

**Vehicle Research and Test Center  
2007 Ford Taurus into 2006 Ford Taurus  
7°, 70 mph, No Frame Rail Overlap  
TRC Inc. Test Number: 101116**

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**Final Report  
November 2010 – January 2011**

**Prepared For:  
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**TRC TEST NUMBER: 101116**

Report Approved February 10, 2011 by:

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## **SECTION 1**

### **PURPOSE AND TEST PROCEDURE**

#### **PURPOSE**

This 112.6 km/h (70.0 mph), no frame rail overlap, 7°, 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 112.6 km/h to impact the left front corner of the target vehicle, with no frame rail overlap, at an impact angle of 7 degrees. The purpose of this test was to evaluate the aggressiveness of the bullet vehicle, a 2007 Ford Taurus 4-door sedan, and the vehicle and occupant response of the target vehicle, a 2006 Ford Taurus 4-door sedan, in this vehicle-to-vehicle angled impact mode.

#### **TEST PROCEDURE**

This test was conducted in accordance with VRTC instructions for a no frame rail overlap 7° 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 2006 Ford Taurus 4-door sedan (target vehicle) was impacted on the left front corner by a 2007 Ford Taurus 4-door sedan (bullet vehicle) which was moving at a velocity of 113.4 km/h. The target vehicle was stationary and positioned at an angle of 7° to the line of forward motion so that there was no frame rail overlap. The weight of the target vehicle as tested was 1730.4 kg and the test weight of the bullet vehicle was 1735.0 kg. The no frame rail overlap, vehicle-to-vehicle impact test was conducted by TRC Inc. on November 16, 2010.

One (1) real-time motion picture camera and twenty (20) high-speed digital motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by the 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 50<sup>th</sup> percentile adult male THOR NT Dummy placed in the driver designated seating position. The THOR NT driver was positioned according to the instructions specified in the Laboratory Test Procedure for FMVSS 208, "Occupant Crash Protection", TP208-13, dated July 27, 2005. The driver 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 50<sup>th</sup> percentile adult male ATD and two Part 572O Hybrid III 5<sup>th</sup> 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 50<sup>th</sup> percentile male dummy. The Hybrid III 5<sup>th</sup> 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 5<sup>th</sup> percentile left rear seat occupant was positioned according to instructions specified in the Laboratory Test Procedure for FMVSS 214, "Side Impact Protection", TP214D-08, dated December 15, 2006. The driver and 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 each instrumented with eleven (11) structural accelerometers, shoulder and lap seat belt load cells, and two (2) 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 568 mm of static crush during the impact. The bullet vehicle sustained 546 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 <sup>1</sup>	X g	-75.9		-203.5	-83.2	-38.4
	Y g	48.6		41.0	45.9	23.6
	Z g	32.7		27.0	31.4	51.0
	R g	90.2		205.6	94.9	55.0
Maximum Chest Acceleration <sup>1</sup>	X g			-67.8	-25.6	-33.5
	Y g			13.6	11.1	20.5
	Z g			7.5	-13.2	8.0
	R g			67.9	28.1	34.7
Head Injury Criteria <sup>2</sup>	HIC <sub>36</sub>		432		1114	504
	T1 ms	83.3		84.7	94.6	86.7
	T2 ms	119.3		106.7	113.9	112.7
	HIC <sub>15</sub>		217		1061	474
	T1 ms	87.4		90.3	94.6	87.4
	T2 ms	102.4		105.3	109.7	102.5
Chest Maximum Resultant Acceleration <sup>3</sup>	g			59.3	27.5	33.7
	T1 ms			92.9	110.2	84.0
	T2 ms			95.9	113.2	87.0
Chest Deflection	mm			-18.8	-15.6	-24.1
Upper Neck Injury Calculations (NIJ) <sup>2</sup>	NTF			0.36	0.14	0.55
	NTE			0.34	0.26	0.62
	NCF			0.01	0.99	0.18
	NCE			0.16	0.01	0.06
Upper Neck Tension Axial Force	Compression N	2029		2232	592	1748
	Compression N	-234		-79	-1703	-370
Upper Tibia Index Left (SAE)	Right	0.56		0.88	0.34	
	Right	0.41		1.43	0.18	
Lower Tibia Index Left (SAE)	Right	0.60		1.42	0.38	
	Right	0.37		1.80	0.25	
Maximum Femur Force	Left N	-6055		-1789	-2505	-145
	Right N	-5167		-5790	-33	-137

<sup>1</sup> See Report Sign Convention in Appendix D.

<sup>2</sup> As defined in FMVSS No. 208.

<sup>3</sup> Defined as equal to or exceeding 0.003 sec. duration.

**Test Notes:**

The Bullet Vehicle Driver Left Foot Y-Axis acceleration data channel, 11FOOTLELXH3ACYA, recorded no valid data after 64.6 milliseconds.

The Bullet Vehicle Driver Right Foot Y-Axis acceleration data channel, 11FOOTRILXH3ACYA, exceeded the data channel's full scale at 61.4 milliseconds and recorded questionable data thereafter.

The Target Vehicle Driver Lower Abdomen DGSP Left Pitch acceleration data channel, 21ABDOOLL00THANYC, recorded questionable data throughout the impact event.

The Target Vehicle Driver CRUX T016 Mid Upper Right Thorax potentiometer, 21CHRILU02THAN0C, recorded questionable data throughout the impact event.

The Target Vehicle Driver CRUX T016 Base Lower Right Thorax Potentiometer, 21CHRIRL02THANYC, recorded questionable data throughout the impact event.

The Target Vehicle Driver Airbag 2<sup>nd</sup> Stage Fire Time channel, 20AIRBLEFR26VO0A, did not record valid data.

**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: 11/16/10

**TARGET VEHICLE INFORMATION AND OPTIONS**

Make	Ford	Driver Front Airbag	Yes
Model Year	2006	Driver Side Airbag	No
VIN:	1FAFP53U36A106887	Driver Head Airbag	No
Model:	Taurus SE	Driver Curtain Airbag	No
Body style:	4-door sedan	Driver Knee Airbag	No
Color:	Maroon	Pass. Front Airbag	Yes <sup>1</sup>
Engine Displacement	3.0 Liters	Pass. Side Airbag	No
Type /No. of Cylinders	V6	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	11/2/2010	Anti-lock Brakes	No
Odometer reading:	78,013	All-Wheel Drive	No
Dealer:	Unknown	Pretensioners	Yes
Power steering	Yes	Front Disc	Yes
Power brakes	Yes	Rear Disc	No
Power seats	No	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	No	Anti-skid brake	No
Roof Rack	No	Rear window defroster	Yes
Sunroof / T-Top	No	Automatic Door Locks	Yes
Traction Control	No	Other	No
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)	2124
Date of Manufacture	05/05	GAWR Front (kg)	1157
		GAWR Rear (kg)	967

**TARGET TEST VEHICLE SEAT TYPE AND CAPACITY**

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	N/A	Bench	
Designated Seating Capacity (DSC)	3	0	3	6
Type of Seat Back	Manual Adjustable	N/A	Fixed	
(A) Capacity Wt. (VCW) (kg)				499
(B) DSC x 68.08 kg				408
(A-B) Cargo Wt. (RCLW) (kg)				91

<sup>1</sup> 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 Impact      Test Date: 11/16/10

**TARGET VEHICLE WEIGHTS**

	Units	As Tested (ATW)		
		Front	Rear	Total
Left	kg	514.8	343.8	
Right	kg	518.4	353.4	
Ratio	%	59.7	40.3	
Totals	kg	1033.2	697.2	1730.4

**TARGET VEHICLE ATTITUDES AND CG**

	Units	LF	RF	LR	RR	CG(aft of front axle)
Delivered: <sup>1</sup>	mm					
Pre-test:	mm	692	690	633	634	1108
Post-test:	mm	850	647	665	642	

**GENERAL TARGET VEHICLE DATA**

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2750
Total Vehicle Length at Left Side	mm	4825
Total Vehicle Length at Centerline	mm	5020
Total Vehicle Length at Right Side	mm	4810
Weight of Ballast in Cargo Area	kg	58.1
Weight of Vehicle Components Removed	kg	0
Amount of Stoddard Solvent in Fuel Tank	liters	64.4

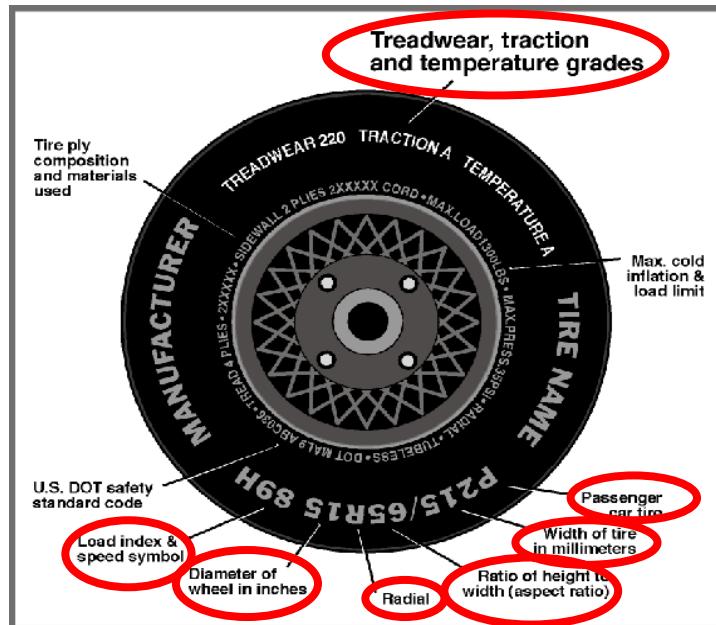
Weight of ballast secured in vehicle: 108.0 kg

Components removed to meet target test weight: None

<sup>1</sup> Data was not recorded.

**DATA SHEET NO. 1 (CONTINUED)**  
**TARGET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10



**DATA FROM TIRE PLACARD**

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300 (44 psi)	300 (44 psi)
Cold / Test Pressure (kPa)	205 (30psi)	205 (30psi)
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P215/60R16
Tire Manufacturer	Continental	Continental
Tire Name	Quadra LE Touring	Quadra LE Touring
Load Index & Speed Symbol	94T	94T
Treadwear	520	520
Traction Grade	A	A
Temperature Grade	B	B

**DATA SHEET NO. 2**  
**TARGET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT**  
**AND FUEL SYSTEMS DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

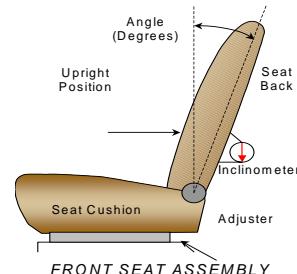
Test Date: 11/16/10

**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	21.3°

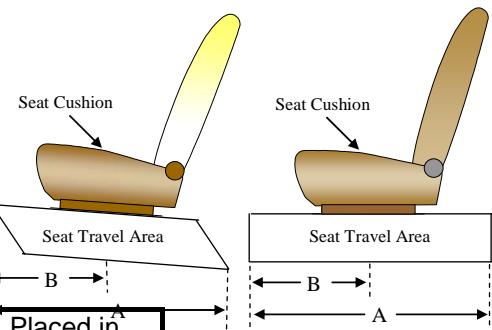


**SEAT FORE/AFT POSITIONS**

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	Mid	7 <sup>th</sup> of 13



**TARGET SEAT BELT UPPER ANCHORAGE**

	Total No. of Positions	Placed in Position No.
Driver Seat	5	1 (full up)

Position number one is the uppermost adjustment position.

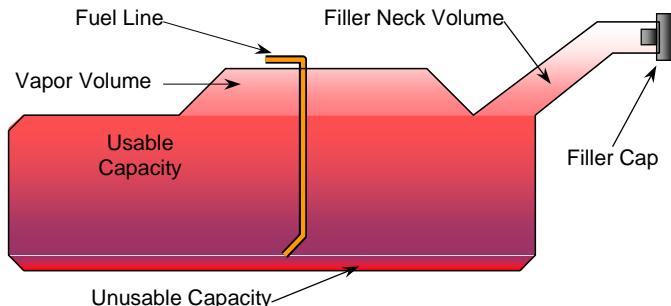
**DATA SHEET NO. 2 (CONTINUED)**  
**TARGET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT**  
**AND FUEL SYSTEMS DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**FUEL TANK CAPACITY**

	Liters
Usable Capacity of Tank	N/A
Usable Capacity used for FMVSS301	N/A
Actual Amount of Solvent used	64.4

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.



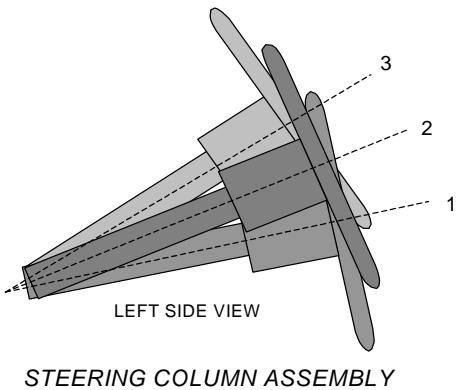
**STEERING COLUMN ADJUSTMENT**

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.

**VEHICLE FUEL TANK ASSEMBLY**

**STEERING COLUMN POSITIONS**

	Detents	Fore/Aft Position, mm
Lowermost Position	1	None
Geometric Center Position	3	None
Uppermost Position	5	None
Telescoping Steering Wheel Travel		None
Test Position		Mid, 3 <sup>rd</sup> of 5



**DATA SHEET NO. 3**  
**BULLET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

**BULLET VEHICLE INFORMATION AND OPTIONS**

Make	Ford	Driver Front Airbag	Yes
Model Year	2007	Driver Side Airbag	No
VIN:	1FAFP53U47A104468	Driver Head Airbag	No
Model:	Taurus SE	Driver Curtain Airbag	No
Body style:	4-door sedan	Driver Knee Airbag	No
Color:	White	Pass. Front Airbag	Yes
Engine Displacement	3.0 Liters	Pass. Side Airbag	No
Type /No. of Cylinders	V6	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	11/02/2010	Anti-lock Brakes	Yes
Odometer reading:	65,672	All-Wheel Drive	No
Dealer:	Unknown	Pretensioners	Yes
Power steering	Yes	Front Disc	Yes
Power brakes	Yes	Rear Disc	No
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	No
Roof Rack	No	Rear window defroster	Yes
Sunroof / T-Top	No	Automatic Door Locks	Yes
Traction Control	No	Other	None
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)	2125
Date of Manufacture	04/06	GAWR Front (kg)	1158
		GAWR Rear (kg)	967

**BULLET VEHICLE SEAT TYPE AND CAPACITY**

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	N/A	Bench	
Designated Seating Capacity (DSC)	3	0	3	6
Type of Seat Back	Manual adjustable	N/A	Fixed	
(A) Capacity Wt. (VCW) (kg)				498
(B) DSC x 68.08 kg				408
(A-B) Cargo Wt. (RCLW) (kg)				91

**DATA SHEET NO. 3 (CONTINUED)**  
**BULLET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**TEST VEHICLE WEIGHTS**

	Units	As Tested (ATW)		
		Front	Rear	Total
Left	kg	514.8	352.0	
Right	kg	514.6	353.6	
Ratio	%	59.3	40.7	
Totals	kg	1029.4	705.6	1735.0

**BULLET VEHICLE ATTITUDES AND CG**

	Units	LF	RF	LR	RR	CG (aft of front axle)
Delivered: <sup>1</sup>	mm					
Pre-test:	mm	695	700	640	640	1118
Post-test	mm	818	680	637	695	

**GENERAL TEST VEHICLE DATA**

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2750
Total Vehicle Length at Left Side	mm	4817
Total Vehicle Length at Centerline	mm	5022
Total Vehicle Length at Right Side	mm	4817
Weight of Ballast in Cargo Area	kg	0
Weight of Vehicle Components Removed	kg	10
Amount of Stoddard Solvent in Fuel Tank	liters	0

Weight of ballast secured in vehicle:

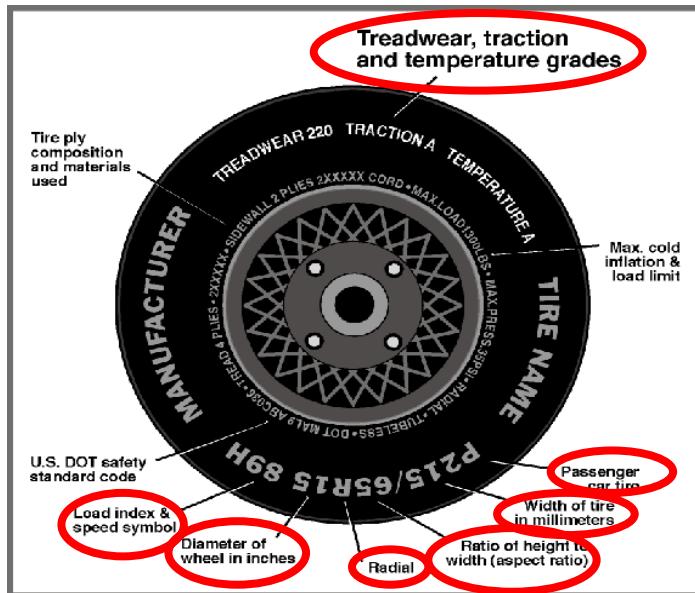
Components removed to meet target test weight:

<sup>1</sup> Data was not recorded.

**DATA SHEET NO. 3 (CONTINUED)**  
**BULLET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



**DATA FROM TIRE PLACARD**

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300 (44 psi)	300 (44 psi)
Cold / Test Pressure (kPa)	205 (30 psi)	205 (30 psi)
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P215/60R16
Tire Manufacturer	Yokohama	Michelin
Tire Name	Radial 376	Energy
Load Index & Speed Symbol	94H	94H
Treadwear	200	200
Traction Grade	B	B
Temperature Grade	A	A

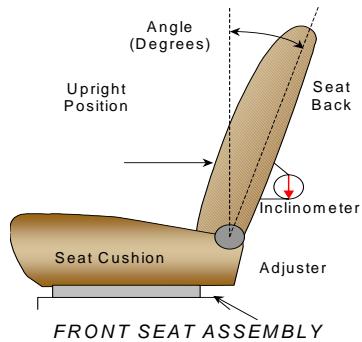
**DATA SHEET NO. 4**  
**BULLET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT**  
**AND FUEL SYSTEMS DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

**NORMAL DESIGN RIDING POSITION**

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



**BULLET SEAT BACK ANGLE**

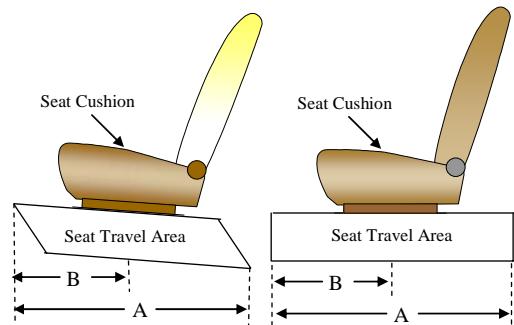
	Degrees
Driver Seat	19.6
Front Passenger Seat	15.6
Left Rear Passenger Seat	Fixed

**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	13	10 <sup>th</sup> of 13
Front Passenger Seat	13	1 <sup>st</sup> of 13
Left Rear Seat	Fixed	NA



**BULLET SEAT BELT UPPER ANCHORAGE**

	Total No. of Positions	Placed in Position No.
Driver Seat	5	1 <sup>st</sup> of 5 (full up)
Front Passenger Seat	5	1 <sup>st</sup> of 5 (full up)
Left Rear Seat	1	1 (fixed)

Position number one is the uppermost adjustment position.

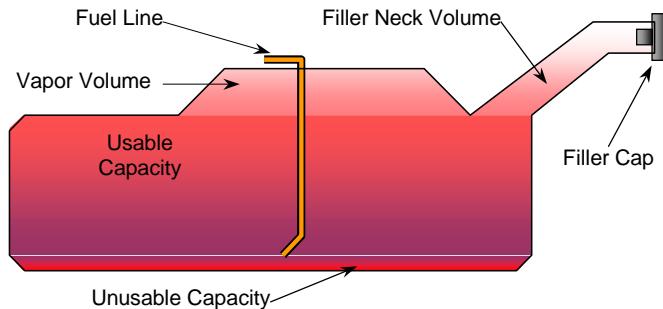
**DATA SHEET NO. 4 (CONTINUED)**  
**BULLET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT**  
**AND FUEL SYSTEMS DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

FUEL TANK CAPACITY	
	Liters
Usable Capacity of Tank	N/A
Usable Capacity used for FMVSS301	N/A
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.



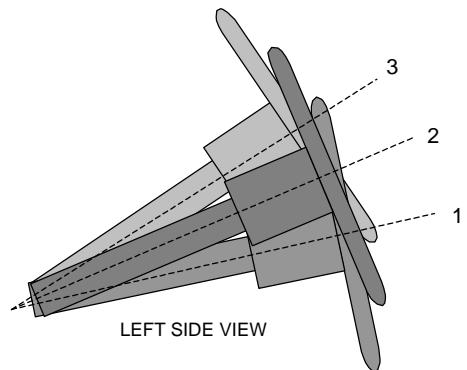
#### STEERING COLUMN ADJUSTMENT

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.

#### VEHICLE FUEL TANK ASSEMBLY

#### STEERING COLUMN POSITIONS

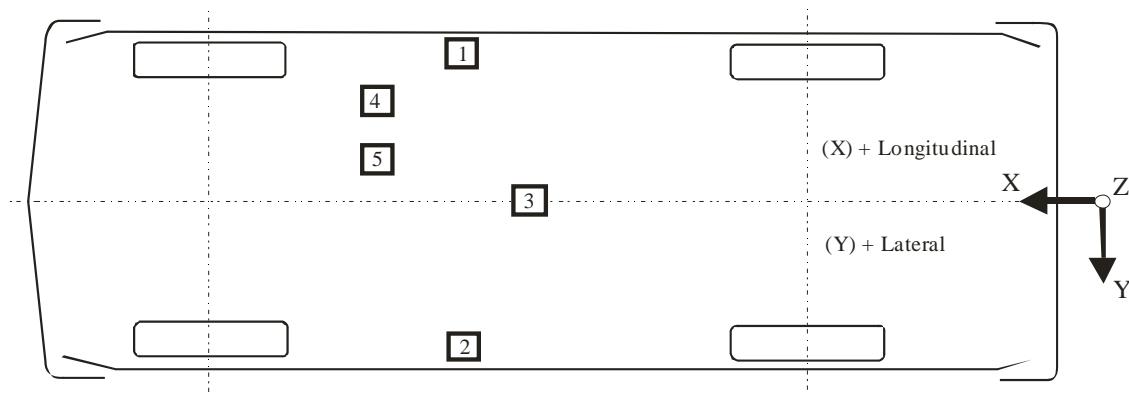
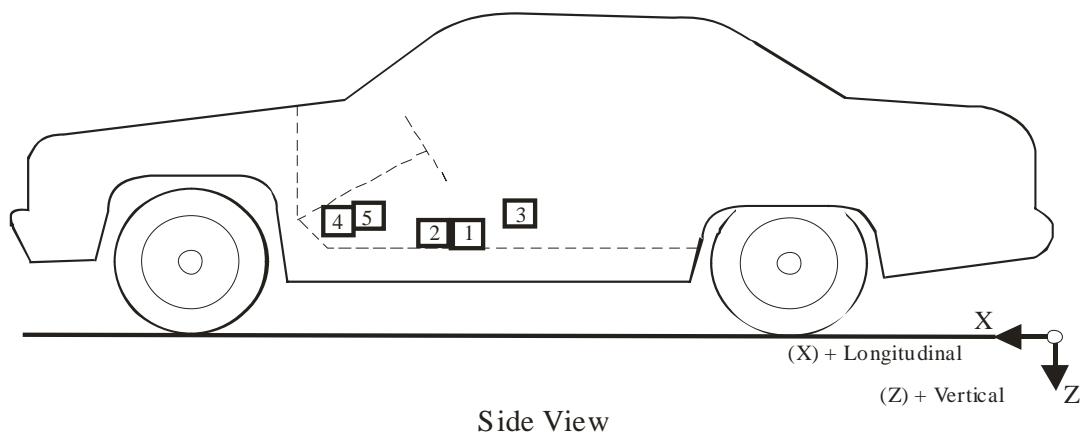
	Detents	Fore/Aft Position, mm
Lowermost Position No. 1	1	None
Geometric Center Position No. 2	3	None
Uppermost Position No. 3	5	None
Telescoping Steering Wheel Travel		None
Test Position		3 <sup>rd</sup> of 5 (Mid)



STEERING COLUMN ASSEMBLY

**DATA SHEET NO. 5**  
**VEHICLES' ACCELEROMETER PLACEMENT AND DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10



**DATA SHEET NO. 5 (CONTINUED)**  
**VEHICLES' ACCELEROMETER PLACEMENT AND DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**TARGET VEHICLE INSTRUMENTATION DATA**

Location		Positive Direction		Negative Direction	
		Max. (g)	Time (ms)	Max. (g)	Time (ms)
(1) Left Sill Acceleration	X	5.7	71.0	-40.3	49.3
	Y	33.1	63.8	-13.2	83.3
(2) Right Sill Acceleration	X	1.5	232.5	-19.9	70.2
	Y	16.2	67.9	-5.0	49.3
(3) Vehicle Center of Gravity Acceleration	X	40.4	56.4	-96.2	63.4
	Y	108.6	64.4	-55.5	51.5
	Z	76.9	45.7	-74.4	63.8
	R	158.3	64.0		
(4) Driver Foot Rest Acceleration	X	17.1	91.0	-65.3	48.6
	Z	33.9	50.5	-14.7	76.9
(5) Toe Pan Behind Center of Accelerator Acceleration	X	28.2	54.3	-93.0	48.8
	Z	83.7	54.1	-49.7	49.8

**BULLET VEHICLE INSTRUMENTATION DATA**

Location		Positive Direction		Negative Direction	
		Max. (g)	Time (ms)	Max. (g)	Time (ms)
(1) Left Sill Acceleration	X	3.8	260.1	-40.3	41.5
	Y	54.8	83.1	-27.0	98.8
(2) Right Sill Acceleration	X	1.4	278.6	-19.5	40.0
	Y	19.0	66.6	-11.1	44.3
(3) Vehicle Center of Gravity Acceleration	X	95.8	65.6	-128.5	61.0
	Y	69.0	61.2	-71.3	65.5
	Z	180.7	41.8	-46.8	64.7
	R	181.2	41.8		
(4) Driver Foot Rest Acceleration	X	28.7	67.1	-120.4	61.7
	Z	32.8	42.1	-7.9	60.0
(5) Toe Pan Behind Center of Accelerator Acceleration	X	2.2	80.5	-82.1	41.9
	Z	40.0	46.2	-52.5	41.5

**DATA SHEET NO. 6**  
**GENERAL TEST DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/06/10

Test Time: 14:40

Ambient temperature at impact area: 9° C

**SPEED TRAP DATA**

Measured Parameter	Units	Requirements	Value
Trap No. 1 Velocity (Primary)	km/h		113.4

**DATA CHANNELS**

TARGET ATD Sensors	107
TARGET Vehicle Structure Accelerometers	11
TARGET Seatbelt Load Cells	2
Airbag Signal Transducers	2
BULLET ATD Sensors	144
BULLET Vehicle Structure Accelerometers	11
BULLET Seatbelt Load Cells	4
Airbag Signal Transducers	4
Total	285

**CAMERA COVERAGE**

Cameras	
High-Speed Vehicle Onboard - TARGET	3
High-Speed Vehicle Onboard - BULLET	4
High-Speed Offboard	13
Real-Time	1
Total	21

**DATA SHEET NO. 7**  
**TARGET VEHICLE POST-IMPACT DUMMY/VEHICLE DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**TEST DUMMY INFORMATION**

Description	Driver
Dummy Type/Serial No.	THOR / T016
Head Contact	Front airbag, upper door frame, side header, A-Pillar 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	Jammed and latched
Rear Door Opening	Jammed 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	Left front tire flat

**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	Yes	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 Impact      Test Date: 11/16/10

**TEST DUMMY INFORMATION**

Description	Driver	Passenger	Left Rear
Dummy Type/Serial No.	HIII 50 <sup>th</sup> / 168	HIII 5 <sup>th</sup> / 329	HIII 5 <sup>th</sup> / 426
Head Contact	Steering wheel, IP, & head restraint	IP & head restraint	Seat back
Upper Torso Contact	Steering wheel	None	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	Separated at latch	Closed and latched
Rear Door Opening	Jammed and latched	Closed and latched
Seat Track Shift (mm)	Yes – inboard seat track released during test	None
Seat Back Failure	None	None
Glazing Damage	Cracks	Cracks

**POST TEST STRUCTURAL OBSERVATIONS**

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

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

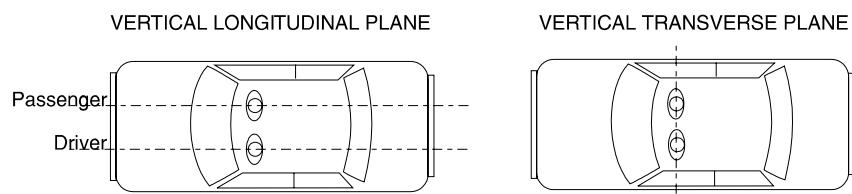
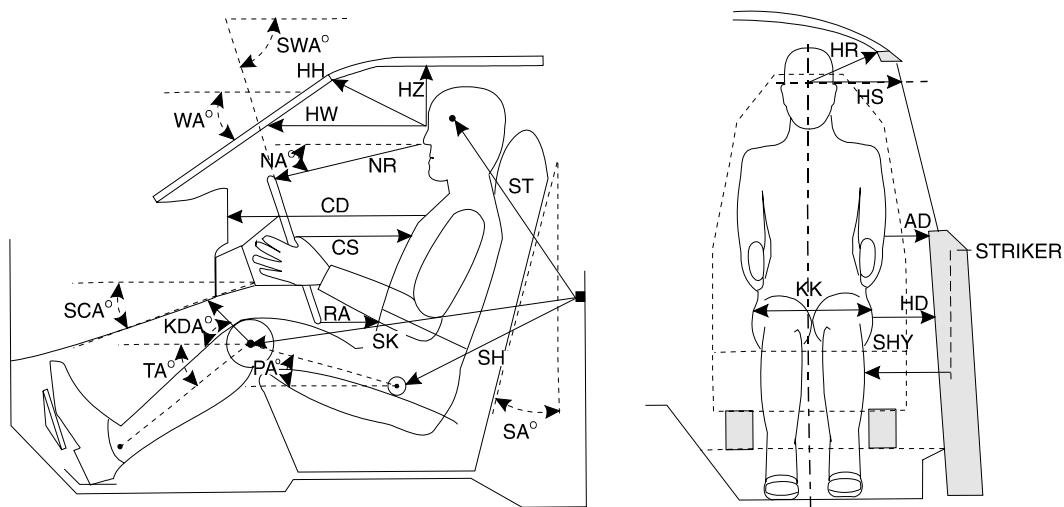
Restraint Type	Driver (Pos. 1)		Passenger (Pos. 3)		Left Rear (Pos. 4)	
	Installed	Operated	Installed	Operated	Installed	Operated
Frontal Airbag	Yes	No	Yes	No	No	N/A
Knee Airbag	No	N/A	No	N/A	No	N/A
Side Torso Airbag	No	N/A	No	N/A	No	N/A
Head/Torso Side Airbag	No	N/A	No	N/A	No	N/A
Curtain Airbag	No	N/A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

**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: 11/16/10



**DATA SHEET NO. 9 (CONTINUED)**  
**TARGET VEHICLE DUMMY CLEARANCE DIMENSIONS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

Code	Measurement Description	Unit	Driver S/N T016
WA	Windshield angle	°	21.6
SWA	Steering wheel angle	°	68.0
SCA	Steering column angle	°	22.0
SA	Seat back angle	°	18.2
HZ	Head to roof	mm	181
HH	Head to header	mm	335
HW	Head to windshield	mm	598
HR	Head to side header	mm	190
NR	Nose to rim	mm	443
NA	Nose to rim angle	°	19.1
CD	Chest to dash	mm	578
CS	Steering wheel to chest	mm	345
RA	Rim to abdomen	mm	171
KDL	Left knee to dash	mm	127
KDR	Right knee to dash	mm	115
KDA	Outboard knee to dash angle	°	20.0
PA <sup>2</sup>	Pelvic angle	°	
TA	Tibia angle	°	50.8
KK	Knee to knee	mm	375
ST <sup>1</sup>	Striker to head	mm	575
	Striker to head angle	°	-86.8
SK <sup>1</sup>	Striker to knee	mm	603
	Striker to knee angle	°	-4.6
SH <sup>1</sup>	Striker to H-point	mm	246
	Striker to H-point angle	°	29.8
SHY	Striker to H-point (Y dir.)	mm	186
HS	Head to side window	mm	302
HD	H-point to door	mm	102
AD	Arm to door	mm	161
	Final head angle (X)	°	-0.9
	Final head angle (Y)	°	1.9
	Final neck angle (X)	°	-3.3
	Final neck angle (Y)	°	0.0
	Final T angle (X)	°	54.2
	Final T angle (Y)	°	20.2
	Final lumbar angle (X)	°	0.5
	Final lumbar angle (Y)	°	1.5
	Final pelvis angle (X)	°	0.6
	Final pelvis angle (Y)	°	1.6

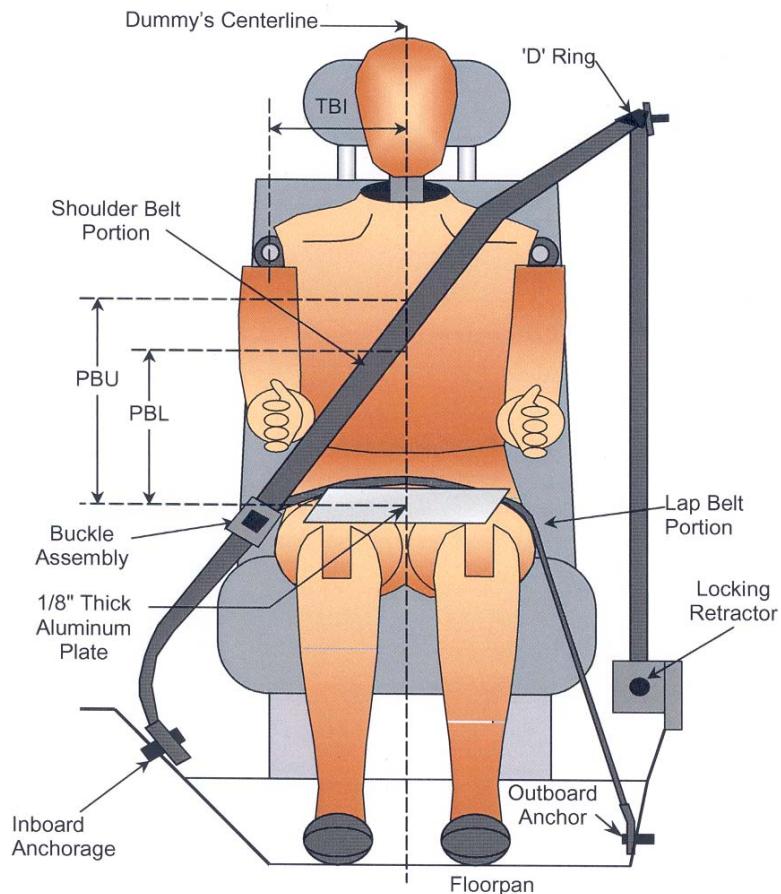
The seat back angle (SA) is measured relative to vertical; all other angles are measured relative to horizontal.

<sup>1</sup> A negative angle indicates the measurement point was above the striker.

<sup>2</sup> Measurement not recorded

**DATA SHEET NO. 10**  
**TARGET VEHICLE SEAT BELT POSITIONING DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

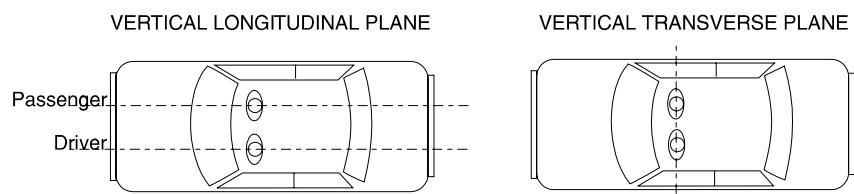
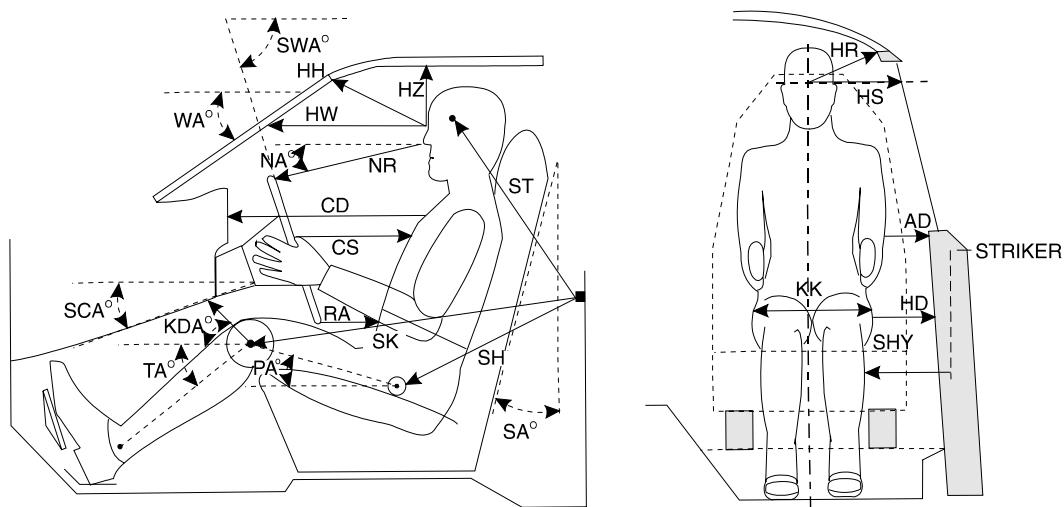


Measurement Parameter		Units	Driver S/N T016
PBU	Top surface of aluminum plate to belt upper edge	mm	375
PBL	Top surface of aluminum plate to belt lower edge	mm	285
TBI	Dummy centerline to intersection of upper torso belt and lap belt	mm	250

**DATA SHEET NO. 11**  
**BULLET VEHICLE DUMMY CLEARANCE DIMENSIONS**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



**DATA SHEET NO. 11 (CONTINUED)**

**BULLET VEHICLE DUMMY CLEARANCE DIMENSIONS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

Code	Measurement Description	Unit	Driver S/N 168	Front Passenger S/N 329	Left Rear Passenger S/N 426
WA	Windshield angle	°	21.5		
SWA	Steering wheel angle	°	69.3		
SCA	Steering column angle	°	20.7		
SA	Seat back angle	°	21.0	16.2	22.7
HZ	Head to roof	mm	208	179	321
HH	Head to header	mm	365	258	
	Head to Seatback	mm			589
HW	Head to windshield	mm	704	645	
HR	Head to side header	mm	200	239	276
NR	Nose to rim	mm	422		
NA	Nose to rim angle	°	9.2		
CD	Chest to dash	mm	600	344	
CB	Chest to seatback	mm			569
CS	Steering wheel to chest	mm	340		
RA	Rim to abdomen	mm	233		
KDL	Left knee to dash / seatback	mm	234	82	262
KDR	Right knee to dash / seatback	mm	224	87	258
KDA	Outboard knee to dash / seatback angle	°	14.8	29.3	
PA	Pelvic angle	°	23.9	21.2	21.0
TA	Tibia angle	°	38.1	53.5	62.7
KK	Knee to knee	mm	417	253	227
ST <sup>1</sup>	Striker to head	mm	526	521	273
	Striker to head angle	°	-86.8	-64.1	-62.6
SK <sup>1</sup>	Striker to knee	mm	530	706	657
	Striker to knee angle	°	0.7	1.1	18.4
SH <sup>1</sup>	Striker to H-point	mm	206	382	449
	Striker to H-point angle	°	38.9	14.5	16.1
SHY	Striker to H-point (Y dir.)	mm	197	158	
HS	Head to side window	mm	325	351	386
HD	H-point to door	mm	101	72	114
AD	Arm to door	mm	143	162	179

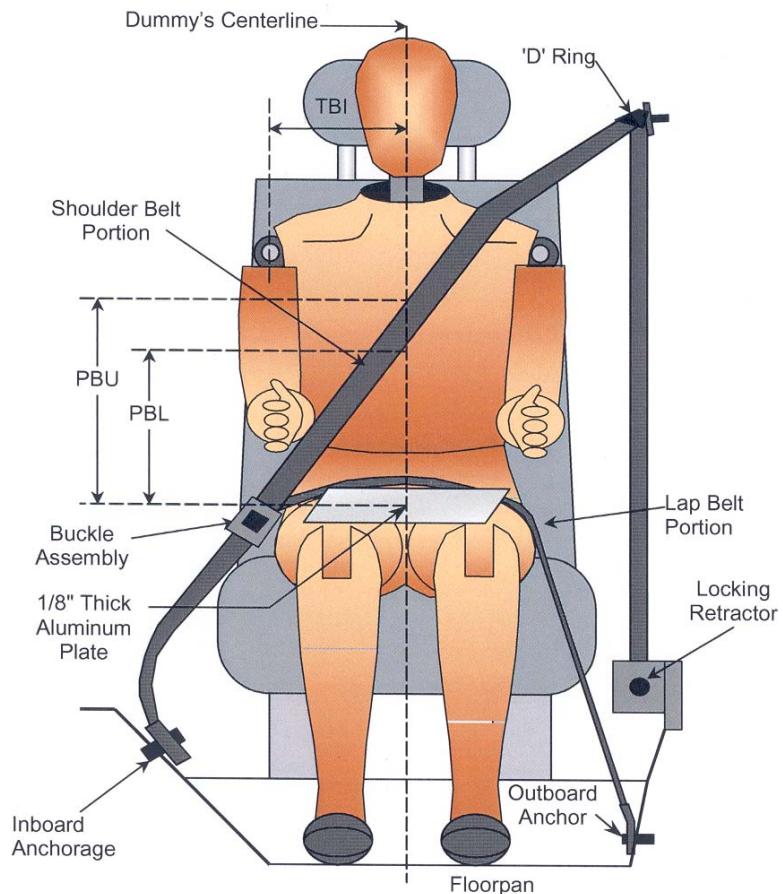
The seat back angle (SA) is measured relative to vertical; all other angles are measured relative to horizontal.

<sup>1</sup> A negative angle indicates the measurement point was above the striker.

<sup>2</sup> Measurement not recorded.

**DATA SHEET NO. 12**  
**BULLET VEHICLE SEAT BELT POSITIONING DATA**

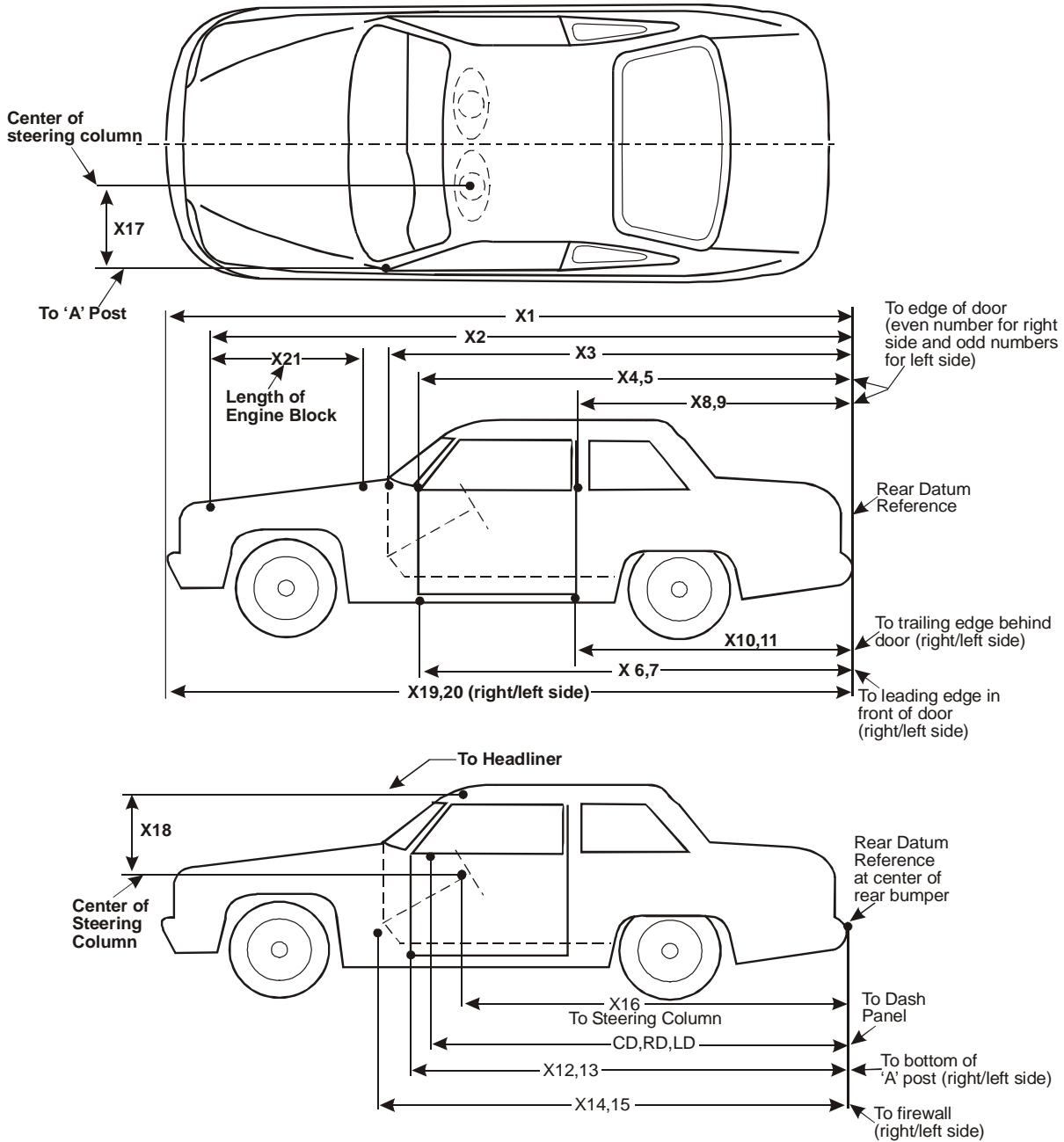
Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10



Measurement Parameter		Units	Driver S/N 168	Front Passenger S/N 329	Left Rear Passenger S/N 426
PBU	Top surface of aluminum plate to belt upper edge	mm	305	270	295
PBL	Top surface of aluminum plate to belt lower edge	mm	220	185	205
TBI	Belt and lap belt	mm	250	225	205

**DATA SHEET NO. 13**  
**TARGET VEHICLE PROFILE MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10



**DATA SHEET NO. 13 (CONTINUED)**  
**TARGET VEHICLE PROFILE MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5020	4777	243
X2	RSOV to Front of Engine Block	4420	3981	439
X3	RSOV to Firewall	3896	3681	215
X4	RSOV to Upper Leading Edge of Right Door	3440	3430	10
X5	RSOV to Upper Leading Edge of Left Door	3450	3164	286
X6	RSOV to Lower Leading Edge of Right Door	3404	3372	32
X7	RSOV to Lower Leading Edge of Left Door	3400	3190	210
X8	RSOV to Upper Trailing Edge of Right Door	2413	2402	11
X9	RSOV to Upper Trailing Edge of Left Door	2417	2227	190
X10	RSOV to Lower Trailing Edge of Right Door	2380	2350	30
X11	RSOV to Lower Trailing Edge of Left Door	2382	NA <sup>1</sup>	NA <sup>1</sup>
X12	RSOV to Bottom of " A " Post on Right Side	3422	3402	20
X13	RSOV to Bottom of " A " Post on Left Side	3420	NA <sup>1</sup>	NA <sup>1</sup>
X14	RSOV to Firewall - Right Side	3832	3610	222
X15	RSOV to Firewall - Left Side	3930	3710	220
X16	RSOV to Steering Wheel Center	2990	2785	205
X17	Center of Steering Column to " A " Post	290	NA <sup>1</sup>	NA <sup>1</sup>
X18	Center of Steering Column to Headliner	435	478	-43
X19	RSOV to Right Side of Front Bumper	4810	4759	51
X20	RSOV to Left Side of Front Bumper	4825	NA <sup>1</sup>	NA <sup>1</sup>
X21	Length of Engine Block	420	420	0
RD	RSOV to Right Side of Dash Panel	3175	3147	28
CD	RSOV to Center of Dash Panel	3220	3046	174
LD	RSOV to Left Side of Dash Panel	3170	2877	293
	Maximum Width	1845	1892	-47

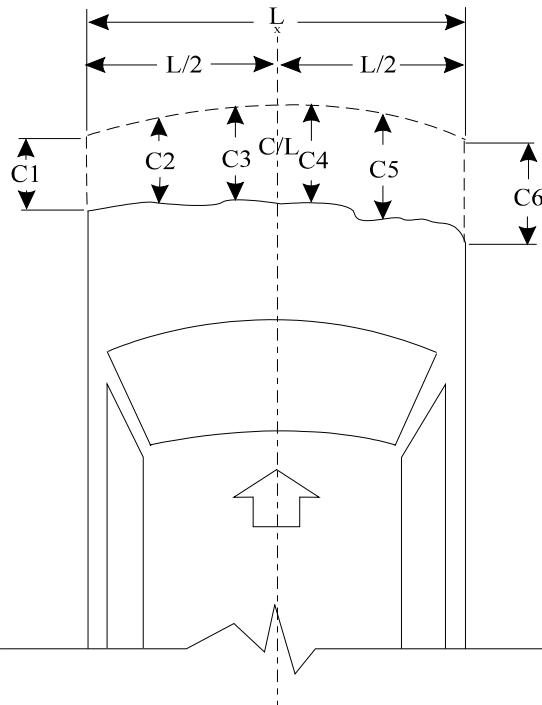
All distance measurements are in millimeters.

<sup>1</sup> Measurement not recorded as a result of vehicle deformation.

**DATA SHEET NO. 14**  
**TARGET VEHICLE CRUSH**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



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

Vehicle: 2006 Ford Taurus  
 Tape measured with bumper fascia in place.

	Pre-Test	Post-Test	Difference	
L=	1530			mm
C1=	4825	NA <sup>1</sup>	NA <sup>1</sup>	mm
C2=	4950	NA <sup>1</sup>	NA <sup>1</sup>	mm
C3=	5019	4660	359	mm
C4=	5020	4824	196	mm
C5=	4955	4845	110	mm
C6=	4810	4759	51	mm
CL=	5020	4777	243	mm

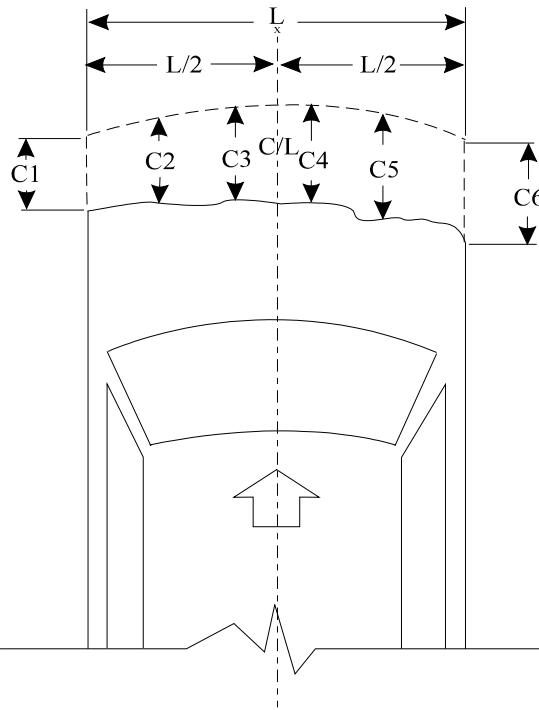
<sup>1</sup> Measurement not recorded as a result of vehicle deformation.

## DATA SHEET NO. 14 CONTINUED

### TARGET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



Notes: L is pre-test length of contact surface.

C1 through C6 are spaced equally apart.

CL is vehicle centerline.

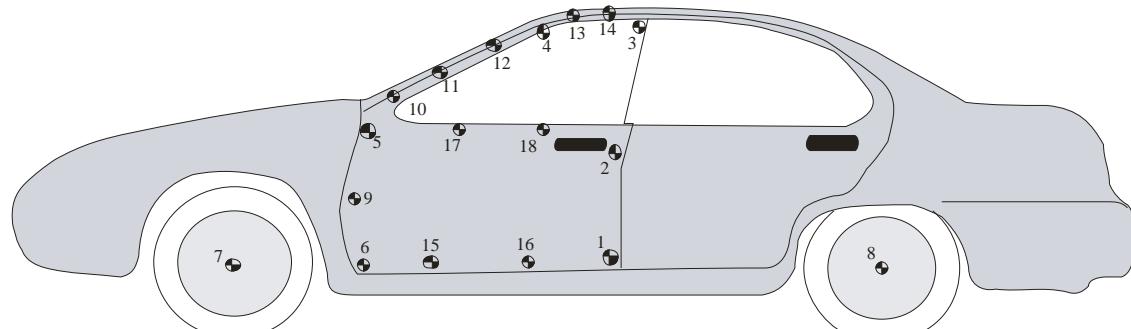
Vehicle: 2006 Ford Taurus

	Pre-Test	Post-Test	Difference	
L=	1332			mm
C1=	4817	4833	-16	mm
C2=	4885	4758	127	mm
C3=	4899	4630	269	mm
C4=	4898	4488	411	mm
C5=	4883	4324	559	mm
C6=	4815	4248	568	mm
CL=	4931	4586	345	mm

Faro measurement of bumper reinforcement.

**DATA SHEET NO. 15**  
**TARGET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10



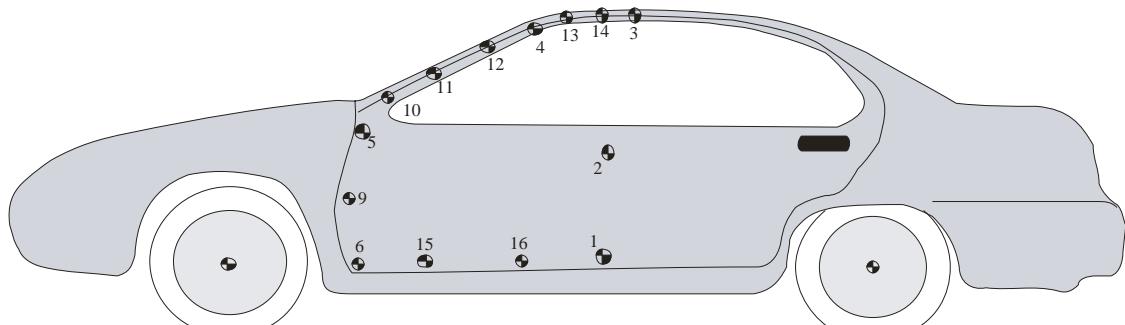
LEFT SIDE VIEW

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2381	-849	289	2223	-819	332	158	-30	-43
2	2415	-869	-343	2231	-1002	-201	184	134	-142
3	2330	-621	-758	2066	-826	-605	265	205	-153
4	2885	-640	-695	2585	-668	-590	299	29	-104
5	3444	-835	-319	3164	-838	-236	281	4	-83
6	3403	-834	293	3213	-793	351	191	-41	-59
Front Axle 7	3970	-869	273	3615	-837	221	355	-32	53
Rear Axle 8	1215	-876	267	1196	-875	292	19	-1	-25
9	3481	-897	53	3212	-787	97	269	-110	-44
10	3437	-811	-342	3165	-756	-278	272	-55	-64
11	3300	-760	-468	3025	-680	-381	275	-80	-87
12	3125	-710	-573	2839	-669	-475	286	-42	-98
13	2642	-601	-759	2341	-707	-642	301	107	-117
14	2399	-599	-781	2109	-780	-642	291	181	-140
15	3055	-856	279	2866	-832	366	189	-23	-87
16	2697	-857	282	2509	-838	382	188	-19	-100
17	3103	-838	-340	2874	-912	-239	229	74	-101
18	2758	-852	-347	2571	-1040	-209	187	188	-138
19	2371	-759	-549	2214	-886	-407	157	127	-142

Units (mm)	(7-8) = Wheelbase Left
Pre-Test	2755
Post-Test	2419
Difference	336

**DATA SHEET NO. 15, CONTINUED**  
**TARGET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

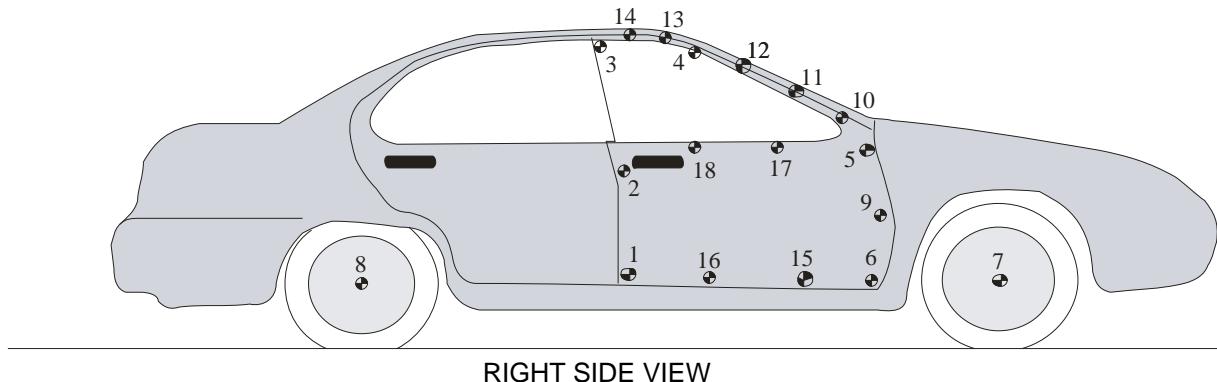


LEFT SIDE VIEW DOOR OPENING

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2383	-812	304	2300	-783	395	82	-29	-92
2	2433	-799	-311	2378	-785	-214	55	-14	-97
3	2349	-580	-741	2345	-563	-651	4	-17	-89
4	2891	-625	-711	2877	-630	-780	15	5	69
5	3416	-783	-304	3131	-707	-218	285	-76	-86
6	3414	-806	288	3214	-749	357	199	-57	-69
9	3401	-785	51	3132	-713	136	268	-72	-85
10	3461	-805	-348	3169	-746	-262	292	-59	-87
11	3310	-749	-482	3096	-672	-394	214	-77	-88
12	3136	-700	-587	3039	-676	-597	97	-24	10
13	2643	-588	-776	2622	-578	-781	21	-10	5
14	2398	-581	-796	2387	-543	-722	11	-38	-74
15	3059	-804	290	2948	-734	344	112	-70	-54
16	2701	-804	288	2605	-748	371	96	-56	-83
19	2370	-727	-525	2336	-706	-432	34	-21	-93

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

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

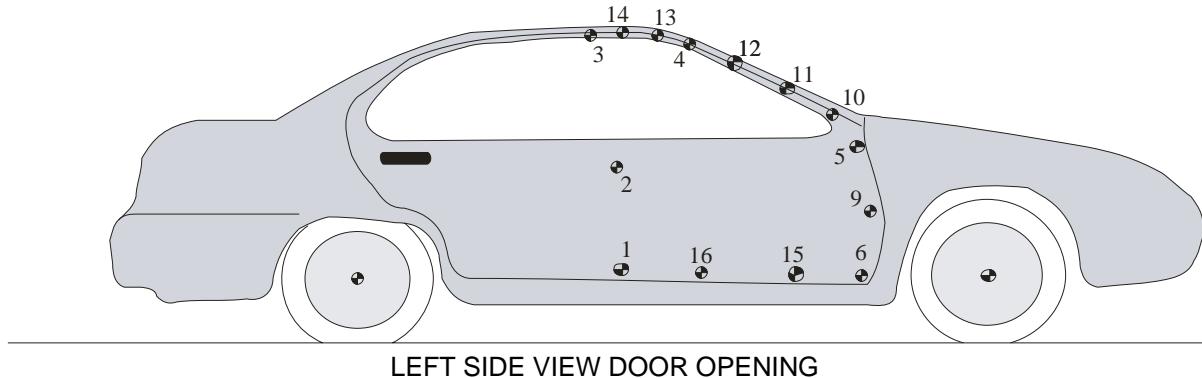


	Pre-Test			Post-Test			Difference			
	X	Y	Z	X	Y	Z	X	Y	Z	
1	2378	844	298	2373	858	310	5	-15	-12	
2	2416	880	-335	2407	908	-322	9	-28	-12	
3	2327	631	-754	2321	665	-746	6	-34	-8	
4	2875	647	-700	2869	690	-695	6	-43	-5	
5	3442	842	-311	3432	891	-306	9	-49	-5	
6	3397	834	302	3392	870	307	5	-36	-5	
Front Axle	7	3964	871	274	4084	820	225	-120	51	49
Rear Axle	8	1214	878	269	1216	875	307	-2	3	-38
	9	3478	901	56	3471	943	63	8	-42	-7
	10	3426	813	-351	3418	863	-346	8	-50	-5
	11	3287	762	-474	3280	810	-469	7	-48	-5
	12	3116	714	-578	3109	760	-572	7	-46	-5
	13	2631	608	-763	2625	647	-757	6	-39	-6
	14	2392	603	-784	2385	638	-777	6	-35	-7
	15	3095	871	272	3089	901	280	6	-30	-8
	16	2739	864	285	2734	886	295	5	-22	-10
	17	3053	846	-332	3044	894	-326	9	-48	-6
	18	2731	856	-340	2723	897	-333	9	-41	-7
	19	2368	760	-559	2362	791	-549	7	-31	-9

Units (mm)	(7-8) = Wheelbase Right
Pre-Test	2750
Post-Test	2868
Difference	-118

**DATA SHEET NO. 15, CONTINUED**  
**TARGET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

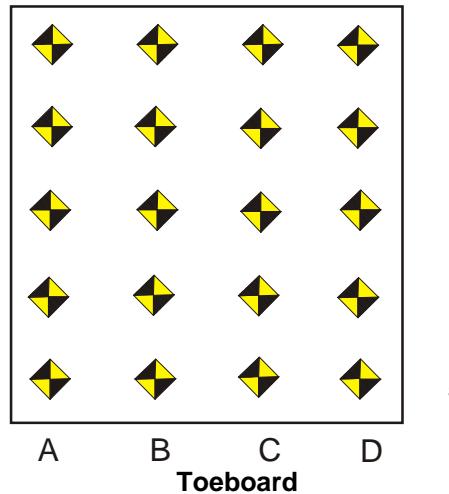


	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2368	813	307	2363	828	312	5	-15	-5
2	2434	807	-299	2433	811	-295	2	-4	-4
3	2346	594	-735	2346	589	-726	0	5	-9
4	2880	636	-710	2881	621	-694	-1	15	-16
5	3418	787	-308	3403	834	-303	15	-47	-5
6	3399	809	294	3394	843	299	5	-34	-5
9	3402	801	72	3394	841	76	8	-40	-4
10	3455	810	-349	3439	853	-346	16	-43	-3
11	3298	755	-483	3285	783	-477	13	-27	-5
12	3124	708	-587	3116	716	-578	8	-8	-10
13	2634	601	-772	2636	592	-760	-2	9	-13
14	2391	596	-790	2393	590	-780	-2	6	-10
15	3091	805	297	3087	832	304	5	-27	-7
16	2744	802	295	2741	823	303	4	-21	-8
19	2370	735	-526	2370	734	-520	0	1	-6

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

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



**DRIVER'S SIDE TOEBOARD MEASUREMENTS**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	-3539	-565	-239	3315	-463	298	6854	102	537
B1	-3620	-428	-274	3429	-353	297	7049	75	570
C1	-3619	-279	-271	3449	-205	292	7068	74	562
D1	-3608	-158	-271	3465	-80	294	7073	78	565
A2	-3513	-566	-285	3313	-466	352	6826	100	637
B2	-3564	-429	-314	3388	-347	351	6952	82	665
C2	-3563	-279	-313	3407	-197	348	6969	82	661
D2	-3548	-146	-320	3414	-67	340	6961	79	659
A3	-3474	-568	-348	3302	-473	423	6775	95	771
B3	-3483	-424	-359	3325	-333	416	6808	91	774
C3	-3483	-277	-360	3341	-185	405	6823	92	765
D3	-3472	-141	-358	3339	-55	375	6811	86	733
A4	-3238	-578	-355	3121	-465	411	6359	113	766
B4	-3243	-414	-365	3111	-310	450	6355	105	816
C4	-3247	-271	-361	3117	-183	409	6364	88	770
D4	-3246	-181	-354	3121	-130	329	6367	51	682
A5	-3022	-587	-343	2912	-506	421	5934	81	765
B5	-3034	-419	-363	2911	-342	416	5945	77	780
C5	-3049	-280	-339	2934	-226	345	5983	53	684
D5	-3066	-240	-344	2953	-190	329	6020	50	672

All measurements are in millimeters.

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

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**DRIVER'S SIDE**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
Front Outboard Seat Bolt	-2920	-562	-307	2826	-513	380	5746	49	687
Steering Center	-2977	-355	293	2764	-291	-333	5741	64	-626
Left Knee Bolster	-3222	-515	108	2983	-398	-45	6205	117	-153
Right Knee Bolster	-3221	-207	91	3084	-110	-48	6305	97	-139
Accelerator Pedal	-3548	-163	-170	3396	-57	231	6944	106	401
Brake Pedal	-3489	-329	-156	3265	-259	200	6754	70	356
Footrest	-3498	-565	-193	3261	-455	269	6759	110	462

All measurements are in millimeters.

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

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

**PASSENGER'S SIDE TOEBOARD**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	-3602	232	-273	3548	275	227	7151	44	499
B1	-3603	352	-262	3585	386	250	7188	34	512
C1	-3611	455	-265	3602	486	259	7213	31	525
D1	-3560	583	-230	3558	619	229	7117	36	459
A2	-3538	229	-320	3501	285	289	7039	57	609
B2	-3532	351	-312	3524	386	312	7056	35	624
C2	-3538	456	-311	3534	488	313	7072	32	623
D2	-3526	592	-292	3523	626	293	7049	34	585
A3	-3461	244	-363	3450	279	364	6910	35	727
B3	-3463	361	-363	3463	394	371	6925	33	734
C3	-3466	465	-365	3465	499	369	6931	33	734
D3	-3477	595	-355	3474	628	355	6951	33	710
A4	-3214	251	-368	3219	281	377	6433	29	745
B4	-3231	361	-370	3231	390	379	6462	30	749
C4	-3230	474	-366	3230	501	366	6460	27	731
D4	-3229	595	-363	3227	623	355	6456	28	718
A5	-3073	251	-357	3075	278	370	6148	27	727
B5	-3018	362	-369	3016	388	378	6033	26	746
C5	-3022	483	-373	3021	511	381	6043	28	755
D5	-3019	604	-347	3018	631	356	6036	27	703

All measurements are in millimeters.

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

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**BUMPER MEASUREMENTS**

(without fascia)

Index	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	-4810	-667	124	4248	-728	260	9058	-61	-136
2	-4864	-547	126	4283	-601	244	9146	-54	-118
3	-4878	-411	126	4324	-492	223	9201	-82	-97
4	-4887	-275	127	4411	-394	197	9298	-119	-71
5	-4892	-139	126	4488	-283	171	9379	-145	-45
6	-4924	-3	128	4586	-189	146	9511	-186	-18
7	-4891	135	126	4630	-57	119	9521	-192	7
8	-4885	269	126	4695	59	-93	9580	-211	32
9	-4874	406	125	4758	178	-65	9632	-229	60
10	-4858	543	124	4815	299	-39	9673	-244	85
11	-4804	664	121	4833	429	-14	9637	-236	108

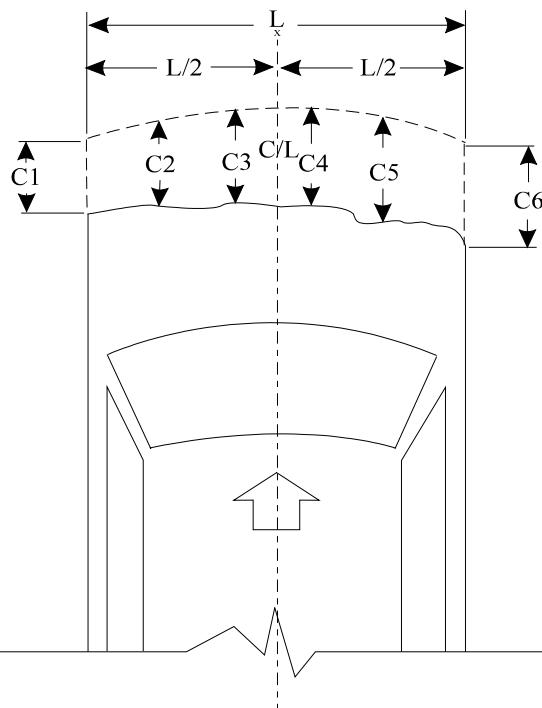
All measurements are in millimeters.

Point 1 is located on the passenger side of the bumper.

**DATA SHEET NO. 16**  
**BULLET VEHICLE CRUSH**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



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

Vehicle: 2007 Ford Taurus

Tape measured with bumper fascia in place.

	Pre-Test	Post-Test <sup>1</sup>	Difference	
L=	1530			mm
C1=	4817			mm
C2=	4962			mm
C3=	5015			mm
C4=	5012			mm
C5=	4962			mm
C6=	4817			mm
CL=	5022			mm

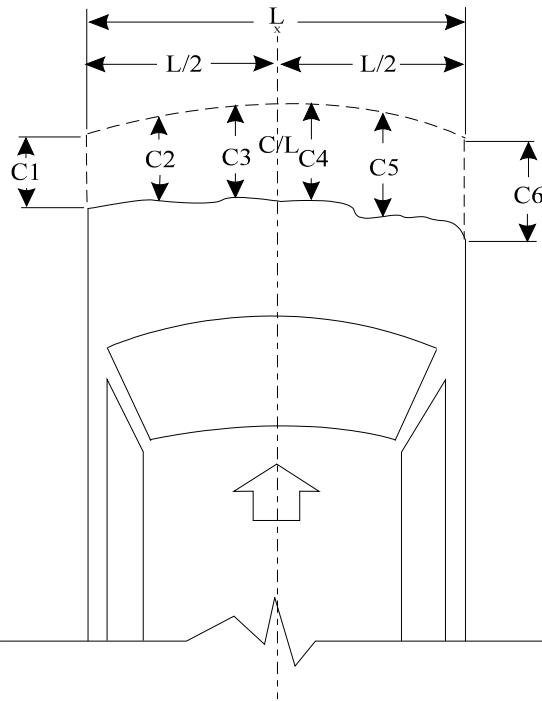
<sup>1</sup> Could not be measured post-test.

**DATA SHEET NO. 16 CONTINUED**

**BULLET VEHICLE CRUSH**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



Notes: L is pre-test length of contact surface.

C1 through C6 are spaced equally apart.

CL is vehicle centerline.

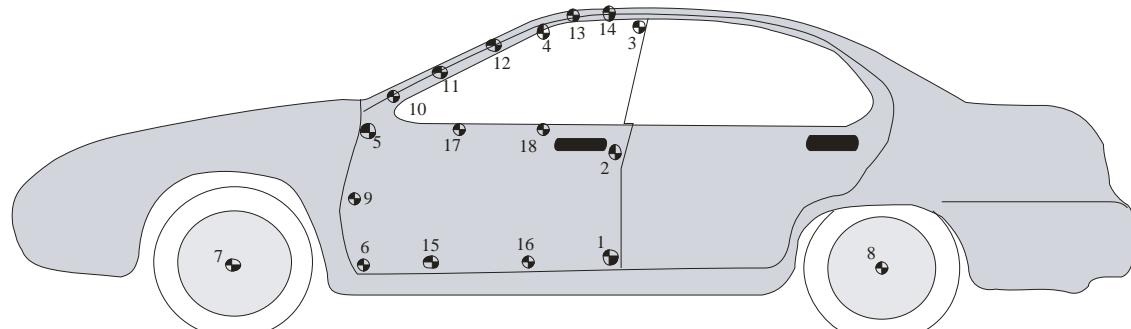
Vehicle: 2007 Ford Taurus

Faro measurement of bumper reinforcement.

	Pre-Test	Post-Test	Difference	
L=	1332			mm
C1=	4817	4850	-33	mm
C2=	4885	4775	110	mm
C3=	4899	4644	255	mm
C4=	4598	4495	404	mm
C5=	4883	4399	483	mm
C6=	4815	4269	546	mm
CL=	4932	4597	334	mm

**DATA SHEET NO. 17**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10



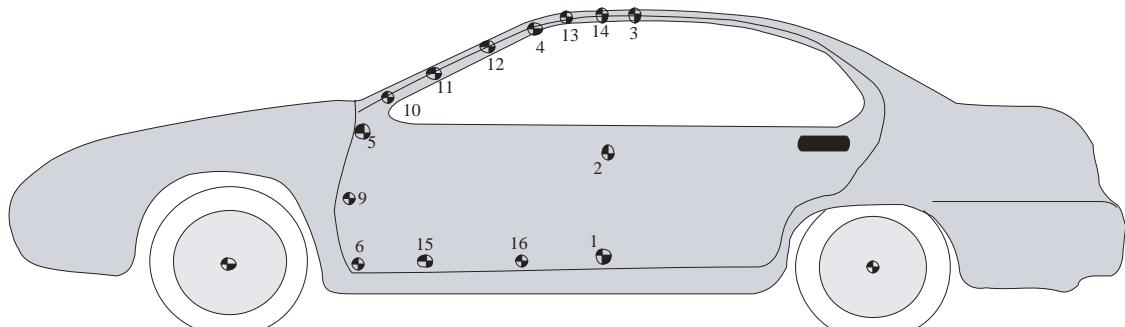
LEFT SIDE VIEW

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2387	-859	258	2390	-852	333	-3	-7	-74
2	2415	-873	-367	2288	-1048	-113	127	175	-254
3	2324	-620	-783	2212	-841	-713	112	221	-69
4	2879	-642	-728	2698	-822	-823	180	180	95
5	3443	-838	-354	3234	-961	-317	209	123	-37
6	3404	-839	254	3264	-749	249	140	-90	5
Front Axle 7	3974	-857	233	3472	-796	137	502	-61	96
Rear Axle 8	1220	-865	242	1224	-856	283	-5	-9	-41
9	3485	-897	11	3336	-825	6	149	-72	5
10	3436	-809	-387	3175	-767	-406	260	-42	19
11	3304	-761	-502	3041	-805	-511	263	44	9
12	3116	-709	-612	2865	-855	-610	251	146	-2
13	2636	-602	-790	2486	-822	-855	150	221	66
14	2390	-598	-809	2261	-843	-756	129	245	-53
15	3082	-850	251	3026	-798	319	56	-52	-68
16	2726	-865	247	2671	-814	346	55	-52	-99
17	3122	-838	-373	2980	-1063	-261	143	225	-113
18	2767	-851	-377	2629	-1062	-196	138	212	-181
19	2361	-740	-608	2280	-917	-523	81	176	-85

Units (mm)	(7-8) = Wheelbase Left
Pre-Test	2754
Post-Test	2248
Difference	506

**DATA SHEET NO. 17, CONTINUED**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

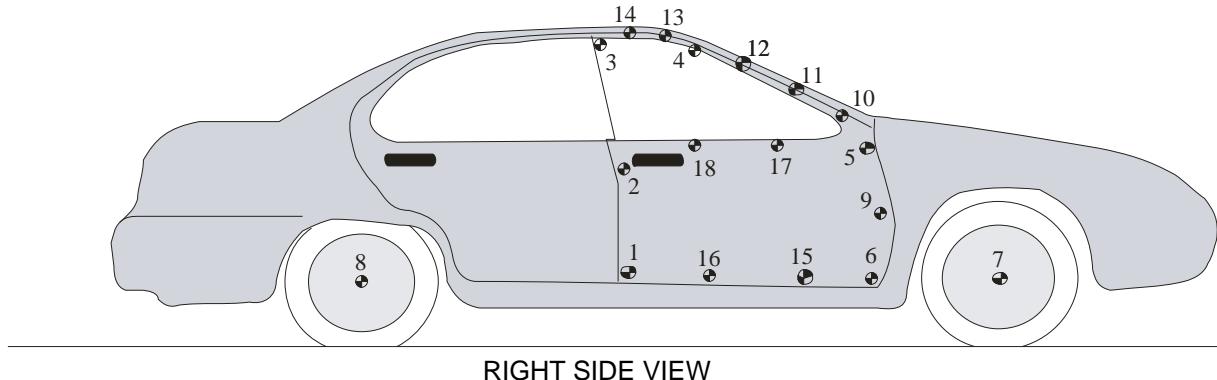


LEFT SIDE VIEW DOOR OPENING

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2389	-813	255	2327	-774	288	62	-39	-33
2	2411	-800	-355	2396	-760	-317	16	-40	-38
3	2350	-580	-769	2352	-542	-736	-3	-37	-32
4	2886	-629	-739	2815	-620	-948	72	-9	209
5	3433	-787	-350	3176	-746	-373	257	-41	23
6	3407	-807	247	3206	-692	230	201	-116	17
9	3403	-782	17	3126	-701	-10	277	-81	27
10	3457	-805	-388	3201	-771	-406	256	-34	18
11	3310	-752	-514	3104	-722	-560	206	-30	46
12	3122	-700	-624	2982	-678	-743	141	-21	119
13	2638	-591	-805	2581	-569	-952	57	-22	148
14	2389	-585	-822	2365	-539	-830	24	-46	8
15	3083	-805	258	2977	-711	261	106	-94	-4
16	2714	-807	261	2611	-722	308	103	-85	-47
19	2358	-711	-590	2356	-671	-555	3	-40	-34

**DATA SHEET NO. 17 (CONTINUED)**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

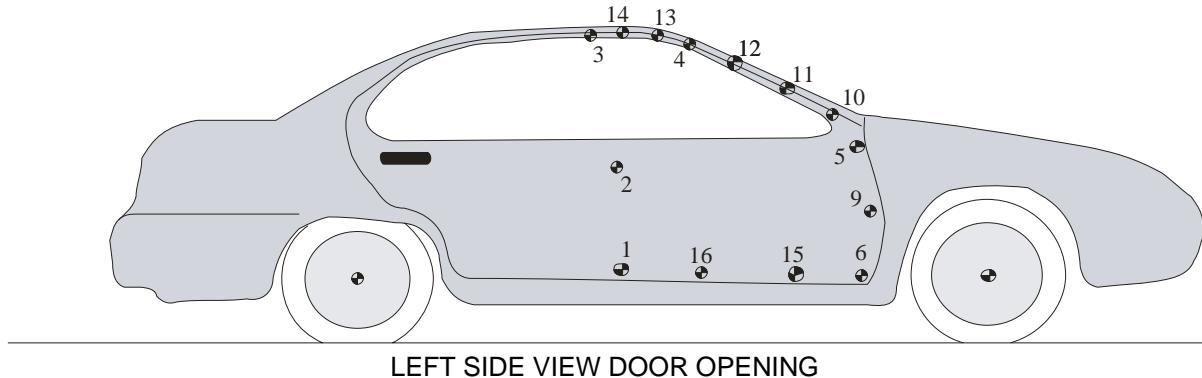


	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2383	853	269	2381	849	270	2	3	-1
2	2415	878	-362	2416	881	-360	-1	-4	-2
3	2327	623	-783	2325	630	-785	2	-7	2
4	2884	646	-725	2881	663	-728	3	-17	3
5	3443	841	-352	3443	844	-351	0	-3	-1
6	3408	846	255	3407	838	256	1	8	-1
Front Axle 7	3976	851	234	4115	732	239	-139	119	-6
Rear Axle 8	1219	863	229	1225	873	289	-6	-11	-60
9	3484	902	20	3484	899	22	0	3	-2
10	3437	820	-376	3437	824	-376	0	-4	0
11	3300	766	-500	3299	775	-500	1	-10	0
12	3121	712	-609	3119	727	-609	3	-15	0
13	2640	606	-788	2638	620	-792	2	-15	3
14	2390	602	-808	2388	611	-810	2	-9	2
15	3038	859	253	3038	853	254	1	5	-1
16	2741	862	257	2741	857	259	1	5	-2
17	3090	849	-364	3091	853	-363	-1	-4	-1
18	2758	860	-368	2759	863	-367	-1	-4	-1
19	2362	748	-602	2359	753	-601	2	-6	-1

Units (mm)	(7-8) = Wheelbase Right
Pre-Test	2757
Post-Test	2890
Difference	-133

**DATA SHEET NO. 17, CONTINUED**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

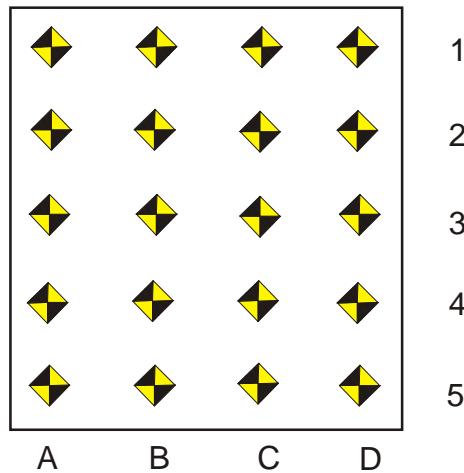


	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2376	814	269	2371	813	268	5	1	1
2	2416	805	-350	2416	805	-349	0	0	-1
3	2343	588	-766	2343	589	-766	0	-2	1
4	2890	635	-736	2891	630	-736	-1	5	0
5	3426	788	-350	3425	790	-350	1	-2	0
6	3410	808	260	3408	799	263	2	8	-3
9	3404	793	30	3401	789	31	4	4	-2
10	3465	813	-371	3465	813	-371	0	0	0
11	3310	757	-509	3310	757	-510	1	1	1
12	3128	707	-617	3128	703	-618	0	4	1
13	2641	598	-800	2642	597	-800	-1	1	0
14	2391	591	-819	2391	595	-819	0	-3	0
15	3049	808	263	3045	803	265	5	5	-2
16	2751	810	265	2747	806	267	4	4	-2
19	2363	719	-582	2363	720	-582	0	-1	0

**DATA SHEET NO. 17 (CONTINUED)**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



**DRIVER'S SIDE TOEBOARD MEASUREMENTS**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3547	-570	201	3285	-429	134	-261	141	-67
B1	3628	-431	236	3402	-325	133	-226	106	-102
C1	3628	-289	229	3417	-184	118	-211	105	-111
D1	3627	-152	223	3443	-49	109	-184	103	-114
A2	3520	-586	249	3278	-444	188	-243	142	-61
B2	3564	-435	285	3355	-319	199	-209	115	-86
C2	3562	-292	276	3371	-179	182	-191	113	-93
D2	3566	-151	276	3399	-41	174	-167	110	-102
A3	3477	-597	313	3254	-454	264	-224	143	-49
B3	3478	-439	326	3289	-313	270	-189	126	-55
C3	3479	-291	325	3303	-166	250	-176	125	-74
D3	3487	-158	322	3323	-36	228	-163	122	-94
A4	3305	-597	318	3136	-445	274	-169	152	-44
B4	3320	-437	328	3143	-289	312	-177	148	-16
C4	3312	-277	324	3157	-142	295	-155	135	-29
D4	3305	-156	311	3165	-87	190	-139	69	-120
A5	3105	-607	325	2983	-486	335	-122	121	10
B5	3133	-431	336	2993	-308	349	-140	123	13
C5	3137	-281	329	2990	-195	256	-147	86	-73
D5	3131	-188	323	2995	-111	219	-135	77	-105

All measurements are in millimeters

**DATA SHEET NO. 17 (CONTINUED)**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

**DRIVER'S SIDE**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
Front Outboard Seat Bolt	2931	-564	280	2834	-494	288	97	-70	-8
Steering Center	2981	-365	-325	2776	-295	-465	205	-70	140
Left Knee Bolster	3232	-521	-131	2965	-437	-225	267	-84	94
Right Knee Bolster	3219	-218	-125	3034	-142	-219	185	-76	94
Accelerator Pedal	3550	-158	159	3405	-60	67	145	-98	92
Brake Pedal	3494	-324	142	3304	-330	50	190	6	92
Footrest	3499	-559	187	3340	-541	132	159	-18	55
Parking Brake	3347	-617	78	3178	-587	12	169	-30	66

All measurements are in millimeters.

**DATA SHEET NO. 17 (CONTINUED)**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

**PASSENGER'S SIDE TOEBOARD MEASUREMENTS**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3628.8	202.9	207.5	3508.0	231.0	142.0	-120.8	28.1	-65.5
B1	3632.8	309.8	212.3	3577.0	297.0	185.0	-55.8	-12.8	-27.3
C1	3633.8	461.7	214.4	3607.0	441.0	202.0	-26.8	-20.7	-12.4
D1	3565.4	576.9	195.0	3559.0	567.0	191.0	-6.4	-9.9	-4.0
A2	3562.4	204.0	255.5	3474.0	219.0	215.0	-88.4	15.0	-40.5
B2	3553.6	307.2	263.9	3517.0	298.0	258.0	-36.6	-9.2	-5.9
C2	3541.3	458.3	275.0	3524.0	443.0	276.0	-17.3	-15.3	1.0
D2	3534.1	587.1	260.3	3524.0	575.0	256.0	-10.1	-12.1	-4.3
A3	3467.3	212.3	324.0	3425.0	207.0	323.0	-42.3	-5.3	-1.0
B3	3469.5	315.0	321.9	3452.0	306.0	333.0	-17.5	-9.0	11.1
C3	3472.3	463.0	327.3	3462.0	452.0	330.0	-10.3	-11.0	2.7
D3	3480.9	588.1	317.7	3473.0	578.0	316.0	-7.9	-10.1	-1.7
A4	3275.5	208.3	324.2	3265.0	199.0	335.0	-10.5	-9.3	10.8
B4	3273.3	319.6	331.3	3261.0	313.0	340.0	-12.3	-6.6	8.7
C4	3261.3	462.2	331.2	3252.0	453.0	338.0	-9.3	-9.2	6.8
D4	3263.6	602.9	330.6	3255.0	596.0	331.0	-8.6	-6.9	0.4
A5	3072.8	204.3	312.9	3059.0	199.0	327.0	-13.8	-5.3	14.1
B5	3058.3	306.3	324.6	3048.0	300.0	334.0	-10.3	-6.3	9.4
C5	3051.7	450.8	337.3	3041.0	446.0	342.0	-10.7	-4.8	4.7
D5	3041.4	607.8	314.7	3034.0	603.0	315.0	-7.4	-4.8	0.3

All measurements are in millimeters.

**DATA SHEET NO. 17 (CONTINUED)**  
**BULLET VEHICLE INTRUSION MEASUREMENTS**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**BUMPER MEASUREMENTS**

(without fascia)

Index	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	4815	-670	73	4269	-748	232	-546	-79	-304
2	4869	-546	72	4359	-663	178	-509	-117	-250
3	4883	-413	72	4399	-540	150	-483	-128	-222
4	4892	-277	72	4425	-433	134	-467	-156	-206
5	4898	-144	72	4495	-322	136	-404	-178	-208
6	4932	-4	70	4597	-222	142	-334	-218	-212
7	4899	135	74	4644	-87	139	-255	-222	-213
8	4894	270	74	4712	30	140	-182	-240	-214
9	4885	404	75	4775	149	141	-110	-255	-215
10	4870	539	76	4834	272	140	-37	-267	-216
11	4817	662	77	4850	405	142	33	-257	-219

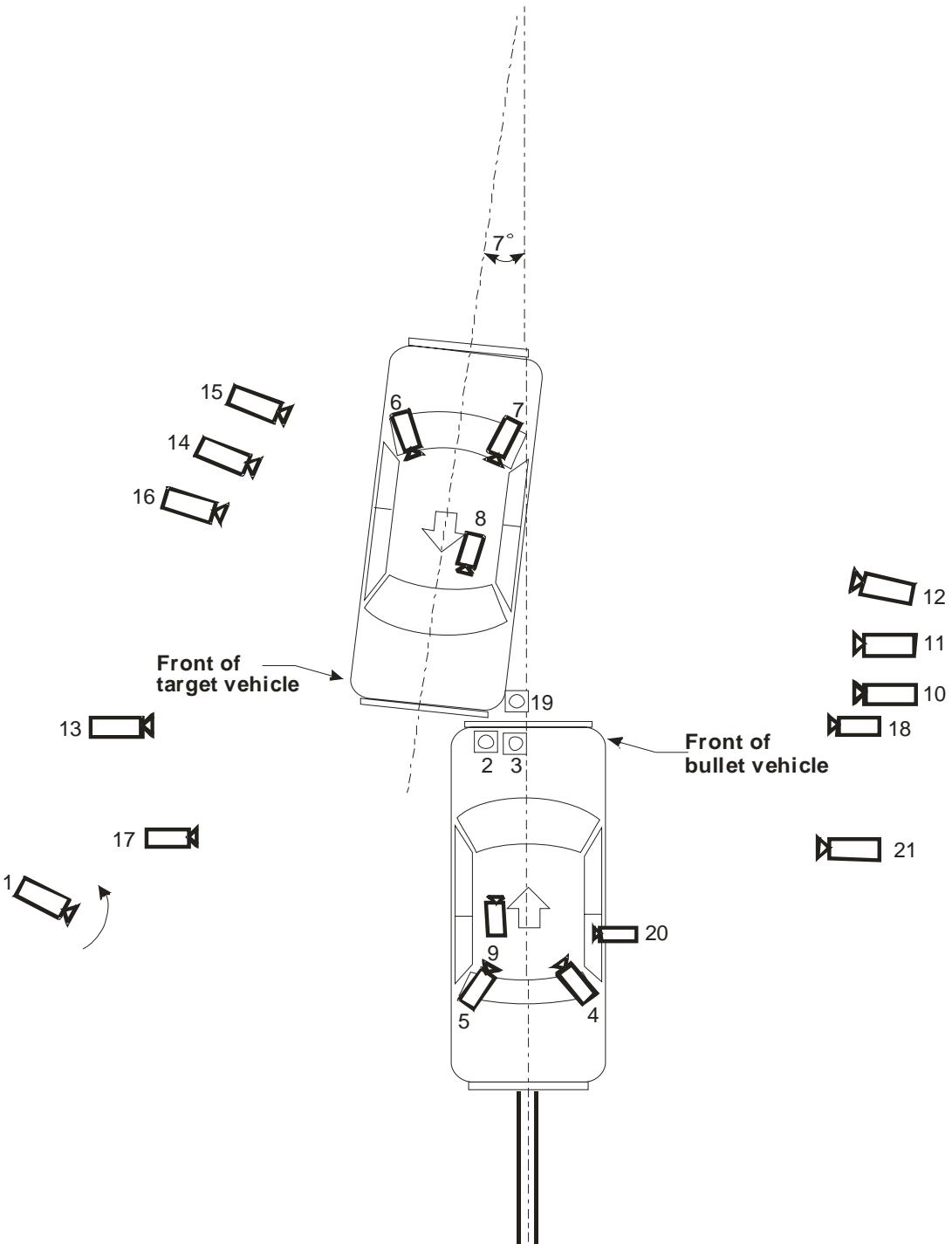
All measurements are in millimeters.

Point 1 is located on the passenger side of the bumper.

**DATA SHEET NO. 18**  
**CAMERA LOCATIONS AND DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10



**DATA SHEET NO. 18 (CONTINUED)**

**CAMERA LOCATIONS AND DATA**

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 11/16/10

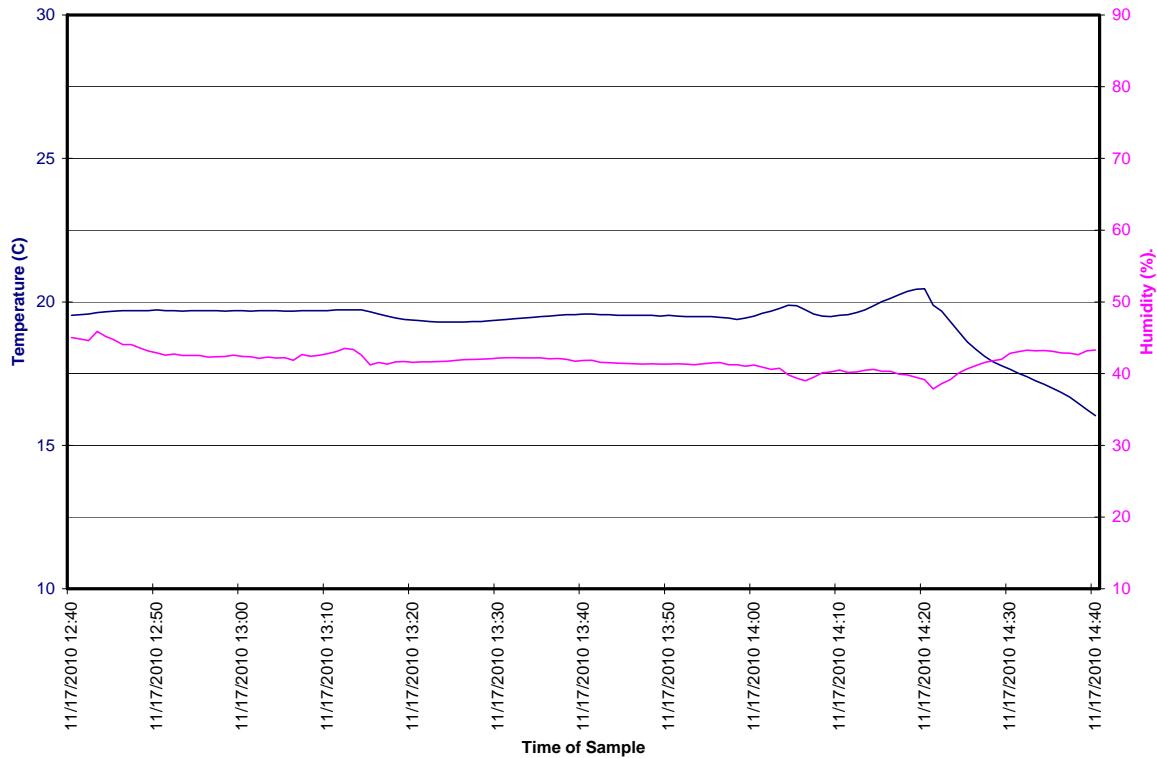
Ref.	Description / Location	Type	Lens (mm)	Speed (f/s)
1	Real Time Panning/Documentary	Canon	Zoom	30
2	Overhead Wide	Visario-G1	12.5	1000
3	Overhead Tight	Visario-G1	25	1000
4	Bullet Onboard Driver Overshoulder	Redlake-LE	8.5	1000
5	Bullet Onboard Passenger Overshoulder	Redlake-LE	8.5	1000
6	Target Onboard Driver Overshoulder	Redlake-LE	8.5	1000
7	Target Onboard Driver Lateral	Redlake-LE	8.5	1000
8	Target Onboard Driver Footwell	Redlake-LE	5.5	1000
9	Bullet Onboard Driver Footwell	VRTC1	4.8	1000
10	Left Wide Bullet Vehicle/Target Vehicle at T-0	Redlake-LE	8.5	1000
11	Left Side Tight Target Vehicle B-Pillar to Bullet Vehicle	Visario-G2	25	1000
12	Left Tight Target Driver to IP/Airbag Contact	Redlake-LE	25	1000
13	Right Wide Target Vehicle/Bullet Vehicle at T-0	Visario-G1	16	1000
14	Right Side Tight Target Vehicle B-Pillar to Bullet Tight	Visario-G2	25	1000
15	Right Tight Target Passenger to IP/Airbag Contact	Visario-G1	50	1000
16	Left Side Tight Bullet Vehicle B-Pillar to Target Vehicle	Visario-G2	25	1000
17	Left Tight Bullet Driver to IP/Airbag Contact	Visario-G1	50	1000
18	Right Side Tight Bullet Vehicle B-Pillar to Target Tight	Redlake-LE	25	1000
19	Pit Wide	Redlake-LE	12.5	1000
20	Bullet Passenger Lateral from Door	VRTC4	8.5	1000
21	Right Tight Bullet Passenger to IP Airbag Contact	----- <sup>1</sup>	----- <sup>1</sup>	----- <sup>1</sup>

<sup>1</sup> Not Recorded

**DATA SHEET NO. 19**  
**TARGET DUMMY / VEHICLE TEMPERATURE STABILIZATION**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

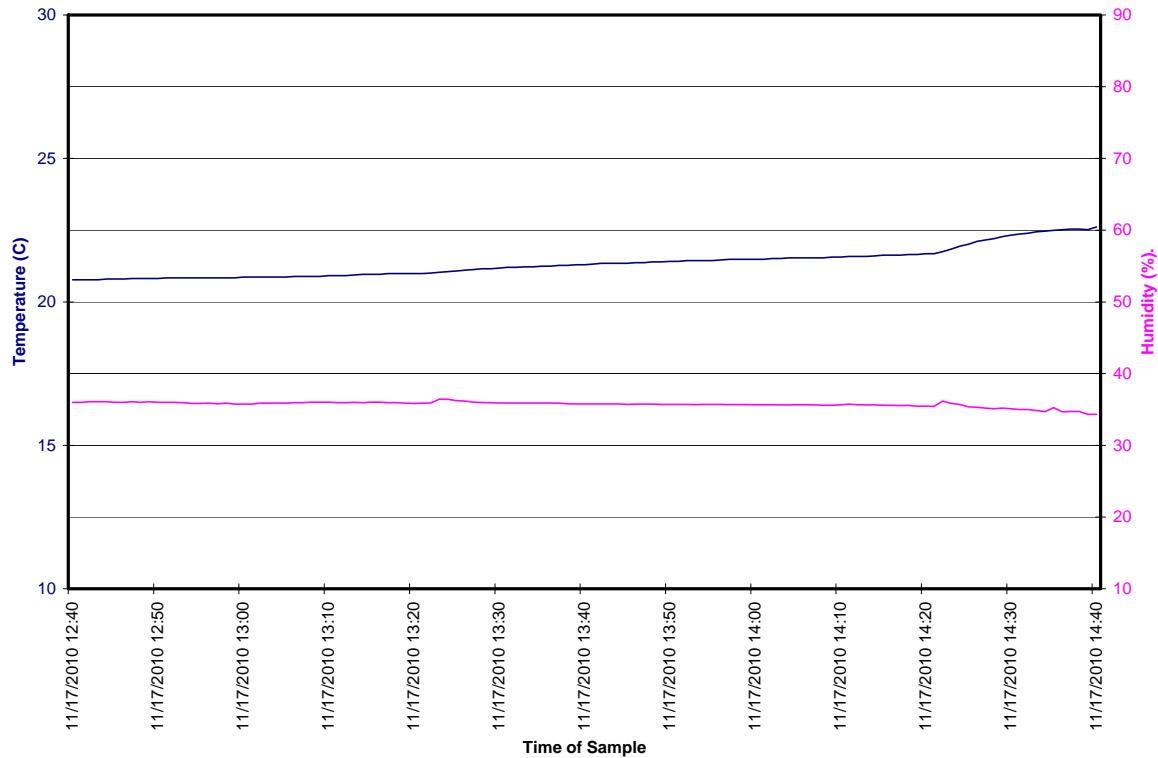
**Vehicle Into Vehicle at 7 Degrees 101116 (Target Vehicle); Test Time 14:40**



**DATA SHEET NO. 20**  
**BULLET DUMMY / VEHICLE TEMPERATURE STABILIZATION**

Test Program: Vehicle to Vehicle Frontal Offset Impact      Test Date: 11/16/10

**Vehicle Into Vehicle at 7 Degrees 101116 (Bullet Vehicle); Test Time 14:40**



Appendix A

Photographs

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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 Overhead Wide View



Figure A-4 Pre-Test Overhead Tight View

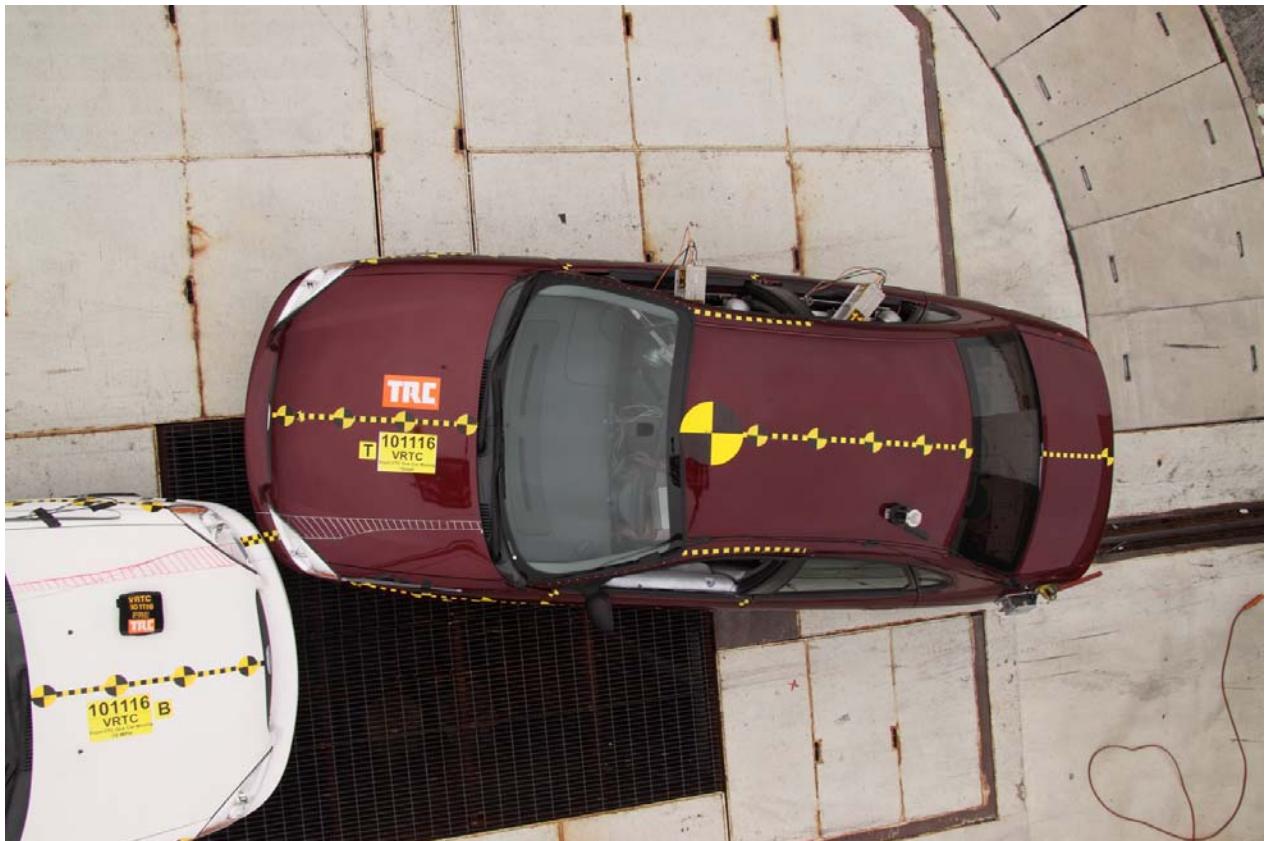


Figure A-5 Pre-Test Overhead Target Vehicle View



Figure A-6 Pre-Test Overhead Bullet Vehicle View



Figure A-7 Pre-Test Overhead Impact Alignment View

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Figure A-8 Pre-Test Impact Alignment – View 1



Figure A-9 Pre-Test Impact Alignment – View 2

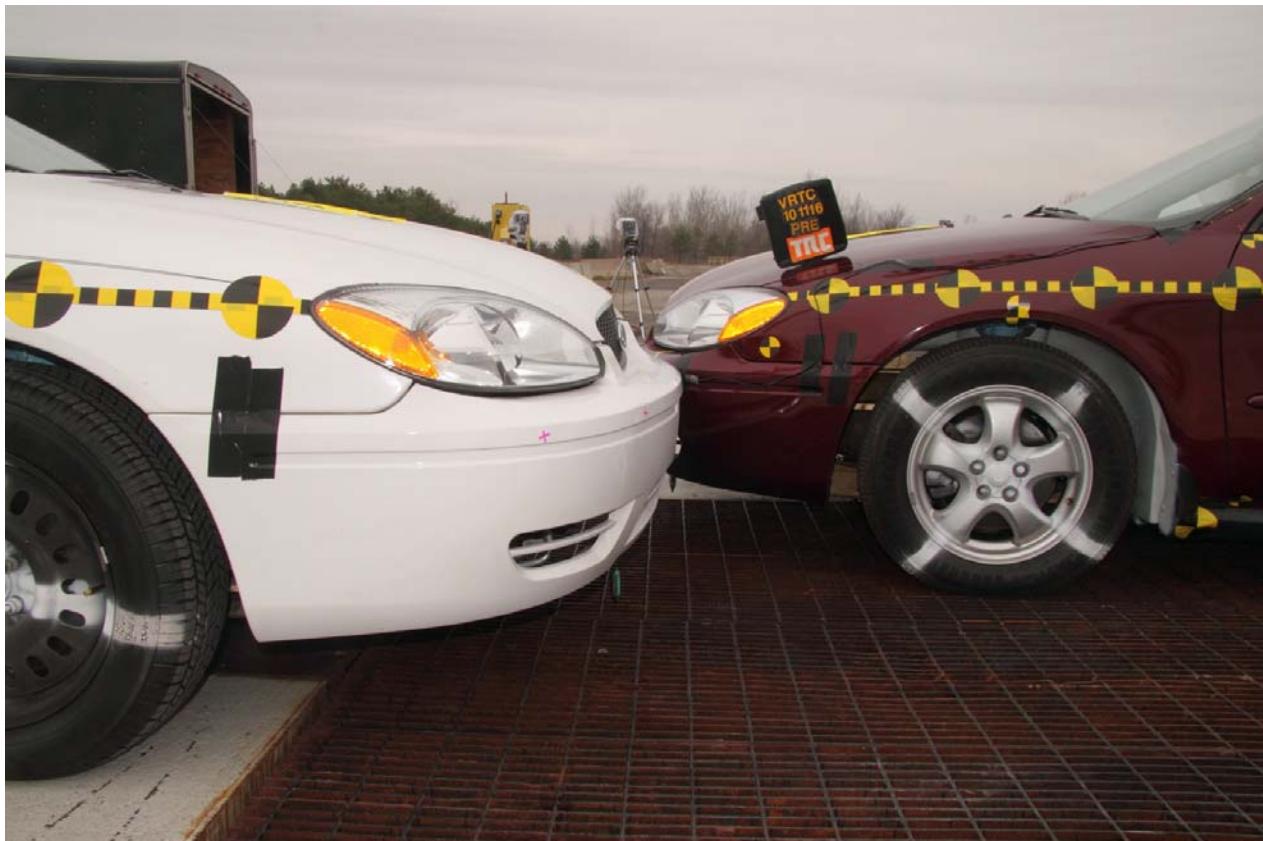


Figure A-10 Pre-Test Impact Alignment - View 3



Figure A-11 Pre-Test Impact Alignment - View 4



Figure A-12 Pre-Test Target Vehicle Front View



Figure A-13 Post-Test Target Vehicle Front View



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



Figure A-15 Post-Test Target Vehicle Left Front View



**Figure A-16 Pre-Test Target Vehicle Left Side View**



**Figure A-17 Post-Test Target Vehicle Left Side View**

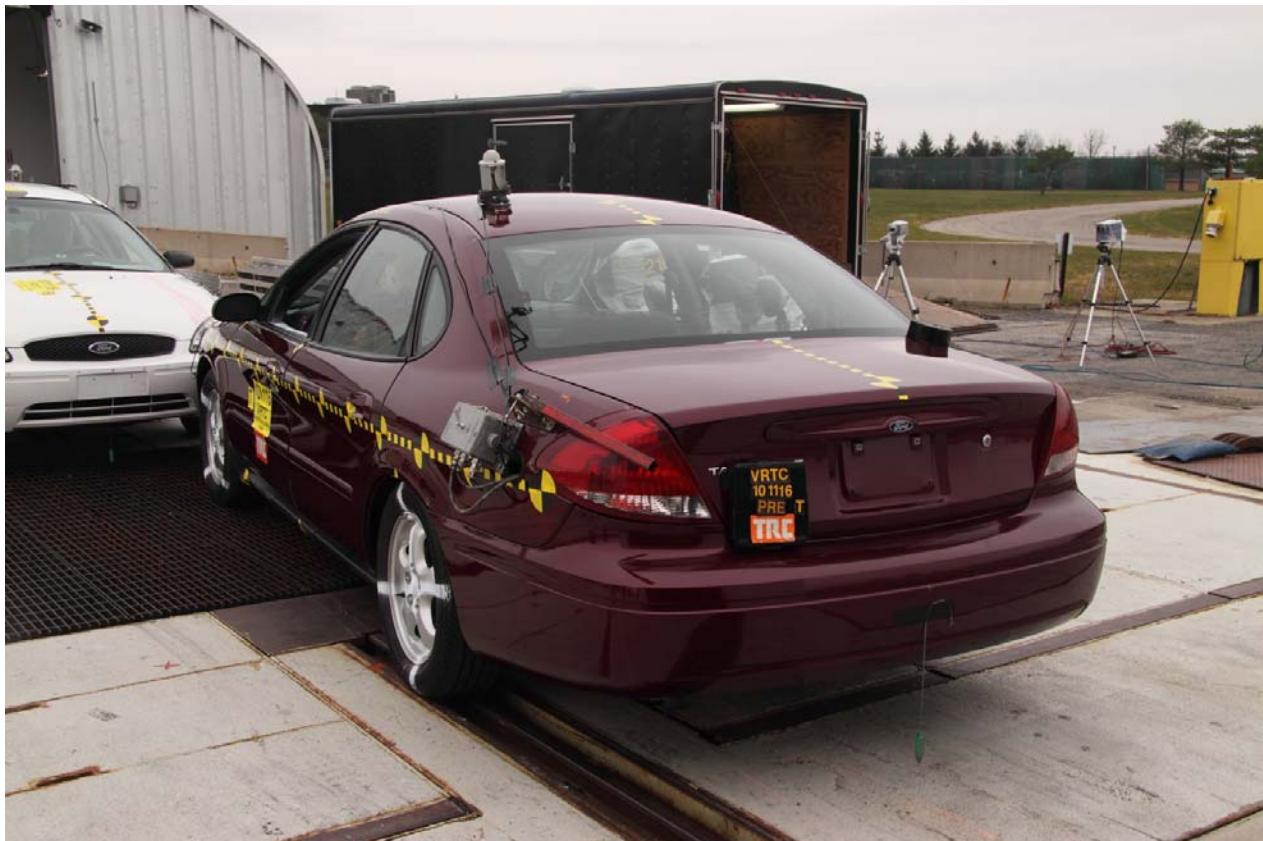


Figure A-18 Pre-Test Target Vehicle Left Rear View

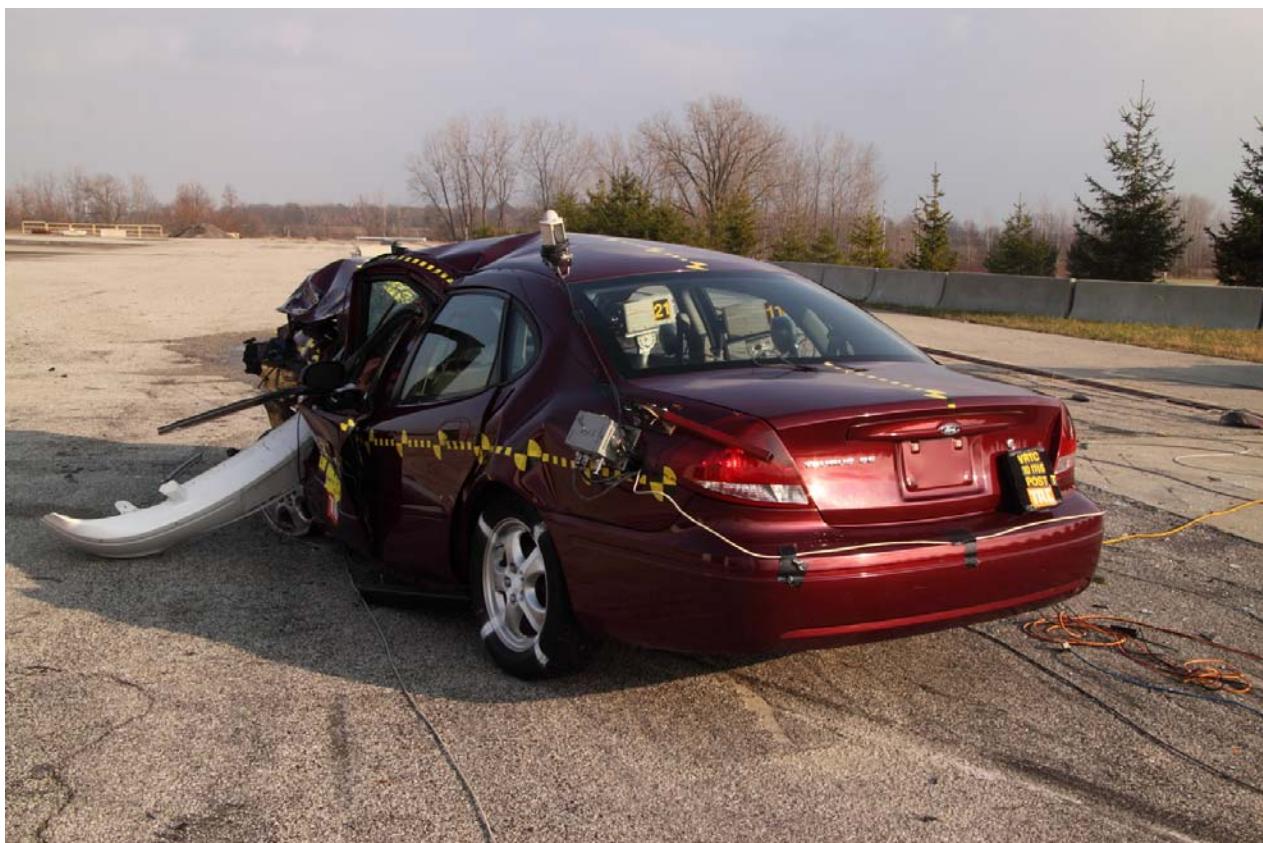
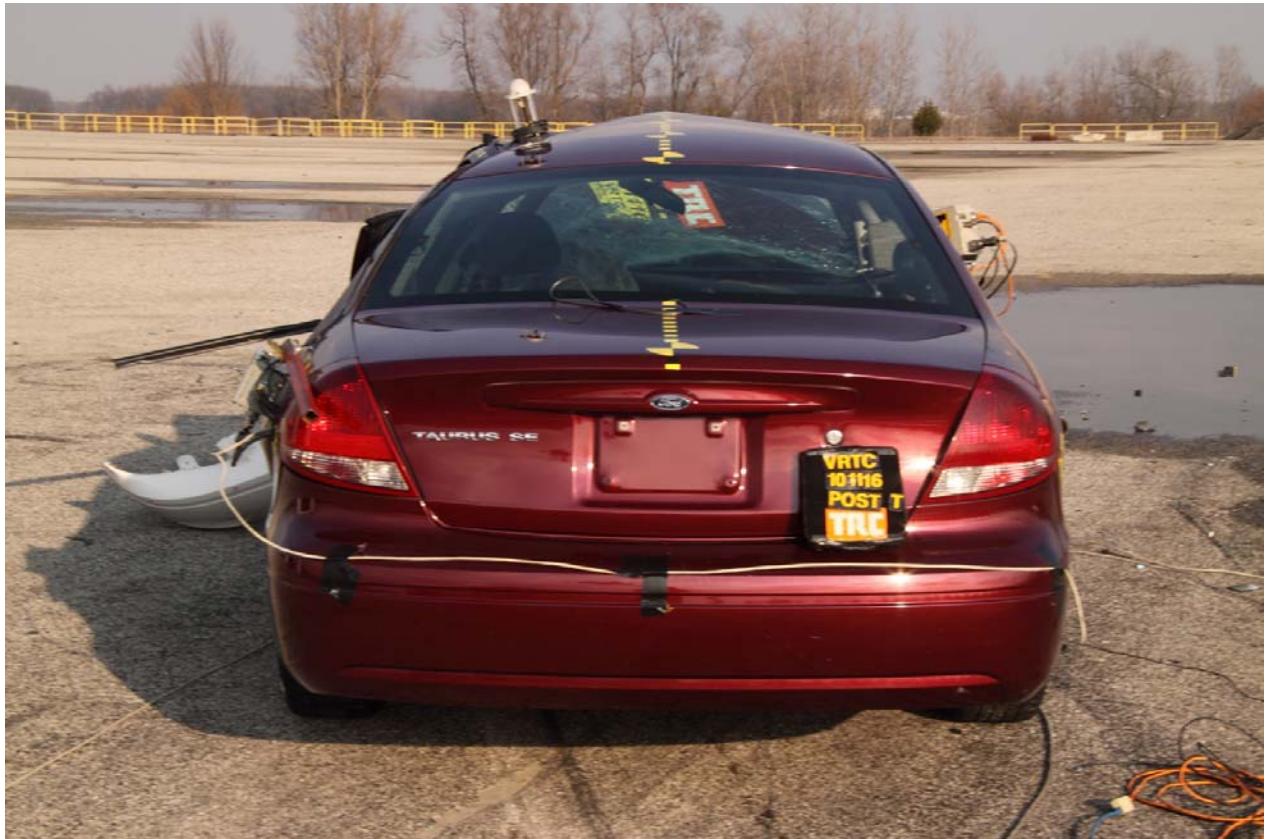


Figure A-19 Post-Test Target Vehicle Left Rear View

**Photograph Not Available**

**Figure A-20 Pre-Test Target Vehicle Rear View**



**Figure A-21 Post-Test Target Vehicle Rear View**

**Photograph Not Available**

**Figure A-22 Pre-Test Target Vehicle Right Rear View**



**Figure A-23 Post-Test Target Vehicle Right Rear View**



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



Figure A-25 Post-Test Target Vehicle Right Side View



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



Figure A-27 Post-Test Target Vehicle Right Front View



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



Figure A-29 Post-Test Target Vehicle Engine Compartment View

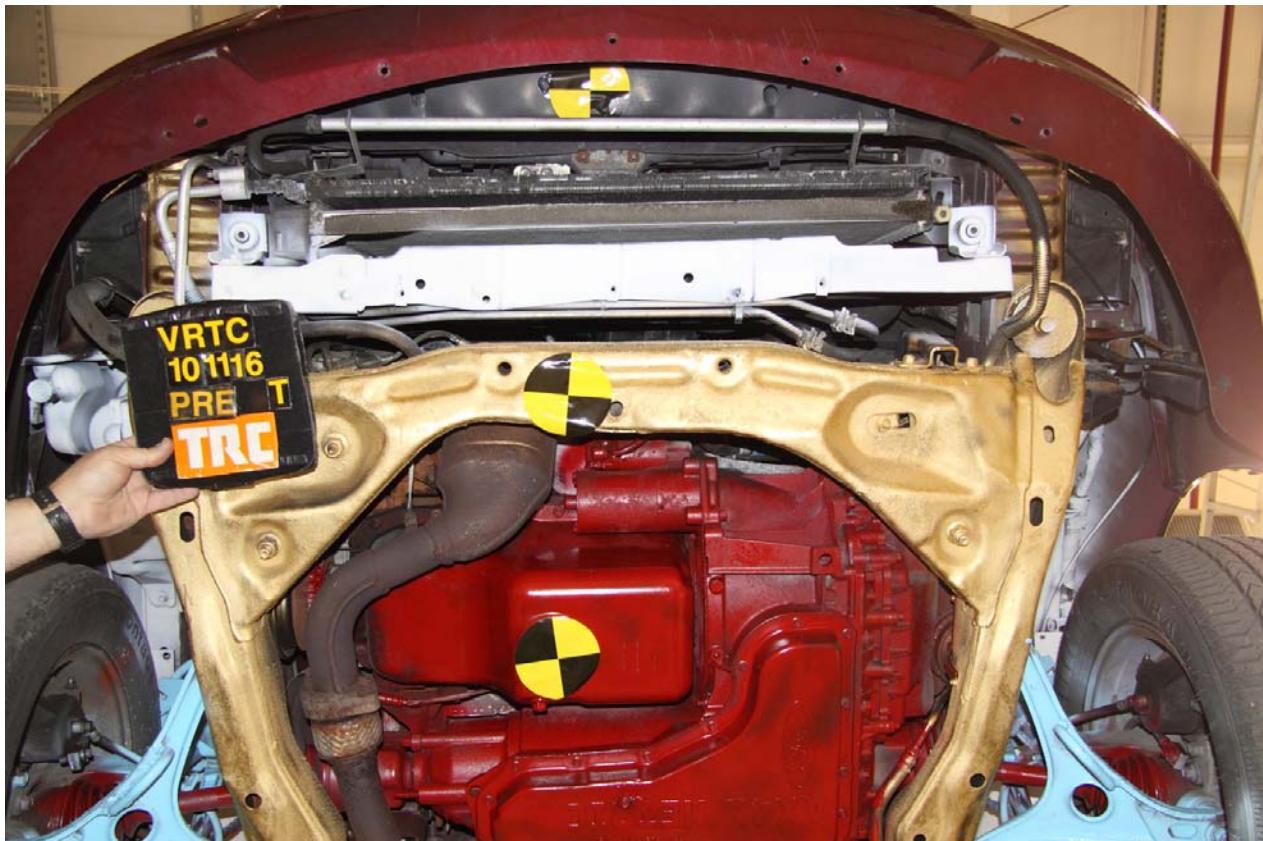


Figure A-30 Pre-Test Target Vehicle Front Underbody View



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



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



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

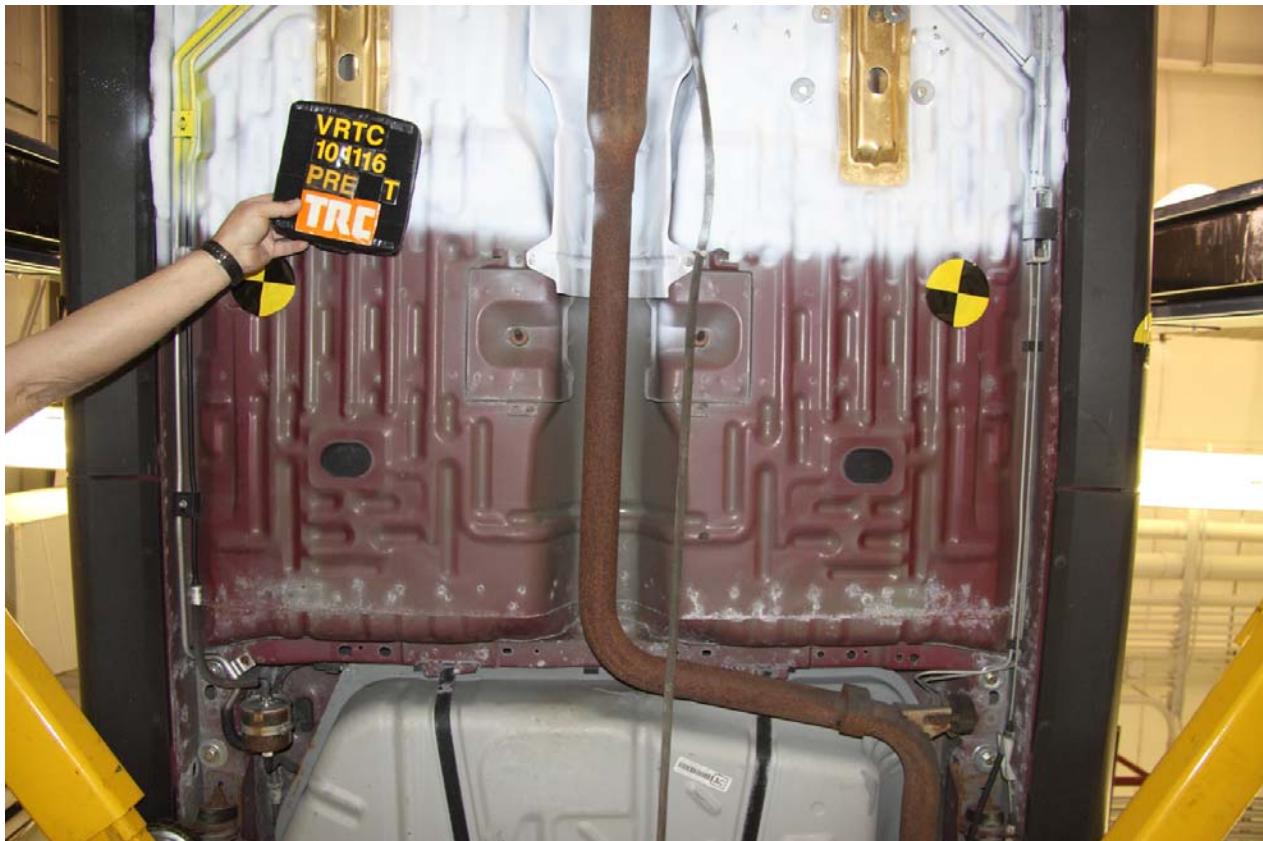


Figure A-34 Pre-Test Target Vehicle Mid Underbody View

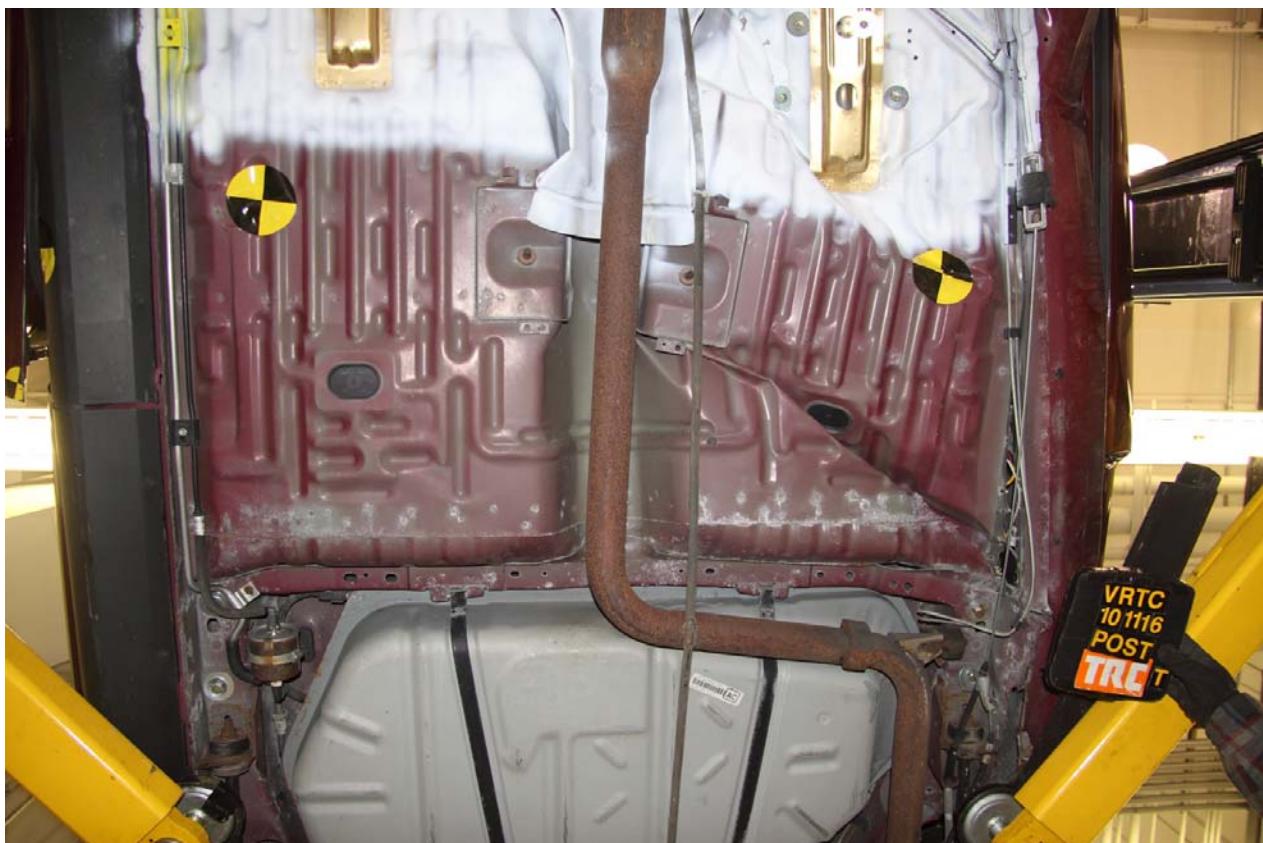


Figure A-35 Post-Test Target Vehicle Mid Underbody View



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



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

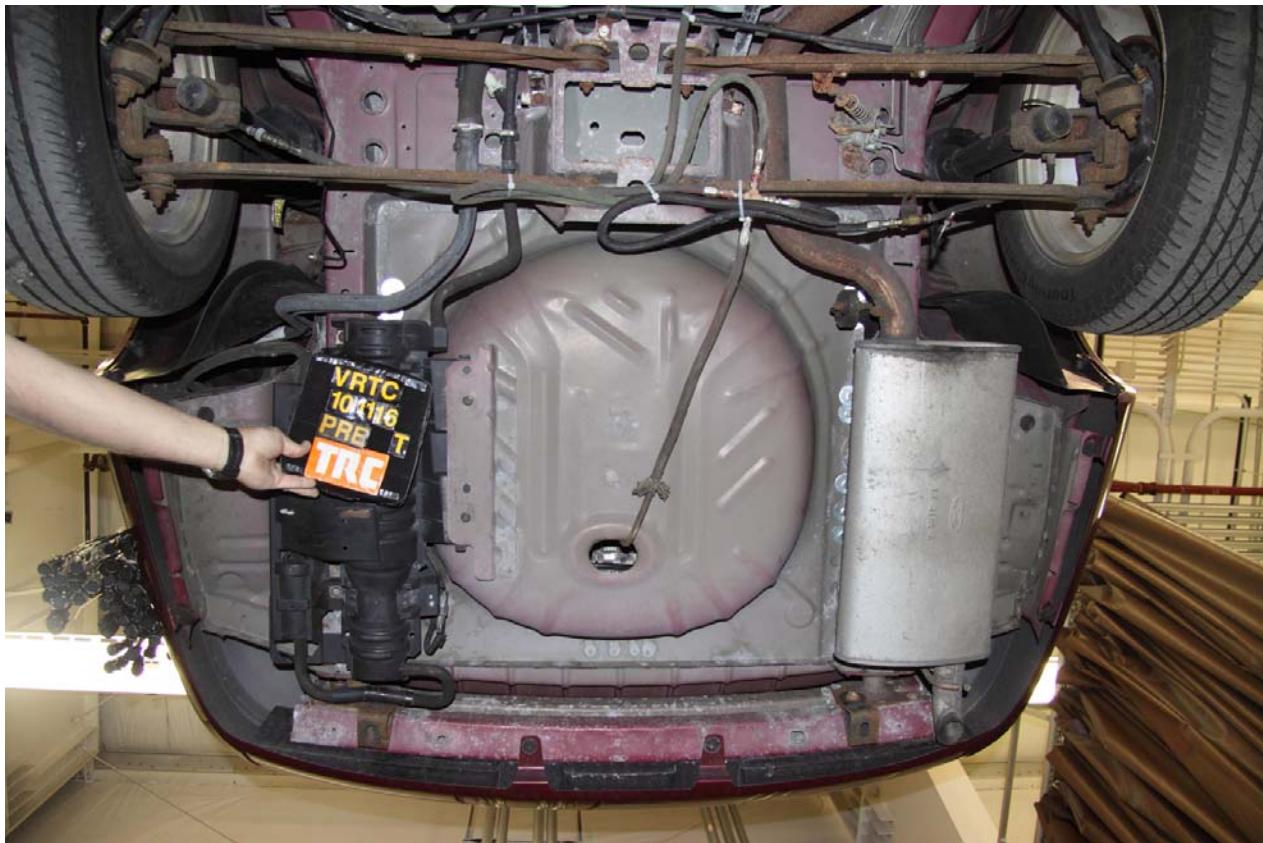


Figure A-38 Pre-Test Target Vehicle Rear Underbody View



Figure A-39 Post-Test Target Vehicle Rear Underbody View

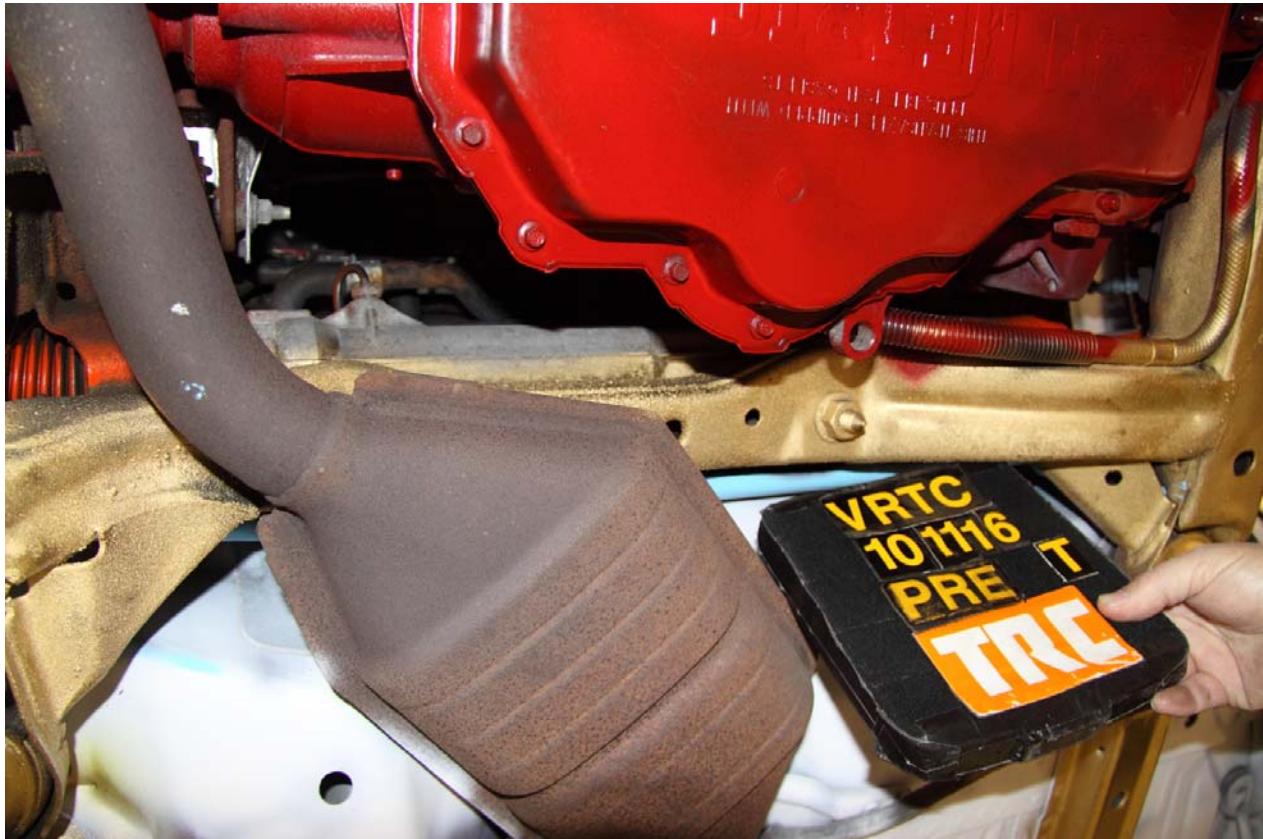


Figure A-40 Pre-Test Target Vehicle Front Underbody Close-up View 1

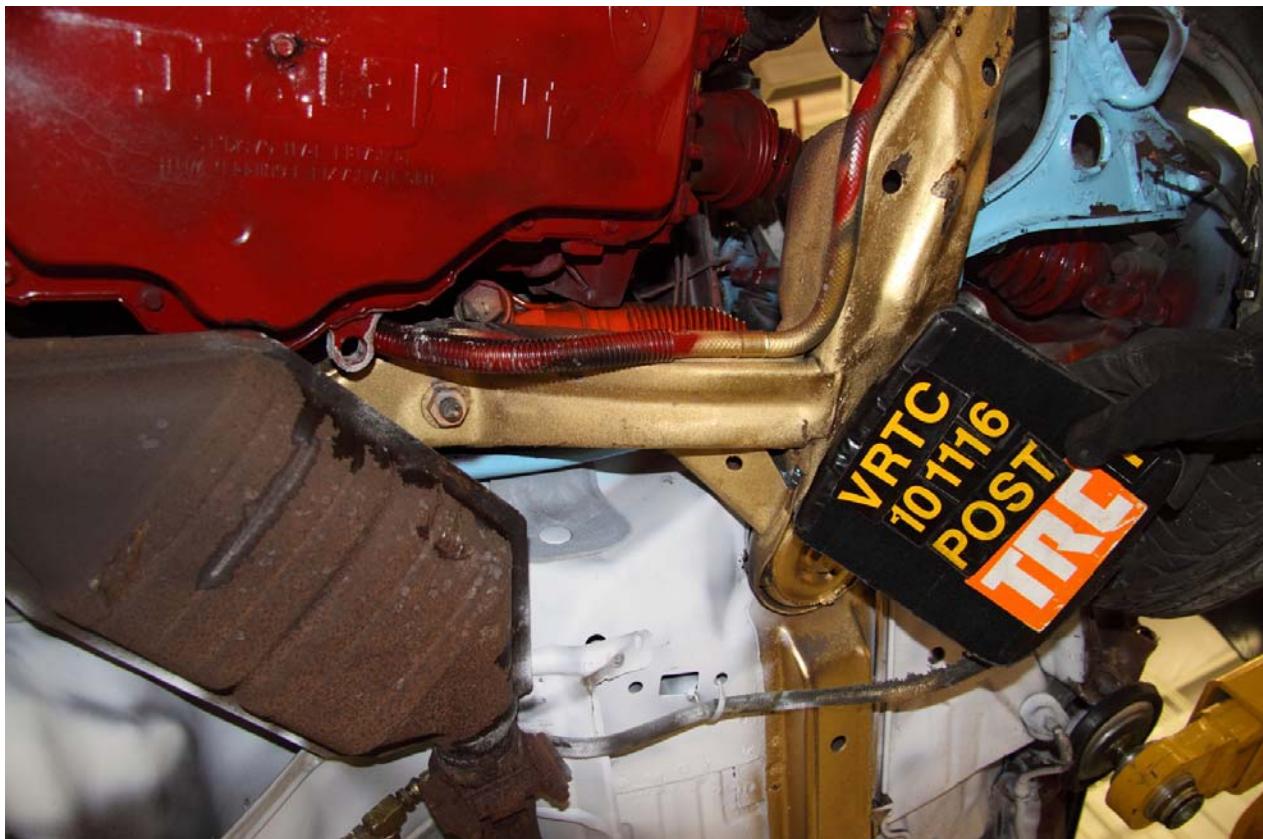


Figure A-41 Post-Test Target Vehicle Front Underbody Close-up View 1



Figure A-42 Pre-Test Target Vehicle Front Underbody Close-up View 2



Figure A-43 Post-Test Target Vehicle Front Underbody Close-up View 2



Figure A-44 Pre-Test Target Vehicle Front Underbody Close-up View 3



Figure A-45 Post-Test Target Vehicle Front Underbody Close-up View 3



Figure A-46 Pre-Test Target Vehicle Front Underbody Close-up View 4



Figure A-47 Post-Test Target Vehicle Front Underbody Close-up View 4



Figure A-48 Pre-Test Target Vehicle Front Underbody Close-up View 5

Intentionally Left Blank



Figure A-49 Pre-Test Target Vehicle Left Front Close-up View 1



Figure A-50 Post-Test Target Vehicle Left Front Close-up View 1



Figure A-51 Pre-Test Target Vehicle Left Front Close-up View 2



Figure A-52 Pre-Test Target Vehicle Left Front Close-up View 3



Figure A-53 Pre-Test Target Vehicle Left Front Close-up View 4

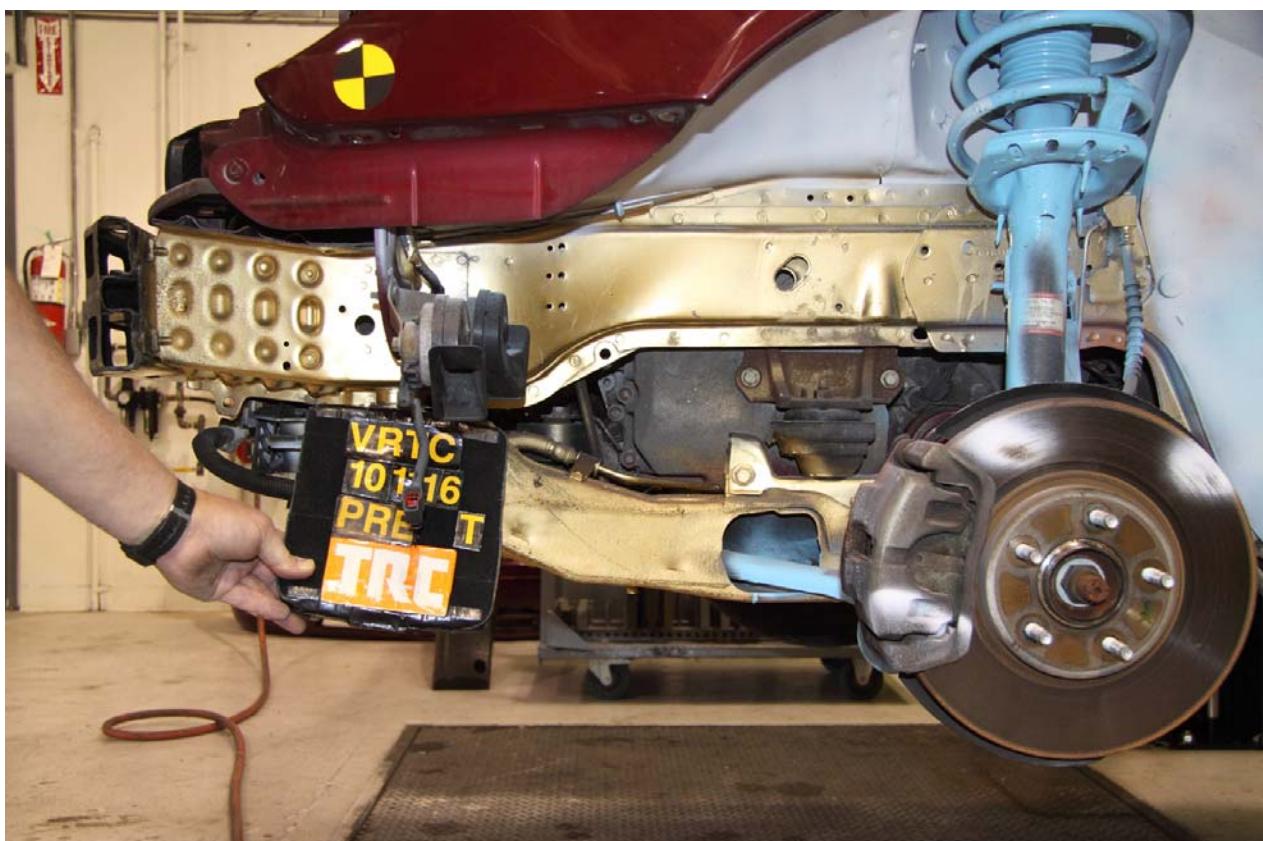


Figure A-54 Pre-Test Target Vehicle Left Front Close-up View 5

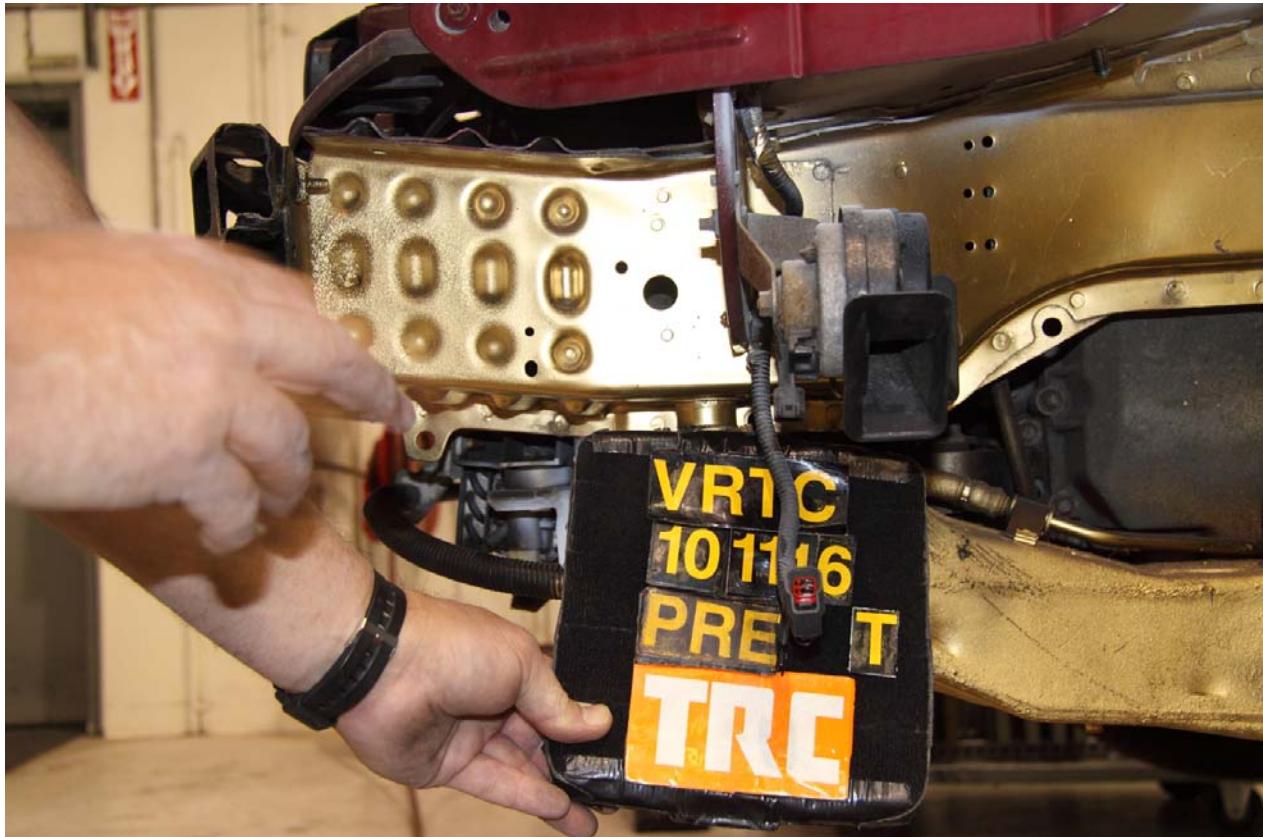


Figure A-55 Pre-Test Target Vehicle Left Front Close-up View 6

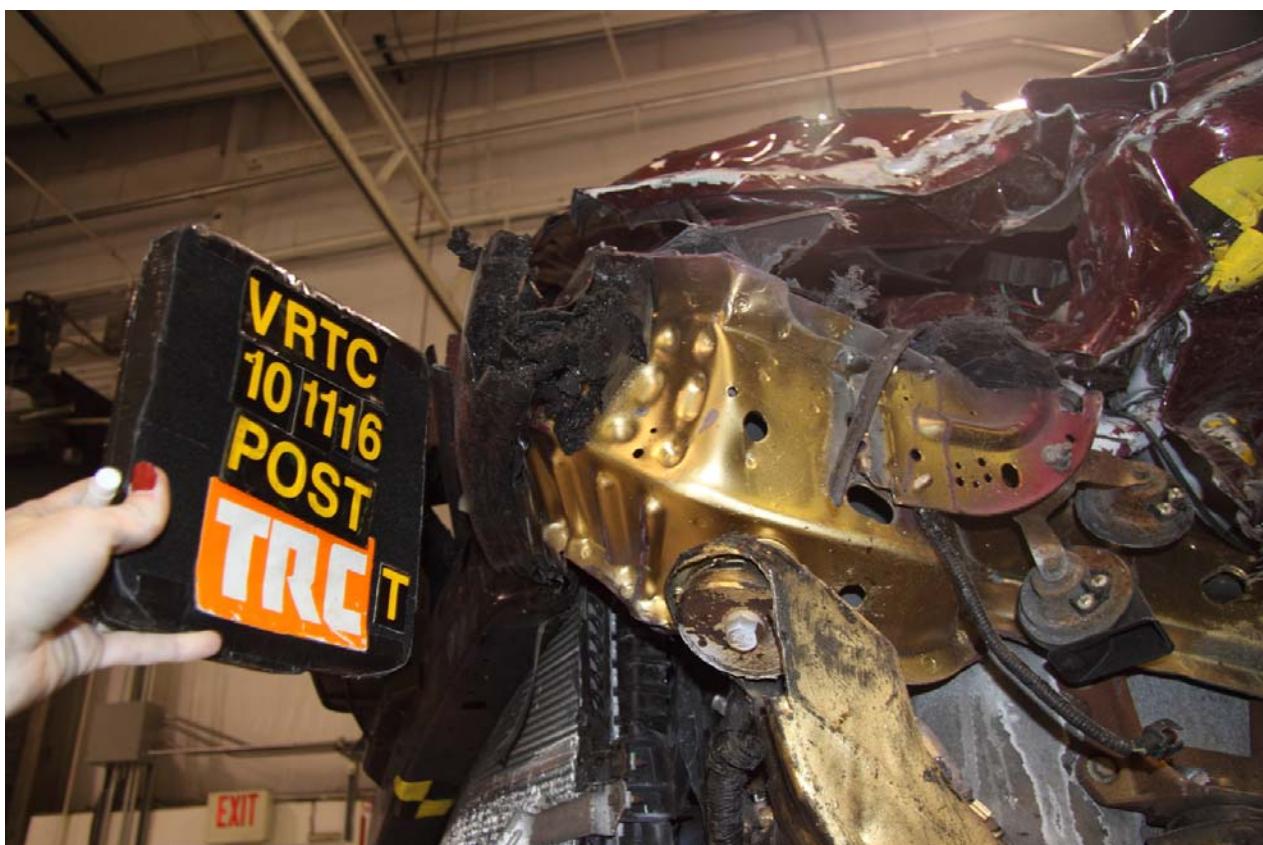
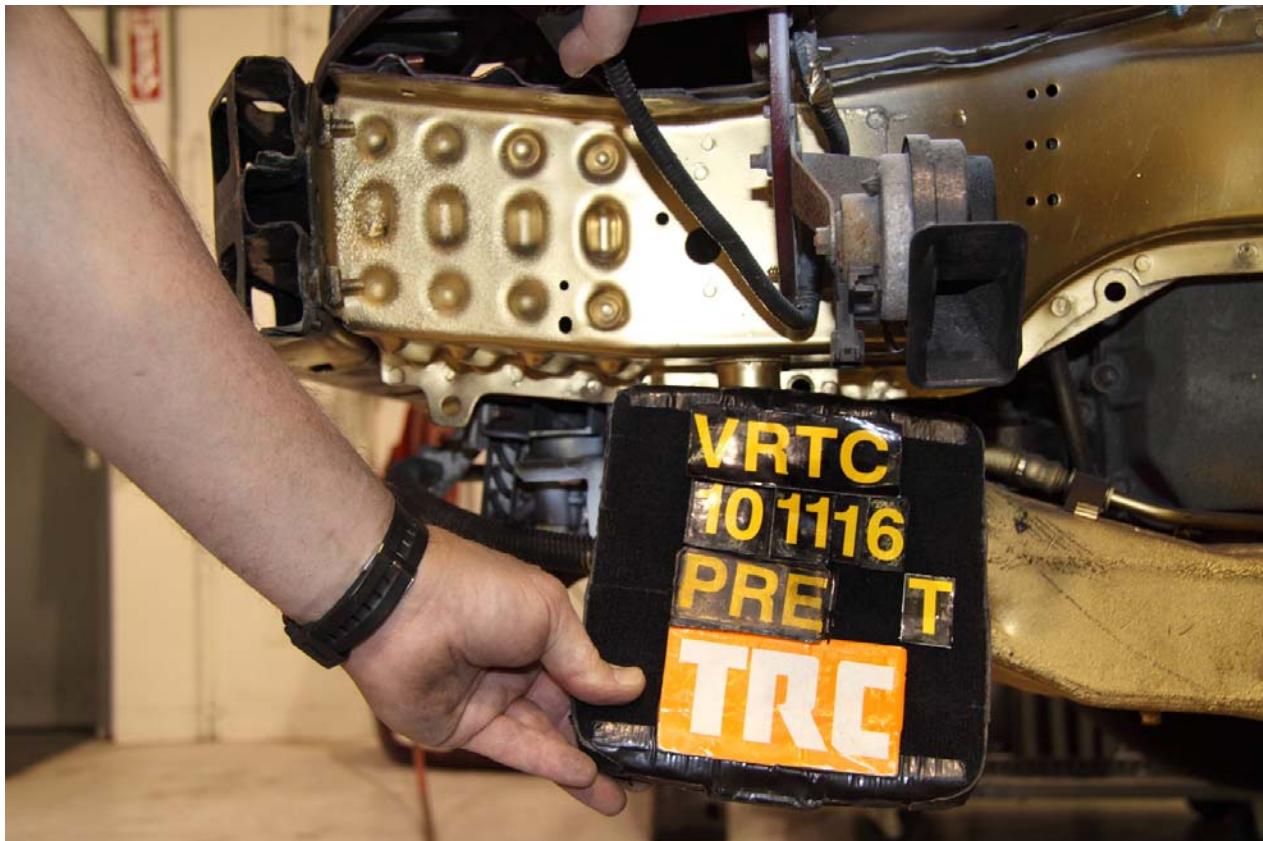


Figure A-56 Post-Test Target Vehicle Left Front Close-up View 6



**Figure A-57 Pre-Test Target Vehicle Left Front Close-up View 7**

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Figure A-58 Pre-Test Target Vehicle Left Front Close-up View 8



Figure A-59 Pre-Test Target Vehicle Left Front Close-up View 9



Figure A-60 Post-Test Target Vehicle Left Front Close-up View 10



Figure A-61 Post-Test Target Vehicle Left Front Close-up View 10



Figure A-62 Pre-Test Bullet Vehicle Front View

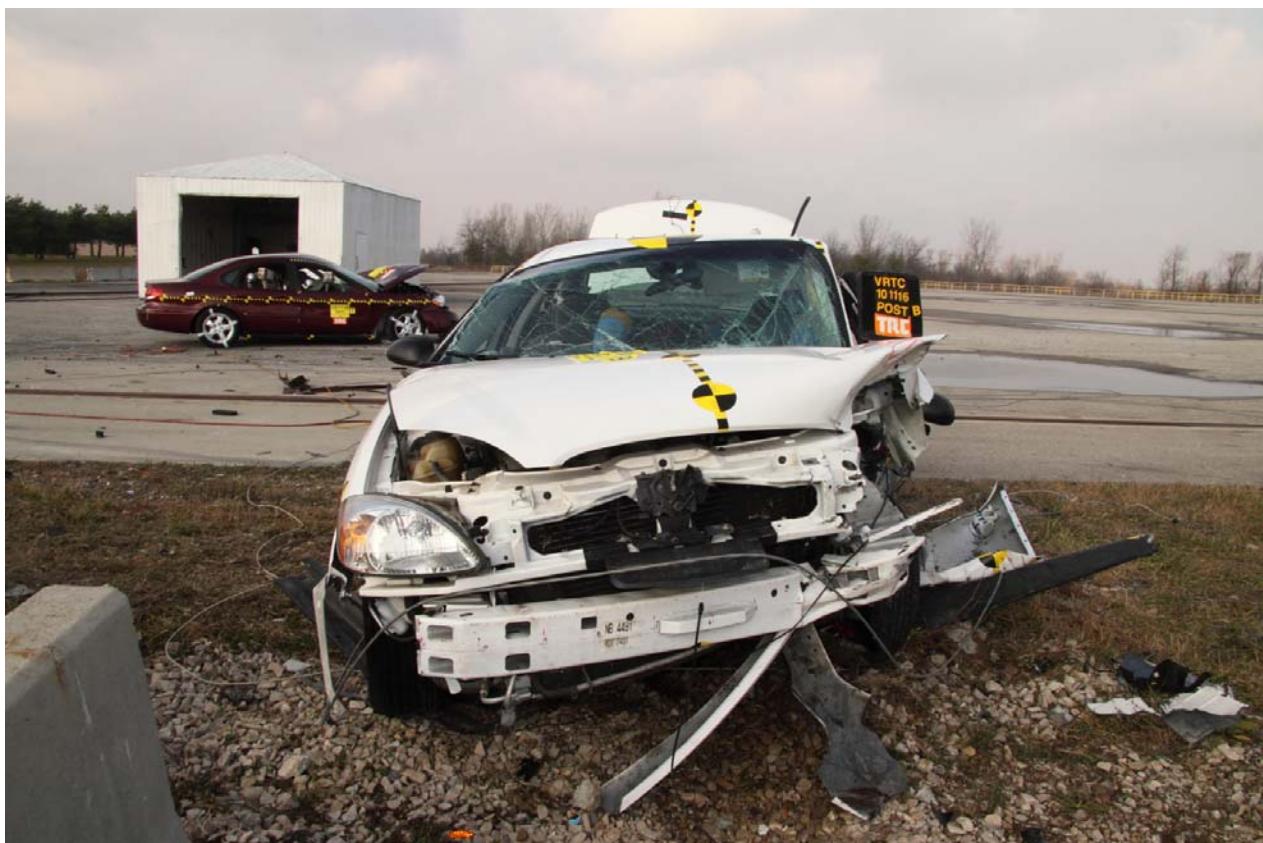


Figure A-63 Post-Test Bullet Vehicle Front View



Figure A-64 Pre-Test Bullet Vehicle Left Front View



Figure A-65 Post-Test Bullet Vehicle Left Front View



Figure A-66 Pre-Test Bullet Vehicle Left Side View



Figure A-67 Post-Test Bullet Vehicle Left Side View



Figure A-68 Pre-Test Bullet Vehicle Left Rear View



Figure A-69 Post-Test Bullet Vehicle Left Rear View



Figure A-70 Pre-Test Bullet Vehicle Rear View



Figure A-71 Post-Test Bullet Vehicle Rear View



Figure A-72 Pre-Test Bullet Vehicle Right Rear View



Figure A-73 Post-Test Bullet Vehicle Right Rear View



Figure A-74 Pre-Test Bullet Vehicle Right Side View



Figure A-75 Post-Test Bullet Vehicle Right Side View



Figure A-76 Pre-Test Bullet Vehicle Right Front View

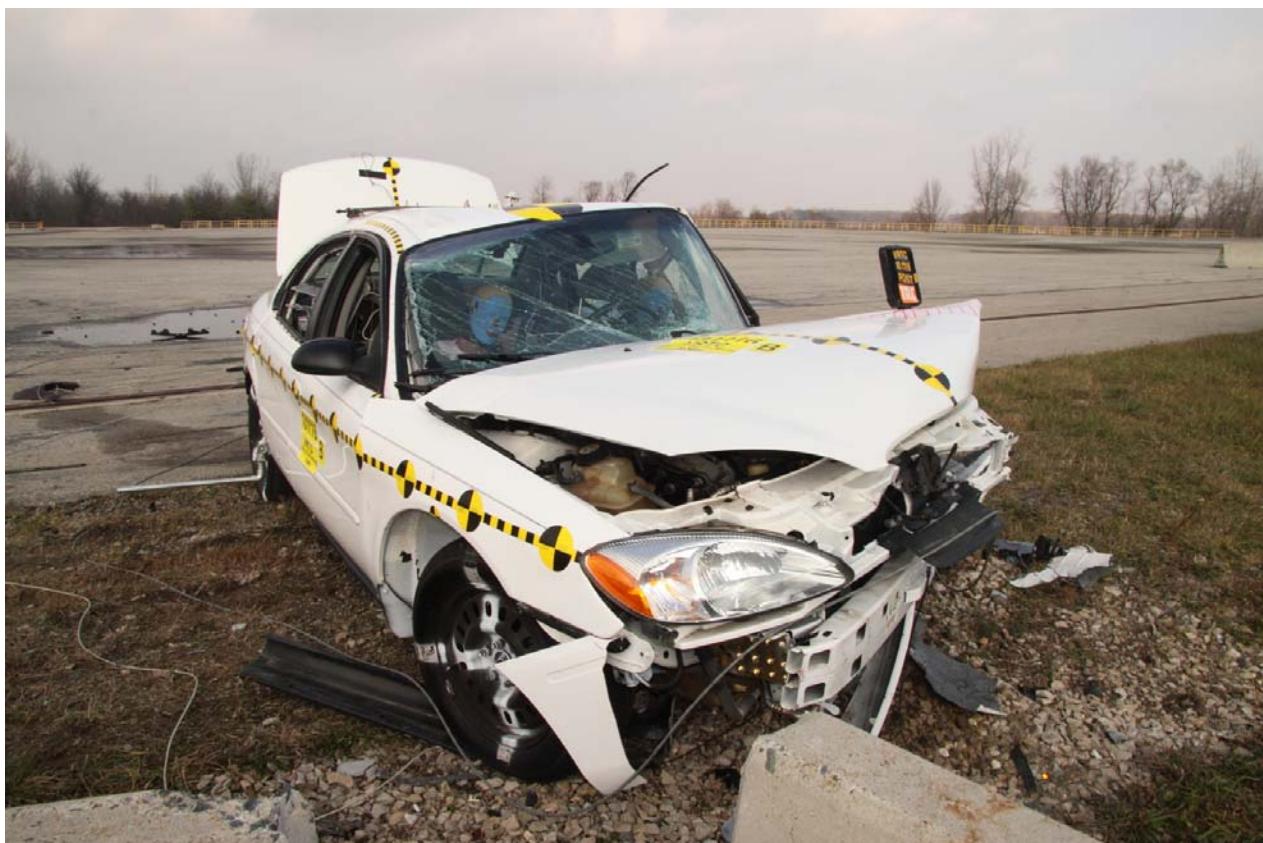


Figure A-77 Post-Test Bullet Vehicle Right Front View



Figure A-78 Pre-Test Bullet Vehicle Engine Compartment View

Photograph Not Available

Figure A-79 Post-Test Bullet Vehicle Engine Compartment View

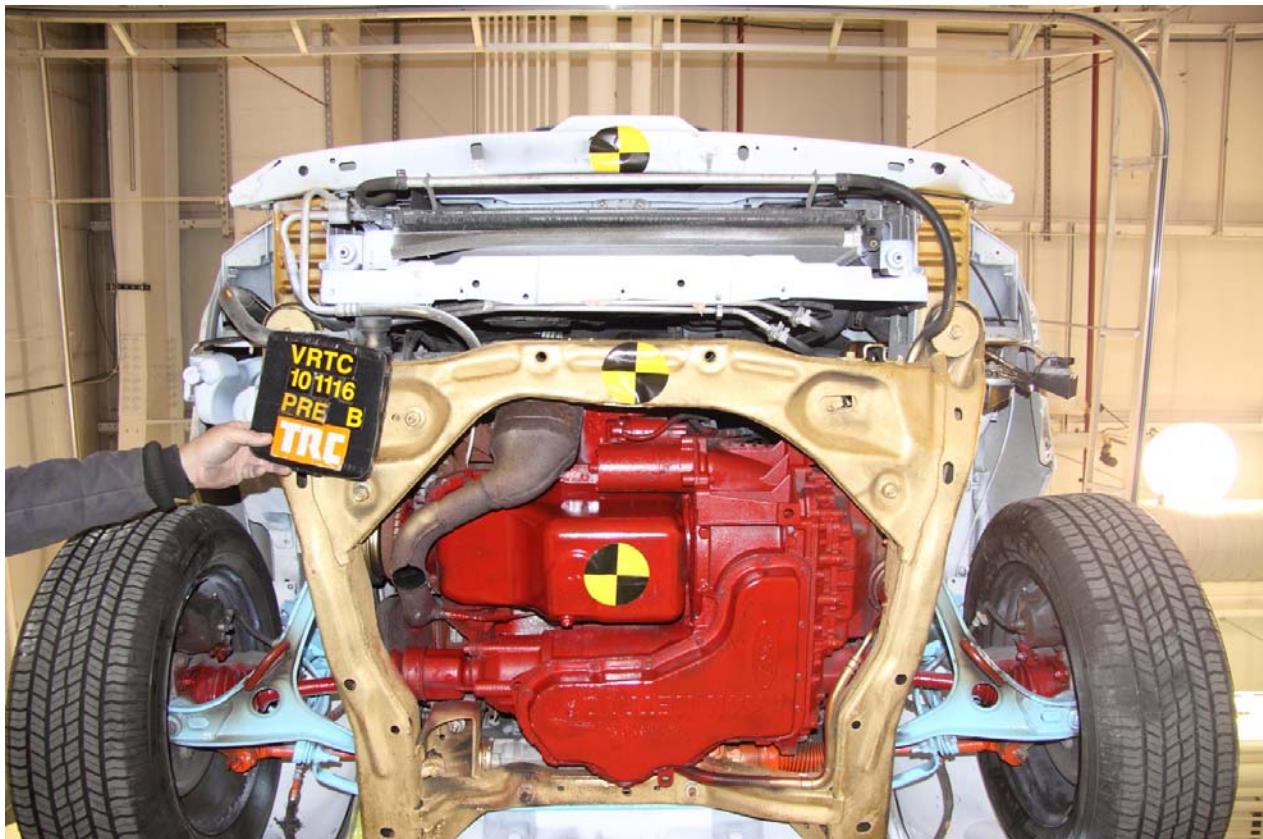


Figure A-80 Pre-Test Bullet Vehicle Front Underbody View

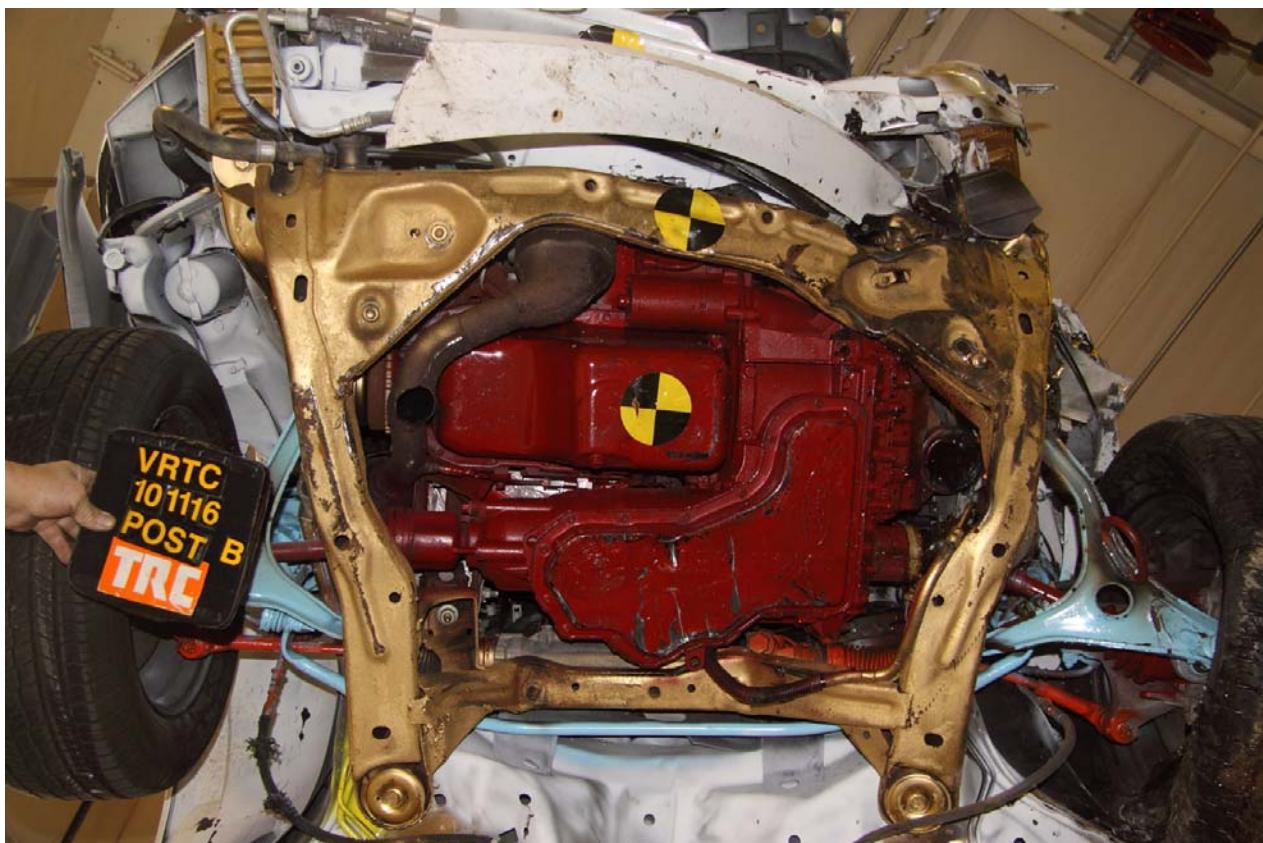


Figure A-81 Post-Test Bullet Vehicle Front Underbody View

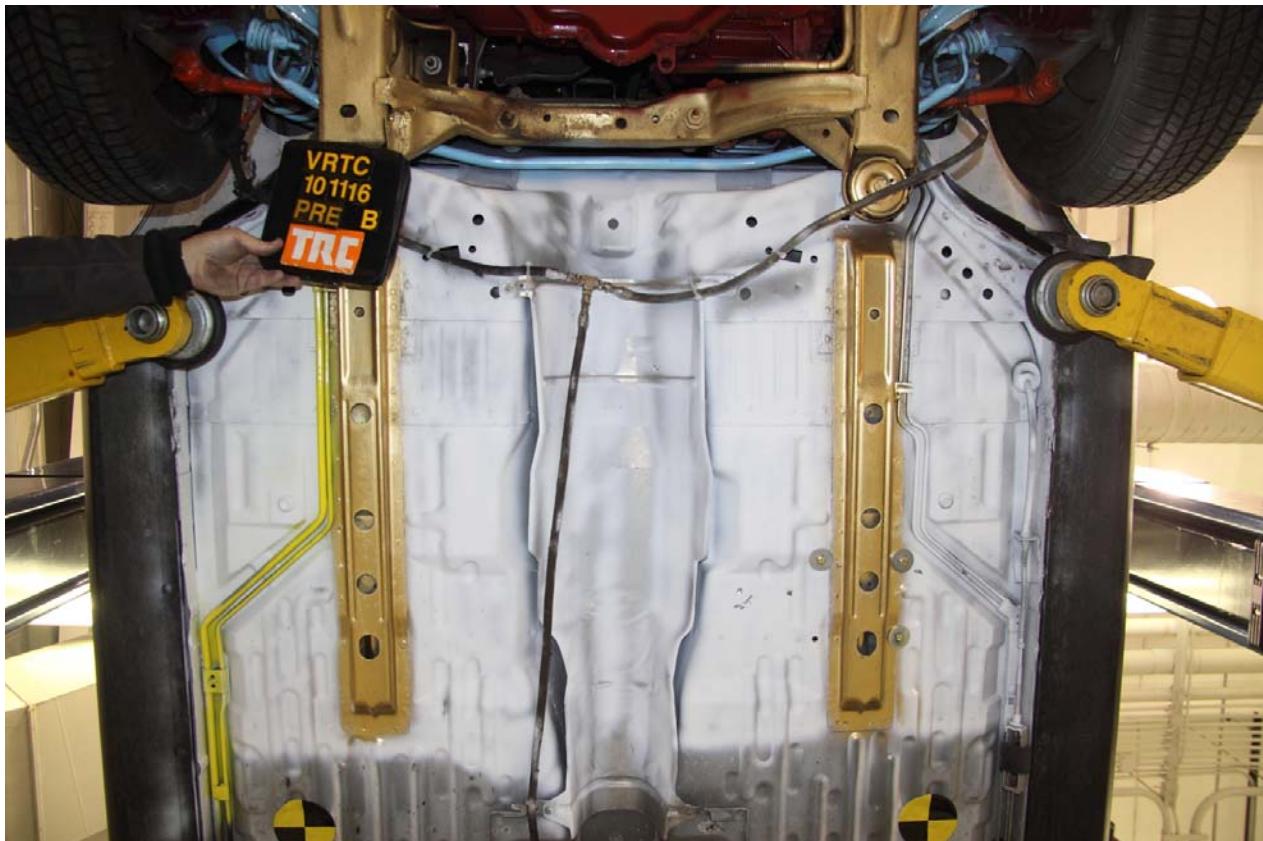


Figure A-82 Pre-Test Bullet Vehicle Mid Front Underbody View

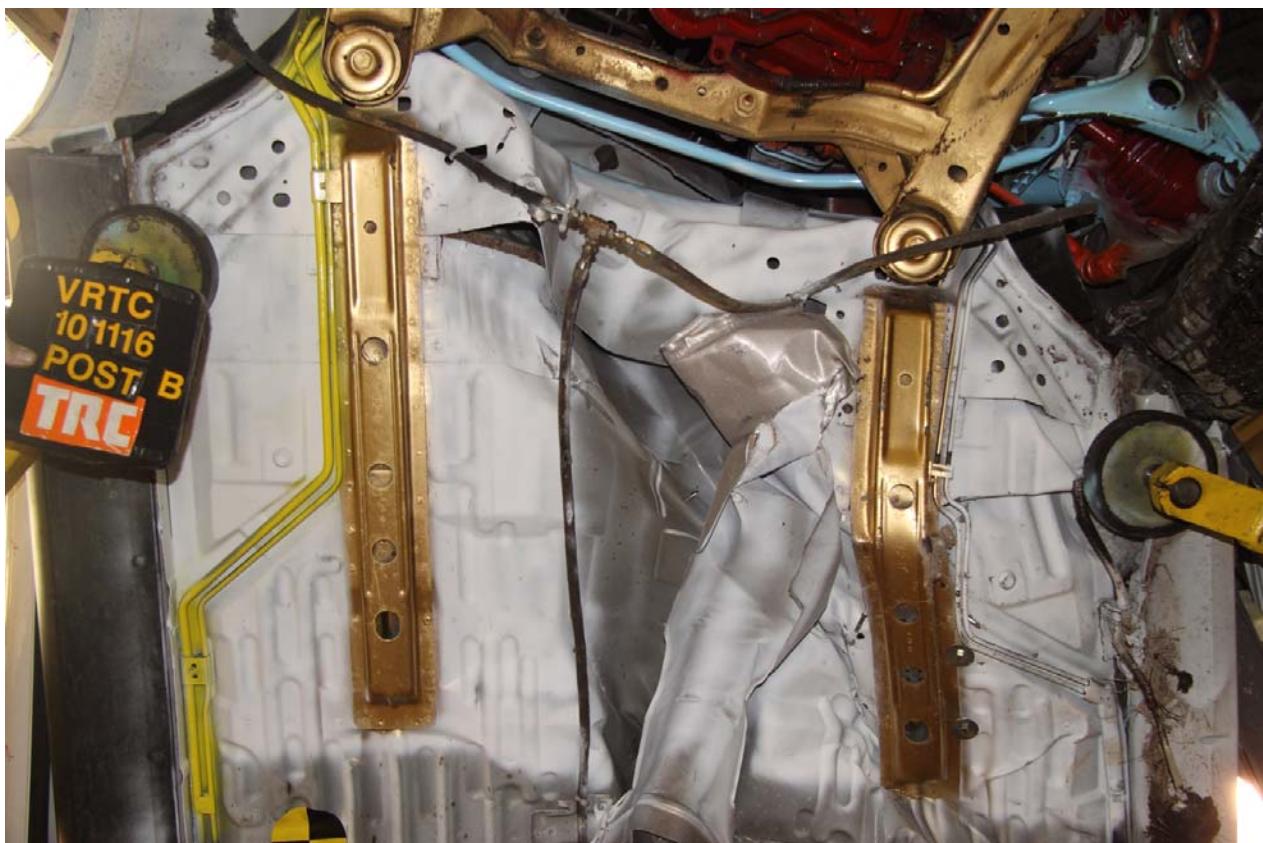


Figure A-83 Post-Test Bullet Vehicle Mid Front Underbody View



Figure A-84 Pre-Test Bullet Vehicle Mid Underbody View



Figure A-85 Post-Test Bullet Vehicle Mid Underbody View



Figure A-86 Pre-Test Bullet Vehicle Mid Rear Underbody View



Figure A-87 Post-Test Bullet Vehicle Mid Rear Underbody View



Figure A-88 Pre-Test Bullet Vehicle Rear Underbody View



Figure A-89 Post-Test Bullet Vehicle Rear Underbody View

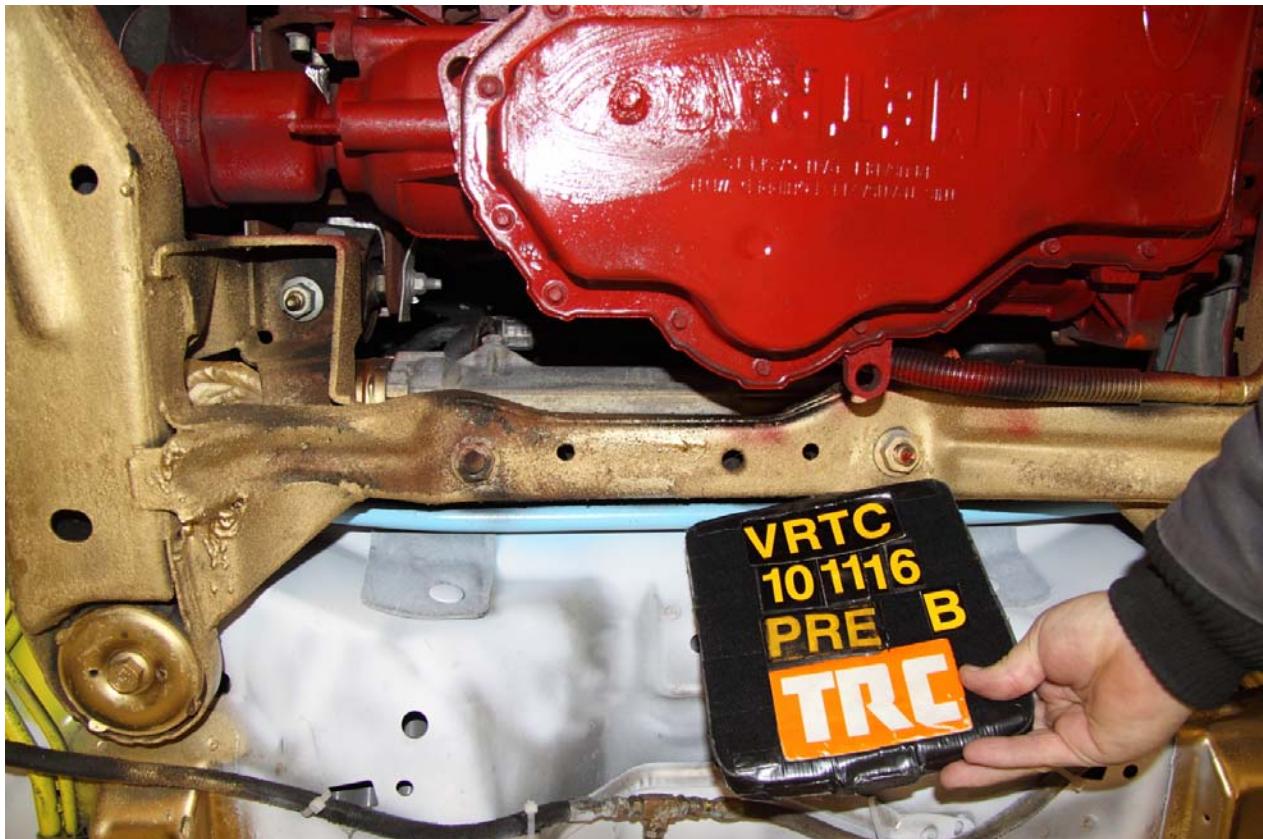


Figure A-90 Pre-Test Bullet Vehicle Front Underbody Close-up View 1



Figure A-91 Post-Test Bullet Vehicle Front Underbody Close-up View 1



Figure A-92 Pre-Test Bullet Vehicle Front Underbody Close-up View 2

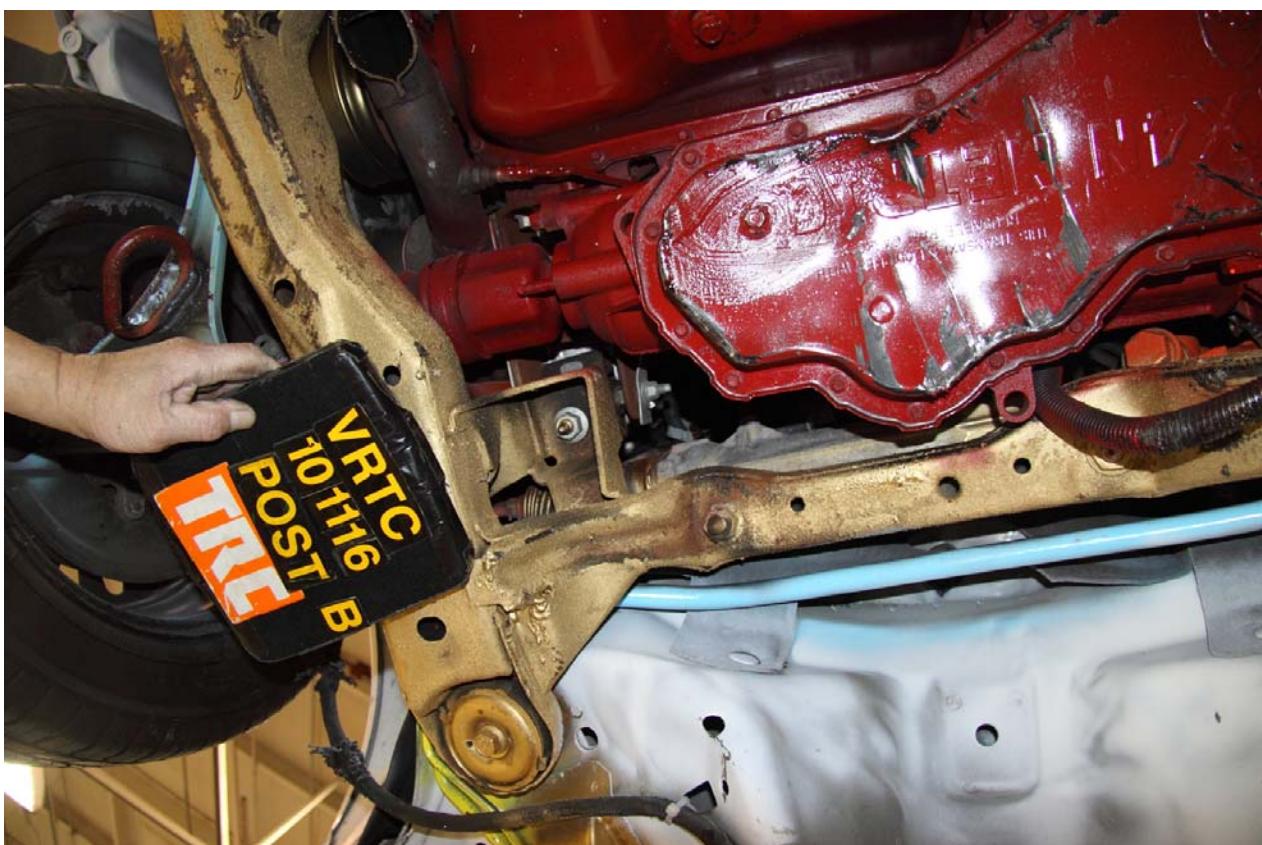


Figure A-93 Post-Test Bullet Vehicle Front Underbody Close-up View 2



Figure A-94 Pre-Test Bullet Vehicle Front Underbody Close-up View 3

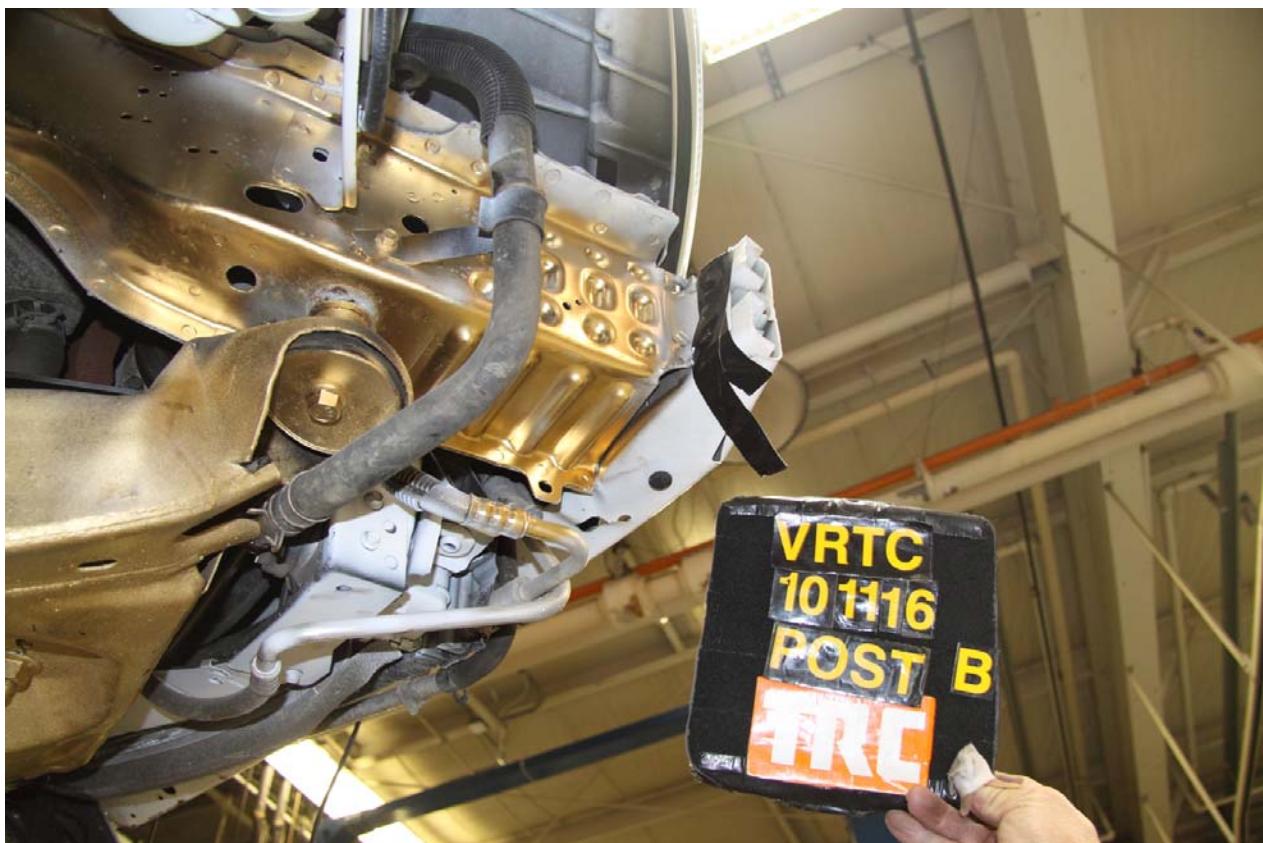


Figure A-95 Post-Test Bullet Vehicle Front Underbody Close-up View 3



Figure A-96 Pre-Test Bullet Vehicle Front Underbody Close-up View 4

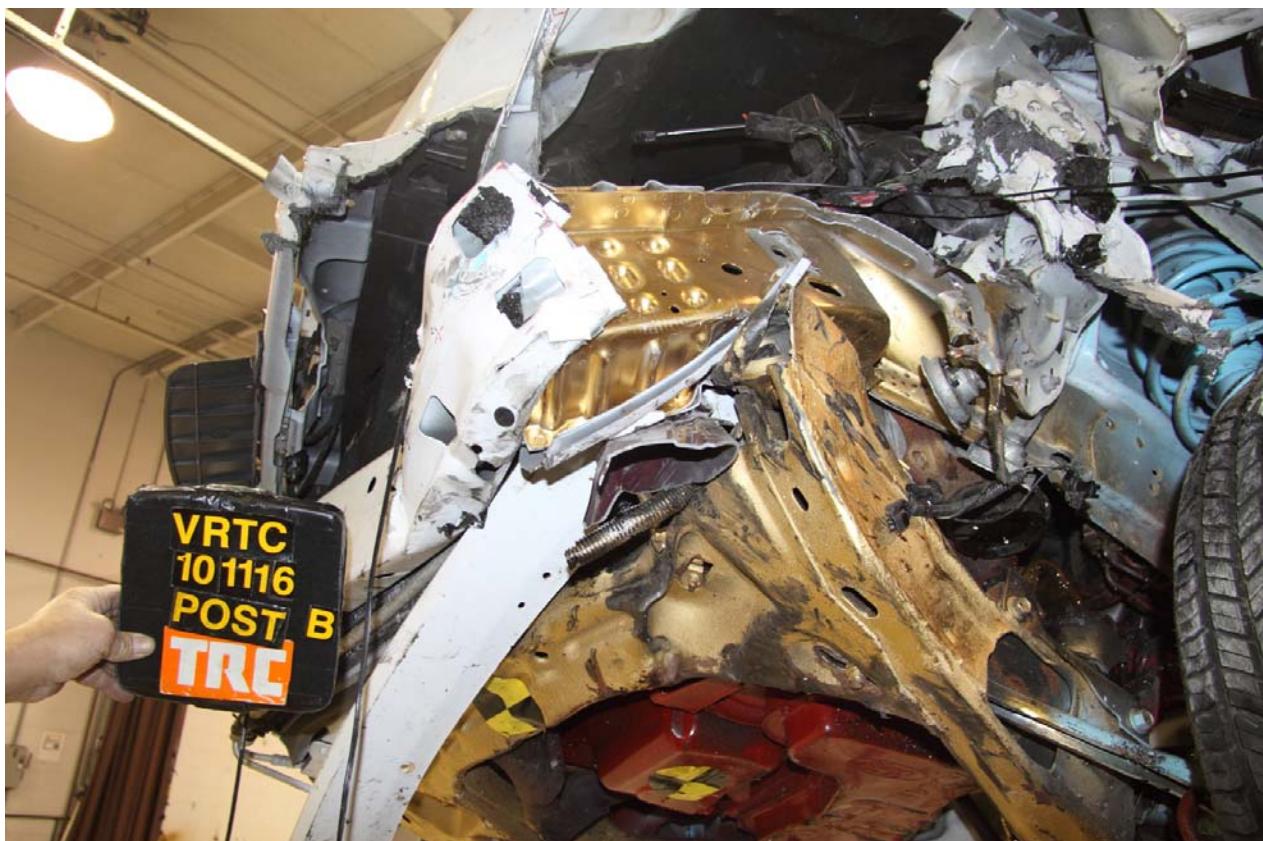


Figure A-97 Post-Test Bullet Vehicle Front Underbody Close-up View 4



Figure A-98 Pre-Test Bullet Vehicle Front Underbody Close-up View 5



Figure A-99 Post-Test Bullet Vehicle Front Underbody Close-up View 5



Figure A-100 Pre-Test Bullet Vehicle Left Front Close-up View 1



Figure A-101 Post-Test Bullet Vehicle Left Front Close-up View 1



Figure A-102 Pre-Test Bullet Vehicle Left Front Close-up View 2



Figure A-103 Post-Test Bullet Vehicle Left Front Close-up View 2

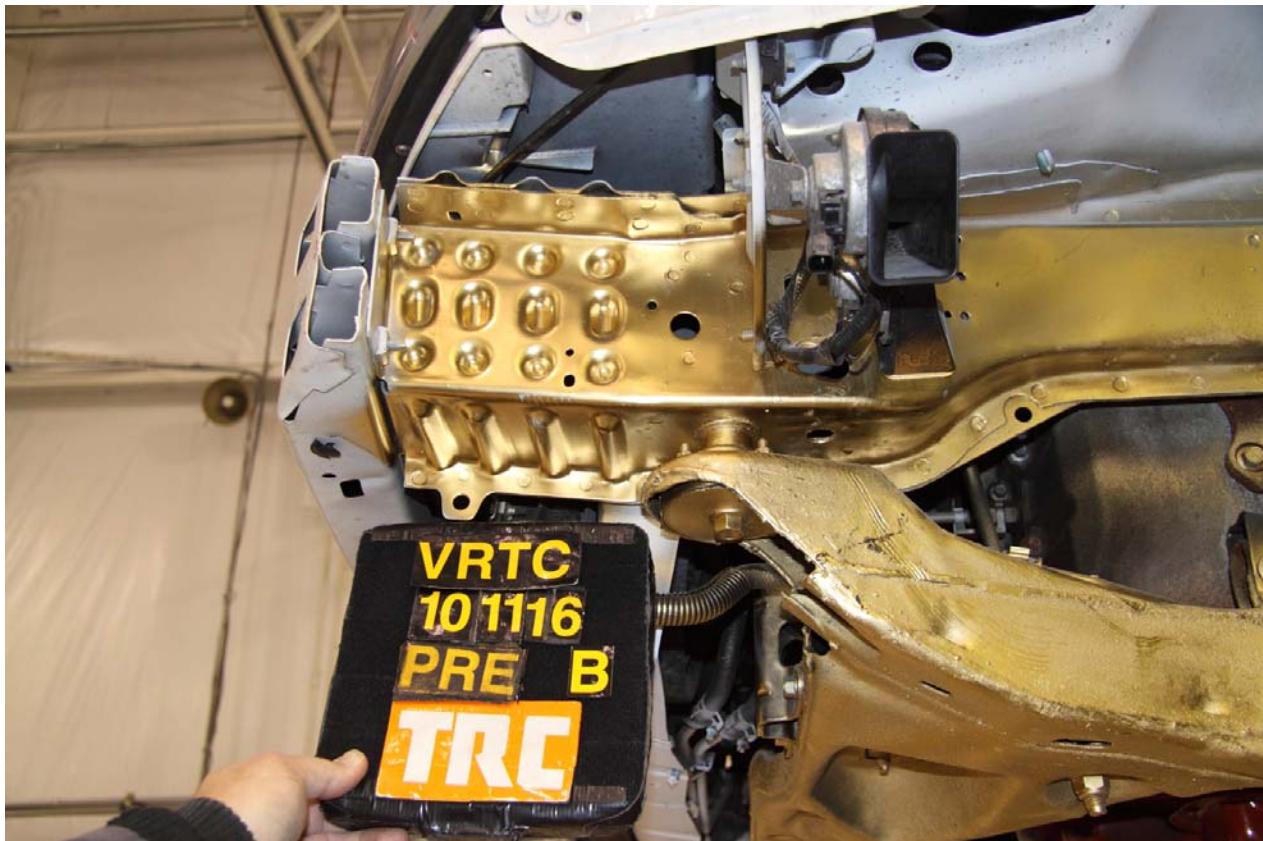


Figure A-104 Pre-Test Bullet Vehicle Left Front Close-up View 3



Figure A-105 Post-Test Bullet Vehicle Left Front Close-up View 3



Figure A-106 Post-Test Bullet Vehicle Left Front Close-up View 4

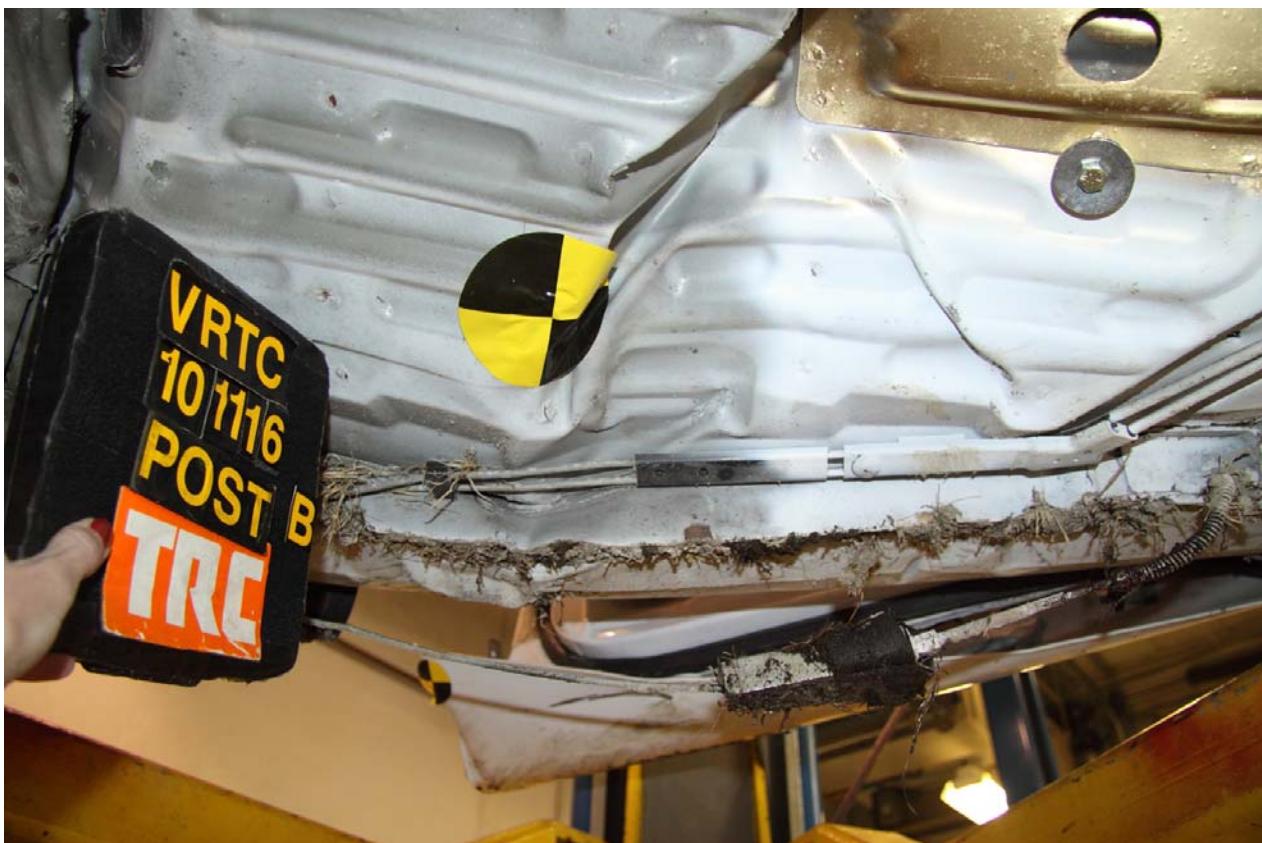
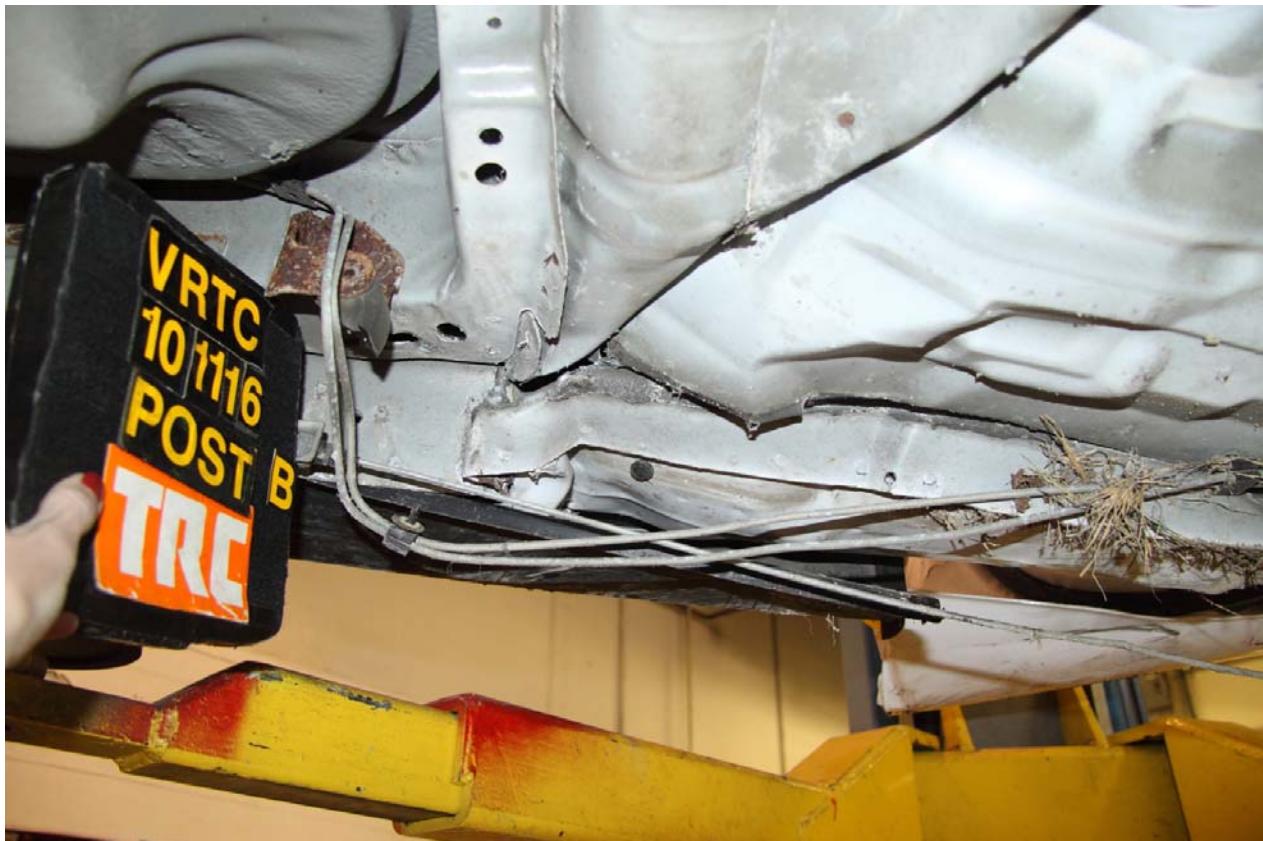


Figure A-107 Post-Test Bullet Vehicle Left Front Close-up View 5



**Figure A-108 Post-Test Bullet Vehicle Left Front Close-up View 6**

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Figure A-109 Pre-Test Target Vehicle Driver Dummy through Windshield View

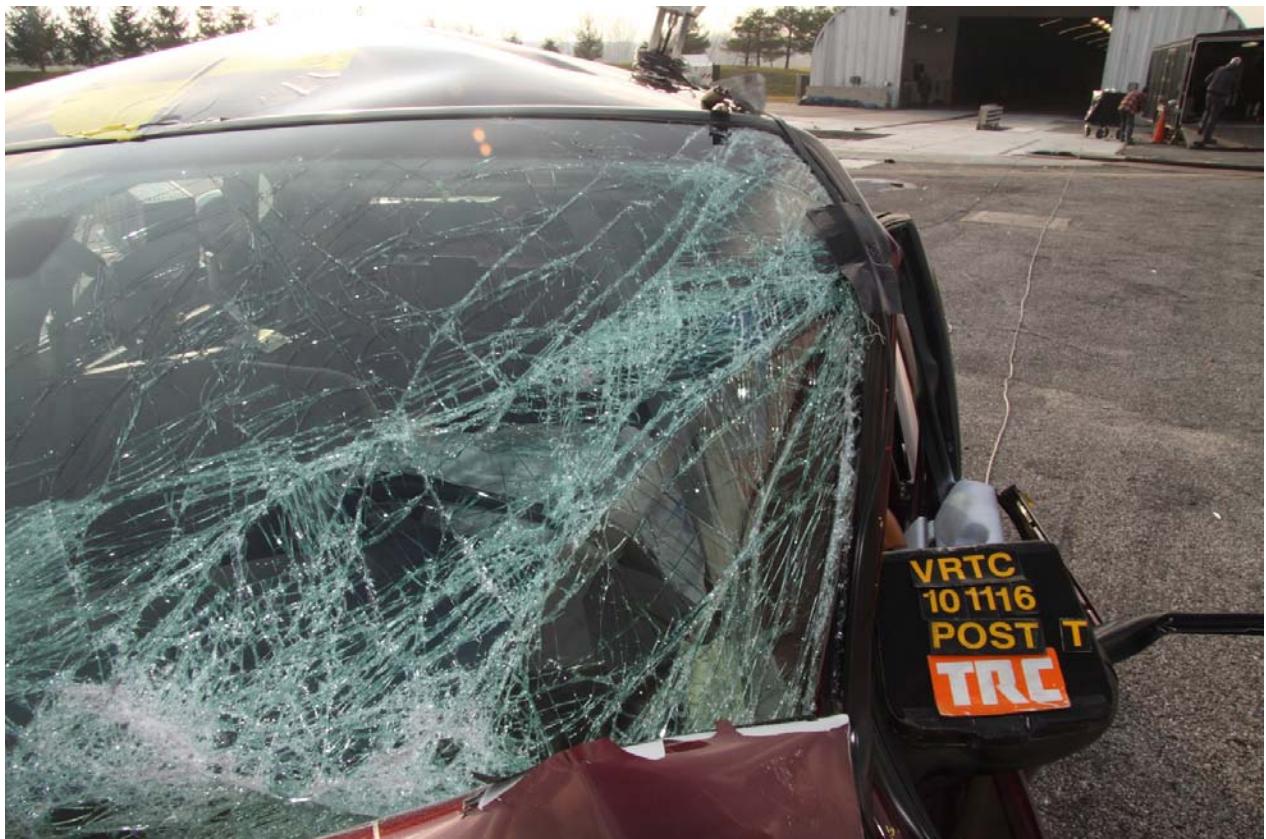


Figure A-110 Post-Test Target Vehicle Driver Dummy through Windshield View



Figure A-111 Pre-Test Target Vehicle Driver Dummy - View 1



Figure A-112 Post-Test Target Vehicle Driver Dummy - View 1



Figure A-113 Pre-Test Target Vehicle Driver Dummy - View 2



Figure A-114 Post-Test Target Vehicle Driver Dummy - View 2



Figure A-115 Post-Test Target Vehicle Driver Dummy - View 3

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Figure A-116 Pre-Test Target Vehicle Driver Dummy Knee Bolster – View 1



Figure A-117 Post-Test Target Vehicle Driver Dummy Knee Bolster – View 1



Figure A-118 Pre-Test Target Vehicle Driver Dummy Knee Bolster – View 2



Figure A-119 Post-Test Target Vehicle Driver Dummy Knee Bolster – View 2



Figure A-120 Pre-Test Target Vehicle Driver Dummy Lower Leg Position - View 1

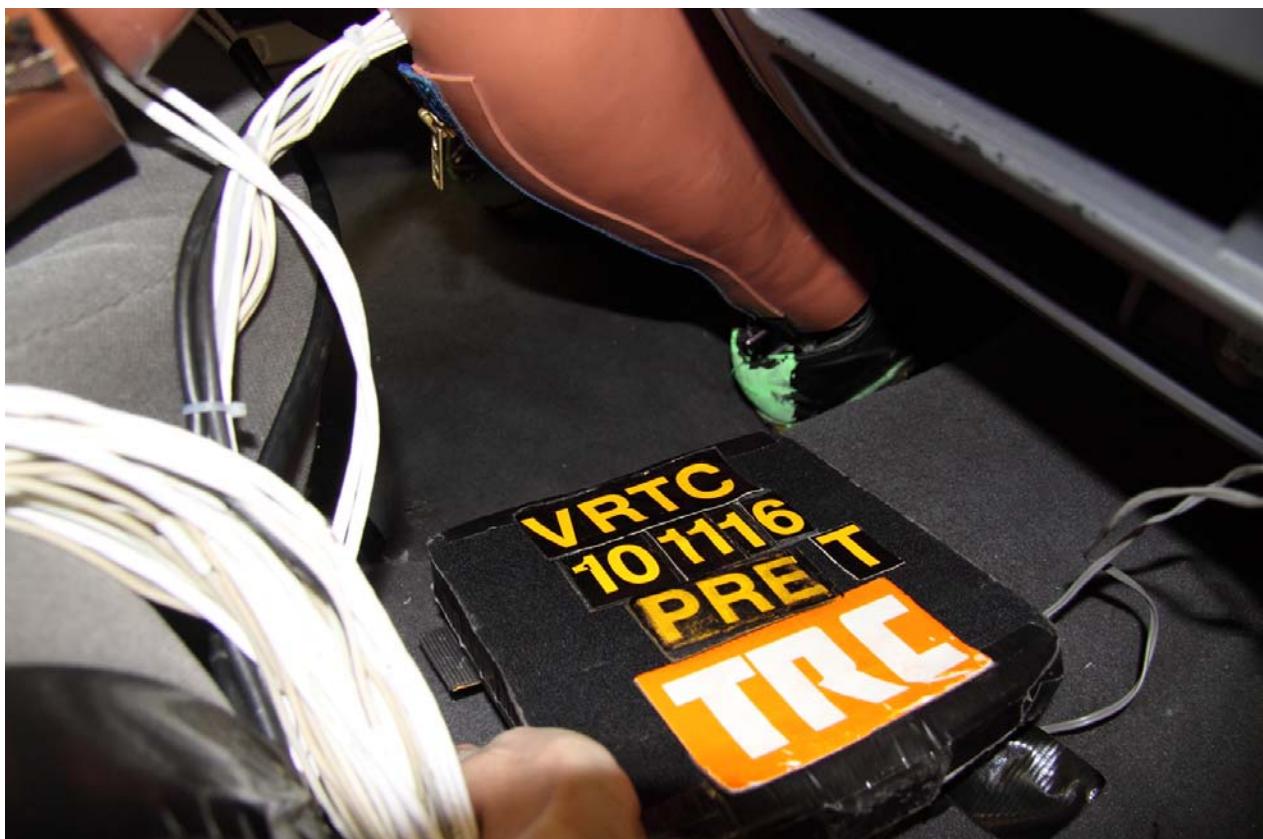


Figure A-121 Pre-Test Target Vehicle Driver Dummy Lower Leg Position - View 2



**Figure A-122 Post-Test Target Vehicle Driver Dummy Lower Leg Position - View 3**

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Figure A-123 Pre-Test Target Vehicle Driver Dummy Foot Position - View 1



Figure A-124 Pre-Test Target Vehicle Driver Dummy Foot Position - View 2

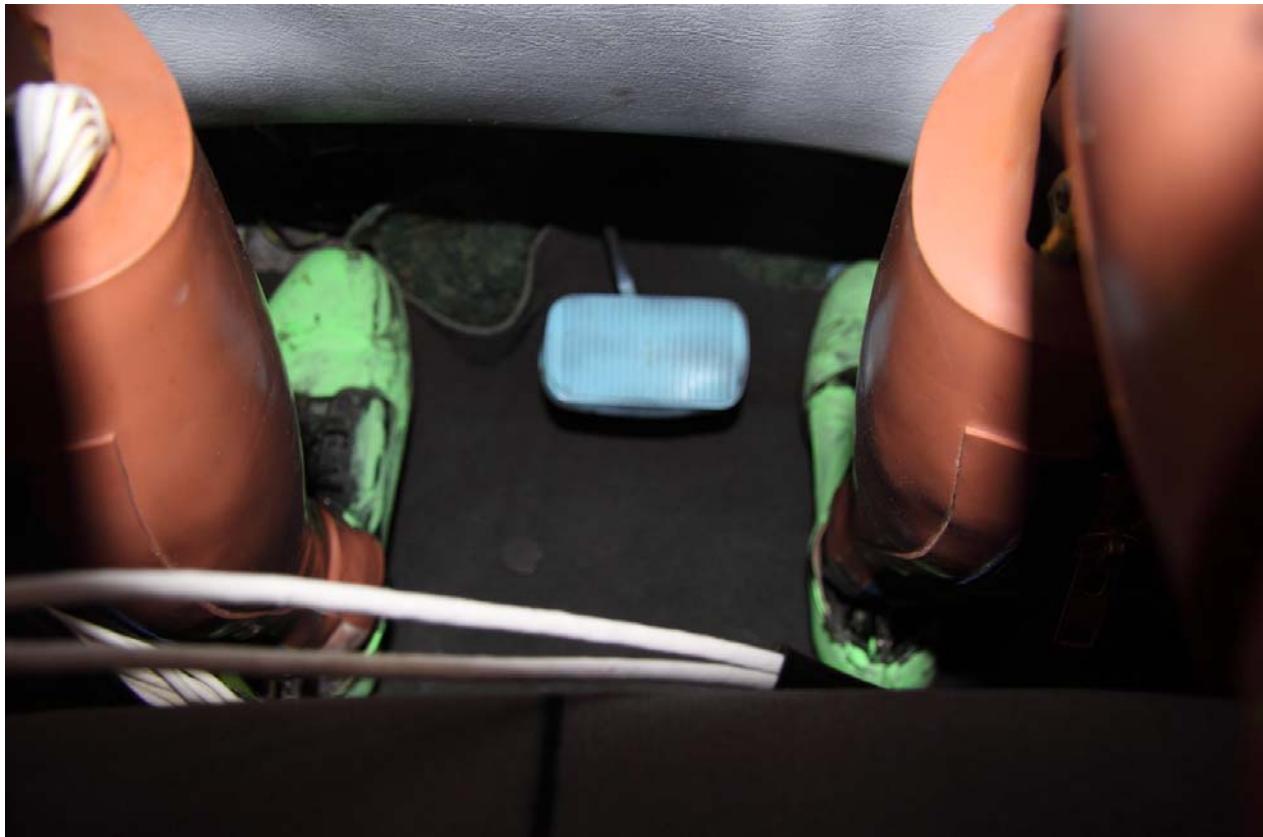


Figure A-125 Pre-Test Target Vehicle Driver Dummy Foot Position - View 3



Figure A-126 Pre-Test Target Vehicle Driver Dummy Seat Track View



Figure A-127 Pre-Test Bullet Vehicle Driver Dummy through Windshield View



Figure A-128 Post-Test Bullet Vehicle Driver Dummy through Windshield View



Figure A-129 Pre-Test Bullet Vehicle Driver Dummy - View 1



Figure A-130 Post-Test Bullet Vehicle Driver Dummy - View 1



Figure A-131 Pre-Test Bullet Vehicle Driver Dummy - View 2



Figure A-132 Post-Test Bullet Vehicle Driver Dummy - View 2



Figure A-133 Pre-Test Bullet Vehicle Driver Dummy - View 3



Figure A-134 Post-Test Bullet Vehicle Driver Dummy - View 3



**Figure A-135 Pre-Test Bullet Vehicle Driver Dummy 1 View 4**

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Figure A-136 Pre-Test Bullet Vehicle Driver Dummy Knee Bolster View



Figure A-137 Post-Test Bullet Vehicle Driver Dummy Knee Bolster View



Figure A-138 Pre-Test Bullet Vehicle Driver Dummy Lower Leg Position - View 1



Figure A-139 Pre-Test Bullet Vehicle Driver Dummy Lower Leg Position - View 2



**Figure A-140 Pre-Test Bullet Vehicle Driver Dummy Lower Leg Position - View 3**

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Figure A-141 Pre-Test Bullet Vehicle Driver Dummy Foot Position – View 1



Figure A-142 Pre-Test Bullet Vehicle Driver Dummy Foot Position – View 2



Figure A-143 Pre-Test Bullet Vehicle Driver Dummy Foot Position – View 3



Figure A-144 Pre-Test Bullet Vehicle Driver Dummy Foot Position – View 4



Figure A-145 Pre-Test Bullet Vehicle Driver Dummy Foot Position – View 5



Figure A-146 Pre-Test Bullet Vehicle Driver Dummy Seat Track View



Figure A-147 Pre-Test Bullet Vehicle Right Front Passenger Dummy thru Windshield View



Figure A-148 Post-Test Bullet Vehicle Right Front Passenger Dummy thru Windshield View



Figure A-149 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 1



Figure A-150 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 1



Figure A-151 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 2



Figure A-152 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 2



Figure A-153 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 3



Figure A-154 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 3



Figure A-155 Pre-Test Bullet Vehicle Right Front Passenger Dummy Knee Bolster View 1



Figure A-156 Post-Test Bullet Vehicle Right Front Passenger Dummy Knee Bolster View 1



Figure A-157 Pre-Test Bullet Vehicle Right Front Passenger Dummy Knee Bolster View 2



Figure A-158 Post-Test Bullet Vehicle Right Front Passenger Dummy Knee Bolster View 2



Figure A-159 Pre-Test Bullet Vehicle Right Front Passenger Dummy Seat Track View



Figure A-160 Post-Test Bullet Vehicle Right Front Passenger Dummy Seat Track View



Figure A-161 Pre-Test Bullet Vehicle Right Front Passenger Knee Position – View 1



Figure A-162 Pre-Test Bullet Vehicle Right Front Passenger Knee Position – View 2



Figure A-163 Pre-Test Bullet Vehicle Right Front Passenger Lower Leg - View 1

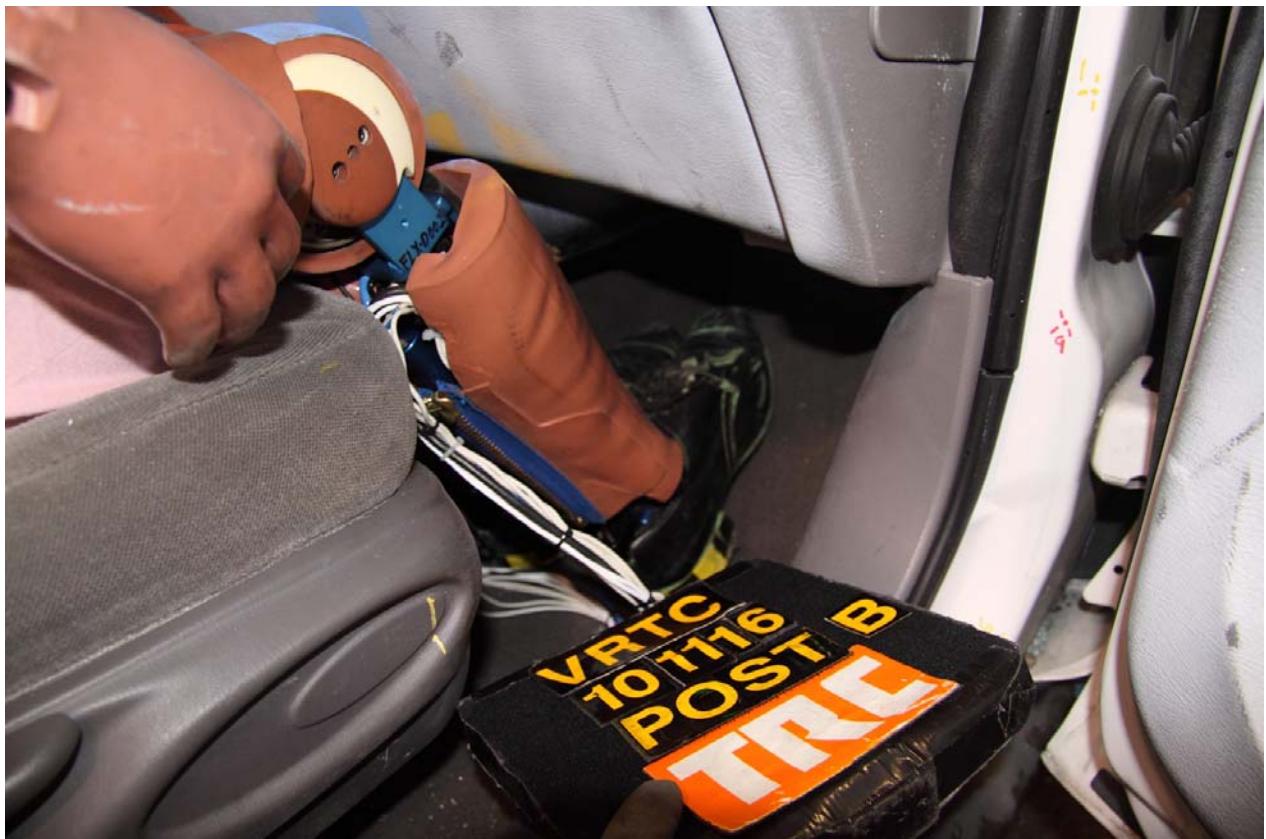


Figure A-164 Post-Test Bullet Vehicle Right Front Passenger Lower Leg - View 1



Figure A-165 Pre-Test Bullet Vehicle Right Front Passenger Lower Leg - View 2



Figure A-166 Post-Test Bullet Vehicle Right Front Passenger Lower Leg - View 2



**Figure A-167 Pre-Test Bullet Vehicle Right Front Passenger Lower Leg - View 3**

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Figure A-168 Pre-Test Bullet Vehicle Right Front Passenger Feet - View 1



Figure A-169 Pre-Test Bullet Vehicle Right Front Passenger Feet - View 2



Figure A-170 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 1



Figure A-171 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 1



**Figure A-172 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 2**

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Figure A-173 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 3

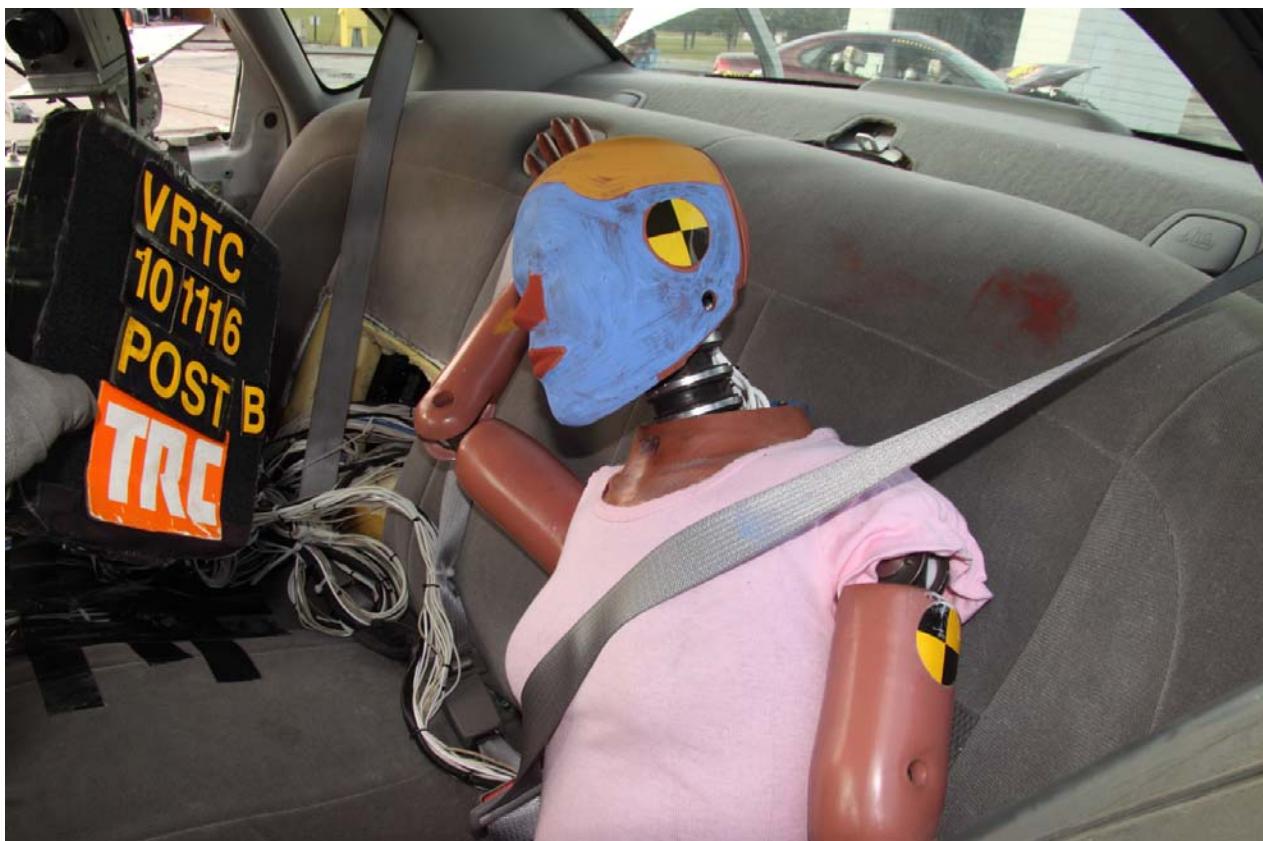


Figure A-174 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 3



Figure A-175 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 4



Figure A-176 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 4



Figure A-177 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 5

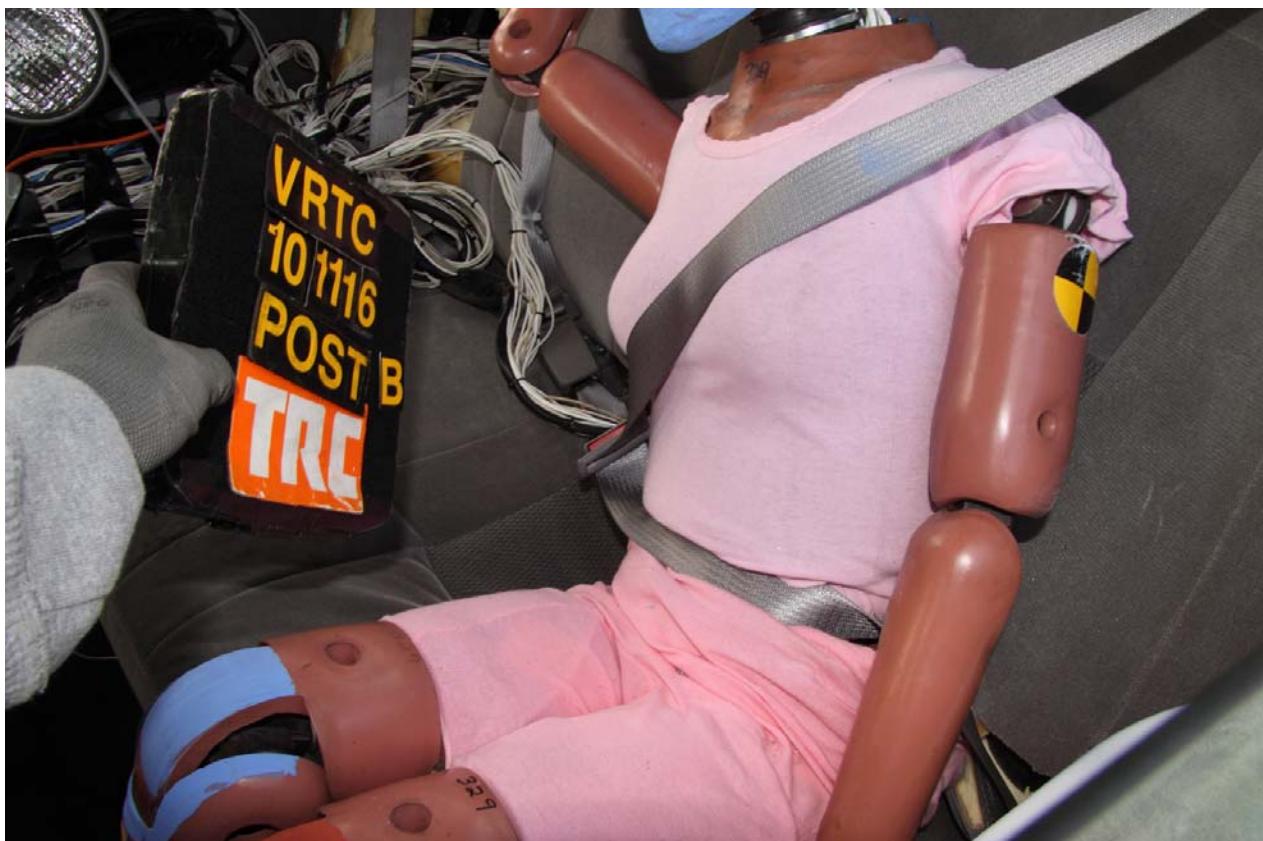


Figure A-178 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 5

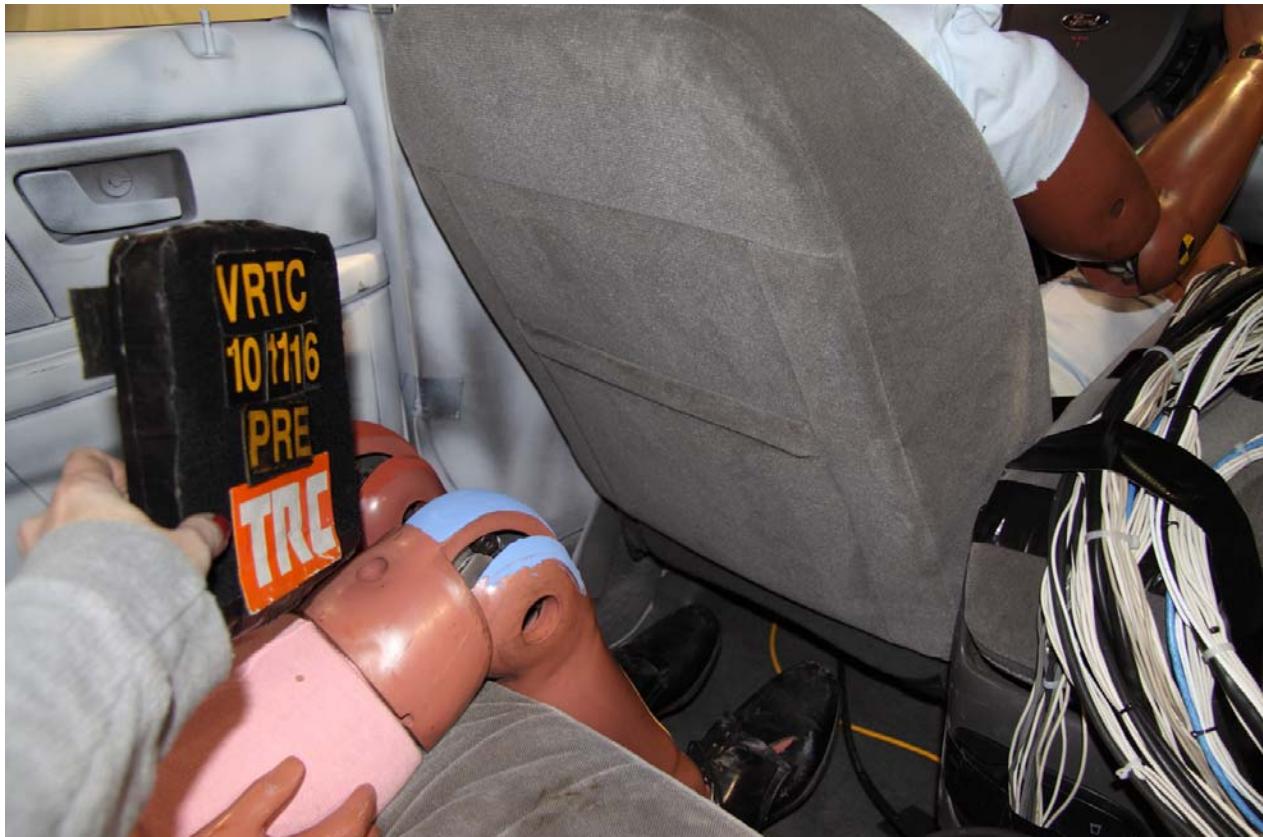


Figure A-179 Pre-Test Left Rear Passenger Knee To Seat Back Position View



Figure A-180 Post-Test Left Rear Passenger Knee To Seat Back Position View



Figure A-181 Pre-Test Bullet Vehicle Left Rear Passenger Lower Leg & Foot View



Figure A-182 Post-Test Bullet Vehicle Left Rear Passenger Lower Leg & Foot View



Figure A-183 Pre-Test Bullet Vehicle Left Rear Passenger Foot View

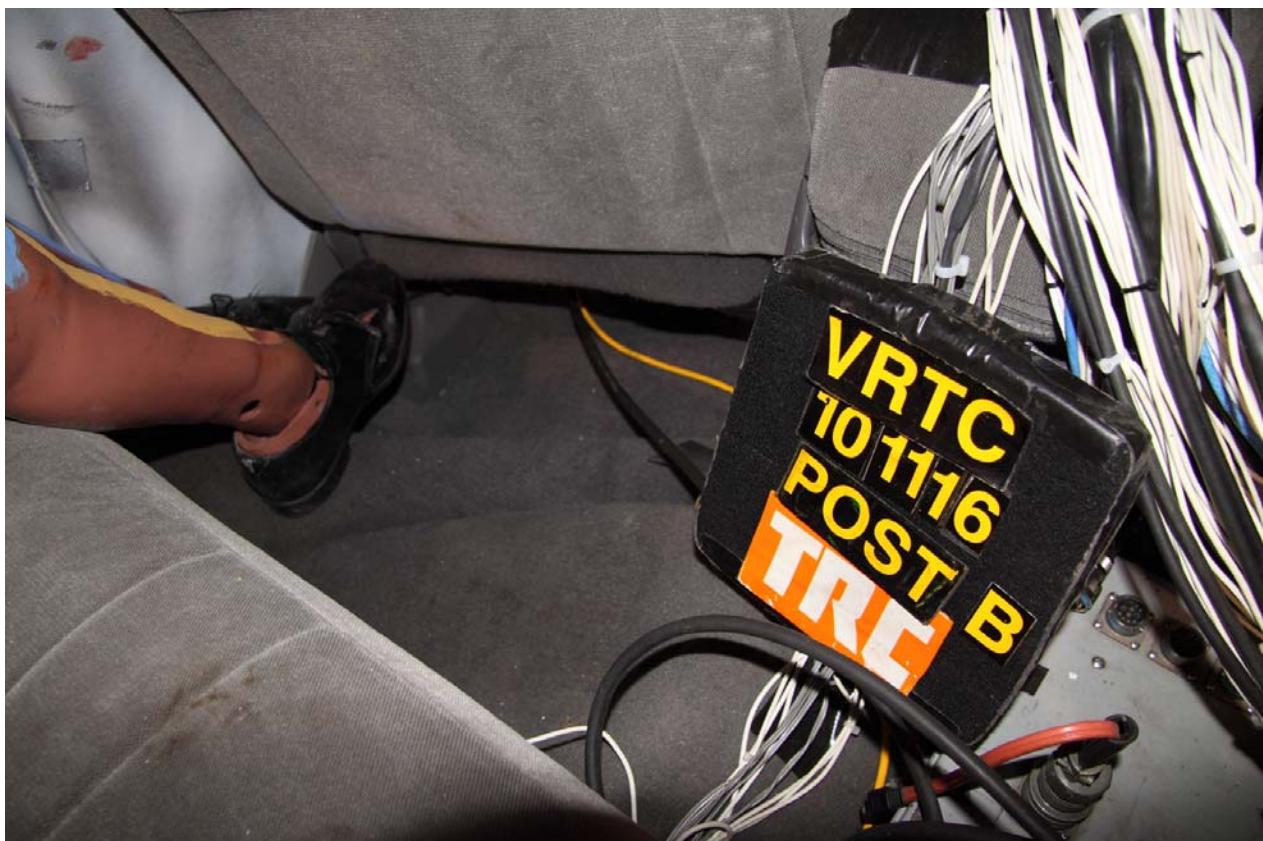


Figure A-184 Post-Test Bullet Vehicle Left Rear Passenger Foot View



Figure A-185 Post-Test Target Vehicle Driver Dummy Overall Contact View



Figure A-186 Post-Test Target Vehicle Driver Dummy Head Contact - View 1



Figure A-187 Post-Test Target Vehicle Driver Dummy Head Contact - View 2



Figure A-188 Post-Test Target Vehicle Driver Dummy Head Contact - View 3



Figure A-189 Post-Test Target Vehicle Driver Dummy Head Contact - View 4



Figure A-190 Post-Test Target Vehicle Driver Dummy Knee Contact - View 1



Figure A-191 Post-Test Target Vehicle Driver Dummy Knee Contact - View 2



Figure A-192 Post-Test Target Vehicle Driver Dummy Knee Contact - View 3



**Figure A-193 Post-Test Target Vehicle Driver Dummy Foot Contact - View 1**



**Figure A-194 Post-Test Target Vehicle Driver Dummy Foot Contact - View 2**



Figure A-195 Post-Test Bullet Vehicle Driver Dummy Overall Contact View



Figure A-196 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 1



Figure A-197 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 2



Figure A-198 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 3



Figure A-199 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 4



Figure A-200 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 1



Figure A-201 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 2



Figure A-202 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 3



Figure A-203 Post-Test Bullet Vehicle Driver Dummy Knee & Foot Contacts – View 1



Figure A-204 Post-Test Bullet Vehicle Driver Dummy Knee & Foot Contacts – View 2



Figure A-205 Post-Test Bullet Vehicle Right Front Passenger Dummy Overall Contact View



Figure A-206 Post-Test Bullet Vehicle Right Front Passenger Dummy Head Contact-View



Figure A-207 Post-Test Bullet Vehicle Right Front Passenger Dummy Knee Contact-View 1



Figure A-208 Post-Test Bullet Vehicle Right Front Passenger Dummy Knee Contact-View 2



Figure A-209 Post-Test Bullet Vehicle Right Front Passenger Dummy Foot Contact View

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Figure A-210 Post-Test Bullet Vehicle Left Rear Passenger Dummy Overall Contact View



Figure A-211 Post-Test Bullet Vehicle Left Rear Passenger Dummy Head Contact – View 1



Figure A-212 Post-Test Bullet Vehicle Left Rear Passenger Dummy Head Contact – View 2



Figure A-213 Post-Test Bullet Vehicle Left Rear Passenger Dummy Knee Contact View



**Figure A-214 Post-Test Bullet Vehicle Left Rear Passenger Dummy Foot Contact View**

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Figure A-215 Pre-Test Target Vehicle Instrumentation View



Figure A-216 Post-Test Target Vehicle Instrumentation View



Figure A-217 Pre-Test Target Vehicle Ignition Position View

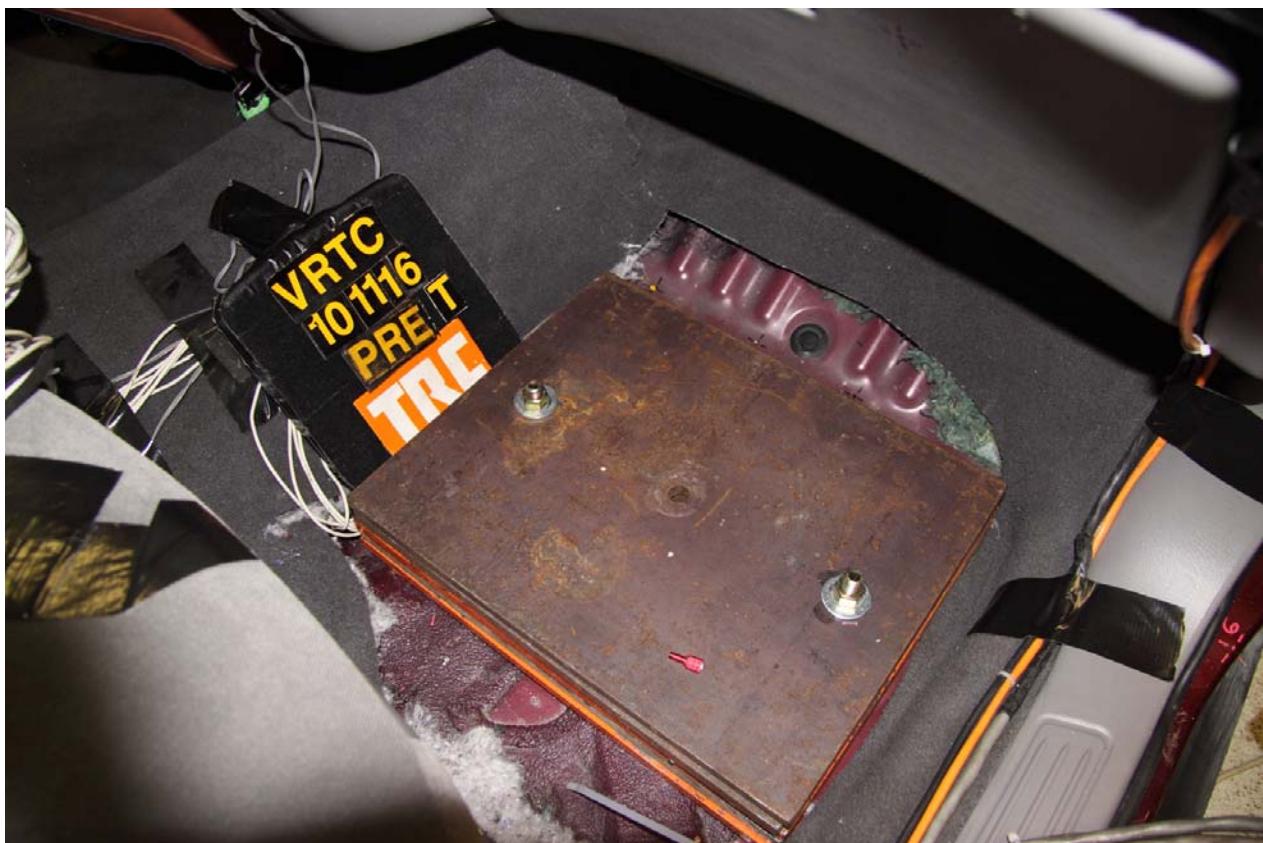


Figure A-218 Pre-Test Target Vehicle Ballast Position View



Figure A-219 Pre-Test Target Vehicle Certification Label View

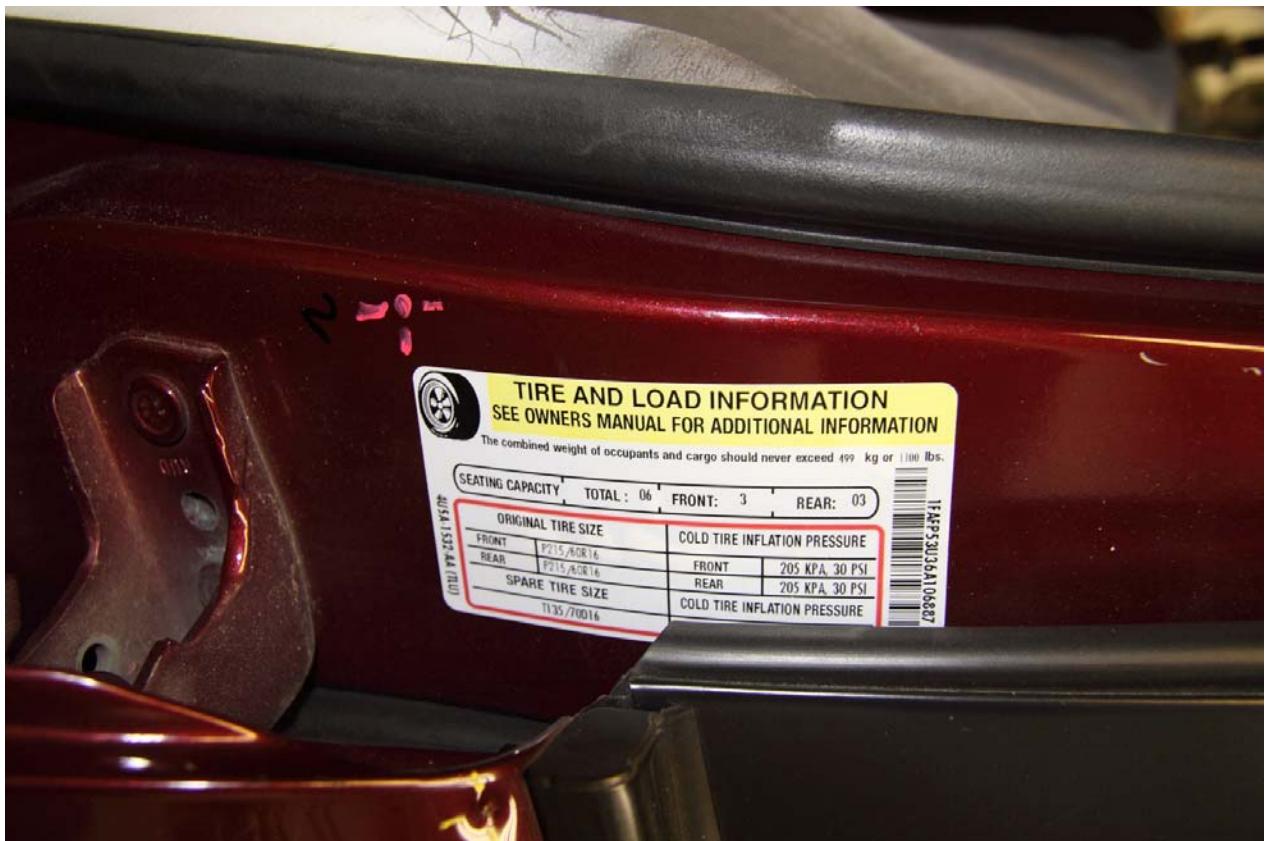


Figure A-220 Pre-Test Target Vehicle Tire Load Label View



Figure A-221 Post-Test Target Vehicle Damage – View 1

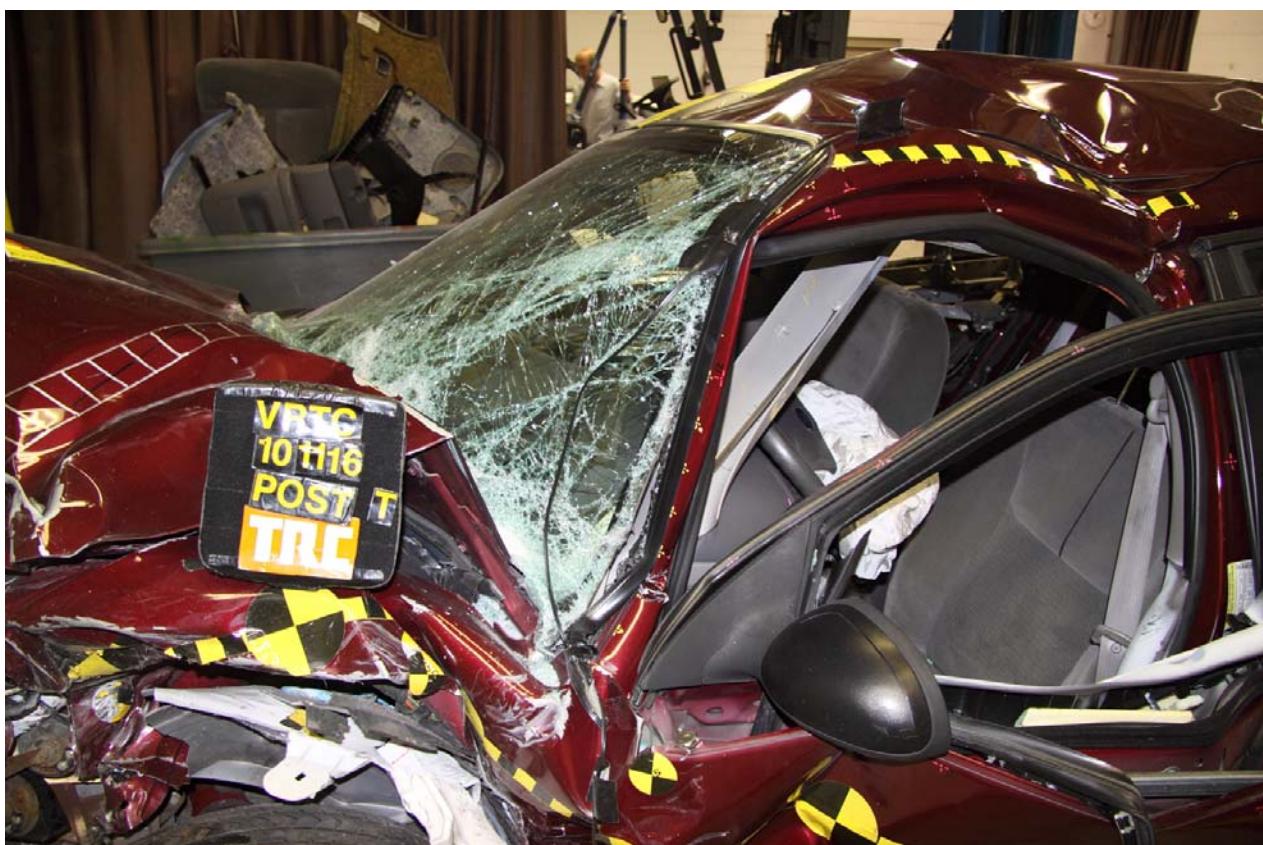


Figure A-222 Post-Test Target Vehicle Damage – View 2



**Figure A-223 Post-Test Target Vehicle Damage – View 3**

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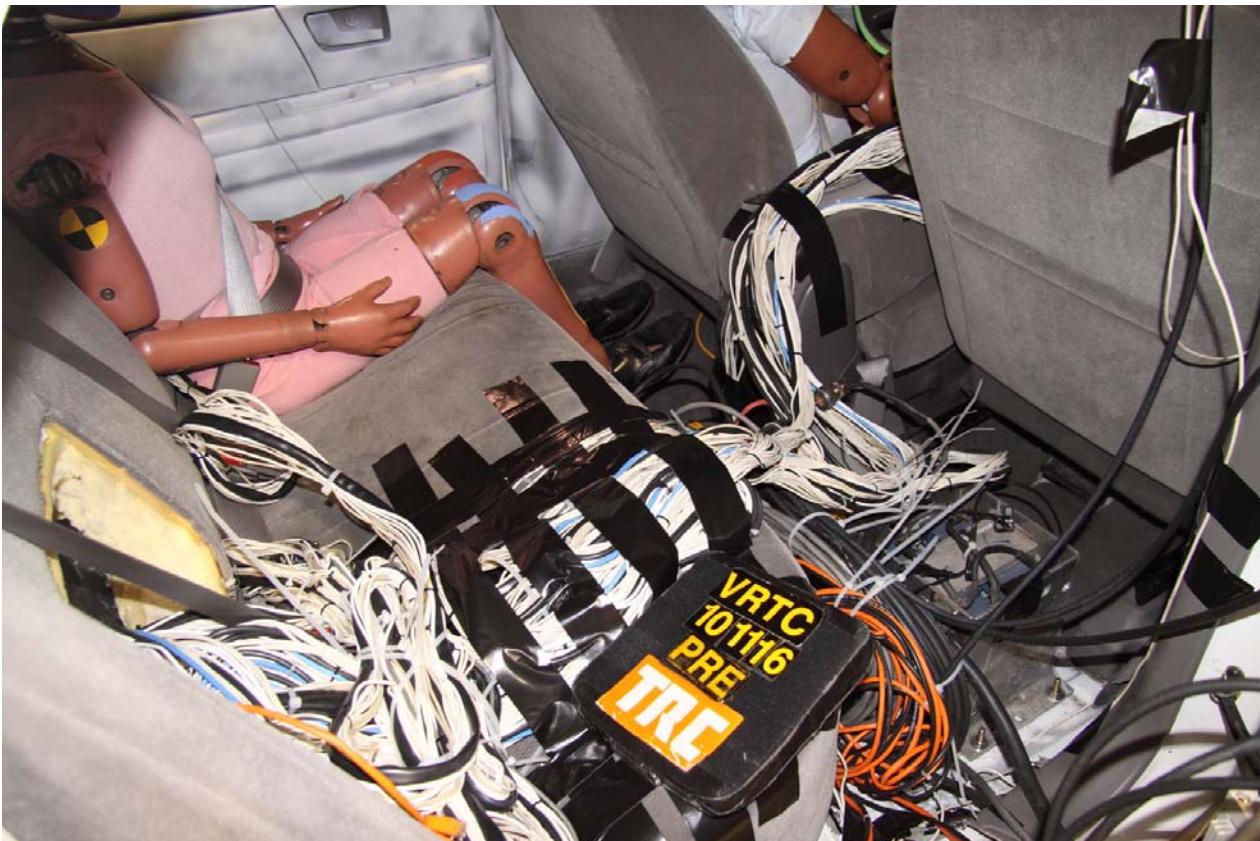


Figure A-224 Pre-Test Bullet Vehicle Instrumentation – View 1

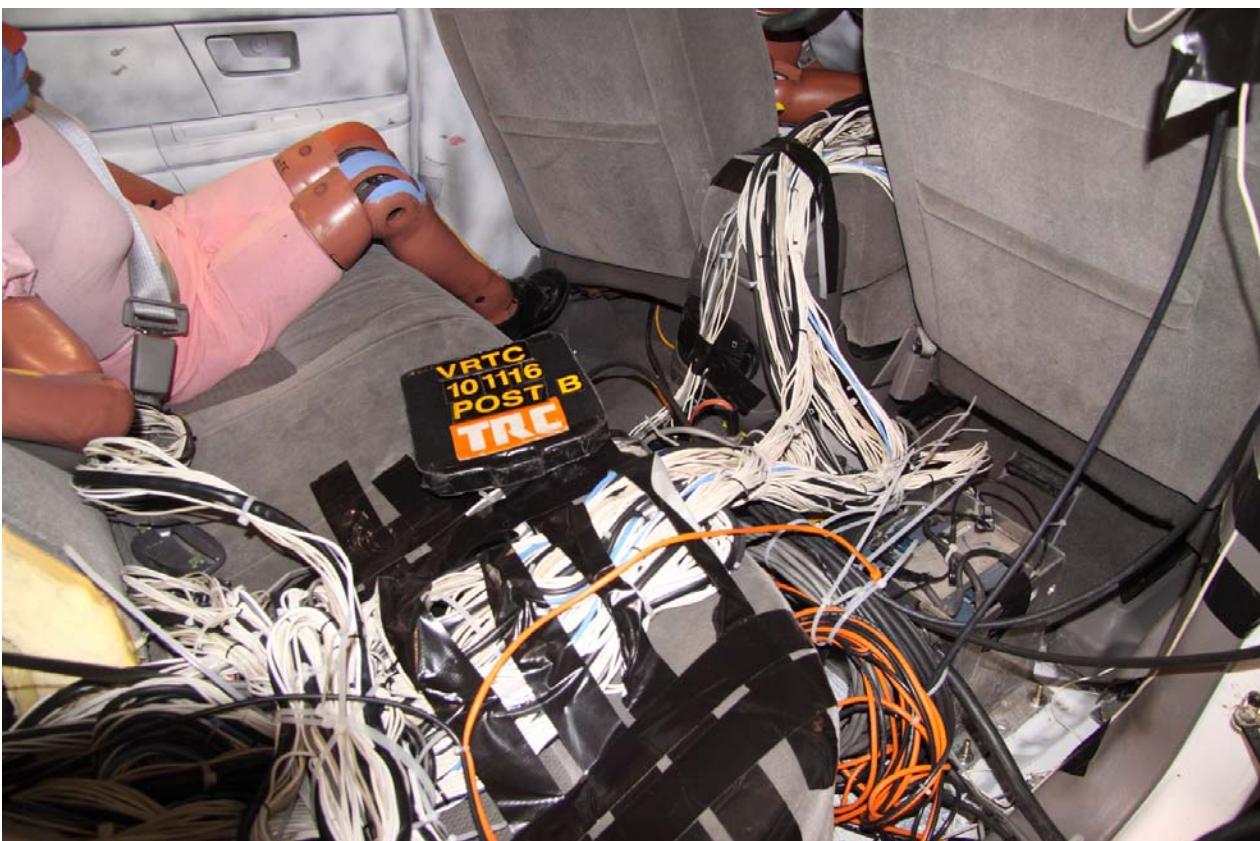


Figure A-225 Post-Test Bullet Vehicle Instrumentation – View 1



Figure A-226 Pre-Test Bullet Vehicle Instrumentation – View 2



Figure A-227 Post-Test Bullet Vehicle Instrumentation – View 2

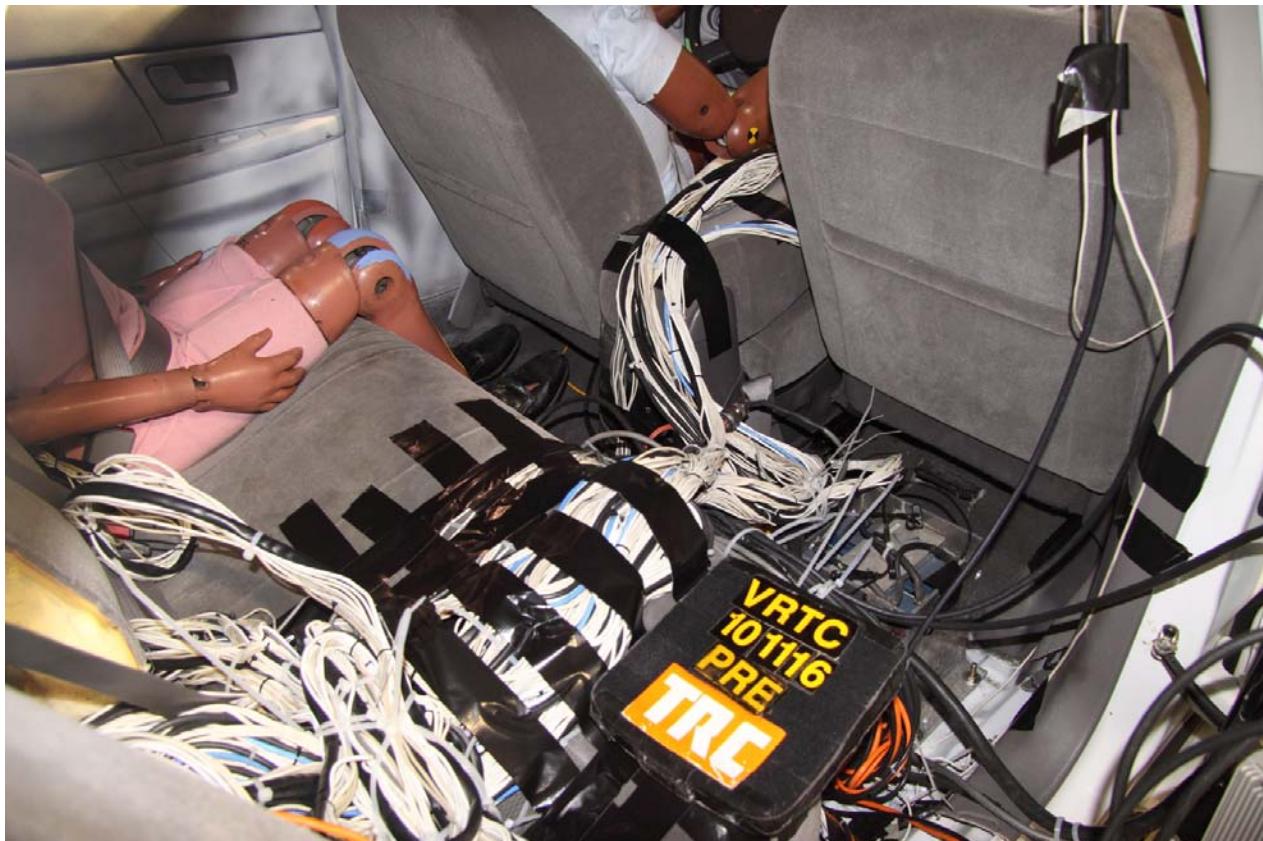


Figure A-228 Pre-Test Bullet Vehicle Instrumentation – View 3



Figure A-229 Pre-Test Bullet Vehicle Ignition Position View



Figure A-230 Pre-Test Bullet Vehicle Certification Label View

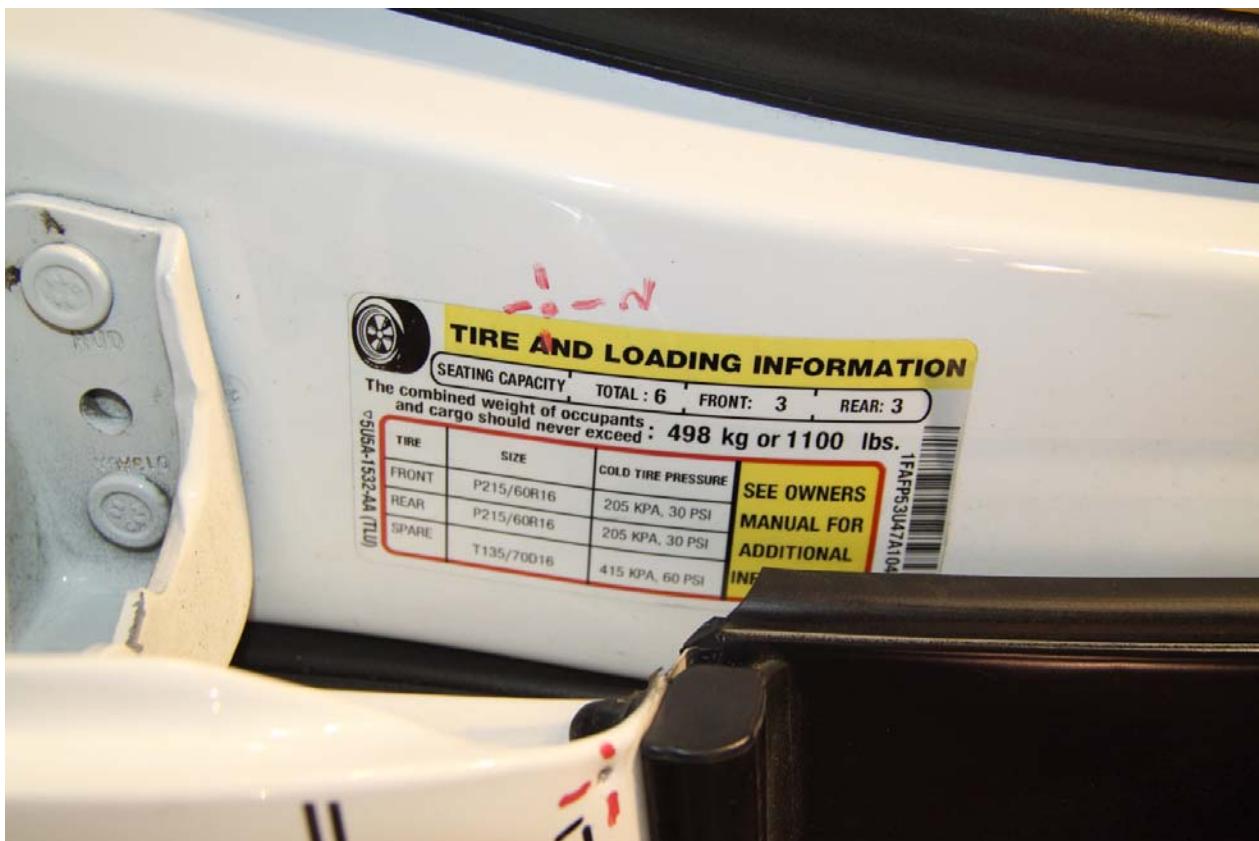


Figure A-231 Pre-Test Bullet Vehicle Tire Load Label View



Figure A-232 Post-Test Bullet Vehicle Damage – View 1



Figure A-233 Post-Test Bullet Vehicle Damage – View 2



Figure A-234 Post-Test Bullet Vehicle Damage – View 3



Figure A-235 Post-Test Bullet Vehicle Damage – View 4



Figure A-236 Post-Test Bullet Vehicle Damage – View 5



Figure A-237 Post-Test Bullet Vehicle Damage – View 6



Figure A-238 Post-Test Target Vehicle 30 Left Level

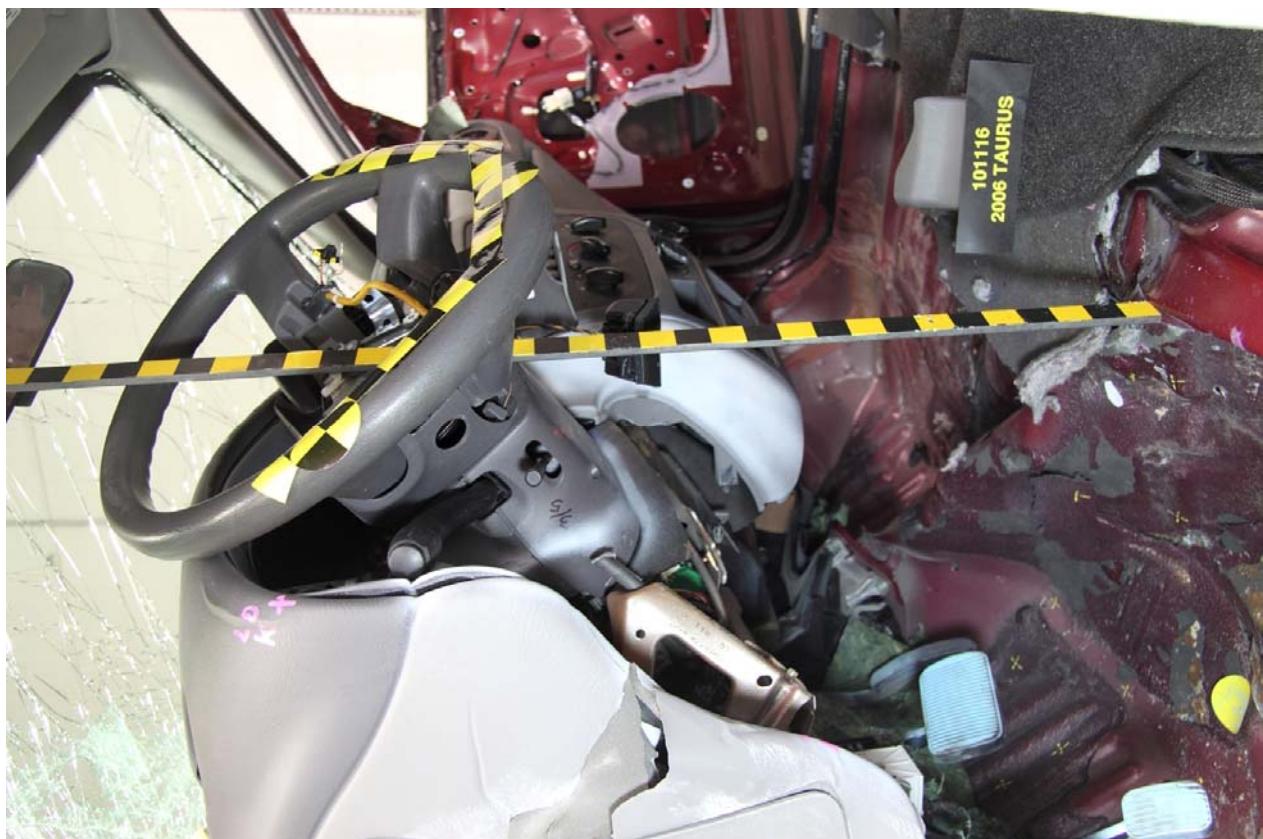


Figure A-239 Post-Test Target Vehicle 30 Left Level without bolster



Figure A-240 Post-Test Target Vehicle 30 Left Low



Figure A-241 Post-Test Target Vehicle 30 Left Low without bolster



Figure A-242 Post-Test Target Vehicle 45 Left Level



Figure A-243 Post-Test Target Vehicle 45 Left Level without bolster



Figure A-244 Post-Test Target Vehicle 45 Left Low



Figure A-245 Post-Test Target Vehicle 45 Left Low without bolster



Figure A-246 Post-Test Target Vehicle 45 Right High



Figure A-247 Post-Test Target Vehicle 45 Right Wide



**Figure A-248 Post-Test Target Vehicle 45 Right Low**

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Figure A-249 Post-Test Target Vehicle 45 Right Level without bolster

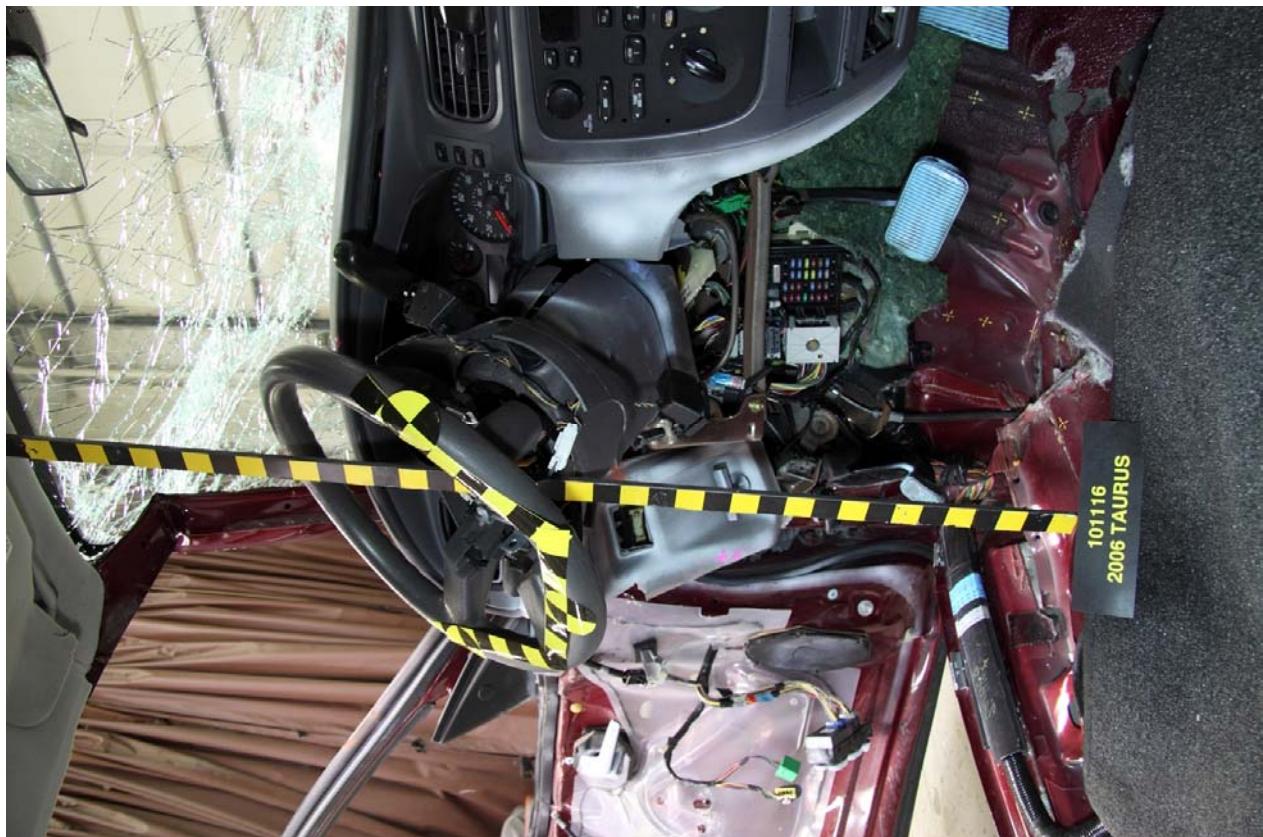


Figure A-250 Post-Test Target Vehicle 45 Right without bolster



Figure A-251 Post-Test Target Vehicle 90 Level



Figure A-252 Post-Test Target Vehicle 90 Level without bolster

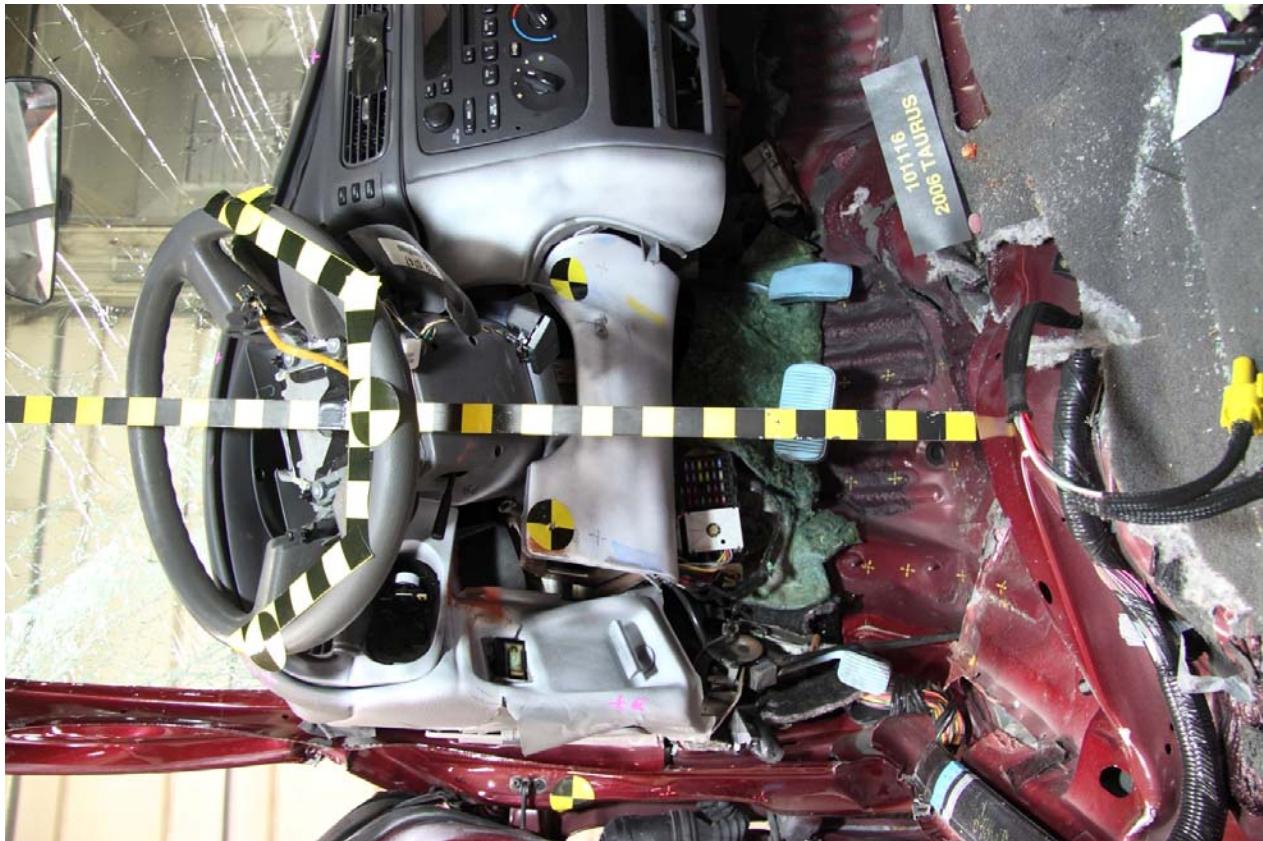


Figure A-253 Post-Test Target Vehicle 90 Low

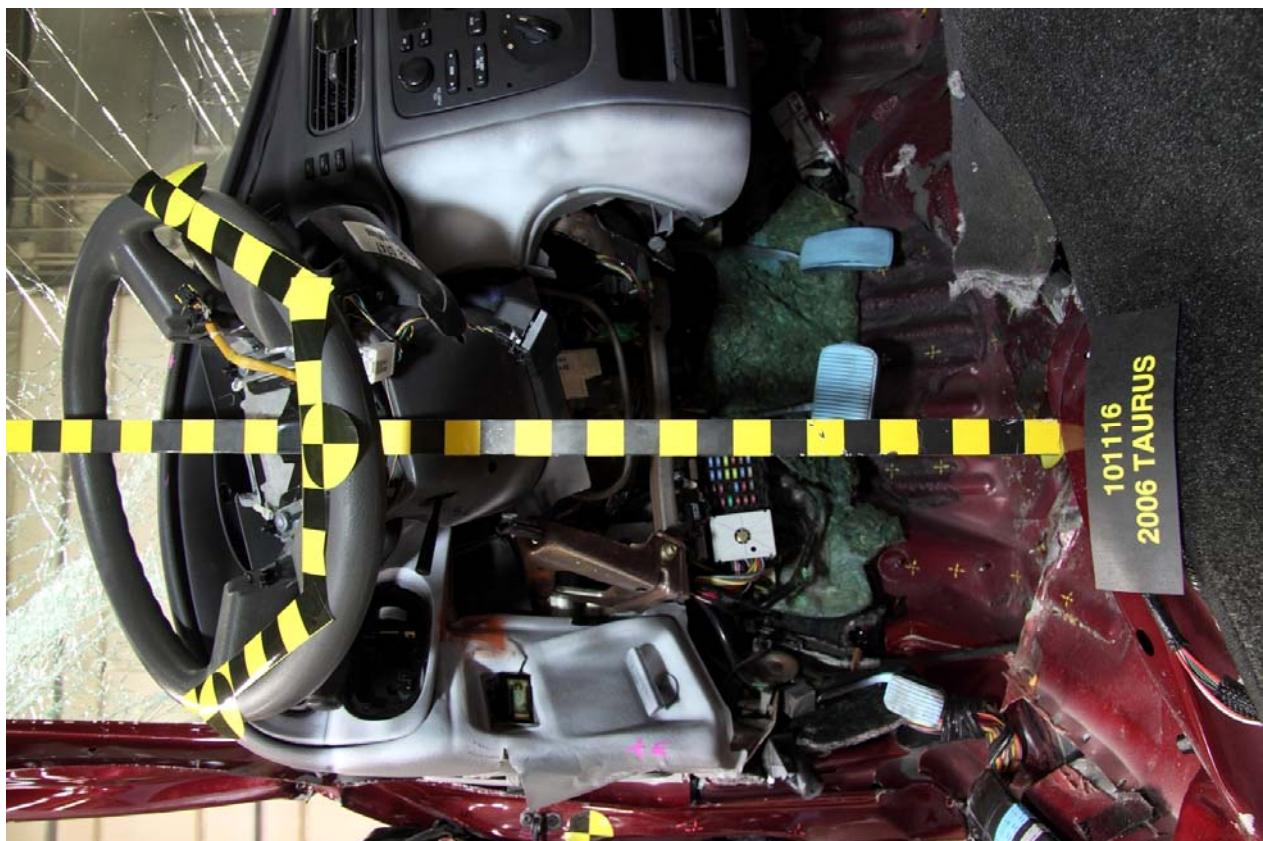


Figure A-254 Post-Test Target Vehicle 90 Low without bolster



Figure A-255 Post-Test Bullet Vehicle 30 Left Level

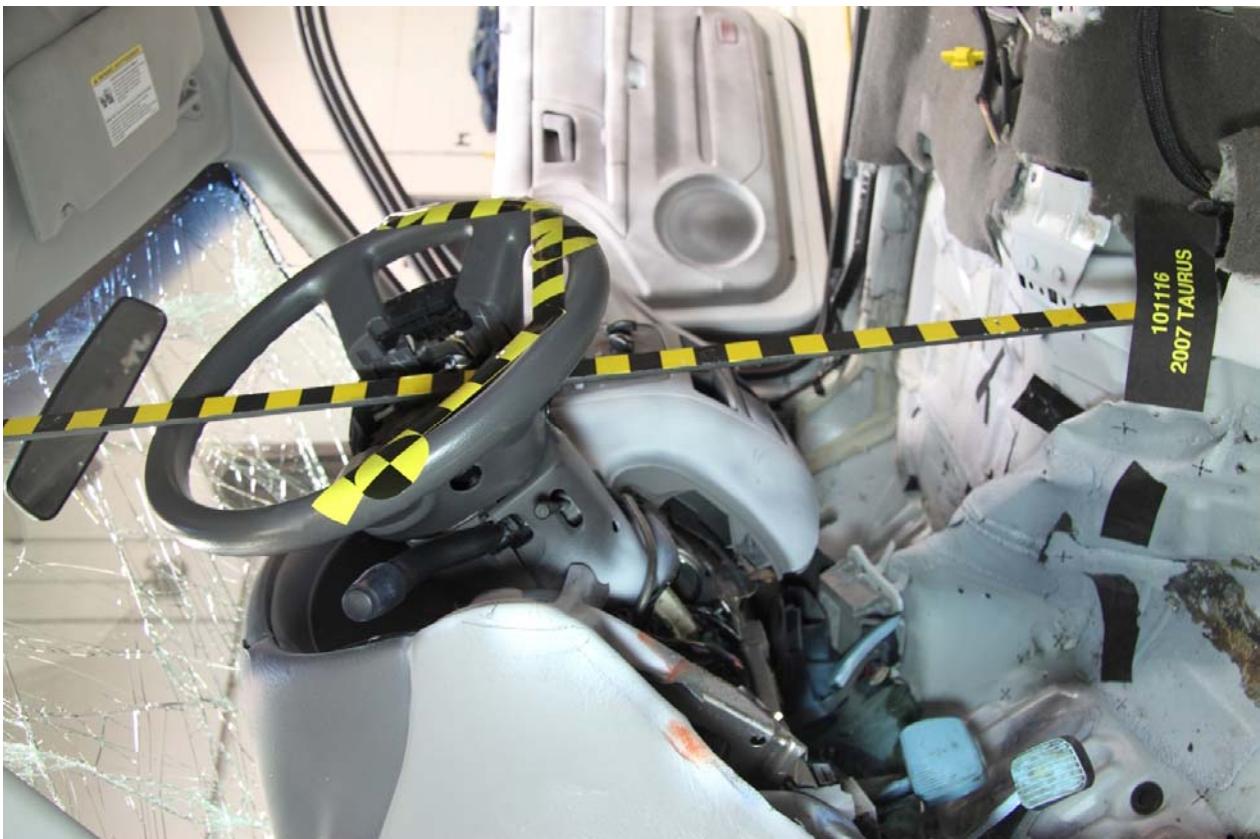


Figure A-256 Post-Test Bullet Vehicle 30 Left Level without bolster



Figure A-257 Post-Test Bullet Vehicle 30 Left Low



Figure A-258 Post-Test Bullet Vehicle 30 Left Low without bolster

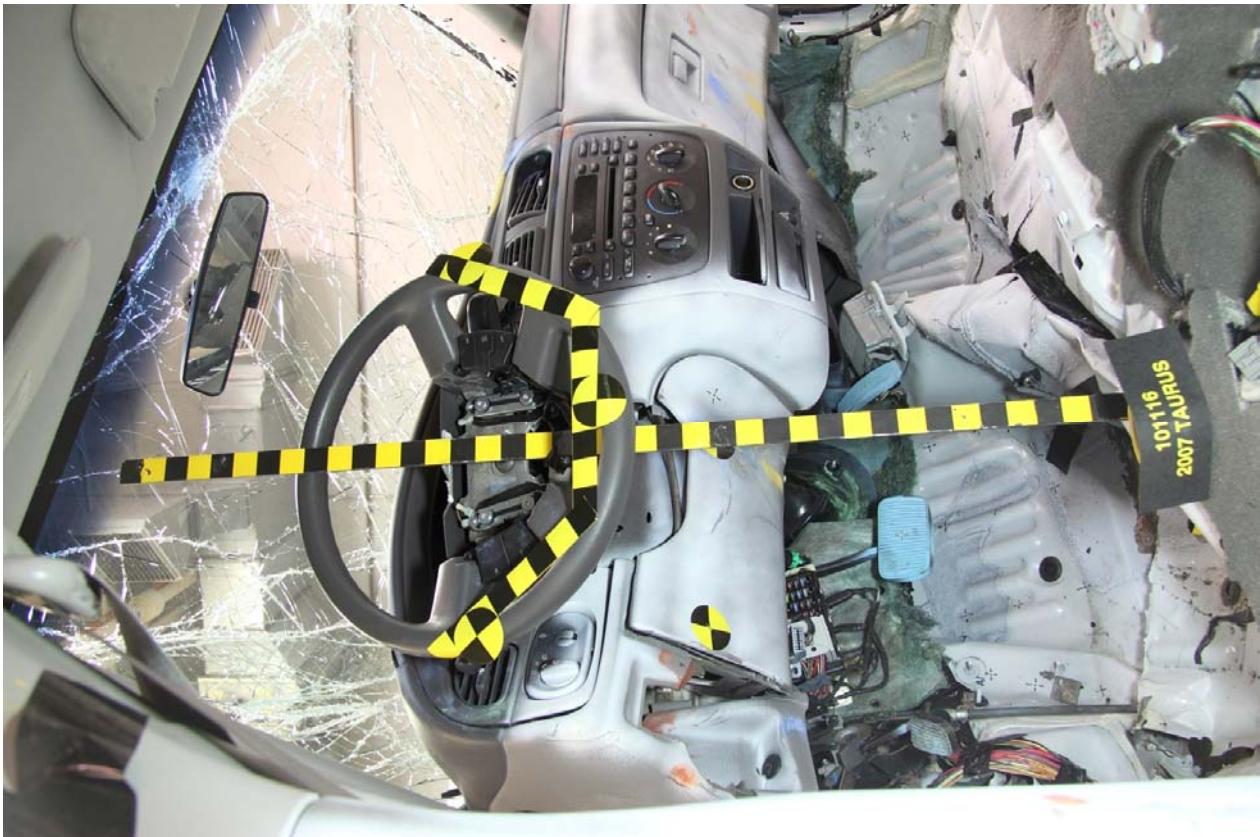


Figure A-259 Post-Test Bullet Vehicle 45 Left Level

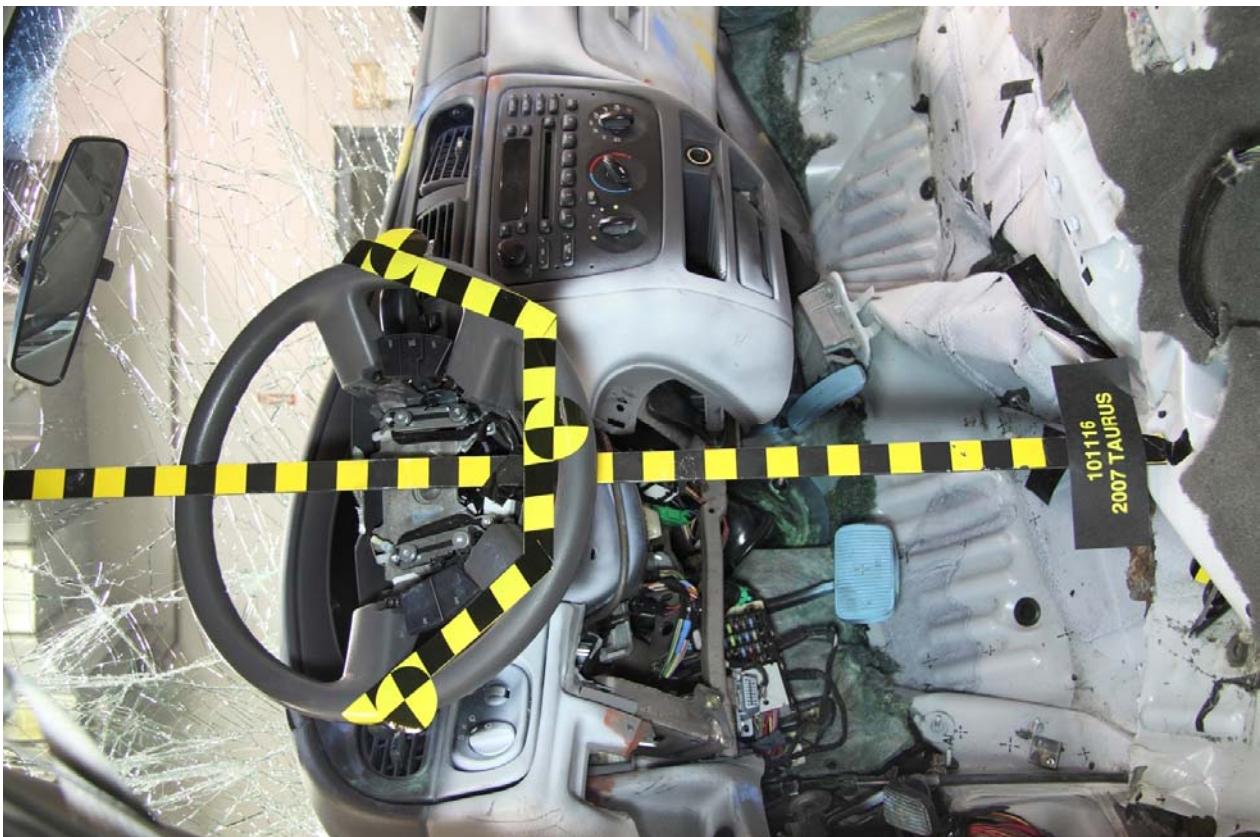


Figure A-260 Post-Test Bullet Vehicle 45 Left Level without bolster

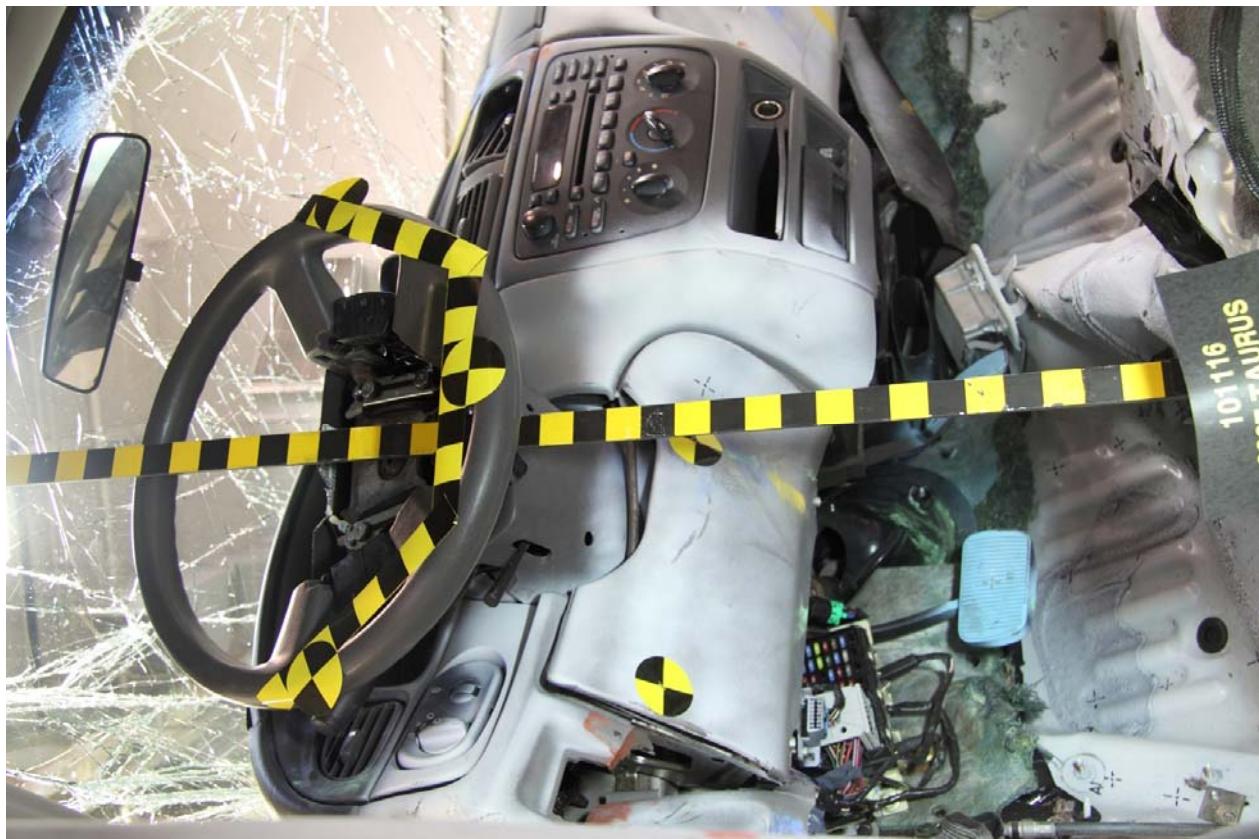


Figure A-261 Post-Test Bullet Vehicle 45 Left Low

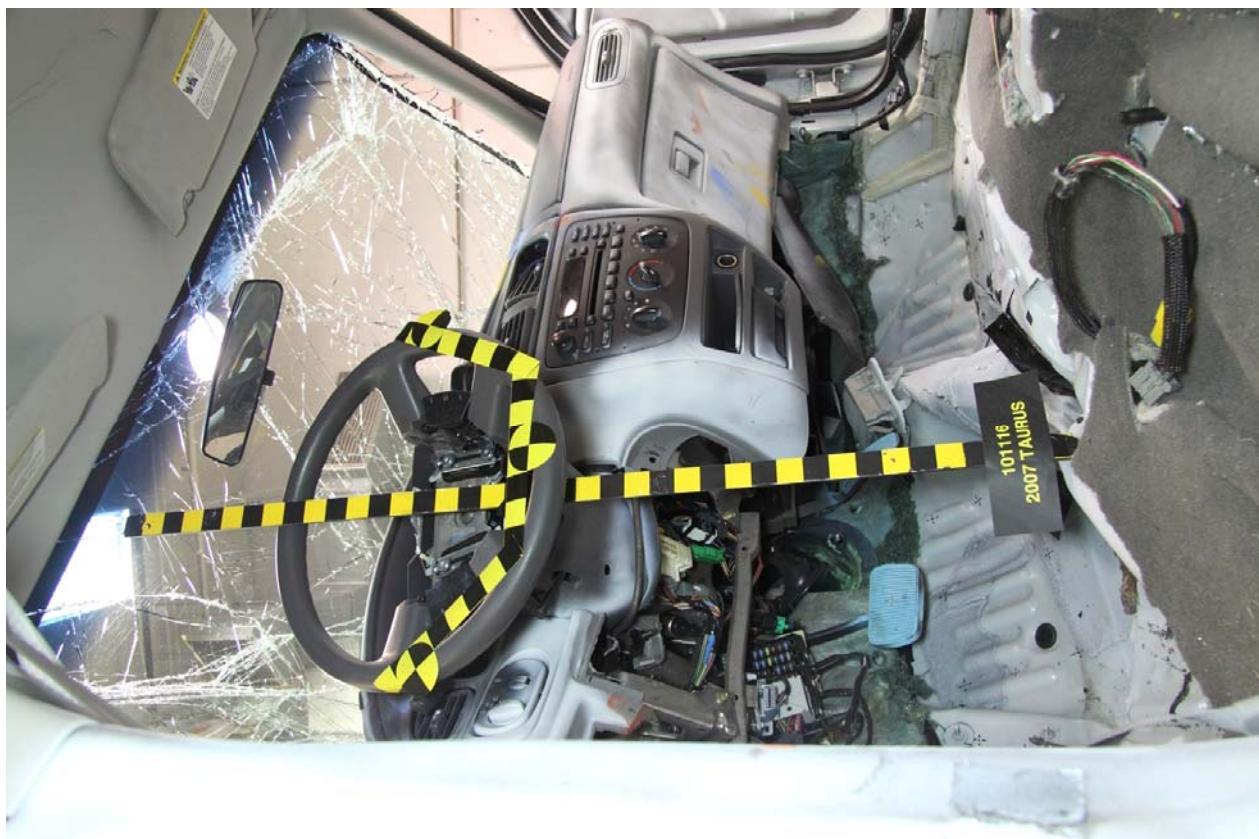


Figure A-262 Post-Test Bullet Vehicle 45 Left Low without bolster



Figure A-263 Post-Test Bullet Vehicle 45 Right Level



Figure A-264 Post-Test Bullet Vehicle 45 Right Level without bolster

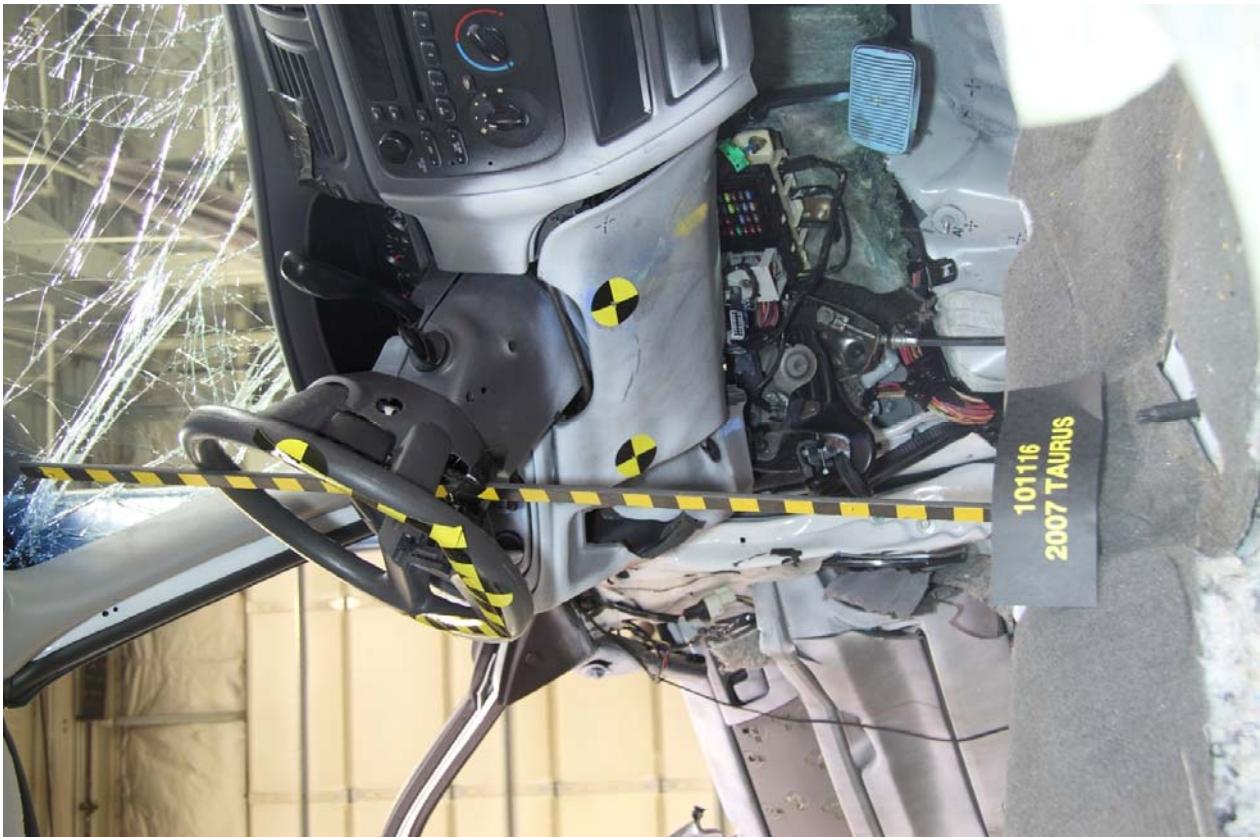


Figure A-265 Post-Test Bullet Vehicle 45 Right Low



Figure A-266 Post-Test Bullet Vehicle 45 Right Low without bolster

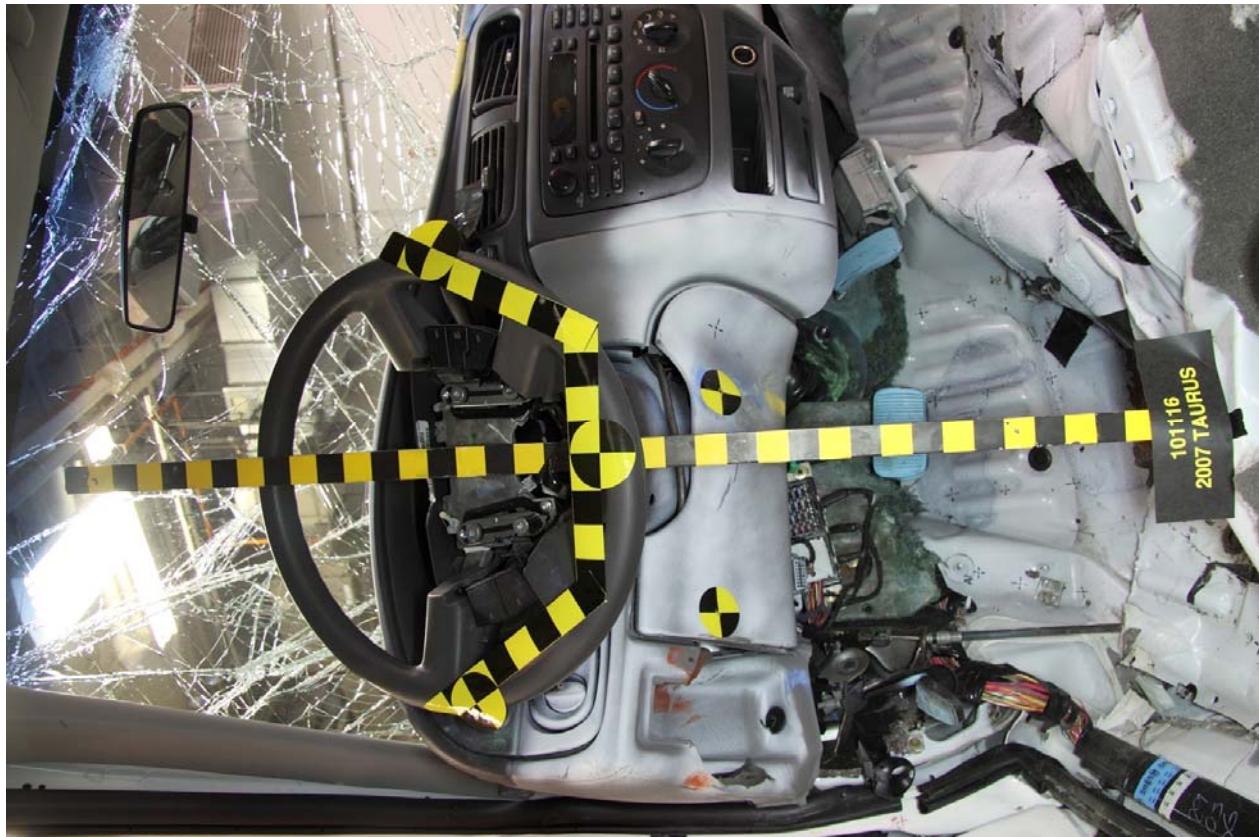


Figure A-267 Post-Test Bullet Vehicle 90 Level

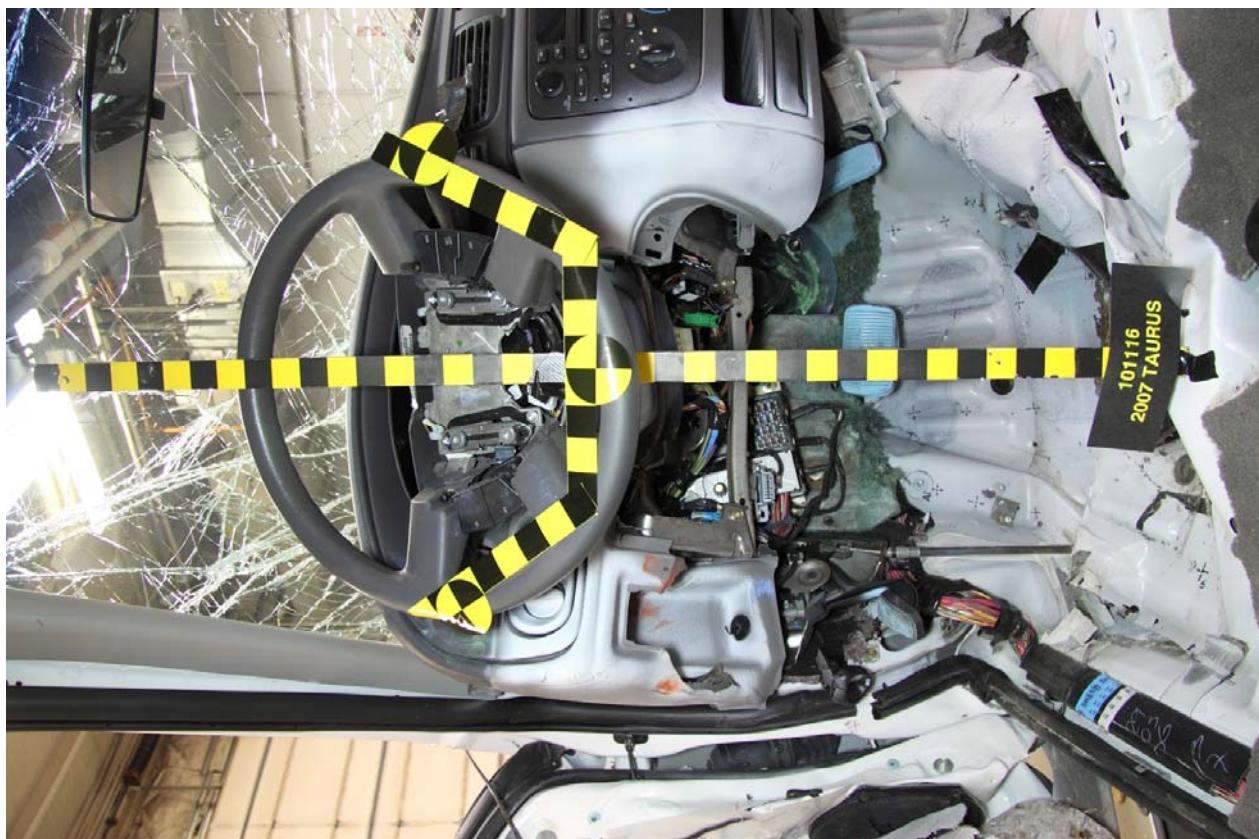


Figure A-268 Post-Test Bullet Vehicle 90 Level without bolster

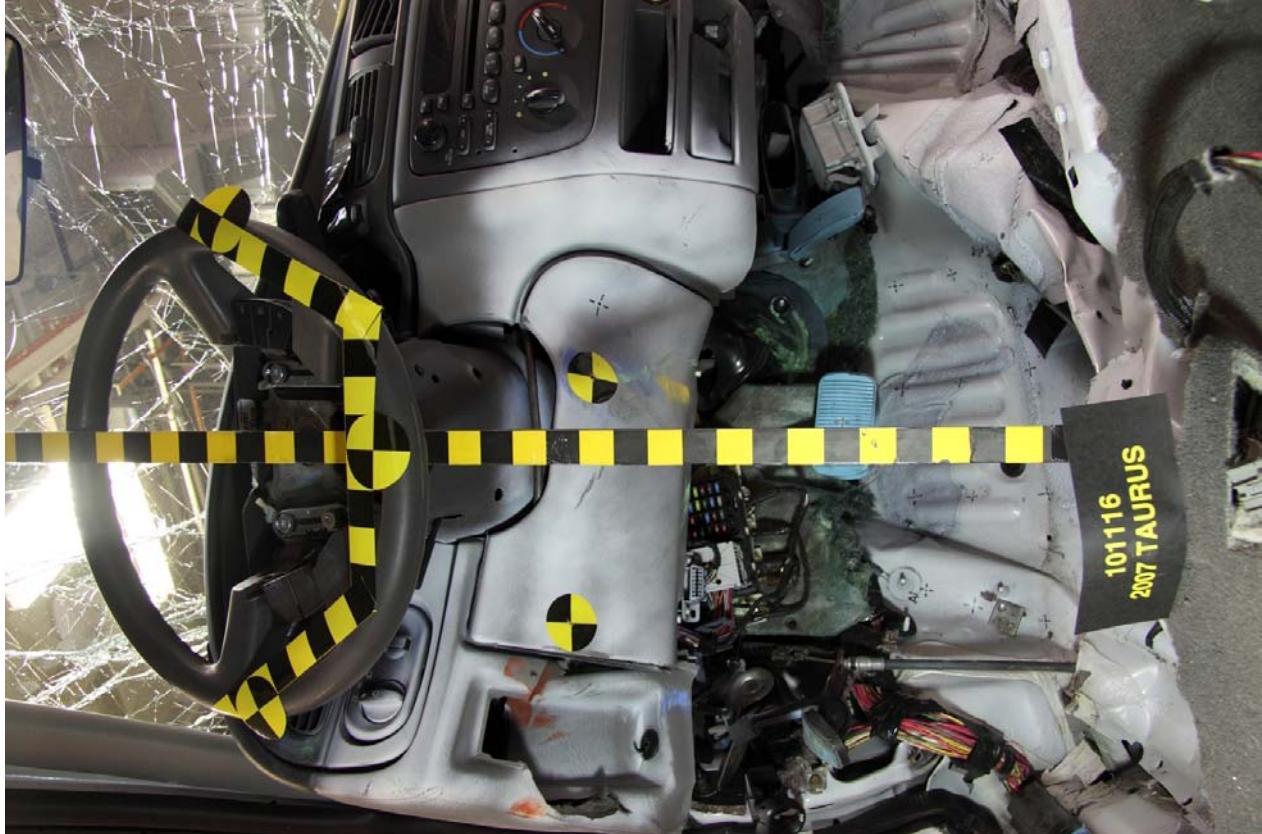


Figure A-269 Post-Test Bullet Vehicle 90 Low

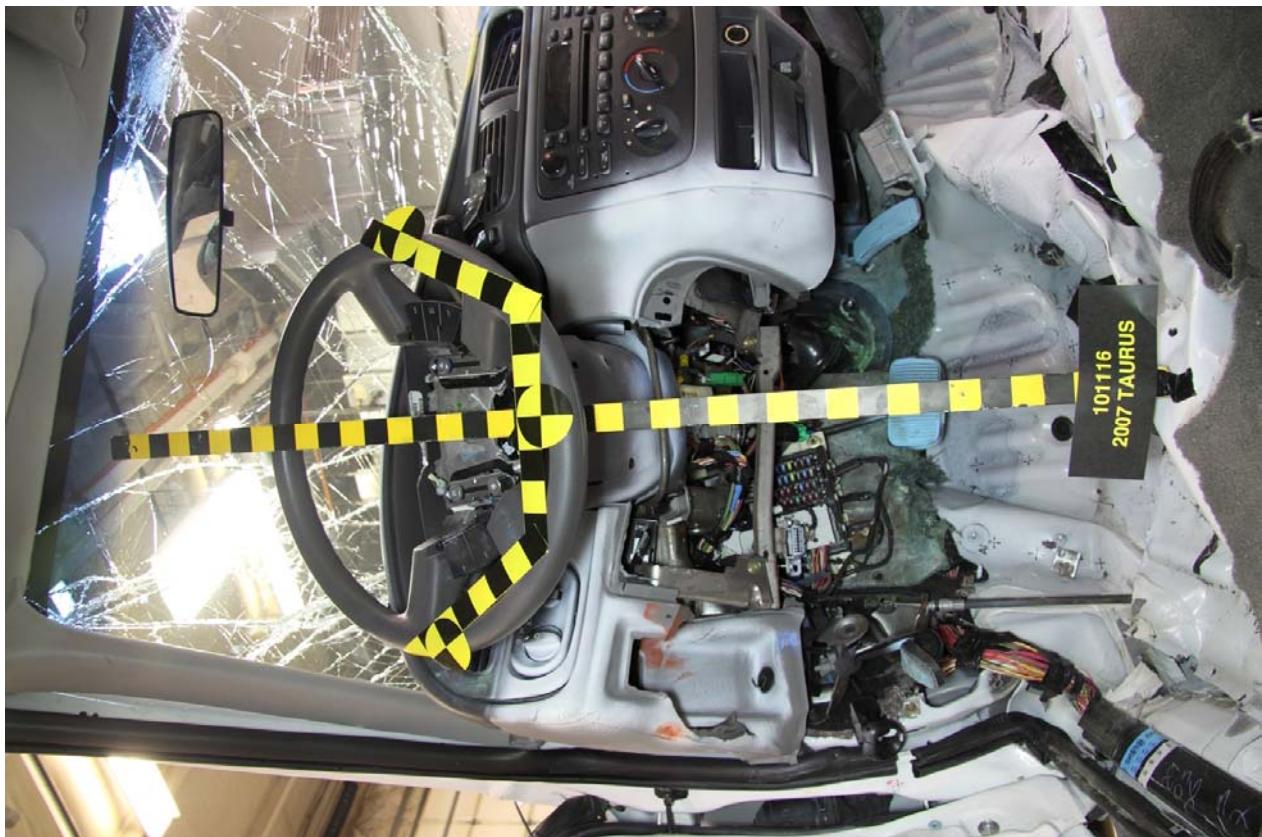


Figure A-270 Post-Test Bullet Vehicle 90 Low without bolster

## Appendix B

### Data Plots



Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

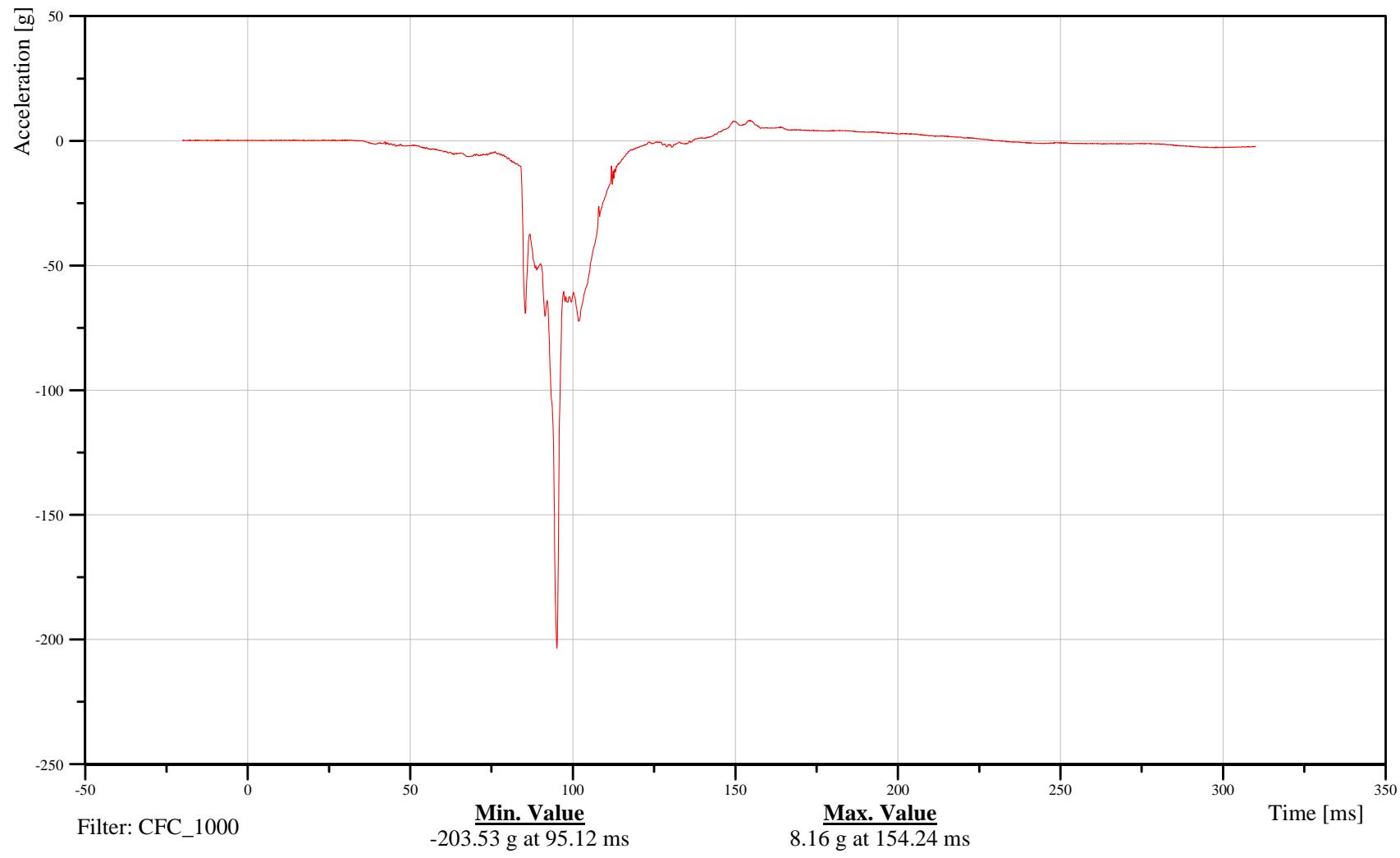
Customer: VRTC

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-2

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

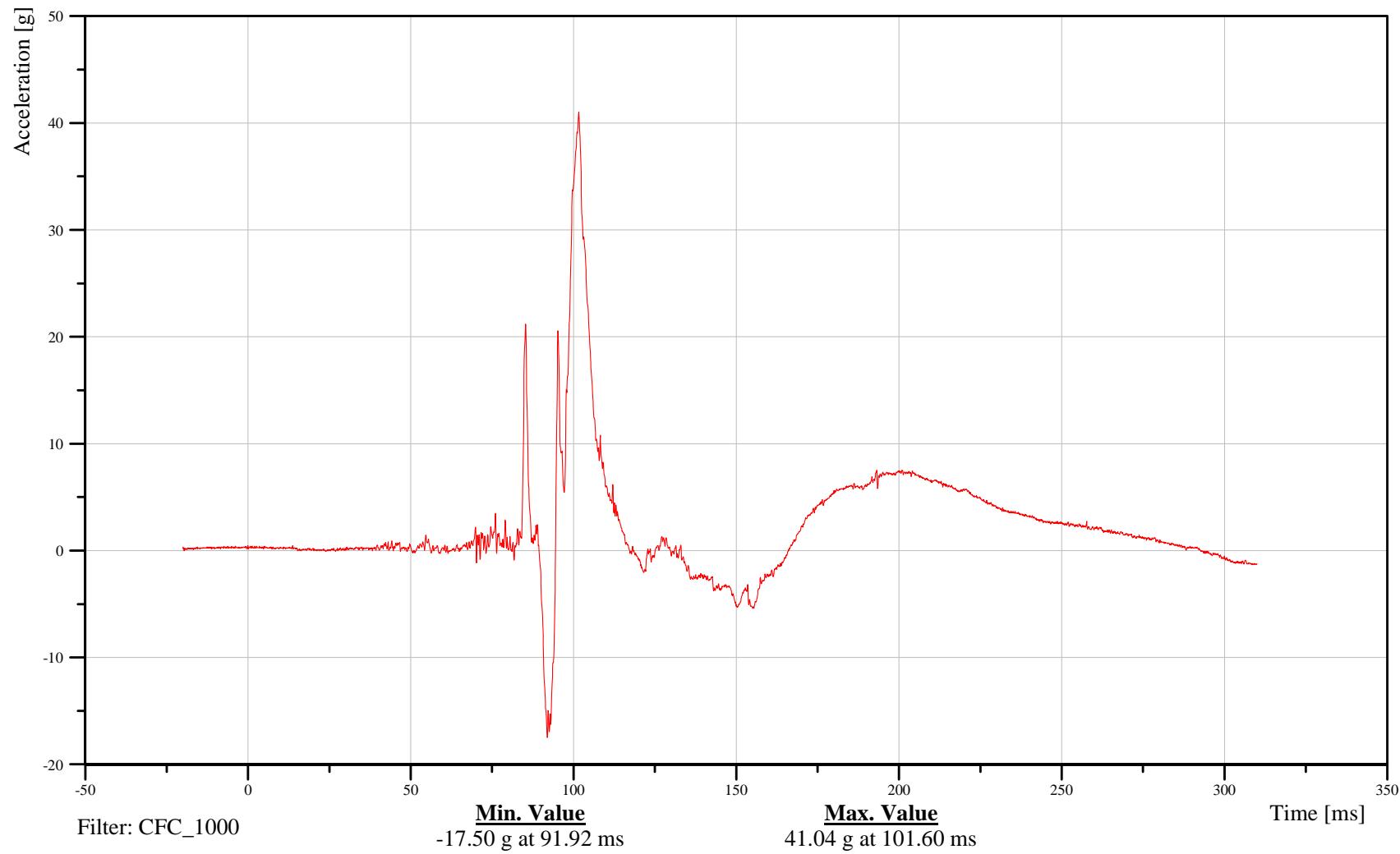
Customer: VRTC

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-3

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Z-Axis Acceleration

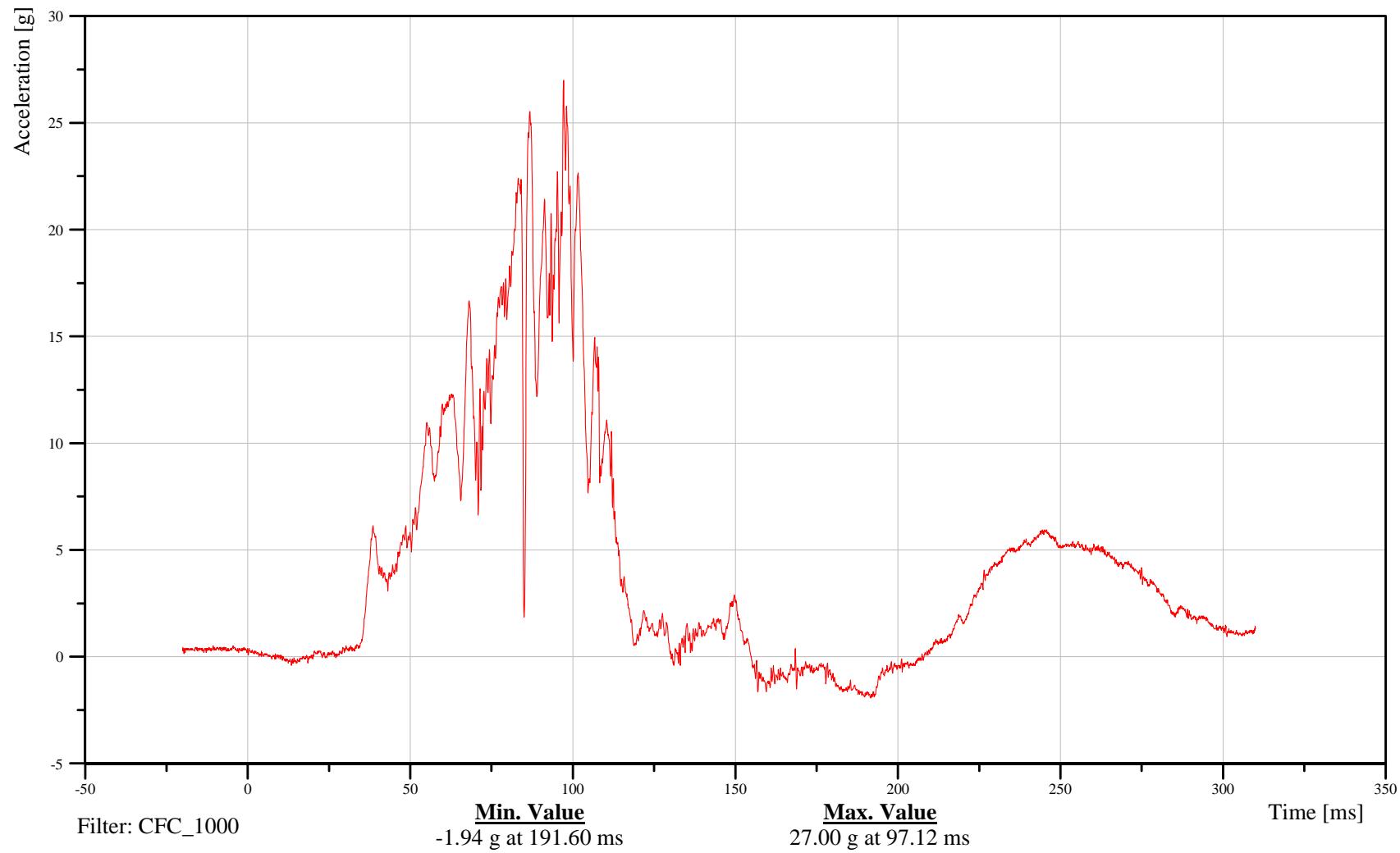
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11HEADCG00H3ACZA

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

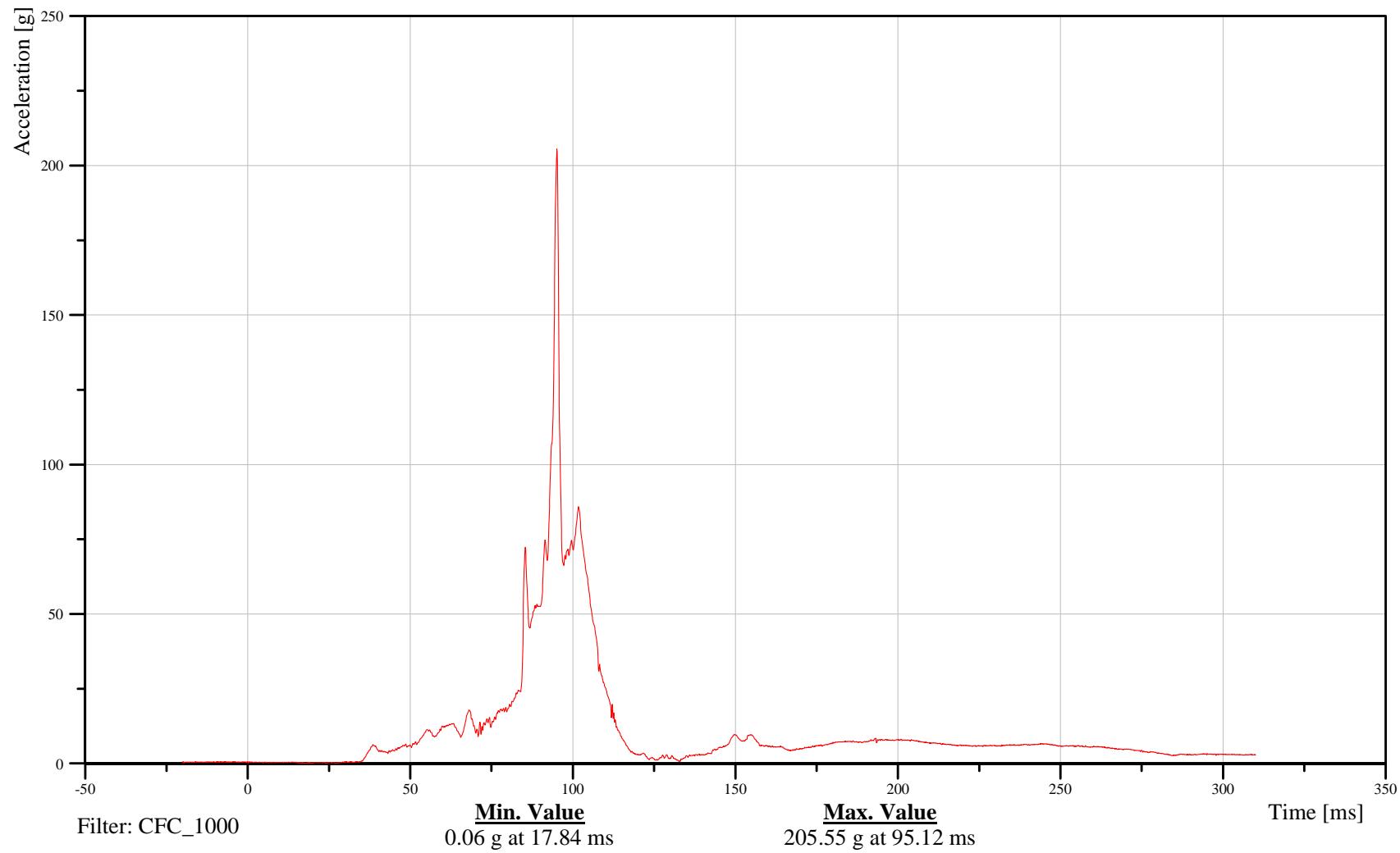
Customer: VRTC

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-5

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Redundant X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

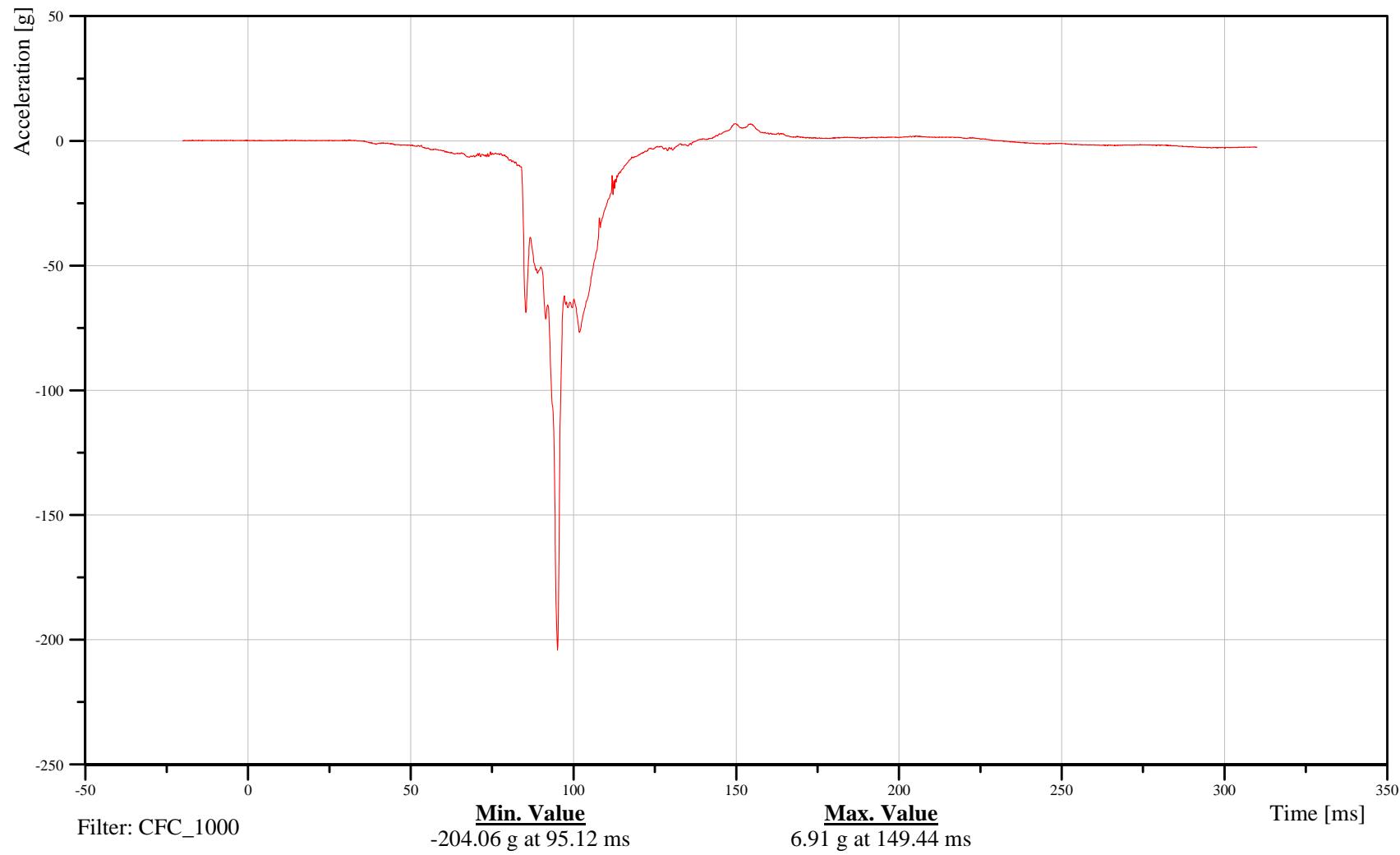
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11HEADCGRDH3ACXA

B-6

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Redundant Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

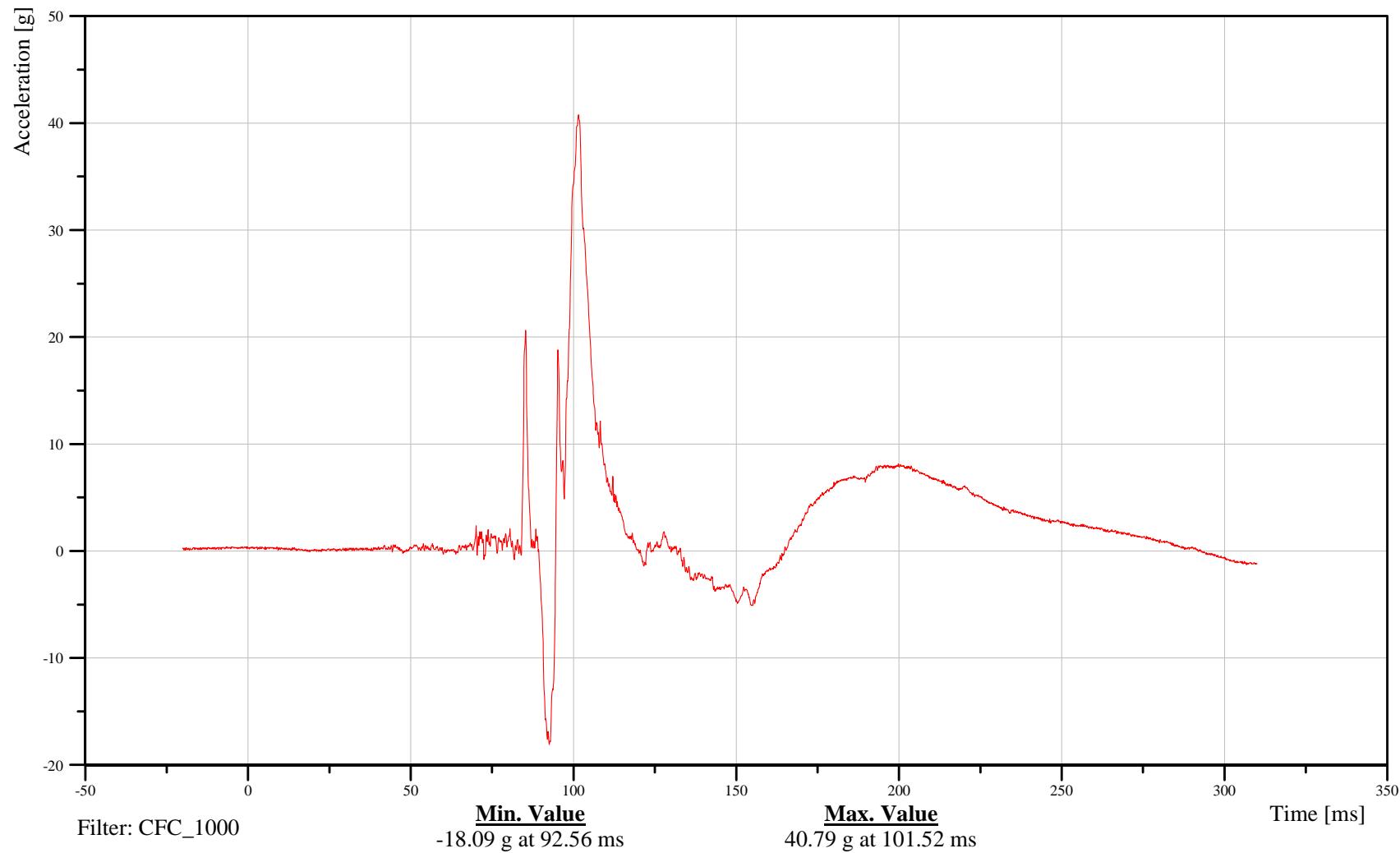
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11HEADCGRDH3ACYA

B-7

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Redundant Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

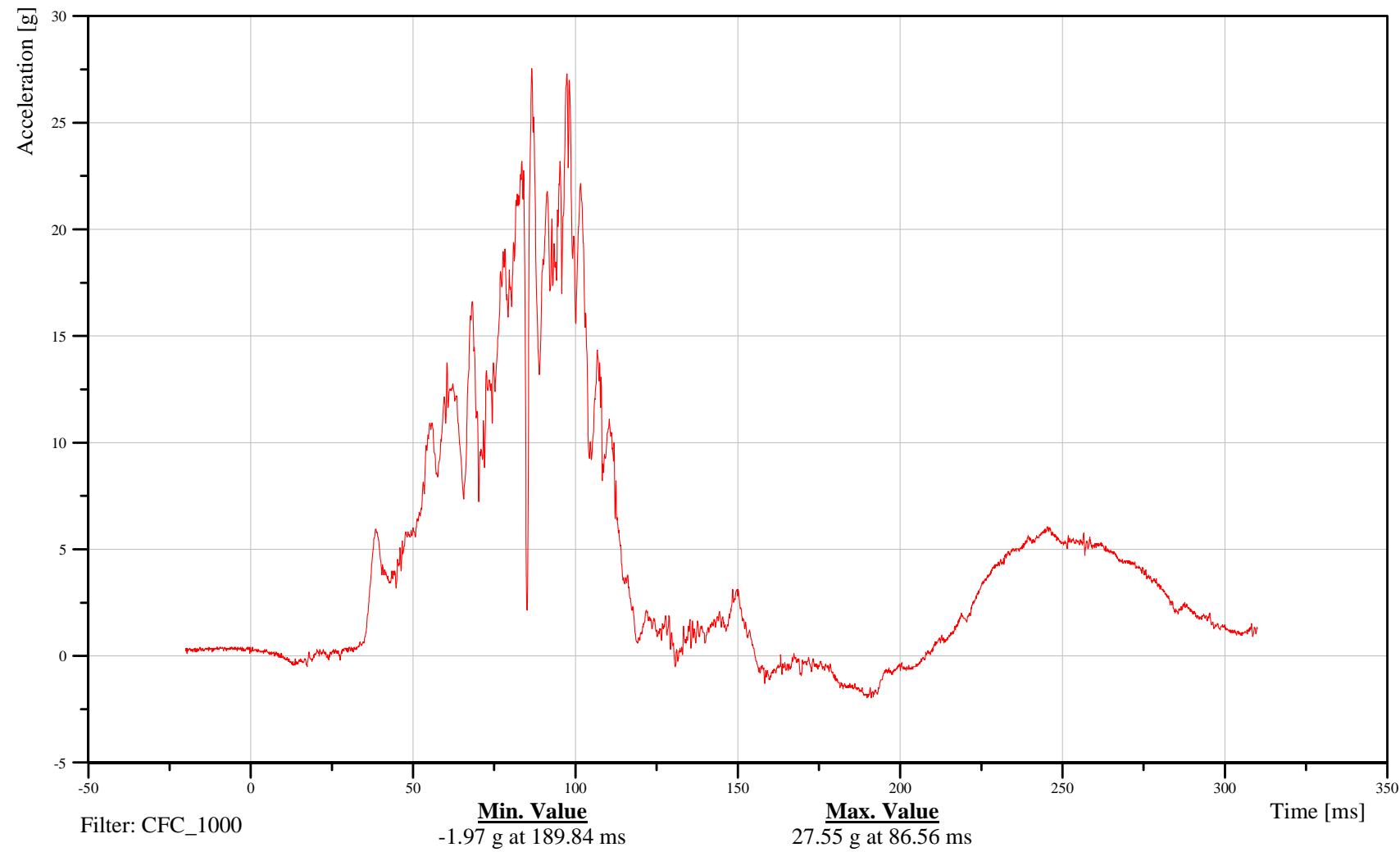
Customer: VRTC

11HEADCGRDH3ACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-8

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Head Redundant Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

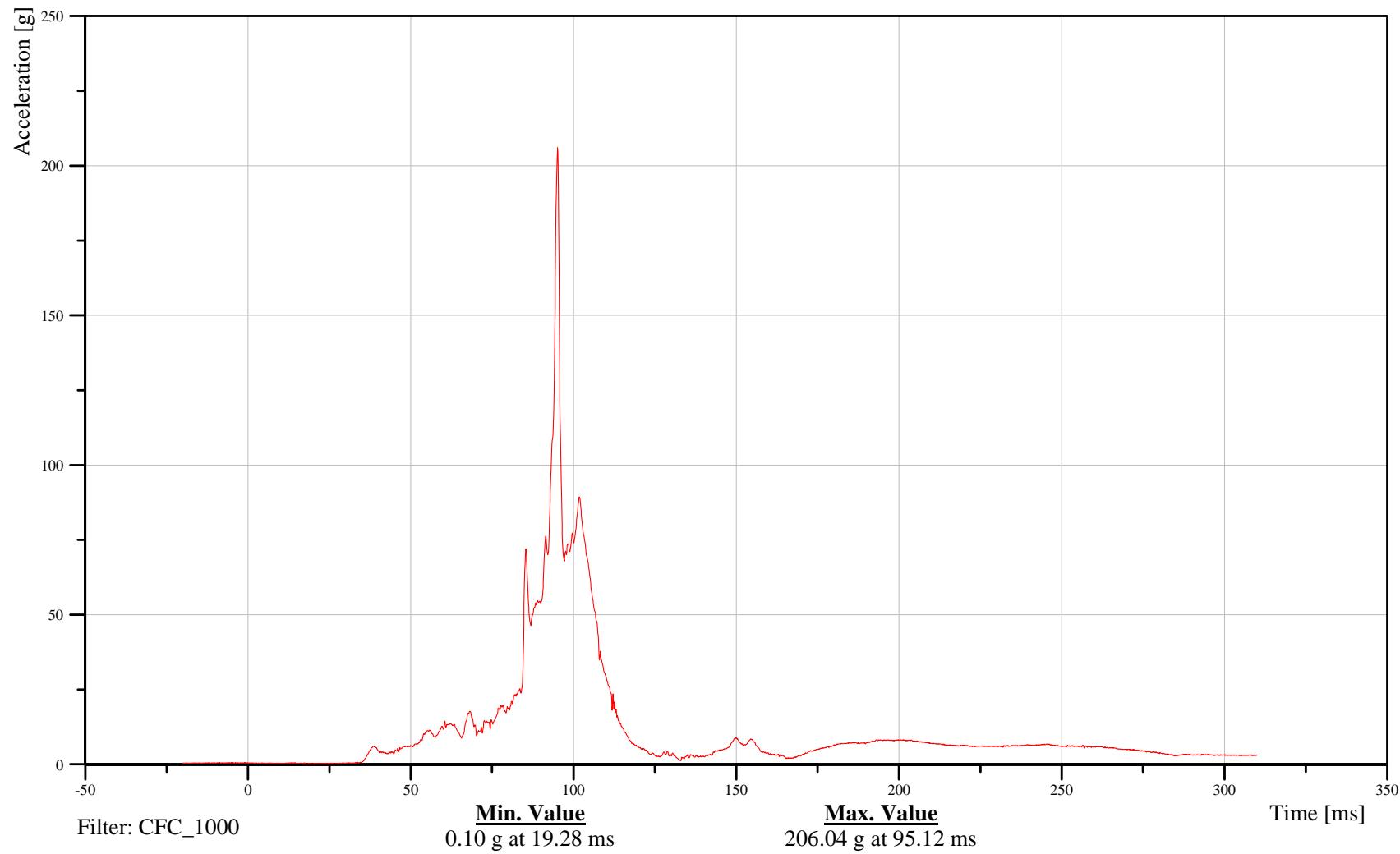
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11HEADCGRDH3ACRA

B-9

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Upper Neck X-Axis Force

Date: 11/17/2010  
Time: 14:40

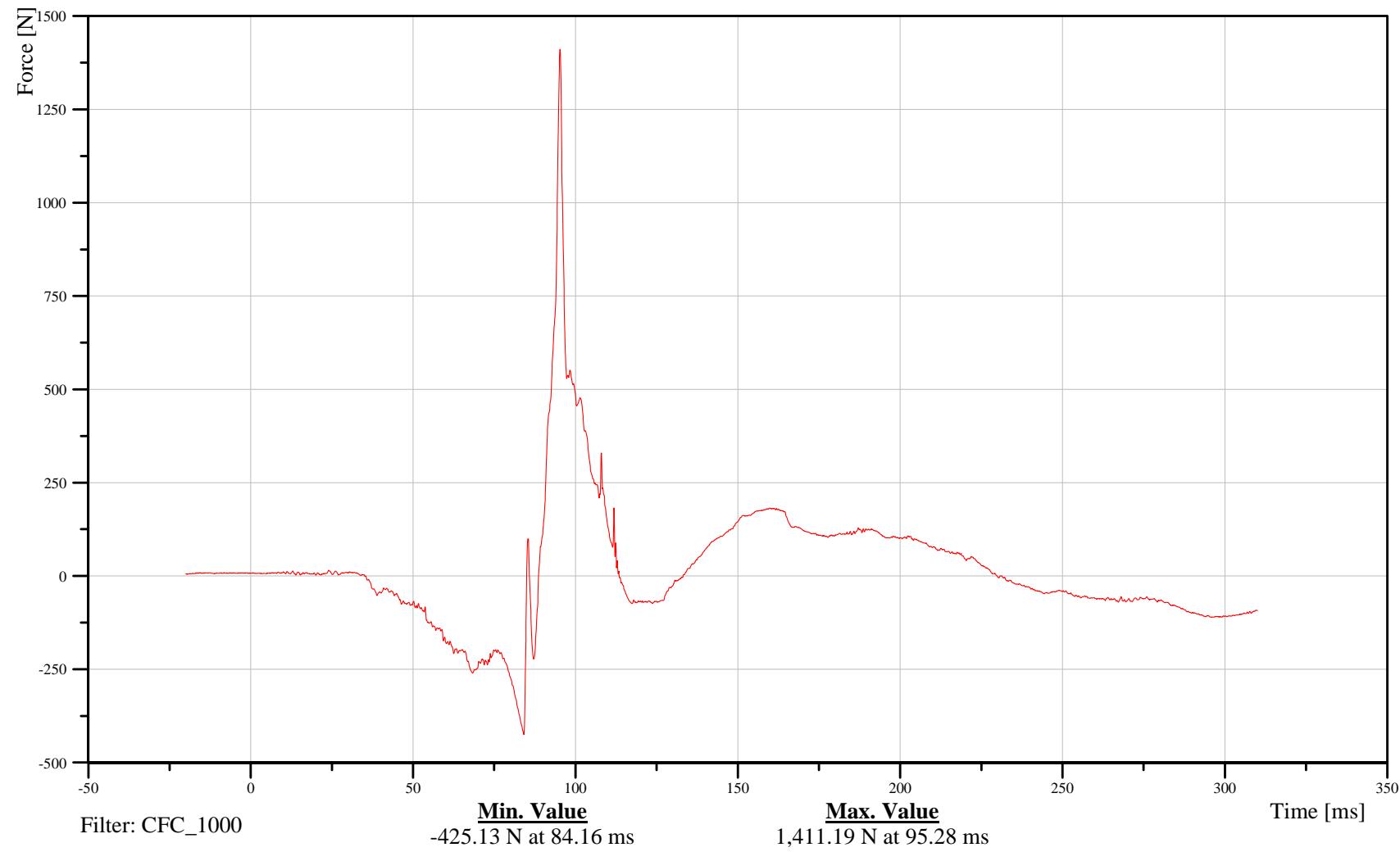
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11NECKUP00H3FOXA

B-10

101116





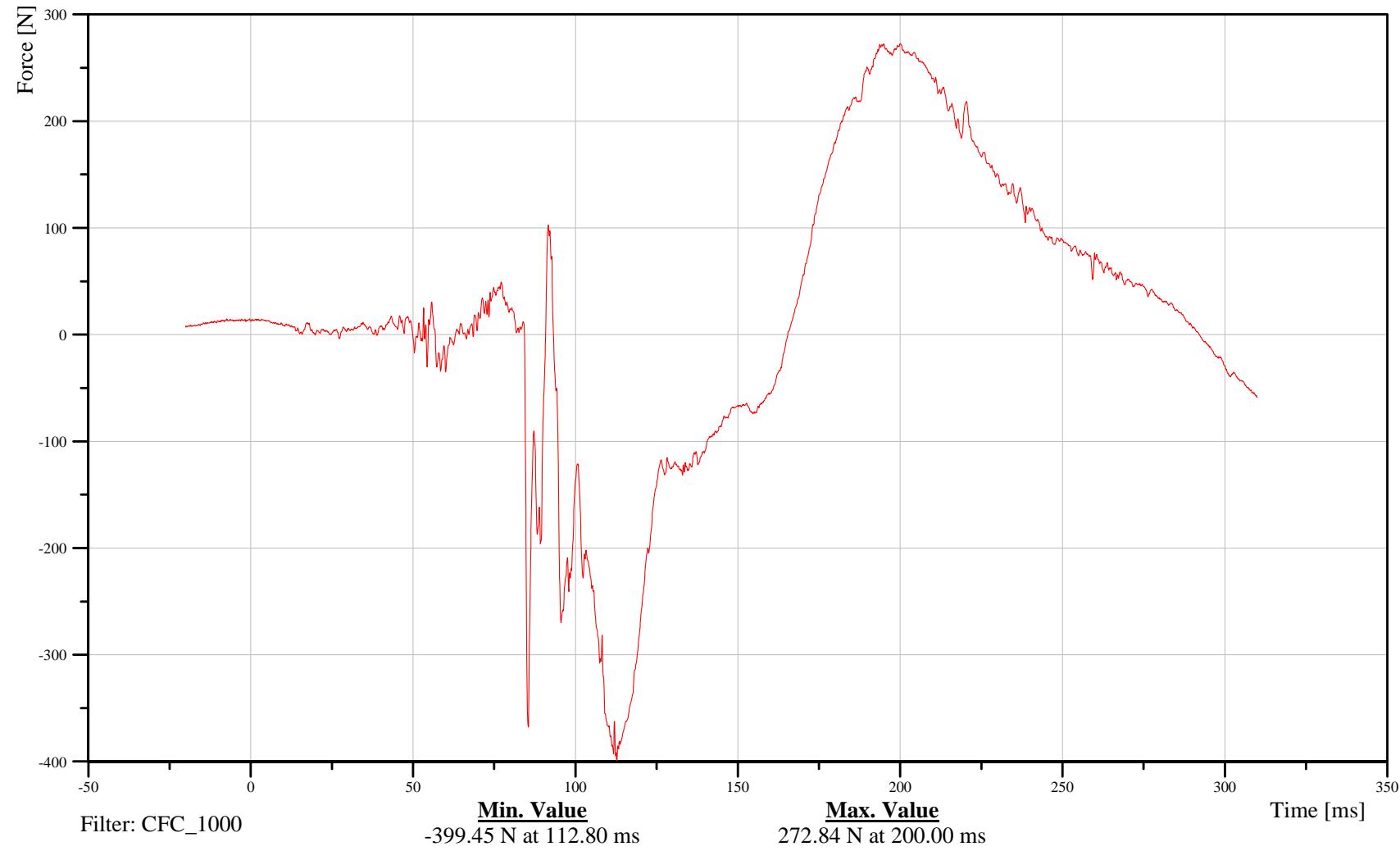
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Upper Neck Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11NECKUP00H3FOYA





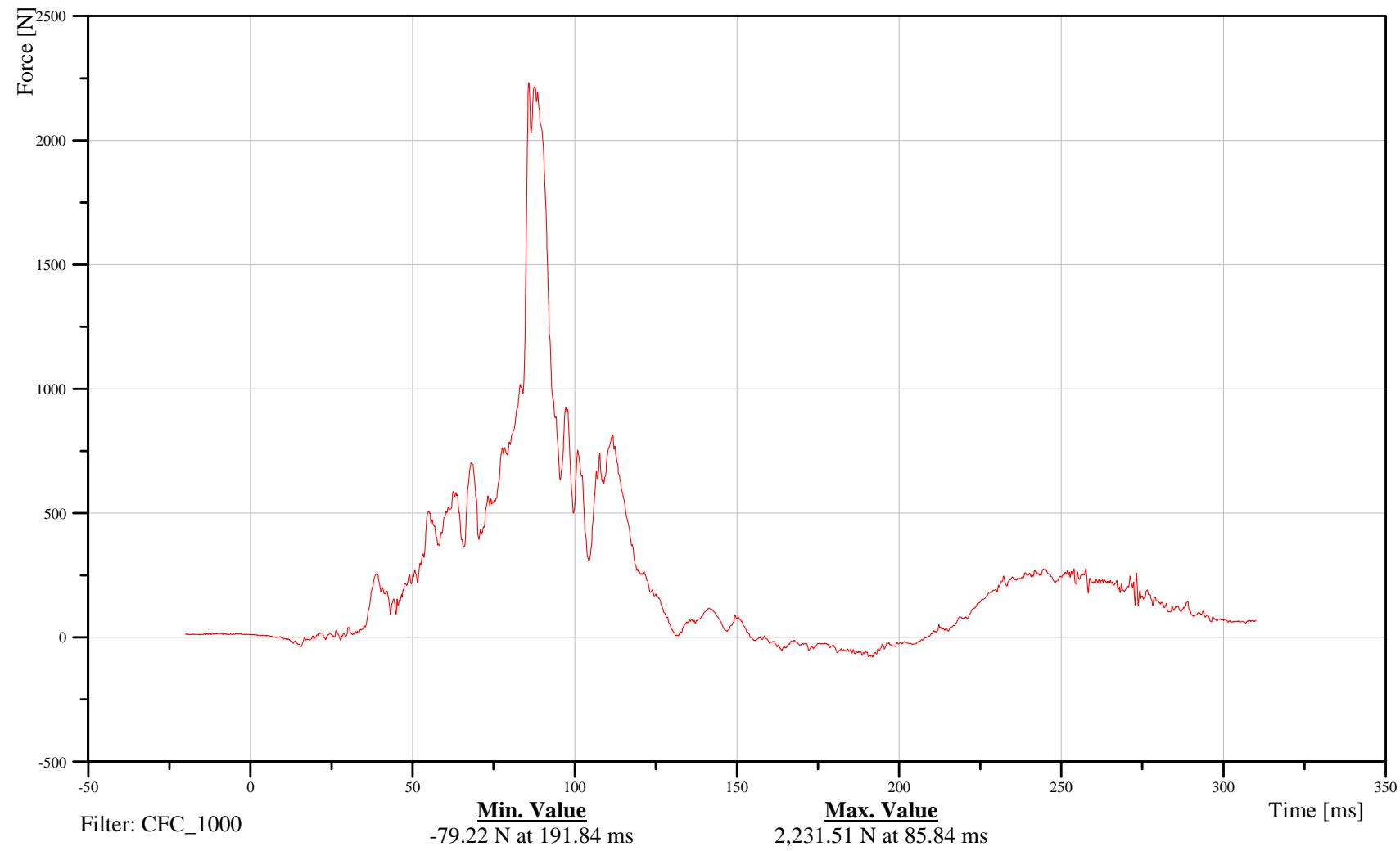
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Upper Neck Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





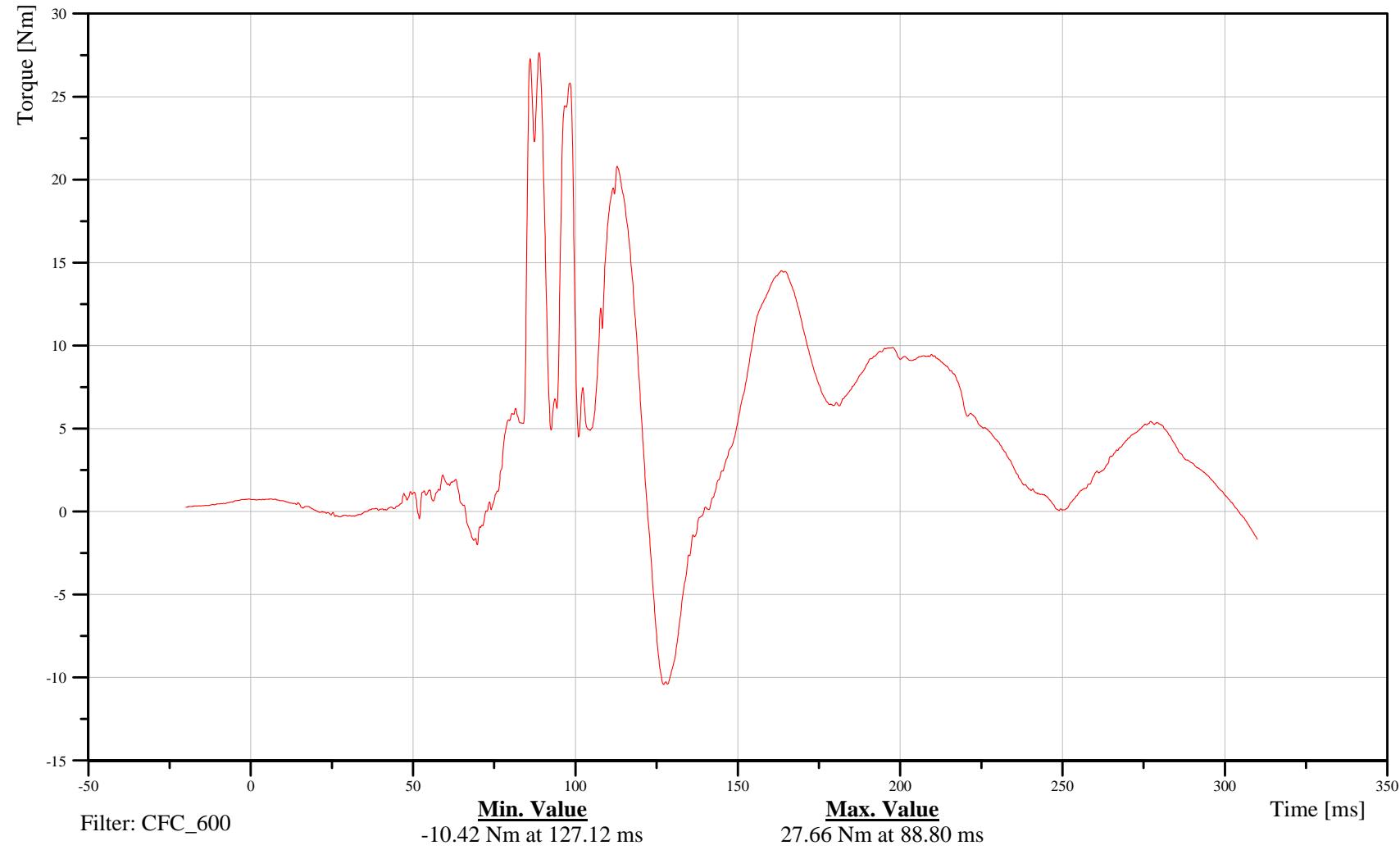
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Upper Neck Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





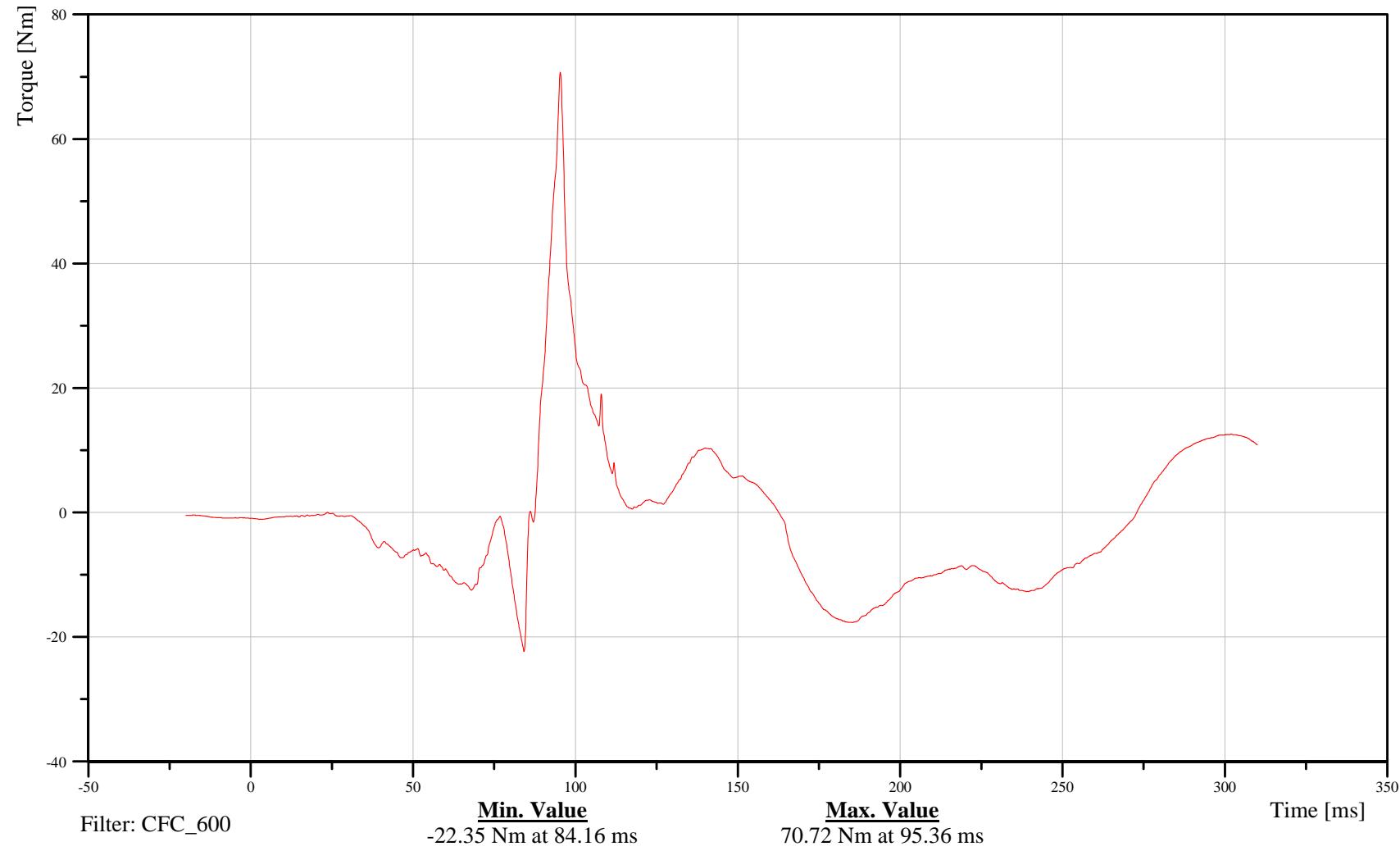
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Upper Neck Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Upper Neck Moment About Z Axis

Date: 11/17/2010  
Time: 14:40

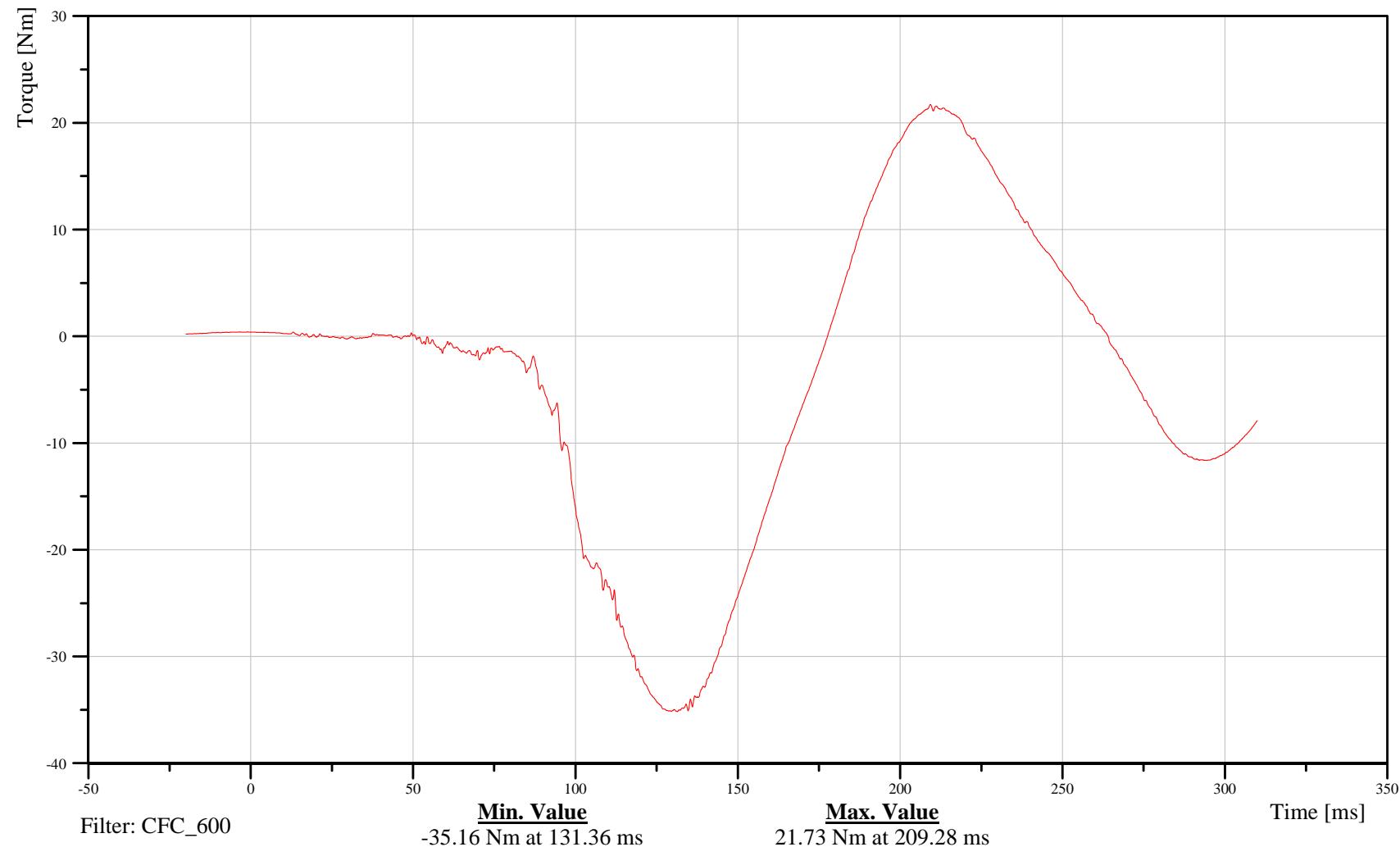
Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-15

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest X-Axis Acceleration

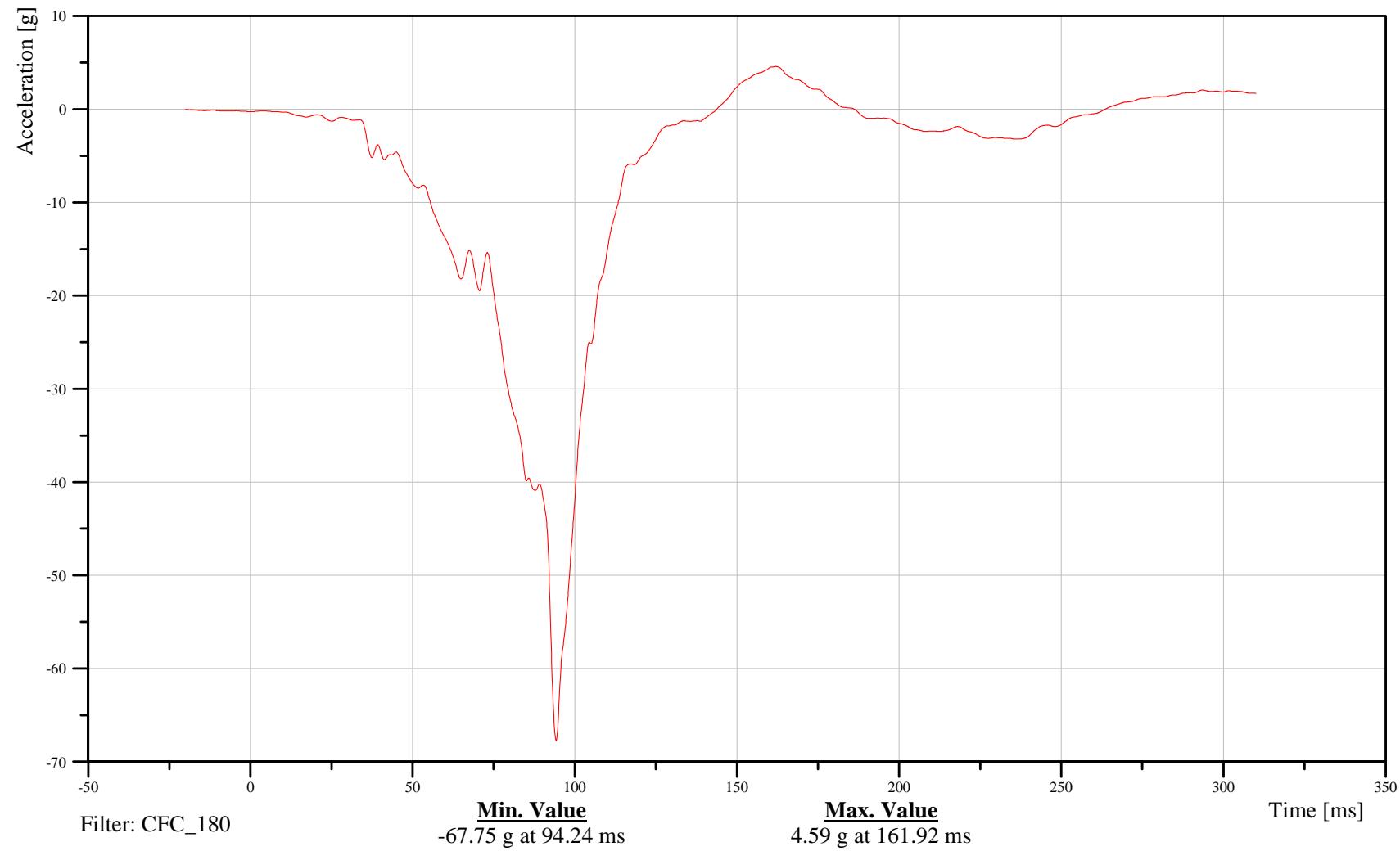
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-16  
101116





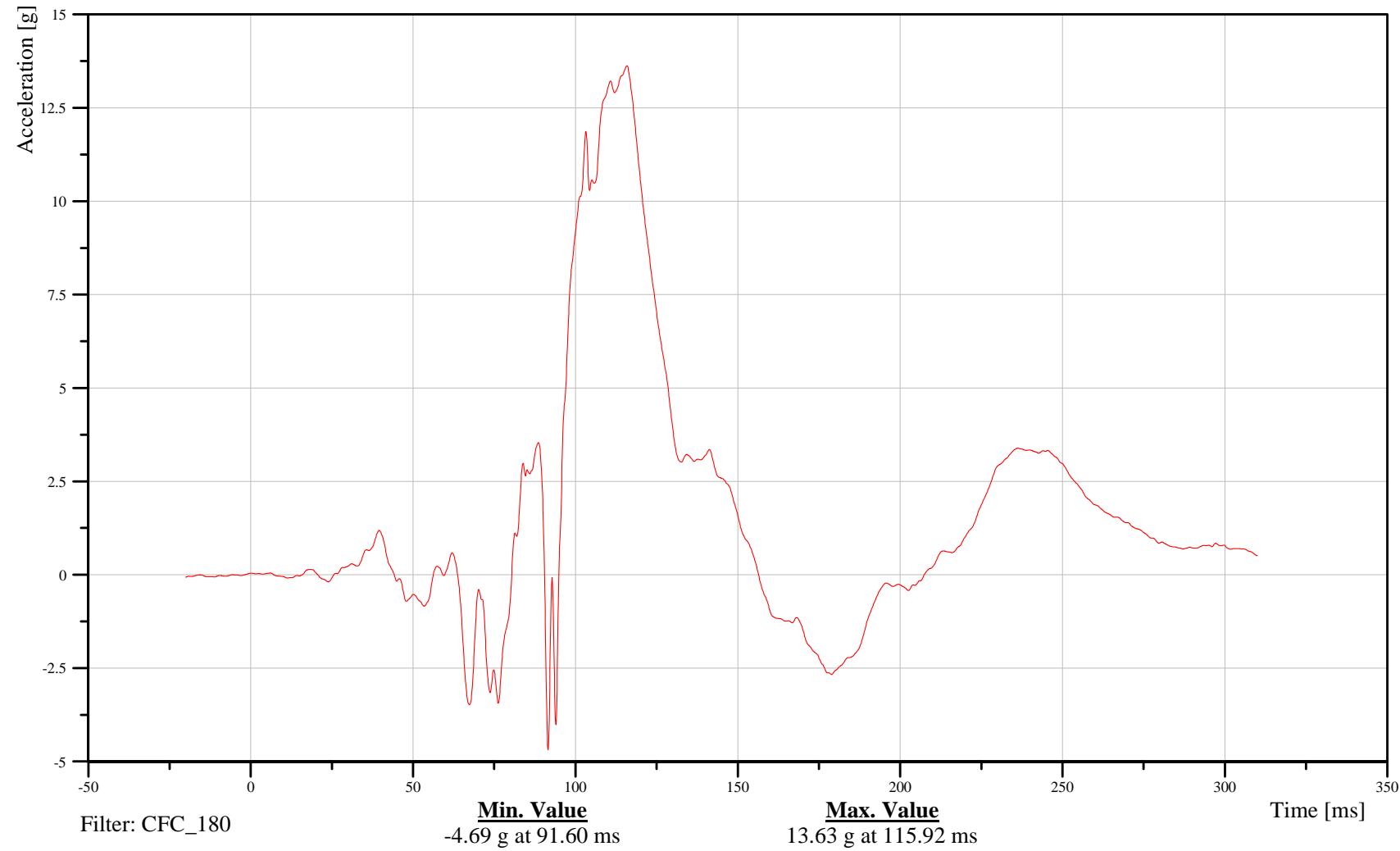
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

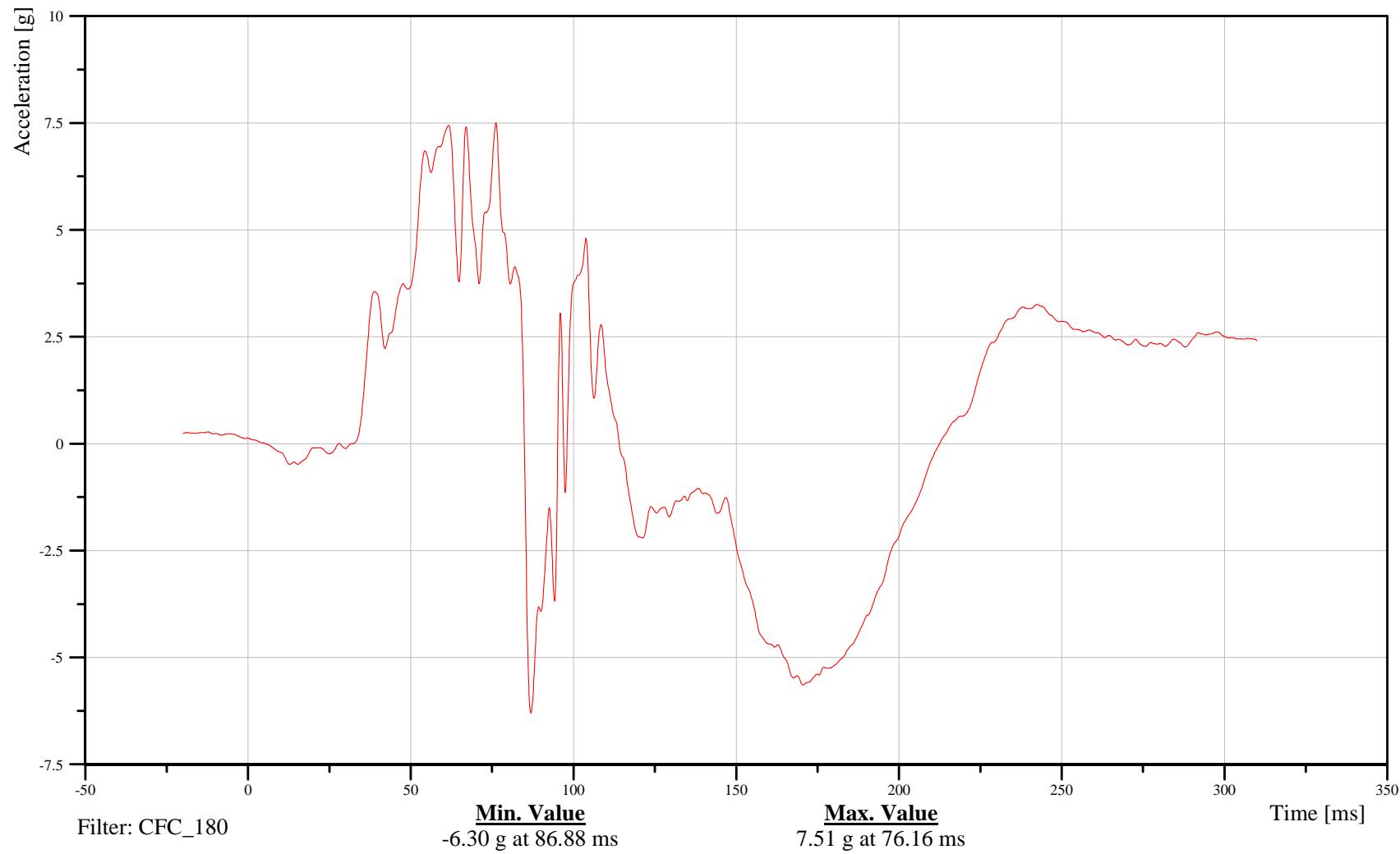
Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-18

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

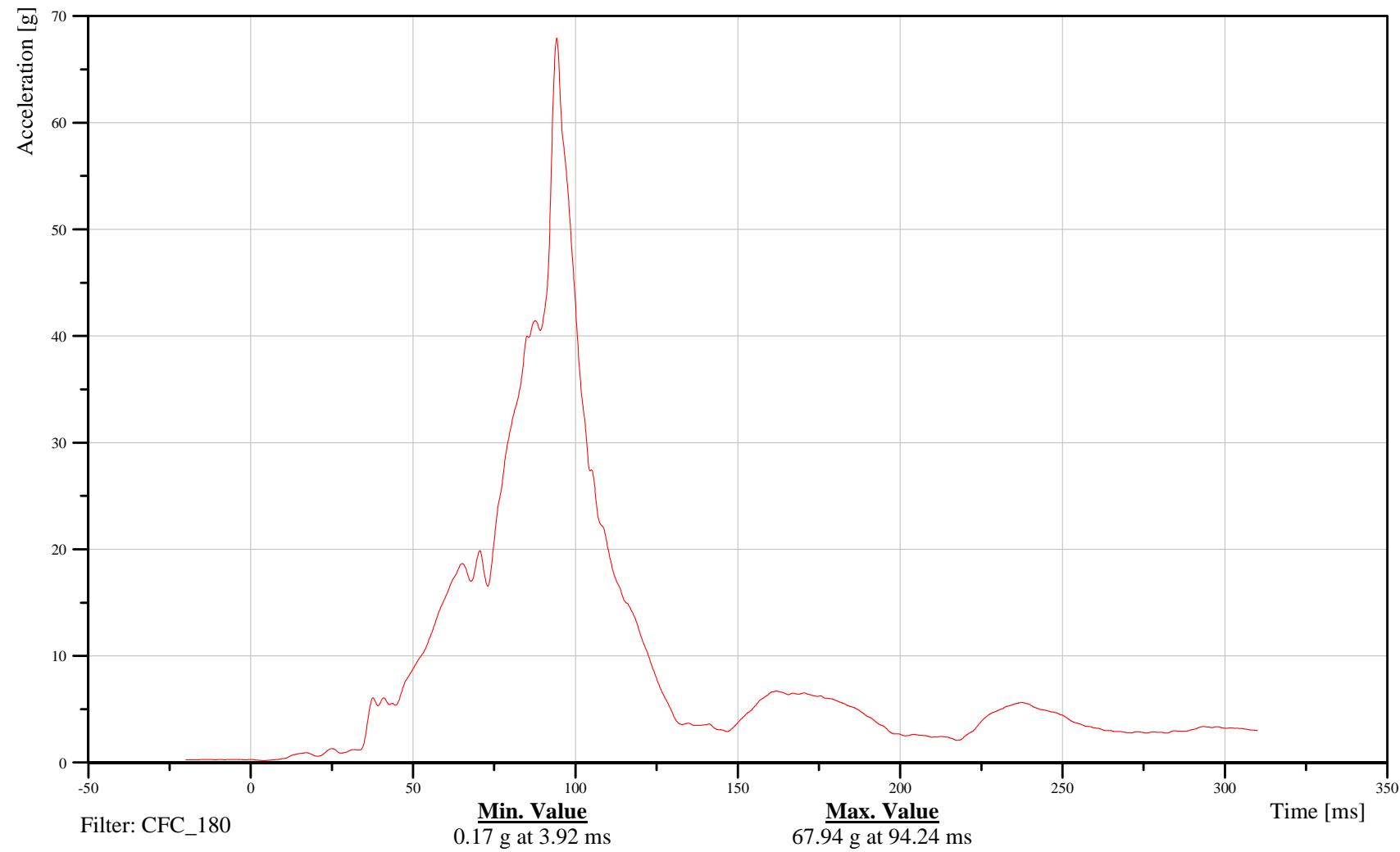
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11CHSTCG00H3ACRC

B-19

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Redundant X-Axis Acceleration

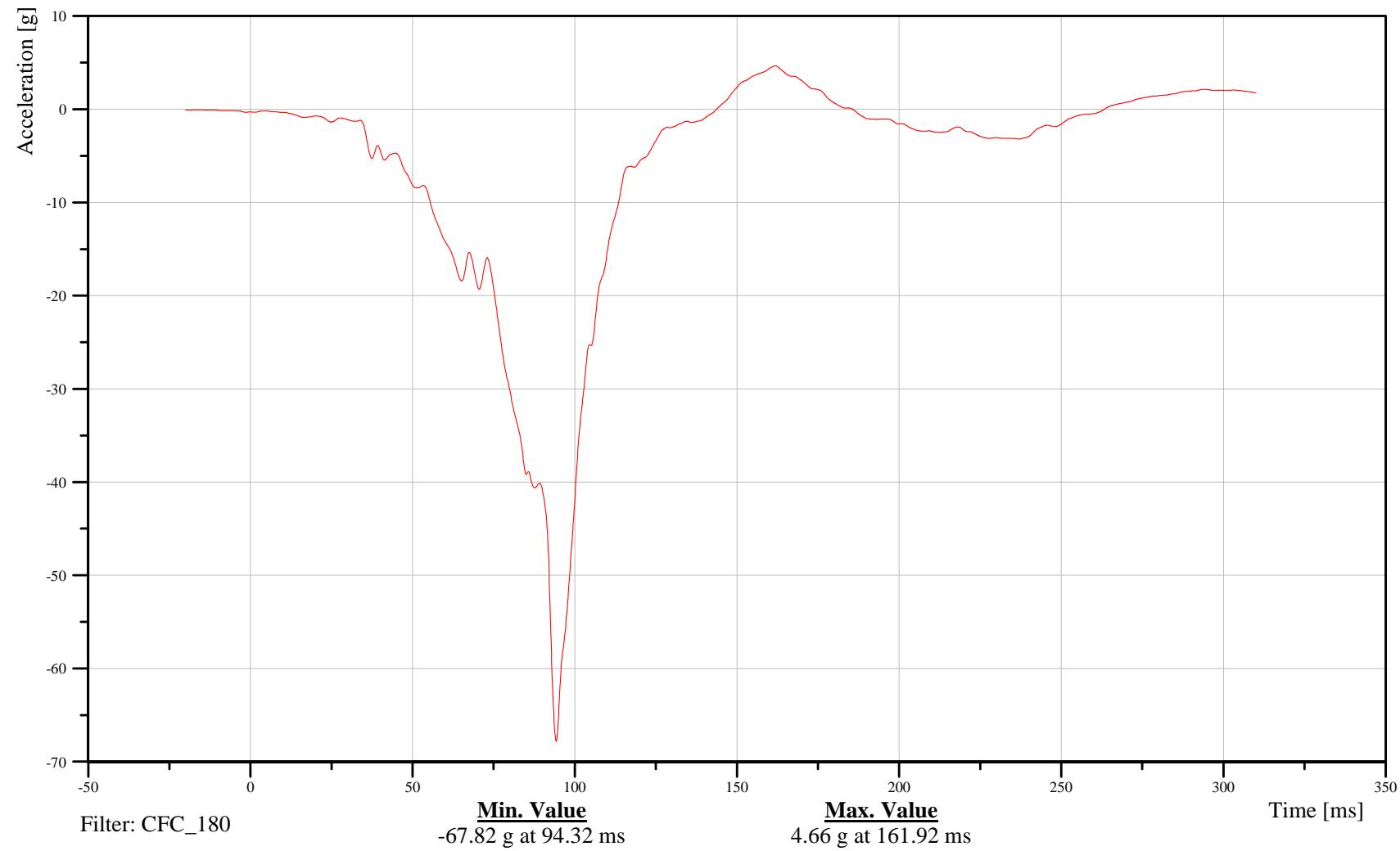
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-20  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Redundant Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

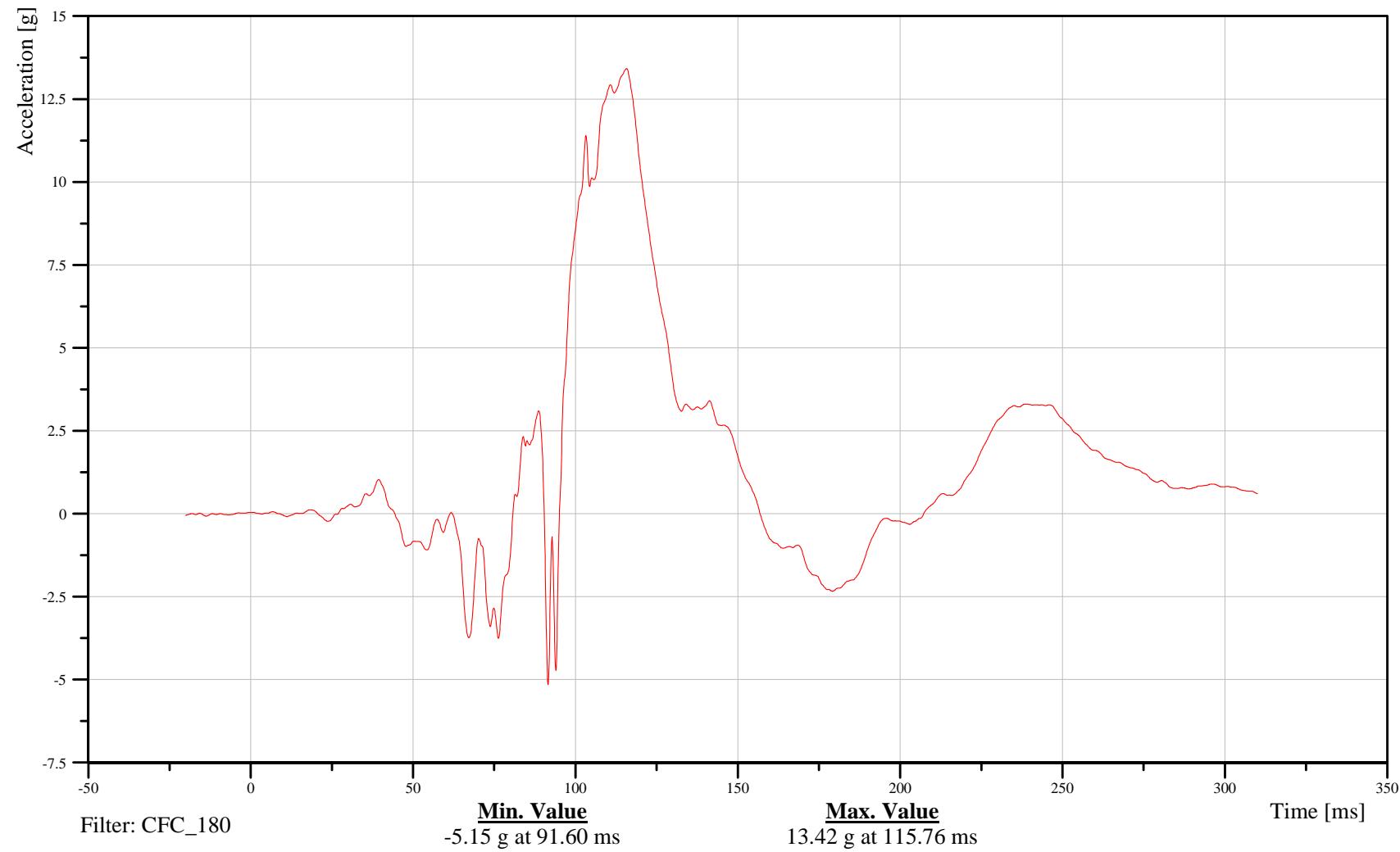
Customer: VRTC

11CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-21

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Redundant Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

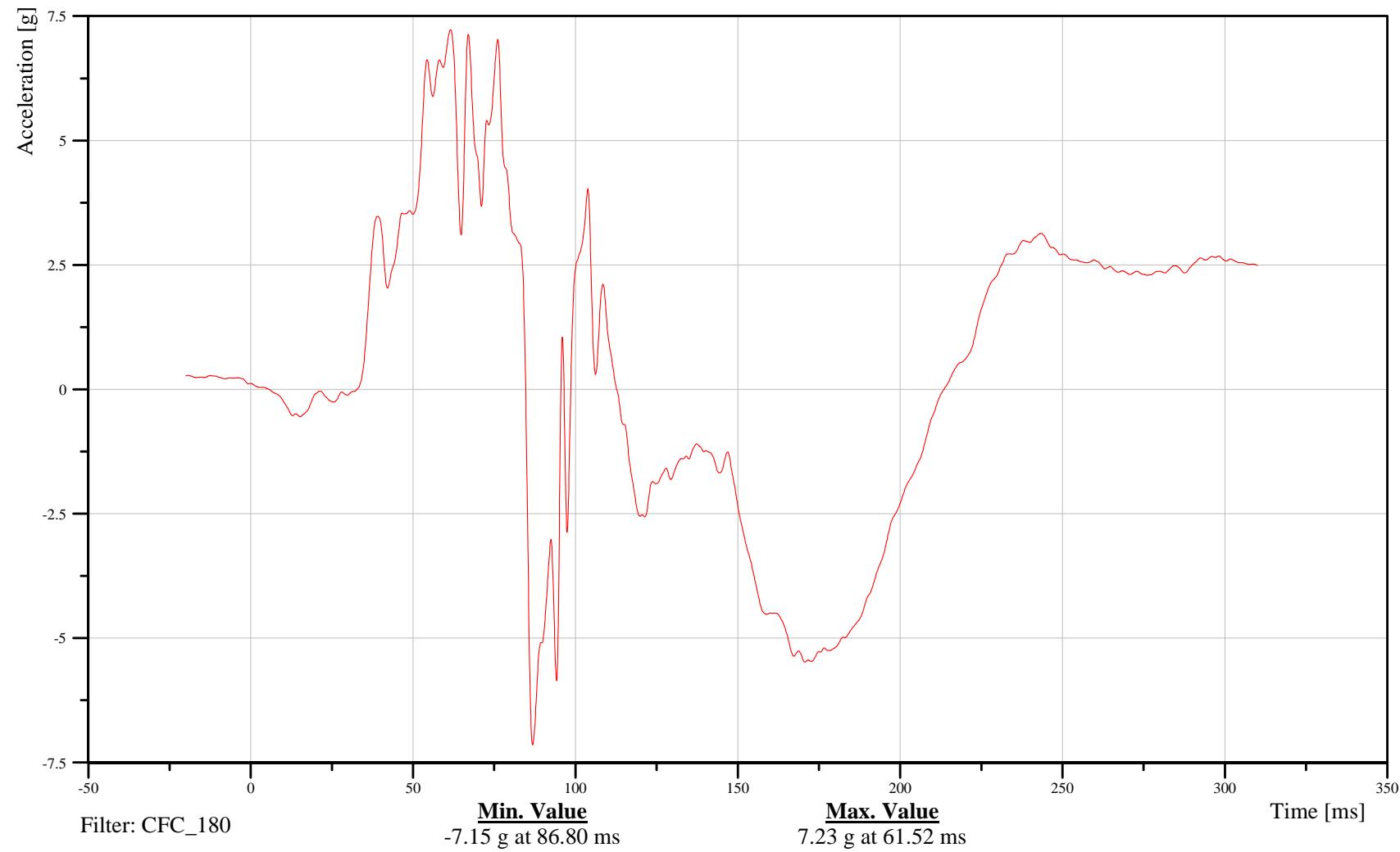
Customer: VRTC

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-22

101116





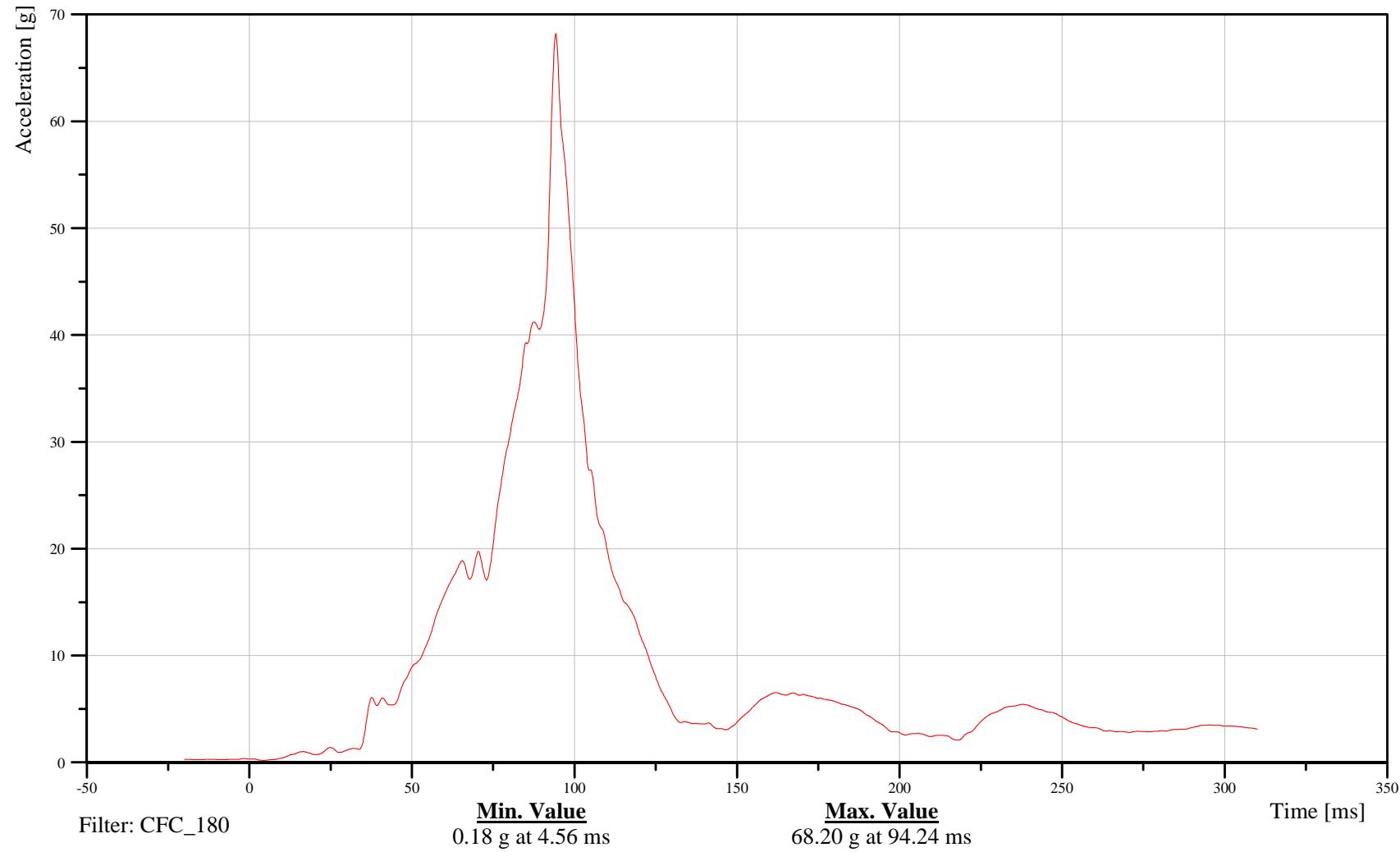
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest Redundant Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11CHSTCGRDH3ACRC





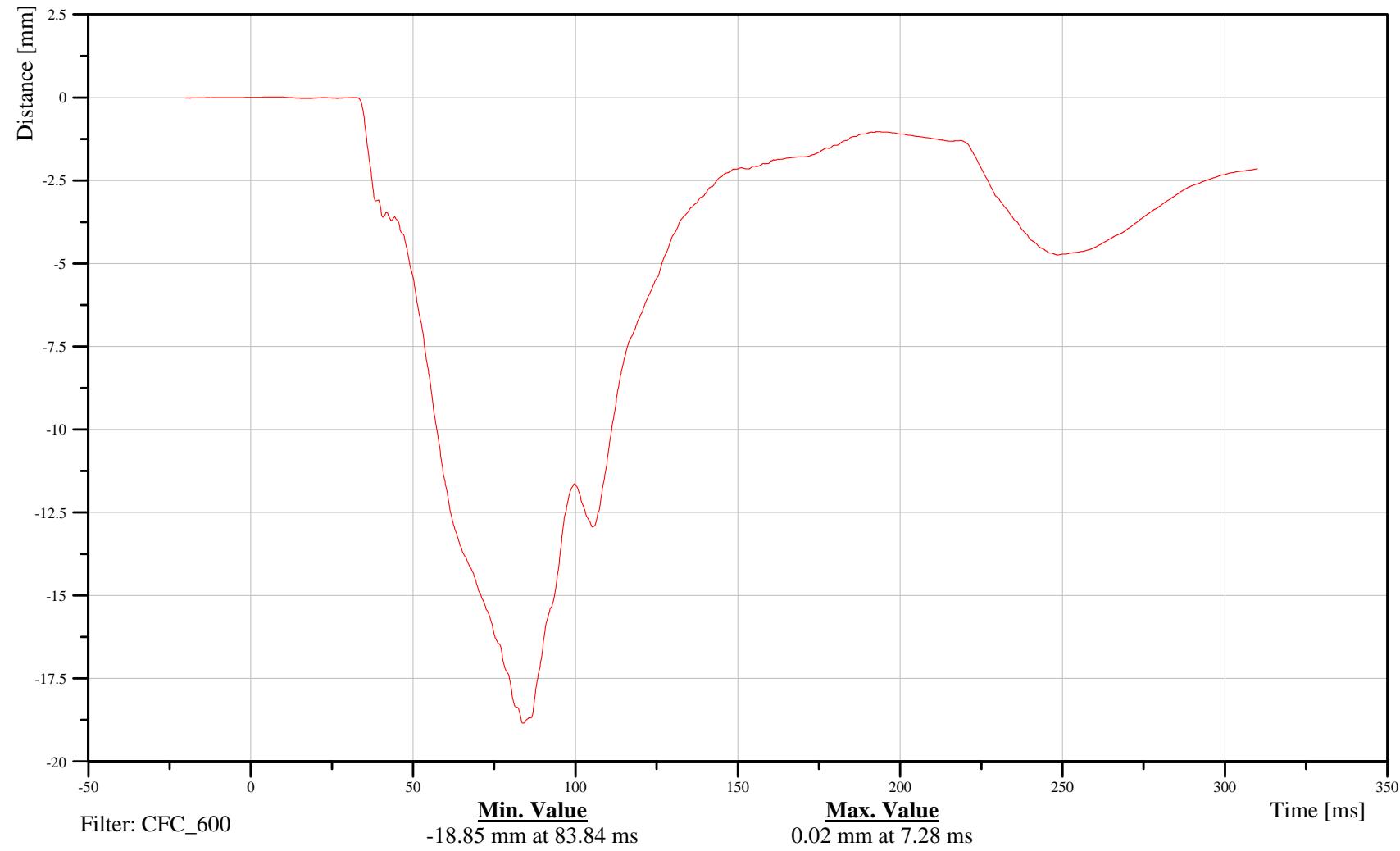
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Chest X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11CHST0000H3DSXB



101116



Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Pelvis X-Axis Acceleration

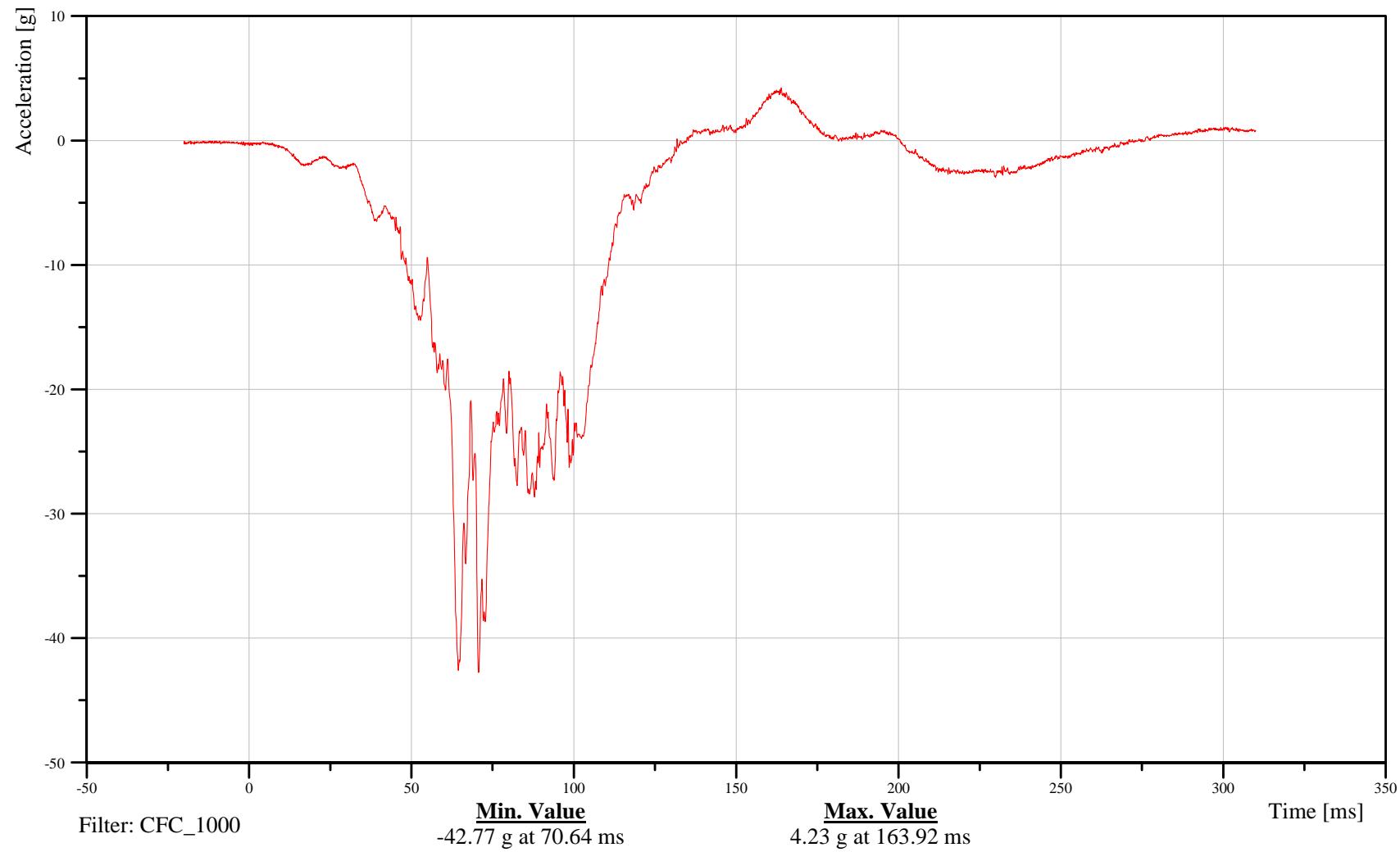
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11PELVCG00H3ACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-25  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Pelvis Y-Axis Acceleration

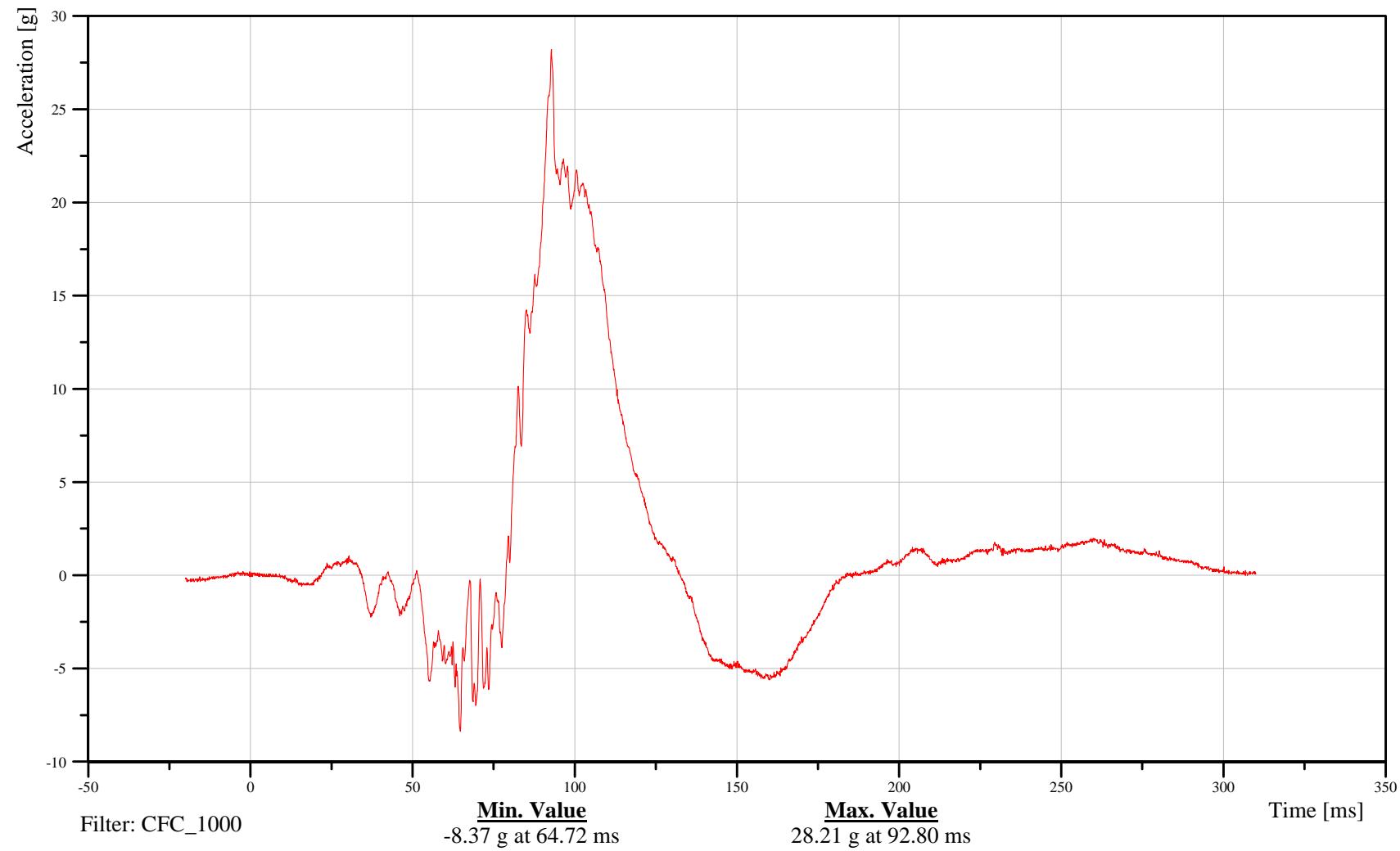
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11PELVCG00H3ACYA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-26  
101116





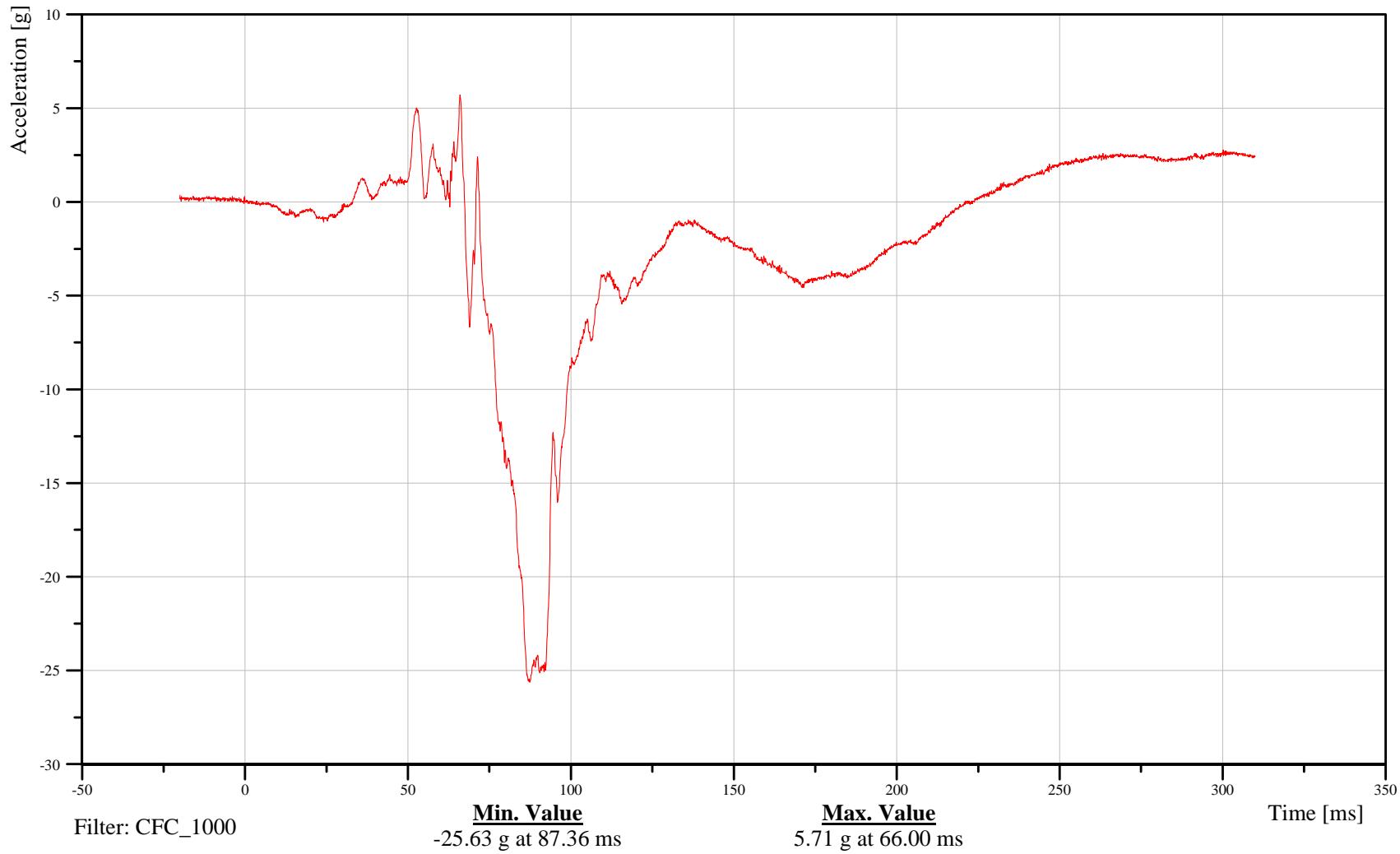
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Pelvis Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11PELVCG00H3ACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Pelvis Resultant Acceleration

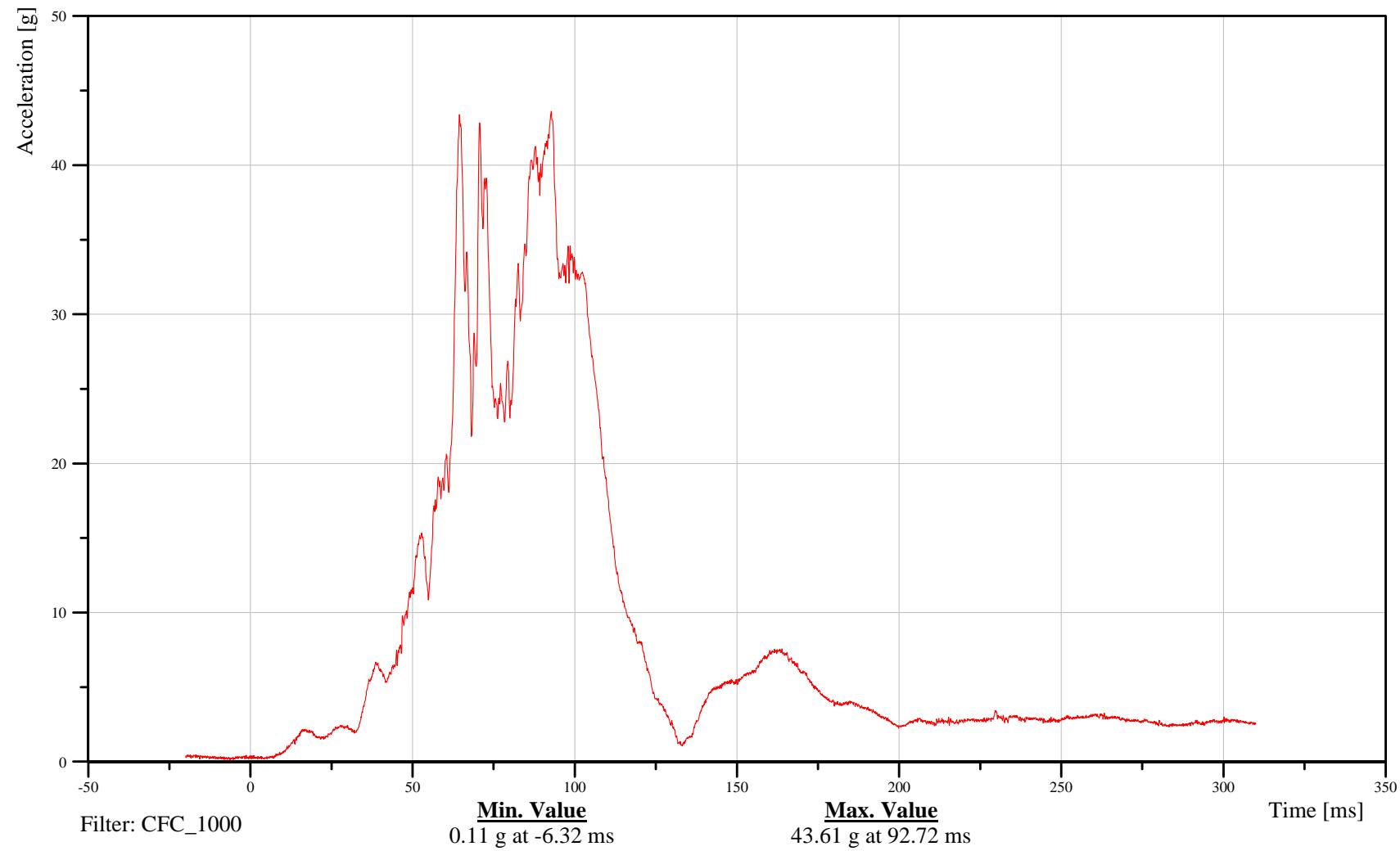
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11PELVCG00H3ACRA

B-28  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

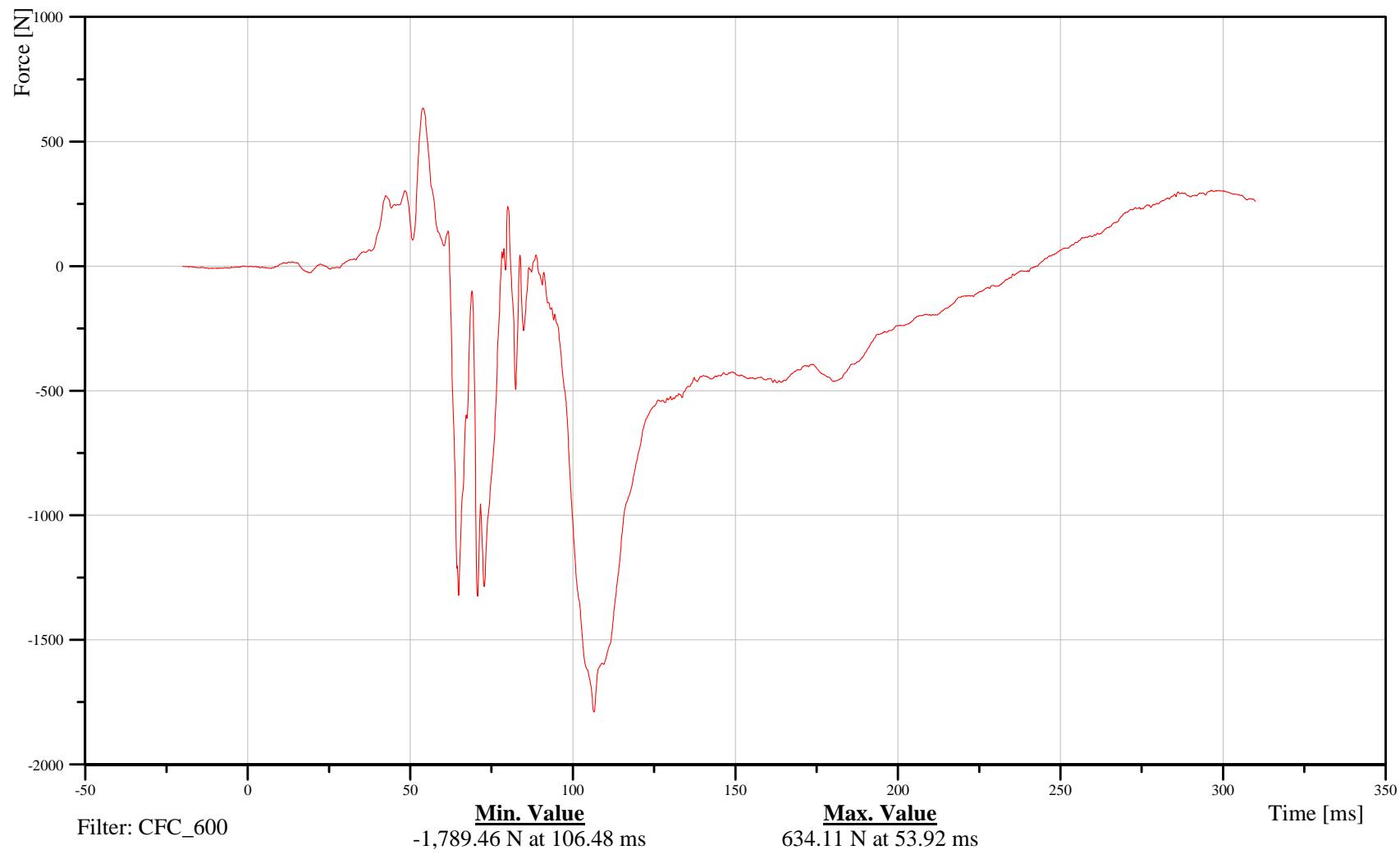
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FEMRLL00H3FOZB

B-29

101116





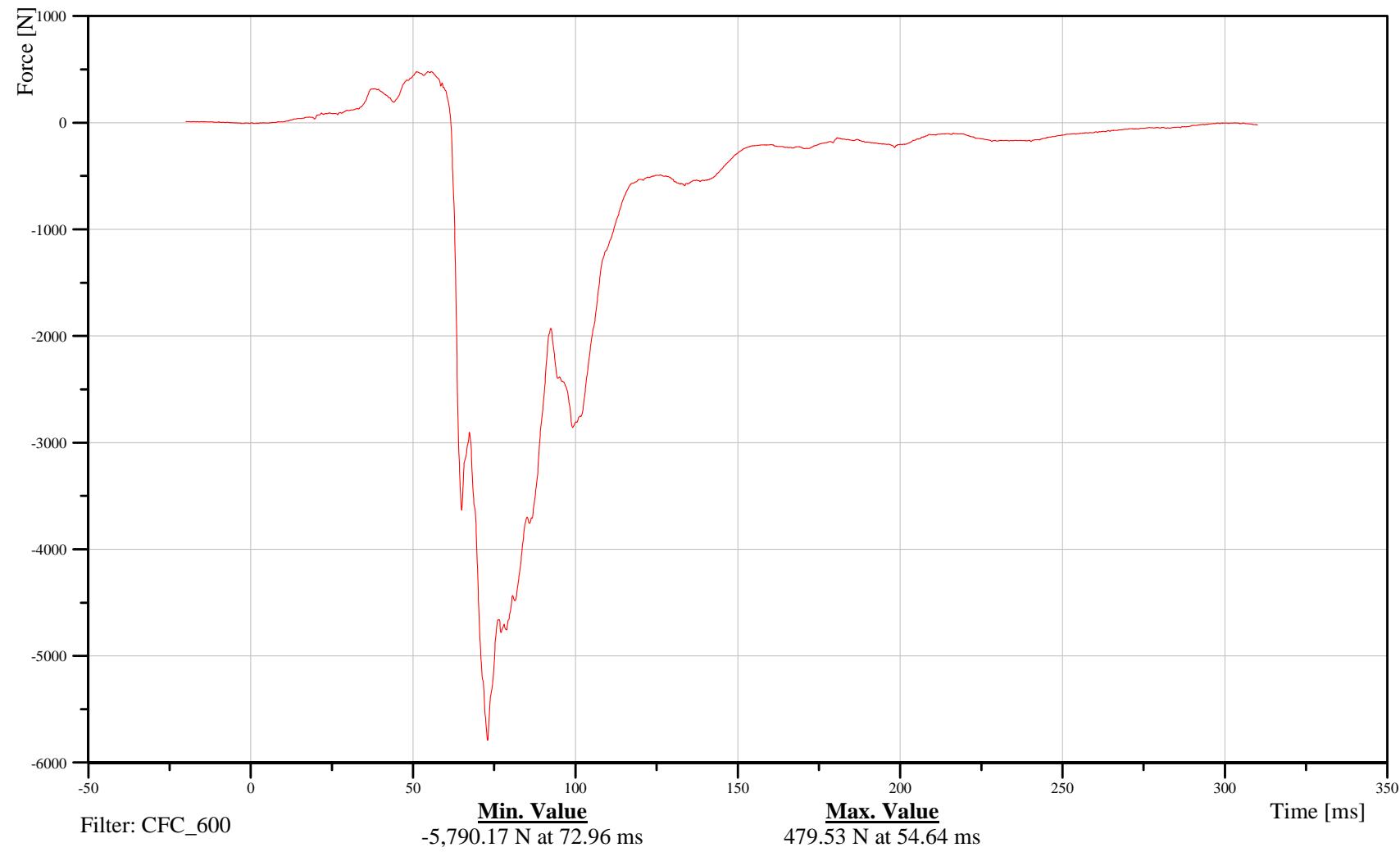
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FEMRRL00H3FOZB





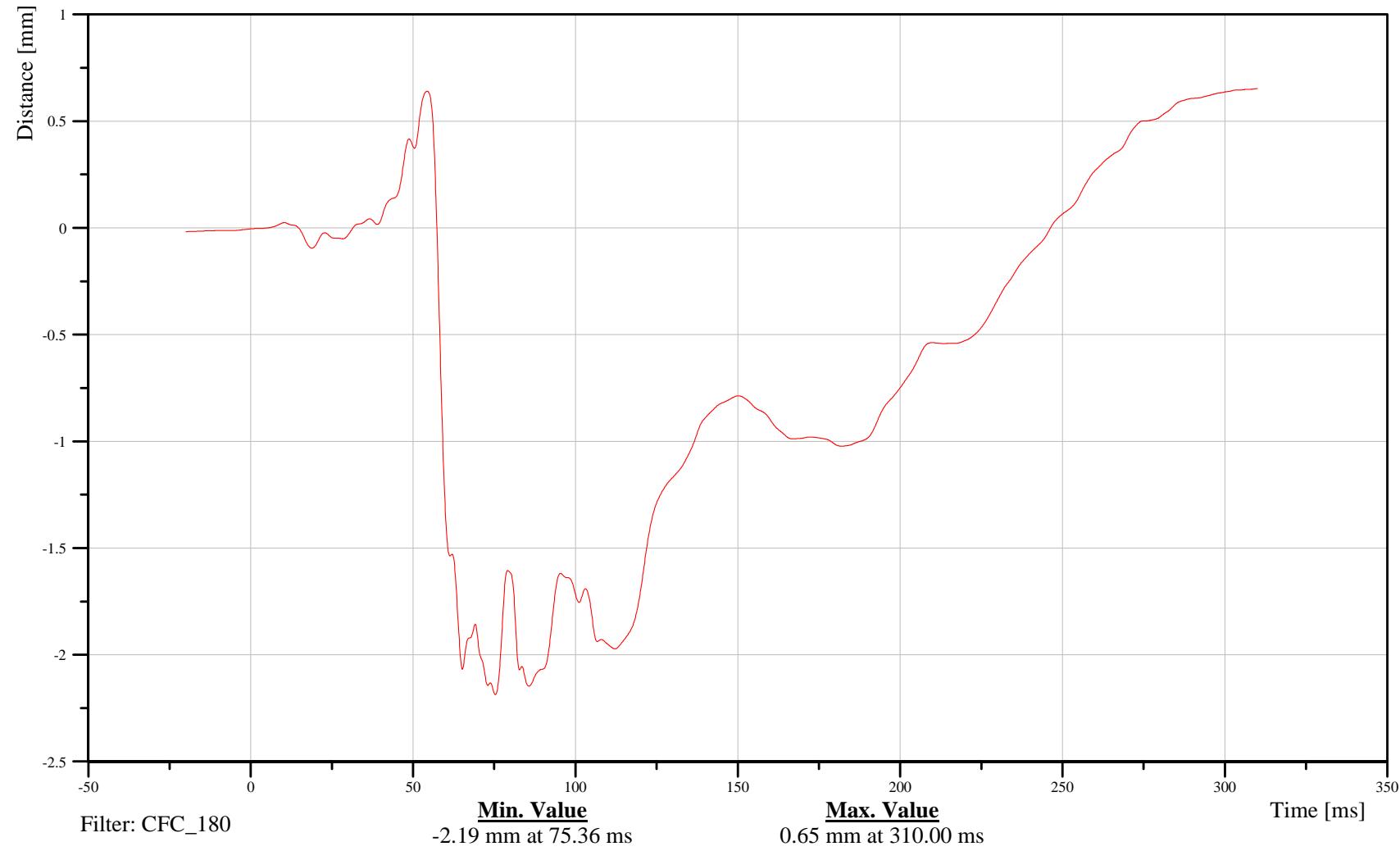
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Knee X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11KNSLLE00H3DSXC





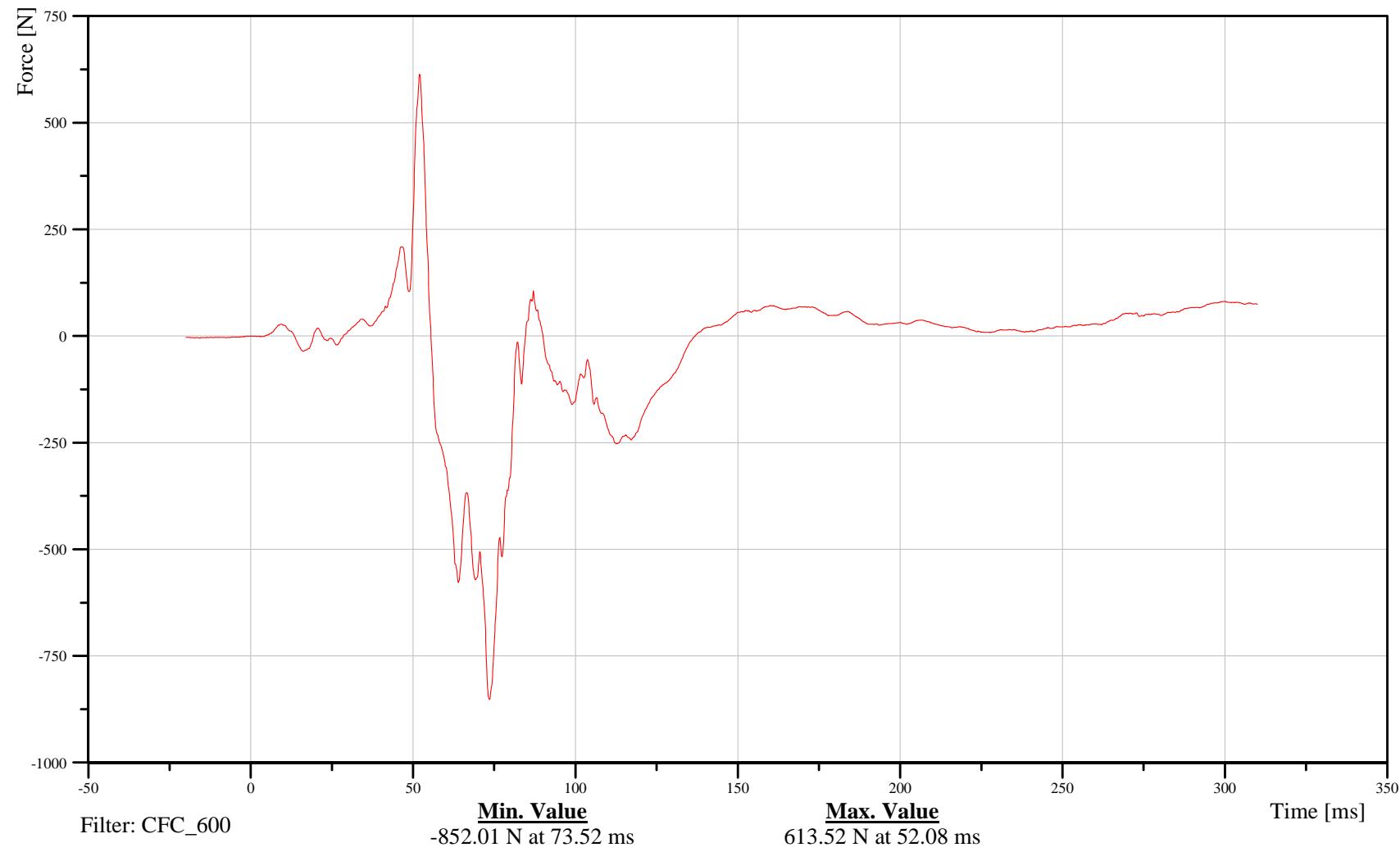
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Upper Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILULXH3FOXB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Upper Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

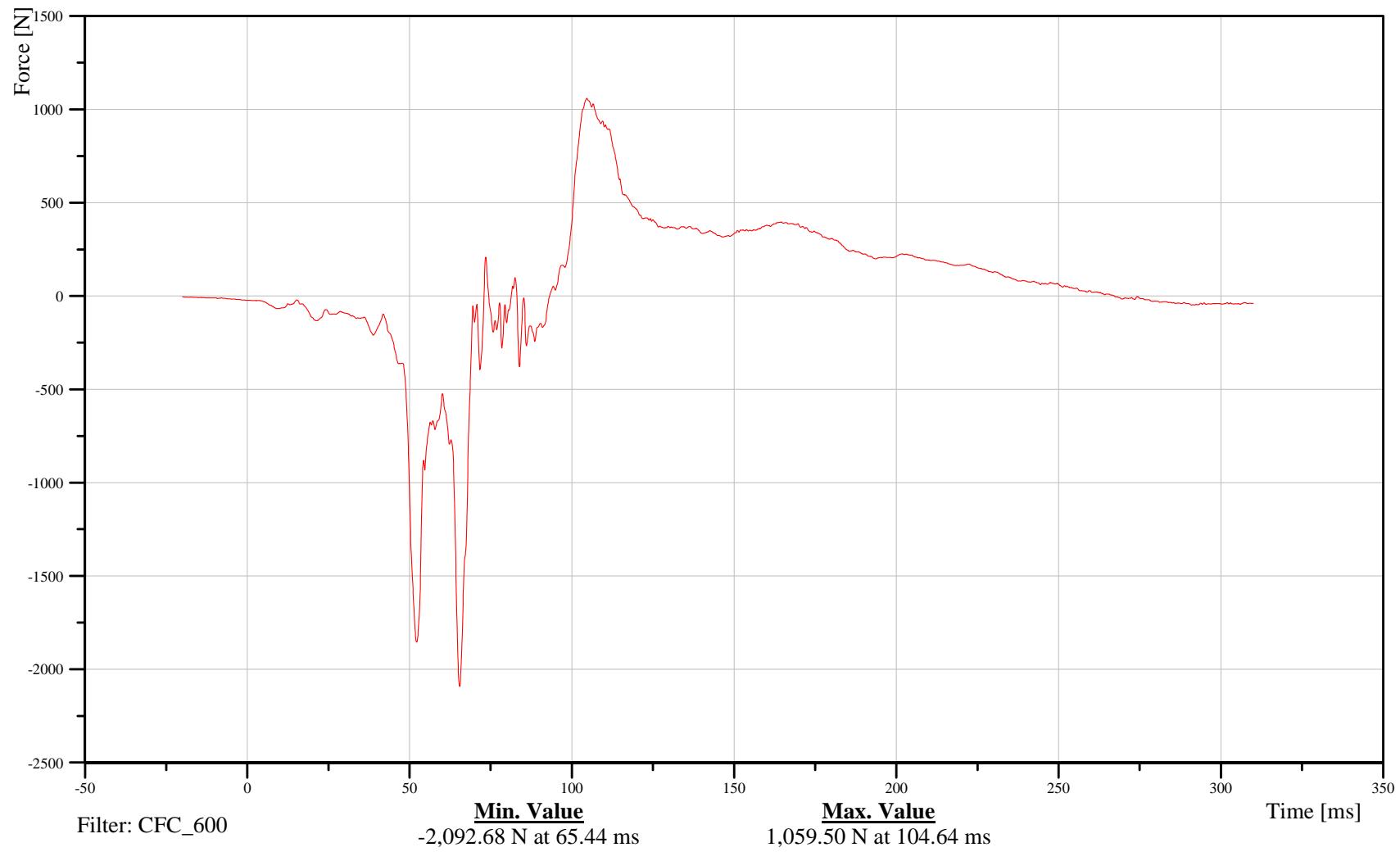
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILULXH3FOZB

B-33

101116





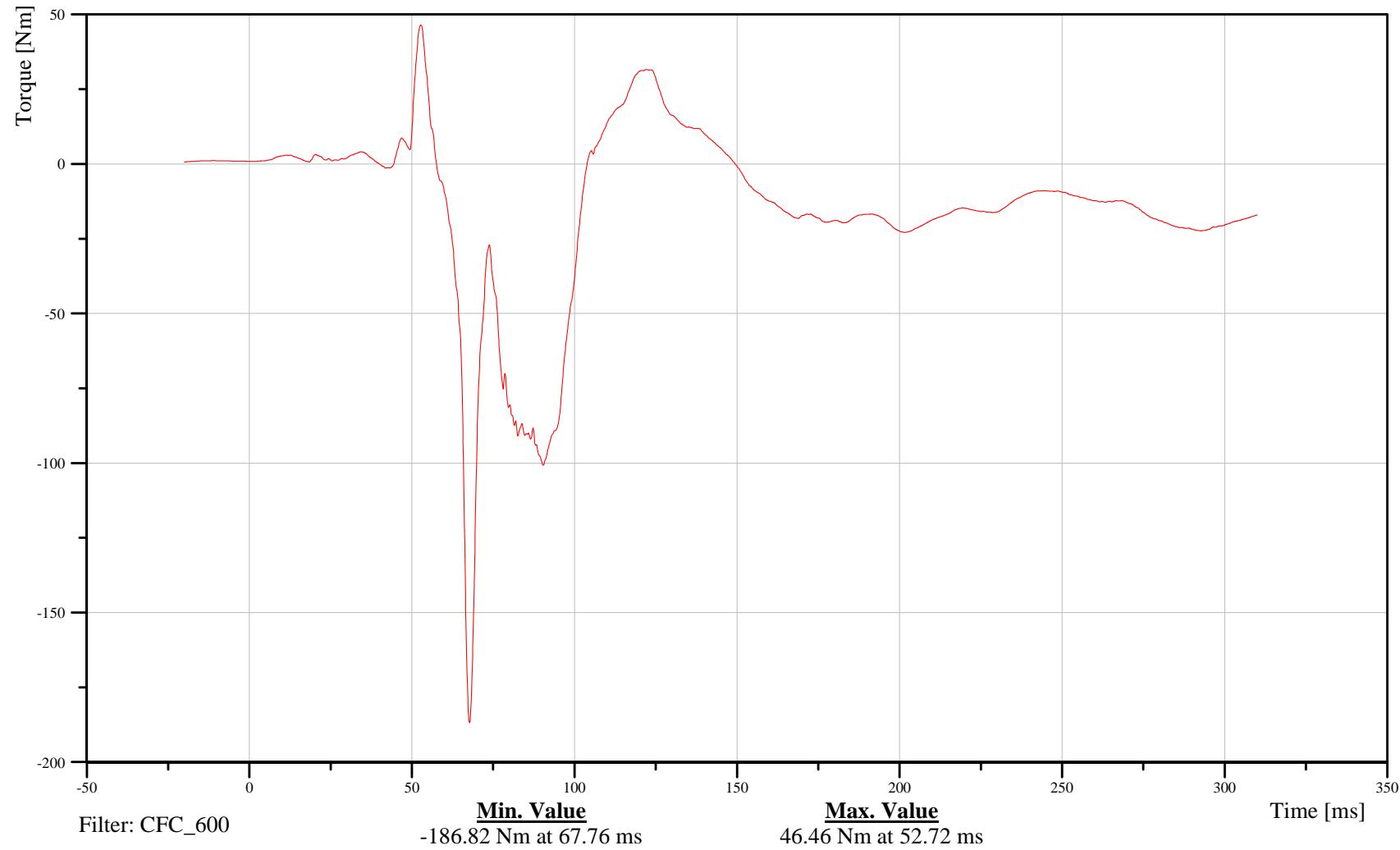
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Upper Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILULXH3MOXB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Upper Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

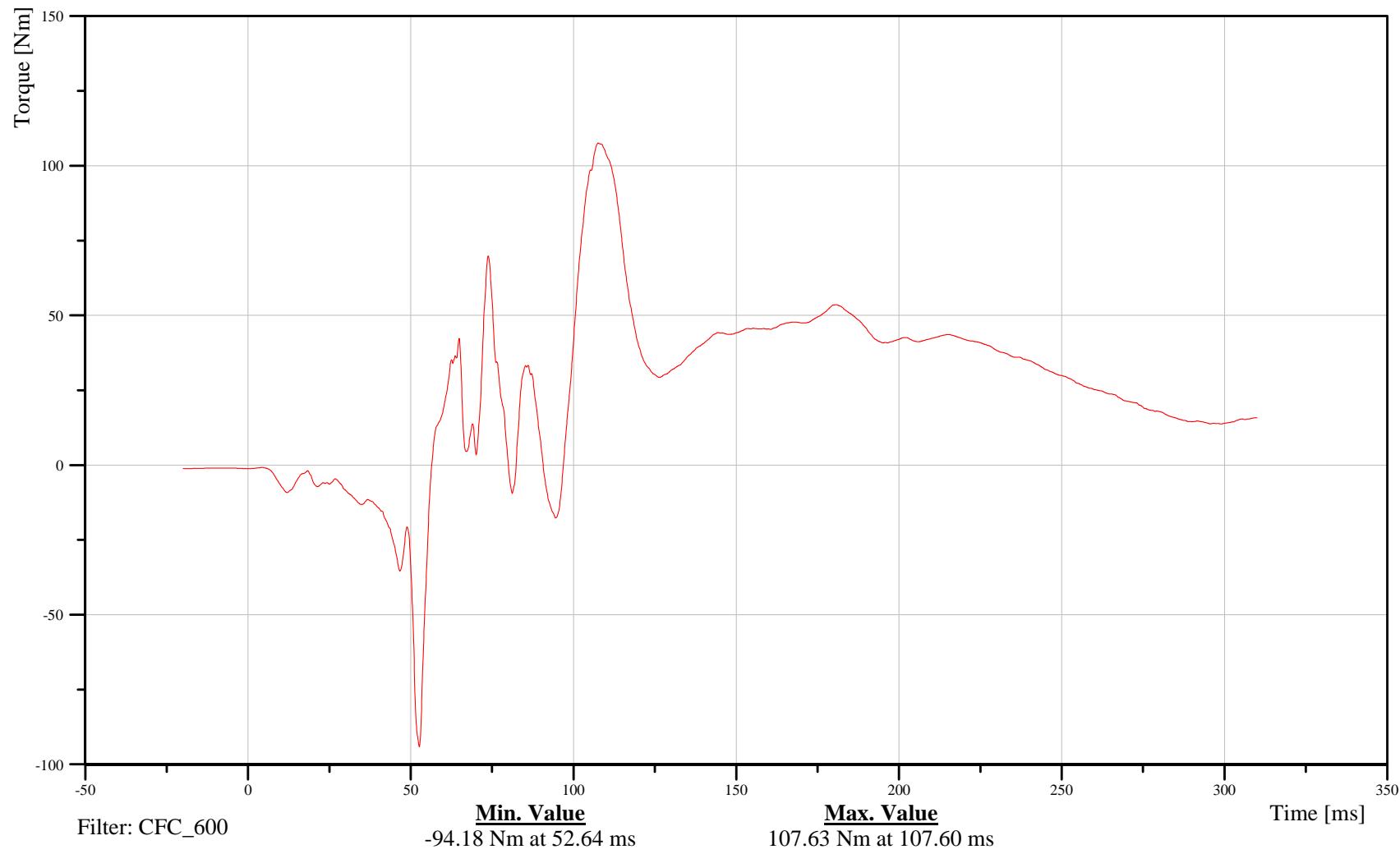
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILULXH3MOYB

B-35

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Lower Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

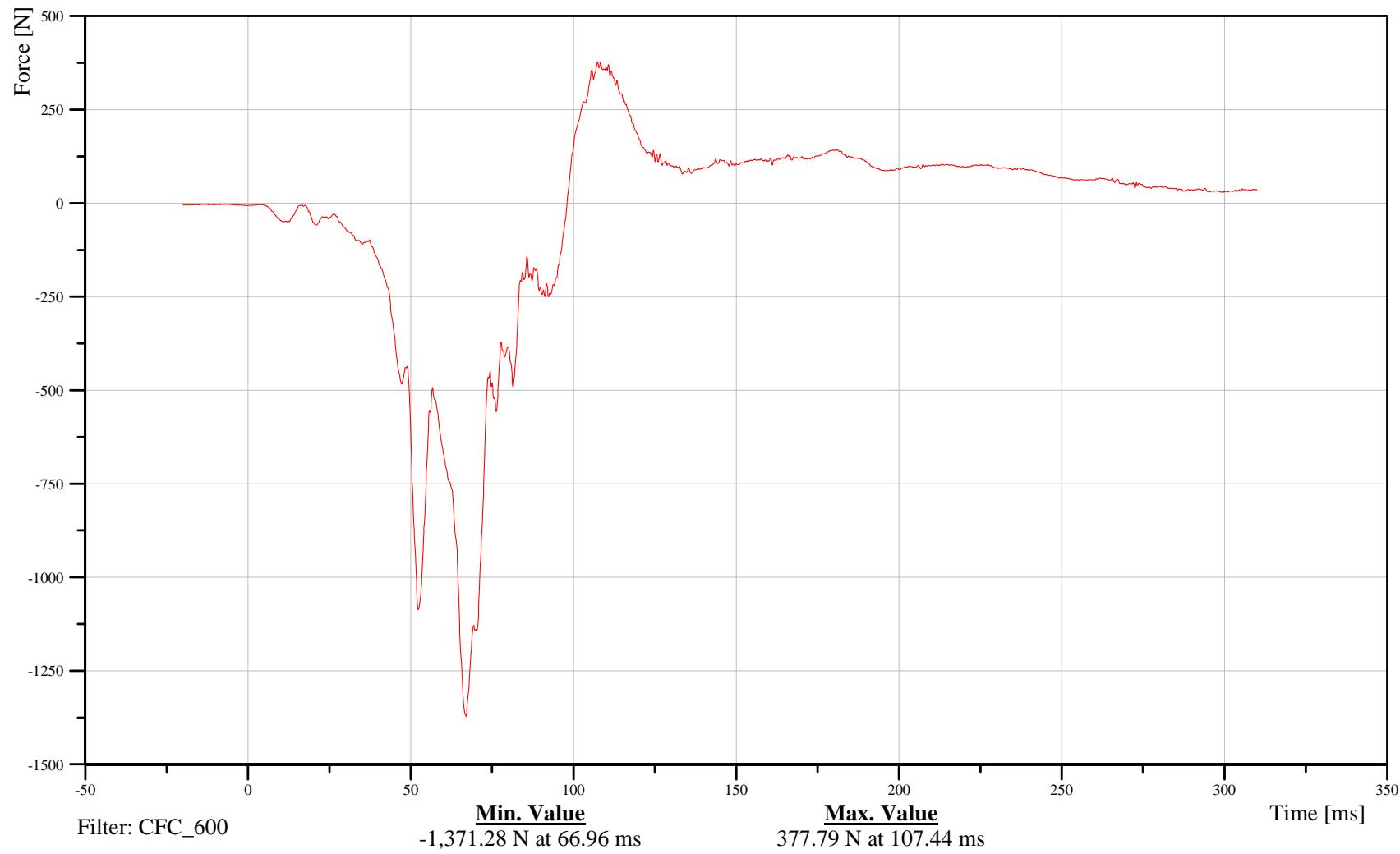
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILLXH3FOXB

B-36

101116





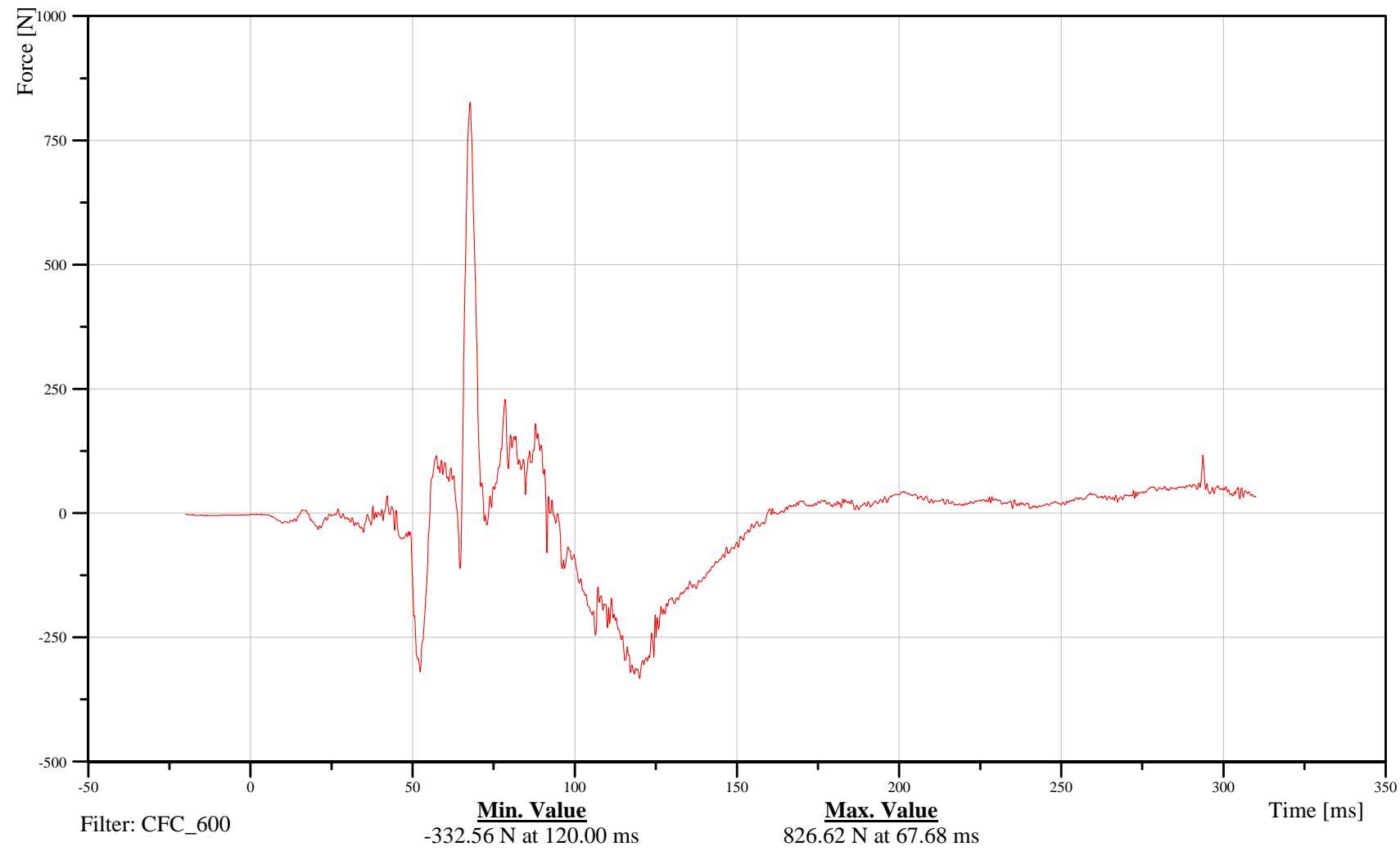
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Lower Tibia Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILLXH3FOYB





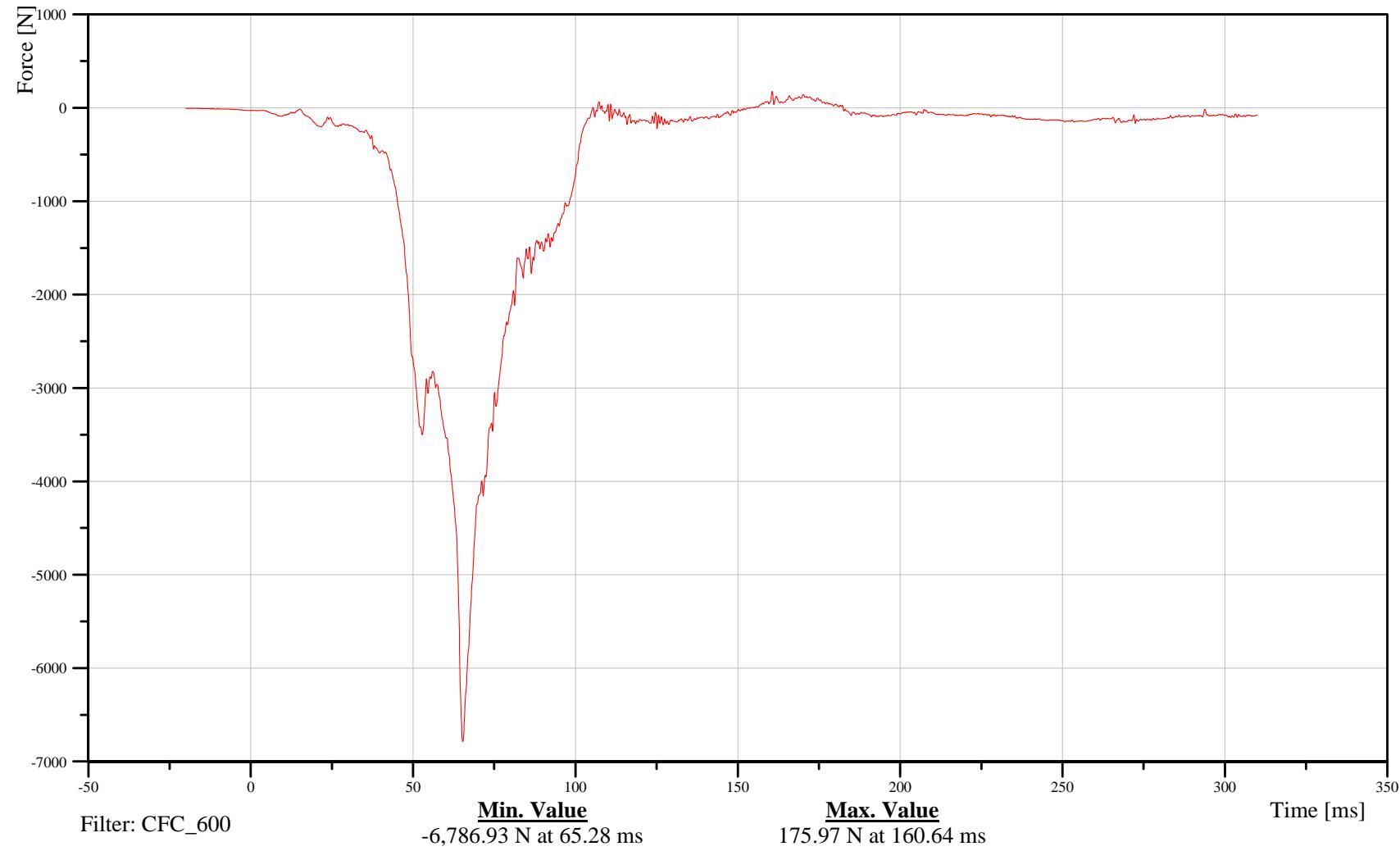
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Lower Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILLXH3FOZB





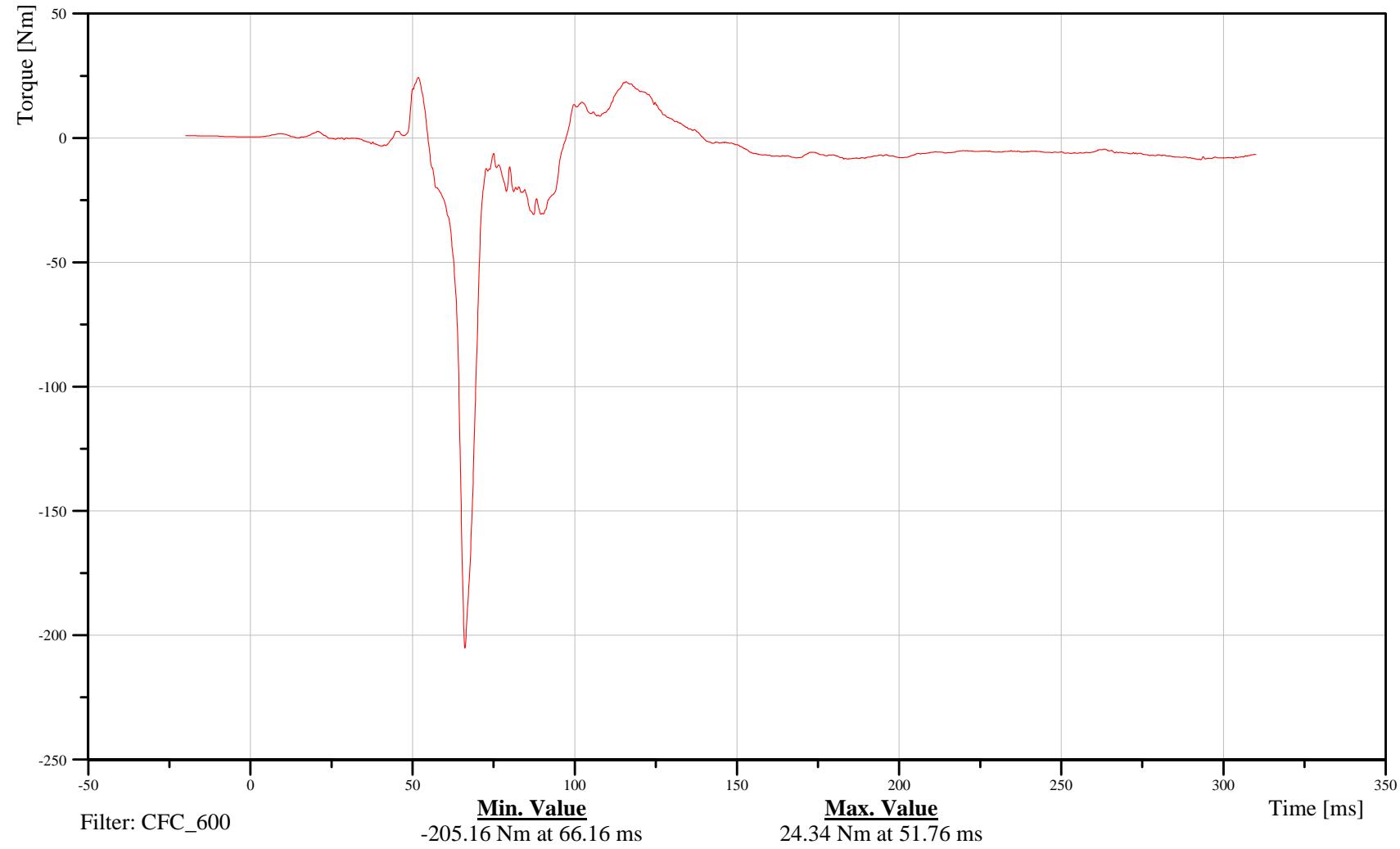
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Lower Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILLXH3MOXB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Lower Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

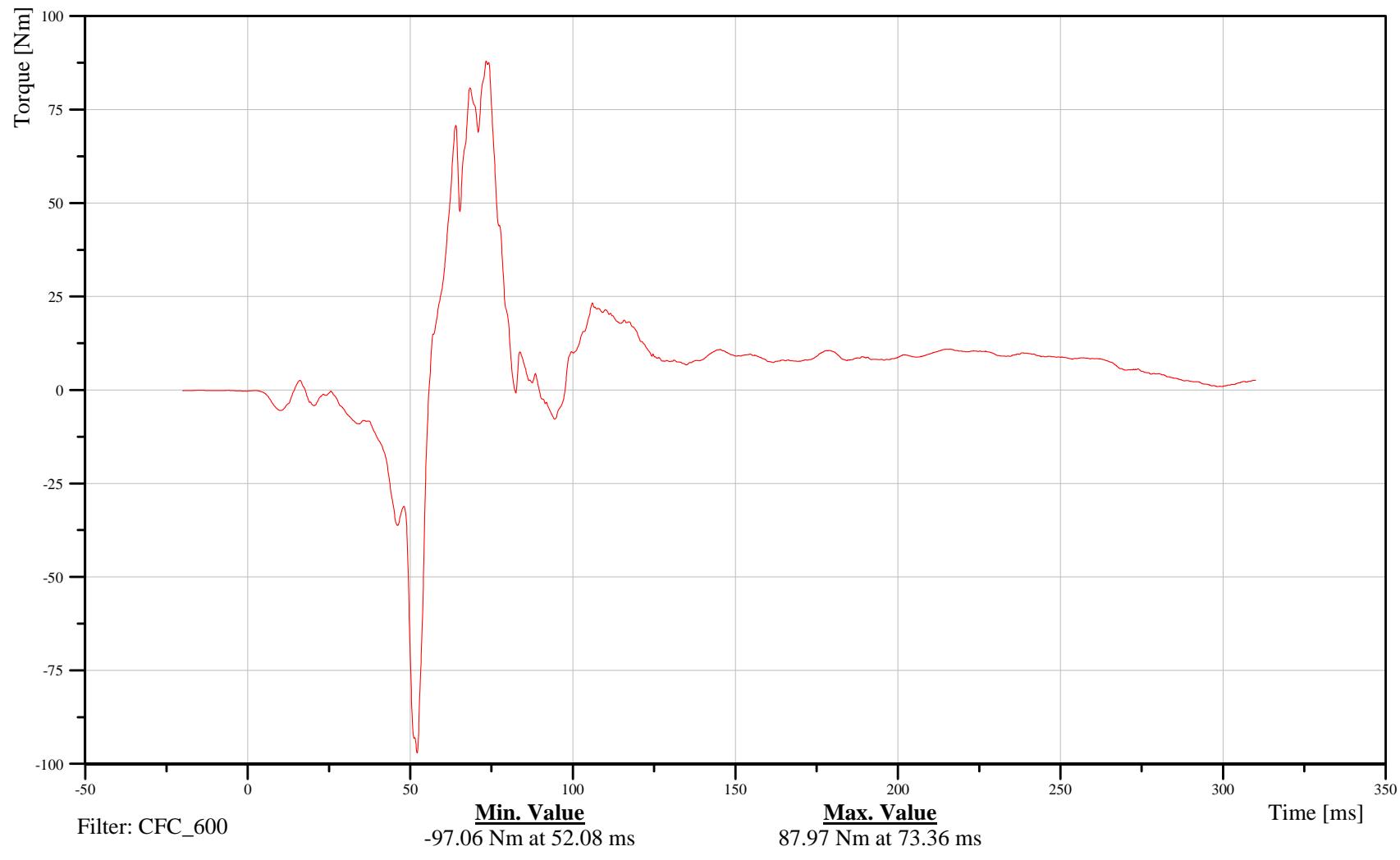
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILLXH3MOYB

B-40

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Tibia X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

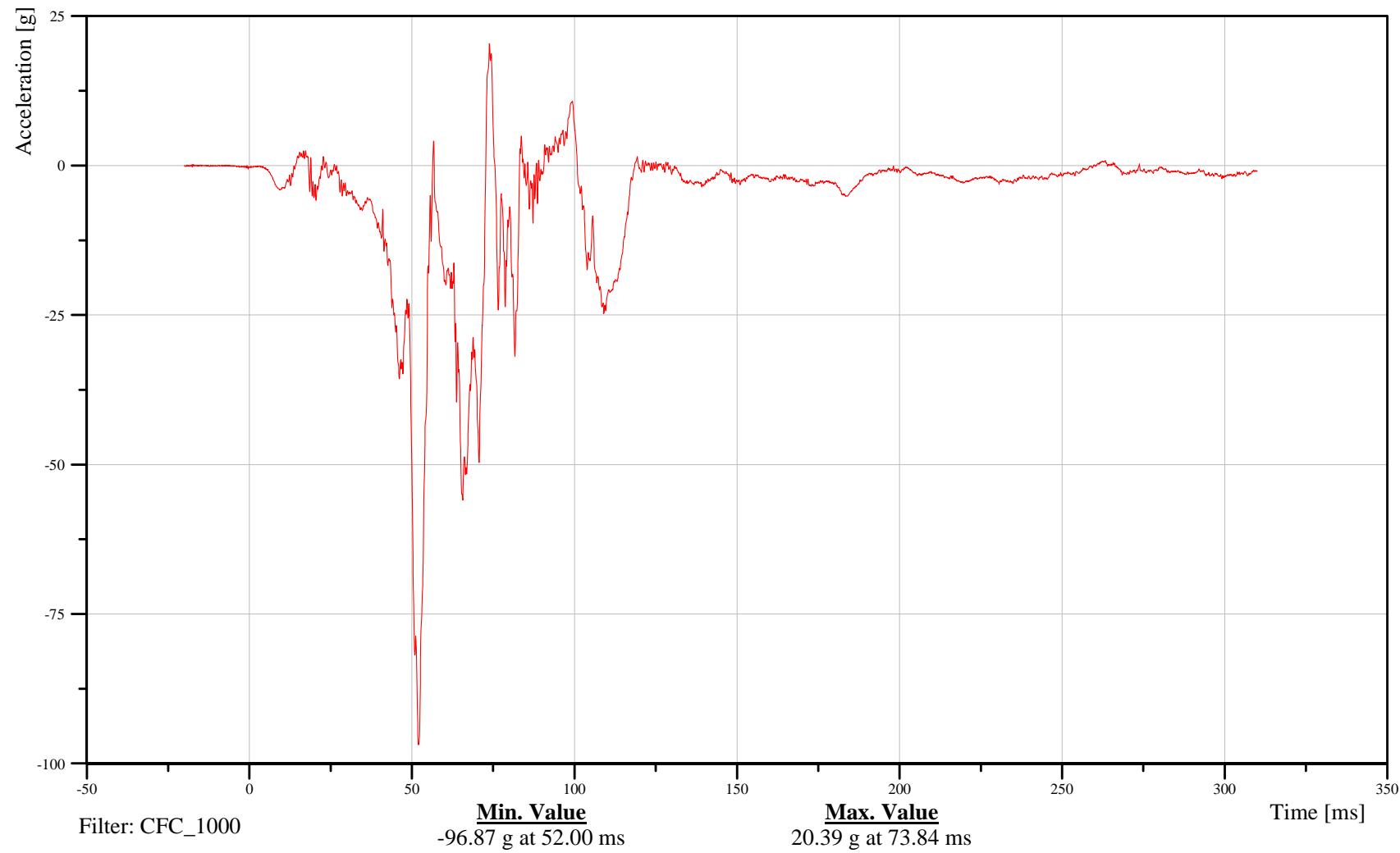
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILELXH3ACXA

B-41

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Tibia Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

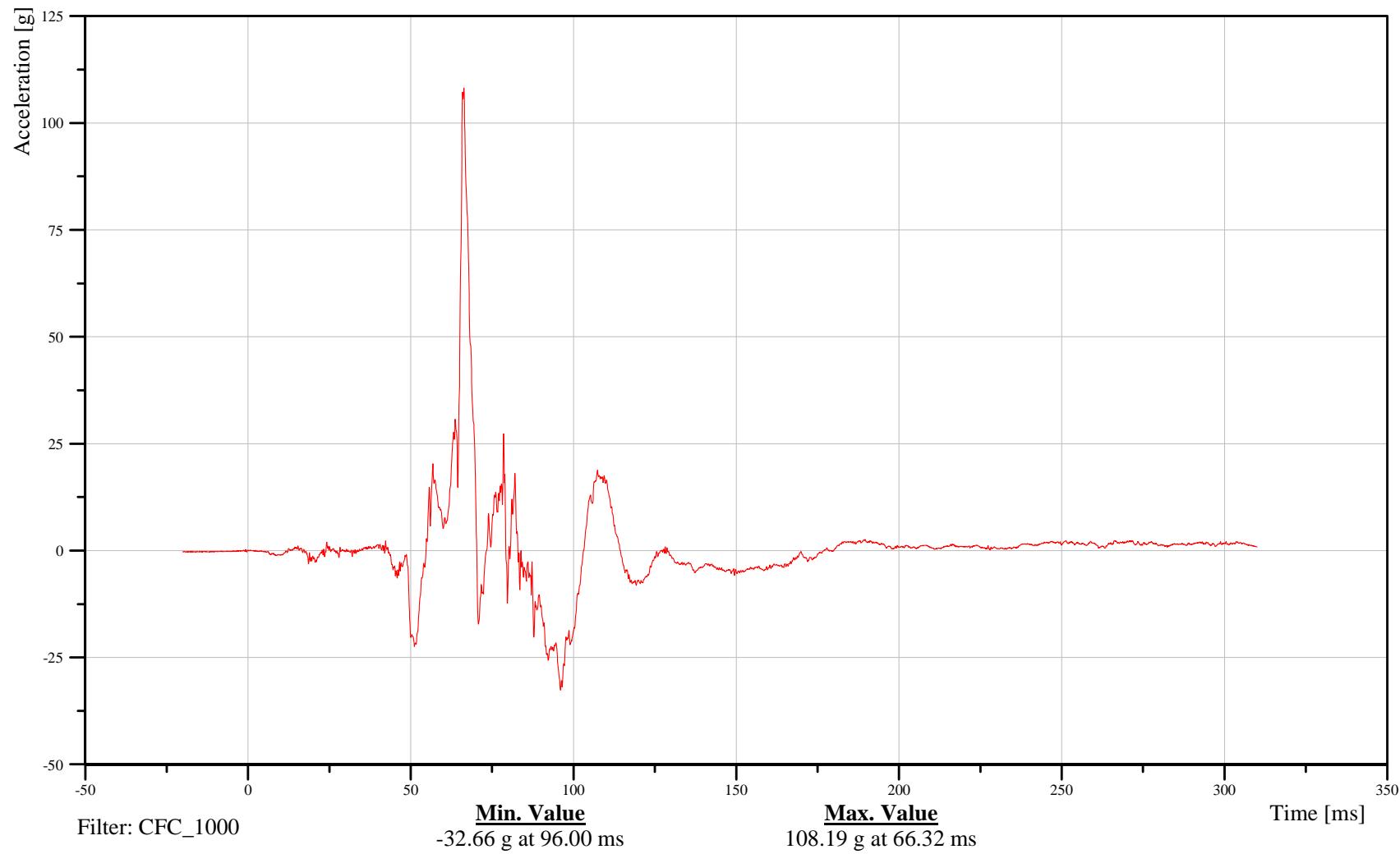
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBILELXH3ACYA

B-42

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

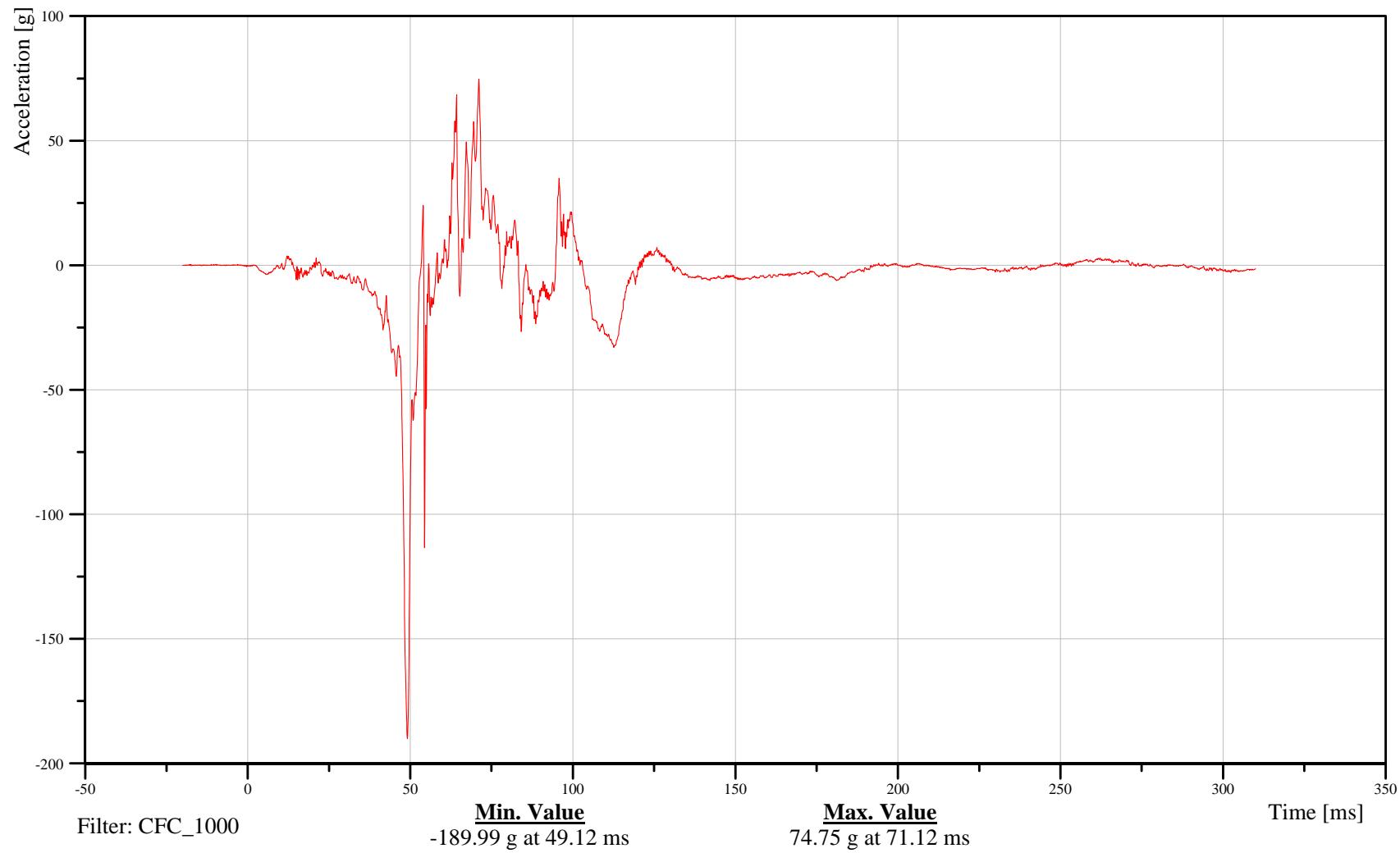
Customer: VRTC

11FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-43

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

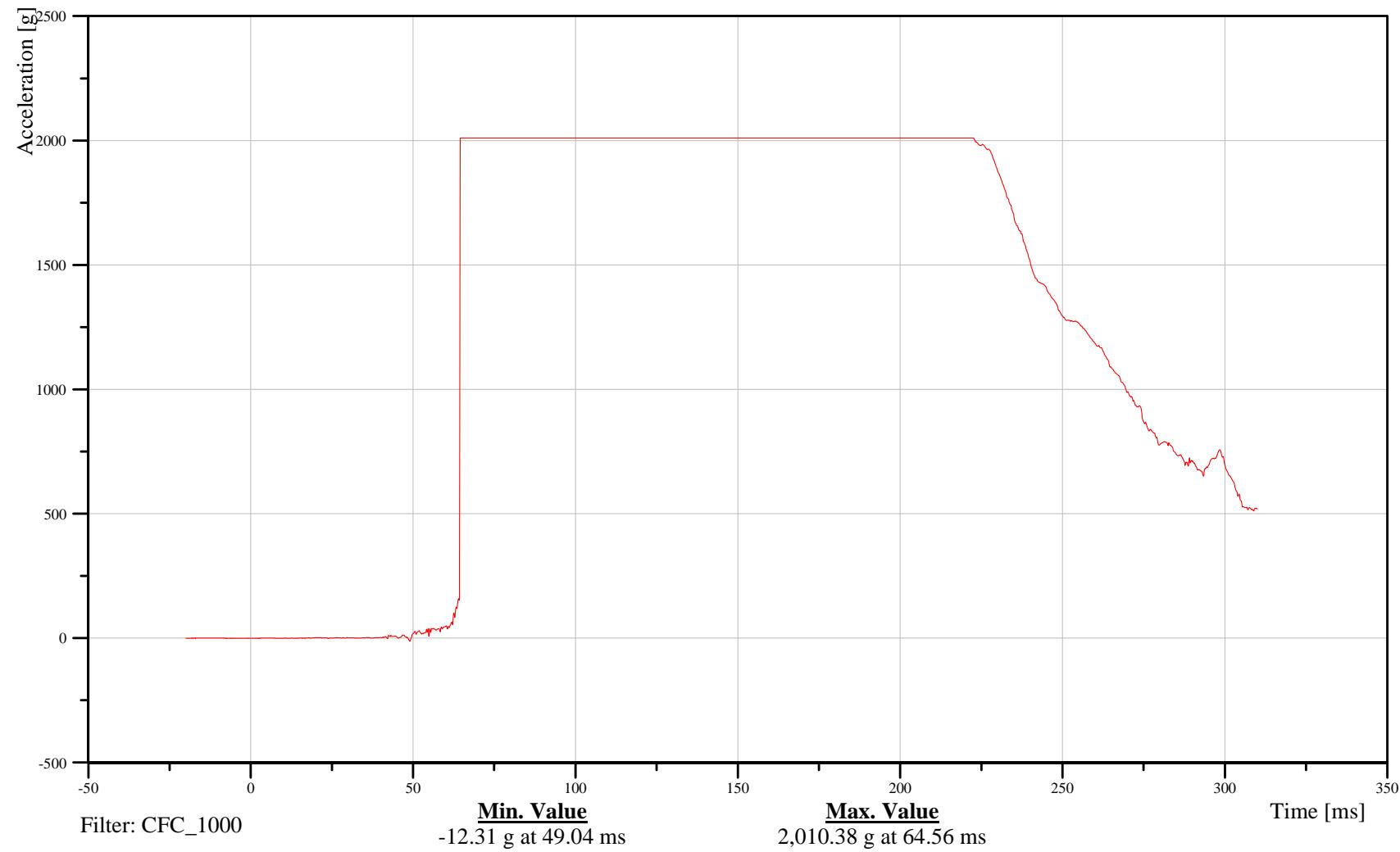
Customer: VRTC

11FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-44

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot Z-Axis Acceleration

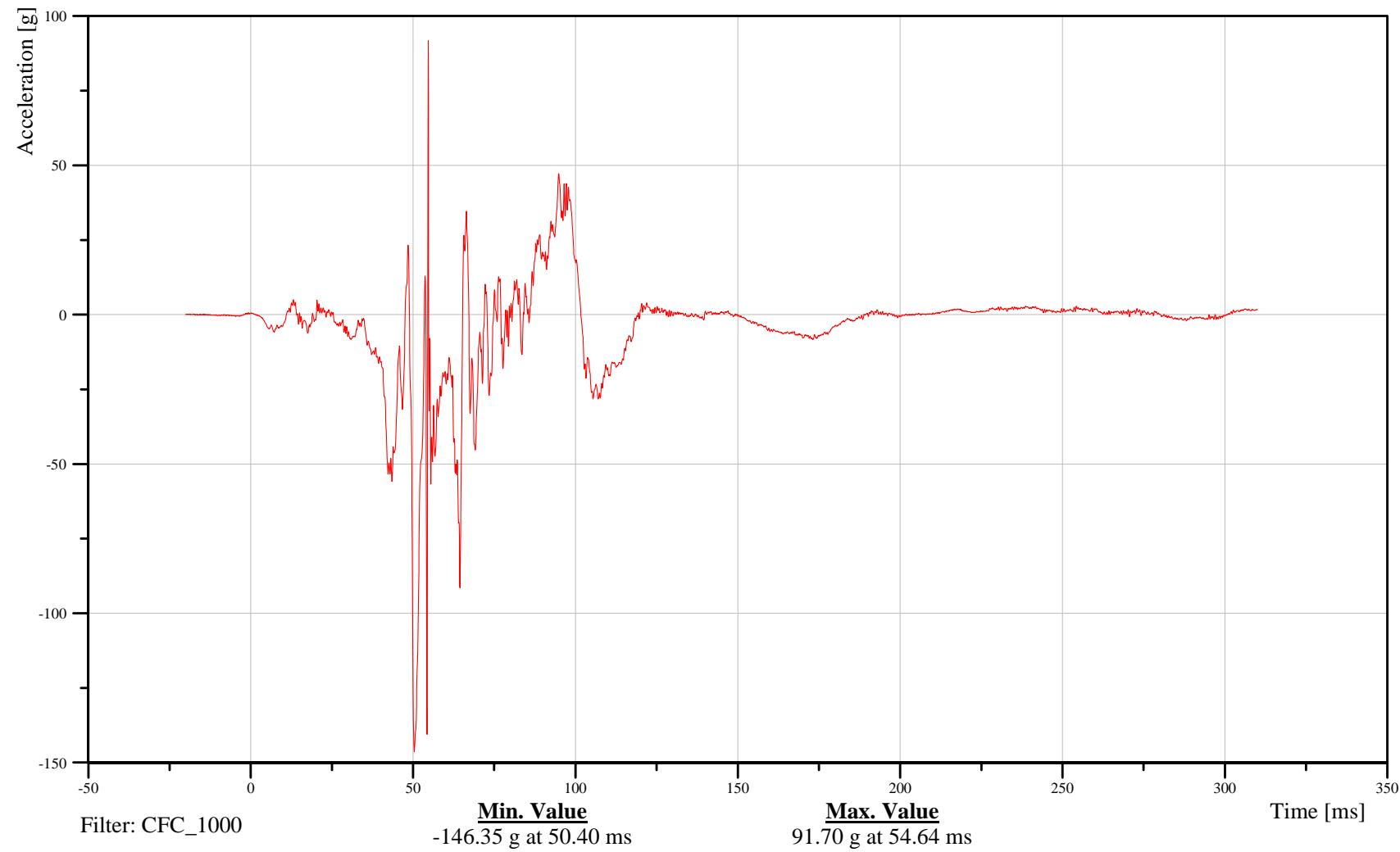
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FOOTLELXH3ACZA

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

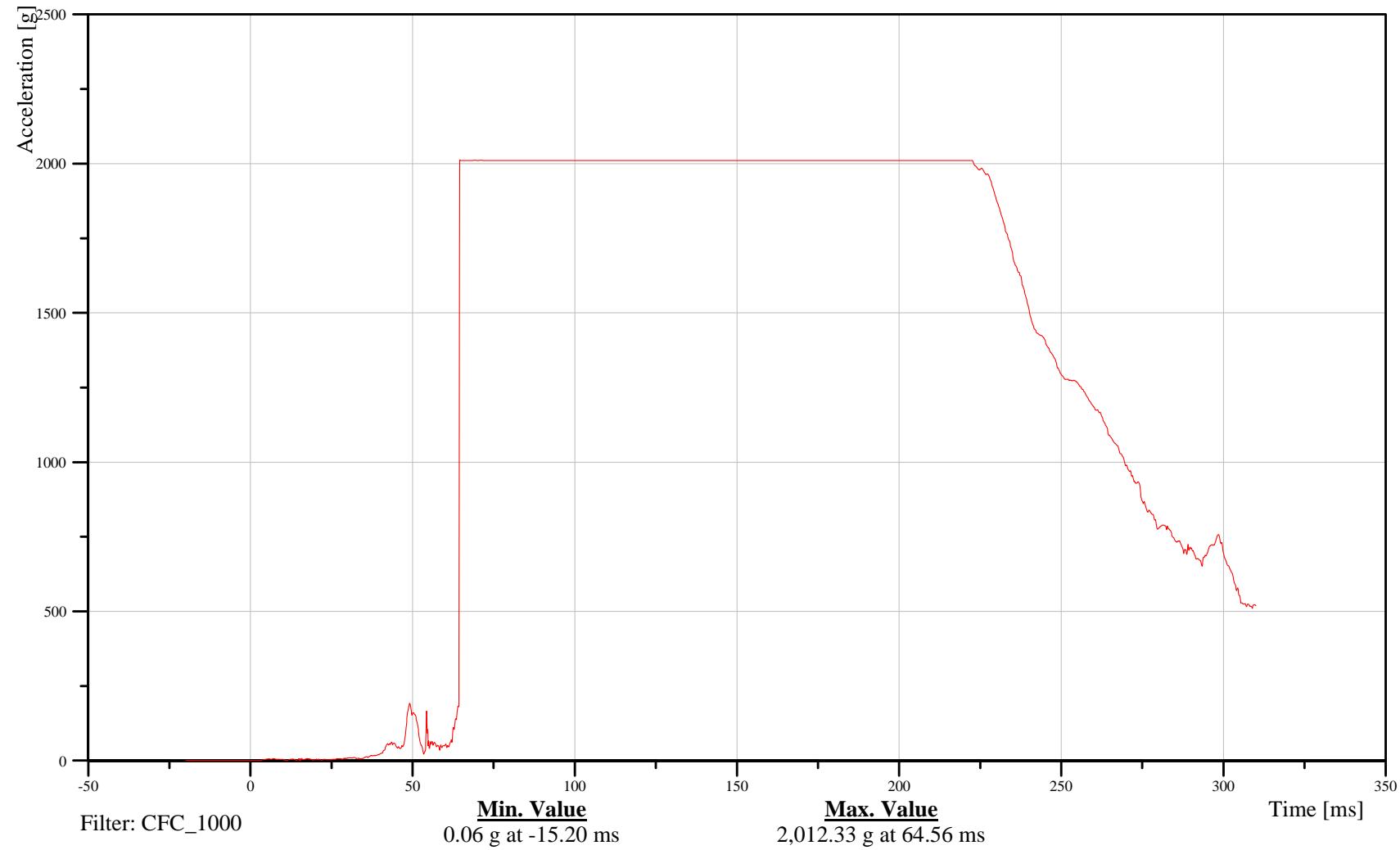
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FOOTLELXH3ACRA

B-46

101116





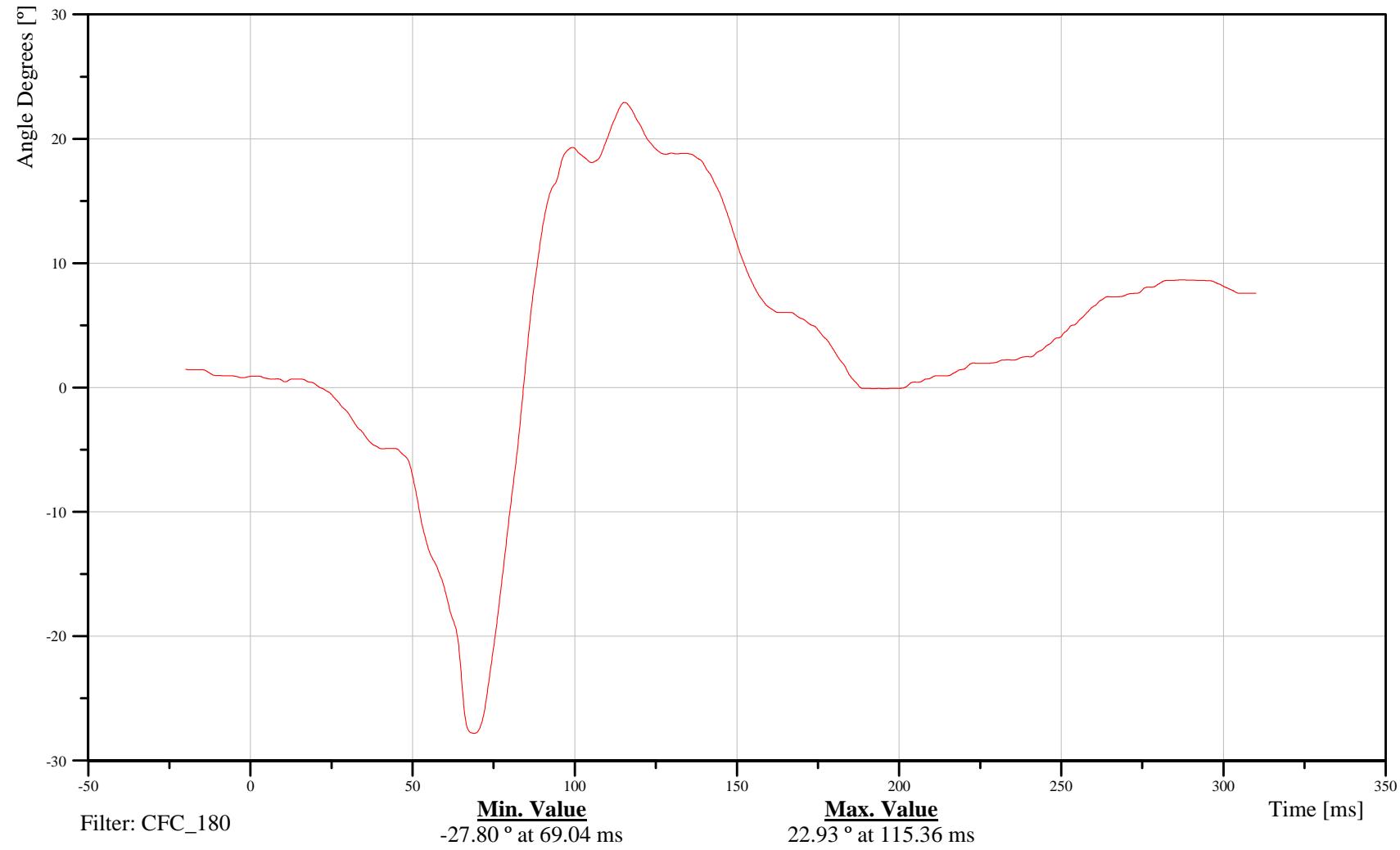
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot X-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





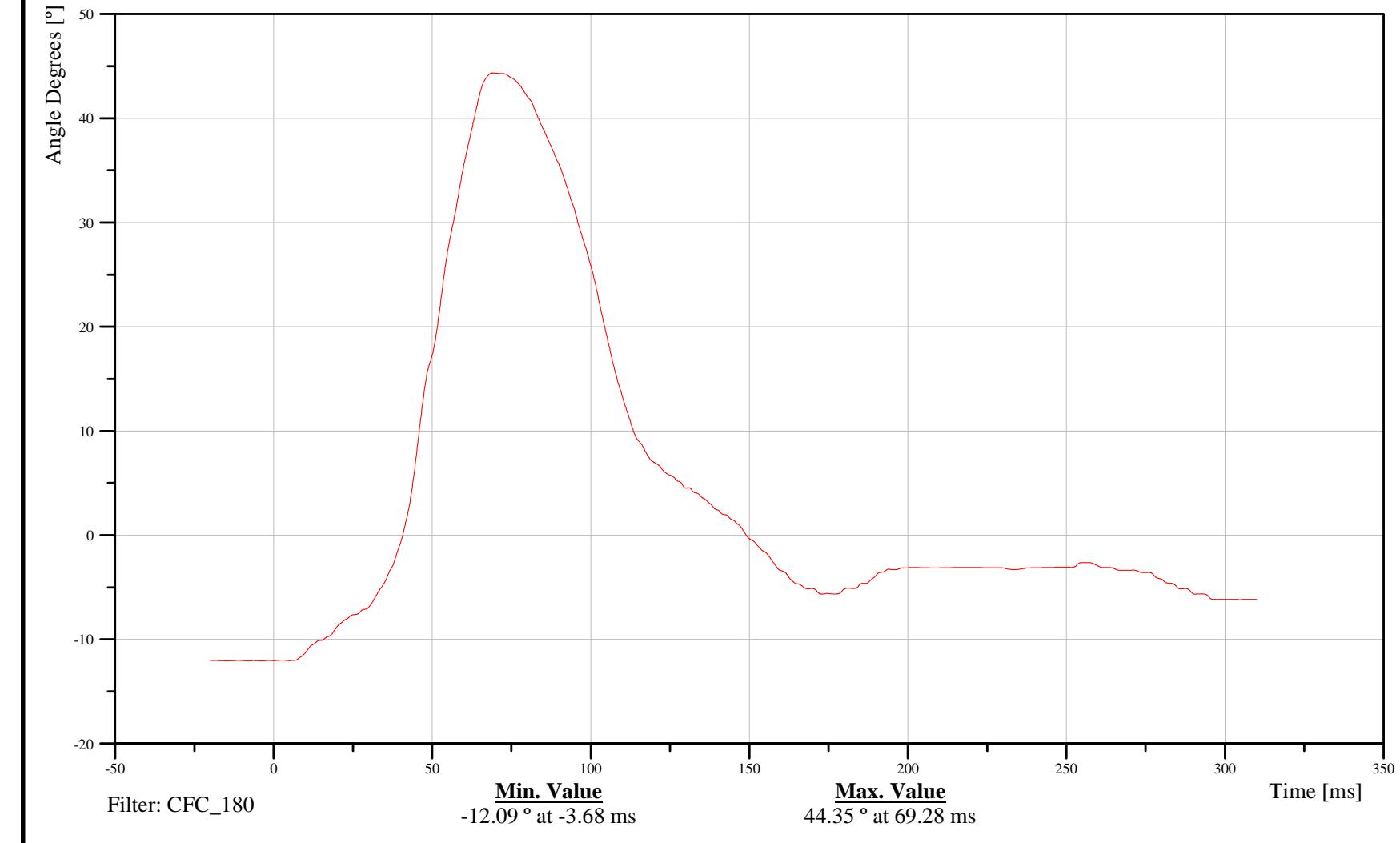
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot Y-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





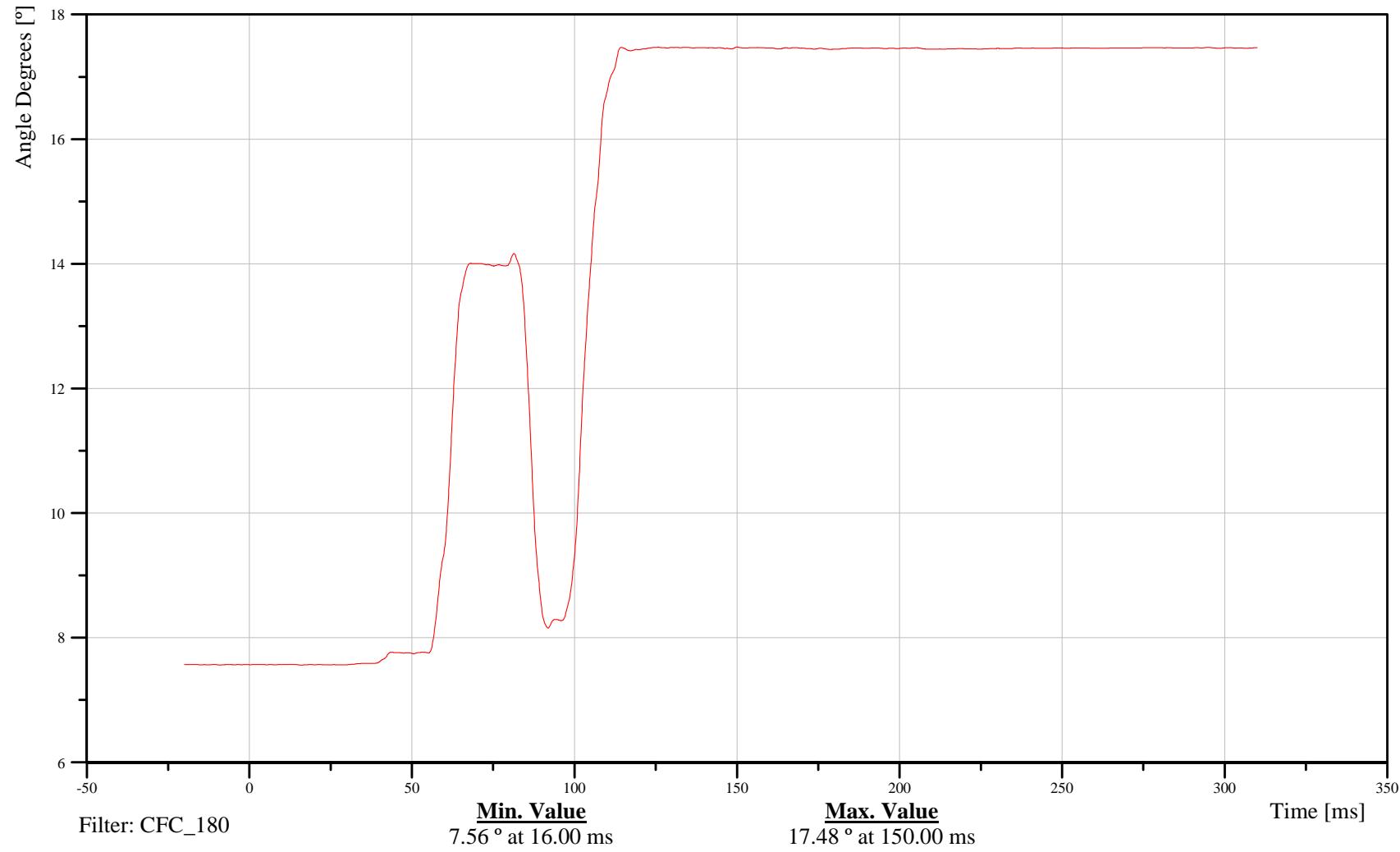
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Left Foot Z-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Knee X-Axis Displacement

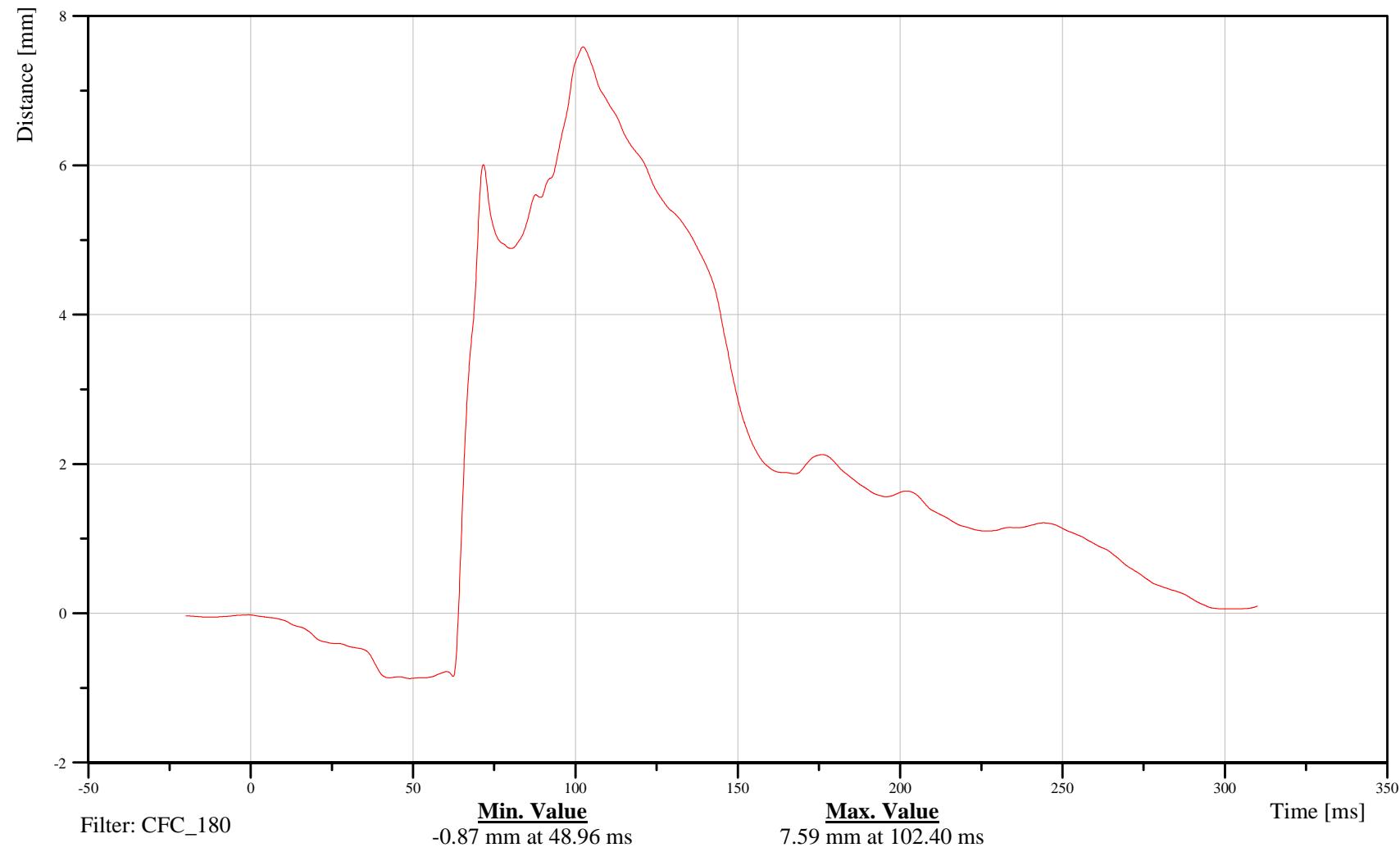
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11KNSLRI00H3DSXC

B-50  
101116





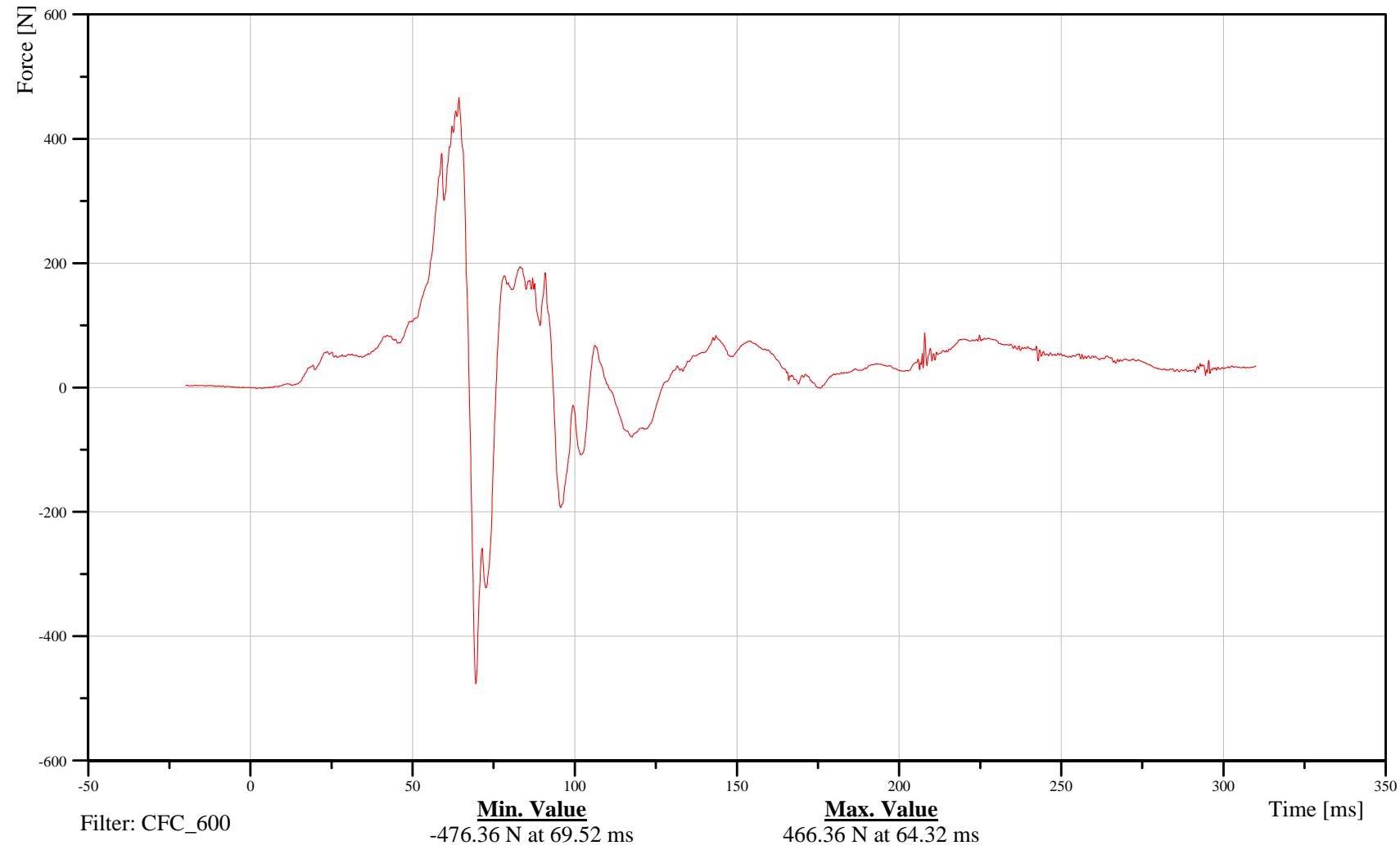
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Upper Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRULXH3FOXB





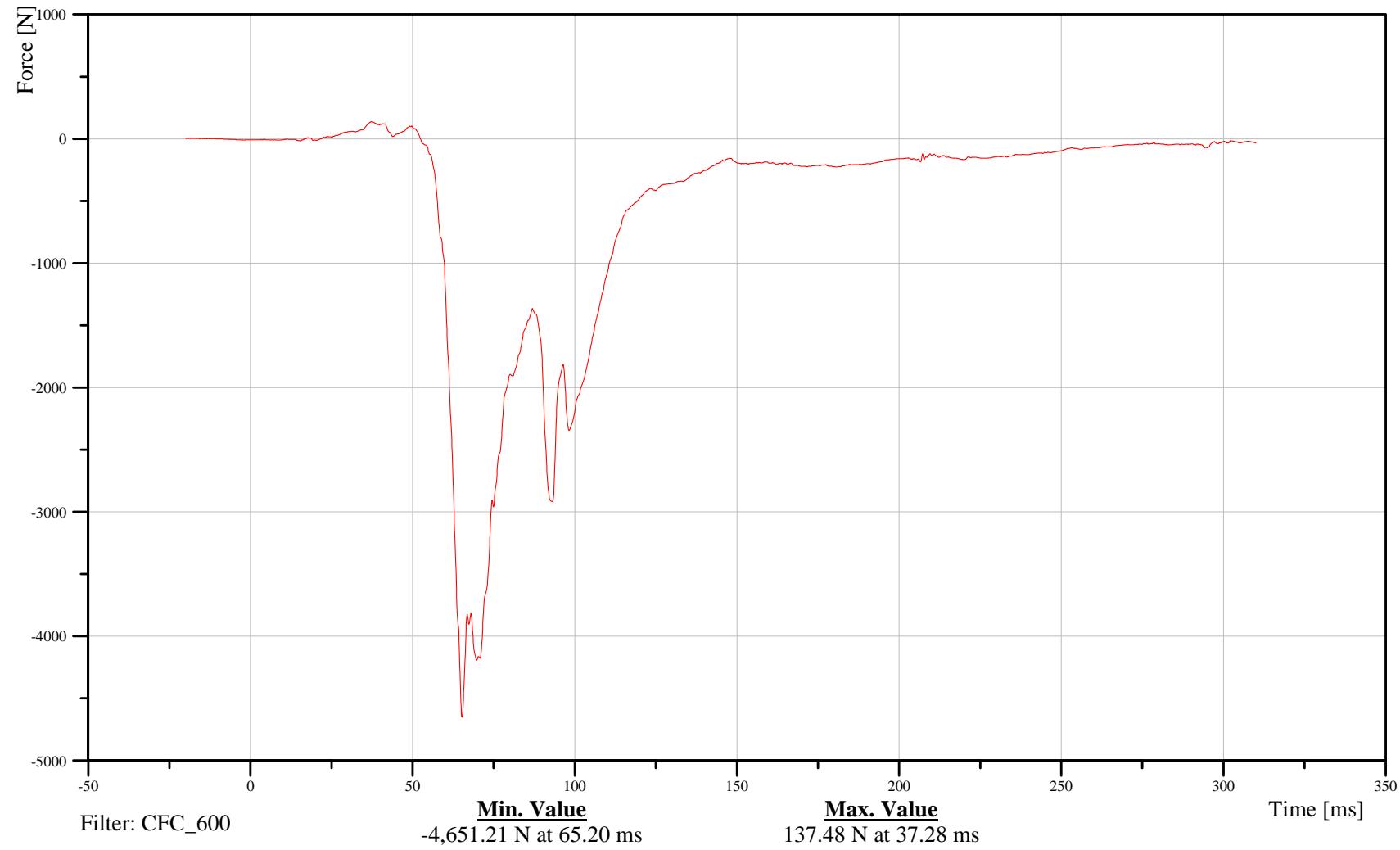
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Upper Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRULXH3FOZB





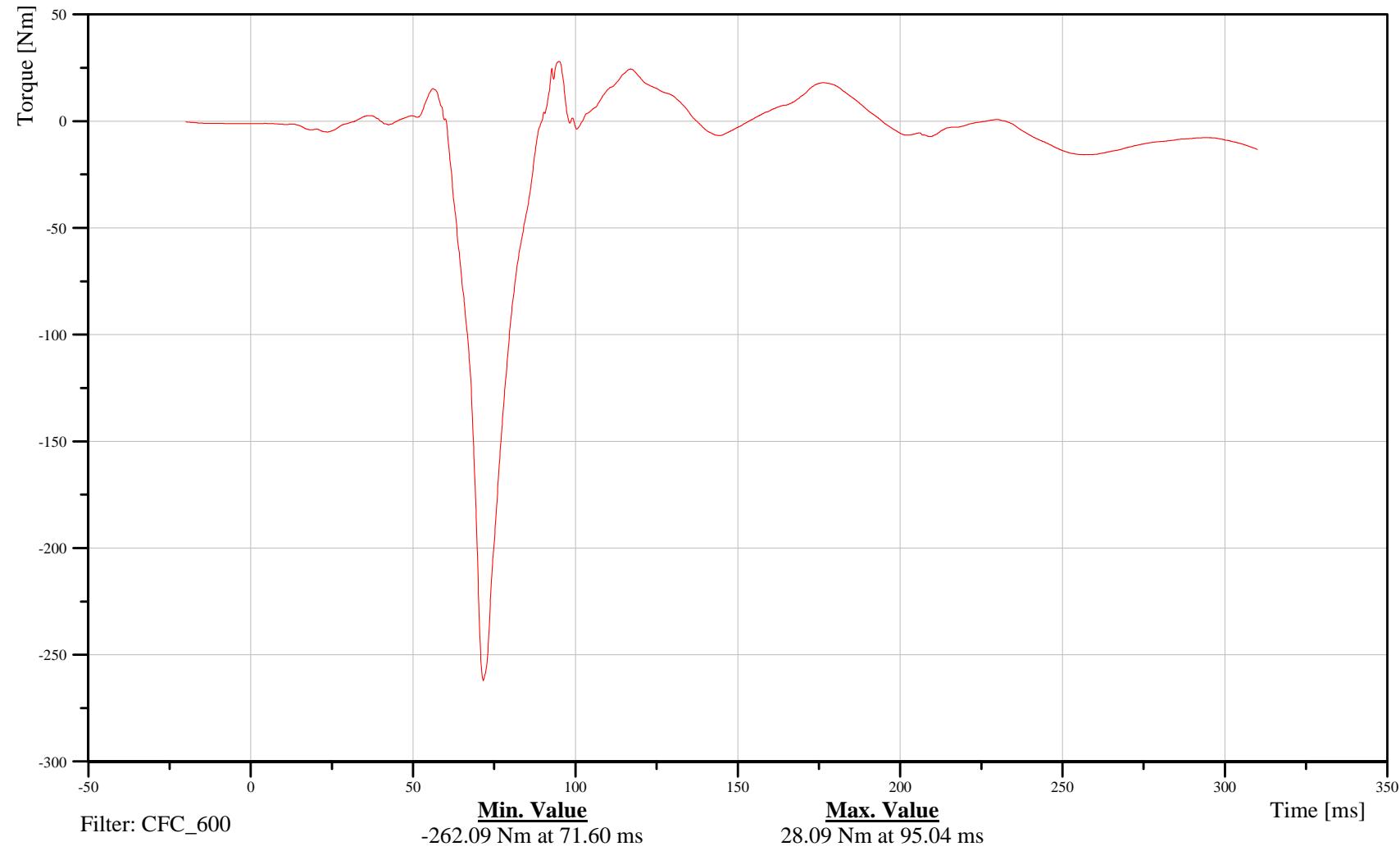
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Upper Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRULXH3MOXB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Upper Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

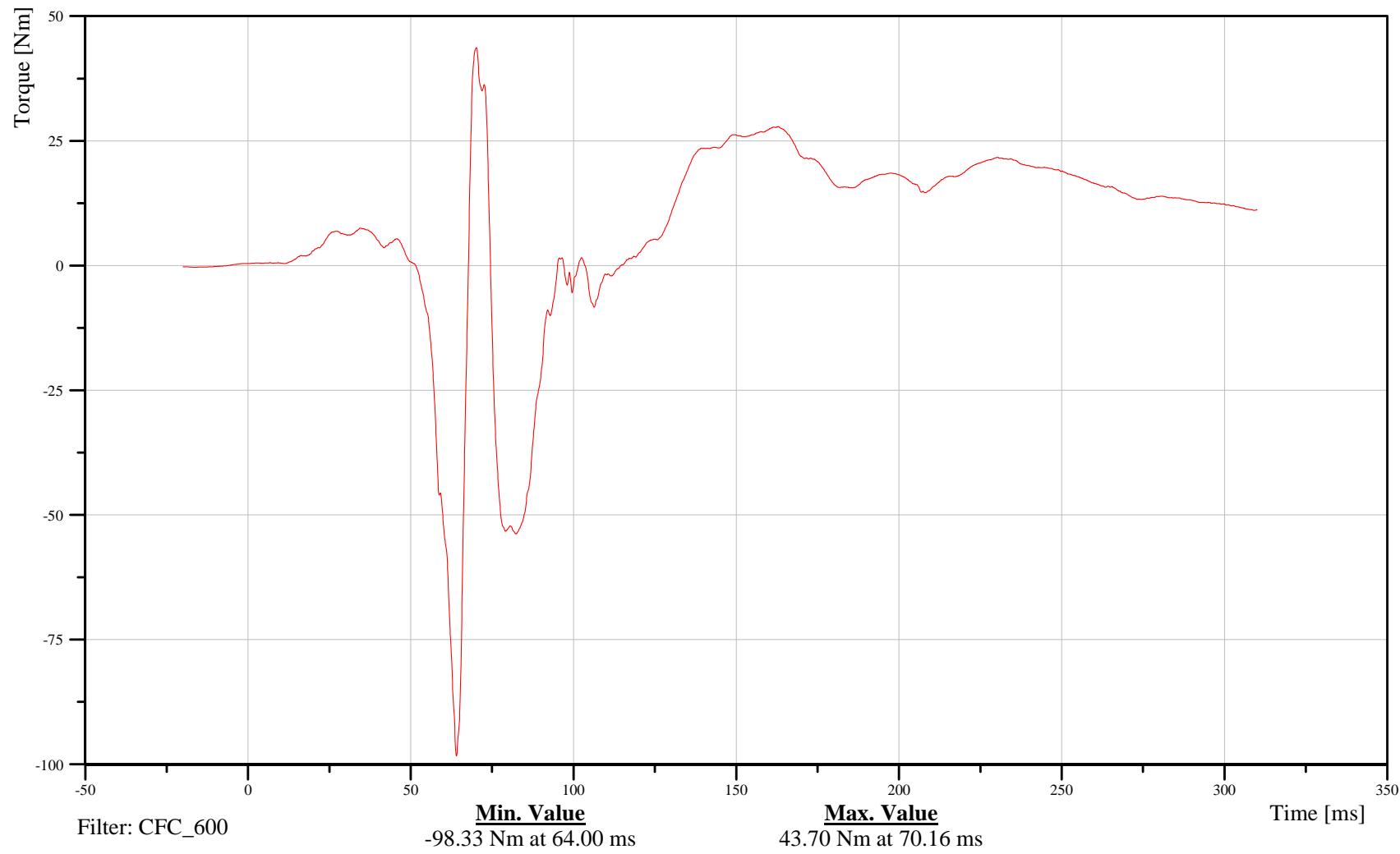
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRULXH3MOYB

B-54

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Lower Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

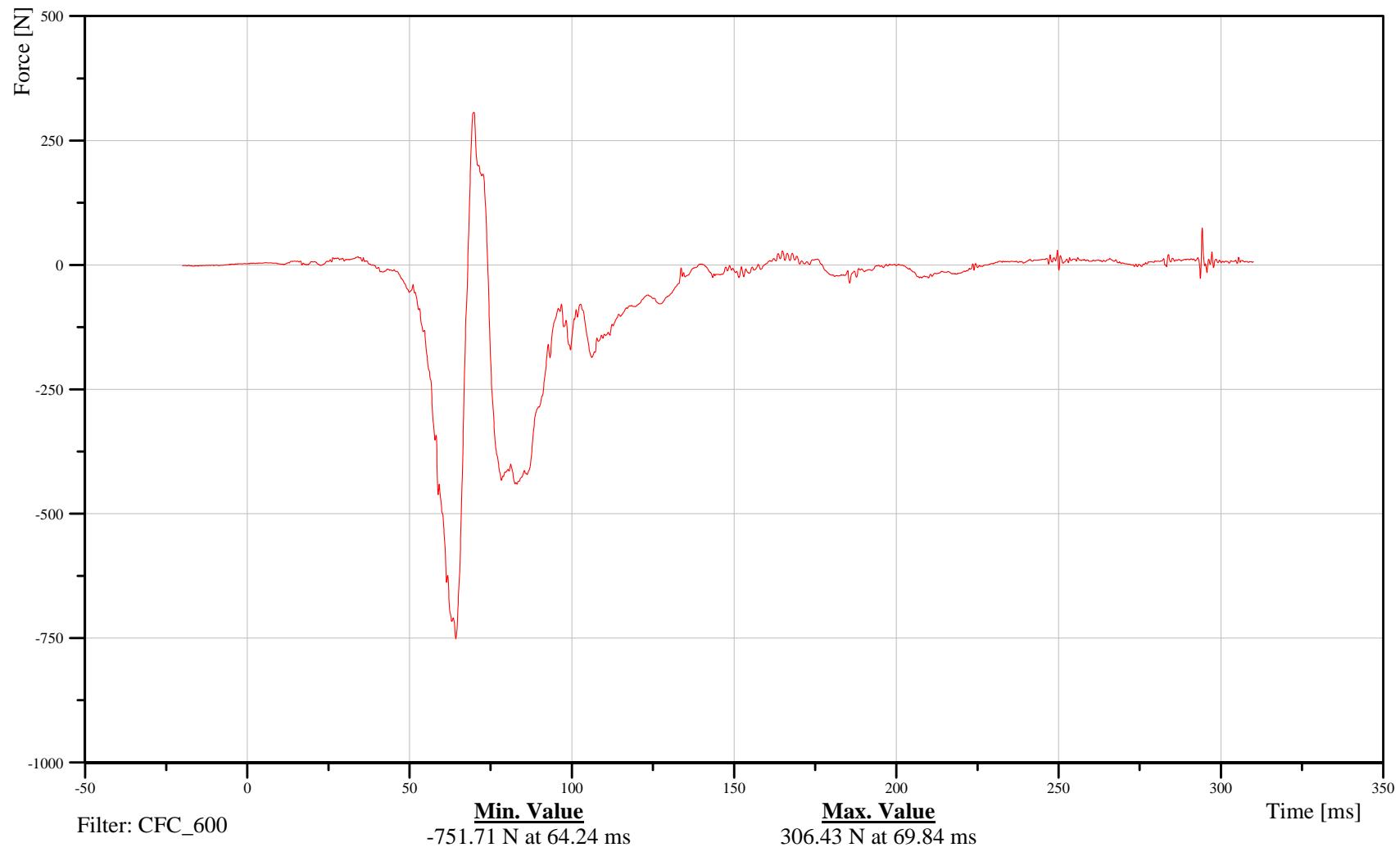
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRLLXH3FOXB

B-55

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Lower Tibia Y-Axis Force

Date: 11/17/2010  
Time: 14:40

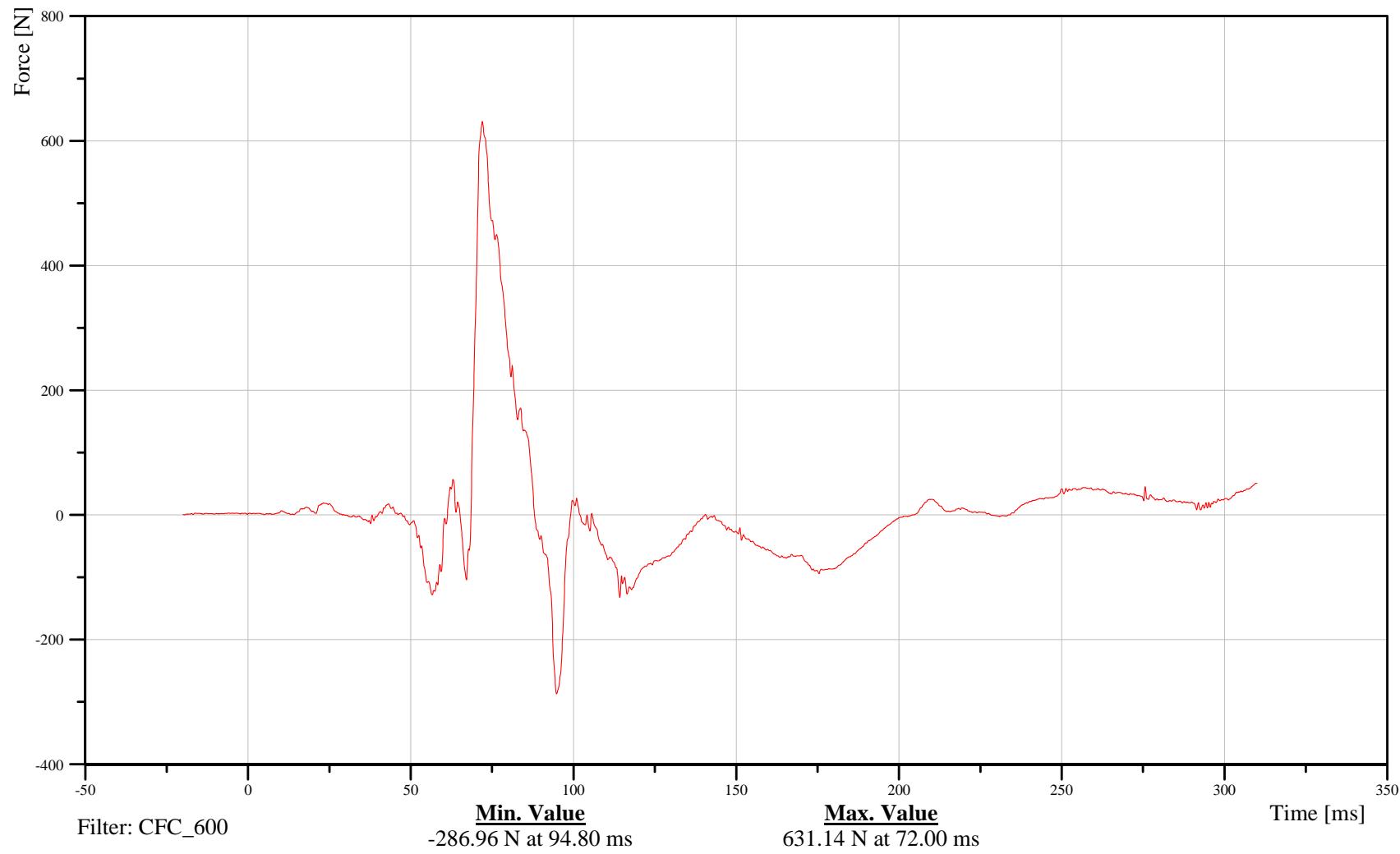
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRLLXH3FOYB

B-56

101116





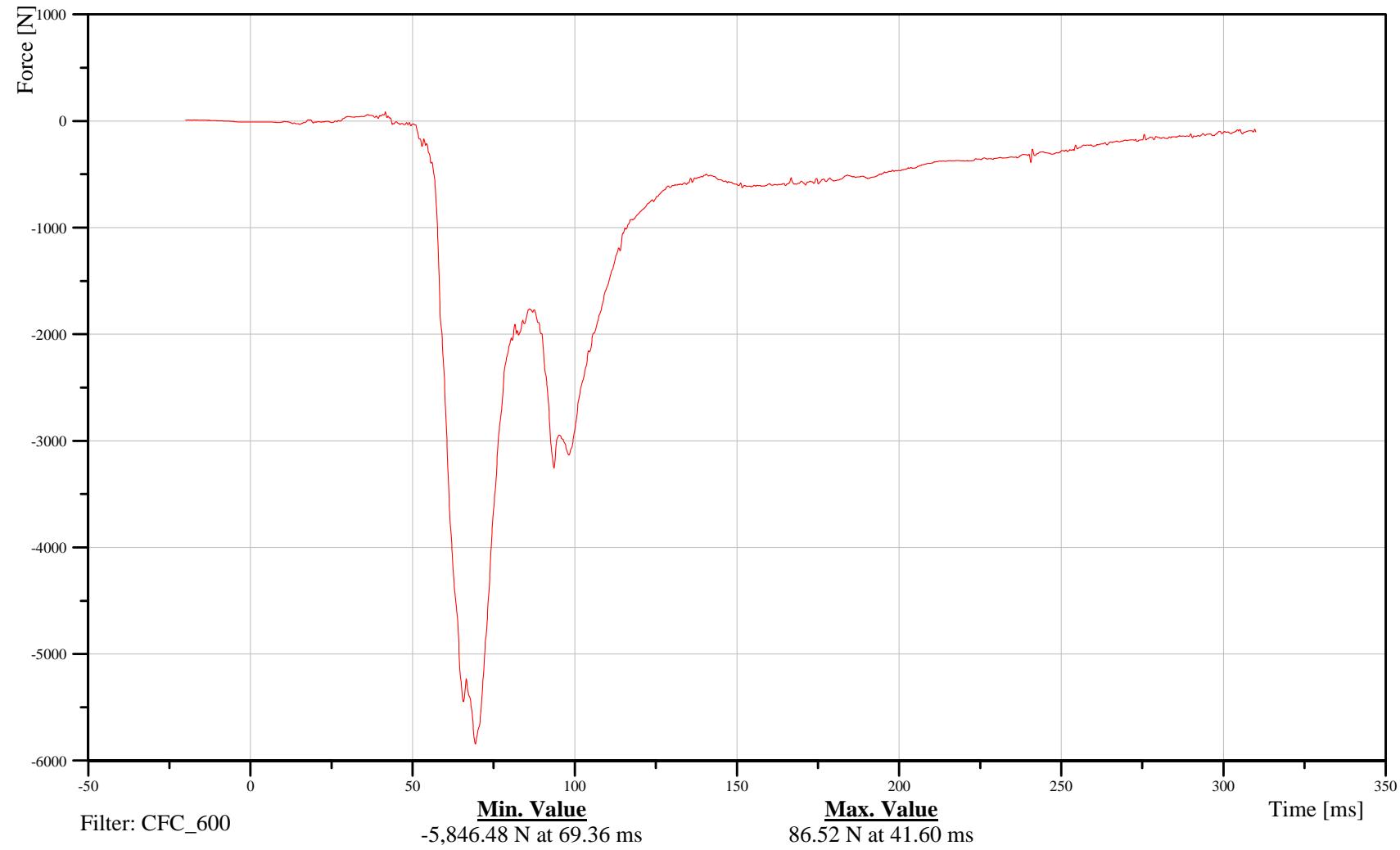
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Lower Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRLLXH3FOZB





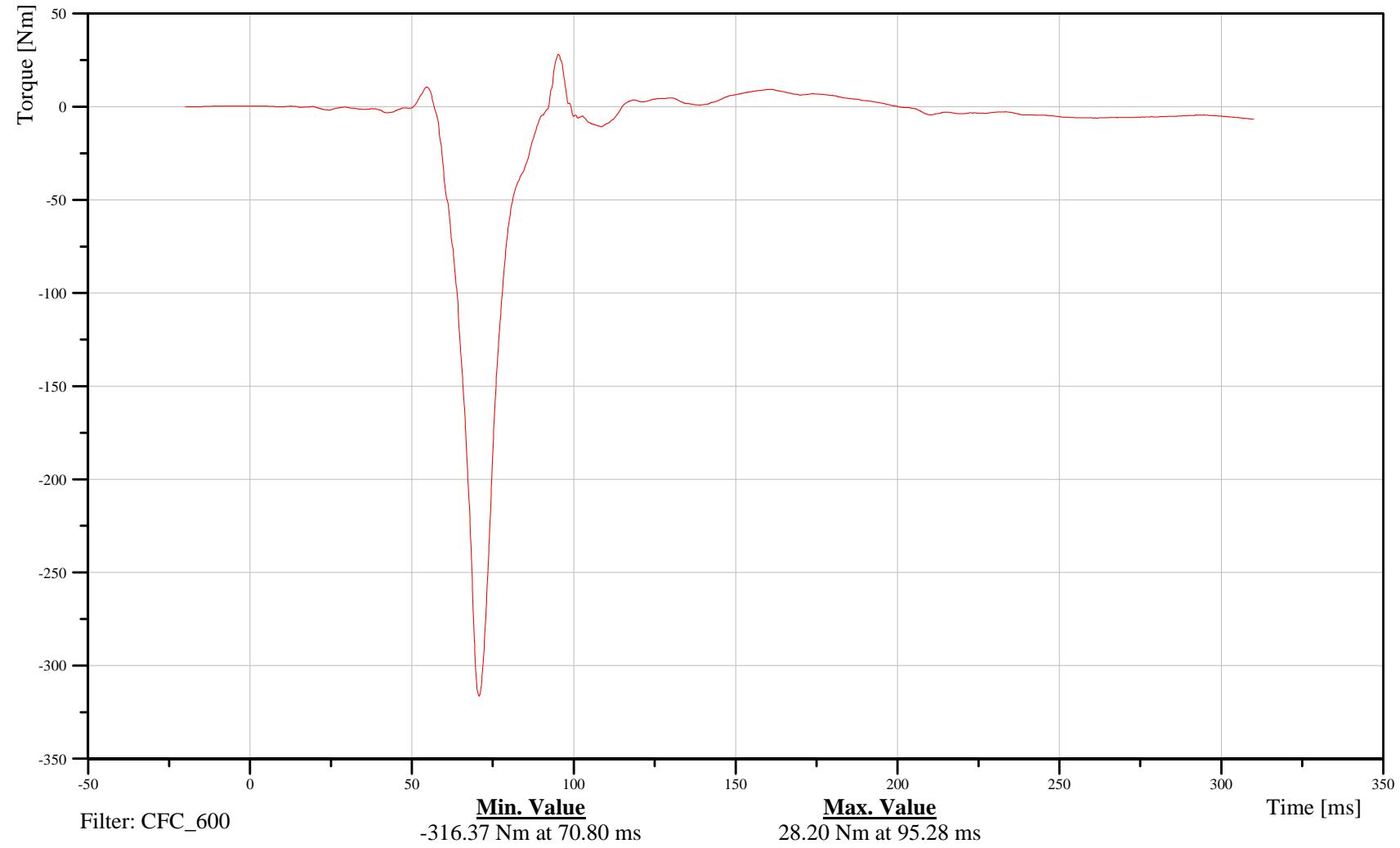
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Lower Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRLLXH3MOXB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Lower Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

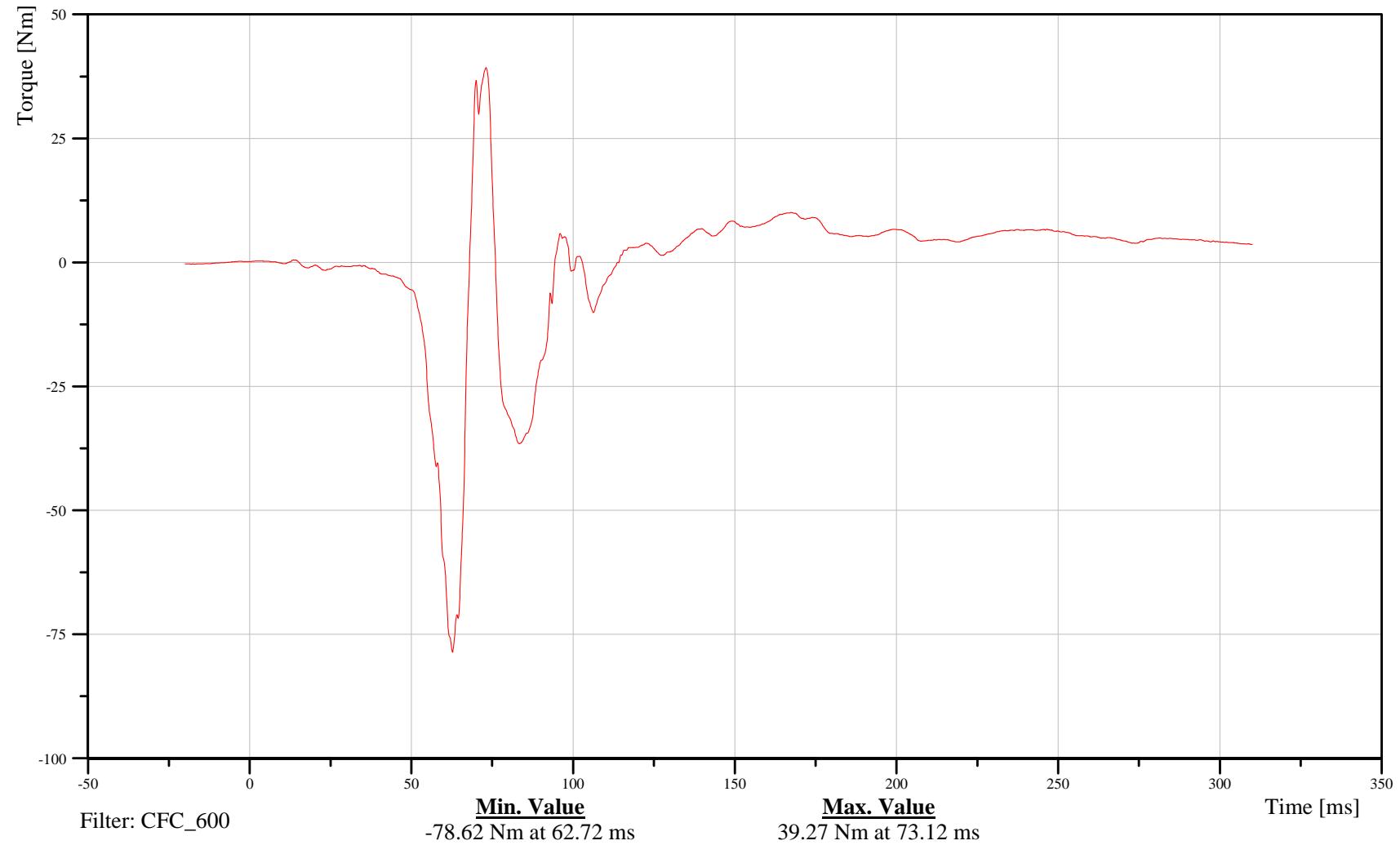
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRLLXH3MOYB

B-59

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Tibia X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

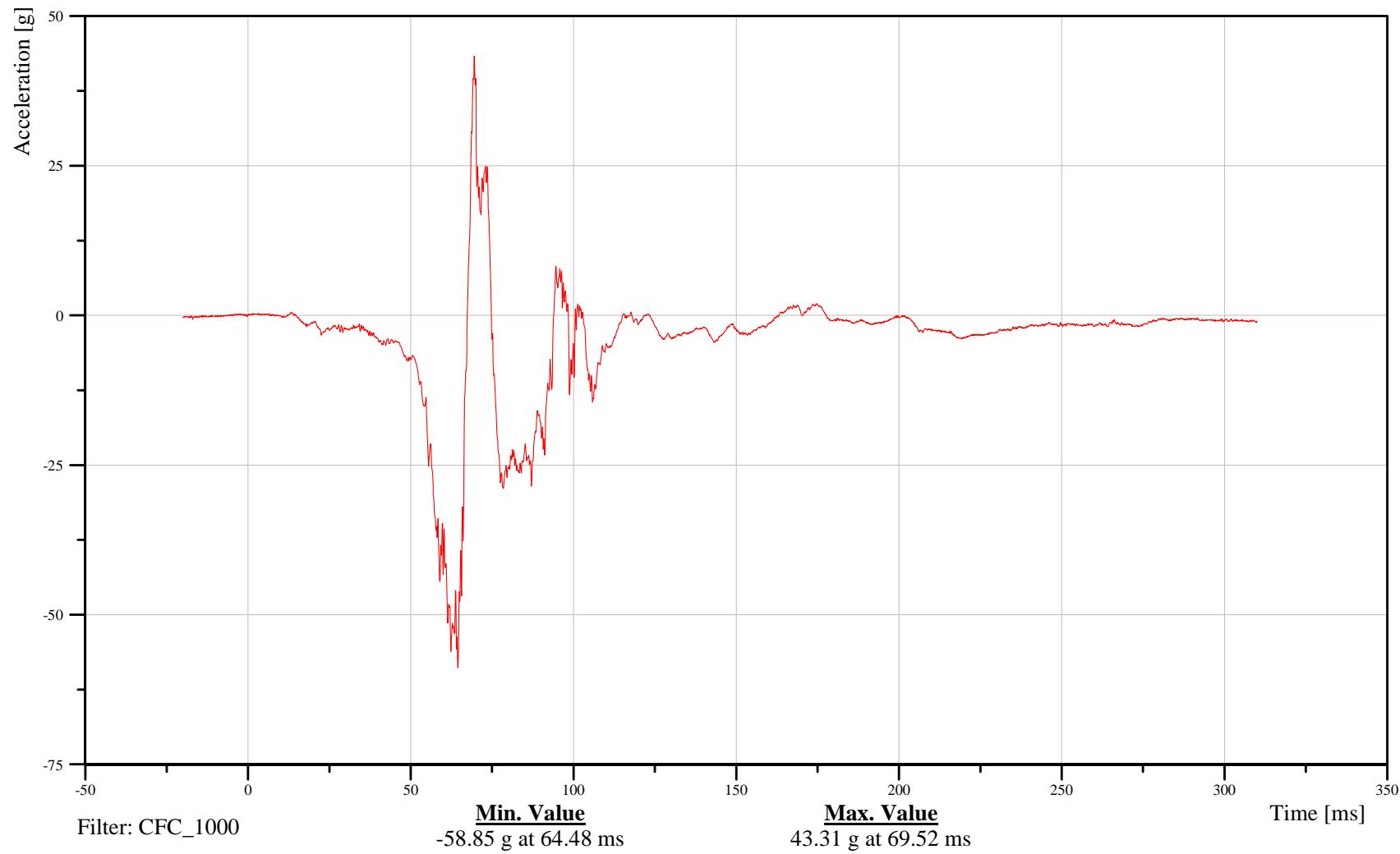
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRILXH3ACXA

B-60

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Tibia Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

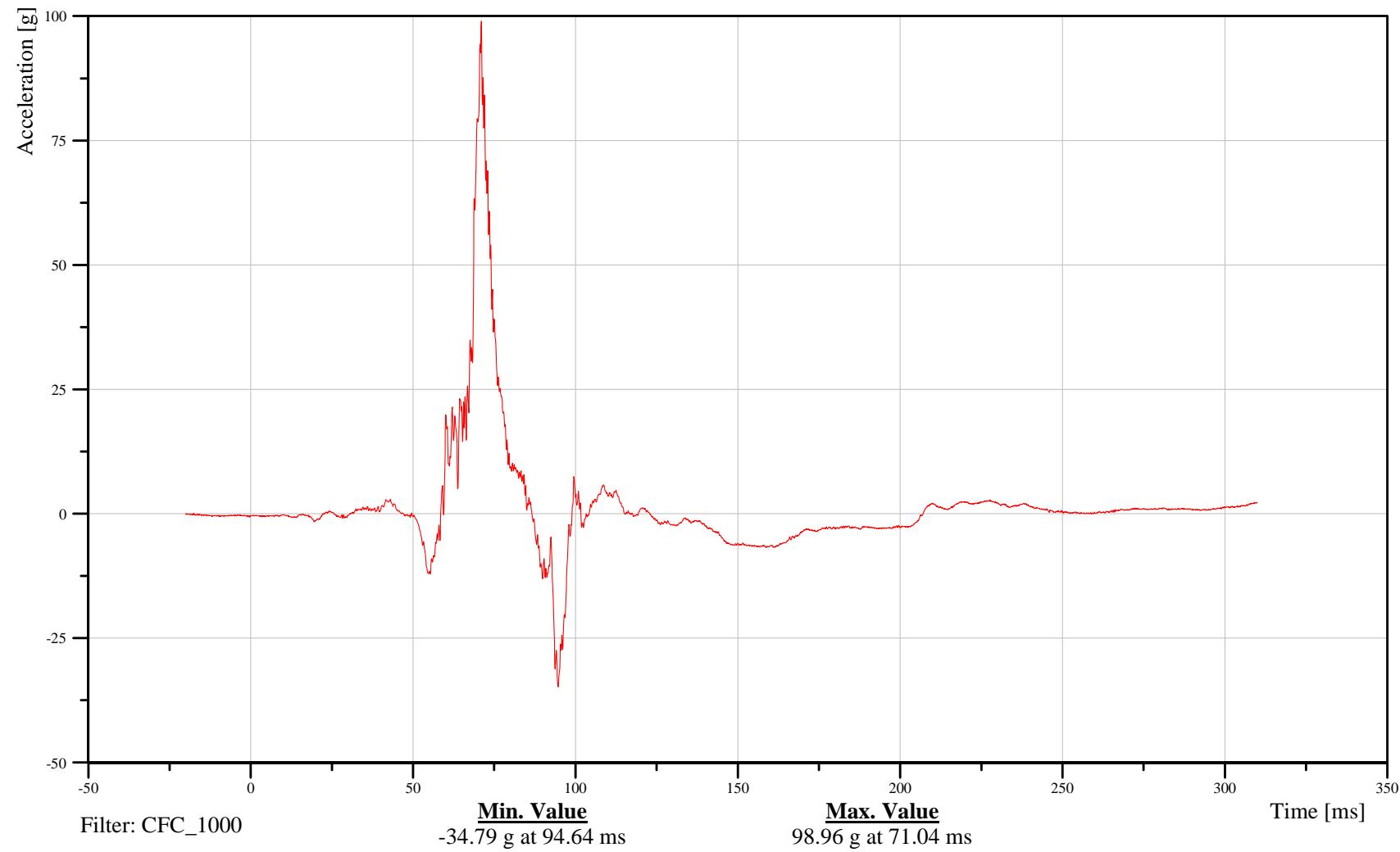
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11TIBIRILXH3ACYA

B-61

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

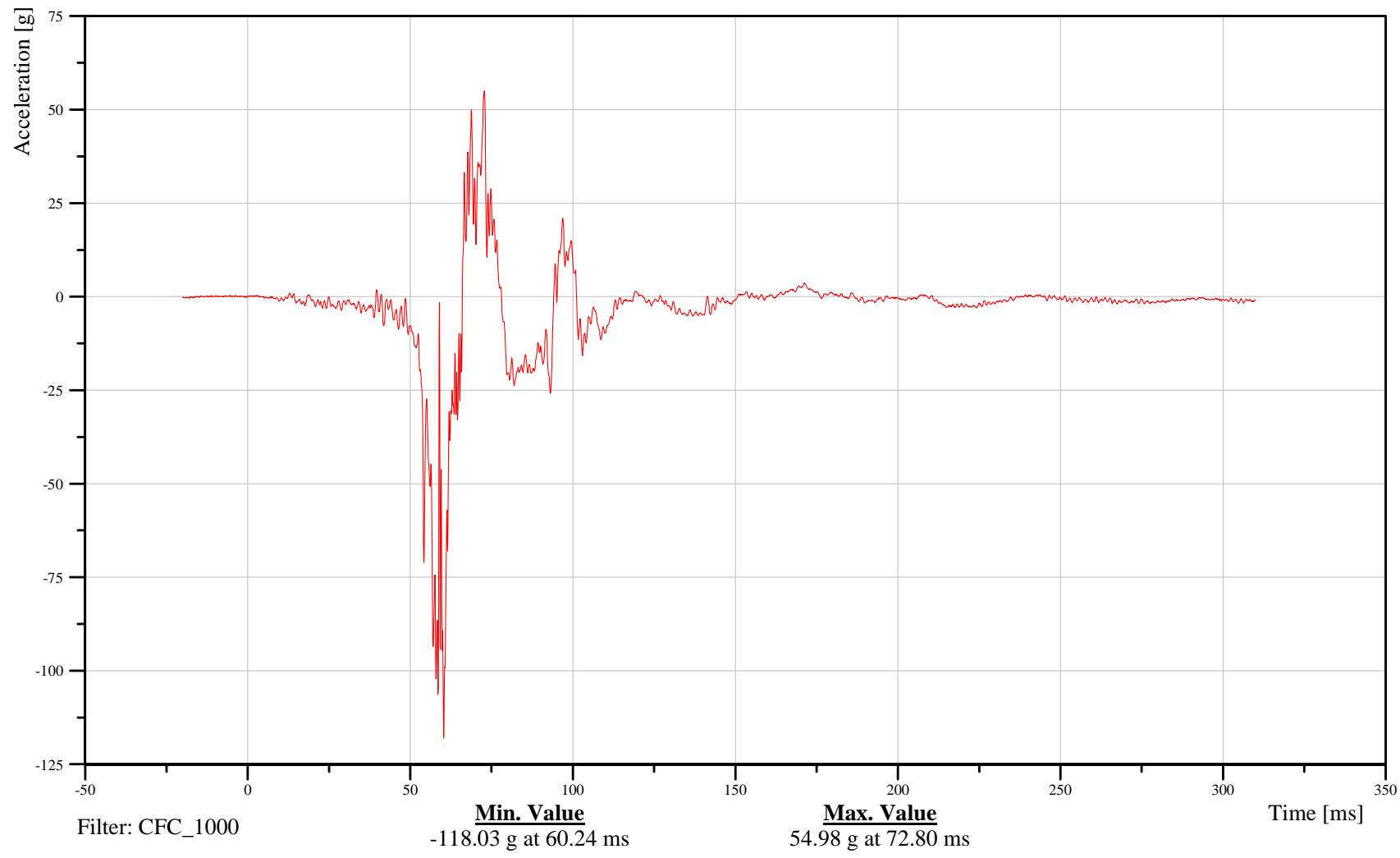
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FOOTRILXH3ACXA

B-62

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

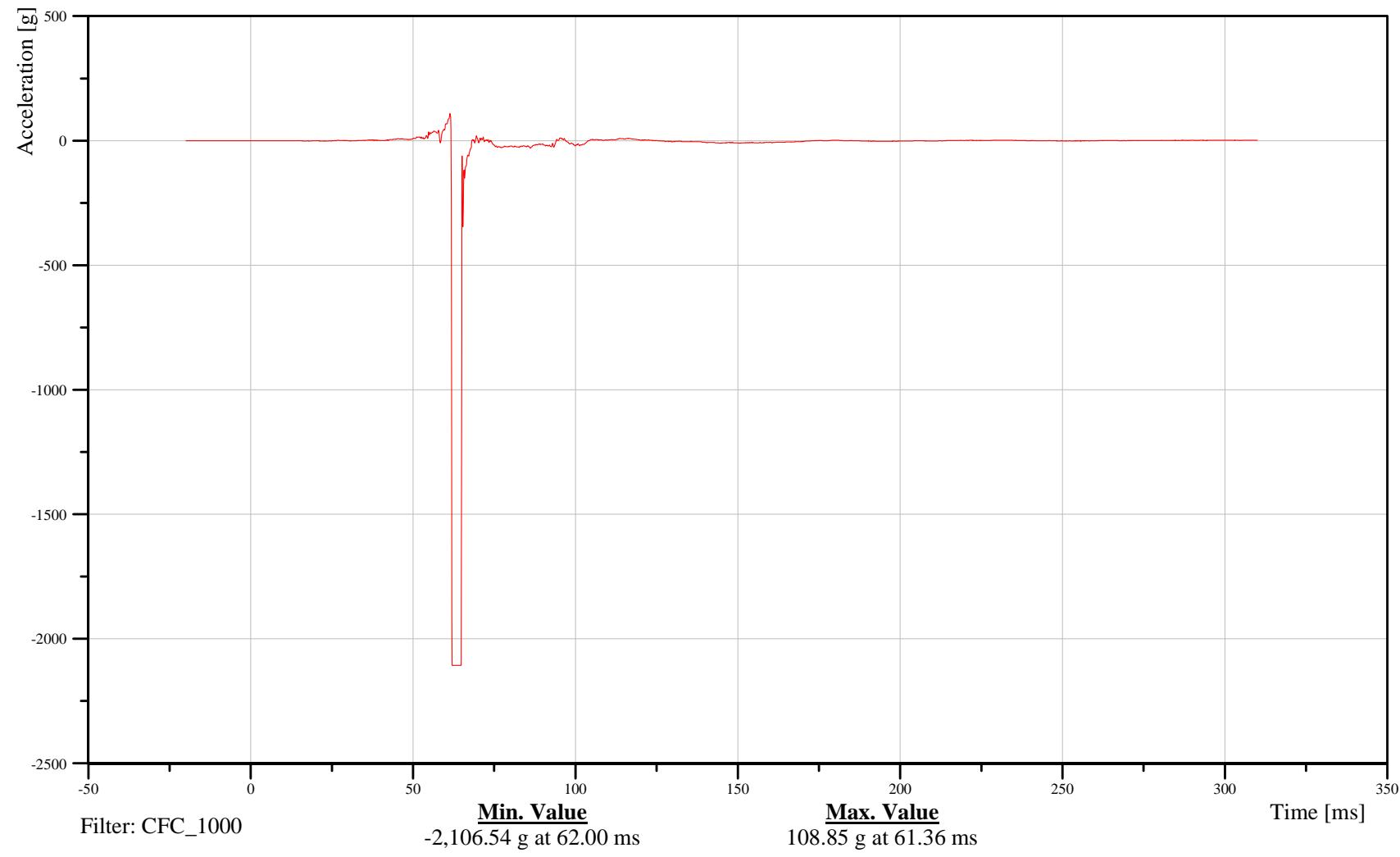
Customer: VRTC

11FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-63

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot Z-Axis Acceleration

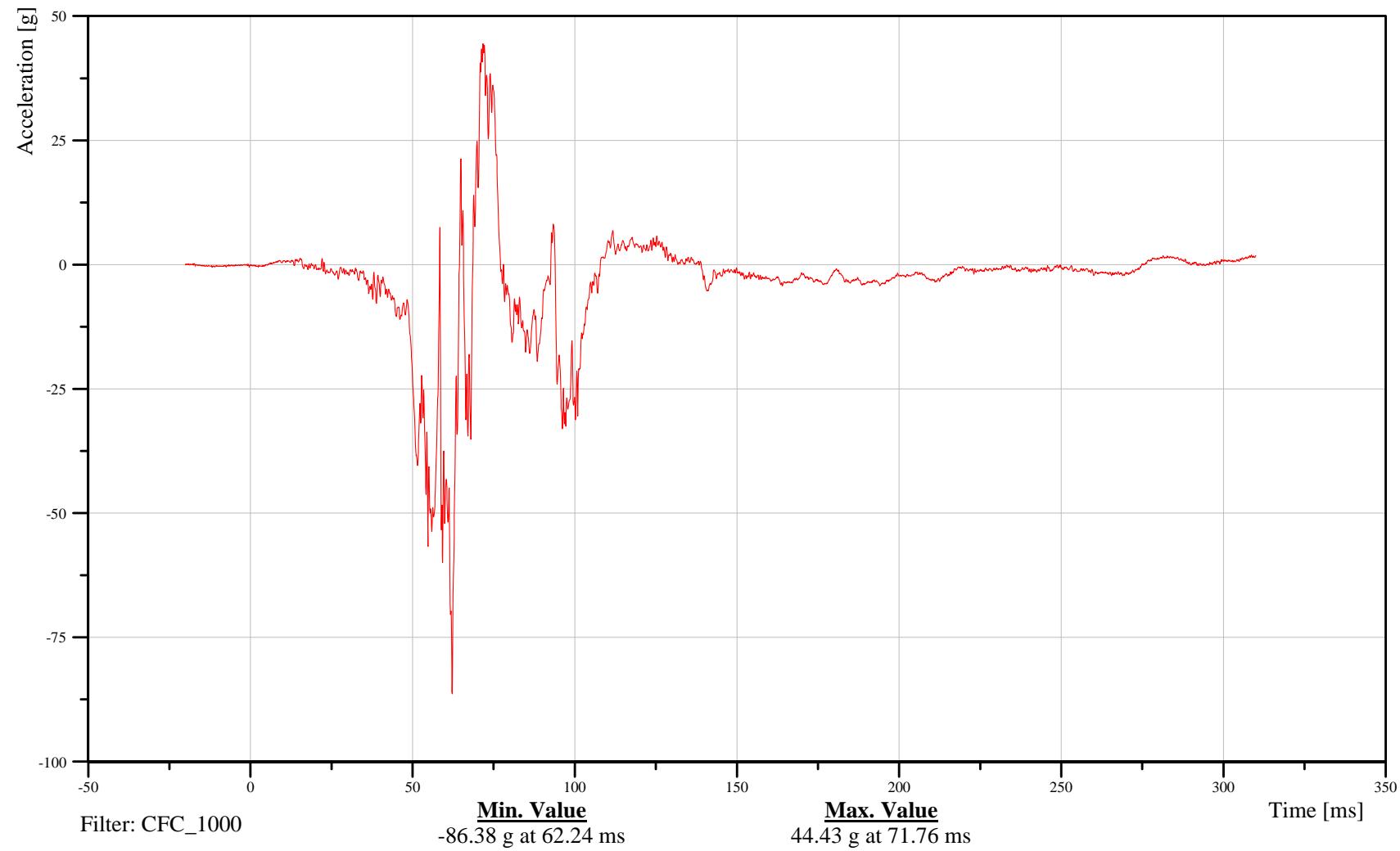
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FOOTRILXH3ACZA

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

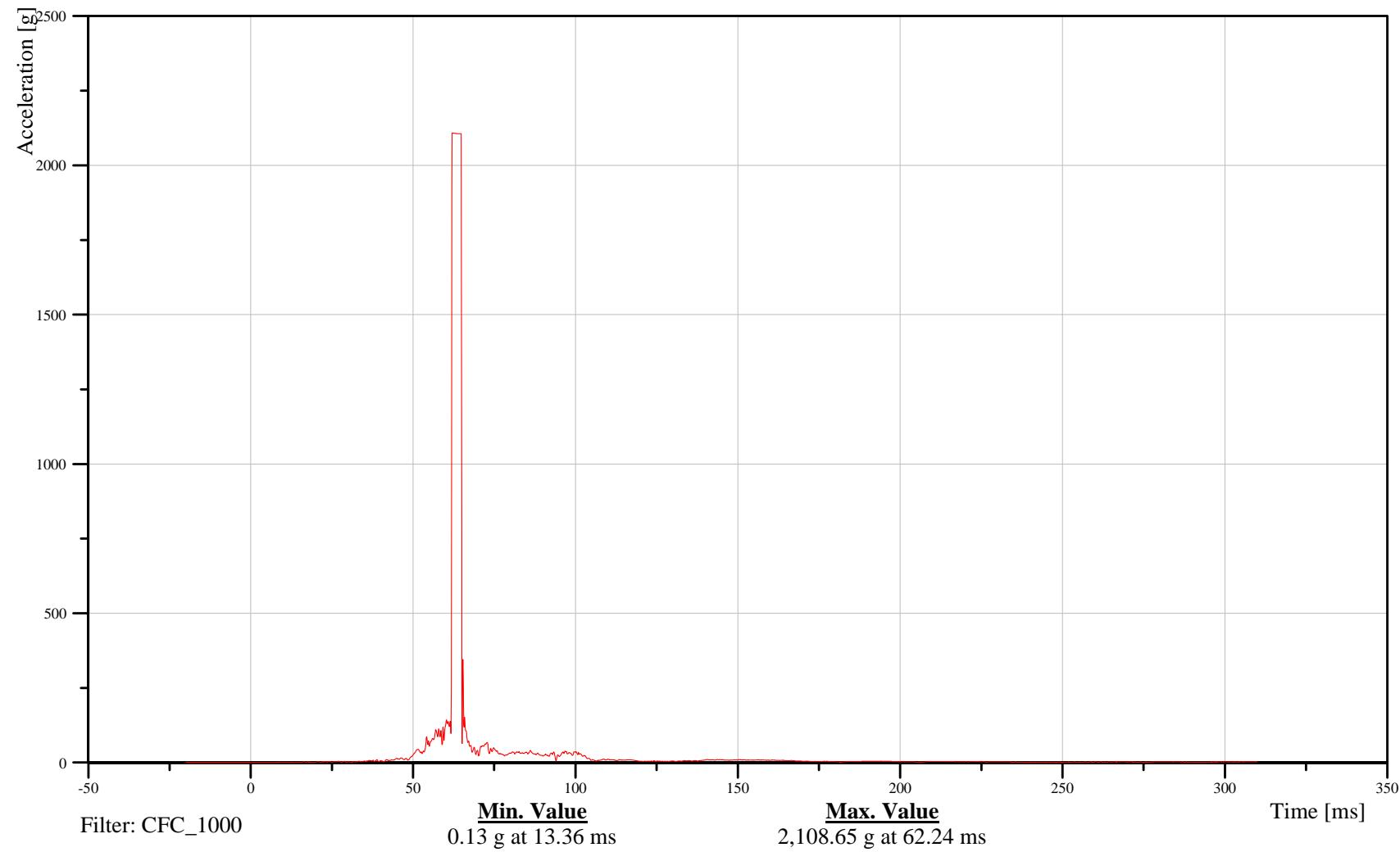
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FOOTRILXH3ACRA

B-65

101116





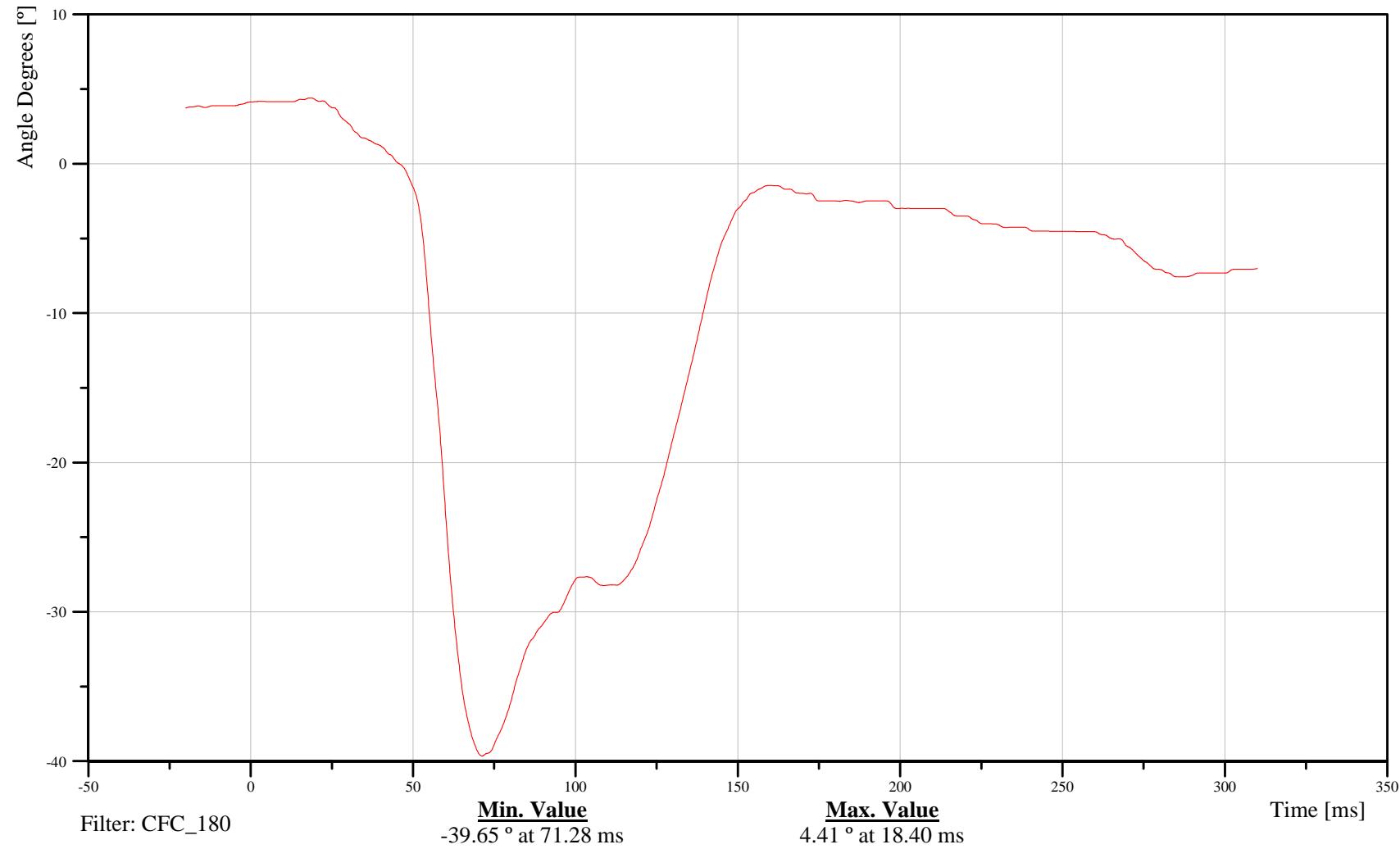
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot X-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





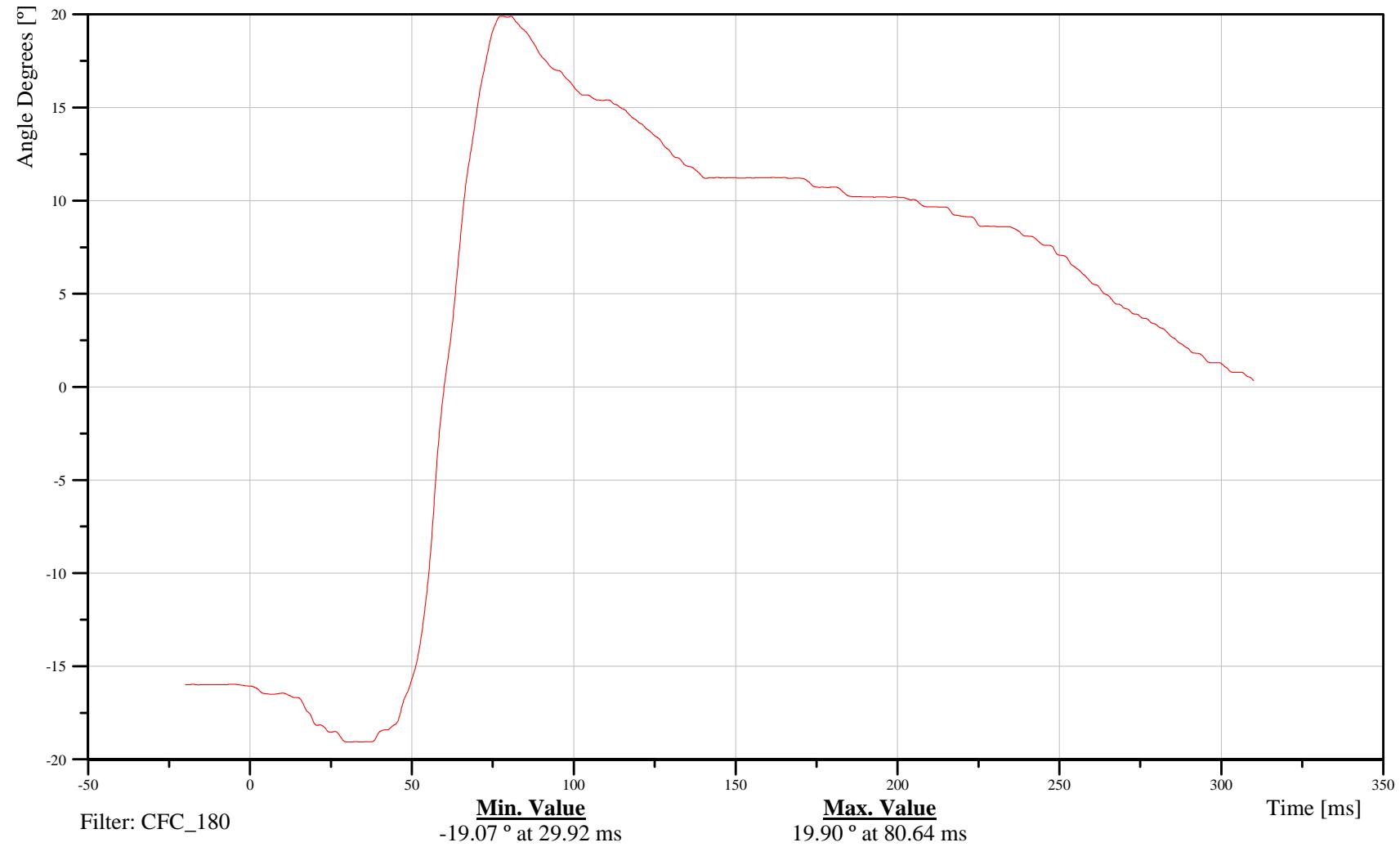
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot Y-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

11FOOTRILXH3ANYC





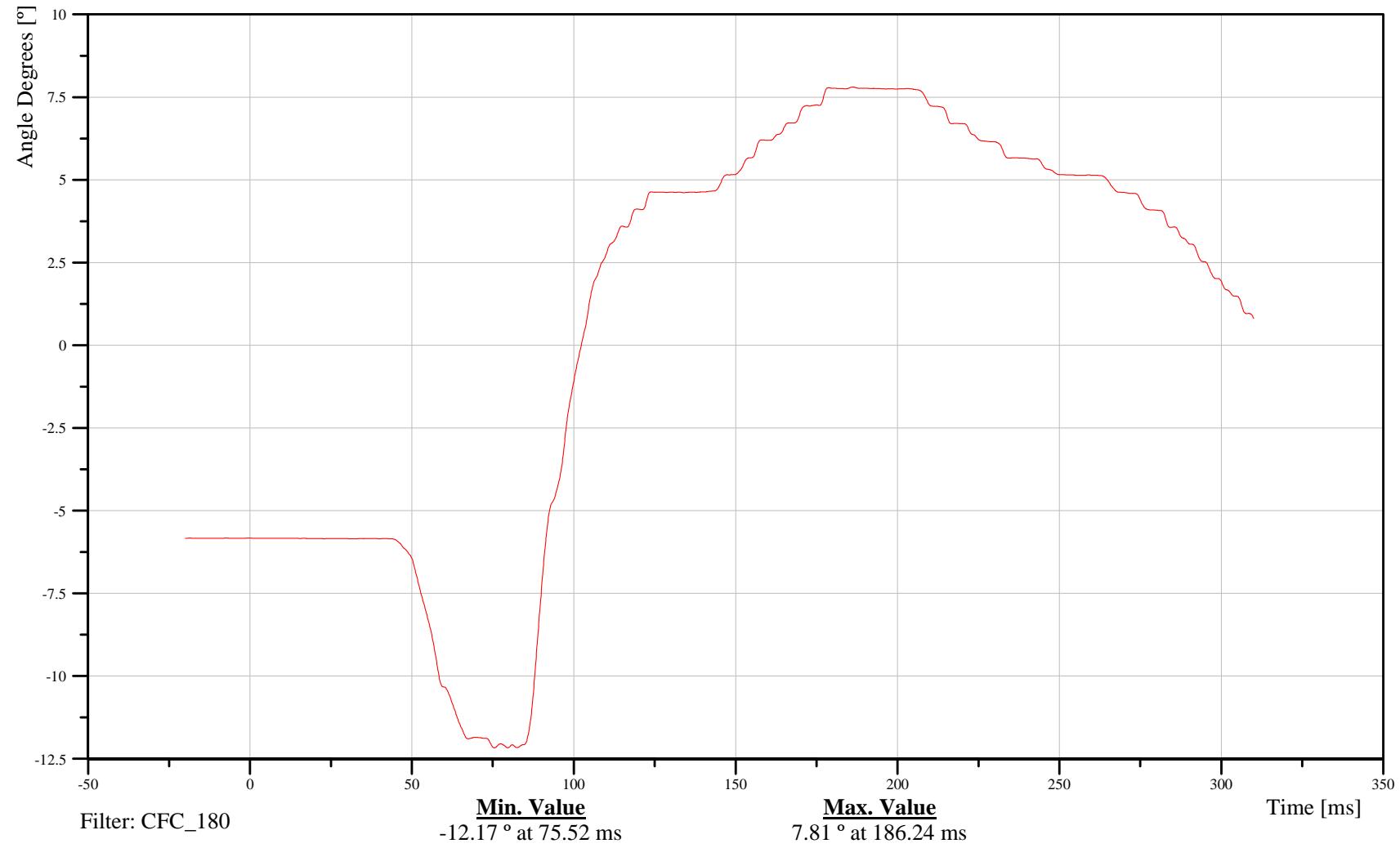
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Right Foot Z-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

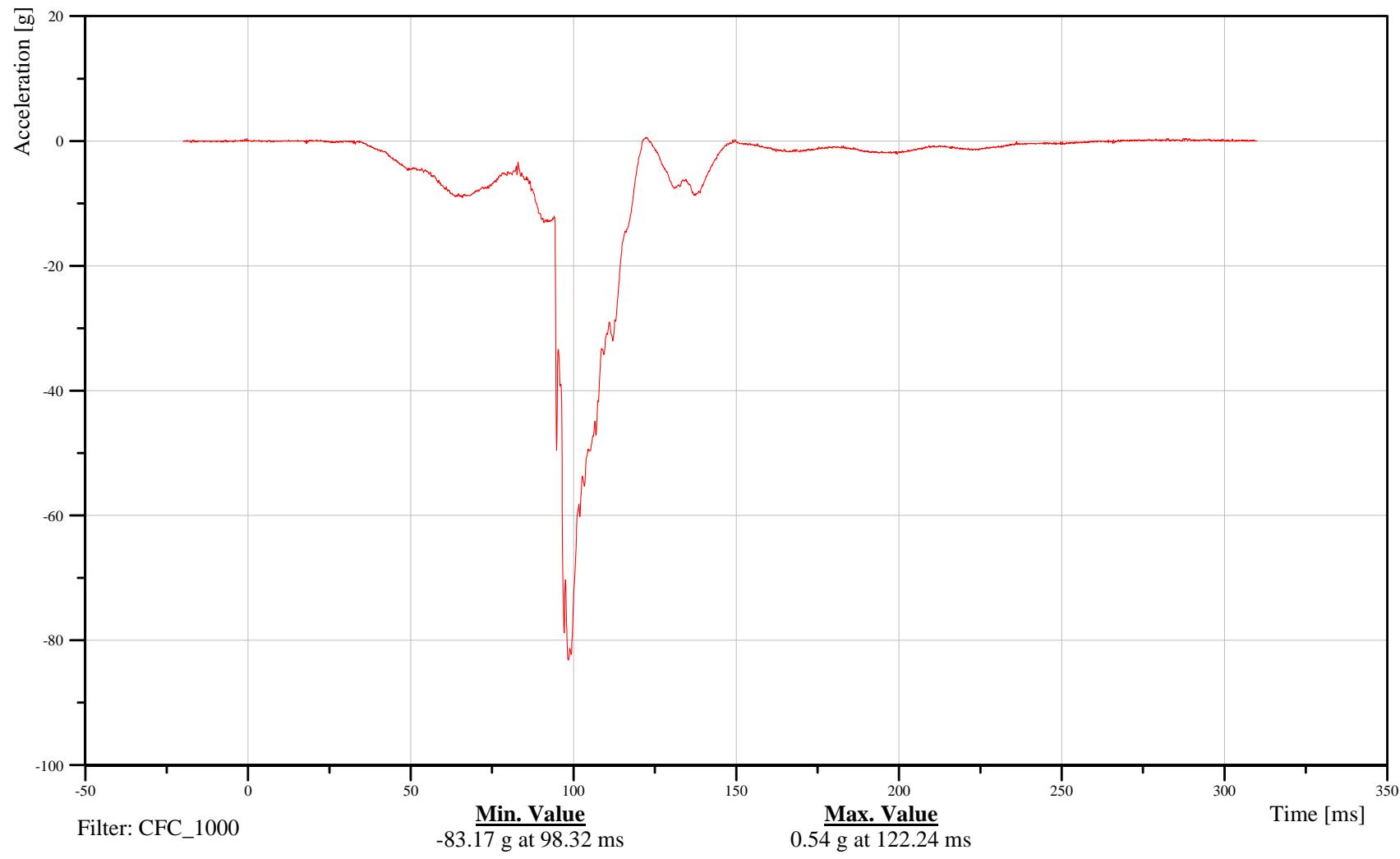
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCG00HFACXA

B-69

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

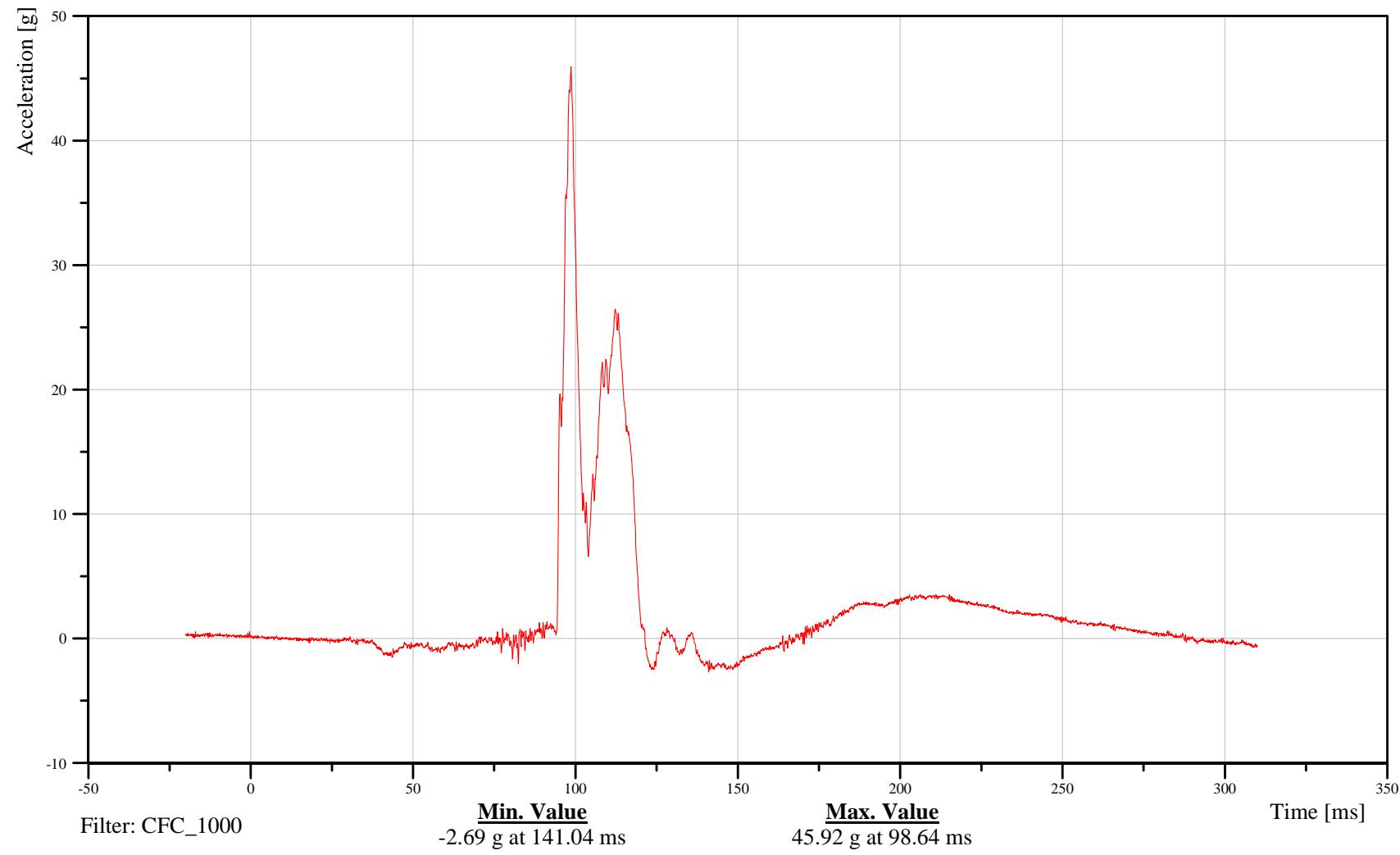
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCG00HFACAYA

B-70

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

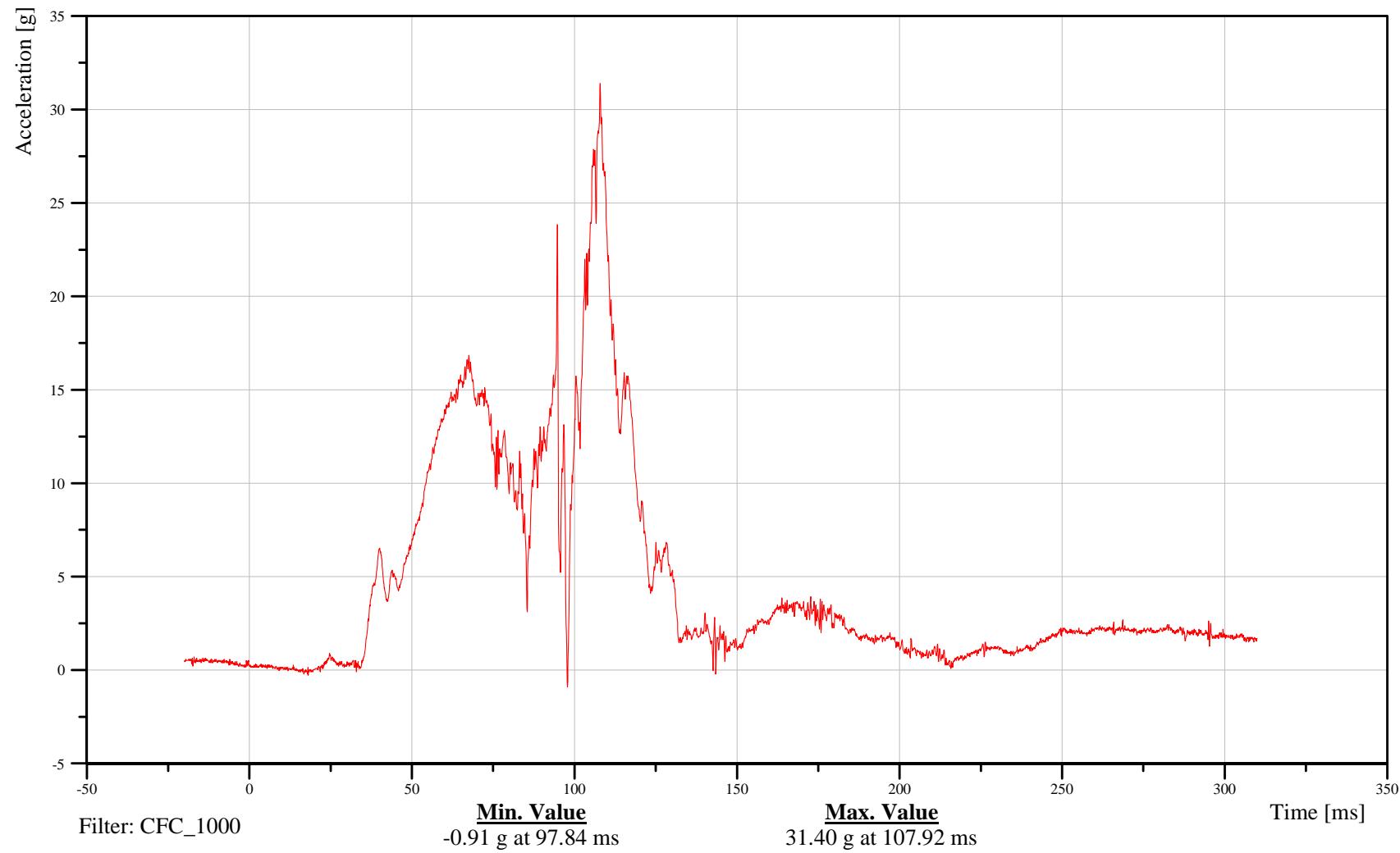
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCG00HFACZA

B-71

101116





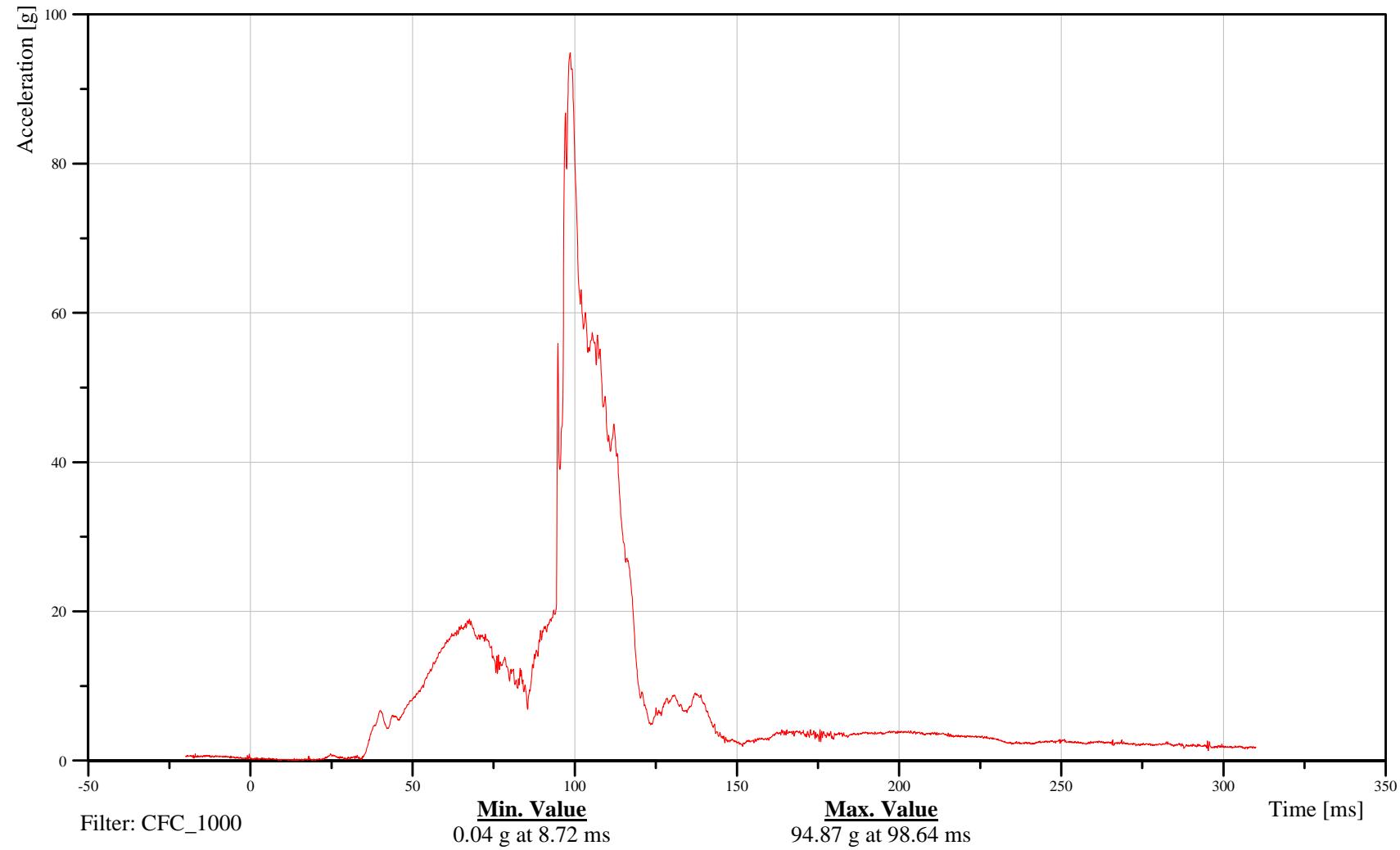
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13HEADCG00HFACRA

TRC Inc. Test Lab: CTF  
Test Number: 101116





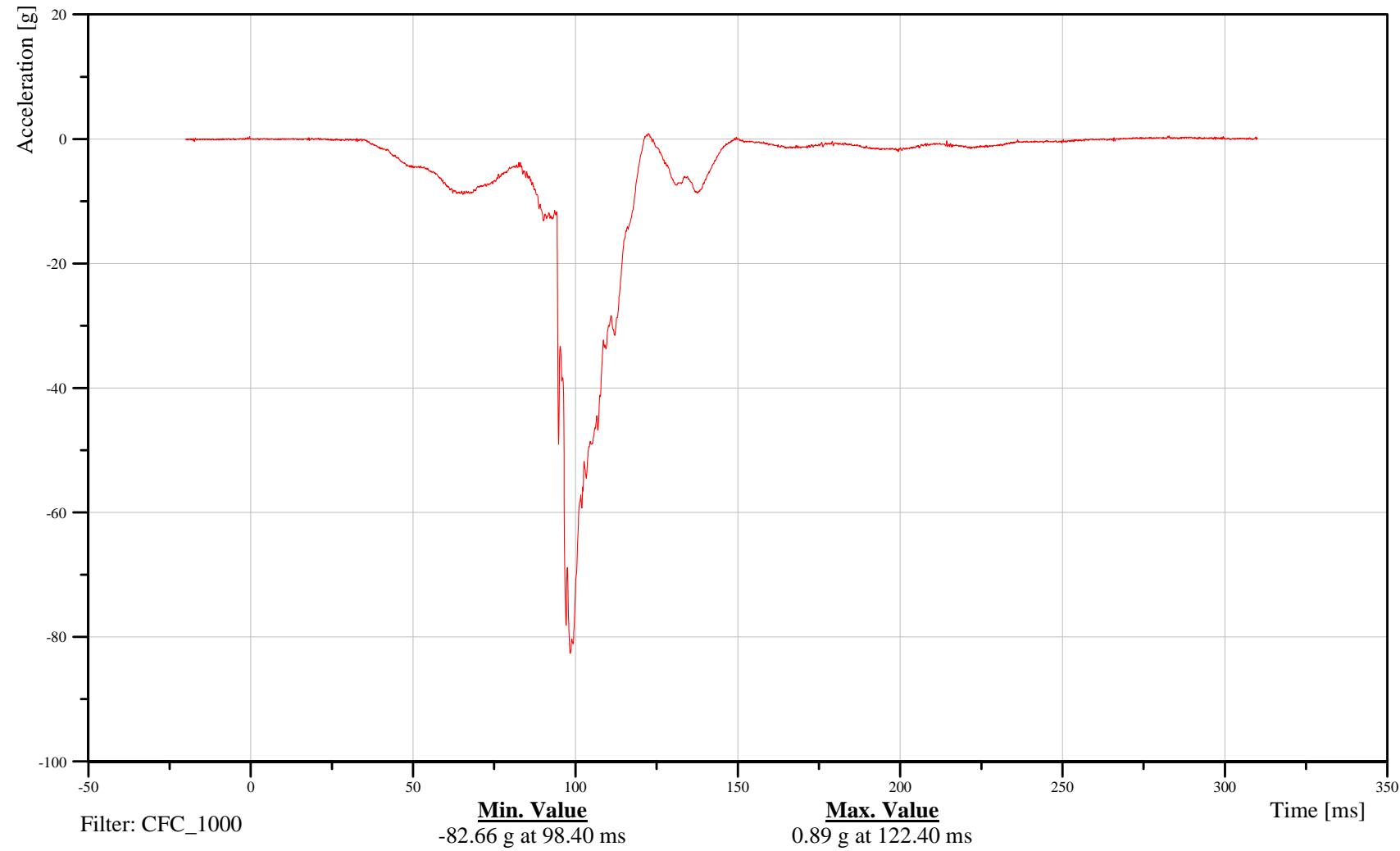
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Redundant X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCGRDHFACXA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Redundant Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

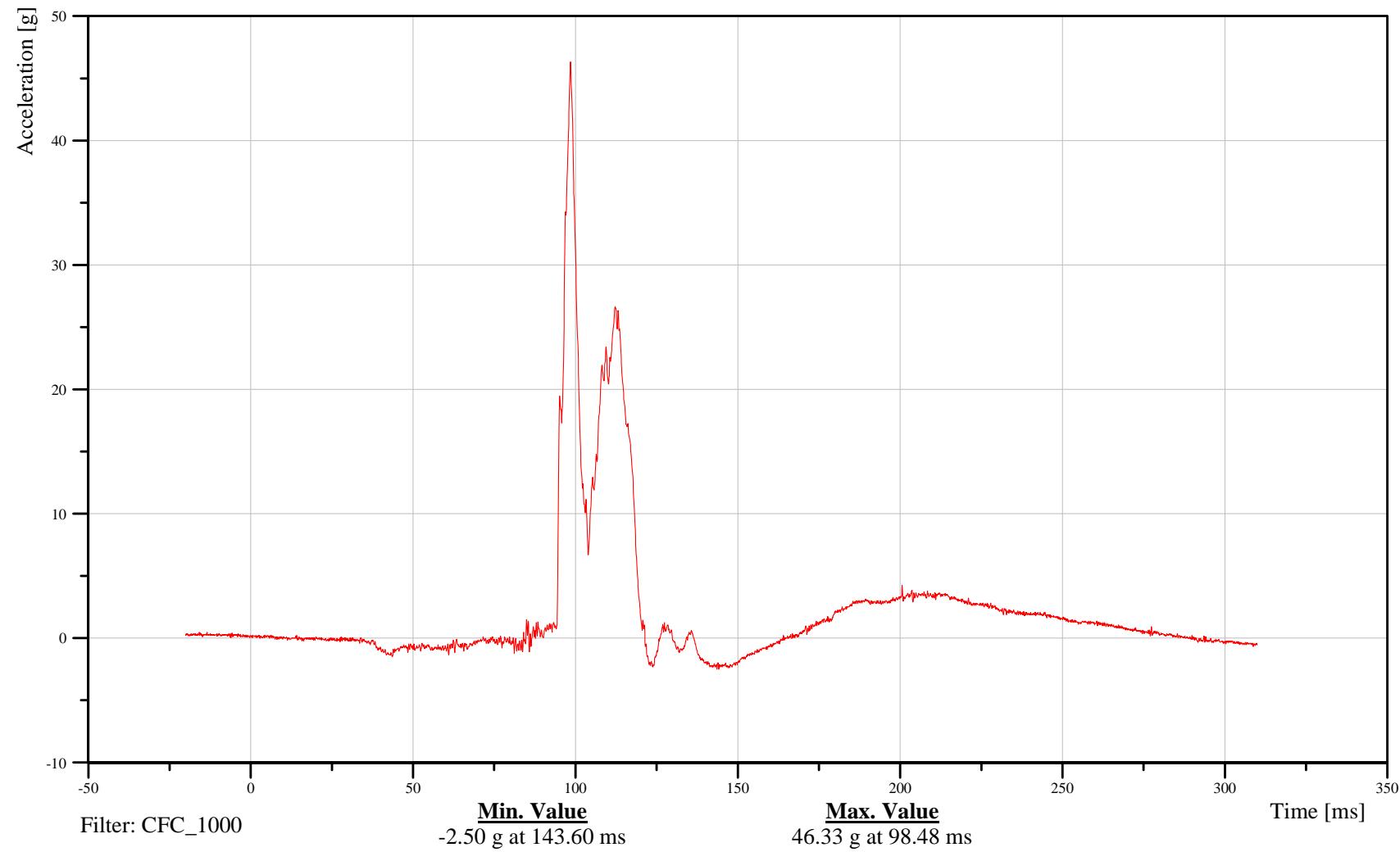
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCGRDHFACYA

B-74

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Redundant Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

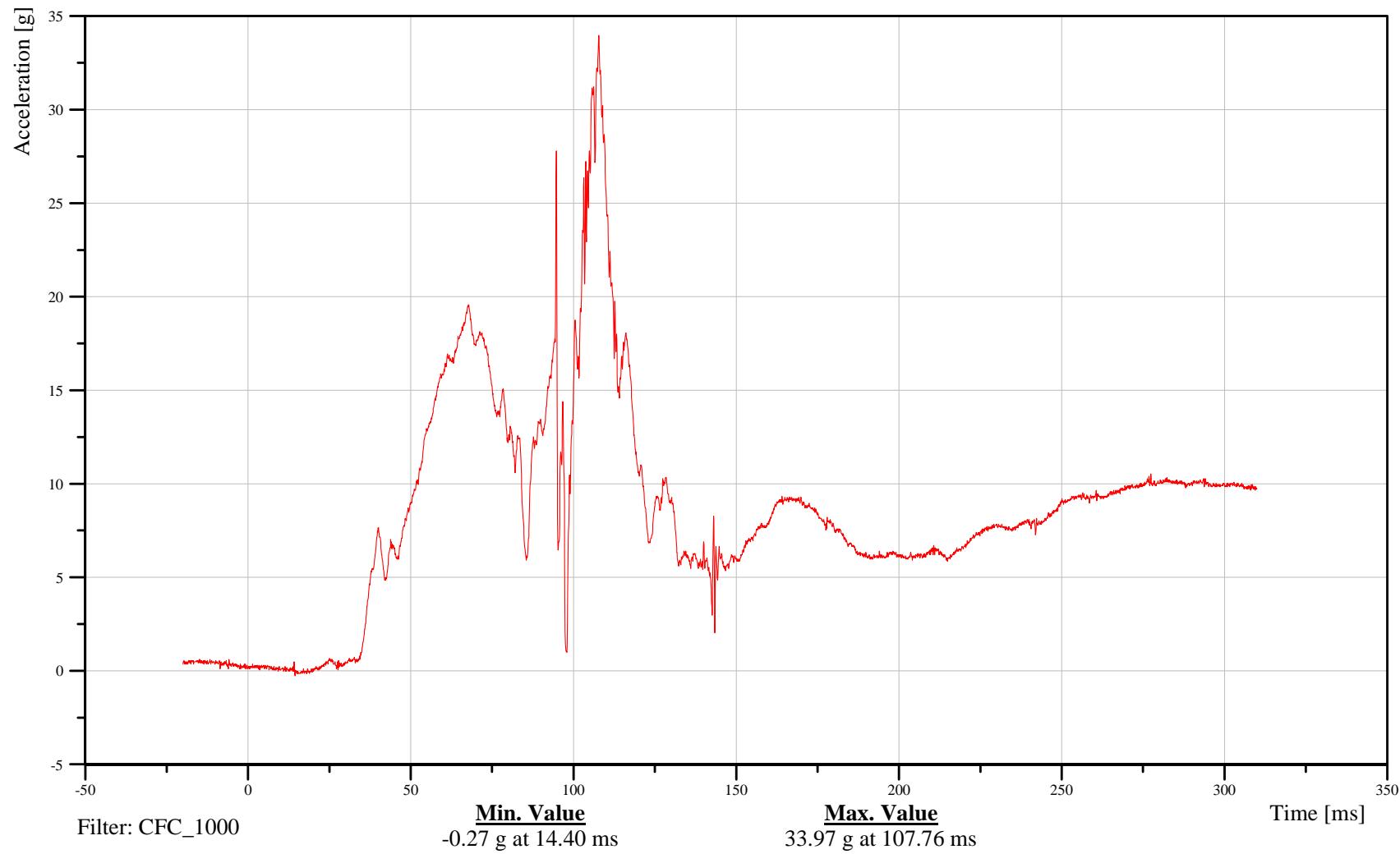
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCGRDHFACZA

B-75

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Head Redundant Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

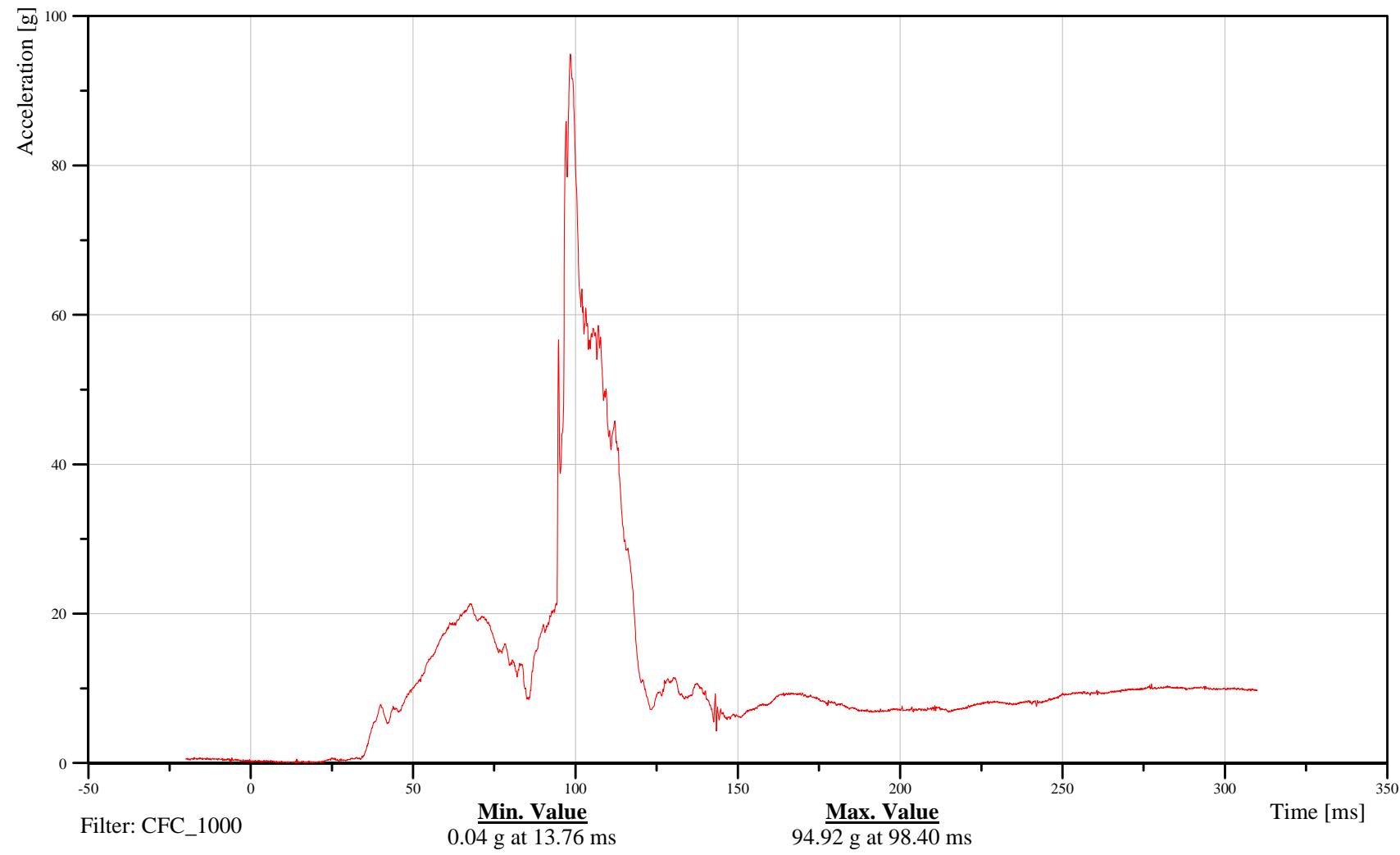
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13HEADCGRDHFACRA

B-76

101116





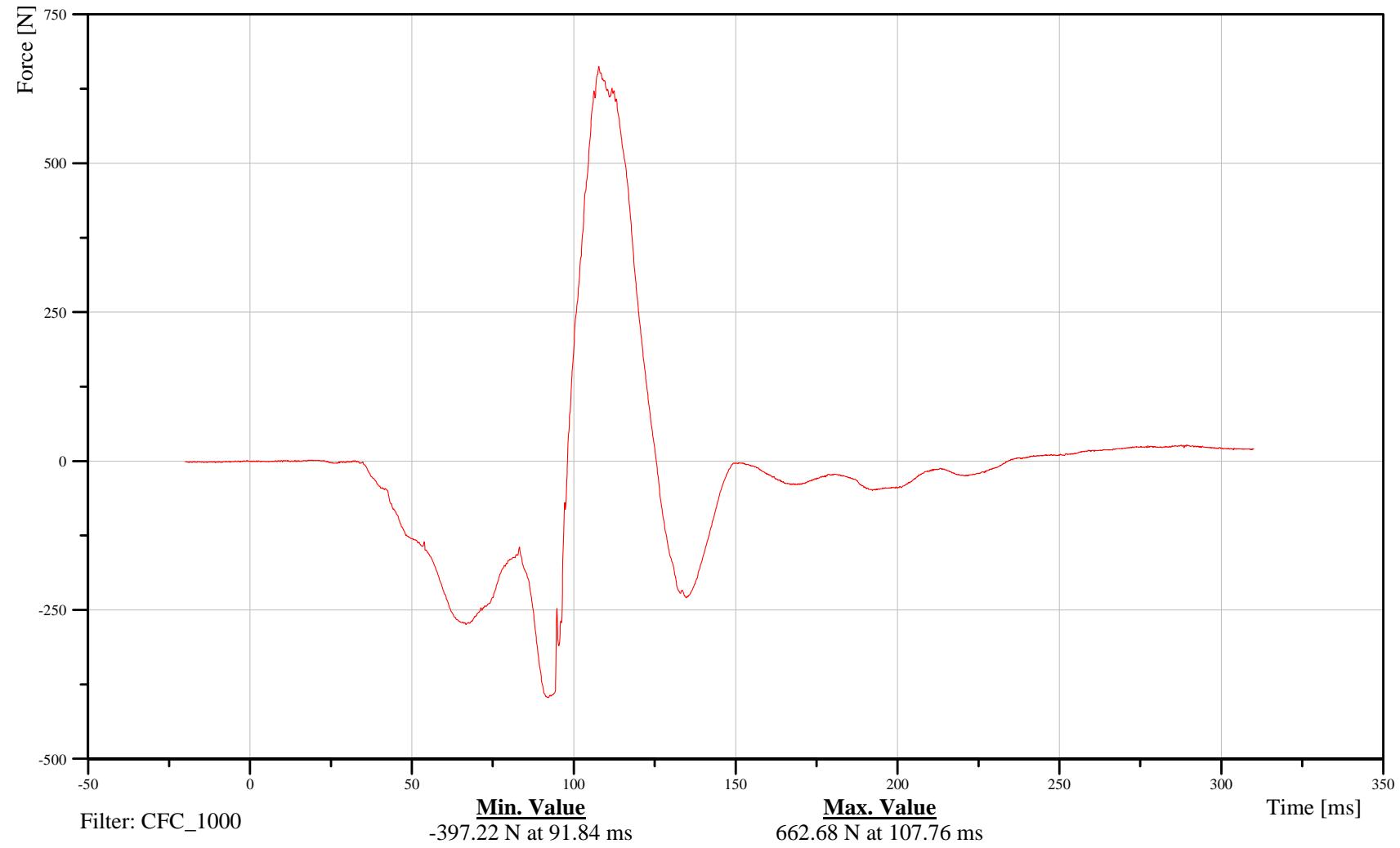
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Upper Neck X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13NECKUP00HFFOXA





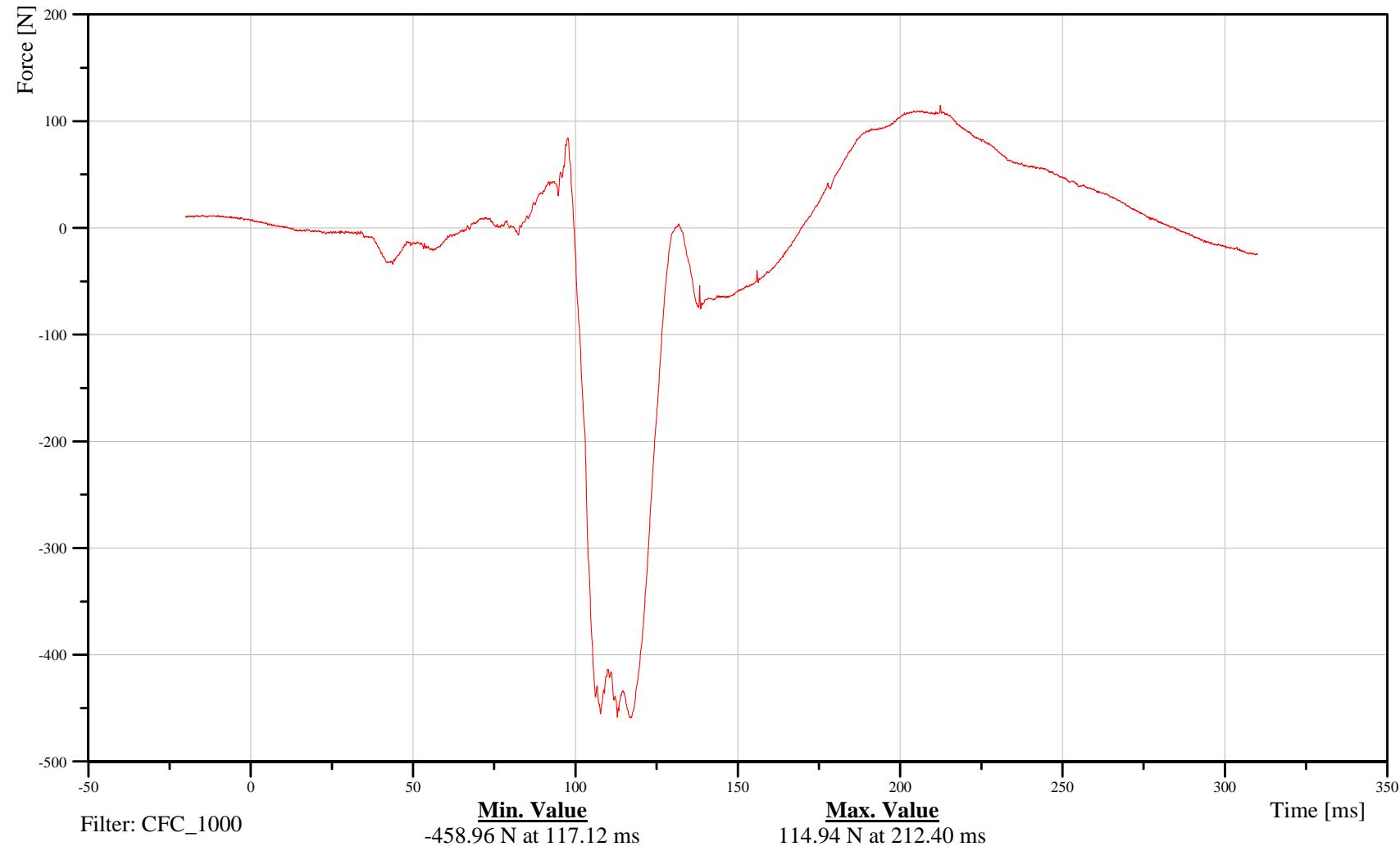
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Upper Neck Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13NECKUP00HFFOYA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Upper Neck Z-Axis Force

Date: 11/17/2010  
Time: 14:40

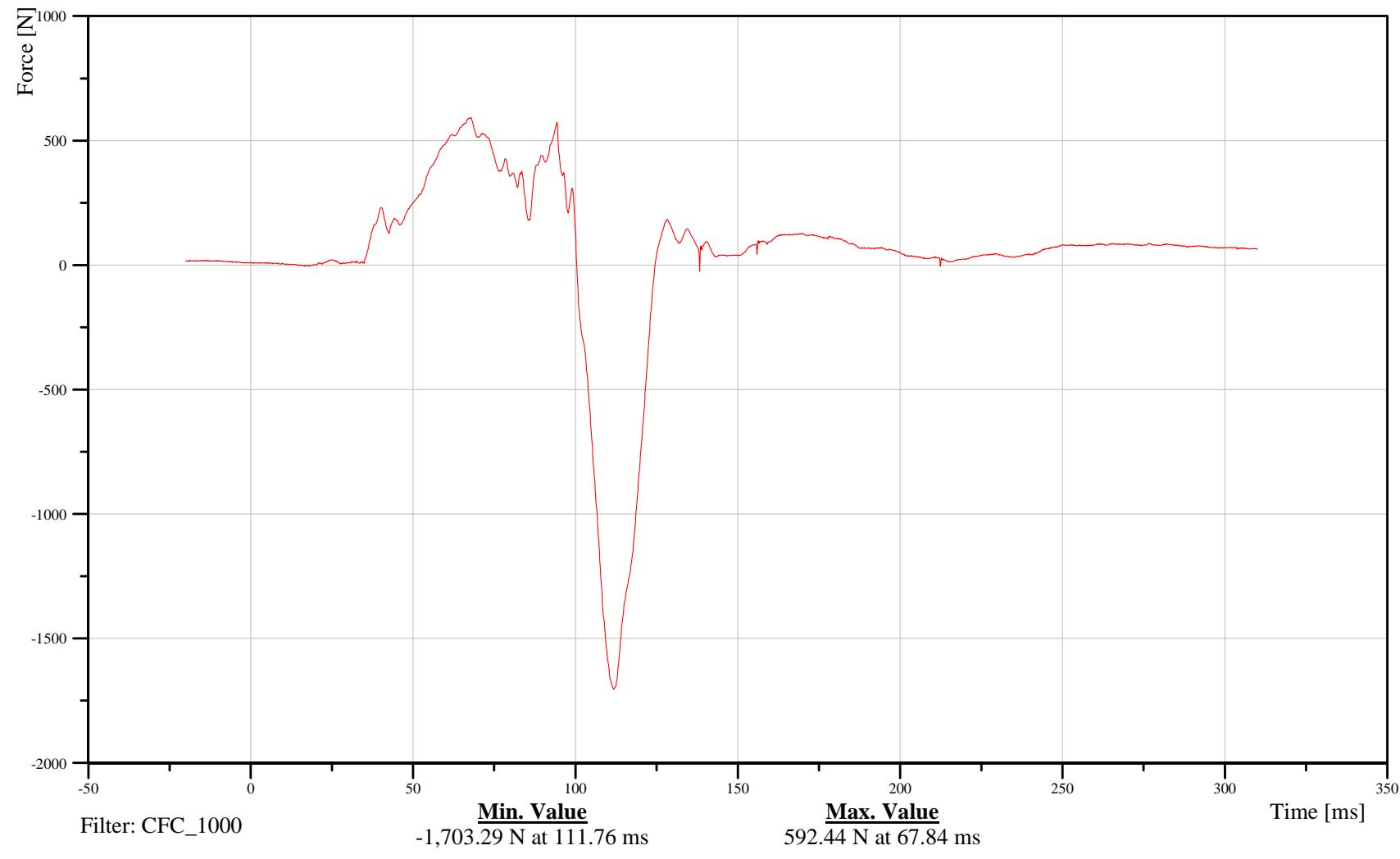
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13NECKUP00HFFOZA

B-79

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Upper Neck Moment About X Axis

Date: 11/17/2010  
Time: 14:40

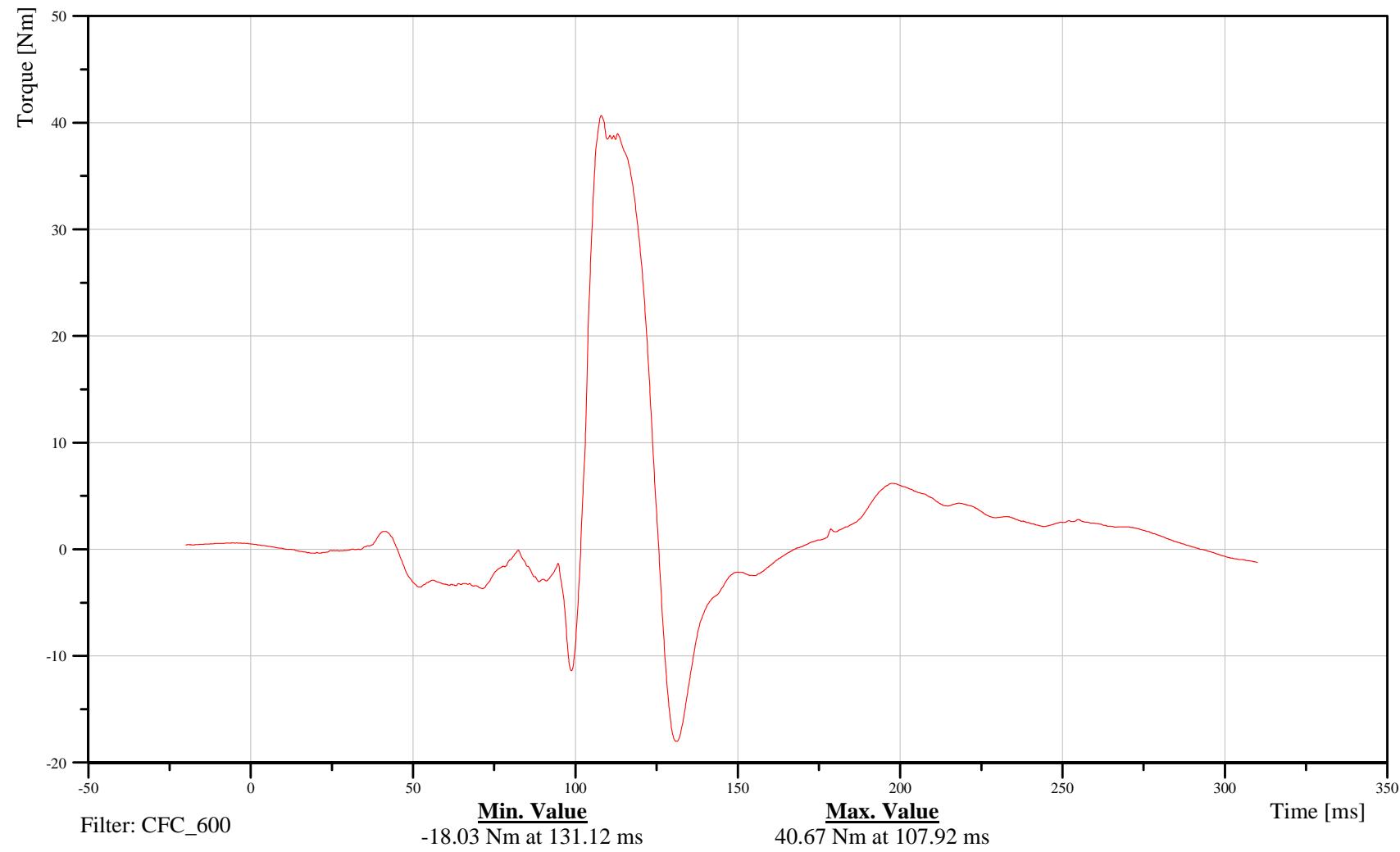
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13NECKUP00HFMOXB

B-80

101116





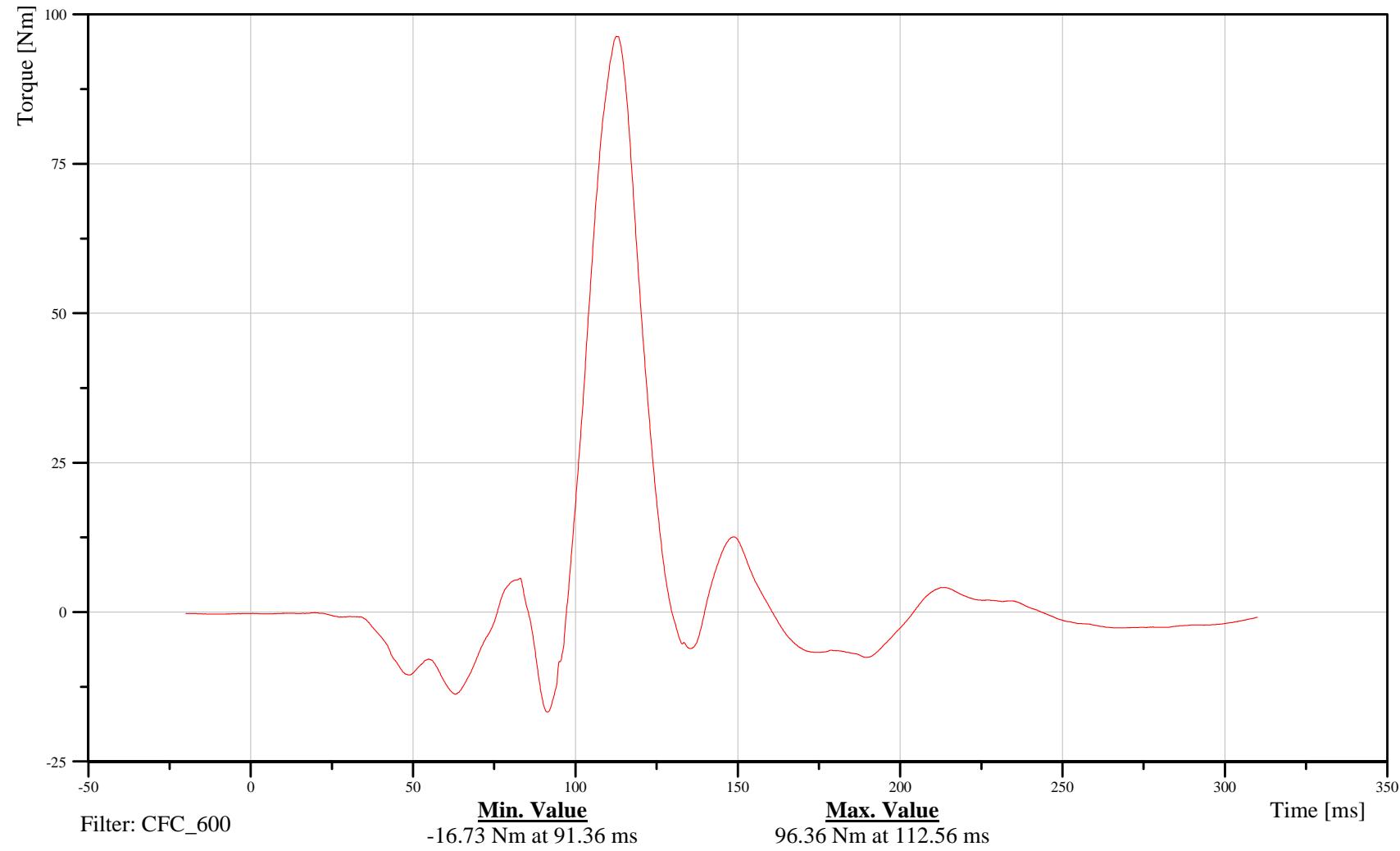
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Upper Neck Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13NECKUP00HFMOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





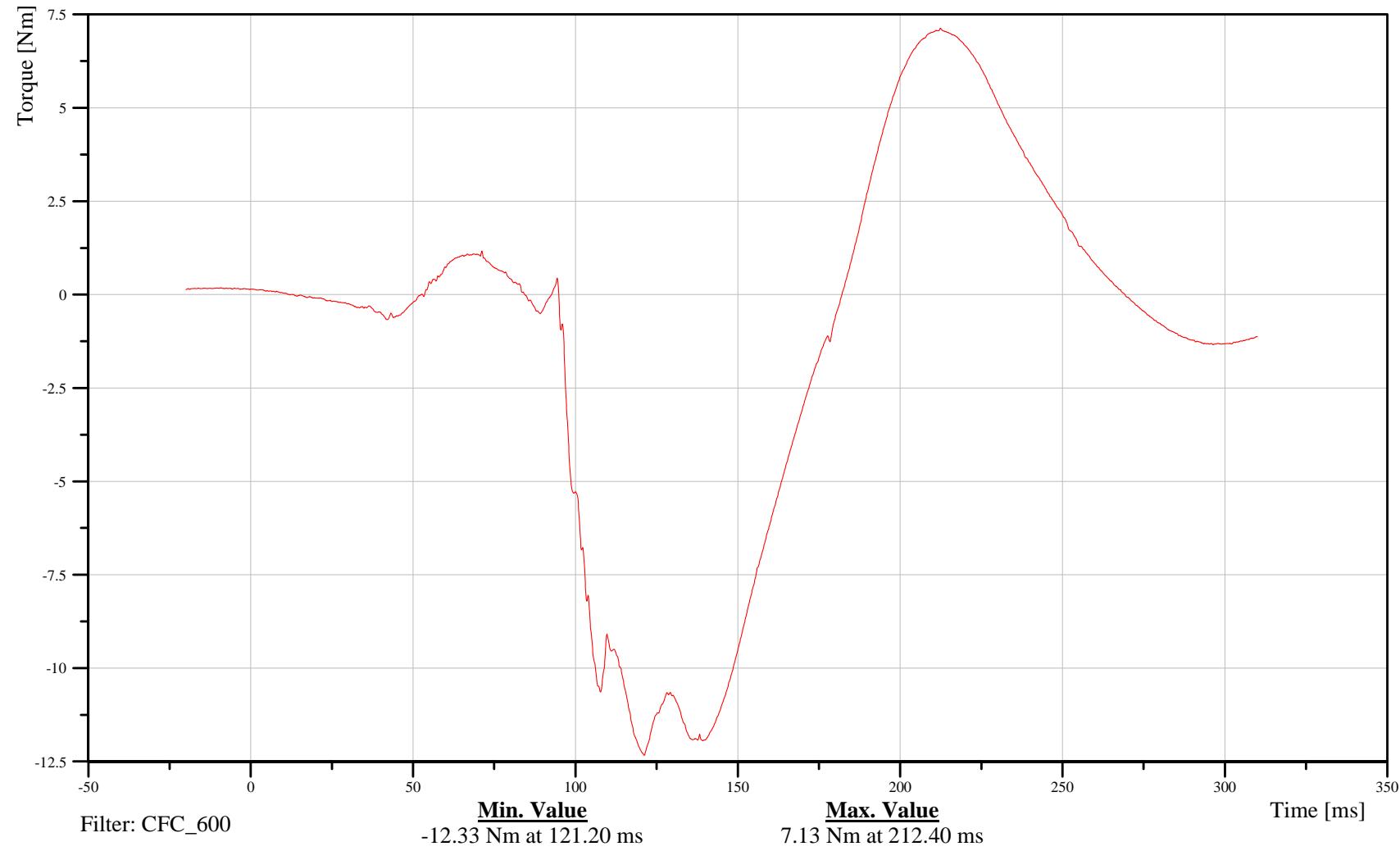
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Upper Neck Moment About Z Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13NECKUP00HFMOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

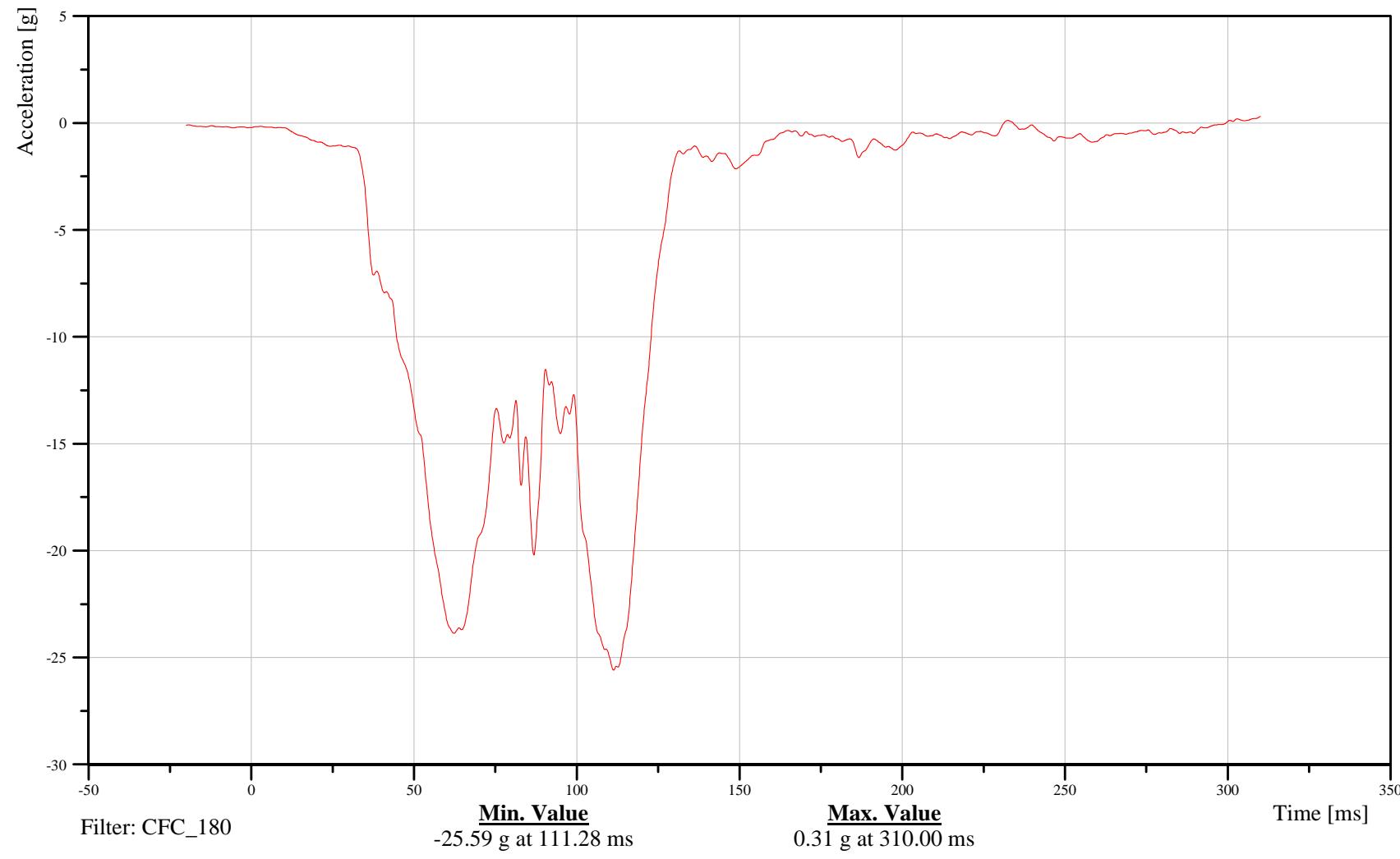
Customer: VRTC

13CHSTCG00HFACXC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-83

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Y-Axis Acceleration

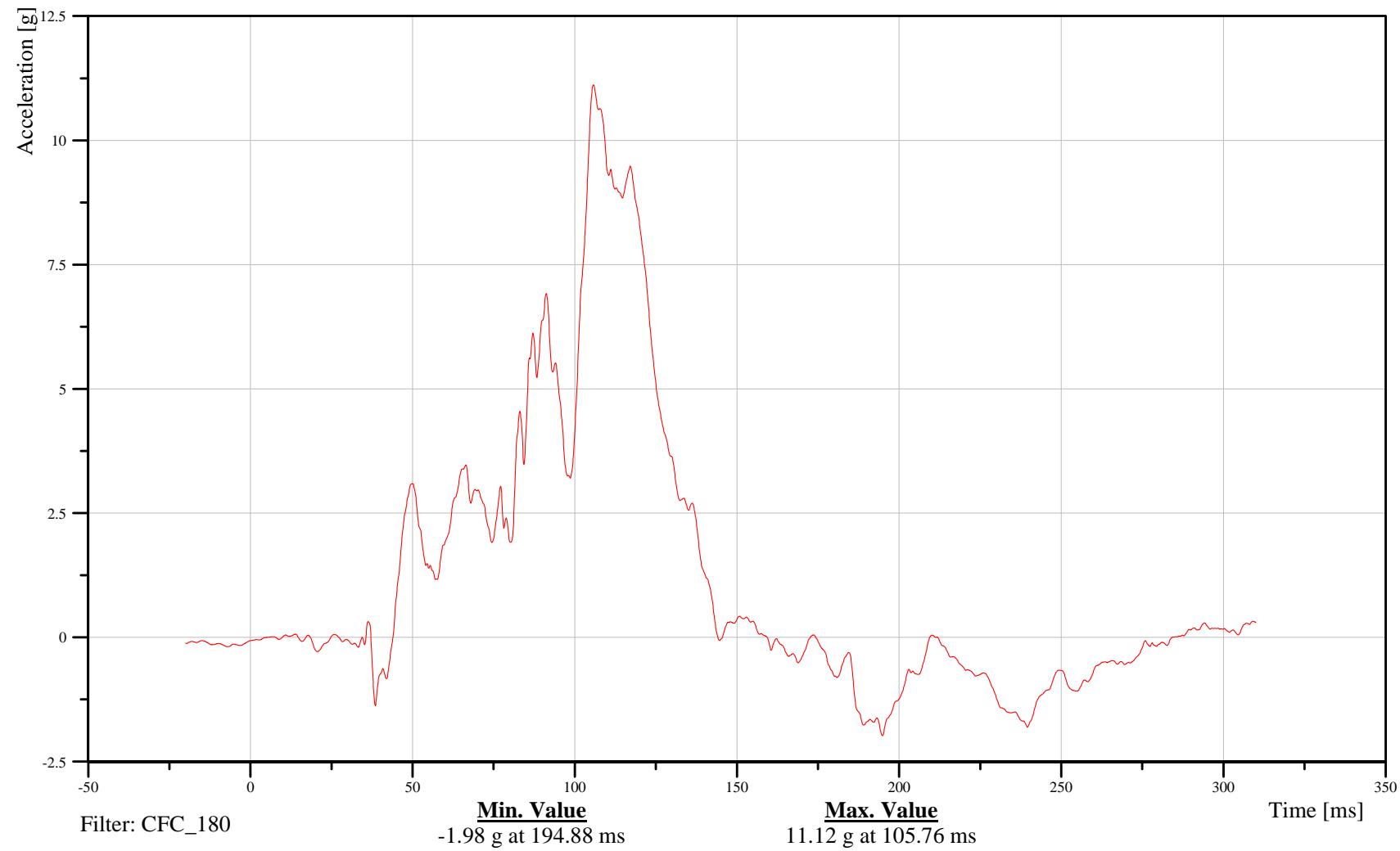
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13CHSTCG00HFACYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-84  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

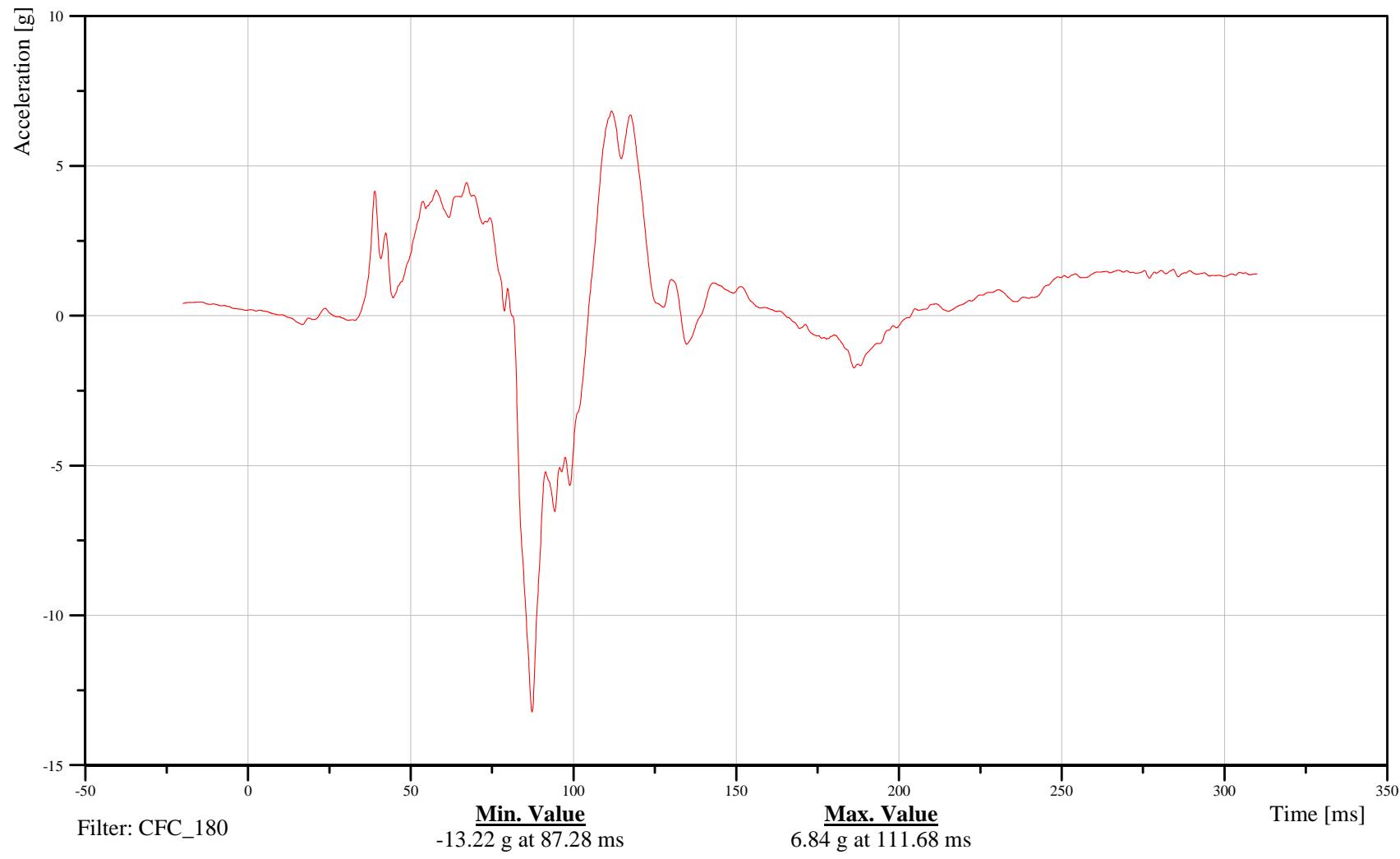
Customer: VRTC

13CHSTCG00HFACZC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-85

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Resultant Acceleration

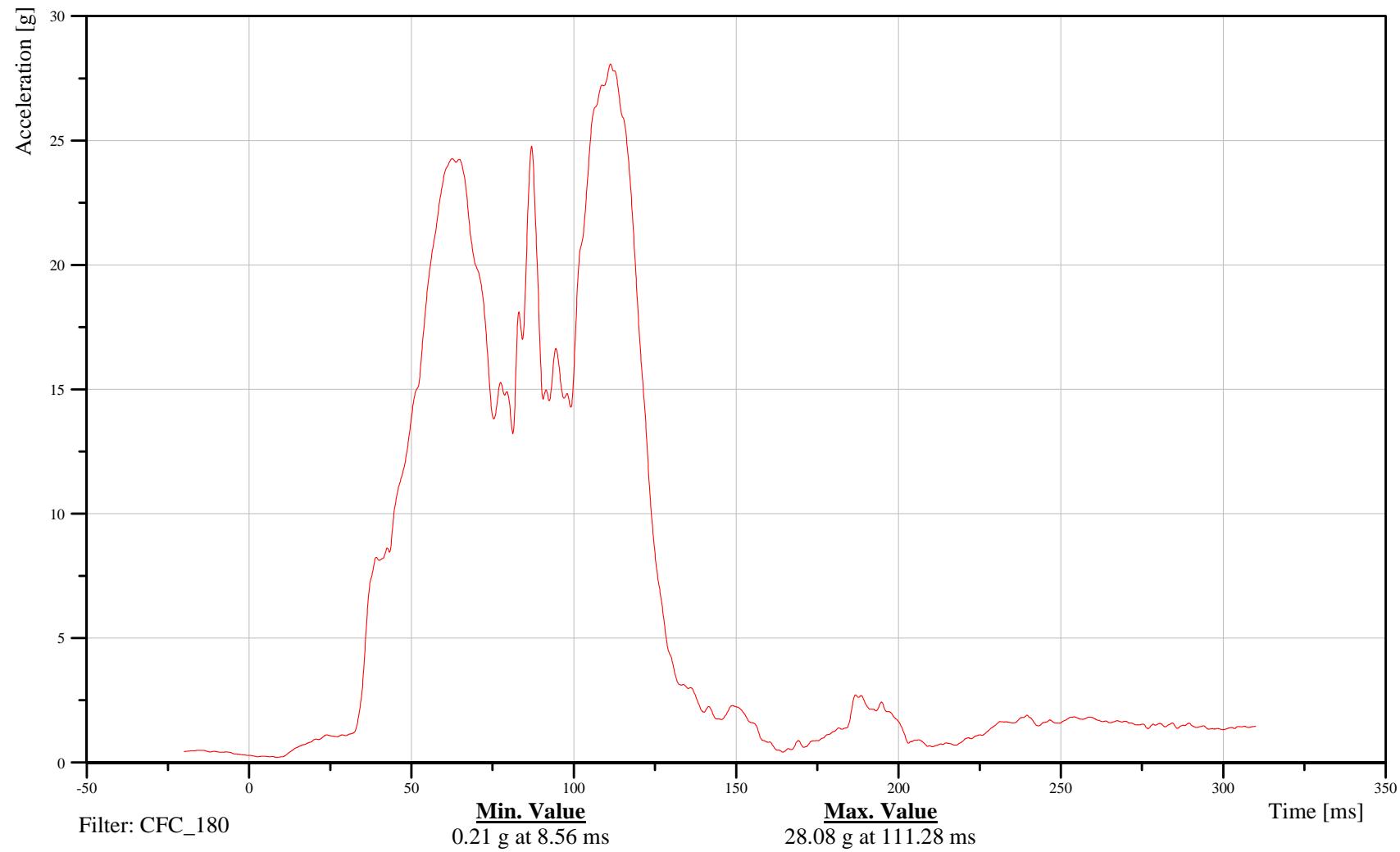
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13CHSTCG00HFACRC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-86  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Redundant X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

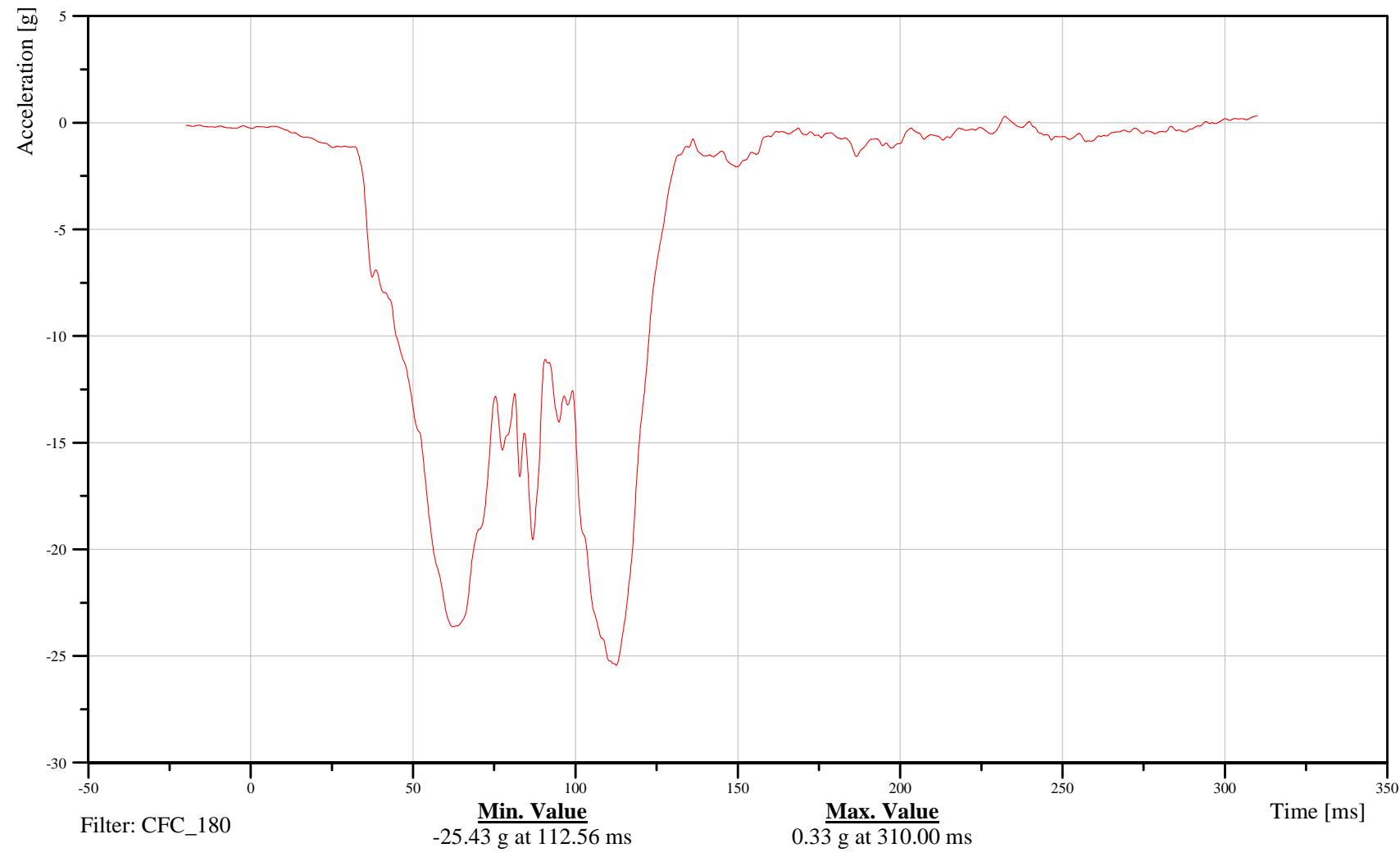
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13CHSTCGRDHFACXC

B-87

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Redundant Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

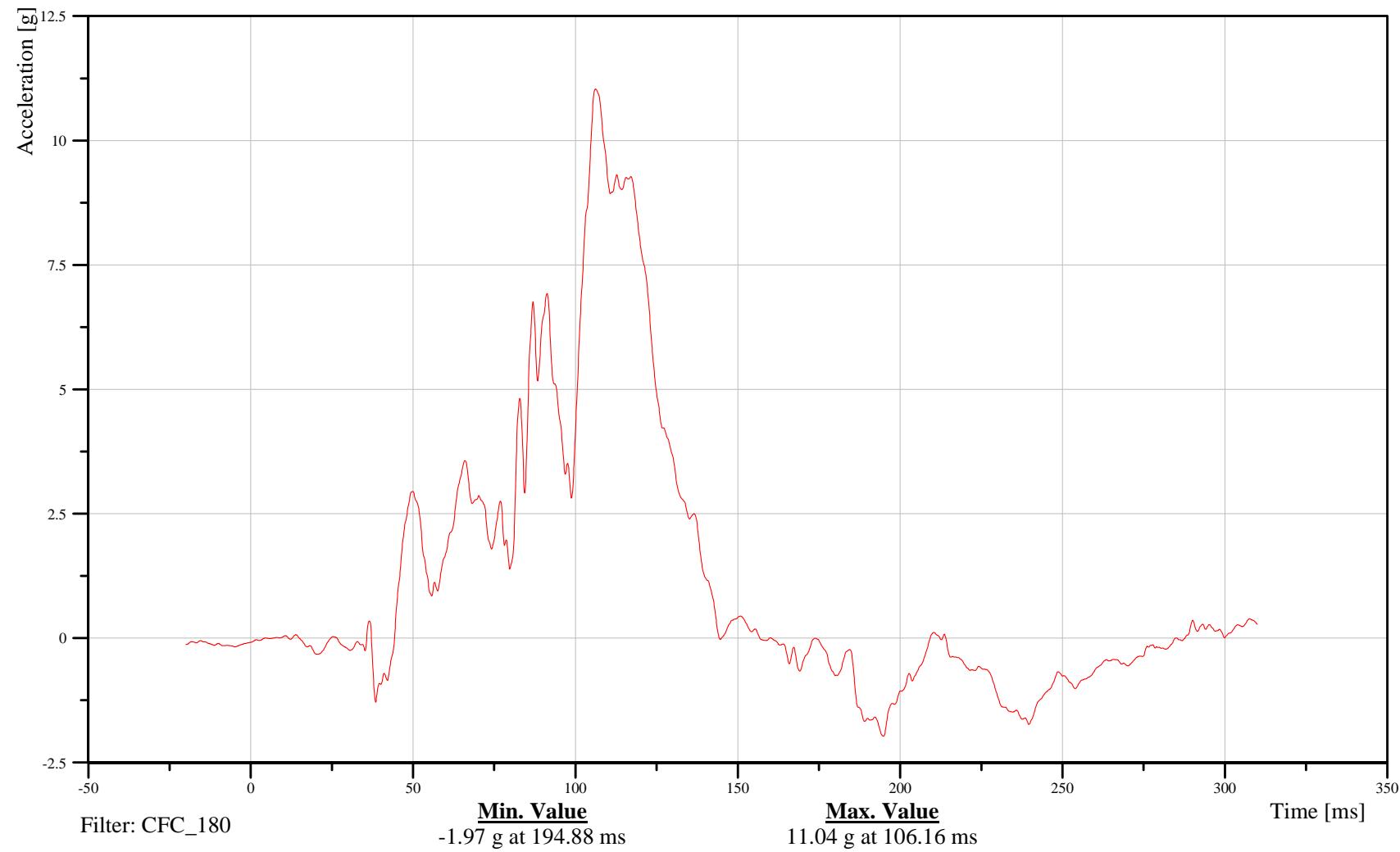
Customer: VRTC

13CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-88

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Redundant Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

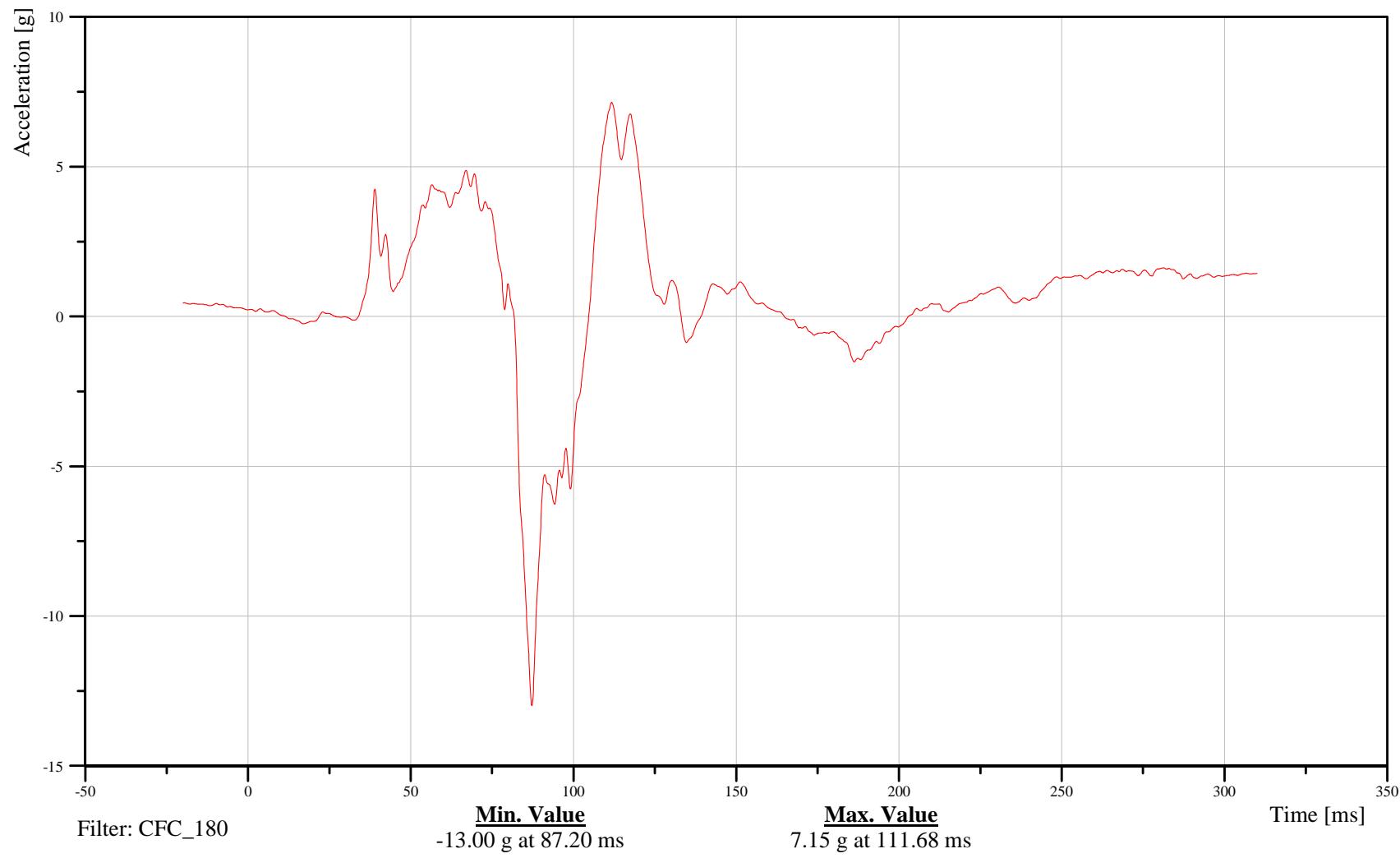
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13CHSTCGRDHFACZC

B-89

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest Redundant Resultant Acceleration

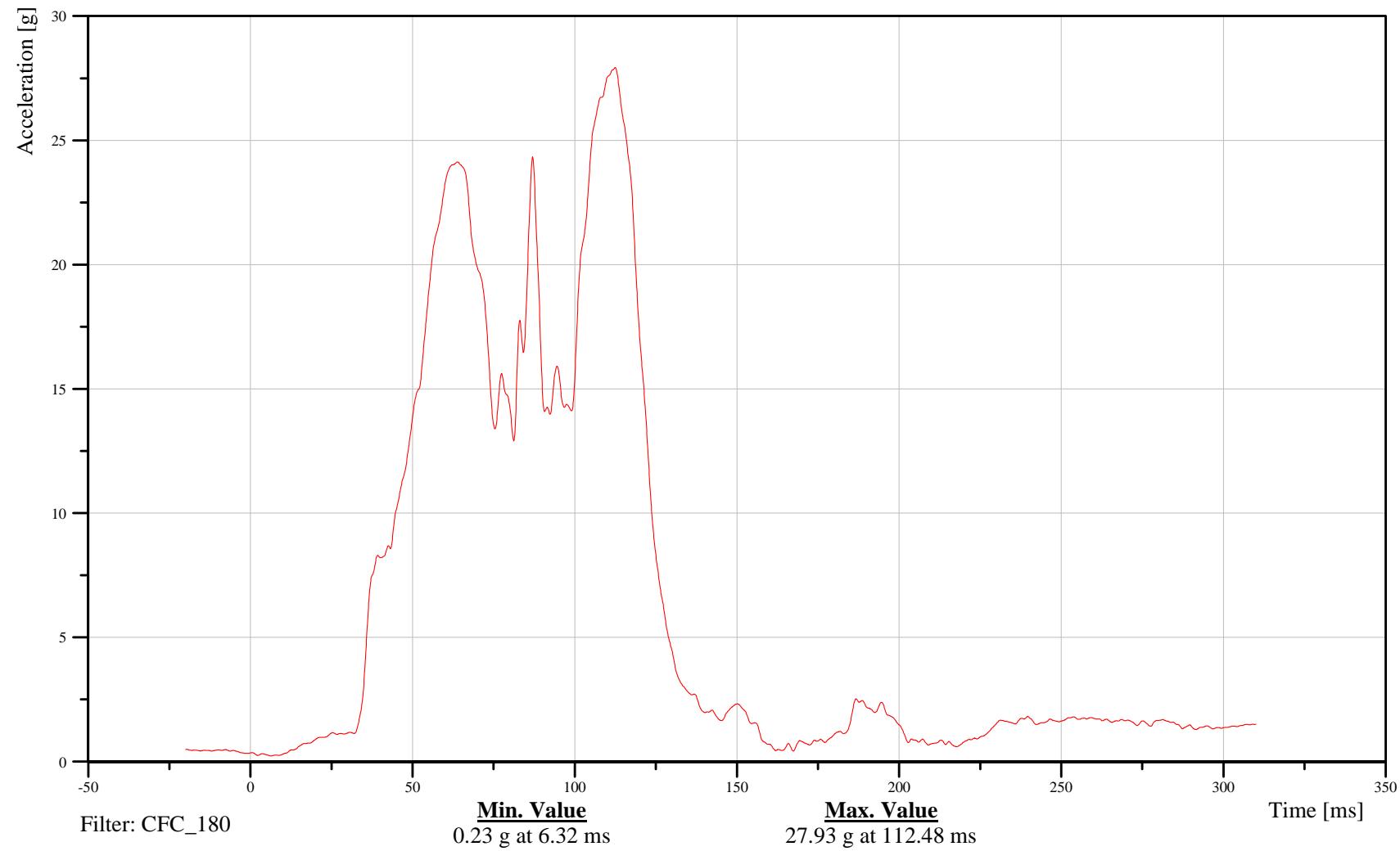
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-90  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Chest X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

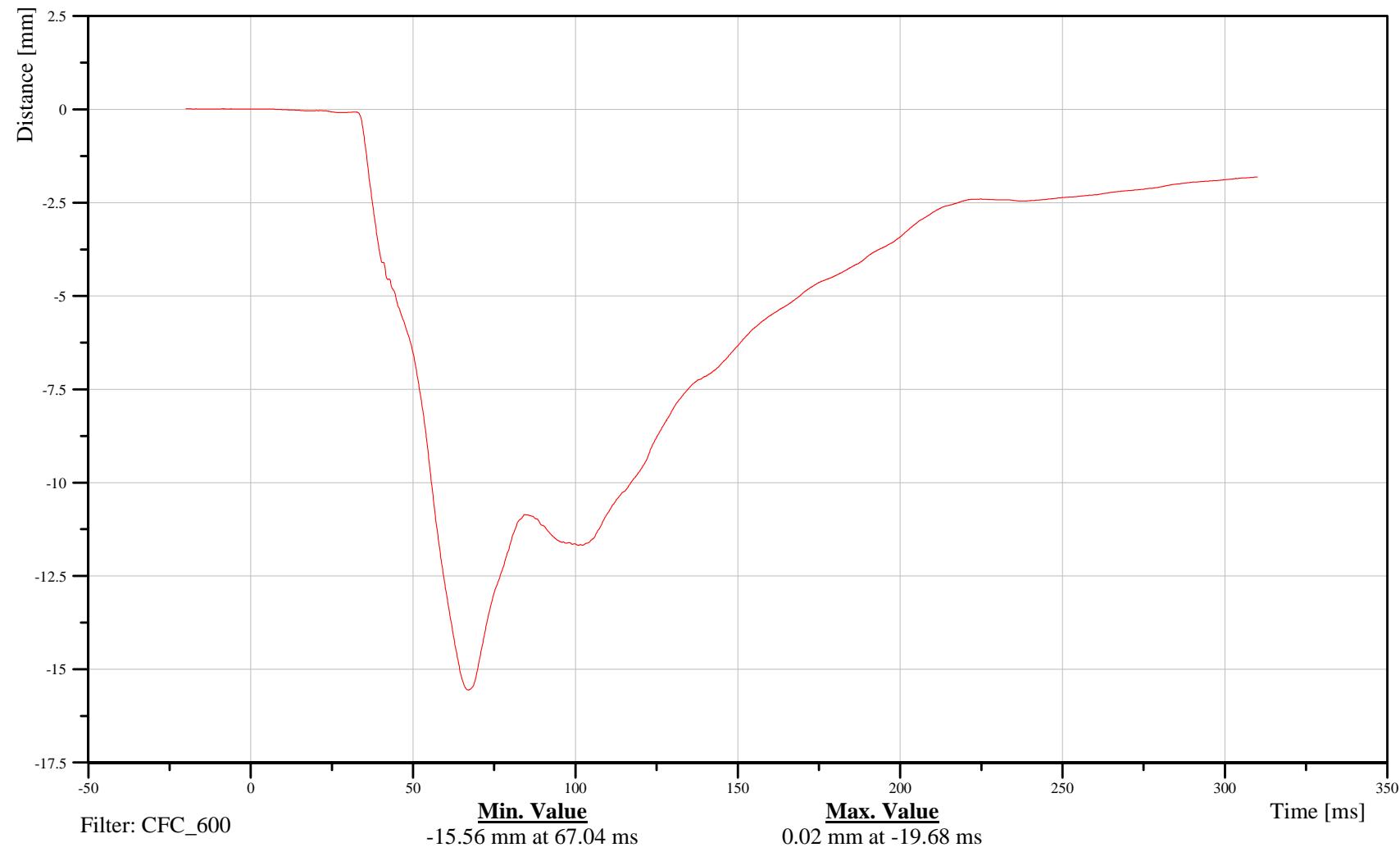
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13CHST0000HFDSXB

B-91

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Pelvis X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

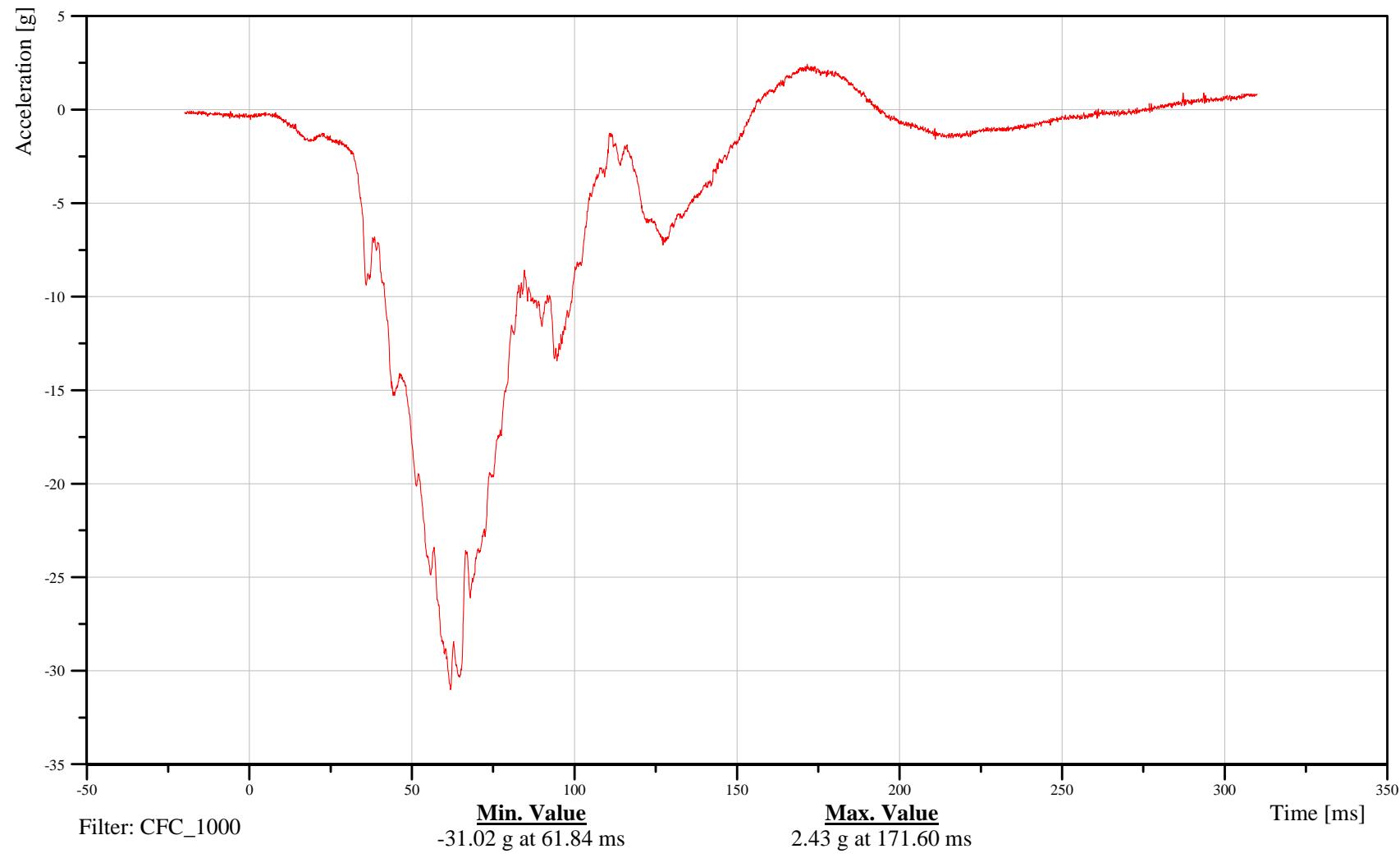
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13PELVCG00HFACXA

B-92

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Pelvis Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

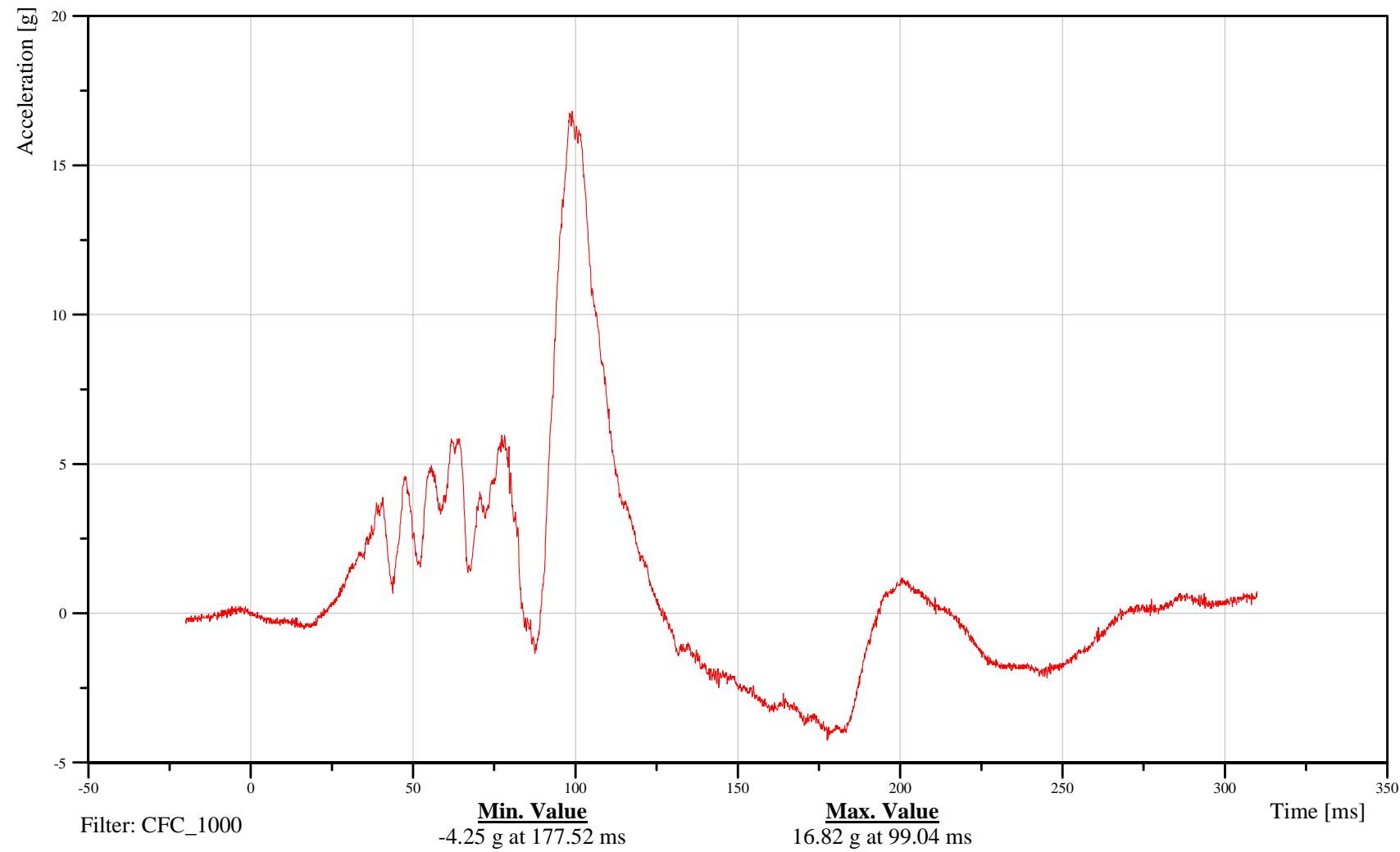
Customer: VRTC

13PELVCG00HFACAYA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-93

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Pelvis Z-Axis Acceleration

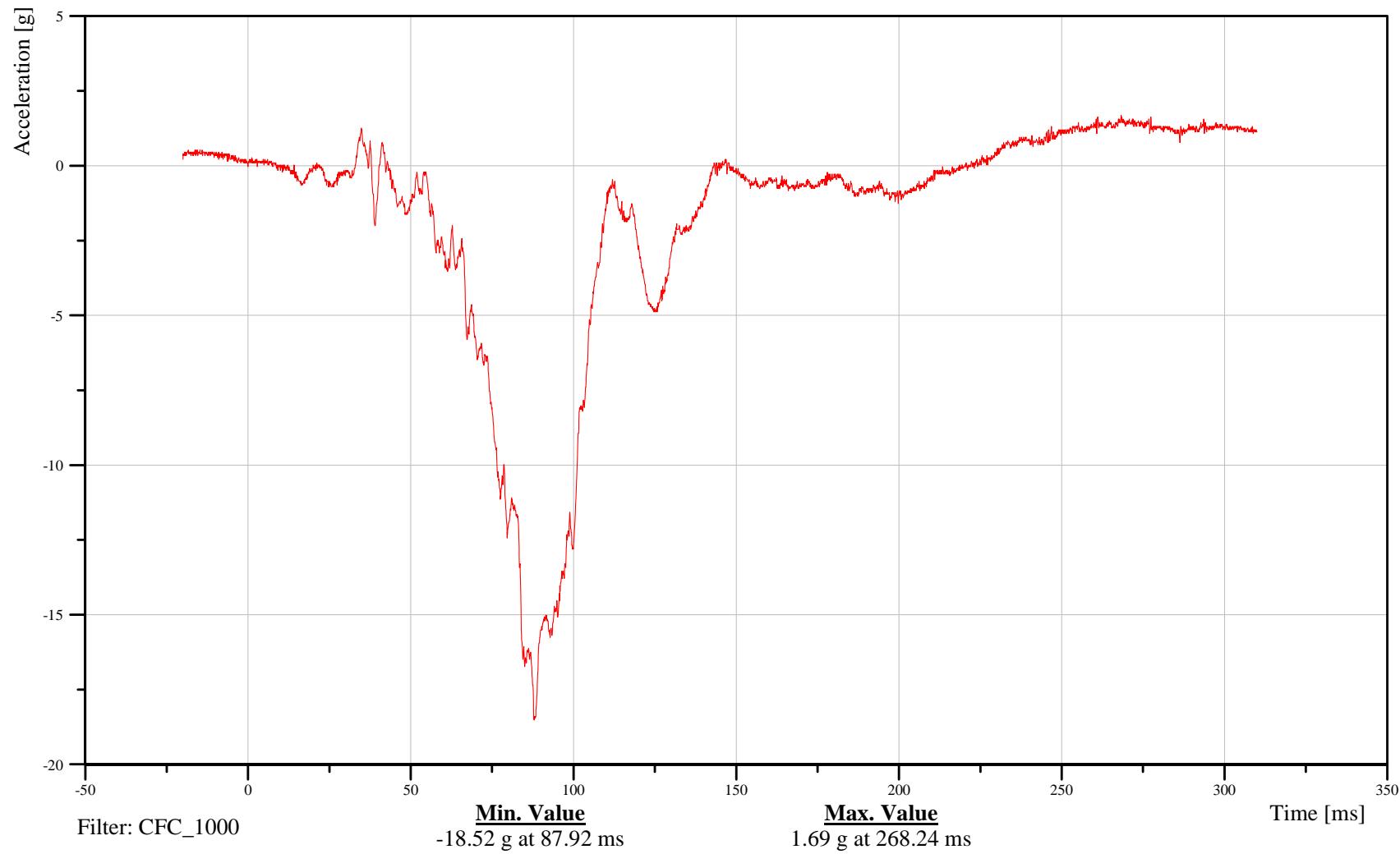
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13PELVCG00HFACZA

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Pelvis Resultant Acceleration

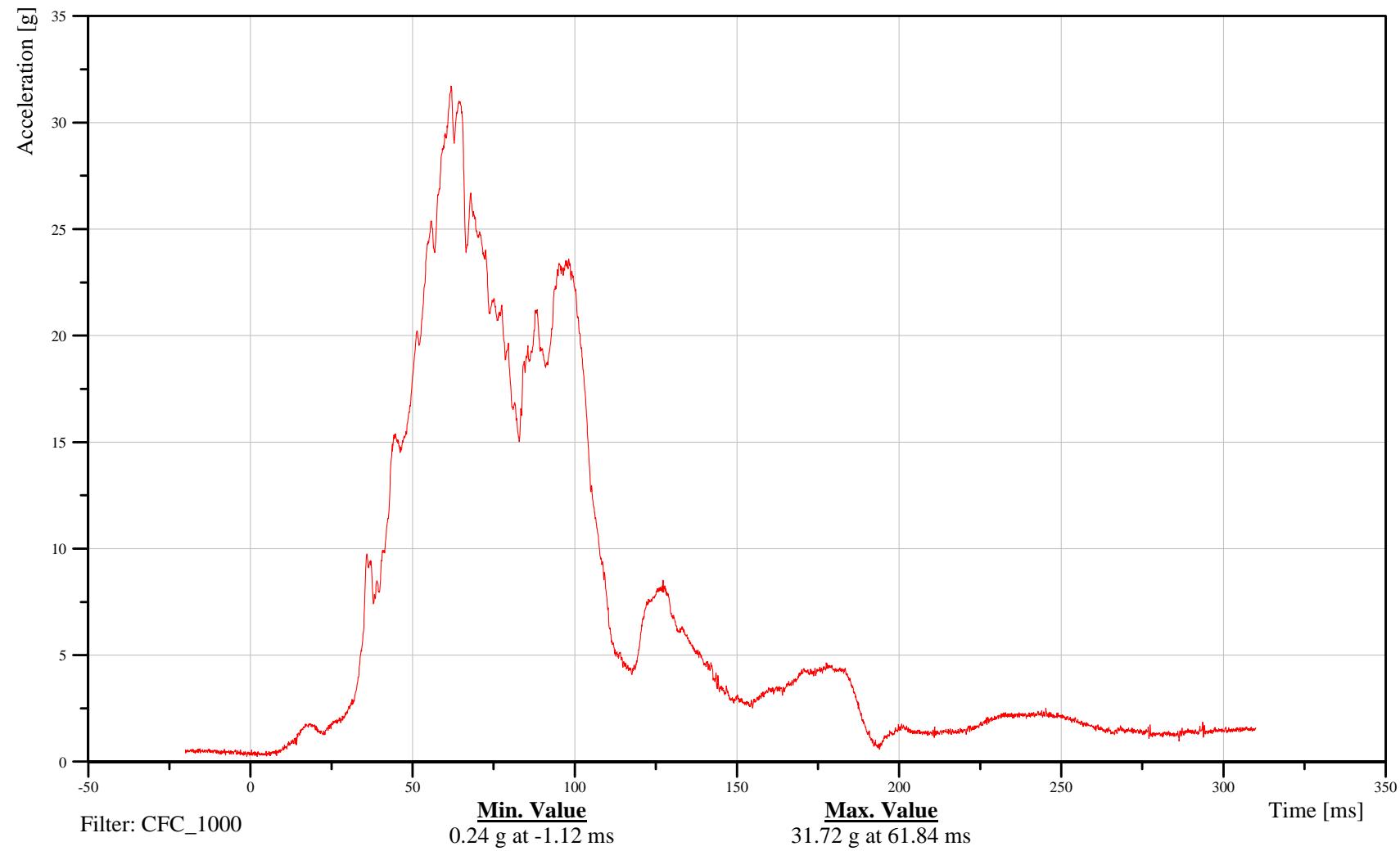
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13PELVCG00HFACRA

B-95  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

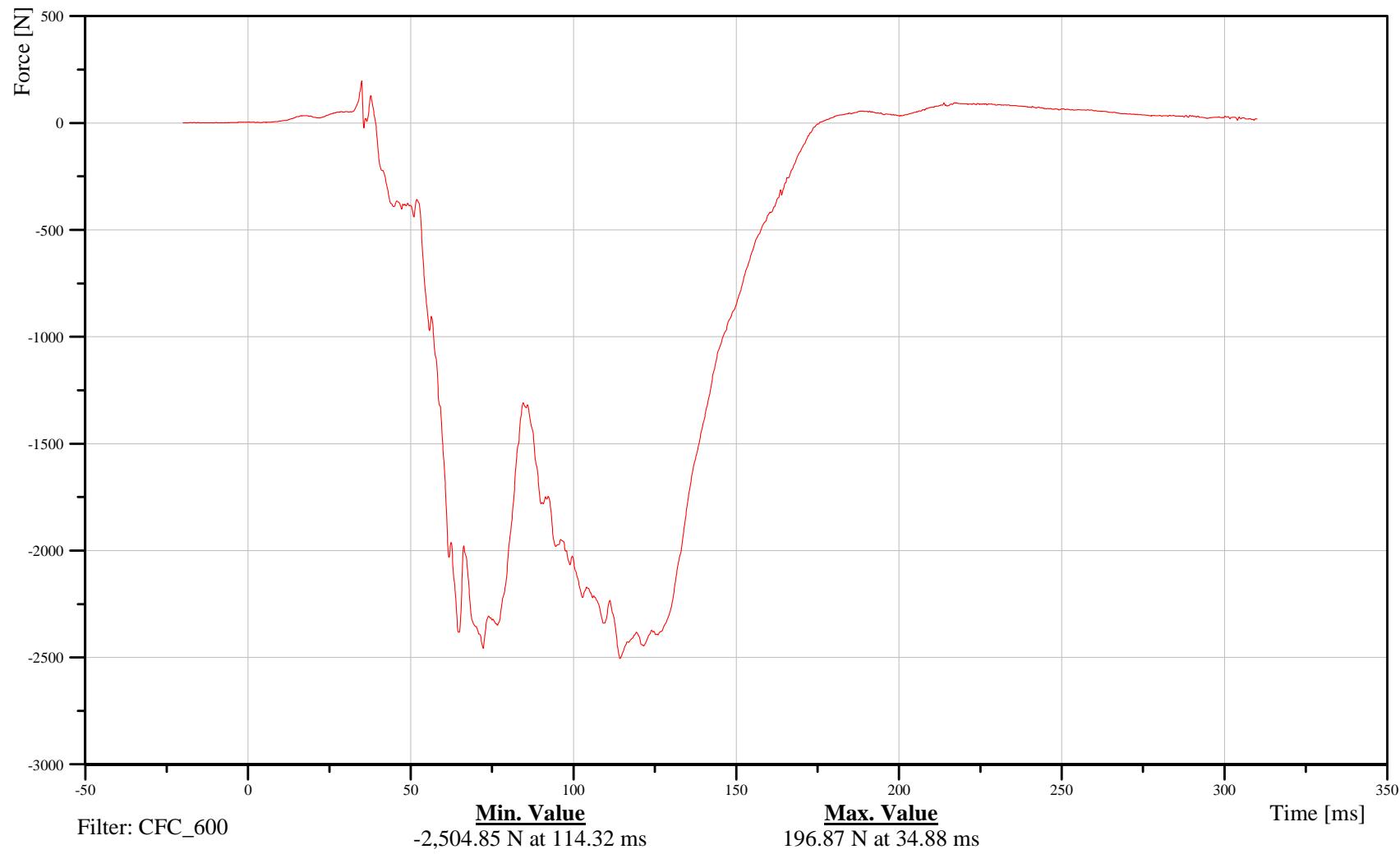
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FEMRLL00HFFOZB

B-96

101116





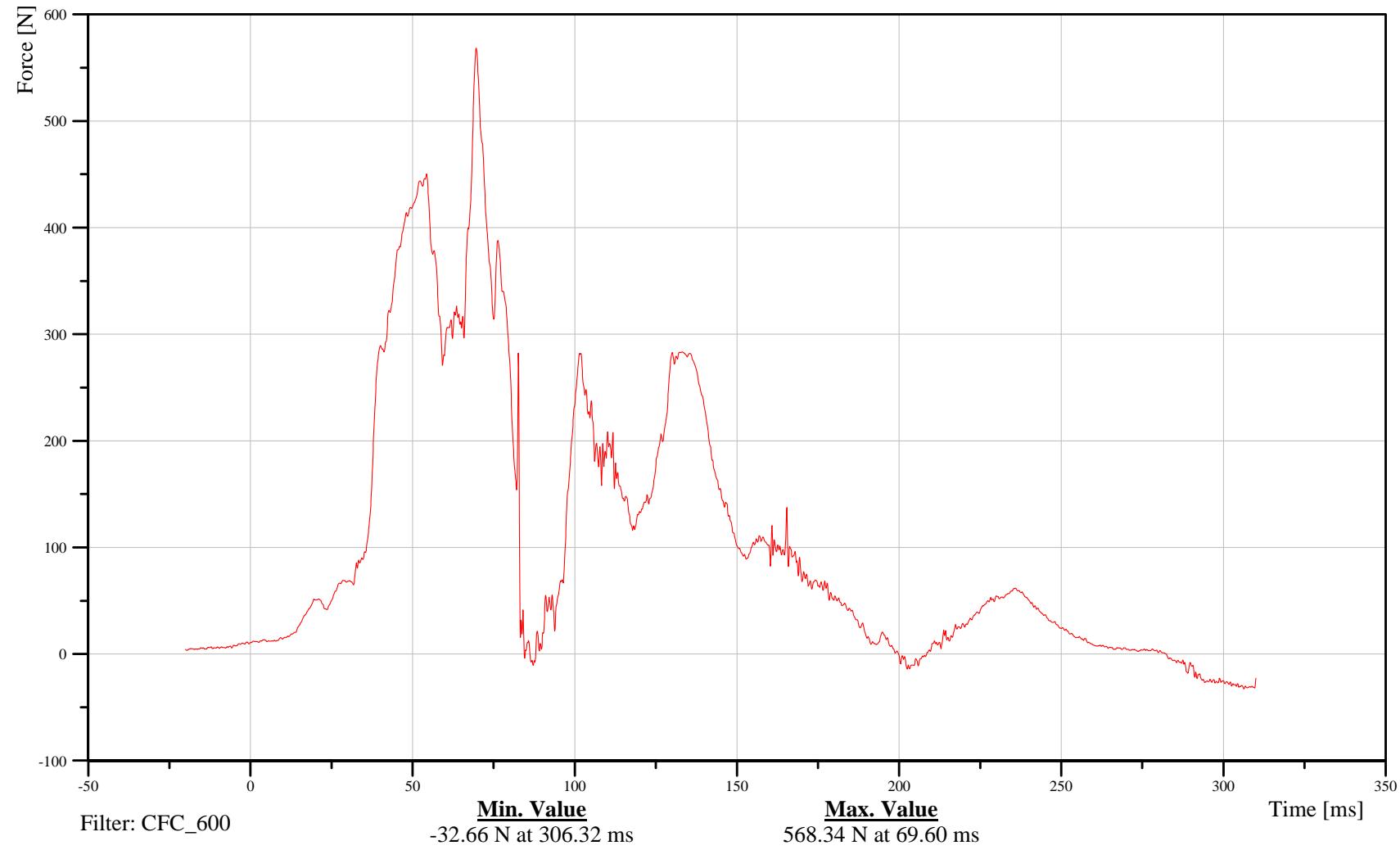
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FEMRRL00HFFOZB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Knee X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

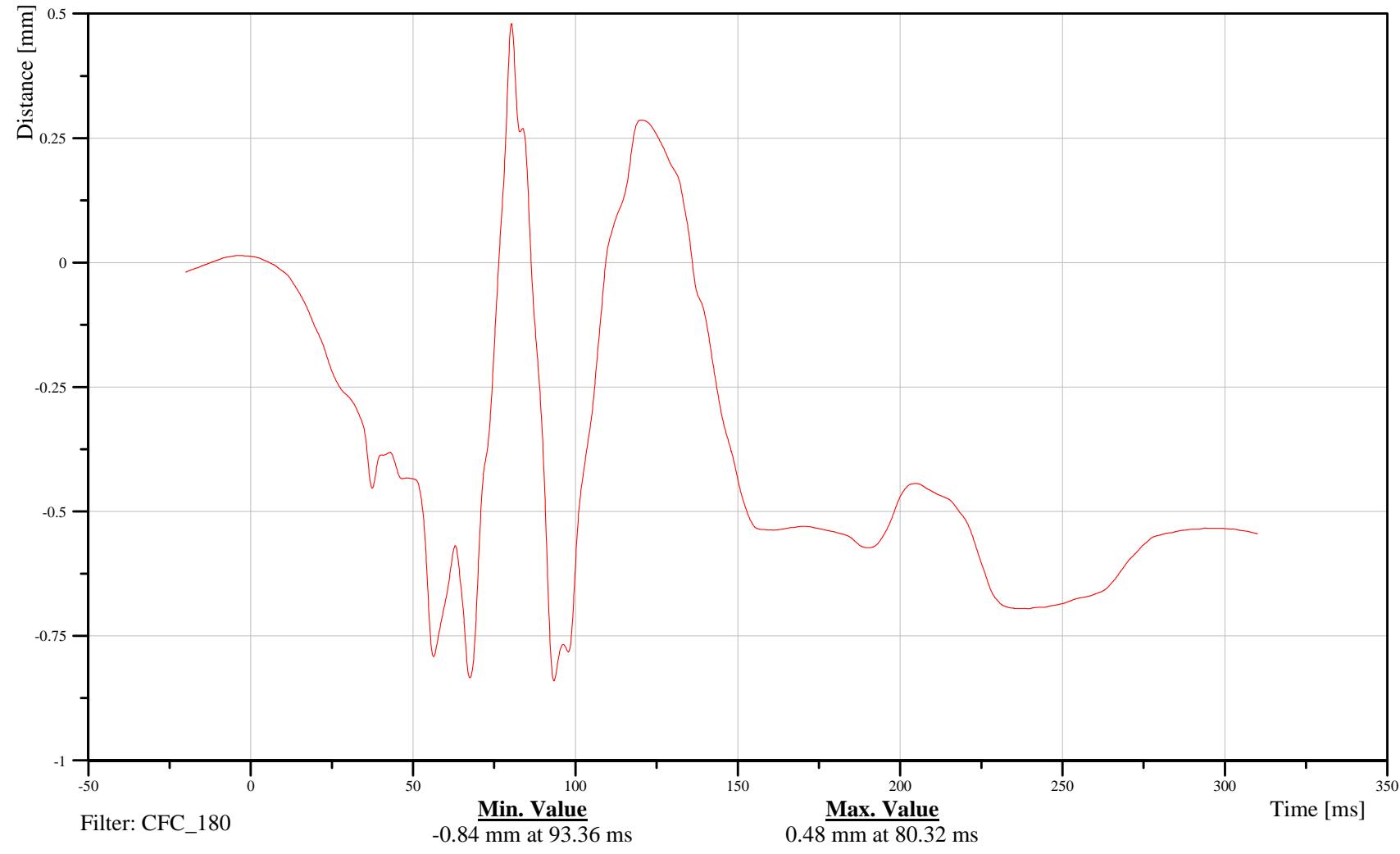
Customer: VRTC

13KNSLLE00HFDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-98

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Upper Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

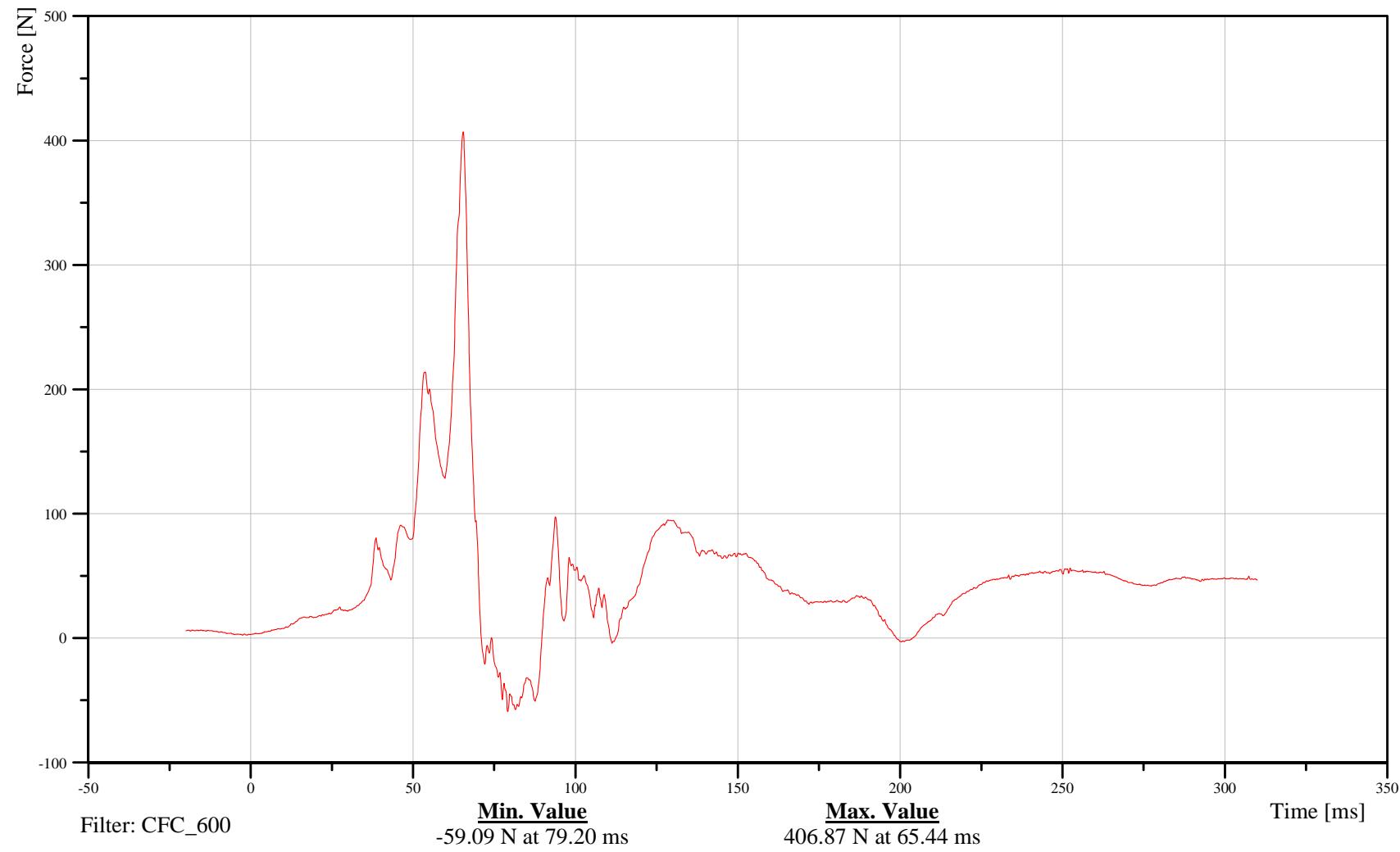
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILULXHFFOXB

B-99

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Upper Tibia Z-Axis Force

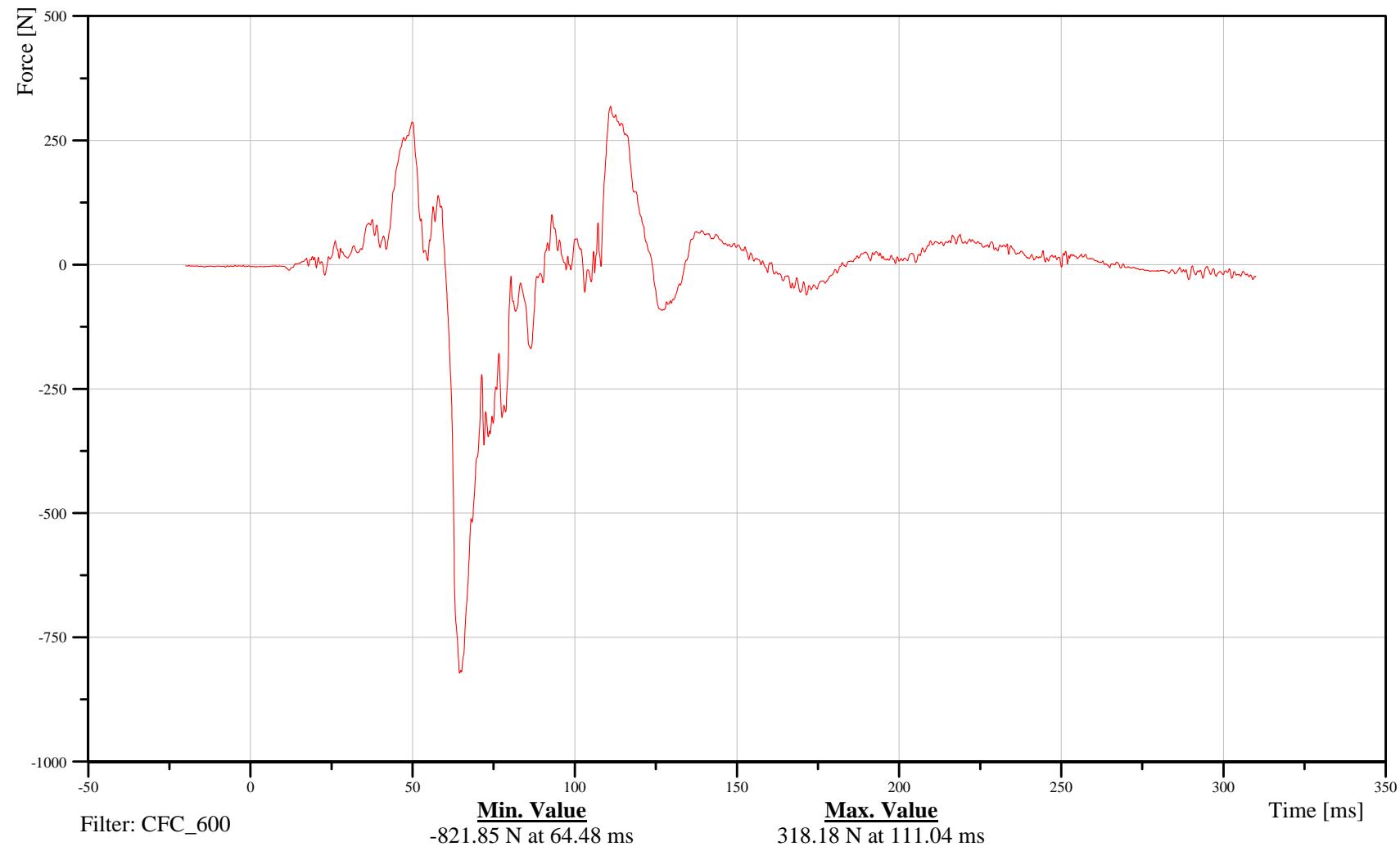
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILULXHFFOZB

B-100





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Upper Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

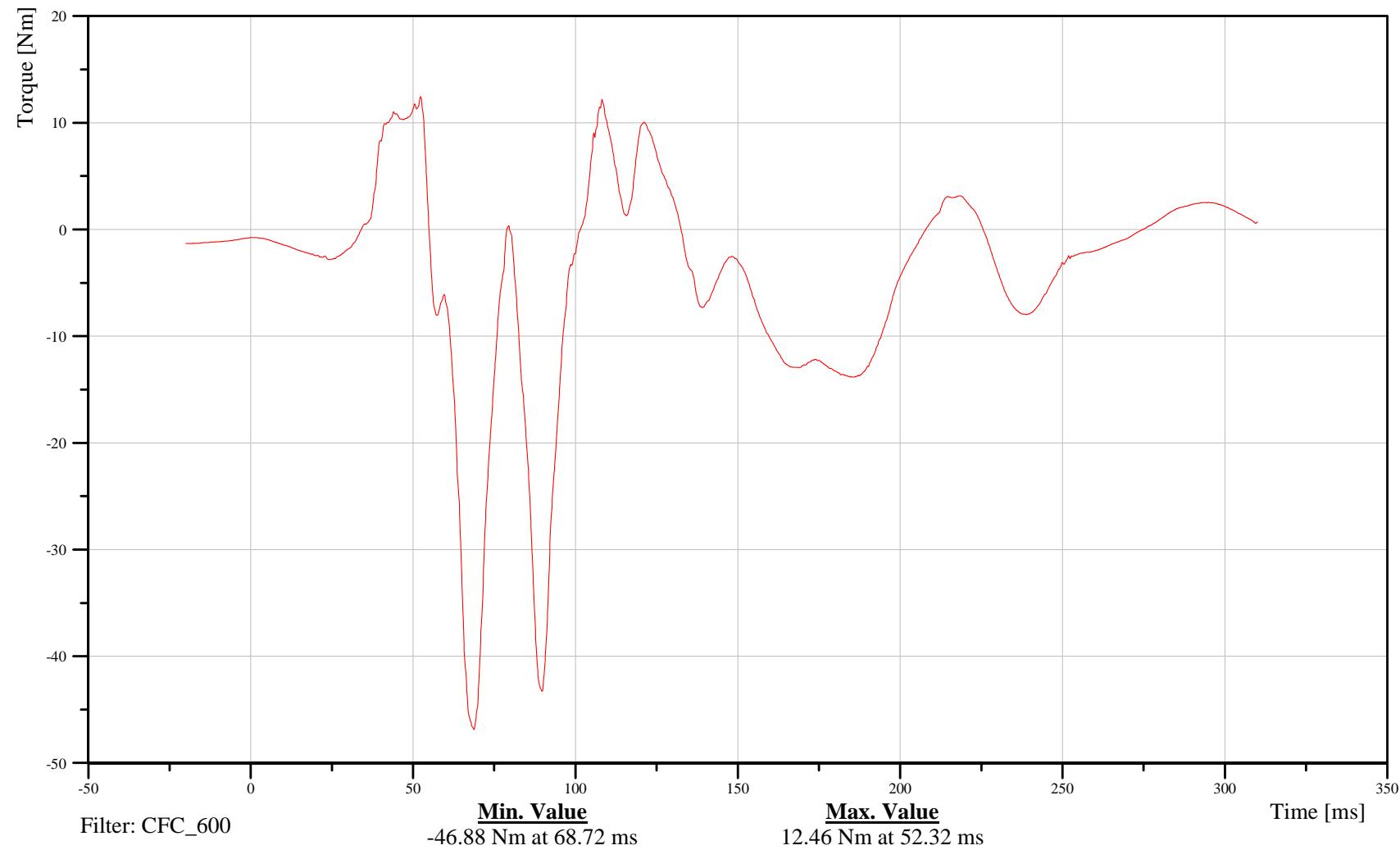
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILULXHFMOXB

B-101

101116





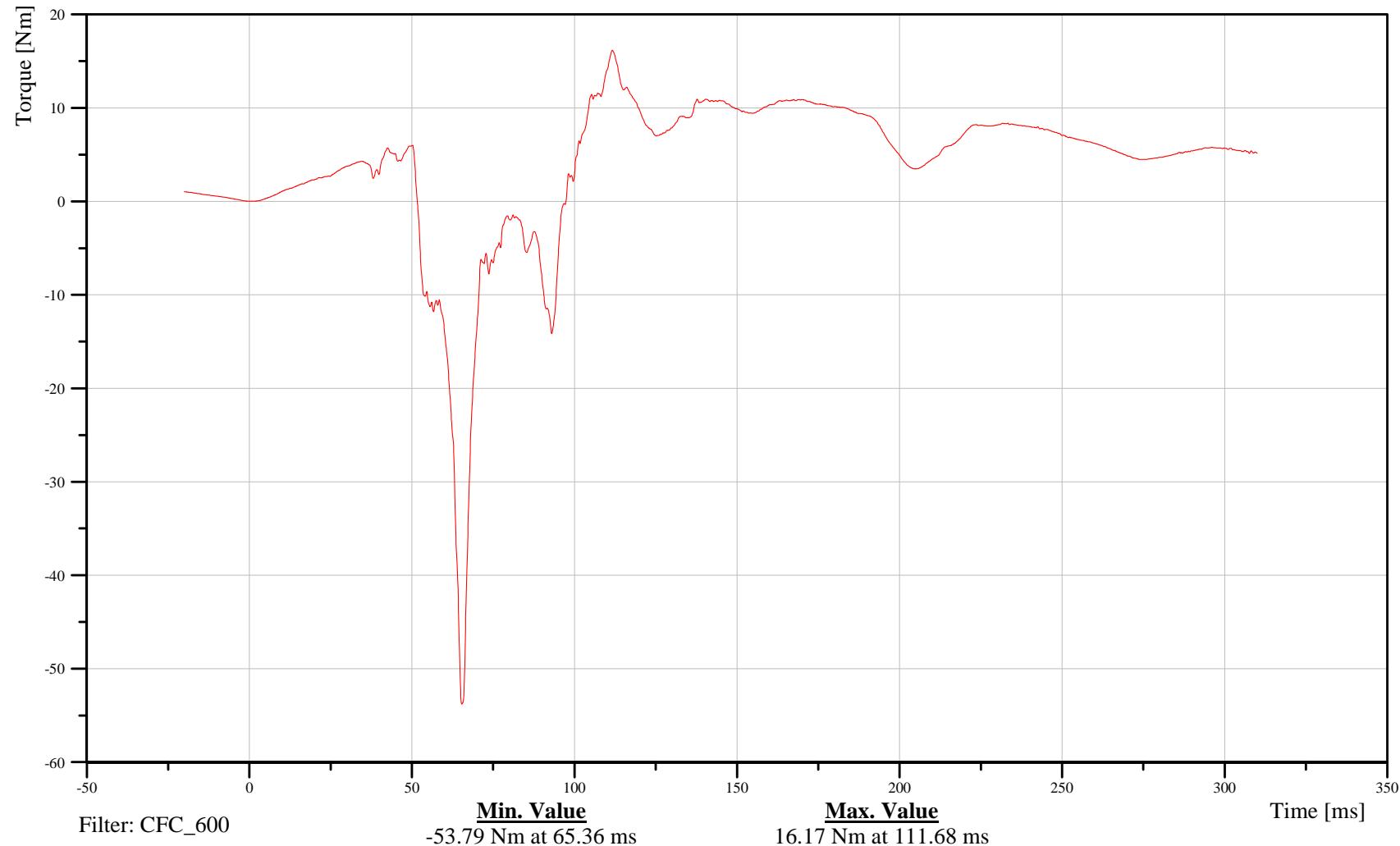
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Upper Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILULXHFMOYB





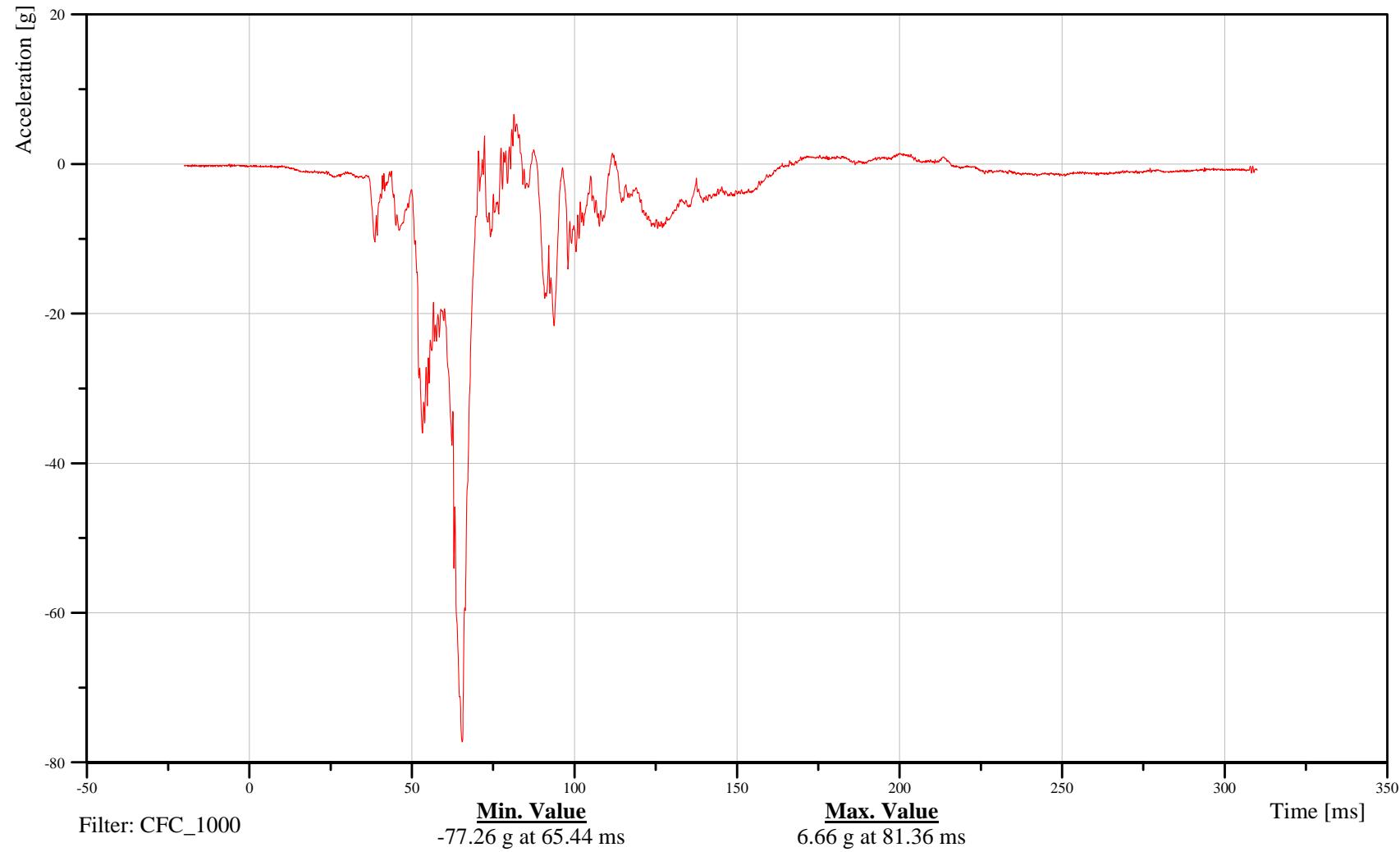
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Tibia X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILELXHFACXA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Tibia Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

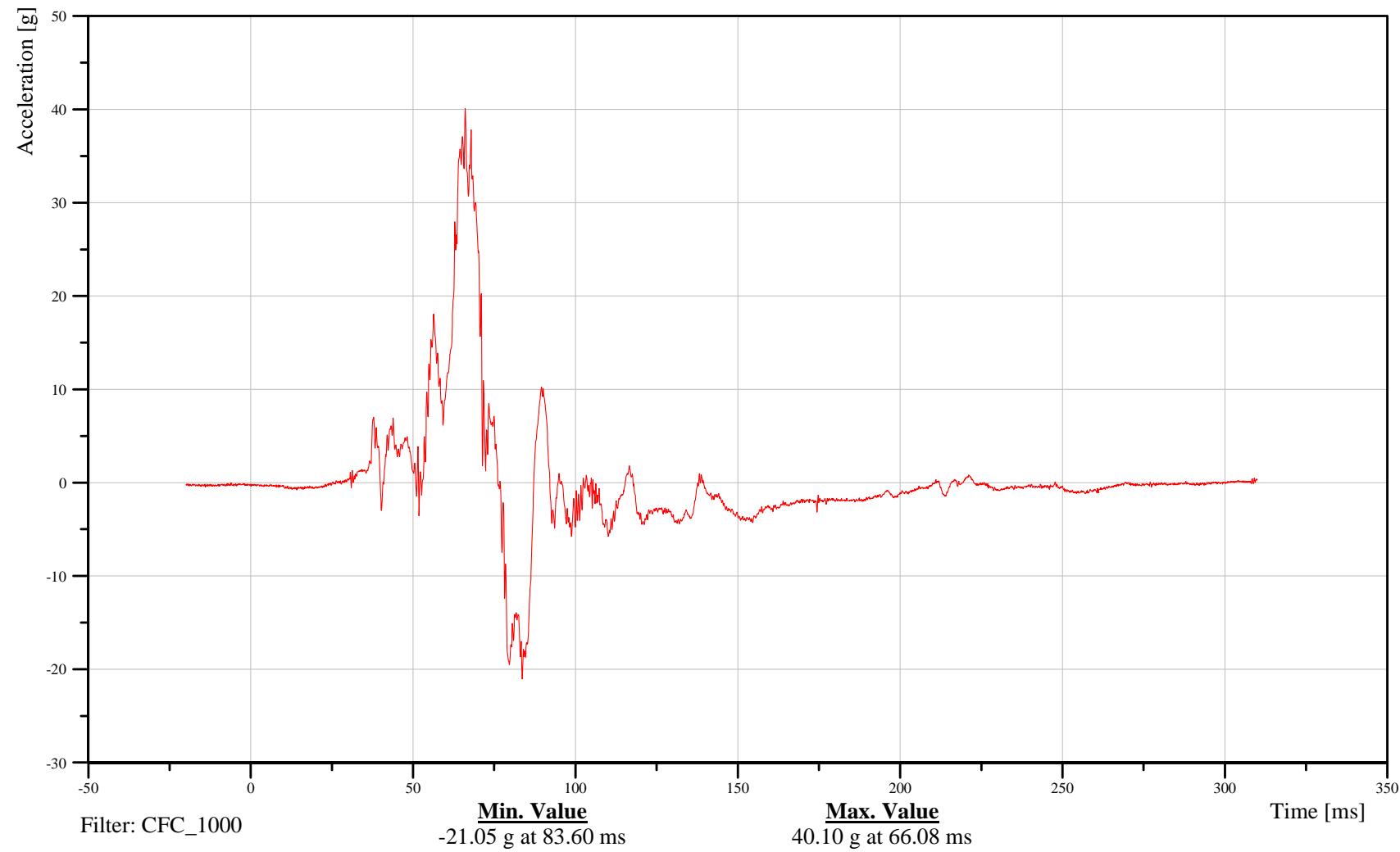
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILELXHFACY

B-104

101116





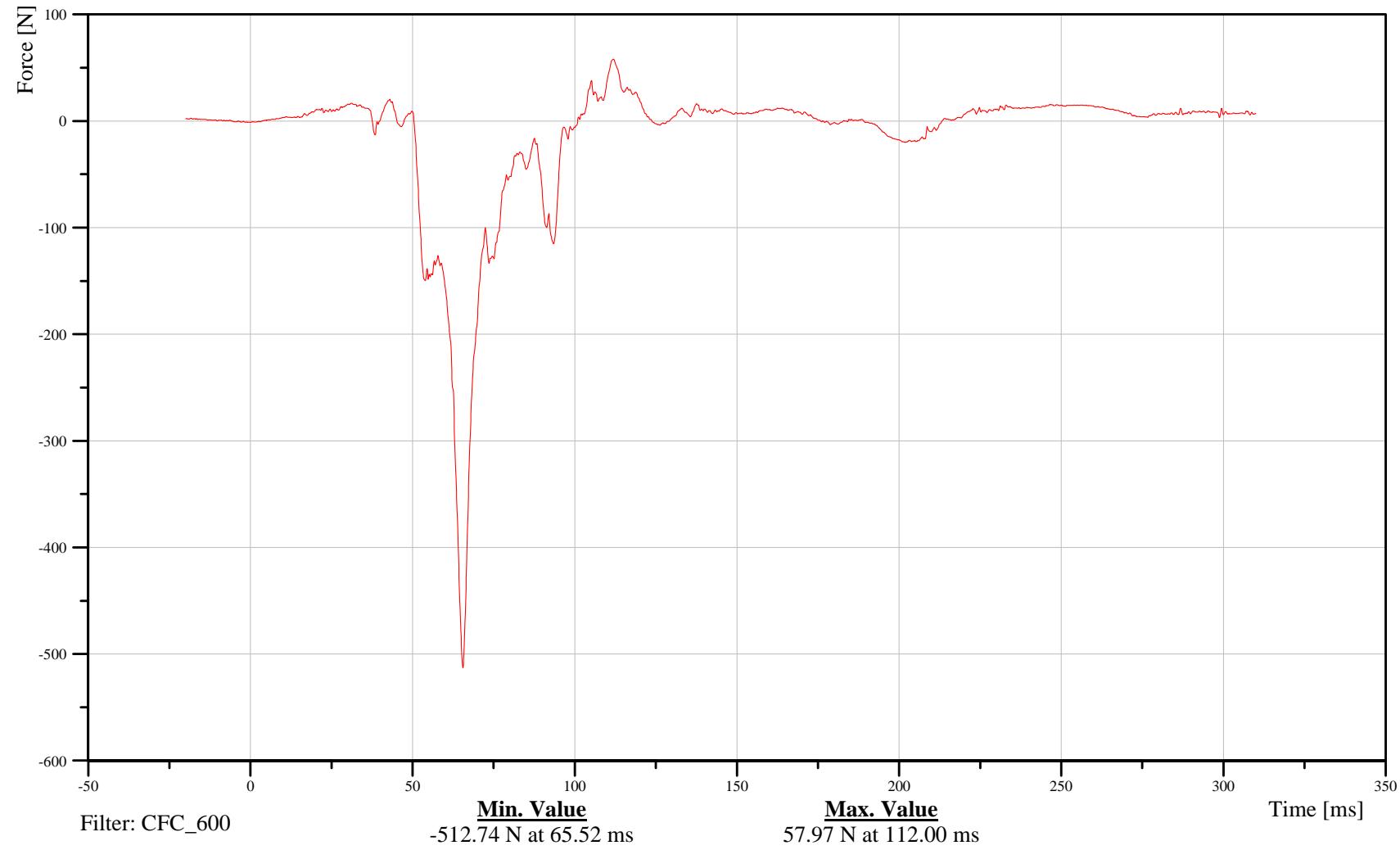
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Lower Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILLXHFFOXB





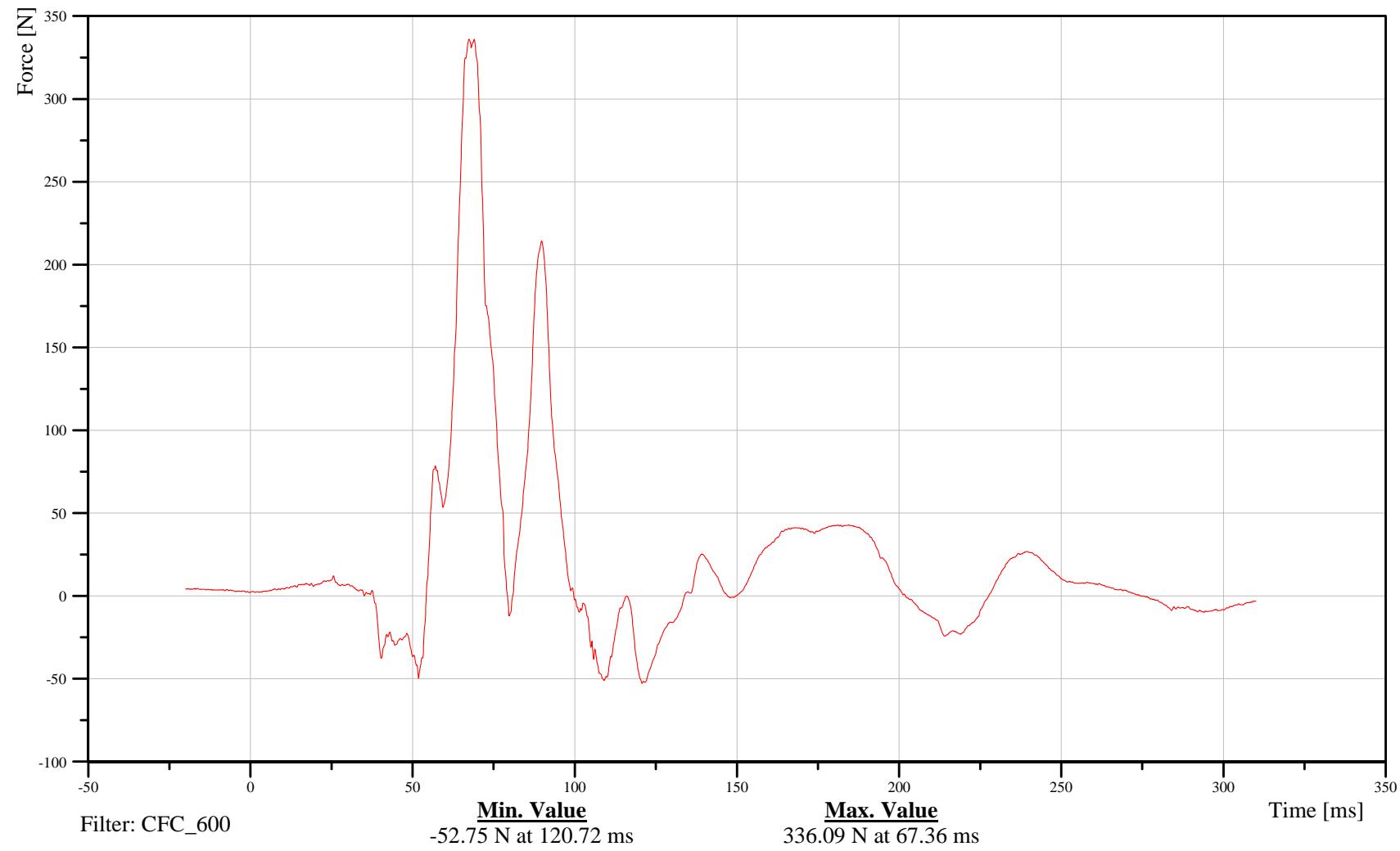
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Lower Tibia Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILLXHFFOYB





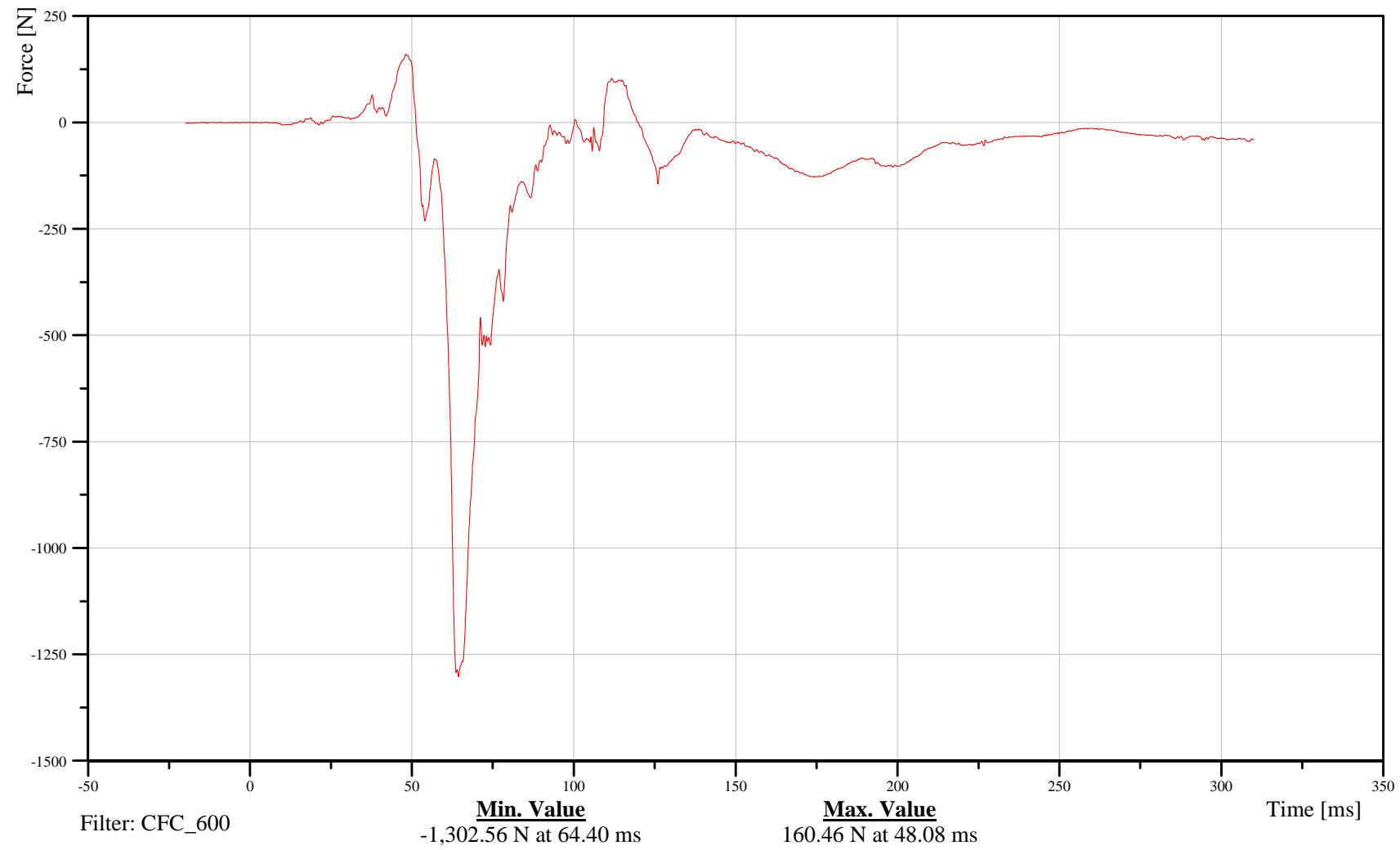
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Lower Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILLXHFFOZB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Lower Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

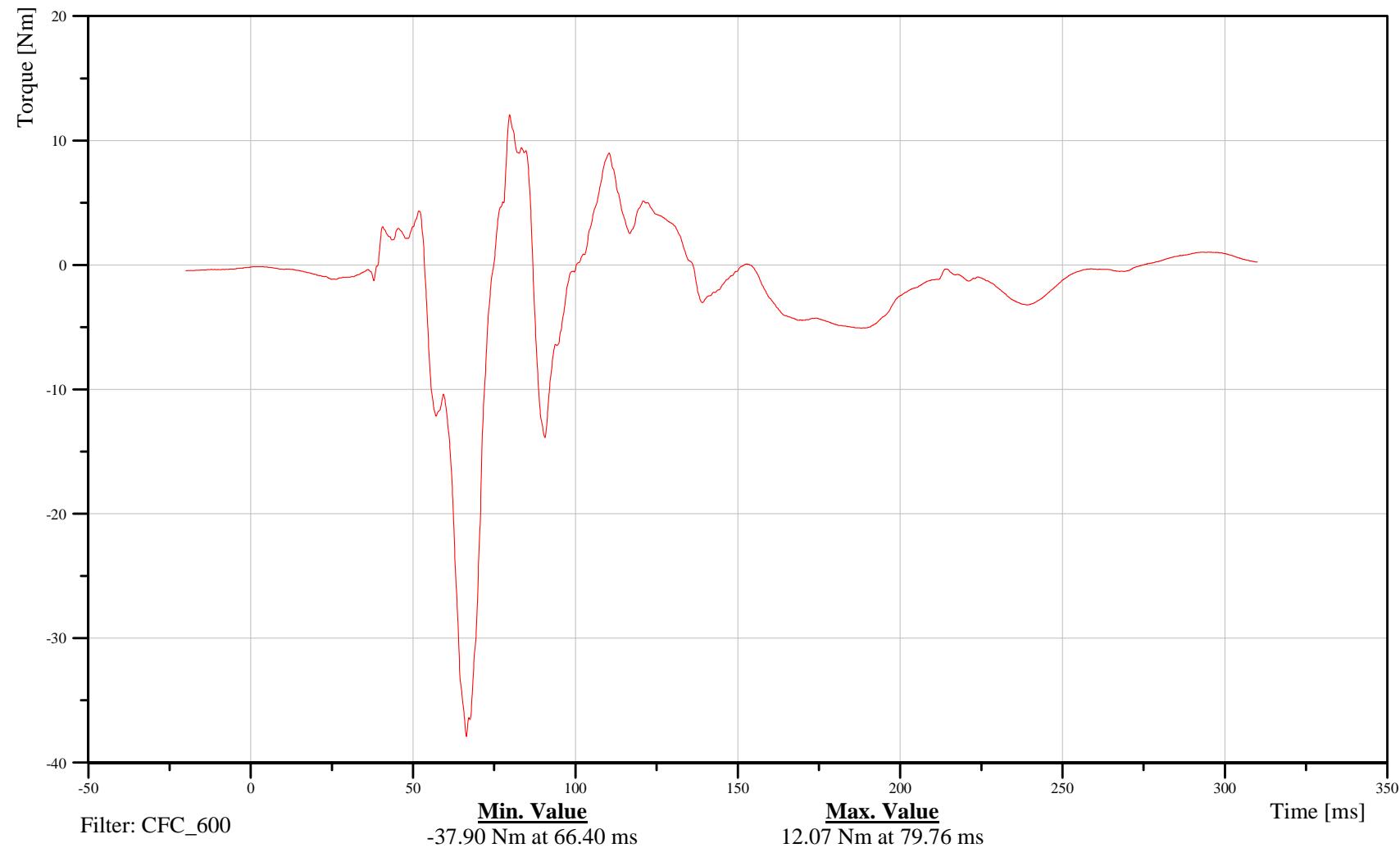
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TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILLXHFMOXB

B-108

101116





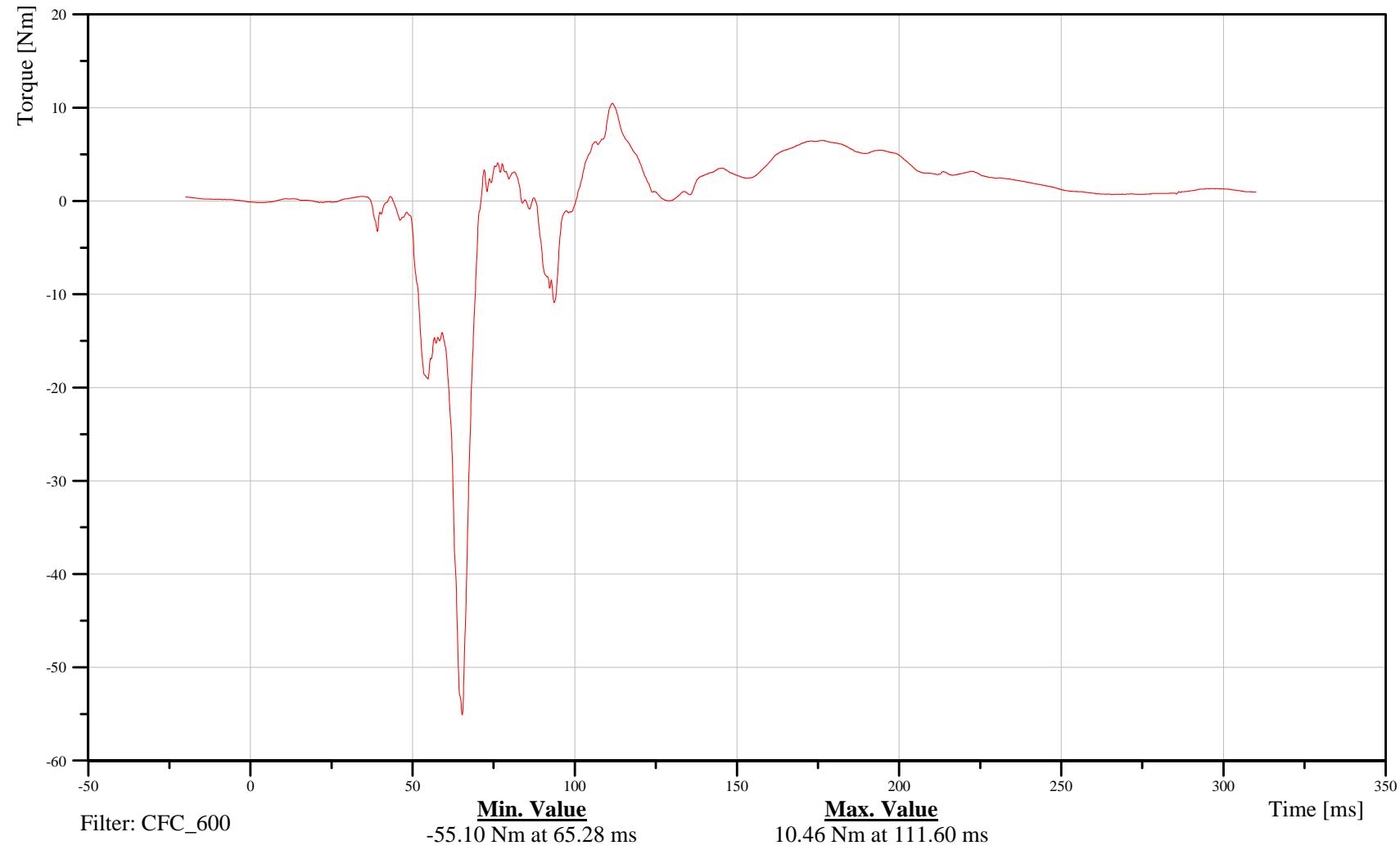
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Lower Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBILLXHFMOYB





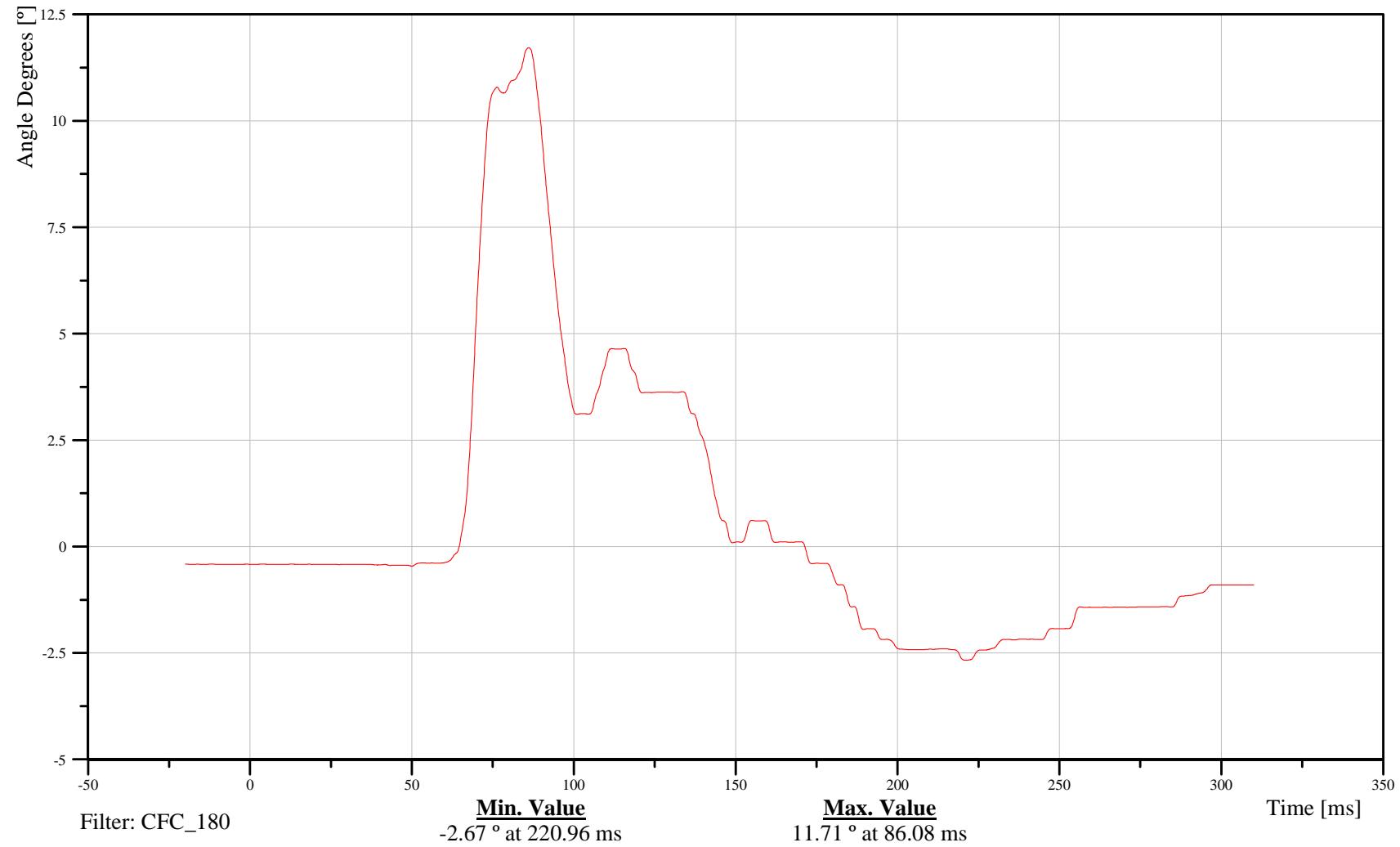
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot X-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13FOOTLELXHFANXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





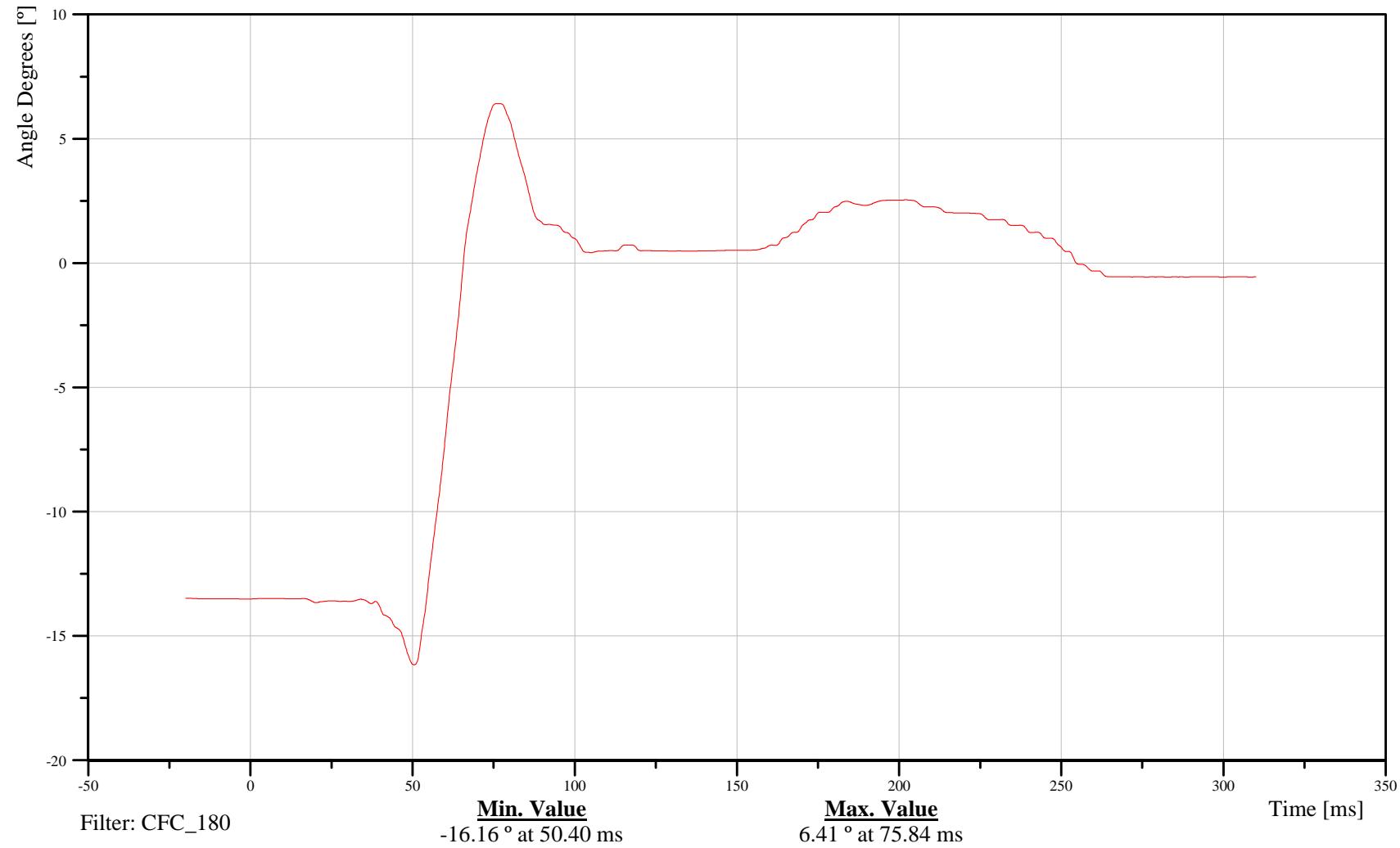
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot Y-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13FOOTLELXHFANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





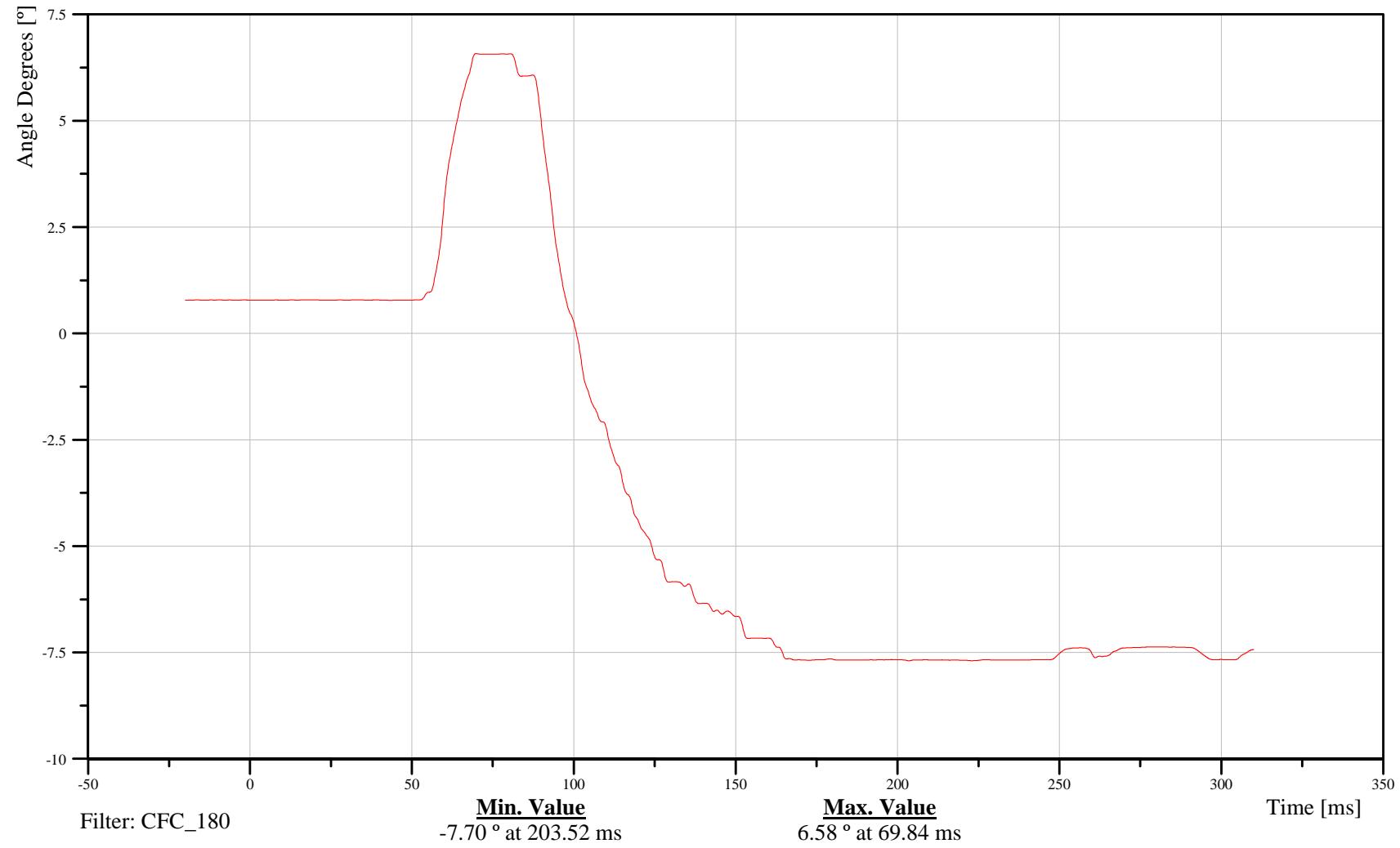
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot Z-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13FOOTLELXHFANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





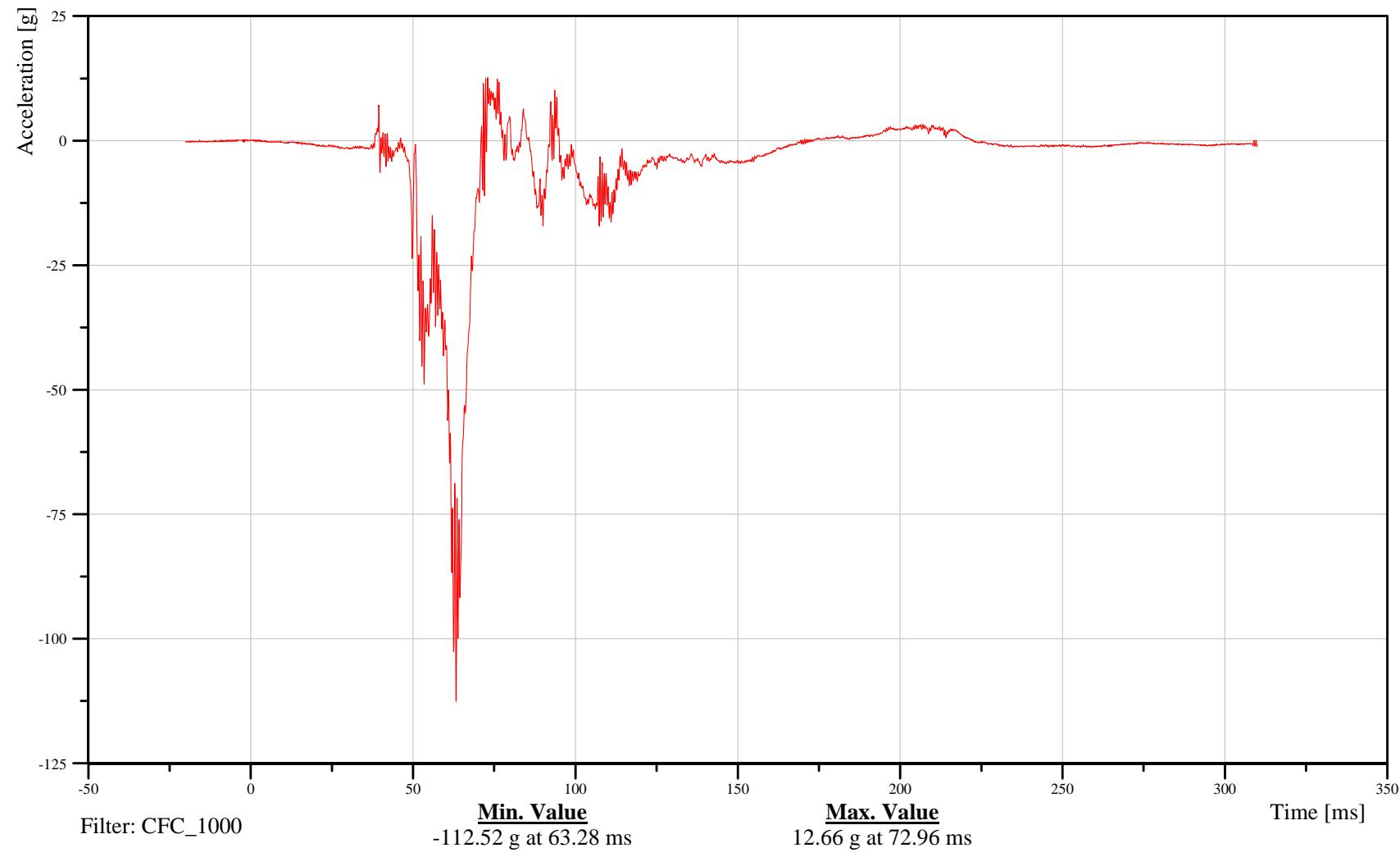
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTLELXHFACXA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

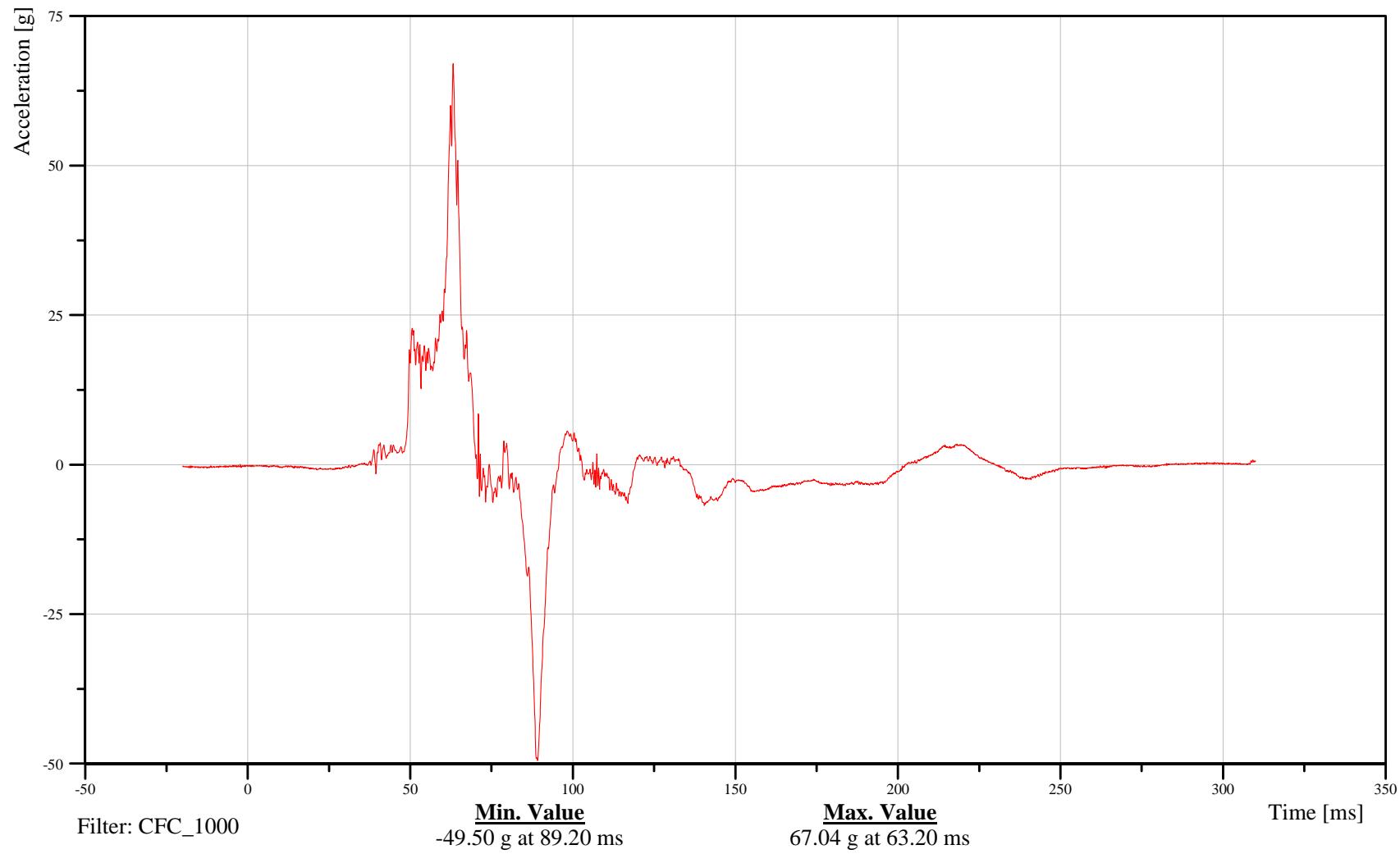
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTLELXHFACYA

B-114

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

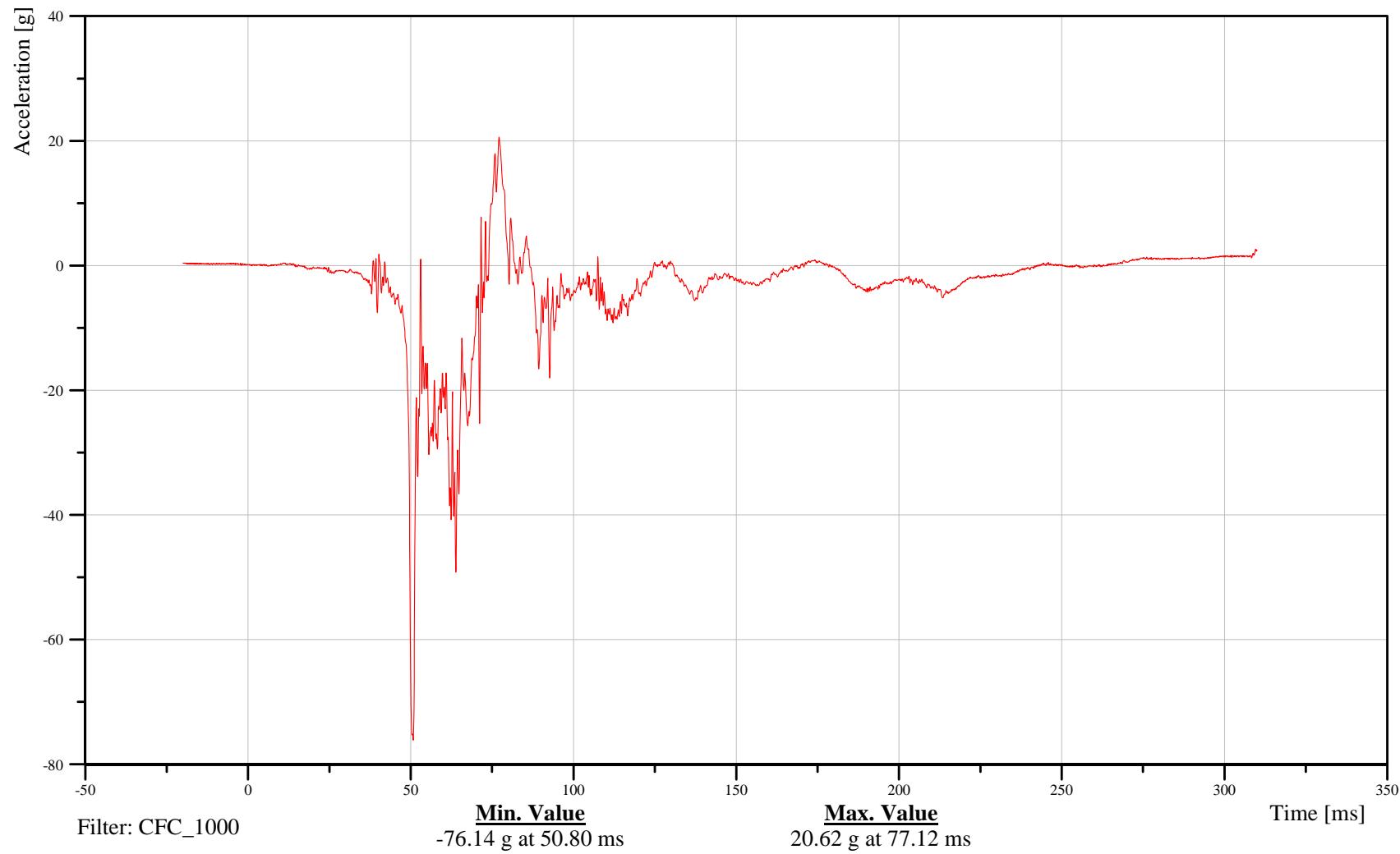
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTLELXHFACZA

B-115

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Left Foot Resultant Acceleration

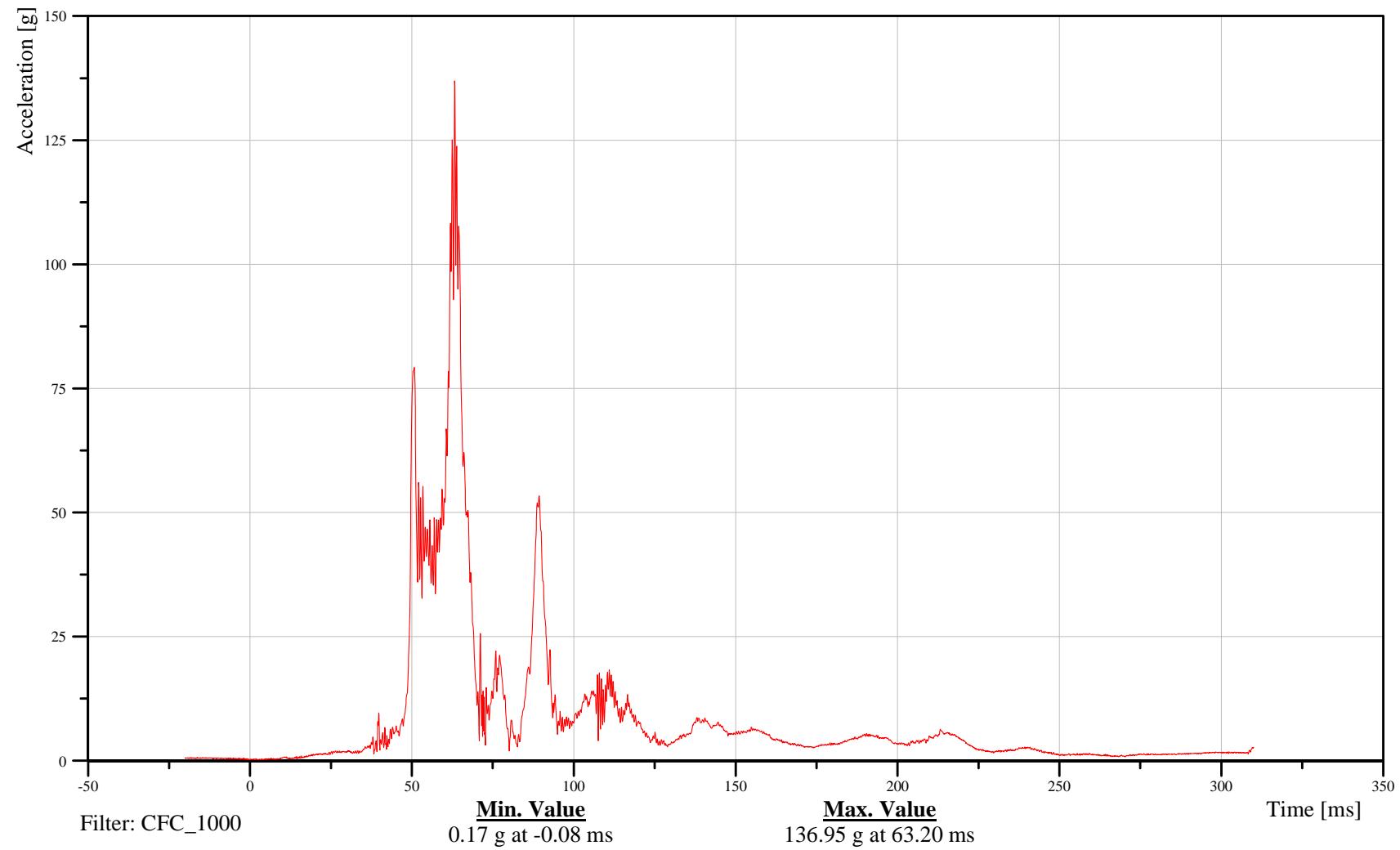
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTLELXHFACRA

B-116  
101116





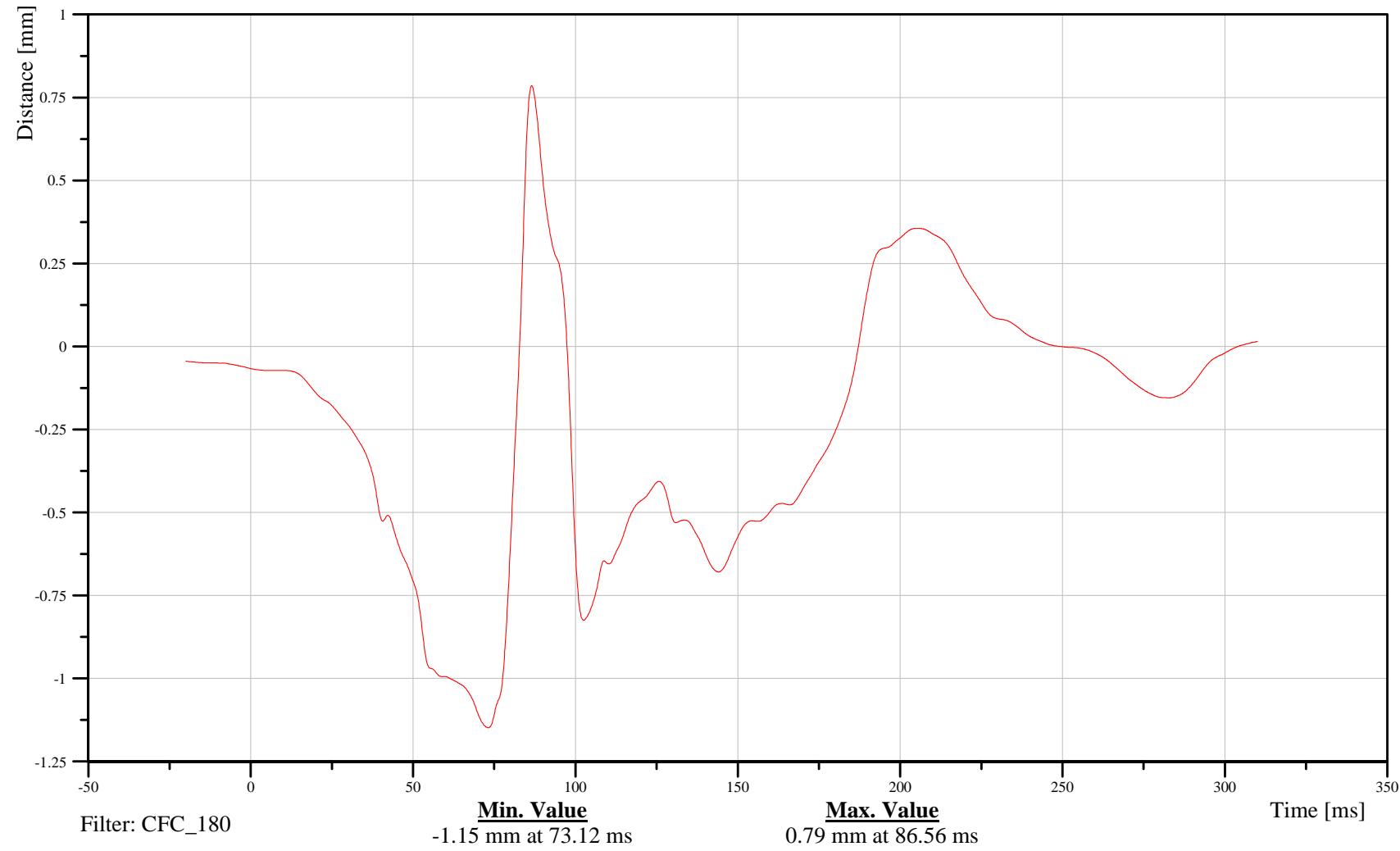
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Knee X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13KNSLRI00HFDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





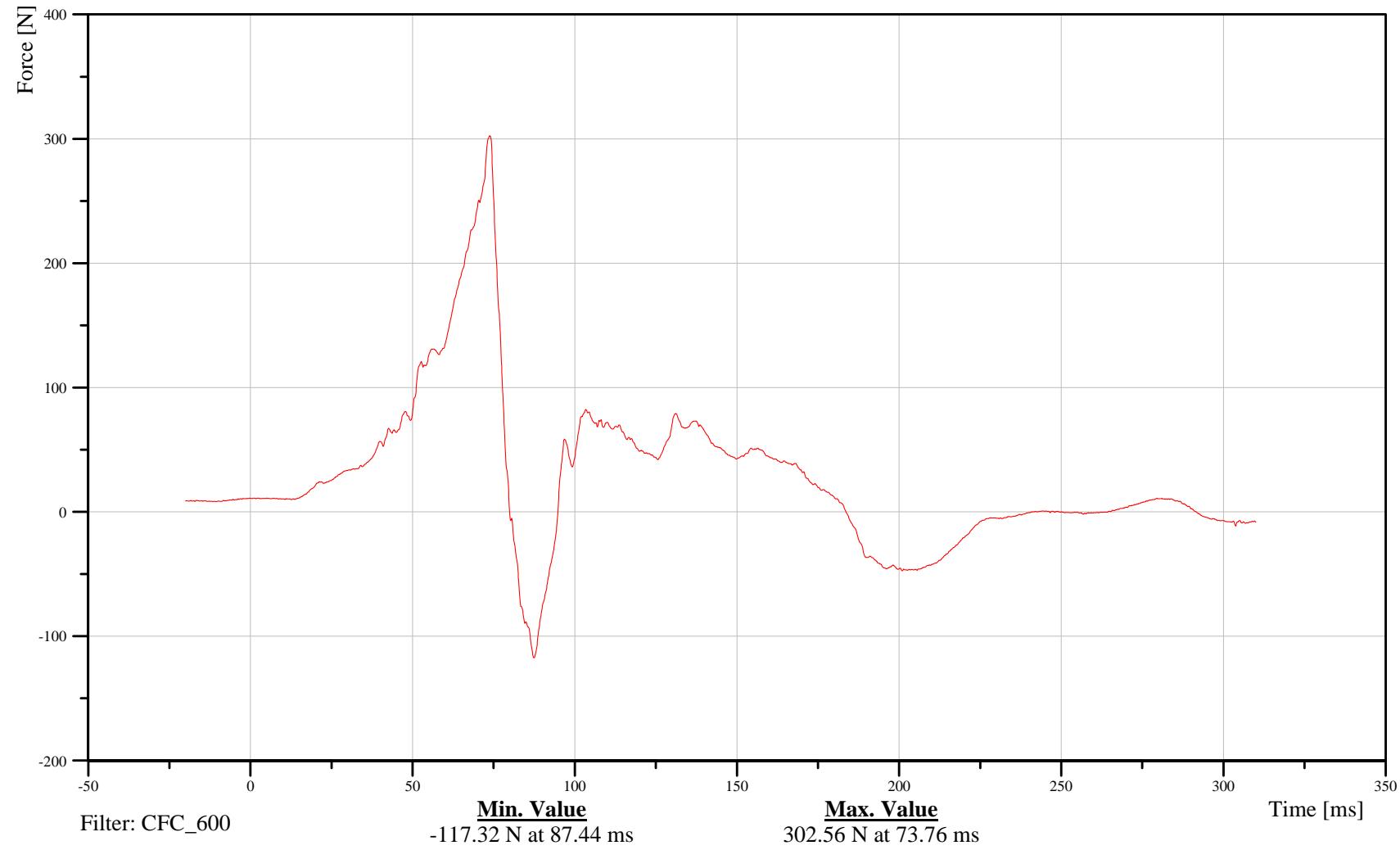
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Upper Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRULXHFFOXB





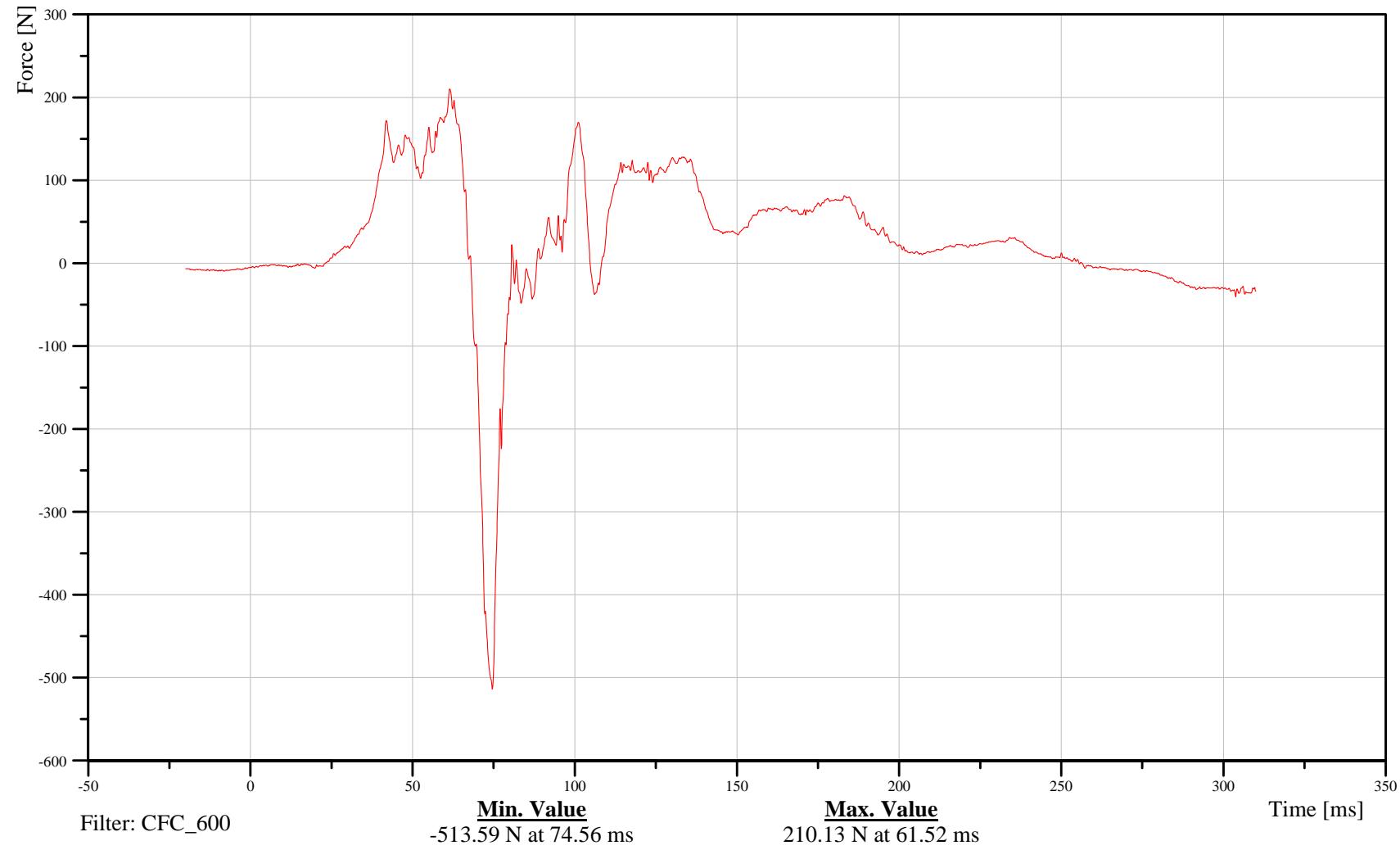
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Upper Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRULXHFFOZB





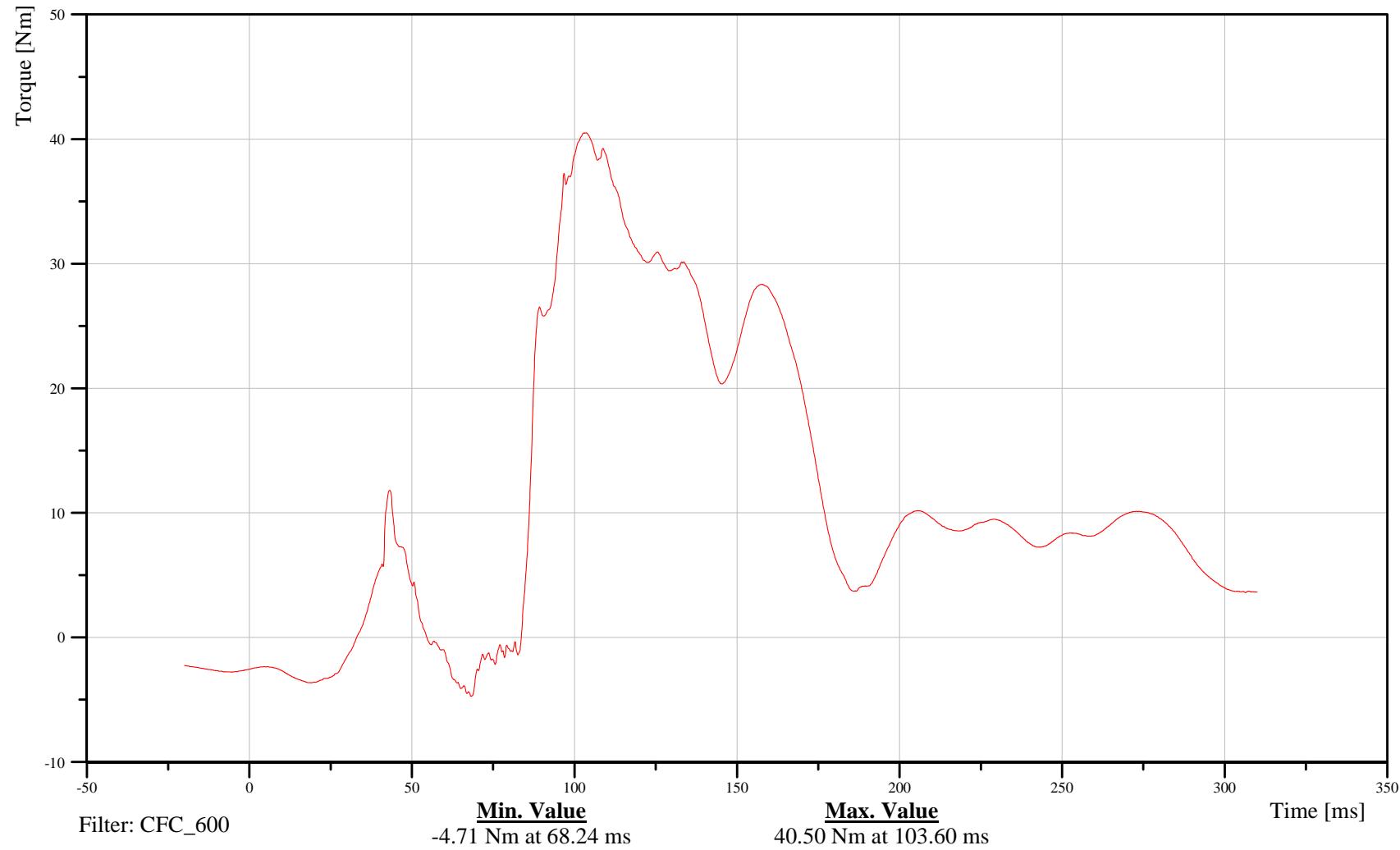
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Upper Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13TIBIRULXHFMOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





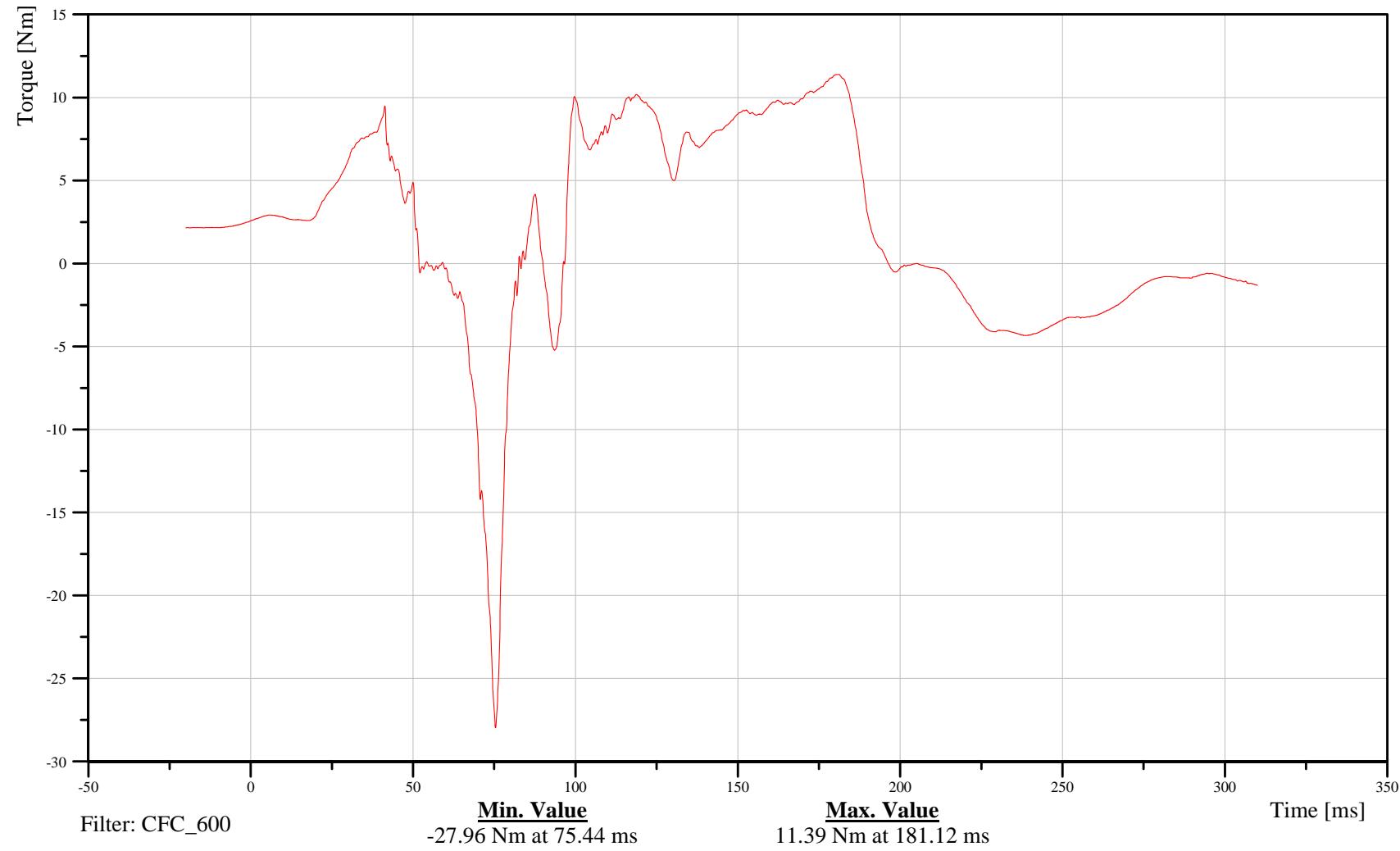
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Upper Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRULXHFMOYB





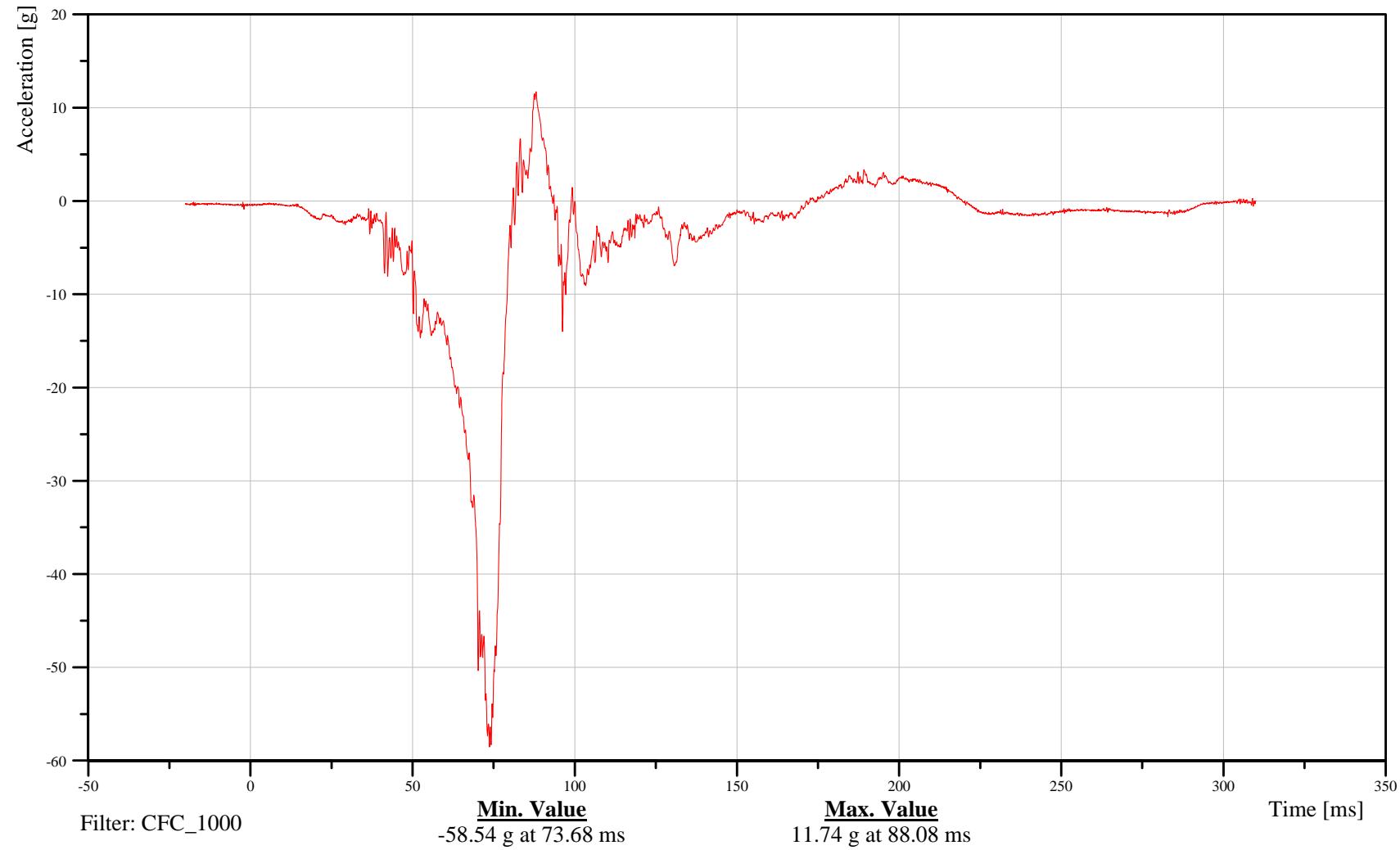
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Tibia X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRILXHFACXA





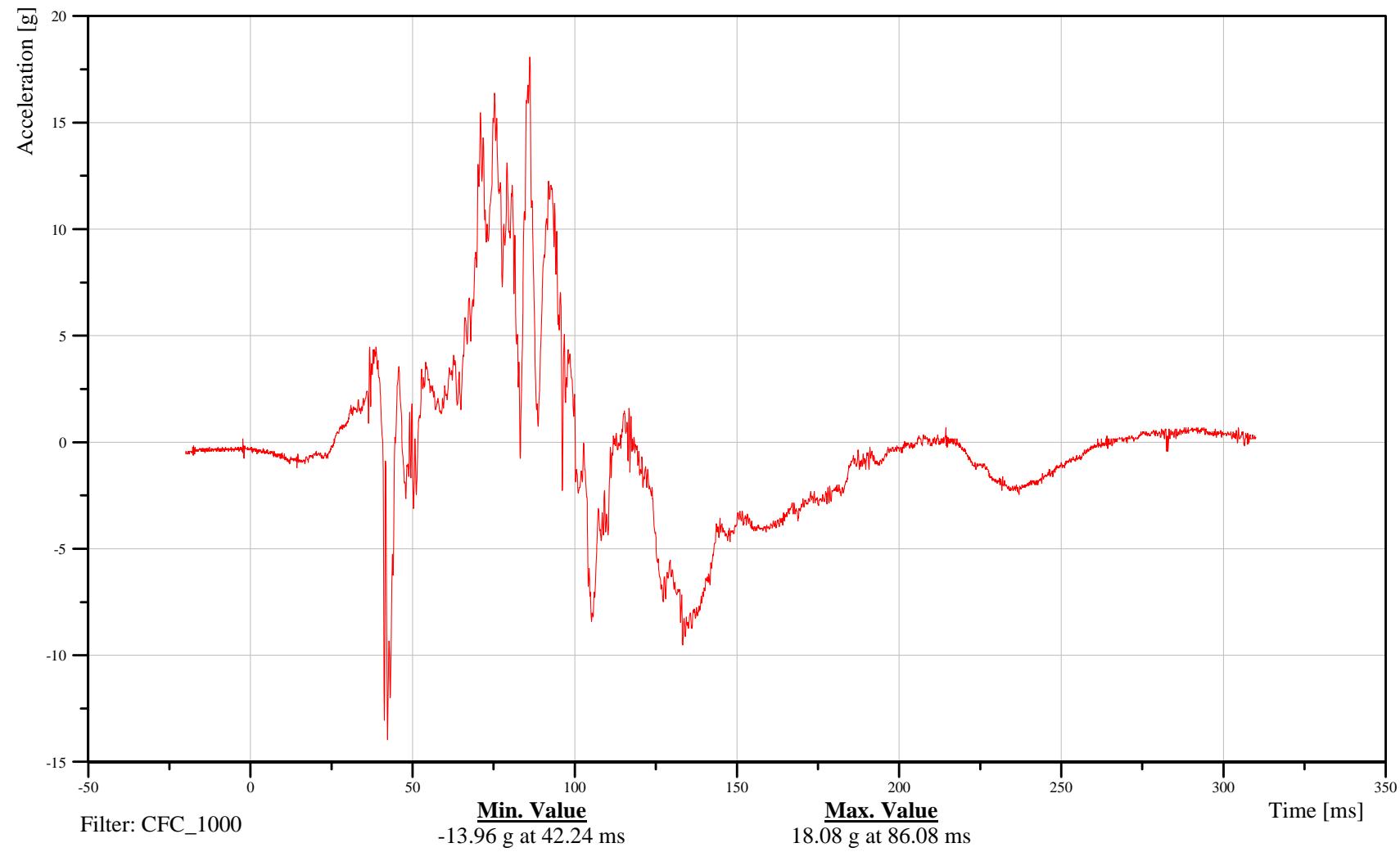
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Tibia Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRILXHFACYA





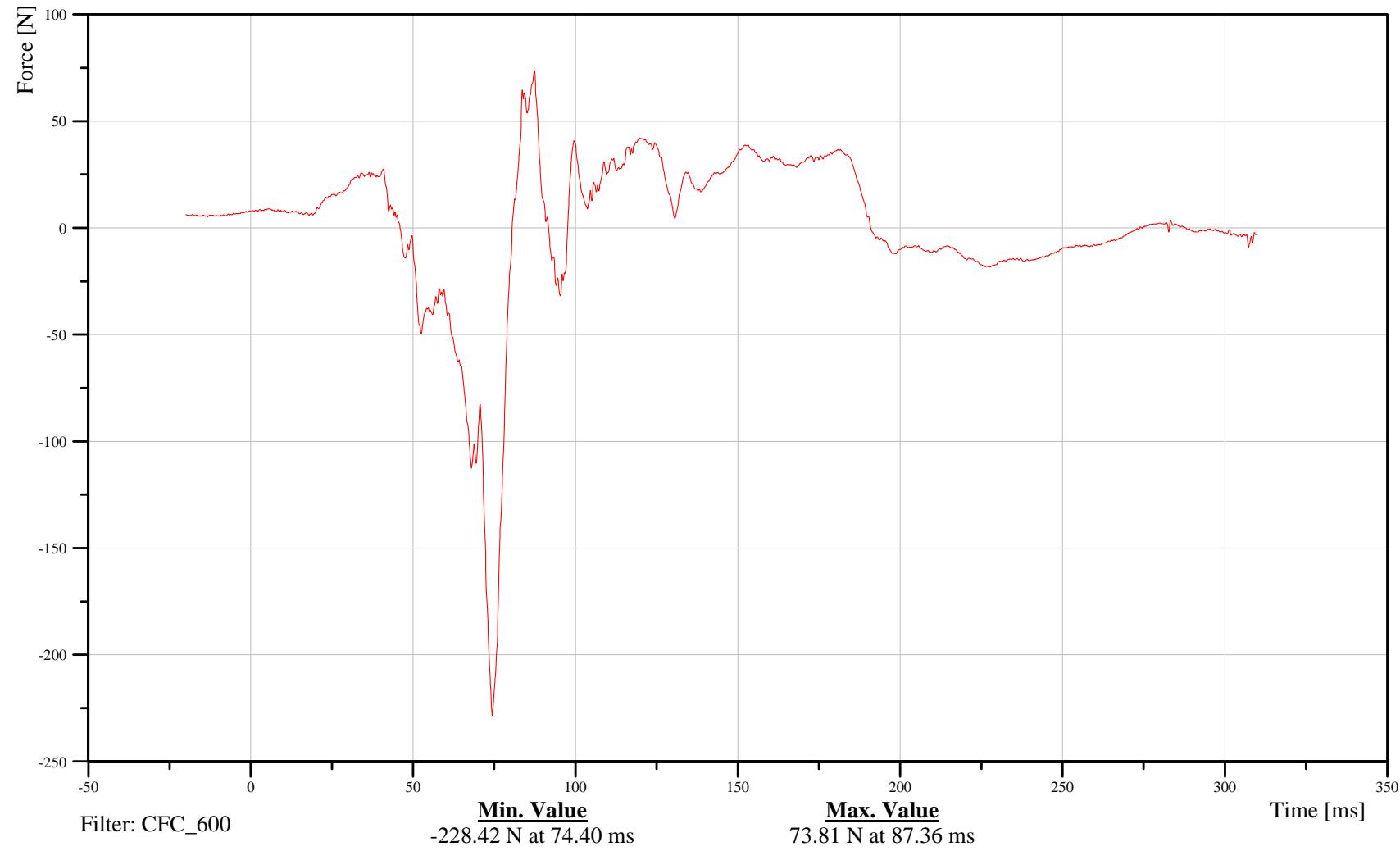
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Lower Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRLLXHFFOXB





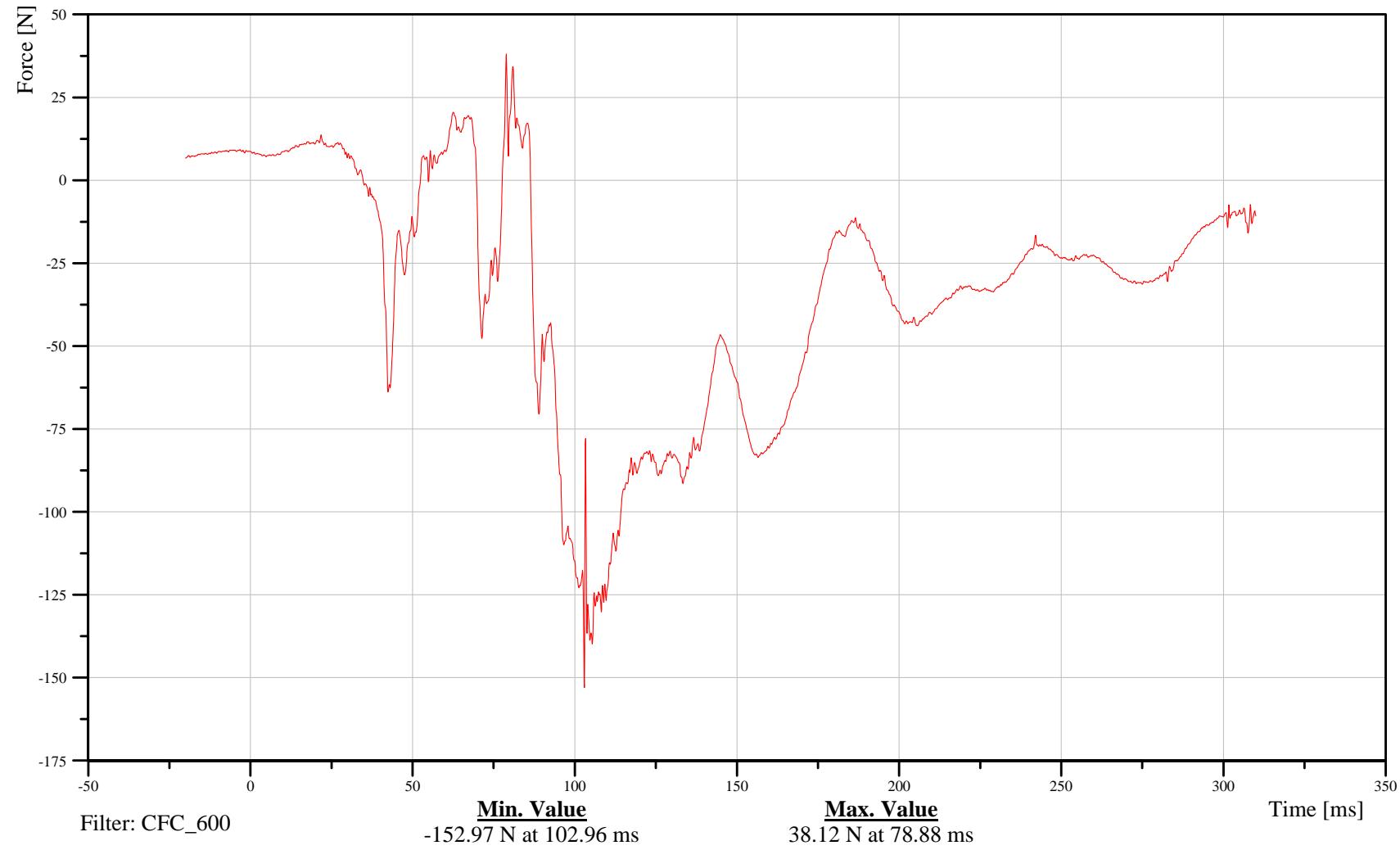
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Lower Tibia Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRLLXHFFOYB





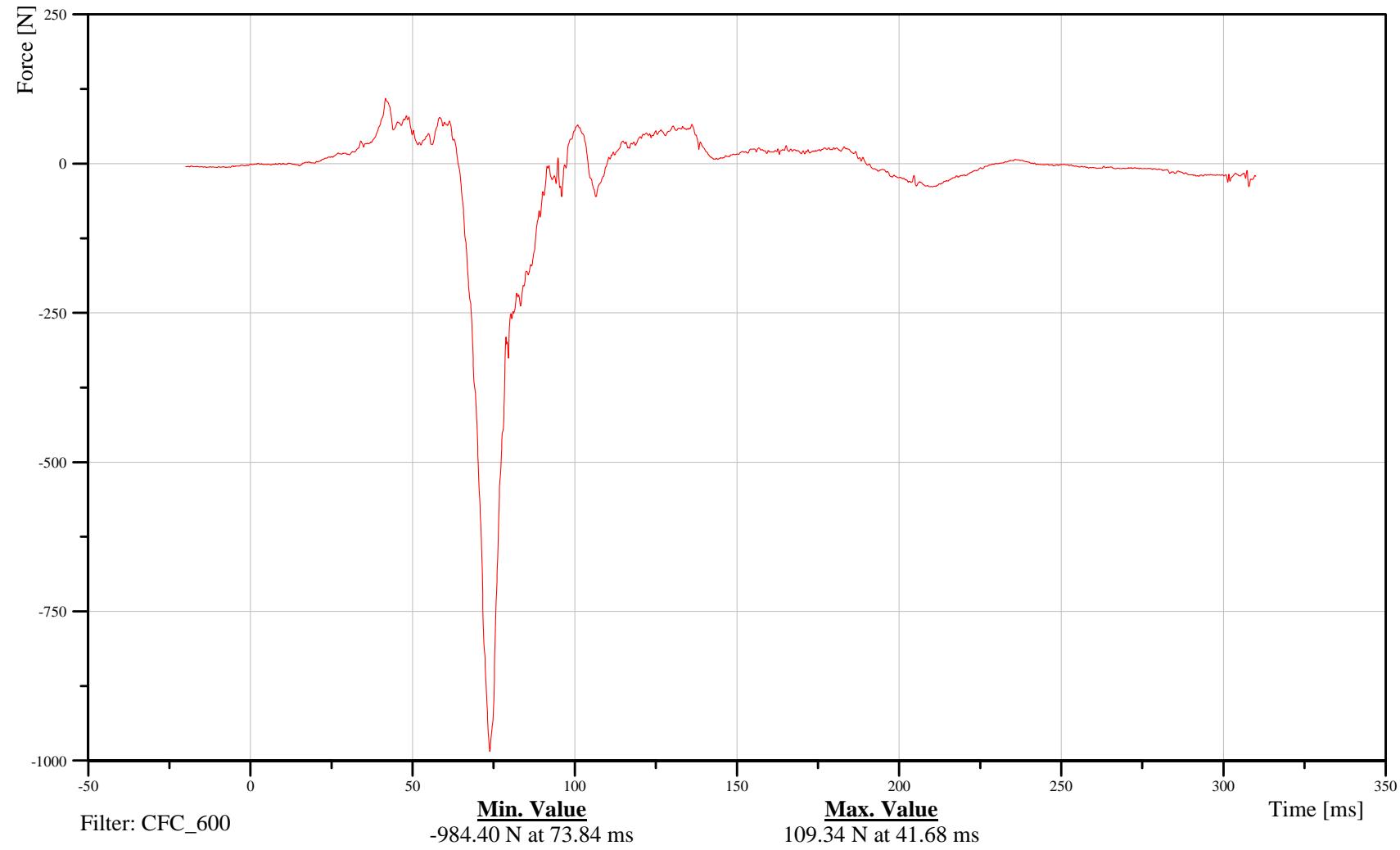
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Lower Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRLLXHFFOZB





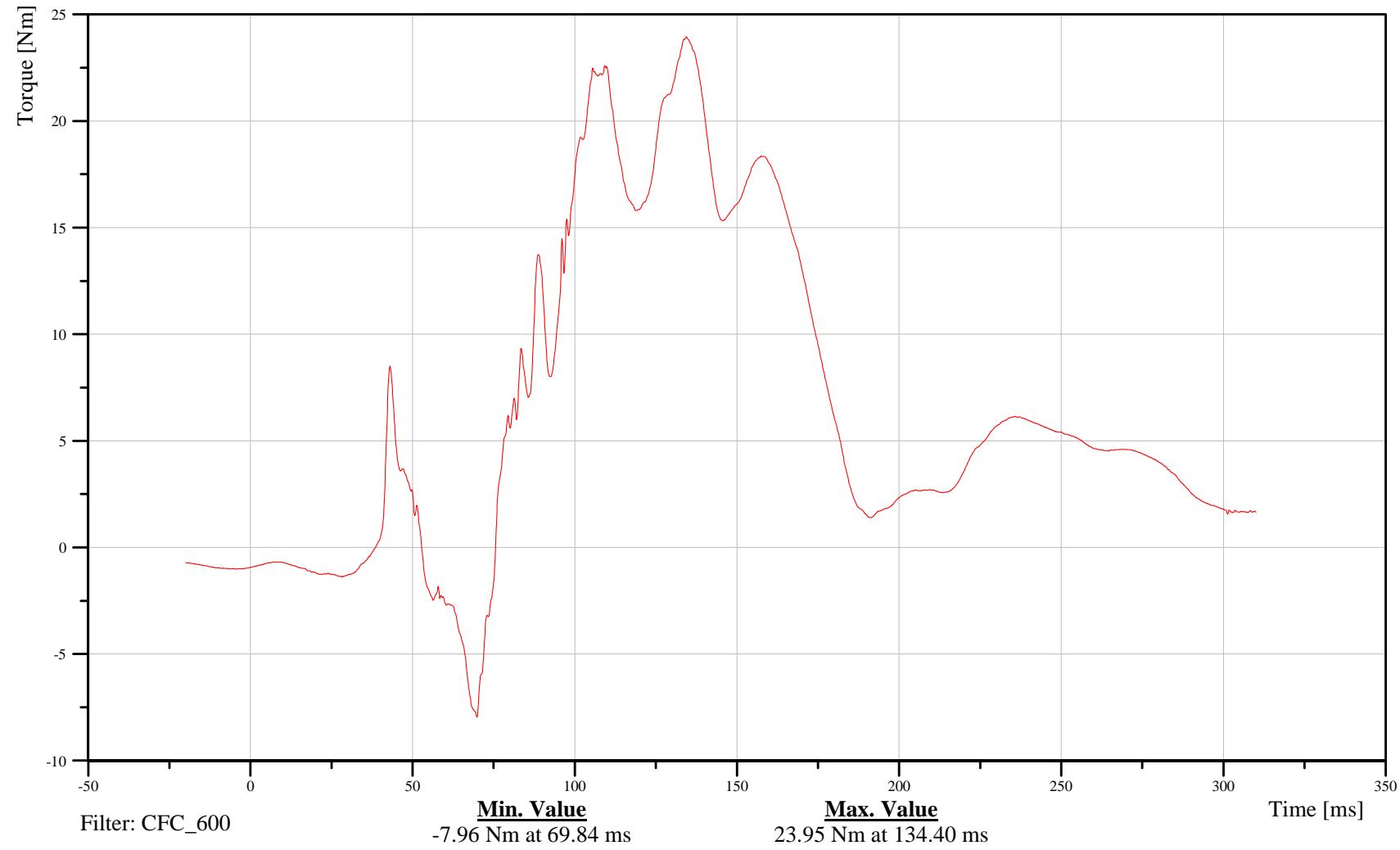
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Lower Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13TIBIRLLXHFMOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





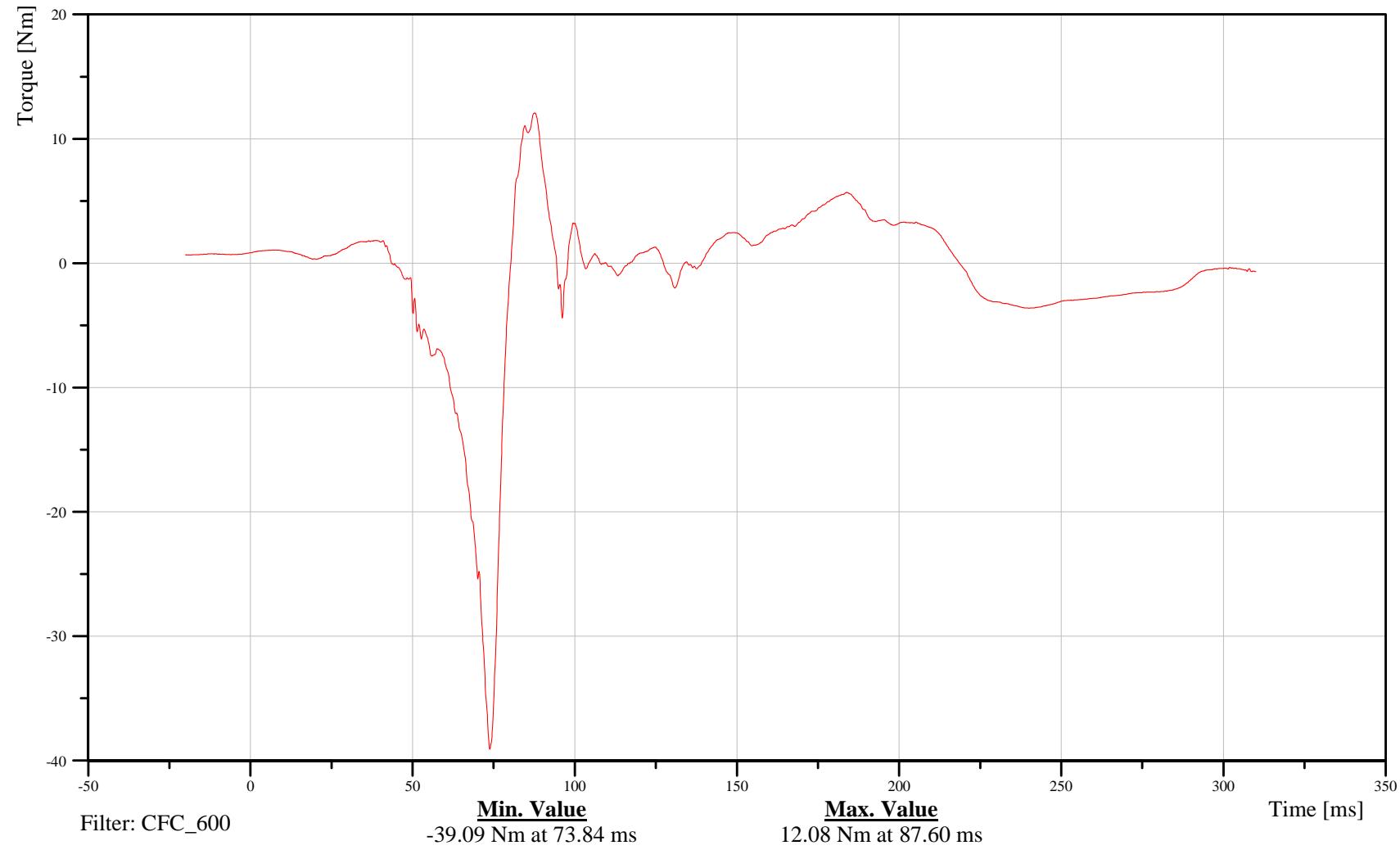
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Lower Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13TIBIRLLXHFMOYB





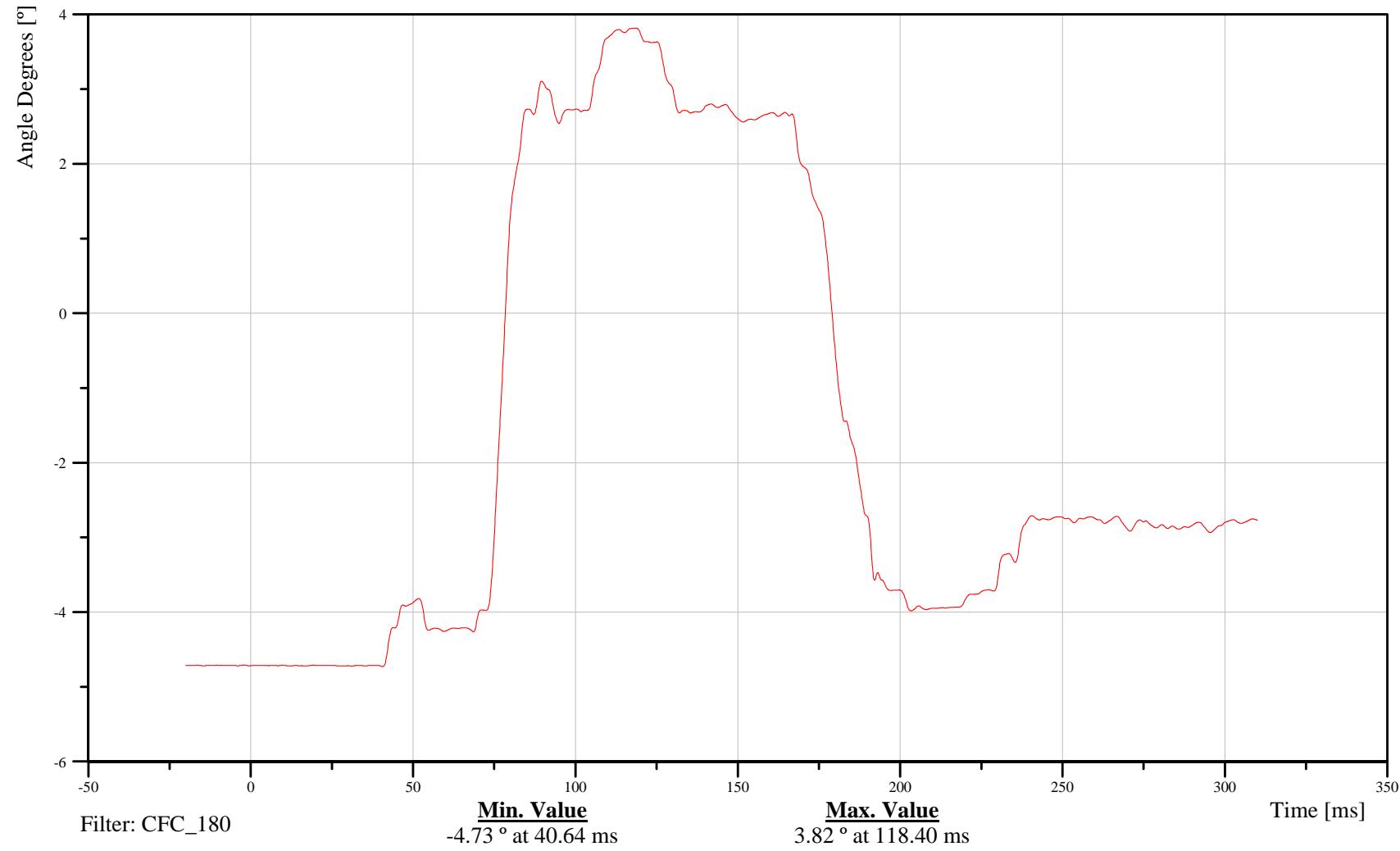
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot X-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13FOOTRILXHFANXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





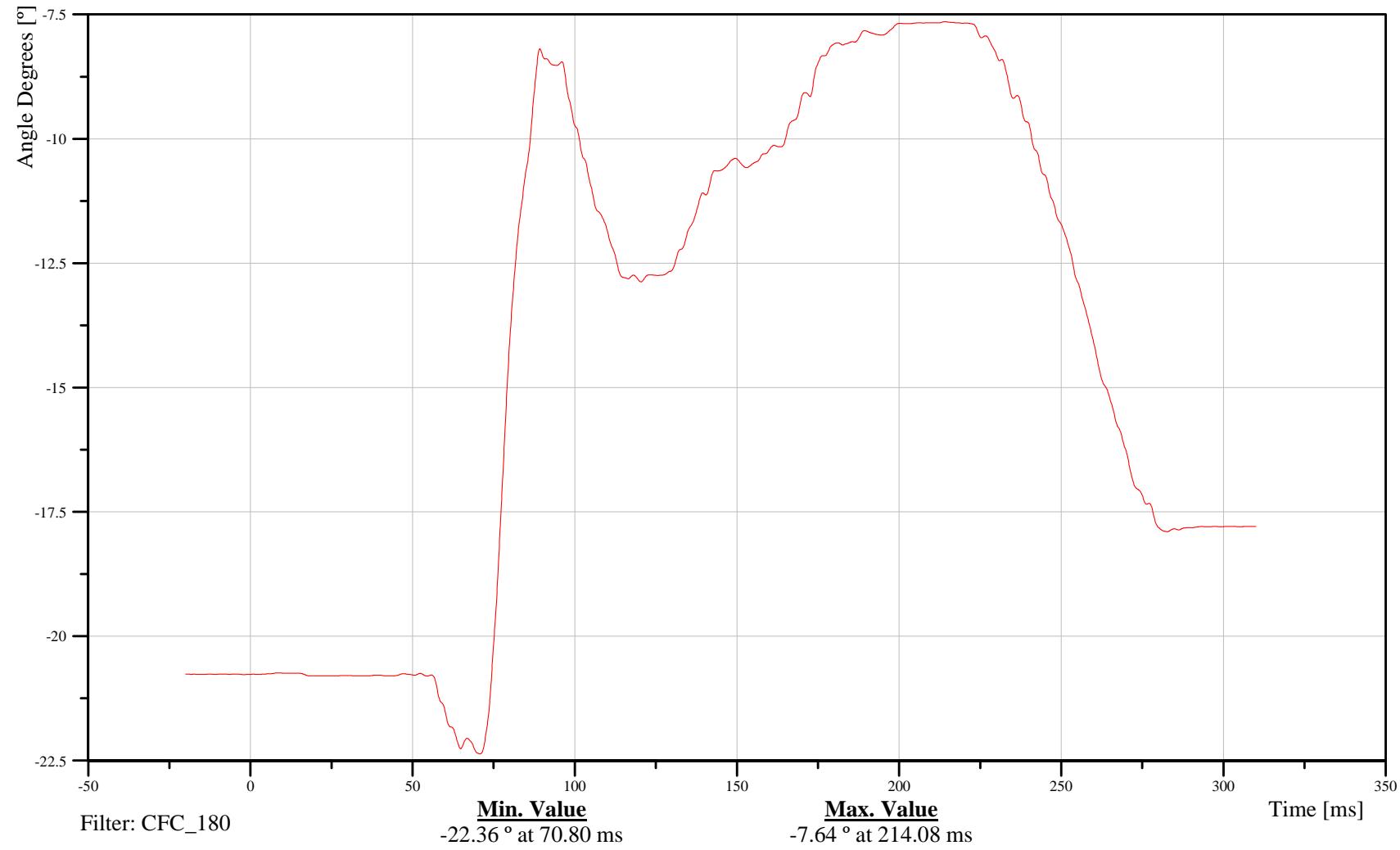
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot Y-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13FOOTRILXHFANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





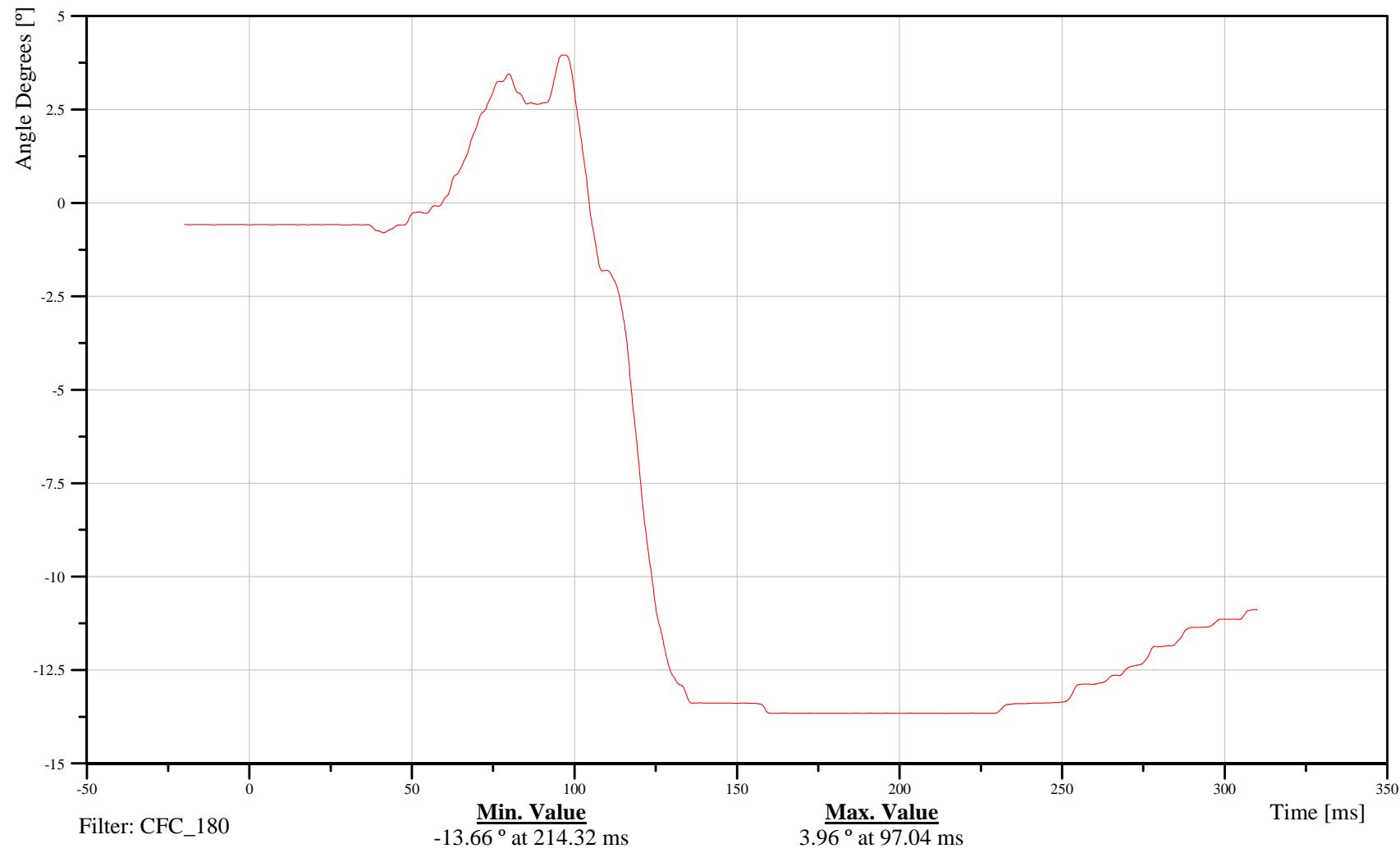
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot Z-Axis Angular Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13FOOTRILXHFANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





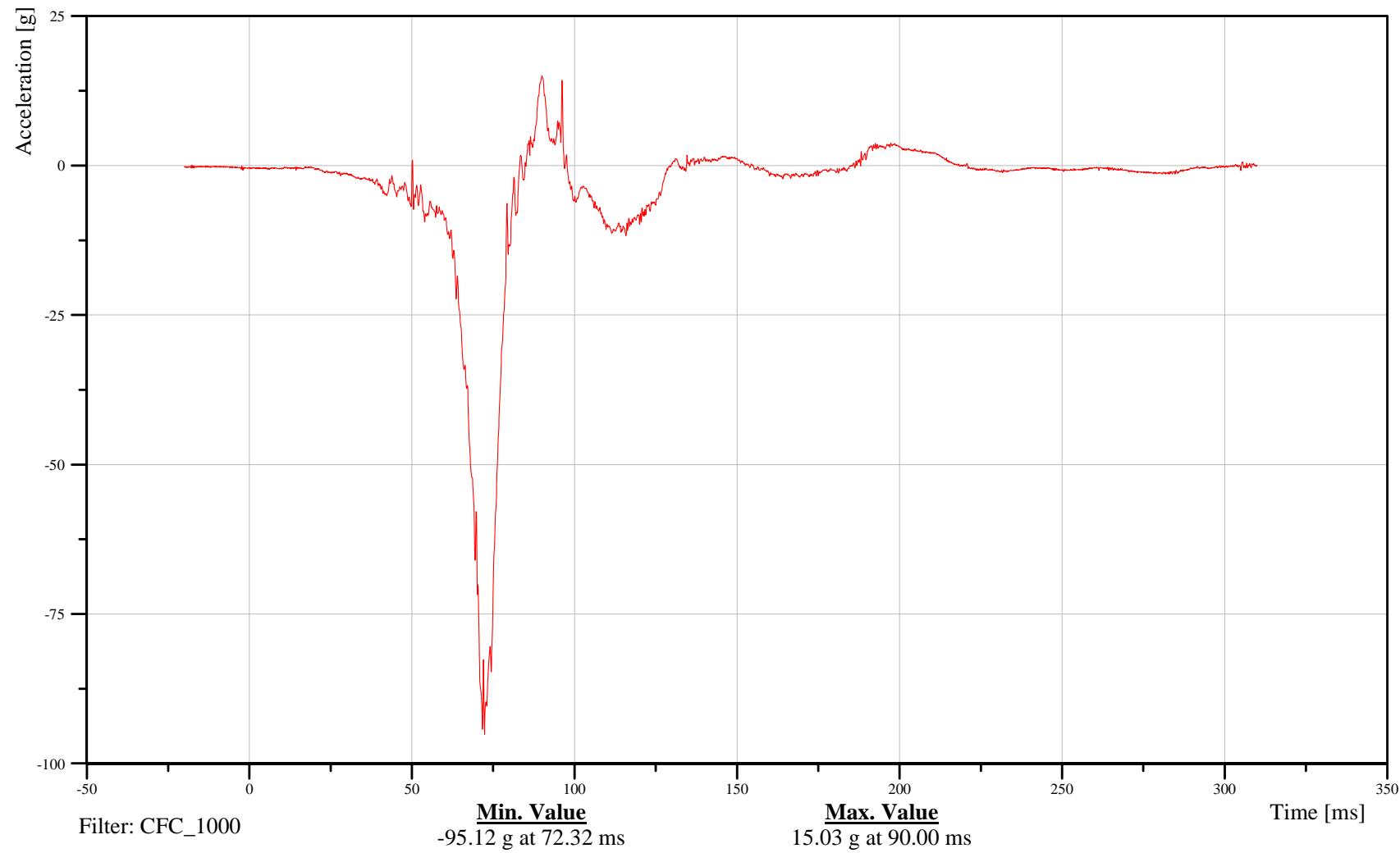
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTRILXHFACXA





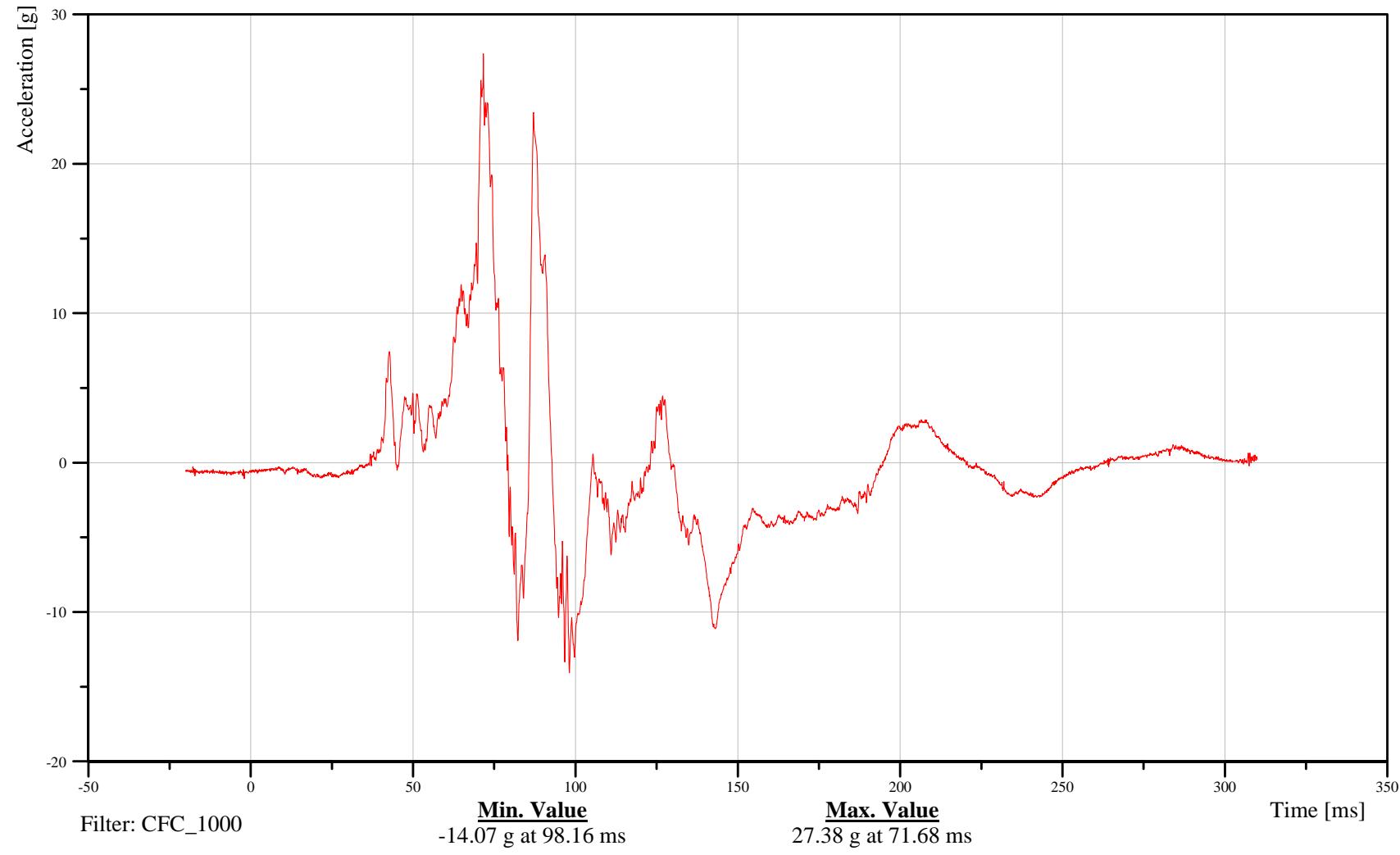
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTRILXHFACYA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

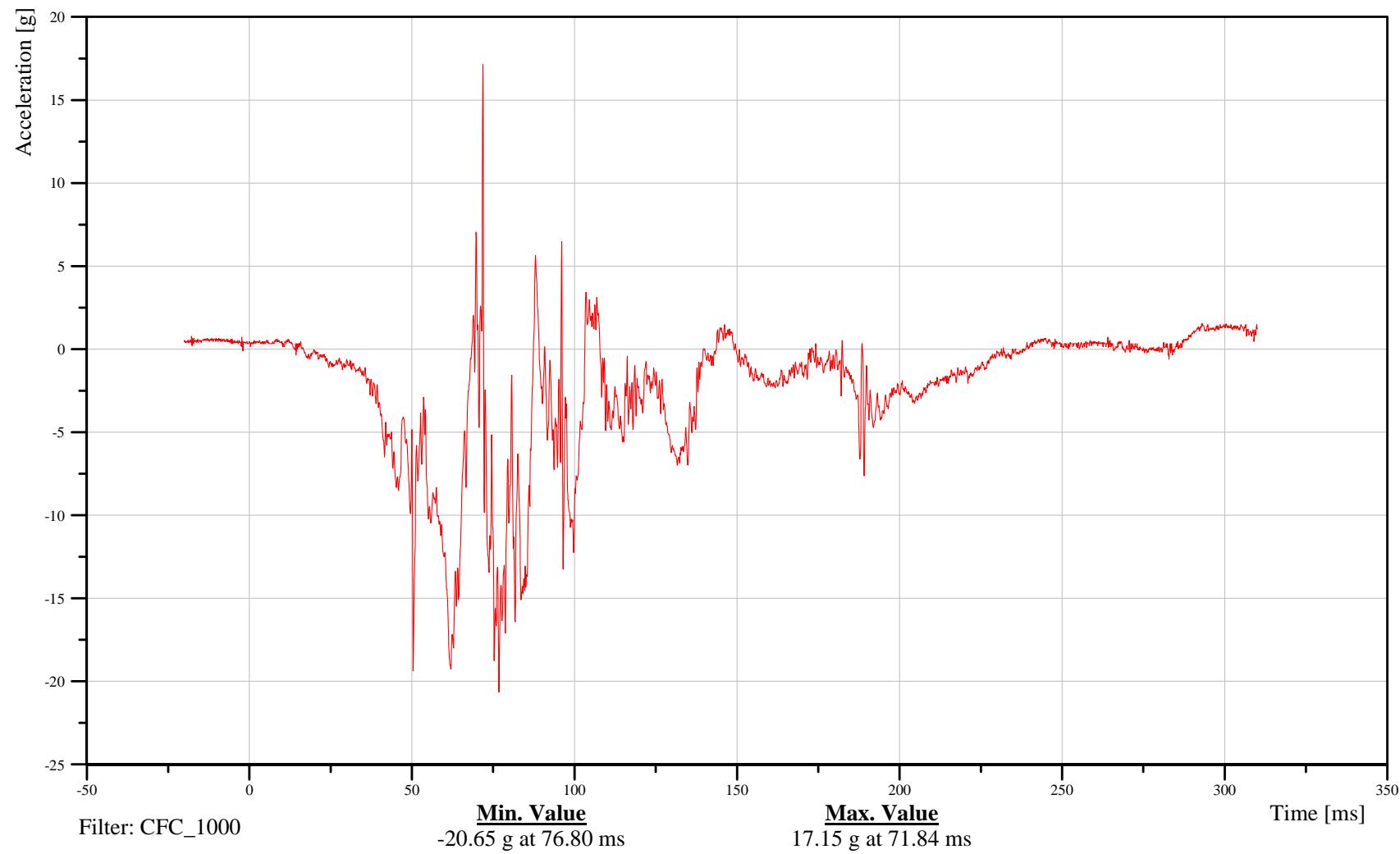
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTRILXHFACZA

B-134

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Right Foot Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

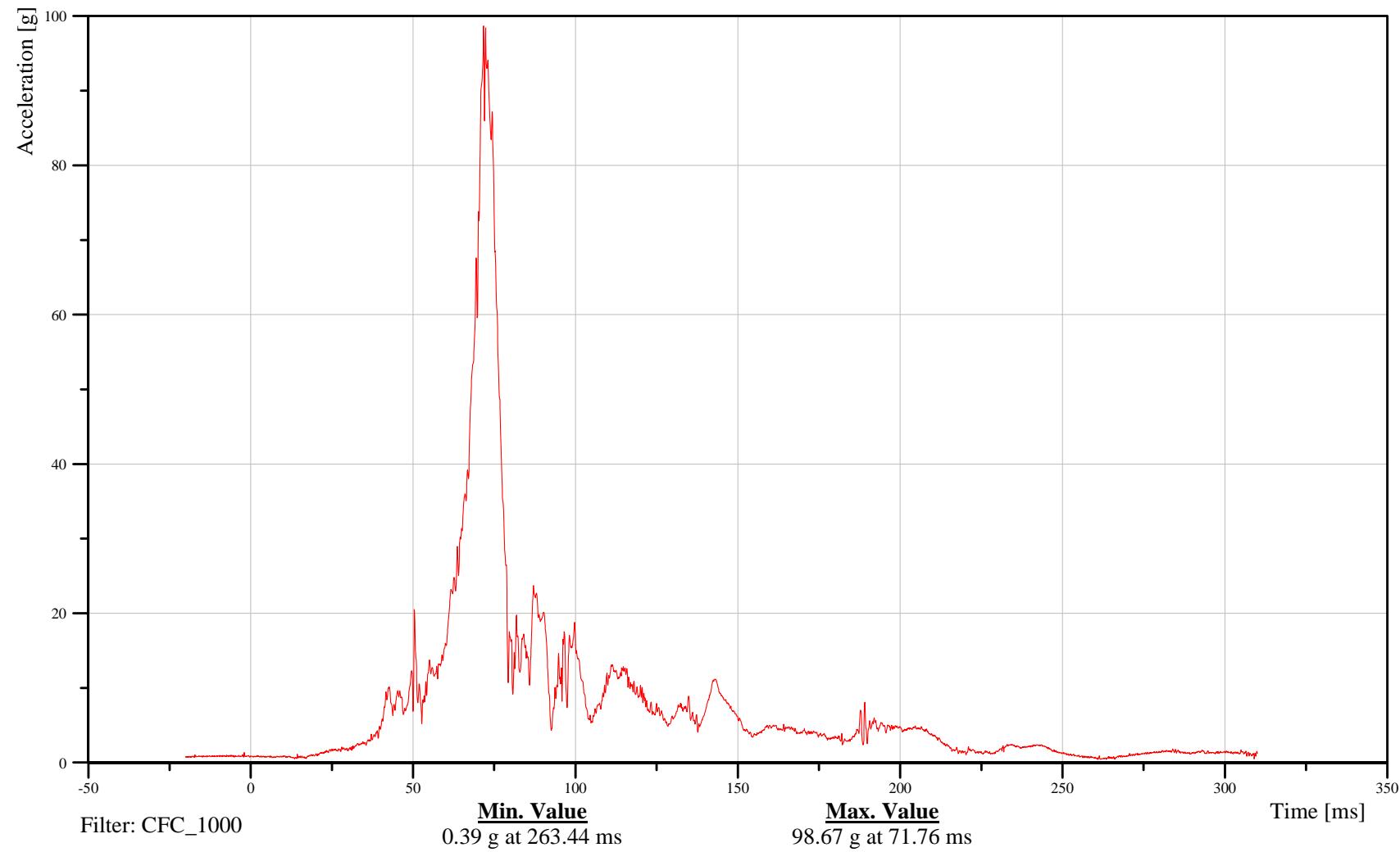
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

13FOOTRILXHFACRA

B-135

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

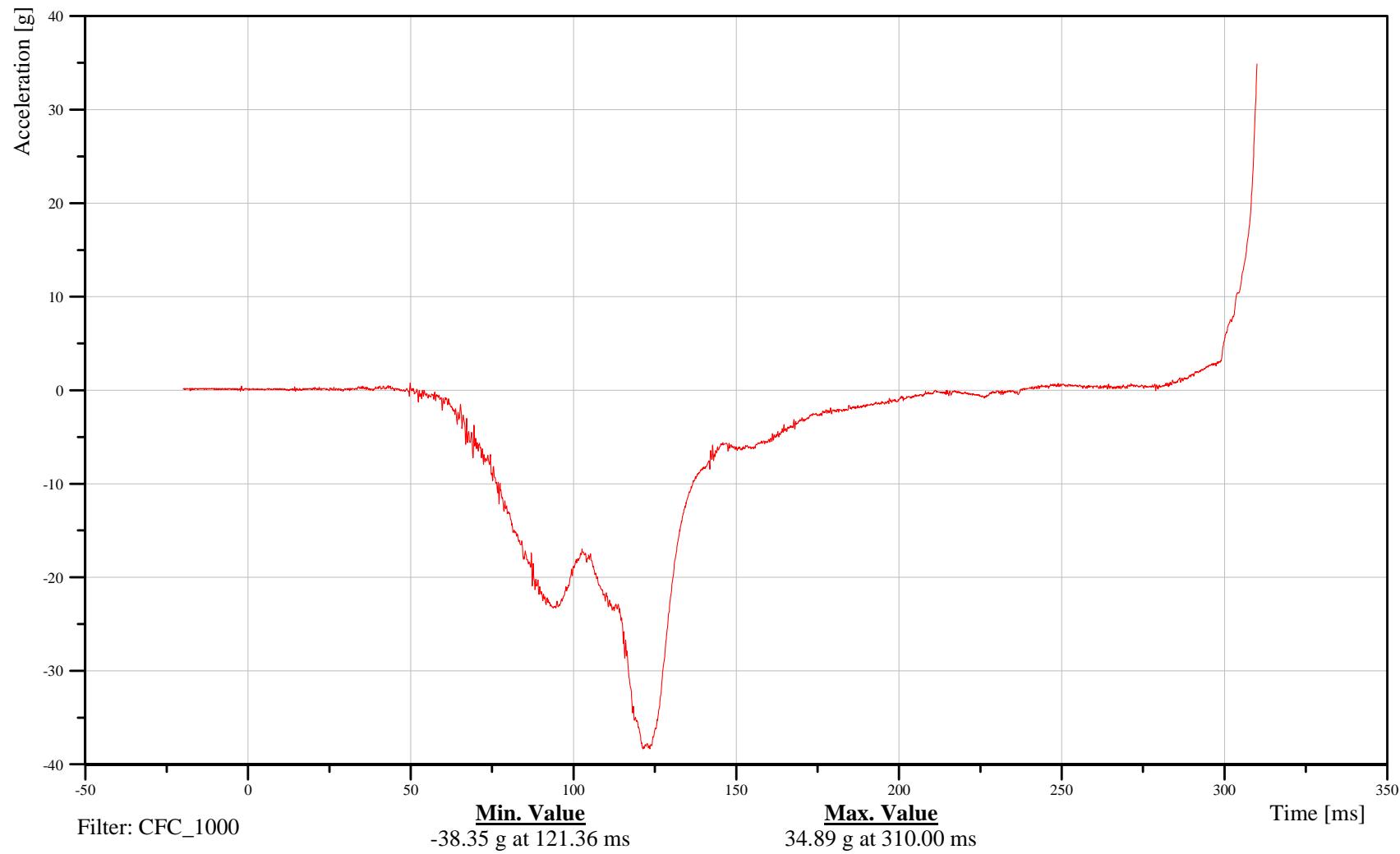
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCG00HFACXA

B-136

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

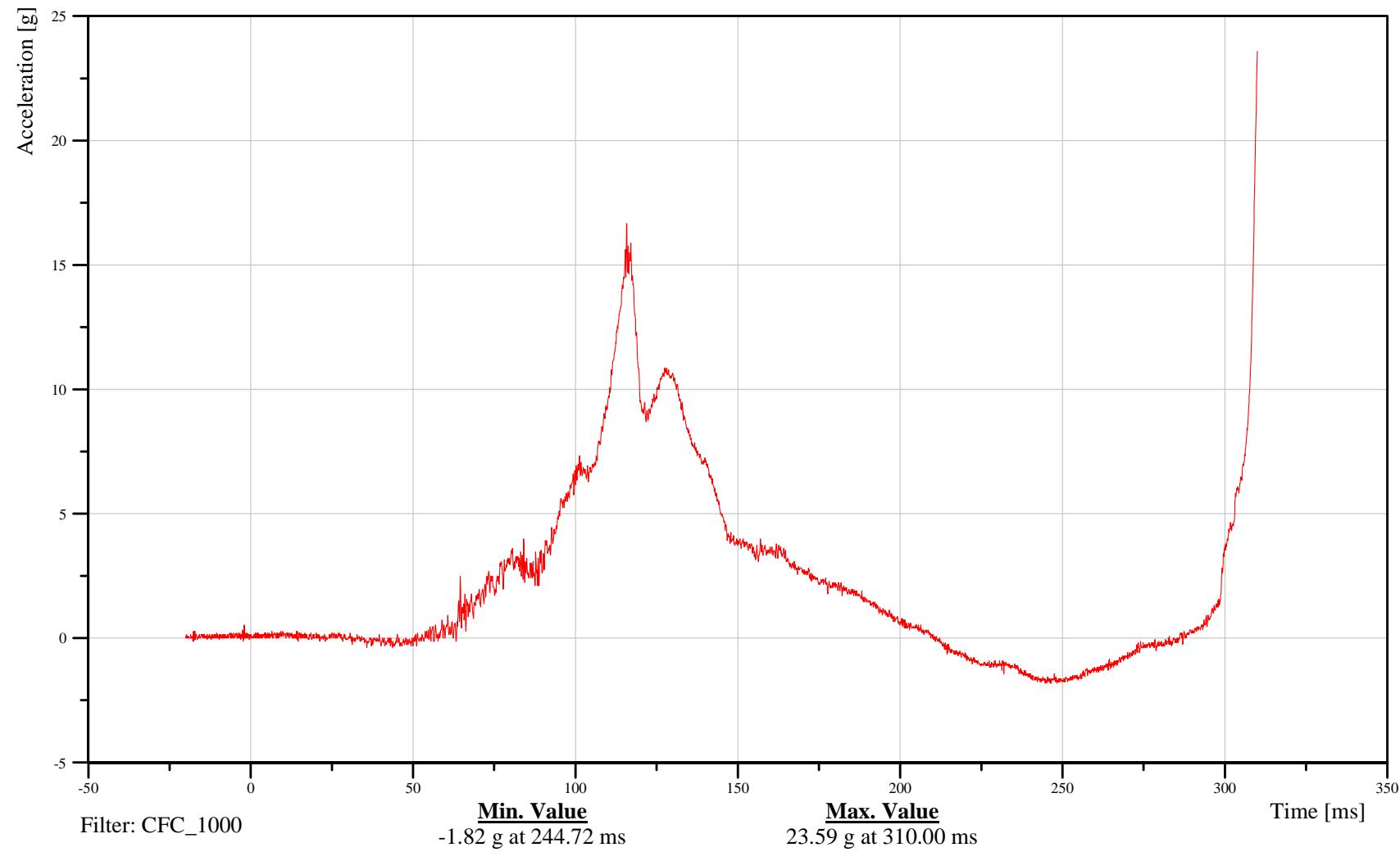
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCG00HFACYA

B-137

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Z-Axis Acceleration

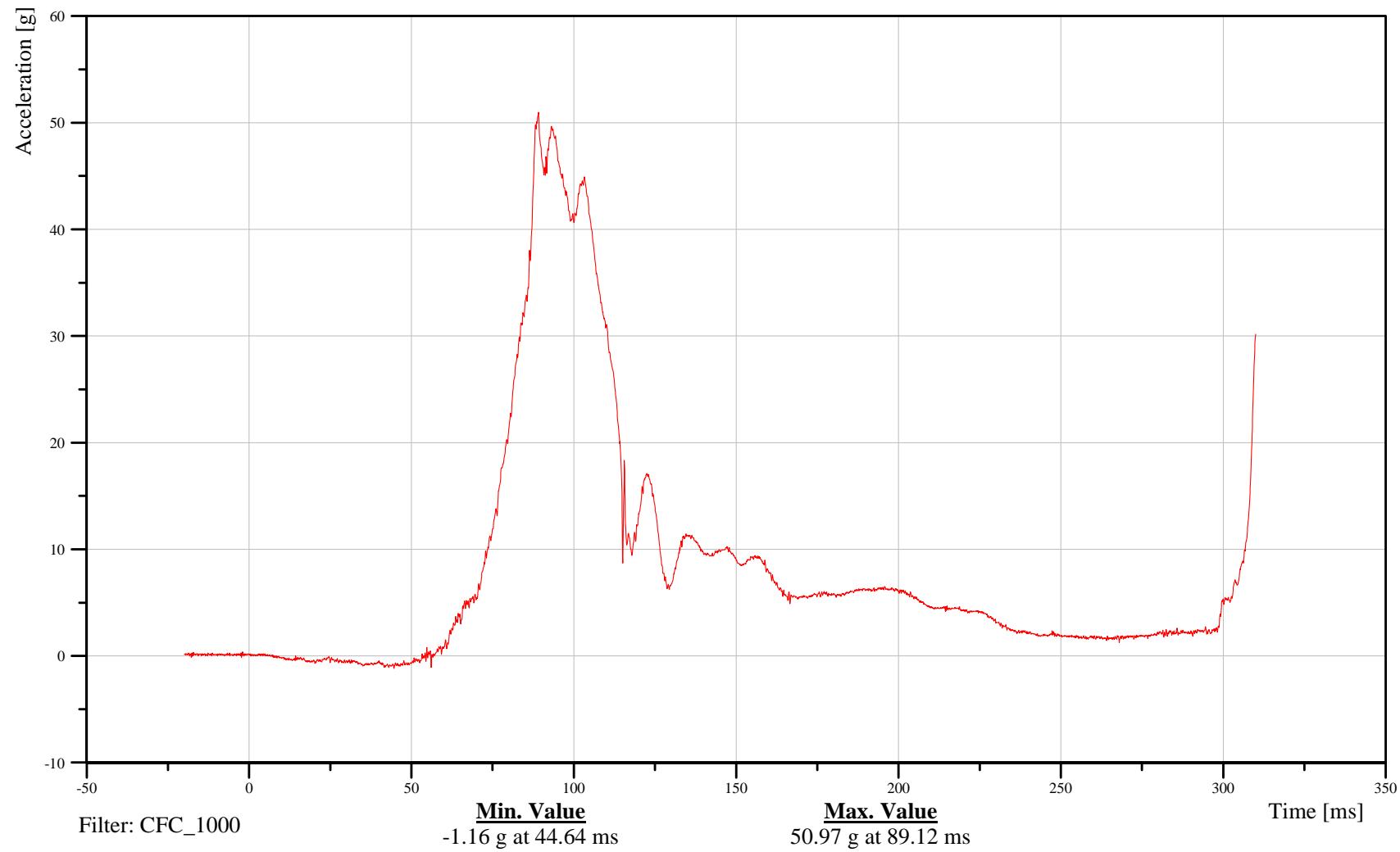
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCG00HFACZA

B-138  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

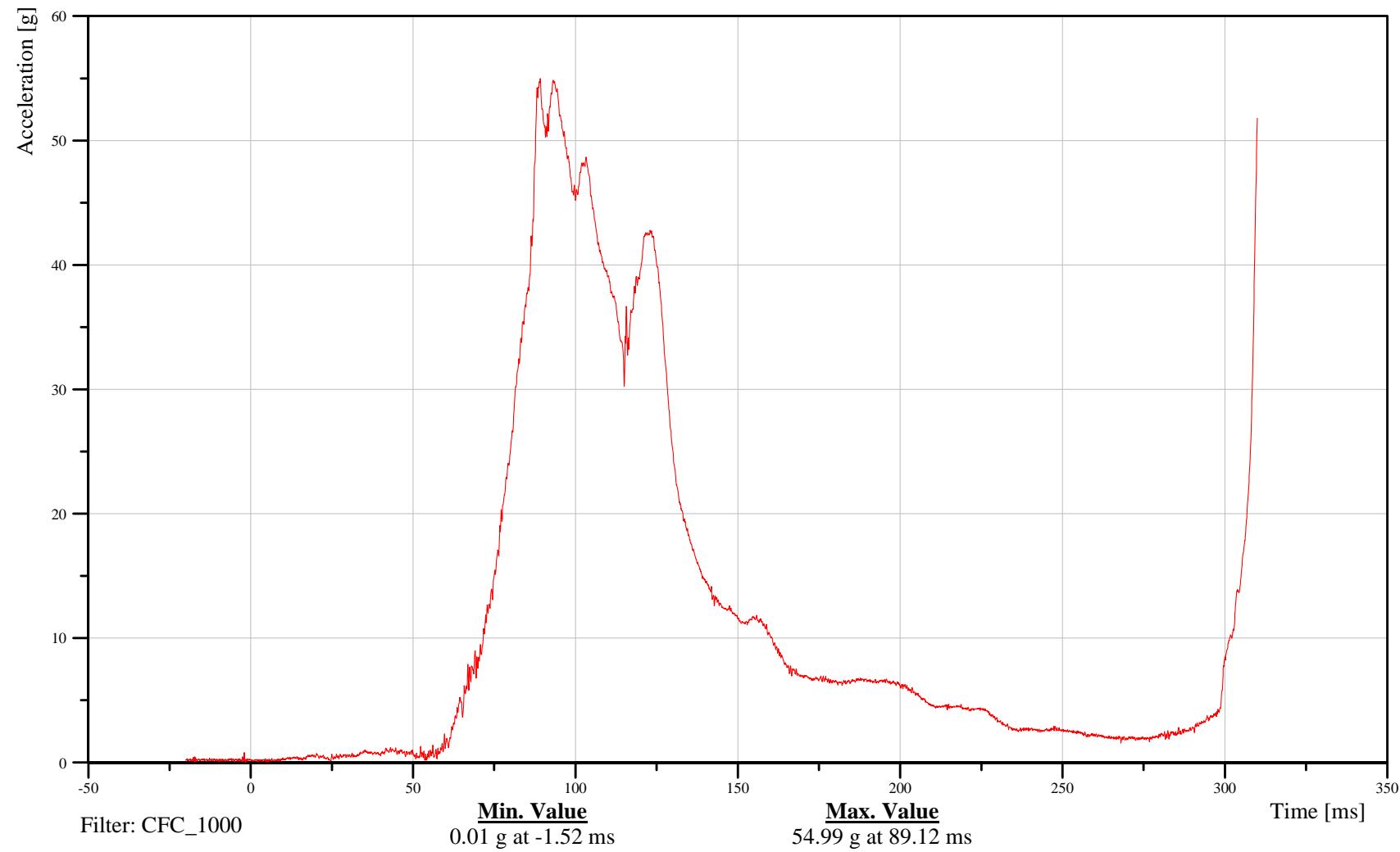
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCG00HFACRA

B-139

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Redundant X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

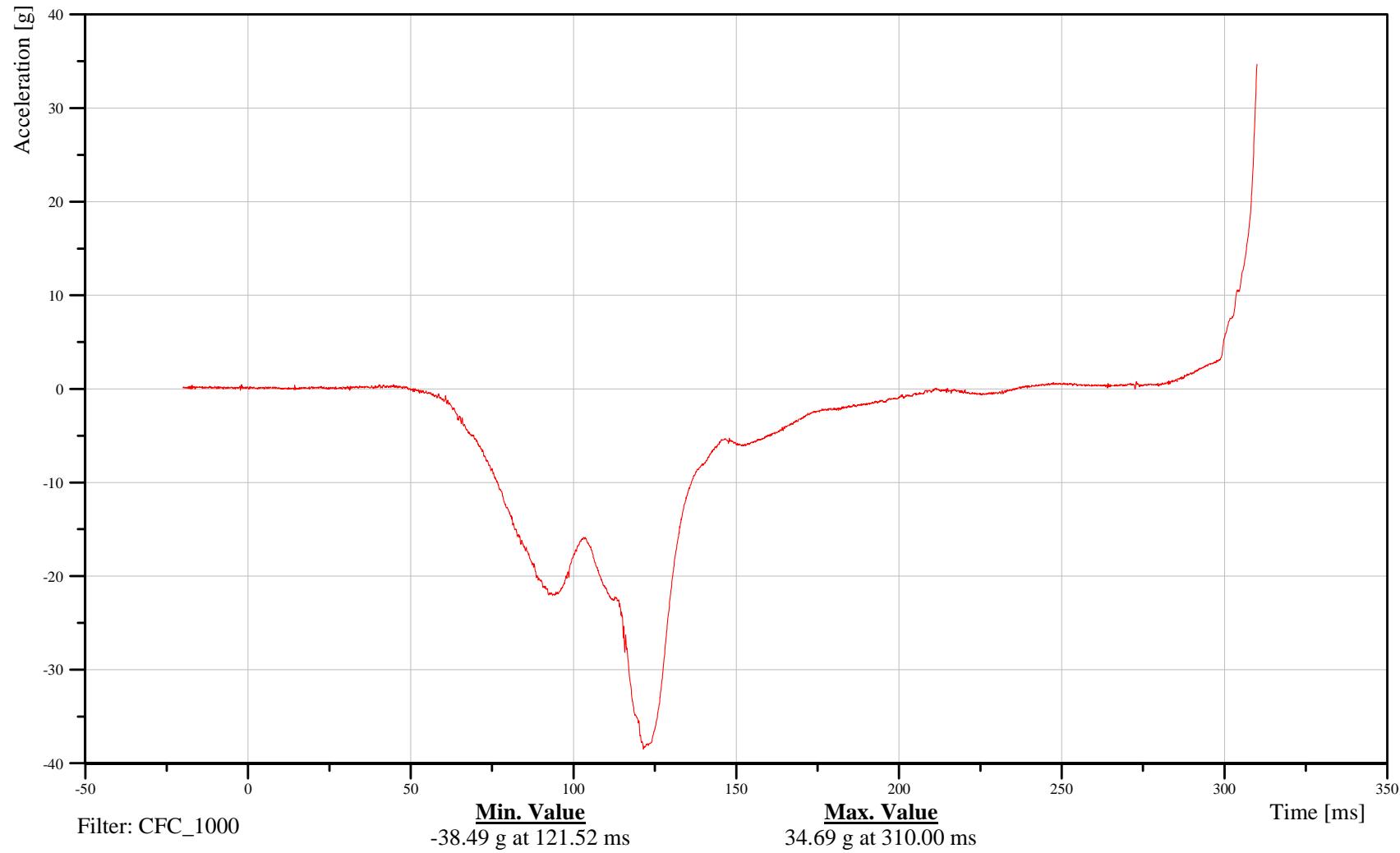
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCGRDHFACXA

B-140

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Redundant Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

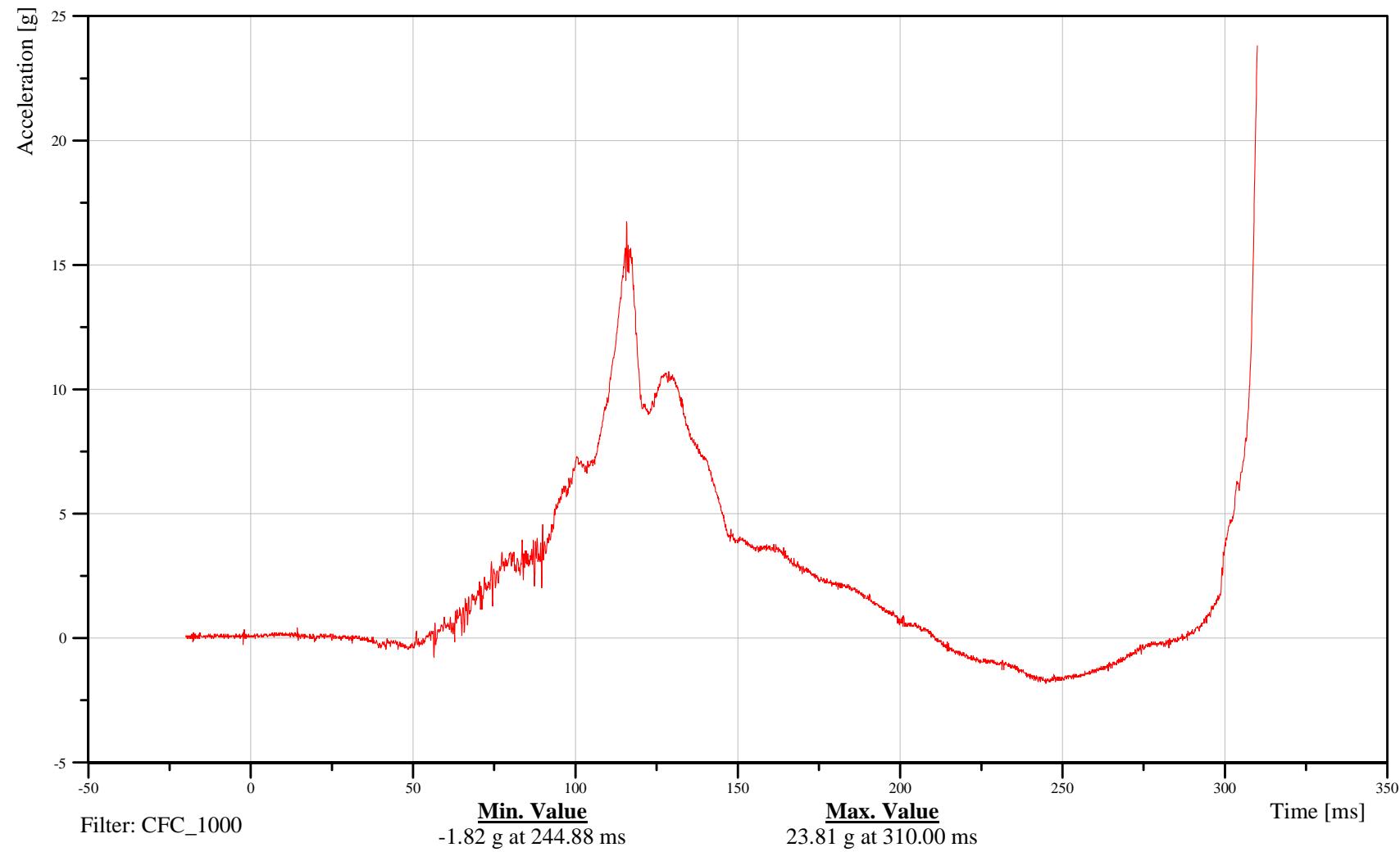
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCGRDHFACYA

B-141

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Redundant Z-Axis Acceleration

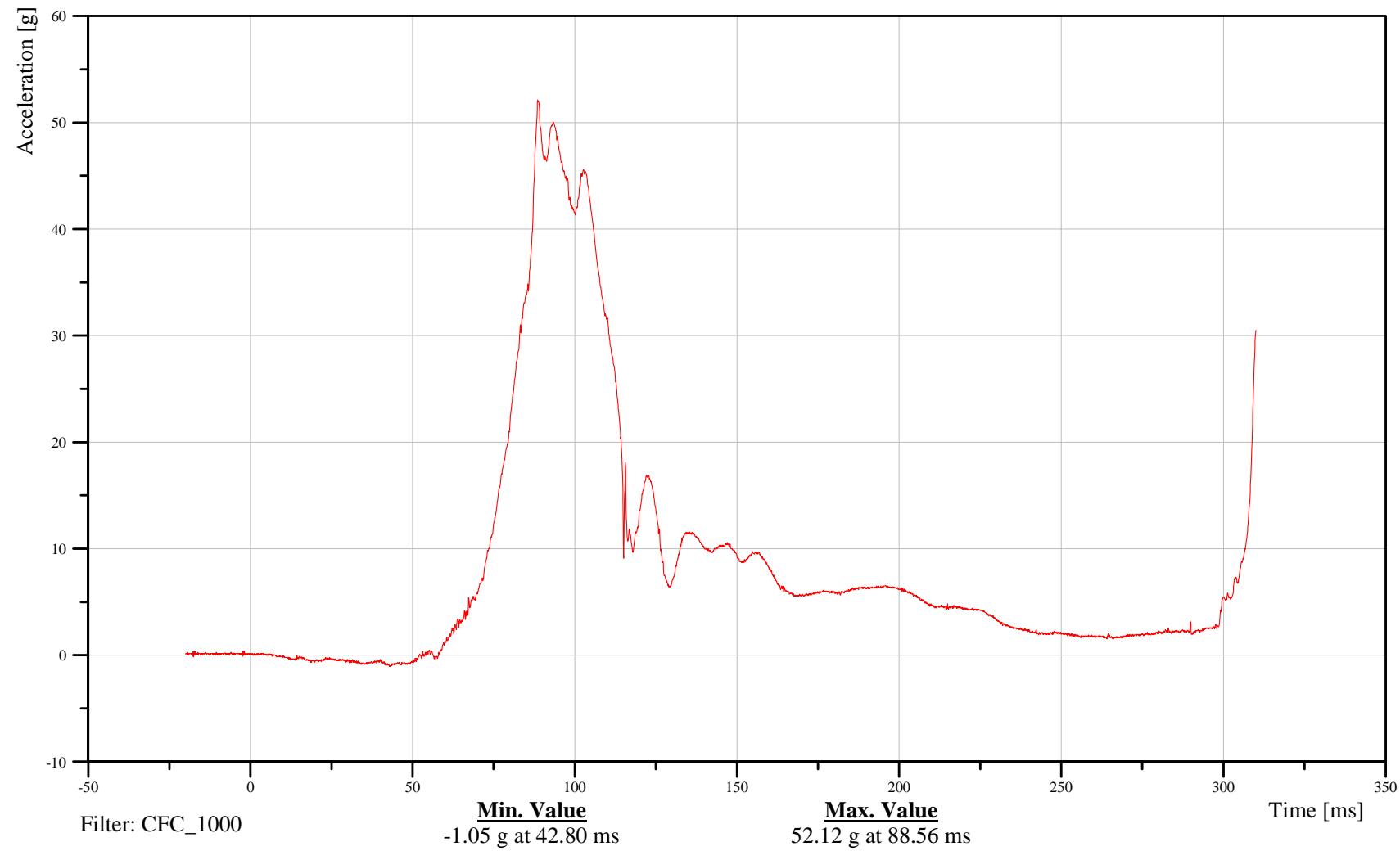
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCGRDHFACZA

B-142  
101116





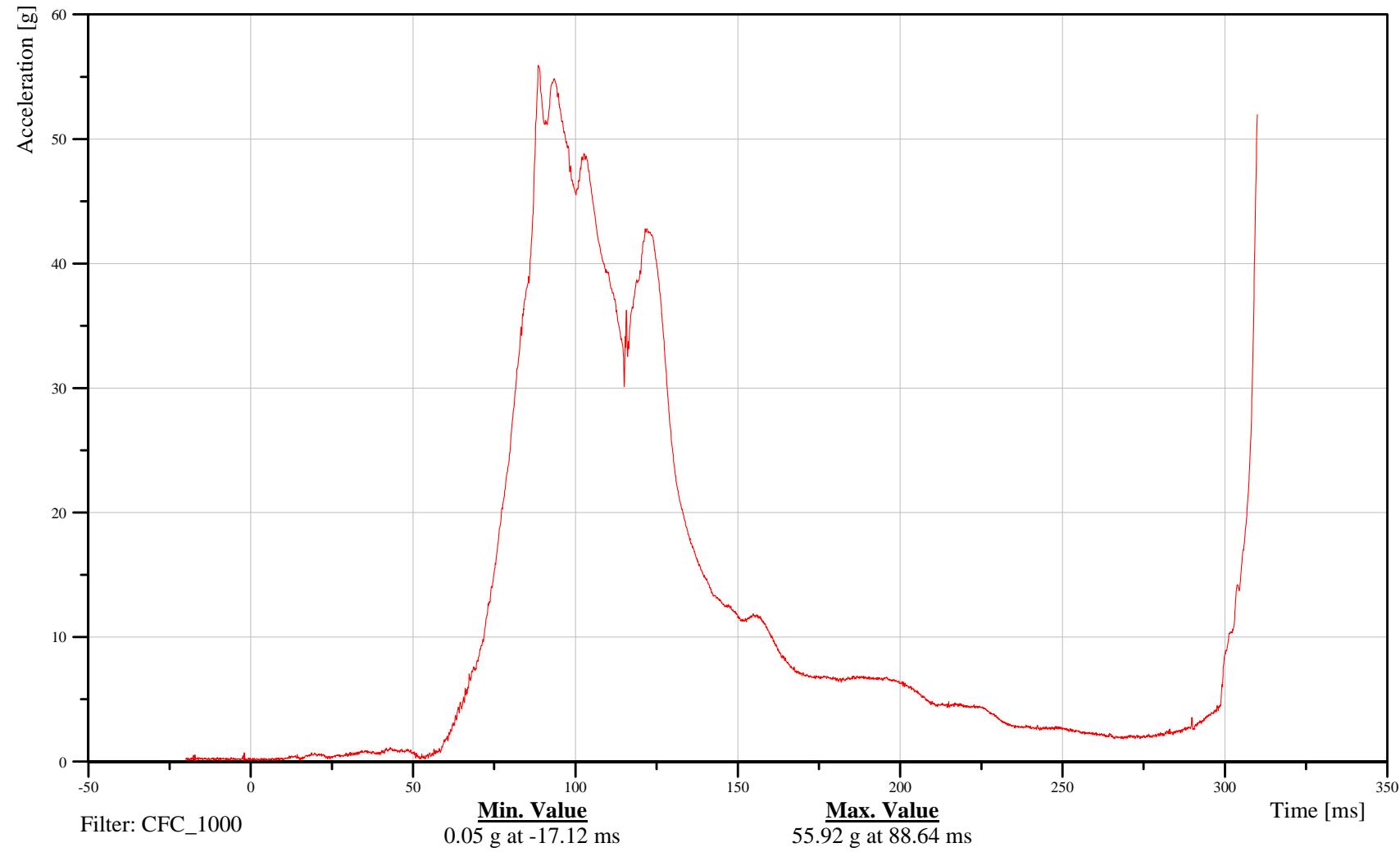
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Head Redundant Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14HEADCGRDHFACRA





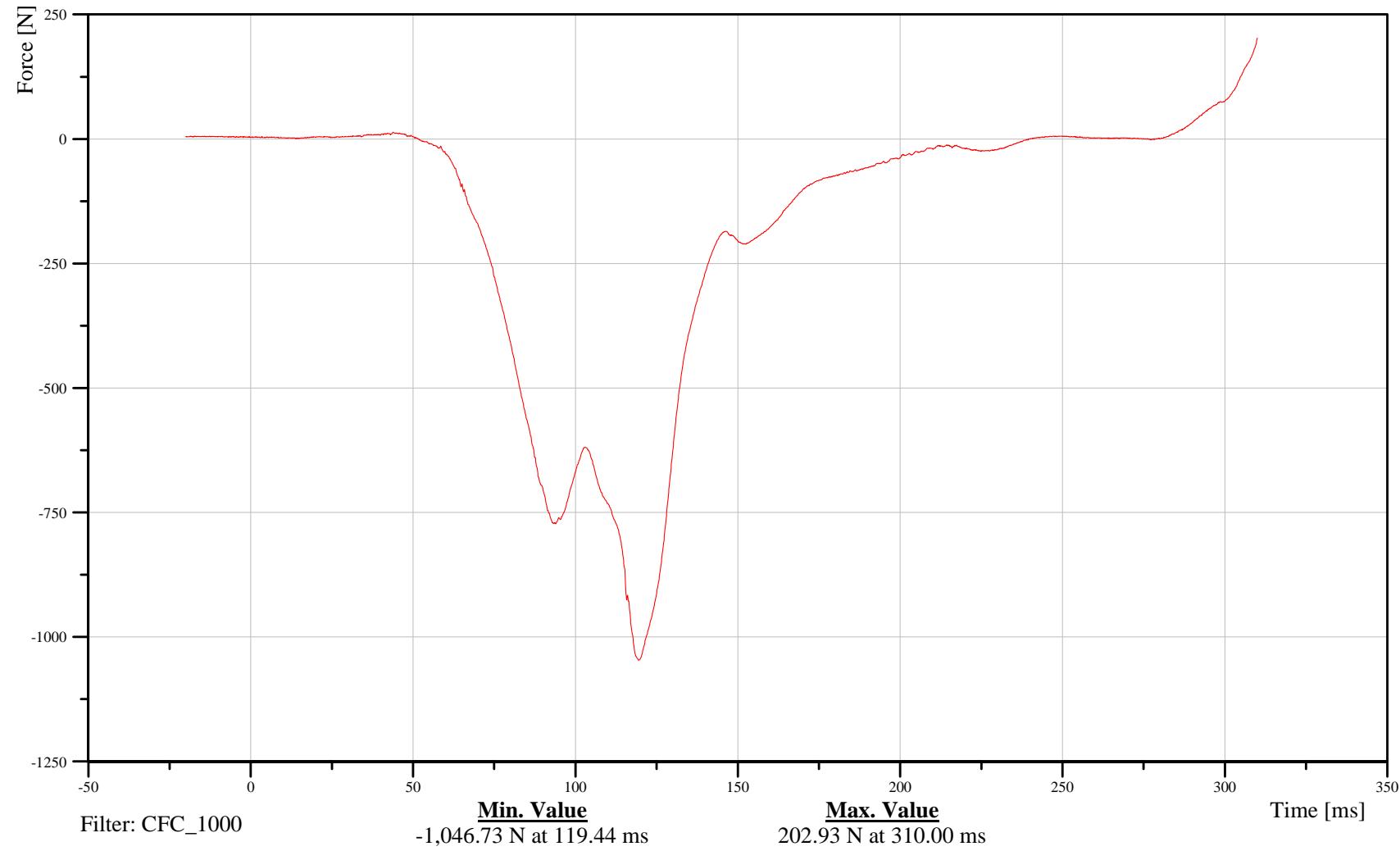
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Upper Neck X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14NECKUP00HFFOXA





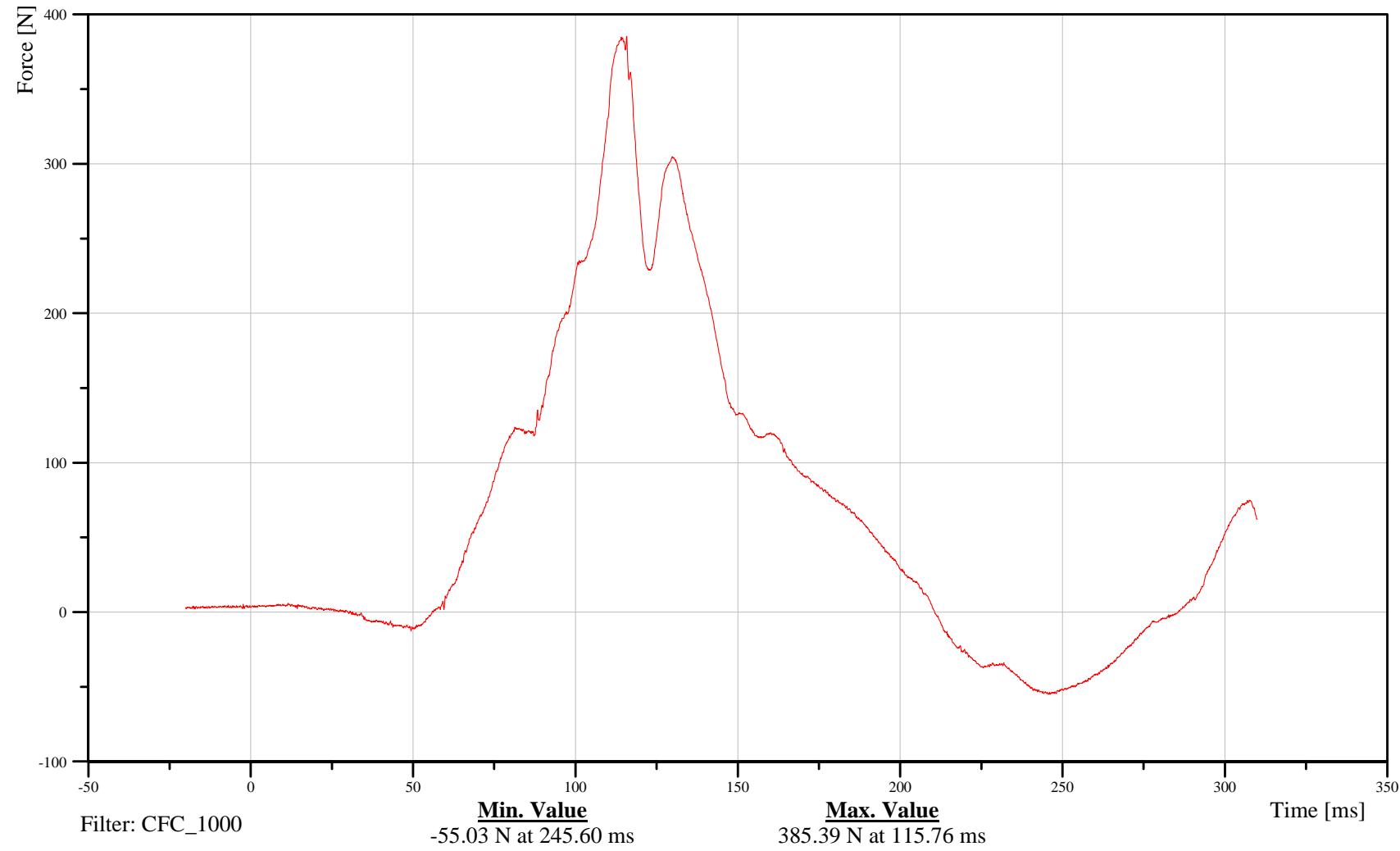
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Upper Neck Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14NECKUP00HFFOYA





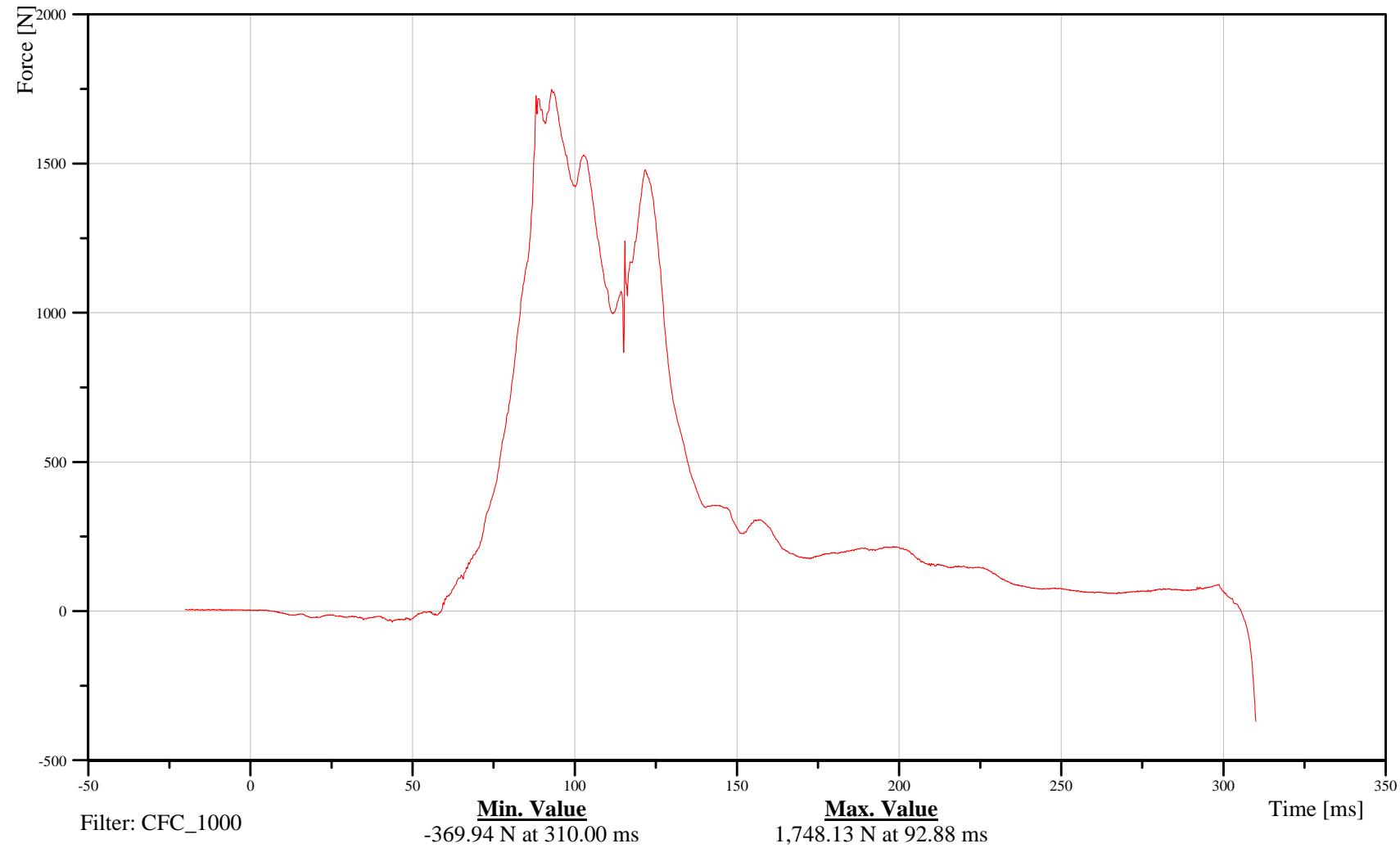
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Upper Neck Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14NECKUP00HFFOZA





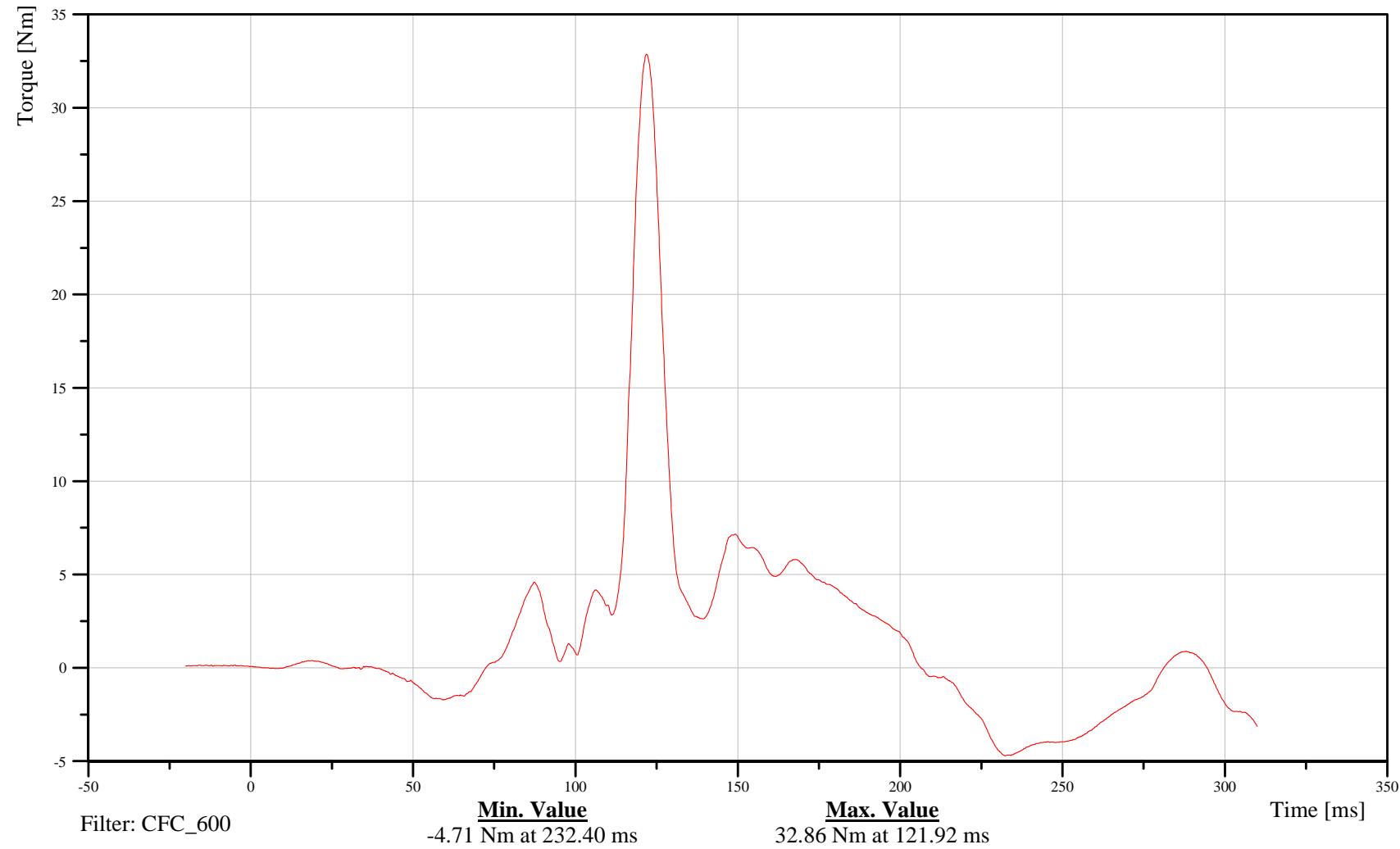
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Upper Neck Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14NECKUP00HFMOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





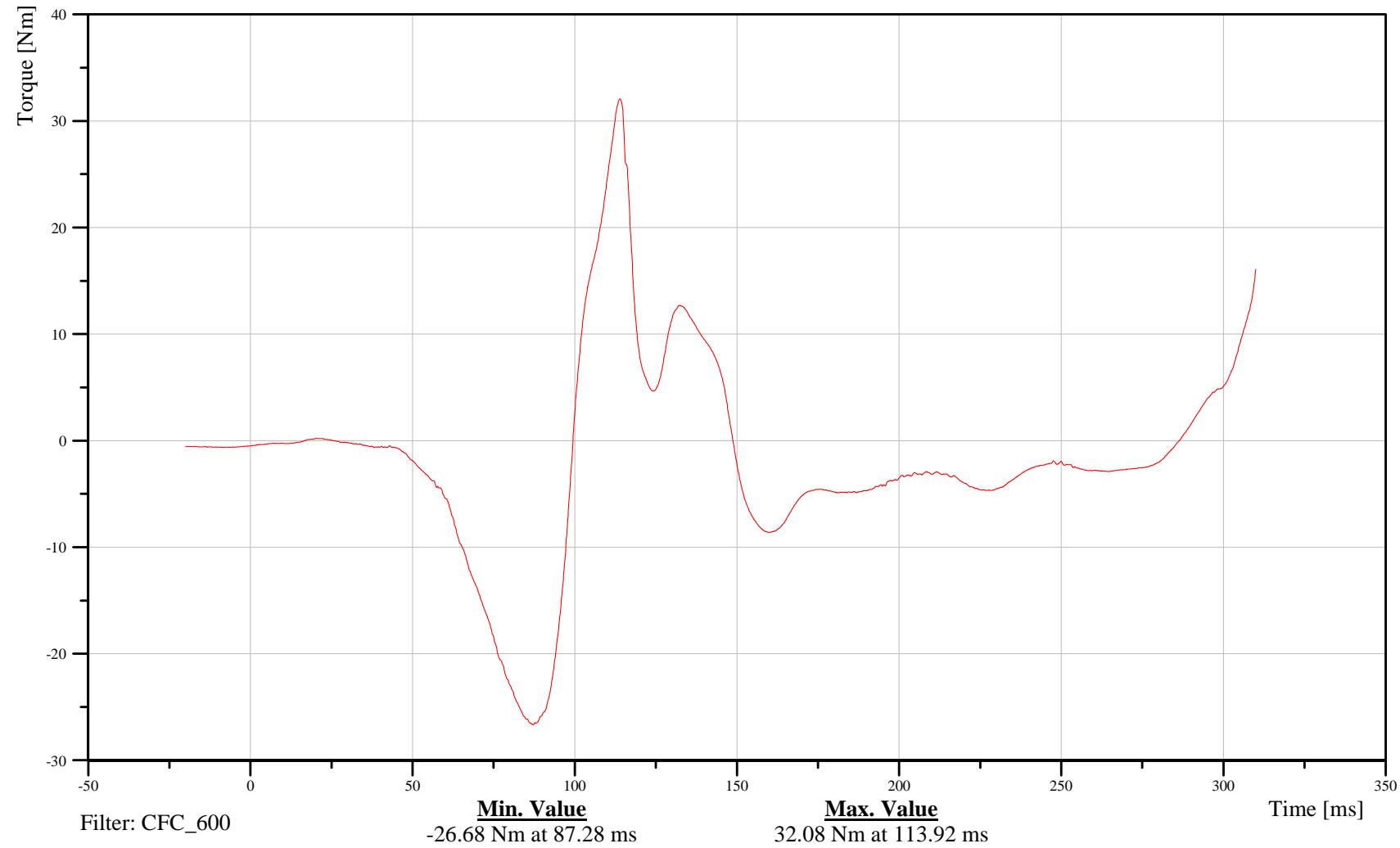
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Upper Neck Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14NECKUP00HFMOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





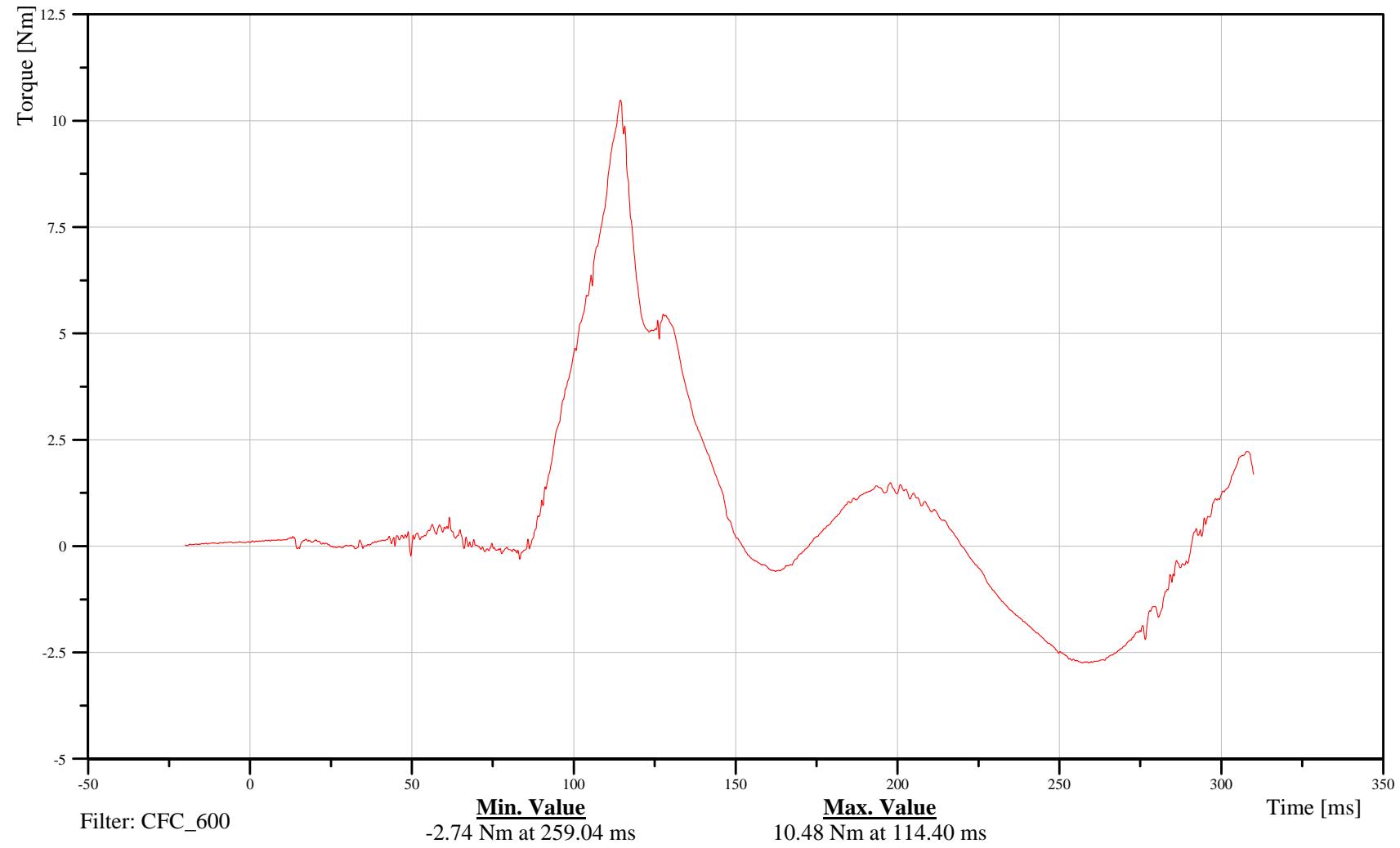
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Upper Neck Moment About Z Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14NECKUP00HFMOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest X-Axis Acceleration

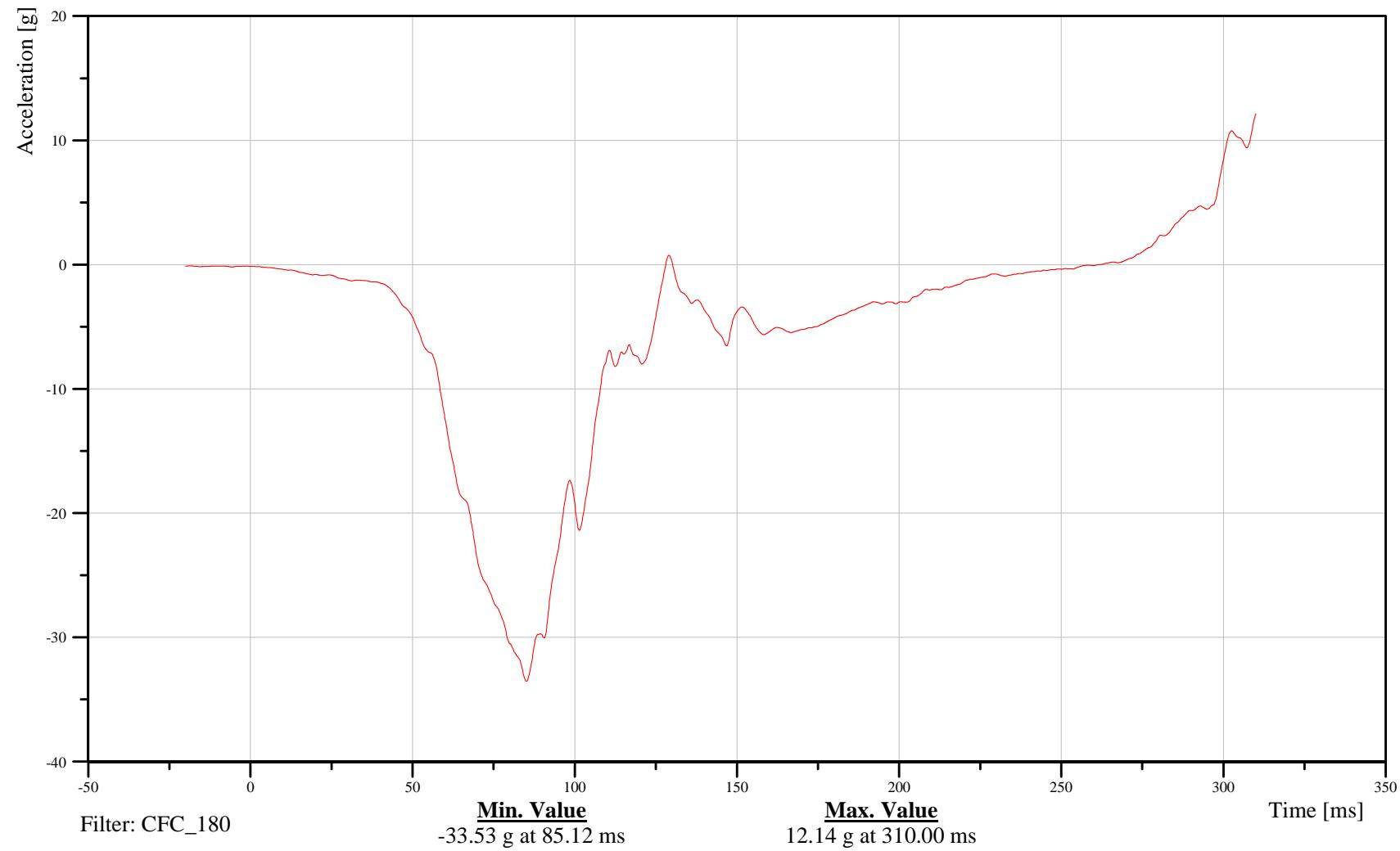
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14CHSTCG00HFACXC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-150  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

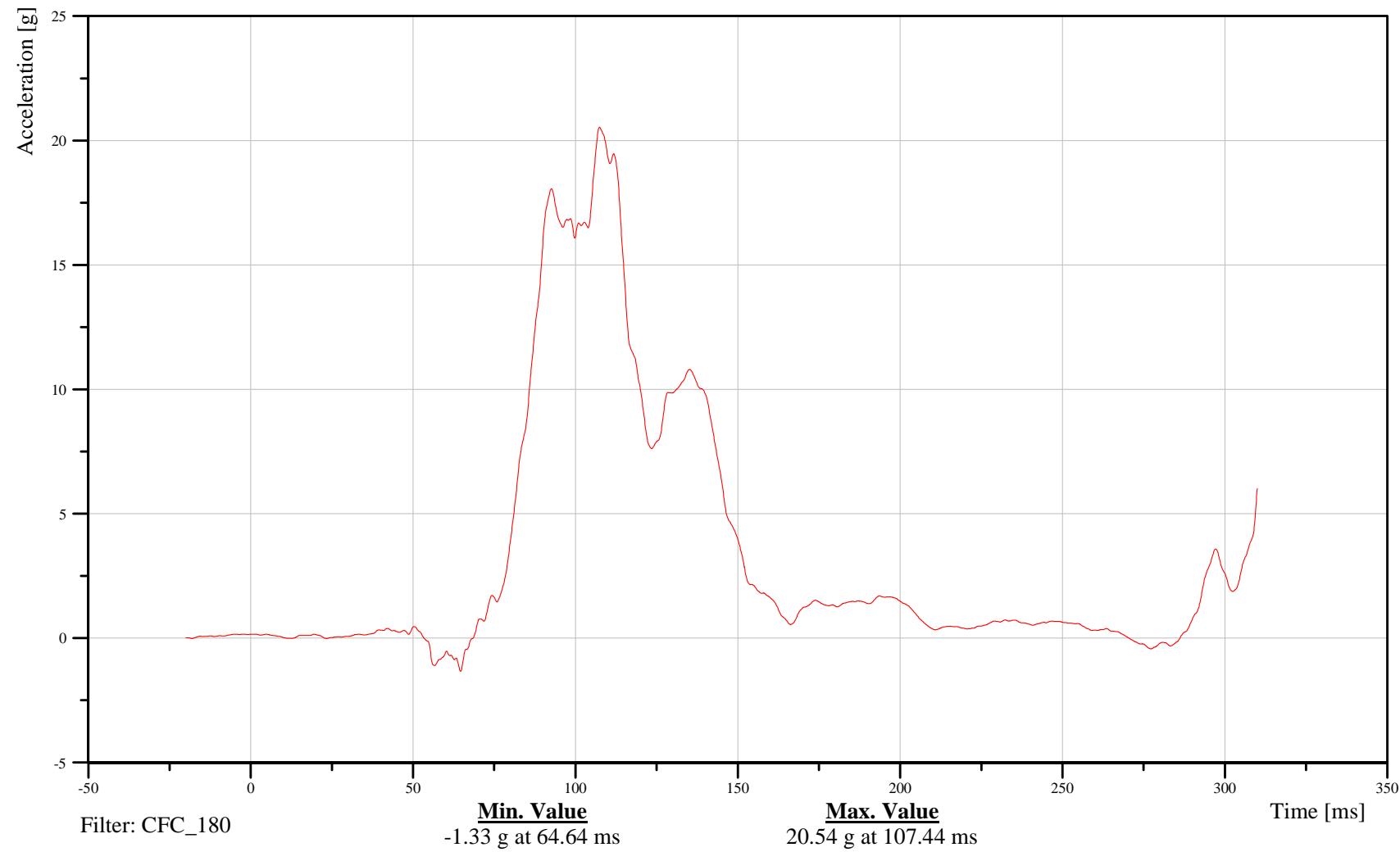
Customer: VRTC

14CHSTCG00HFACYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-151

101116





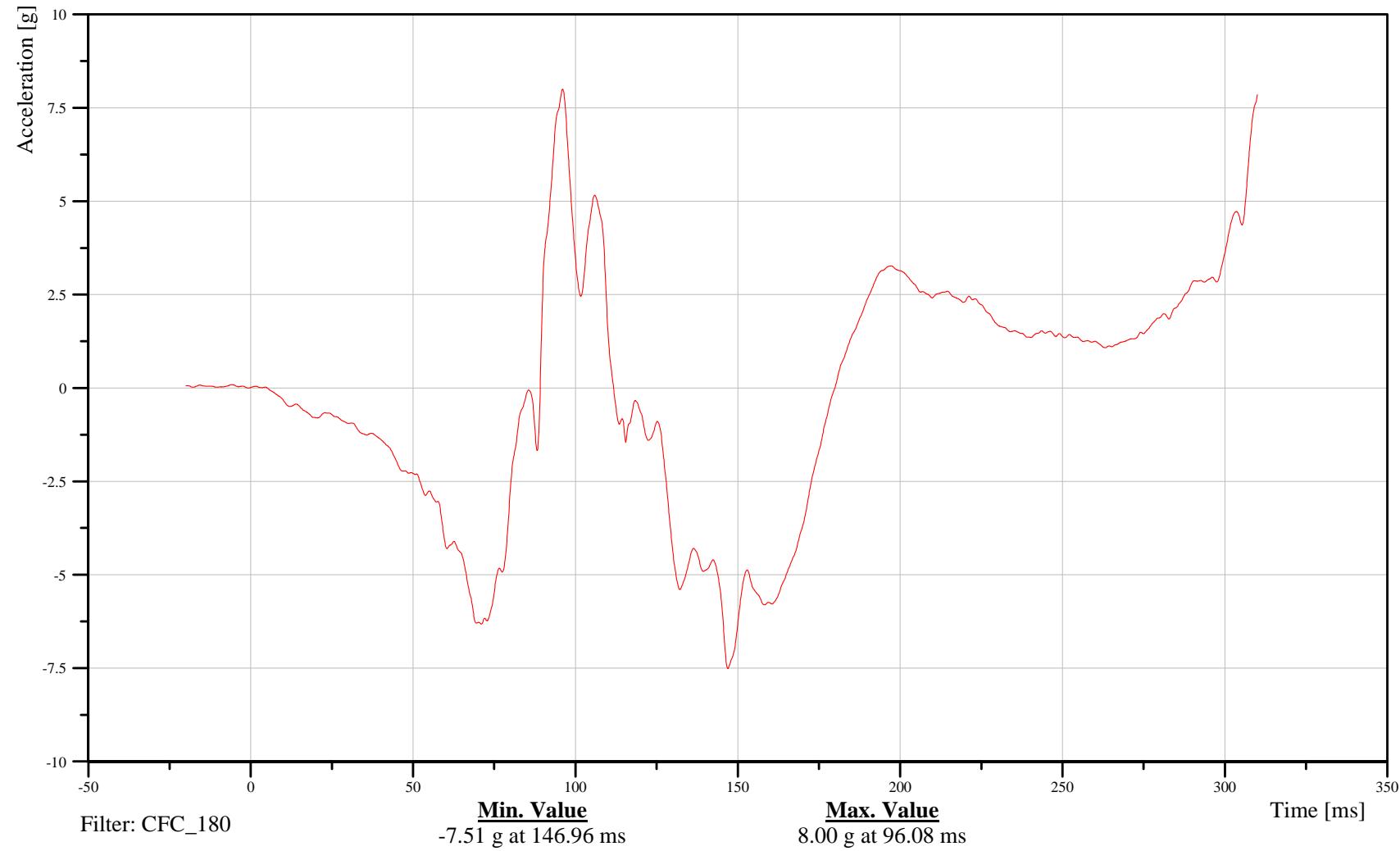
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14CHSTCG00HFACZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





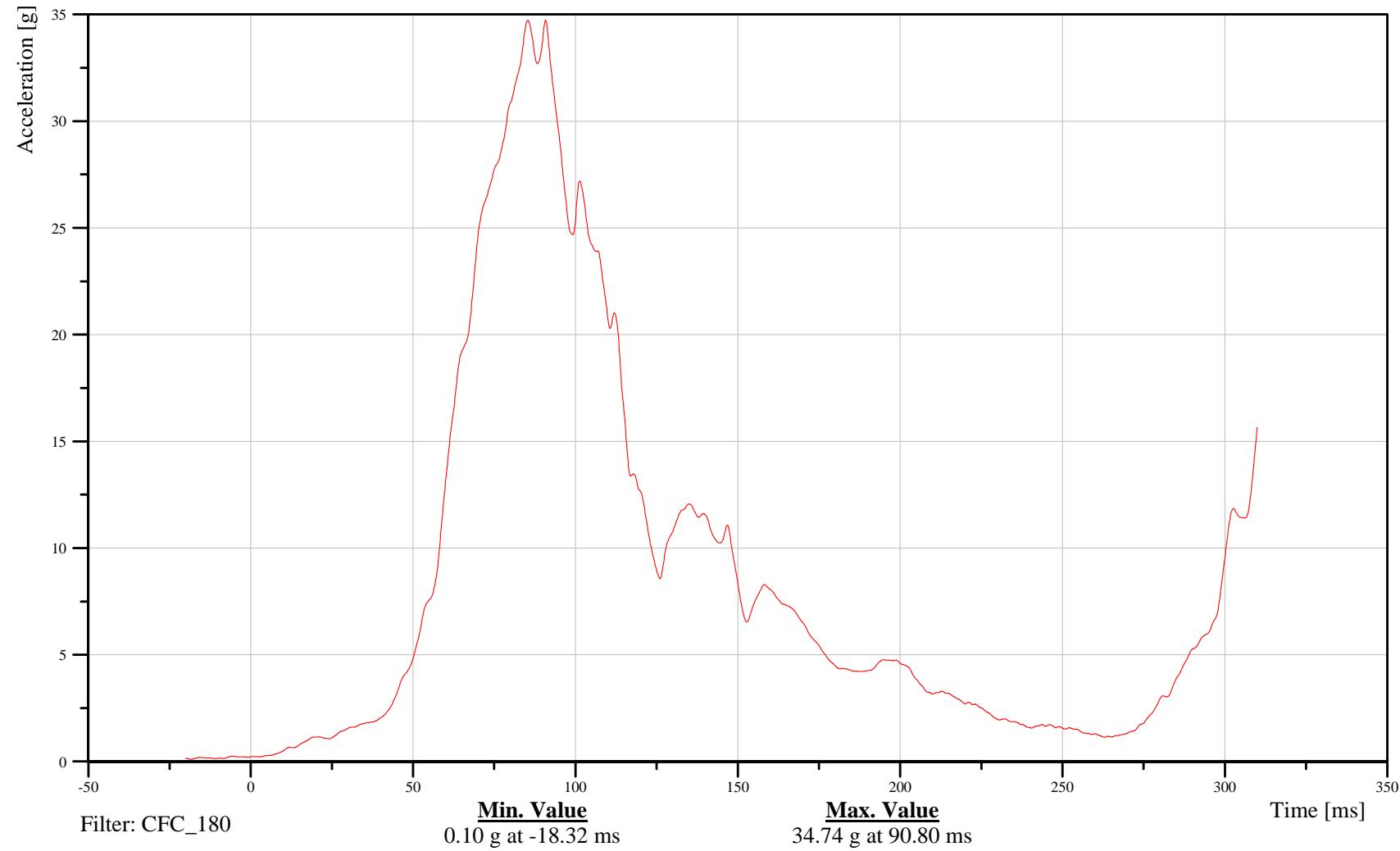
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14CHSTCG00HFACRC





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Redundant X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

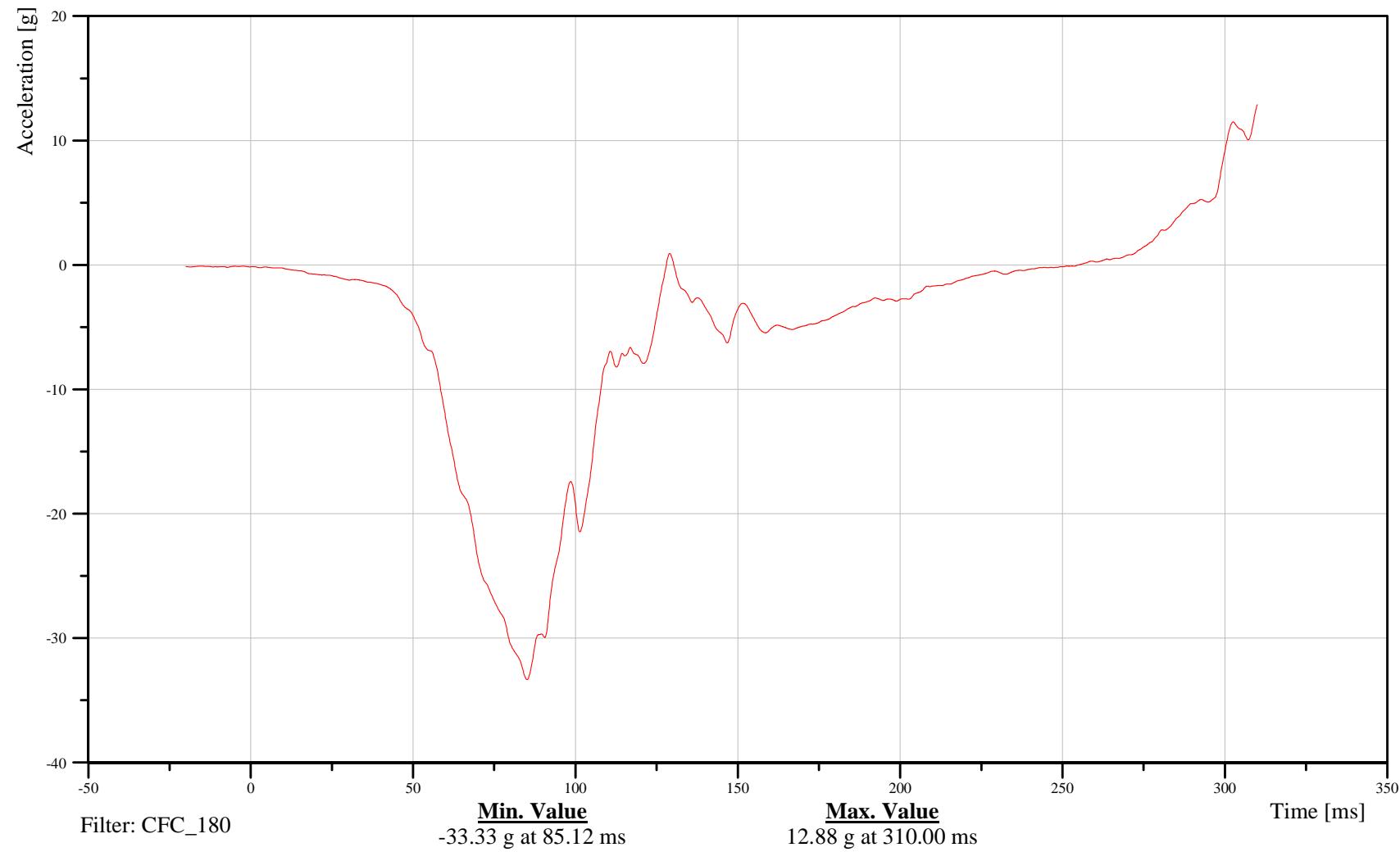
Customer: VRTC

14CHSTCGRDHFACXC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-154

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Redundant Y-Axis Acceleration

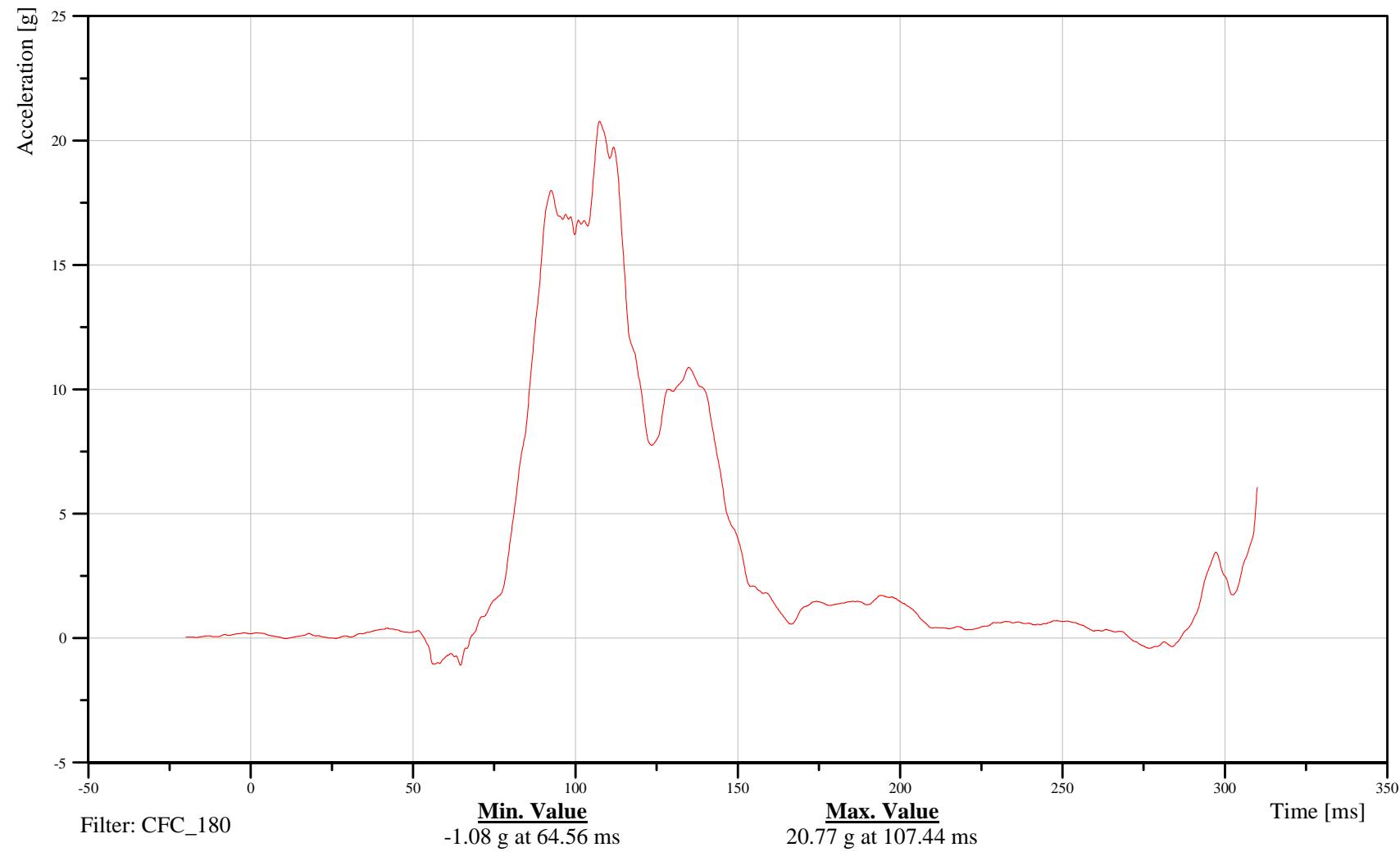
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-155  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Redundant Z-Axis Acceleration

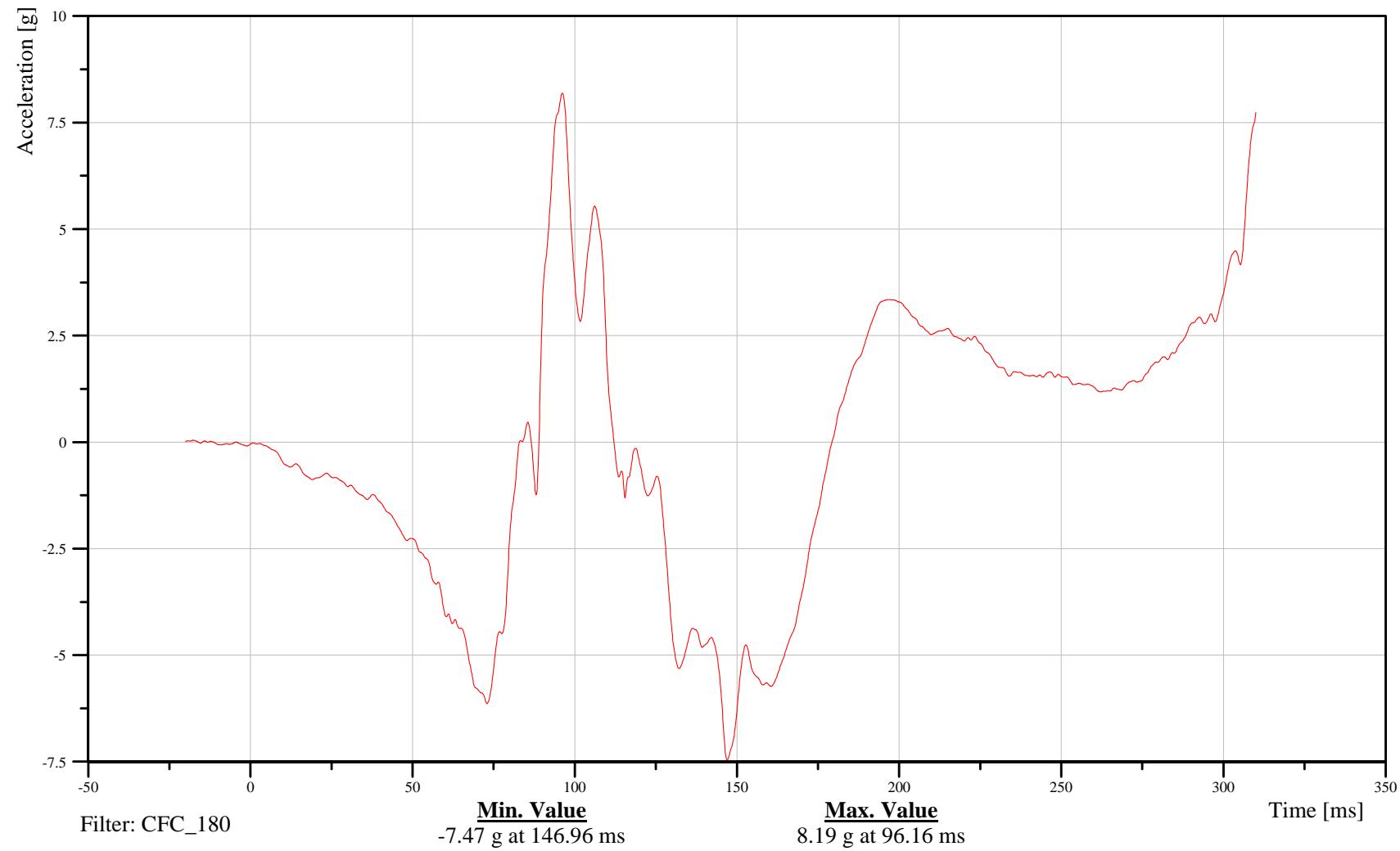
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14CHSTCGRDHFACZC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-156  
101116





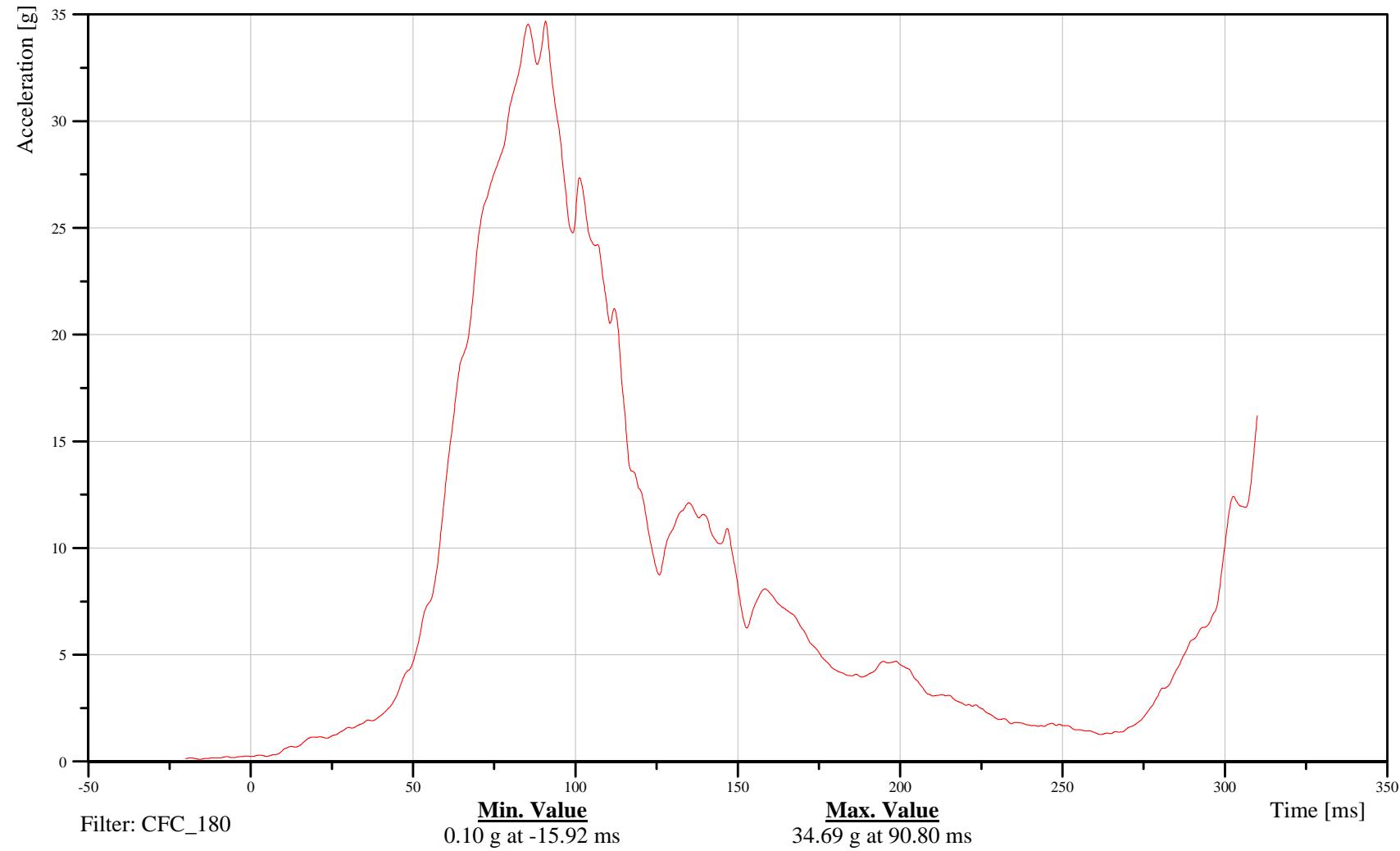
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest Redundant Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Chest X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

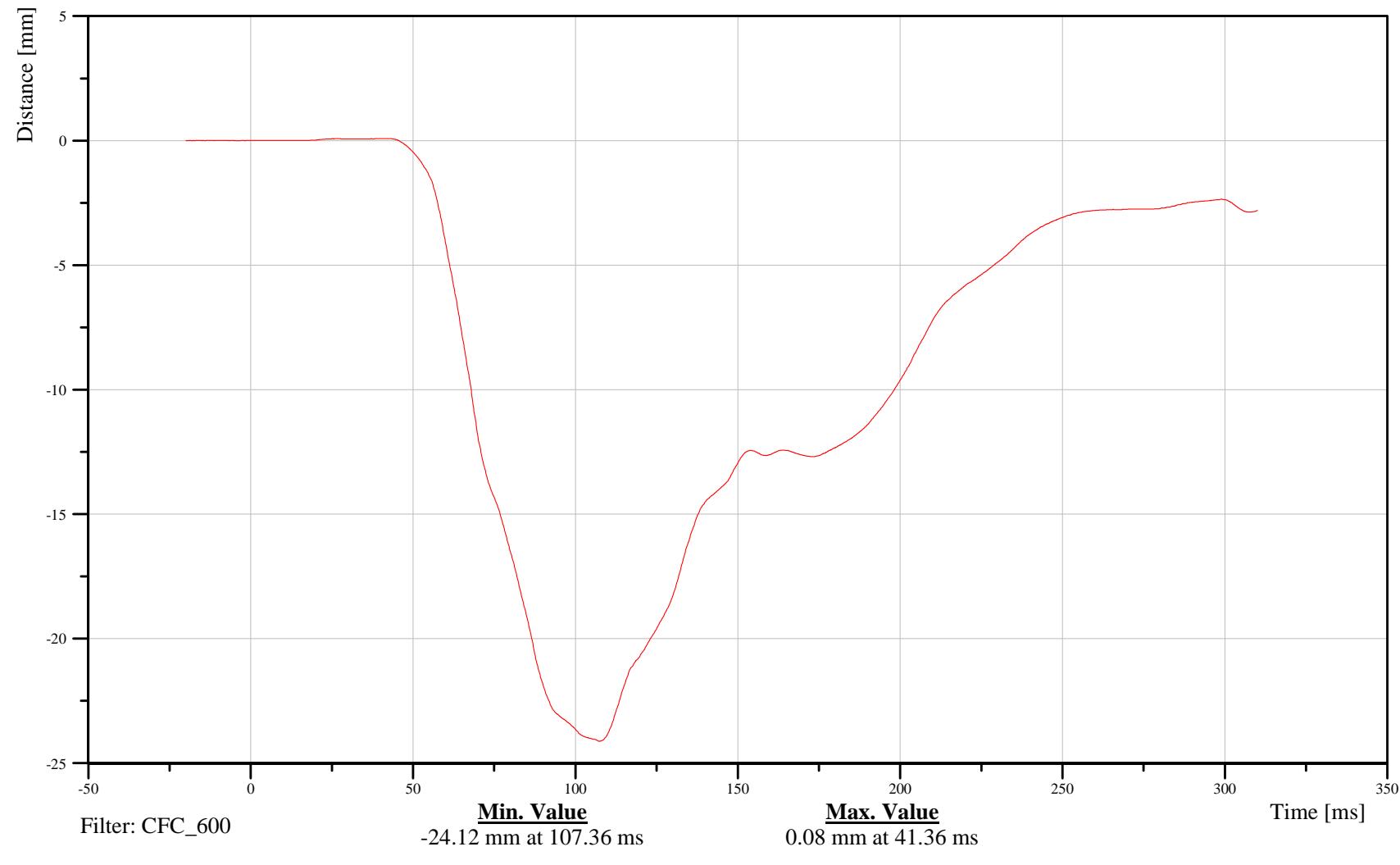
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14CHST0000HFDSXB

B-158

101116





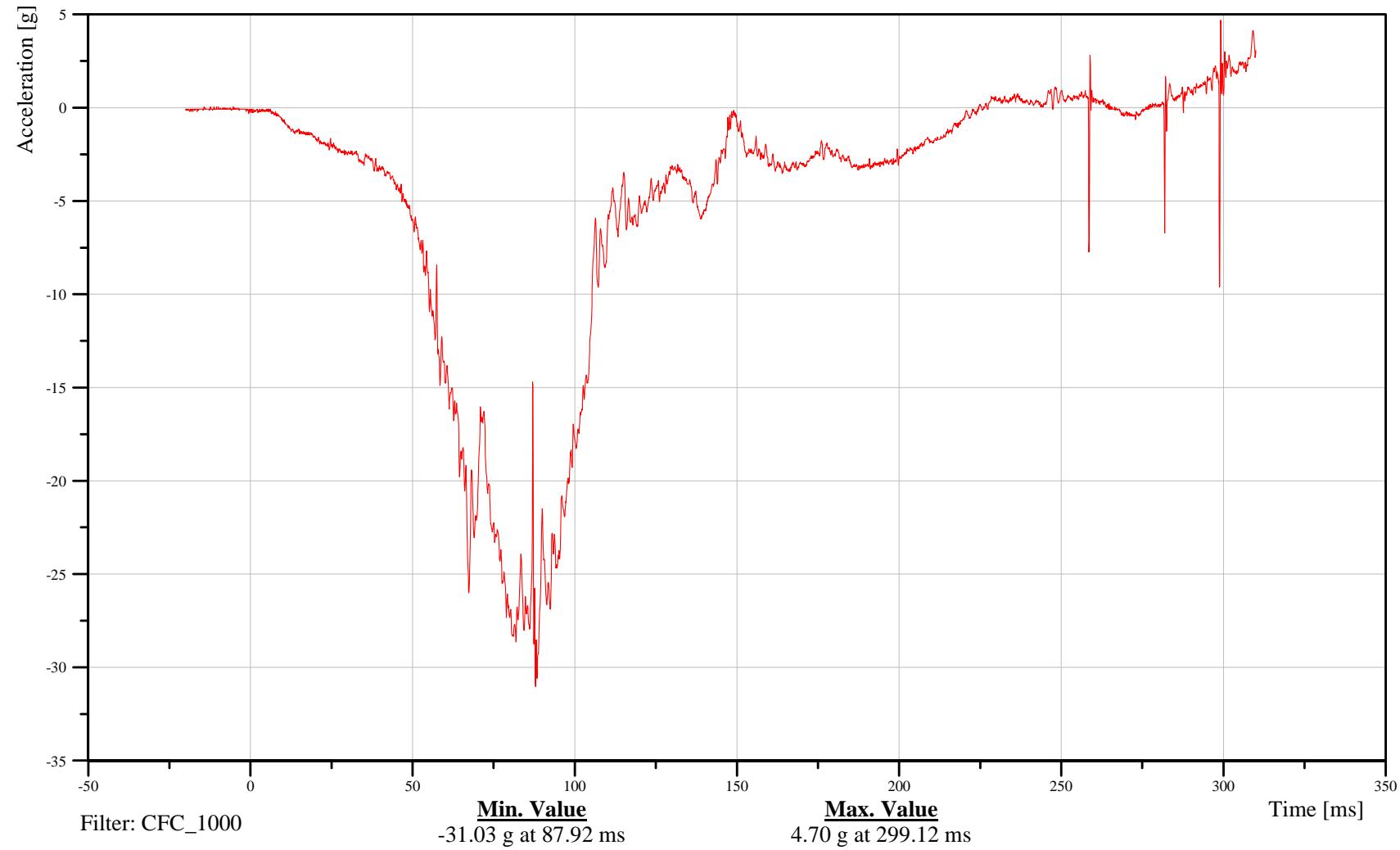
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Pelvis X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14PELVCG00HFACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Pelvis Y-Axis Acceleration

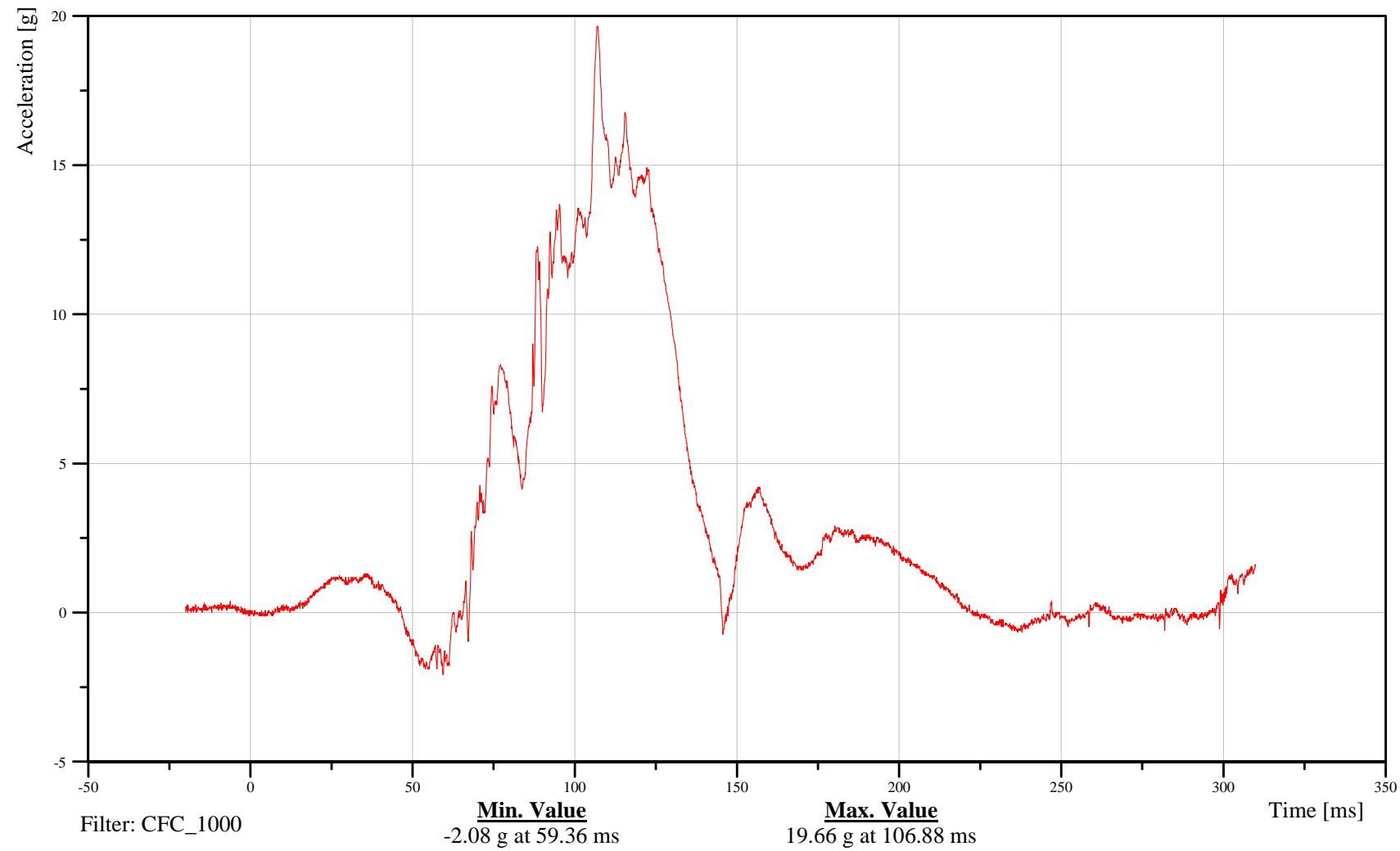
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14PELVCG00HFACAYA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-160  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Pelvis Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

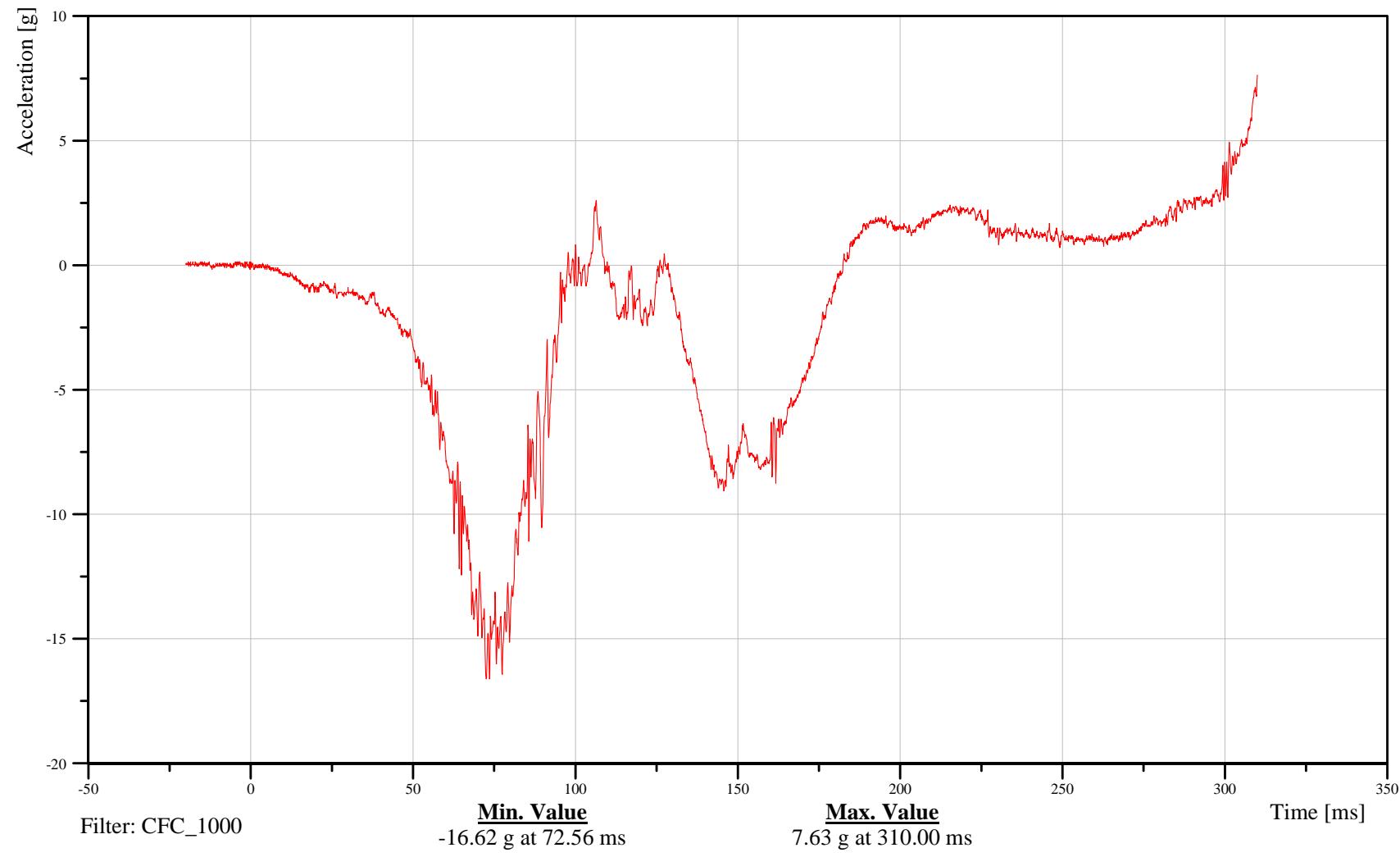
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14PELVCG00HFACZA

B-161

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Pelvis Resultant Acceleration

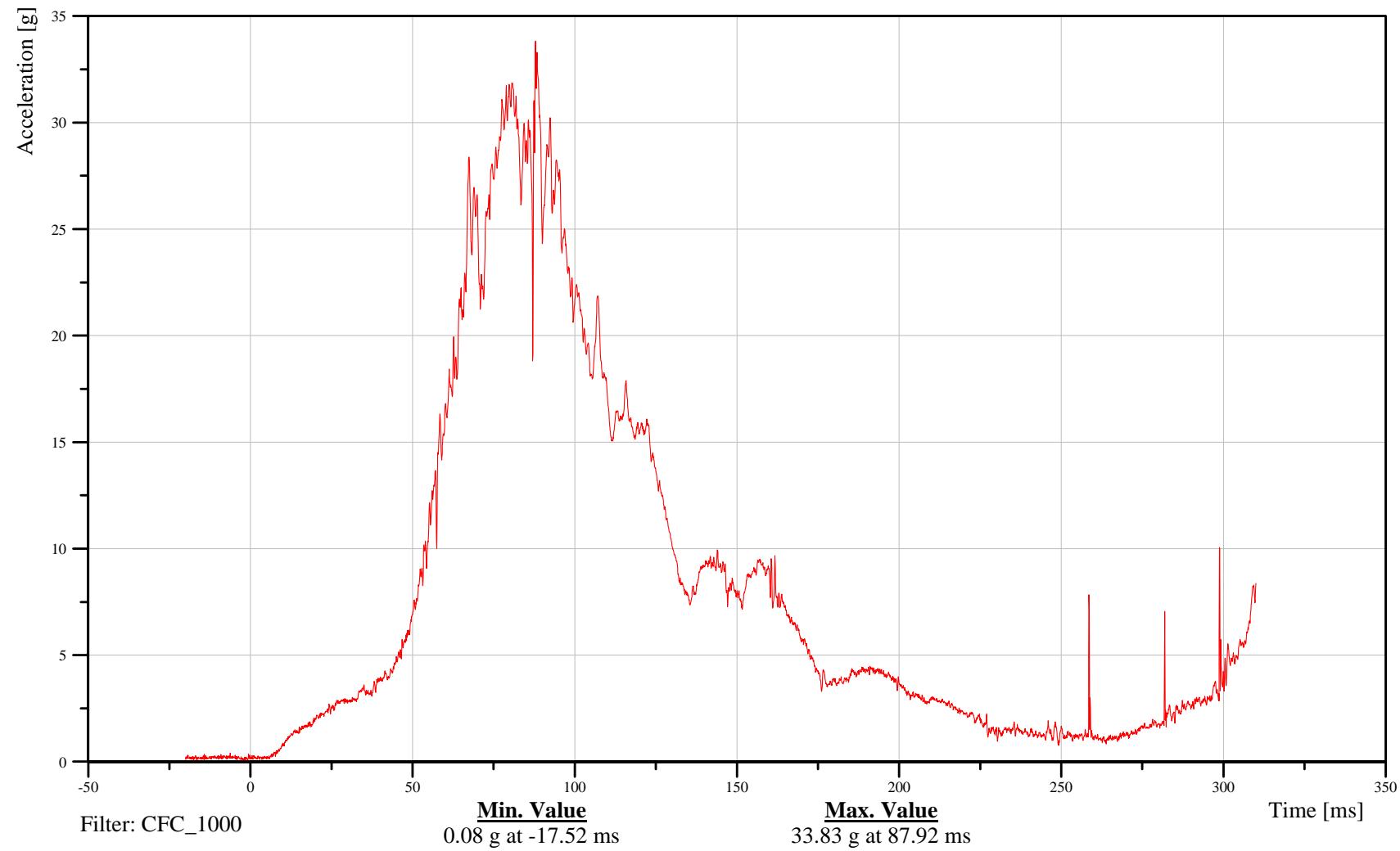
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14PELVCG00HFACRA

B-162  
101116





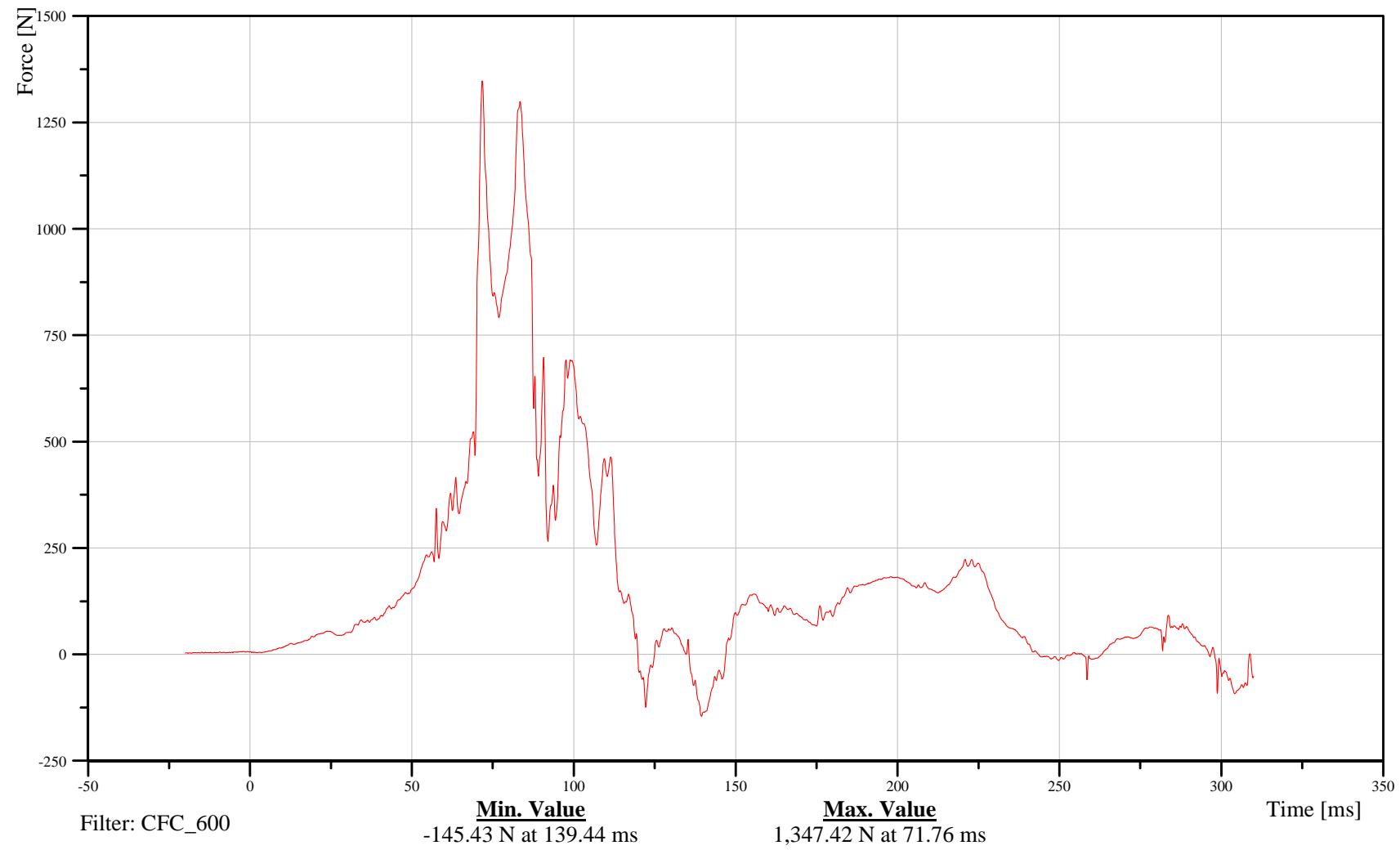
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Left Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

14FEMRLU00HFFOZB





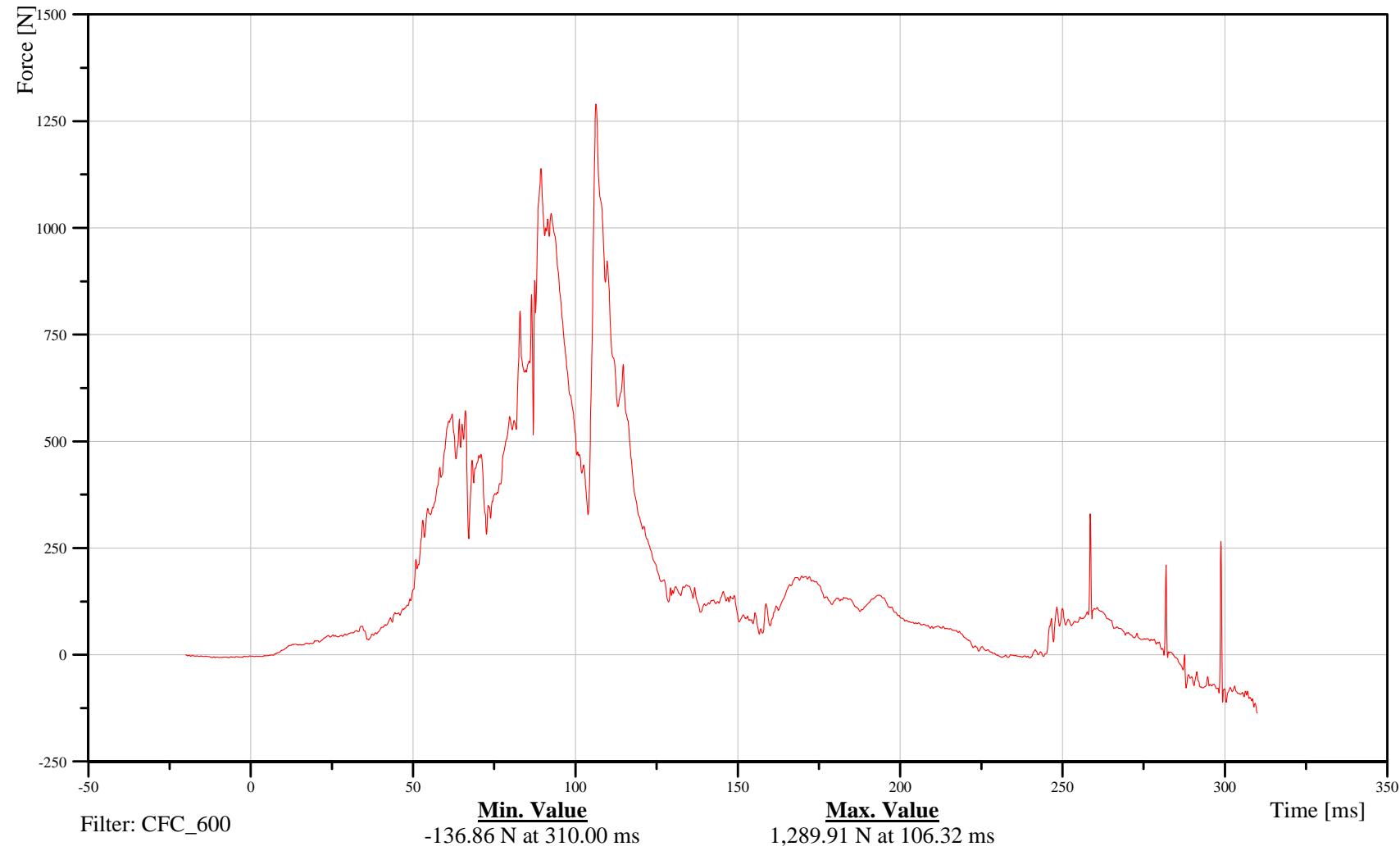
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Rear Passenger Right Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

14FEMRRU00HFFOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Sill X-Axis Acceleration

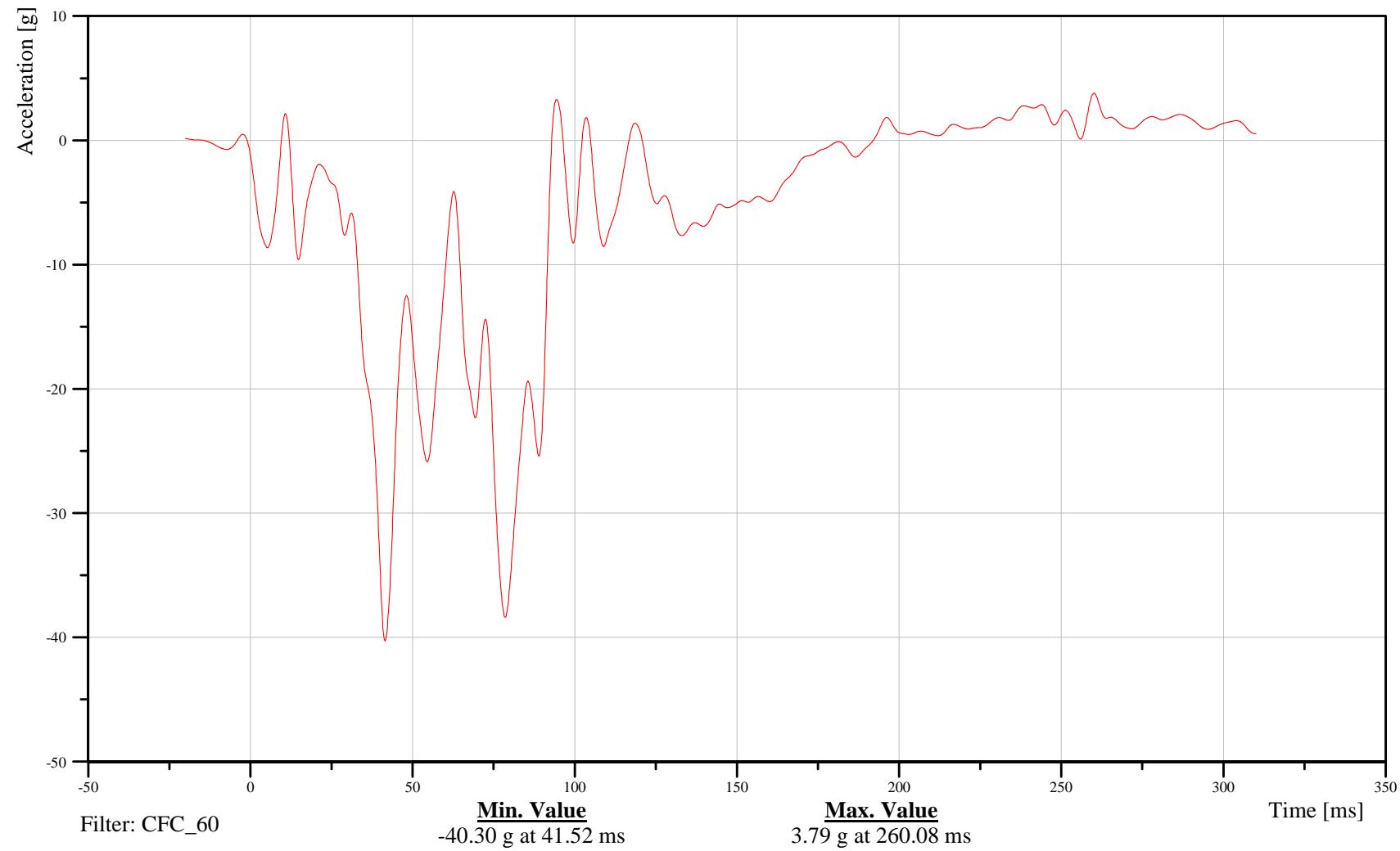
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10SILLLE0000ACXD

B-165  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Left Sill Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

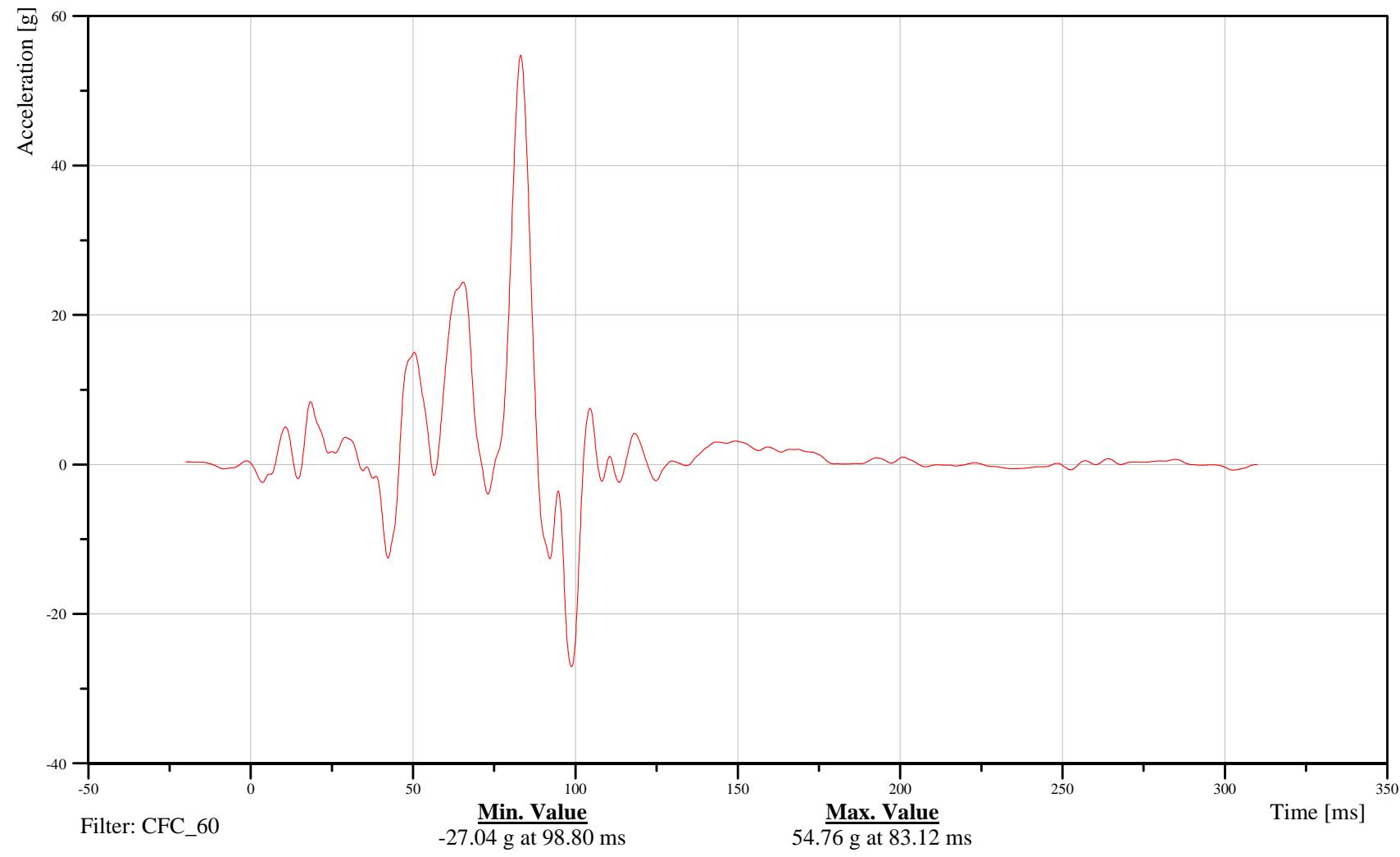
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10SILLLE0000ACYD

B-166

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Sill X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

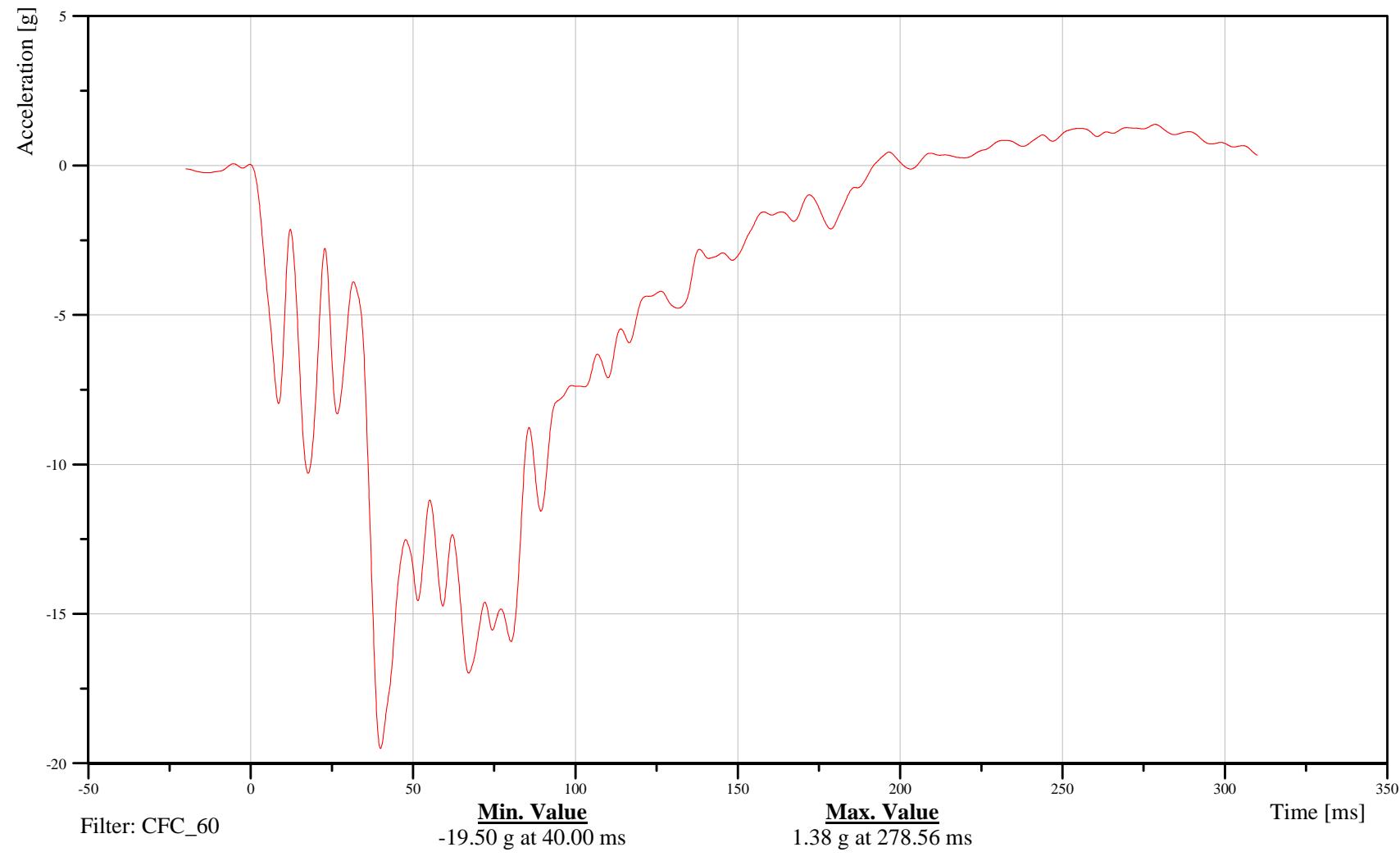
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10SILLRI0000ACXD

B-167

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Sill Y-Axis Acceleration

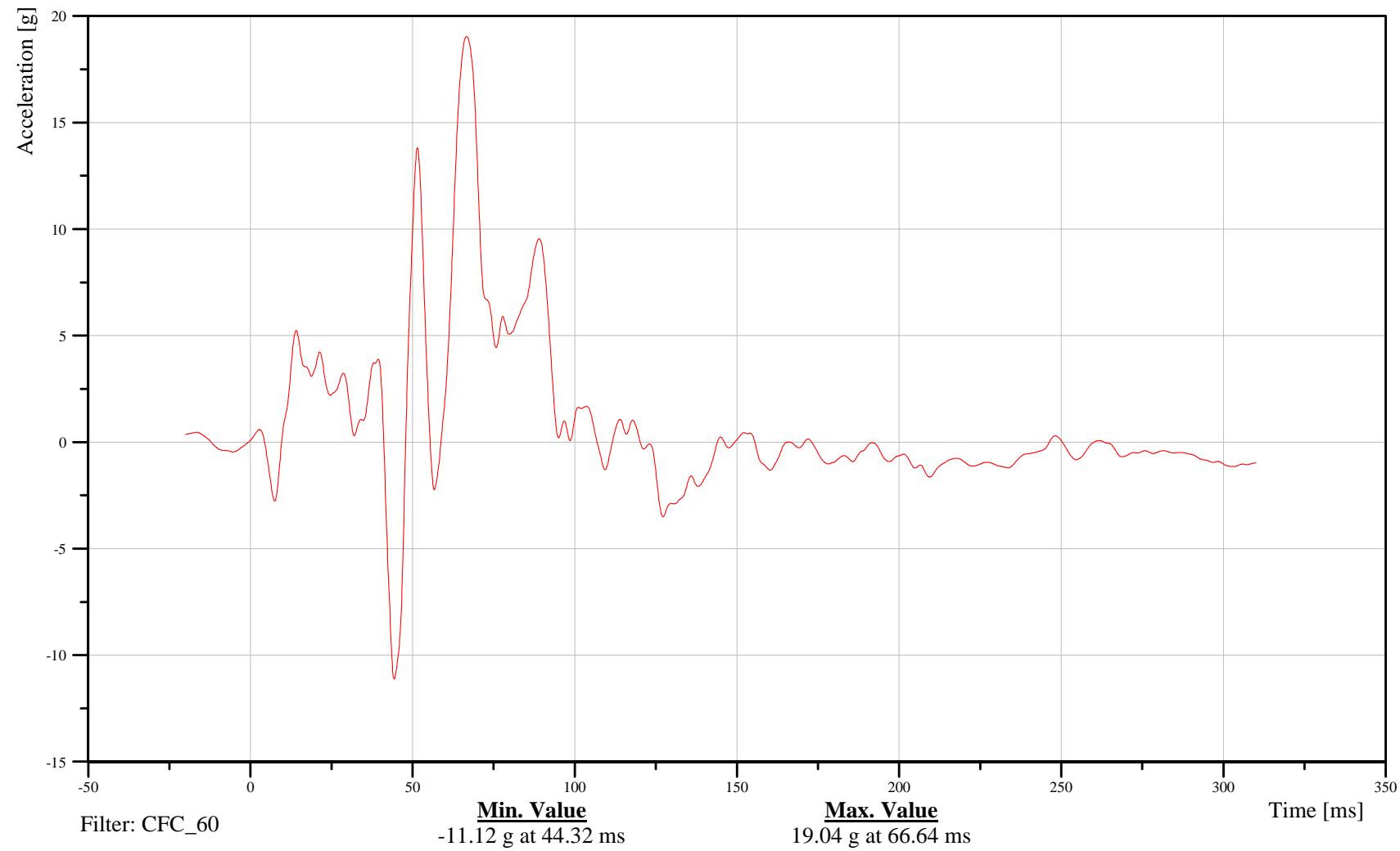
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10SILLRI0000ACYD

B-168  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Vehicle Center of Gravity X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

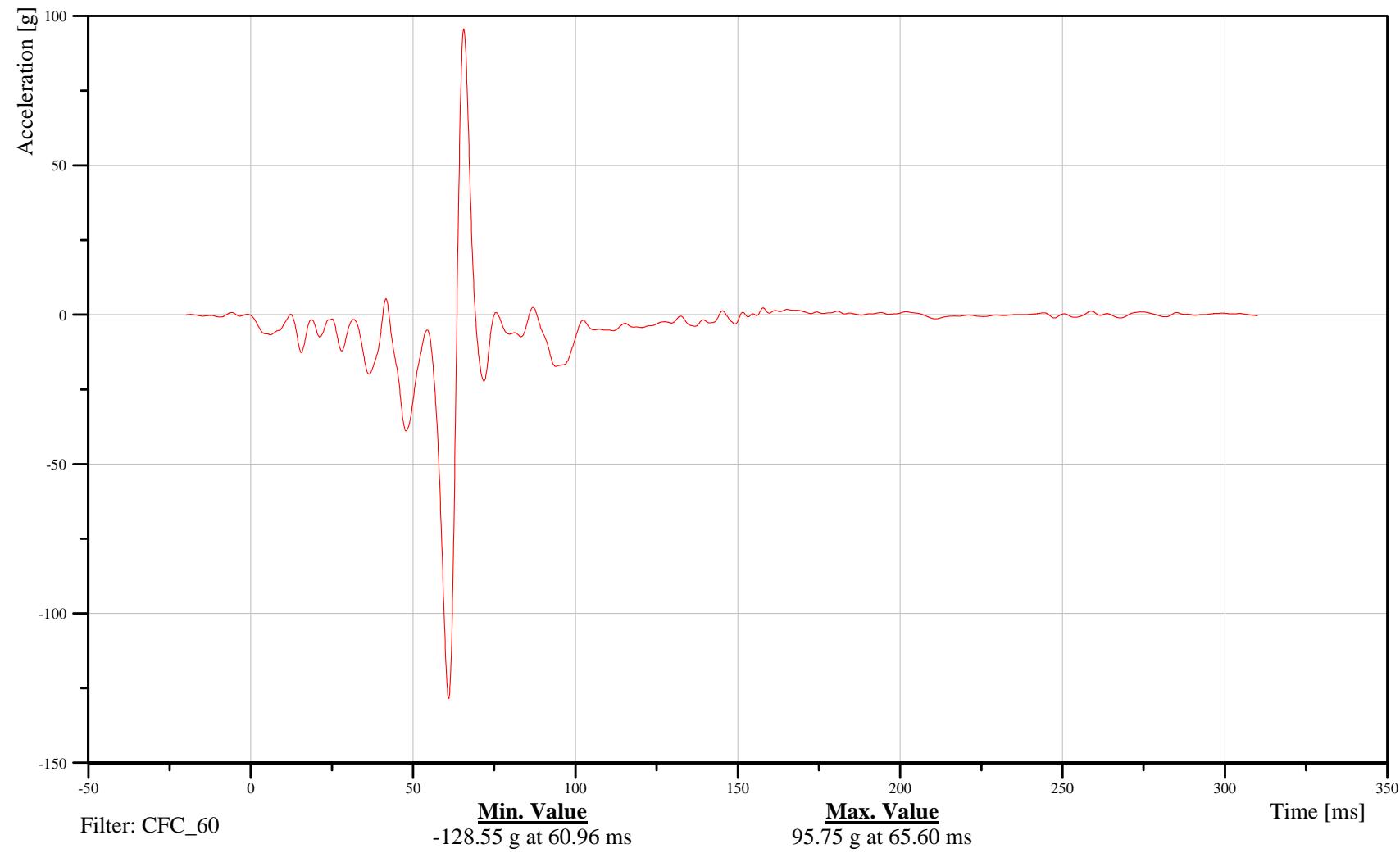
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10VEHCCG0000ACXD

B-169

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Vehicle Center of Gravity Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

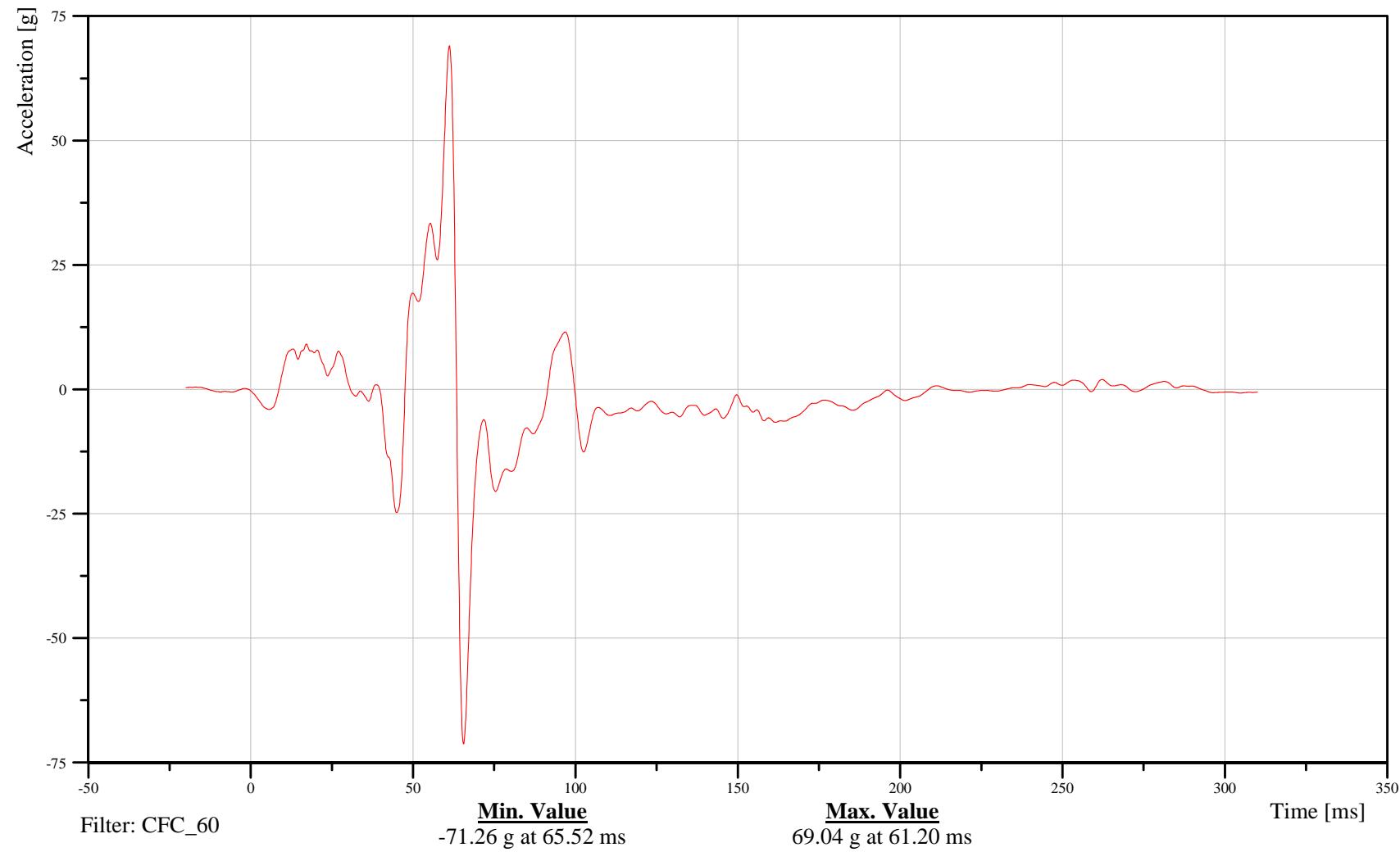
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10VEHCCG0000ACYD

B-170

101116





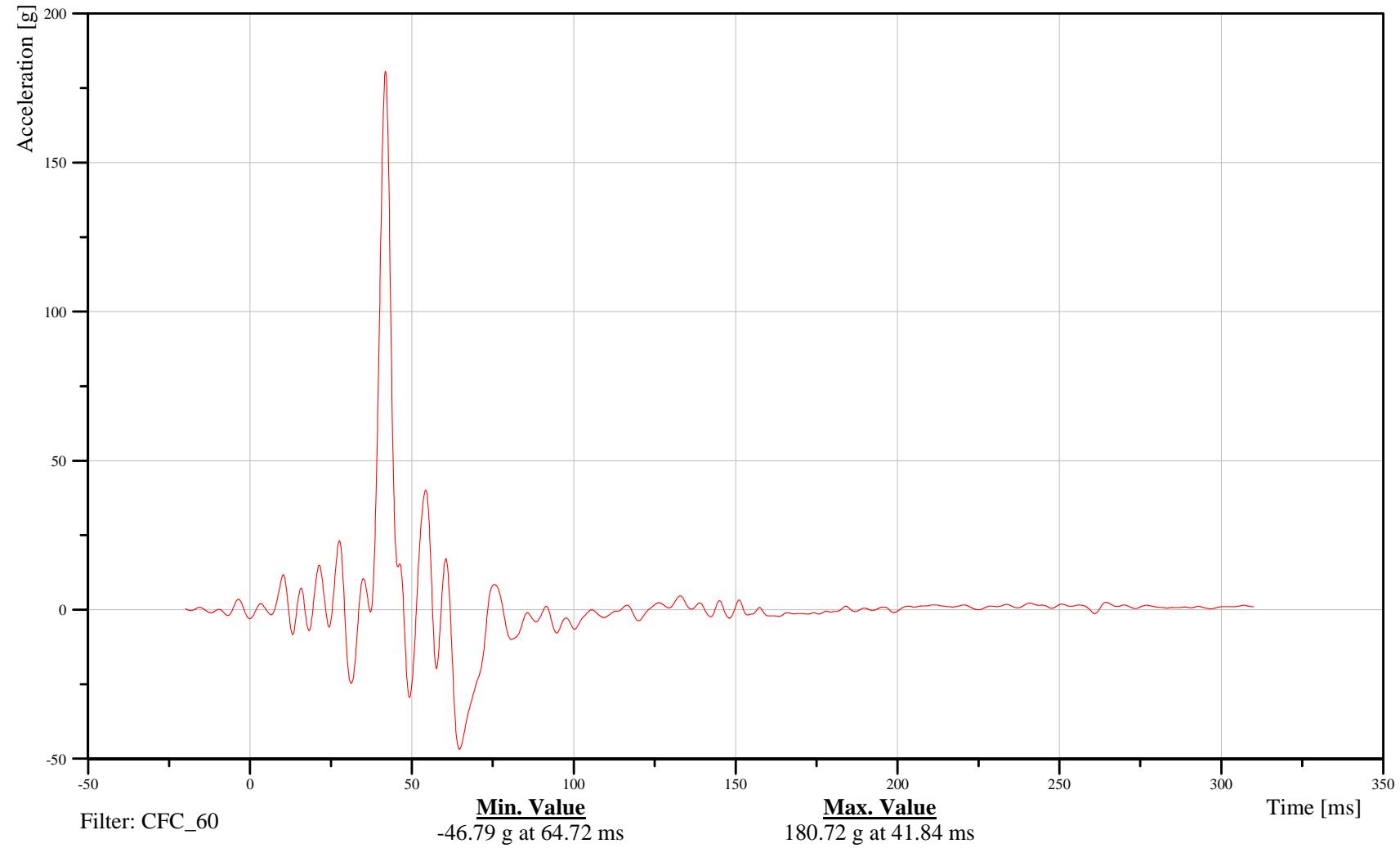
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Vehicle Center of Gravity Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Vehicle Center of Gravity Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

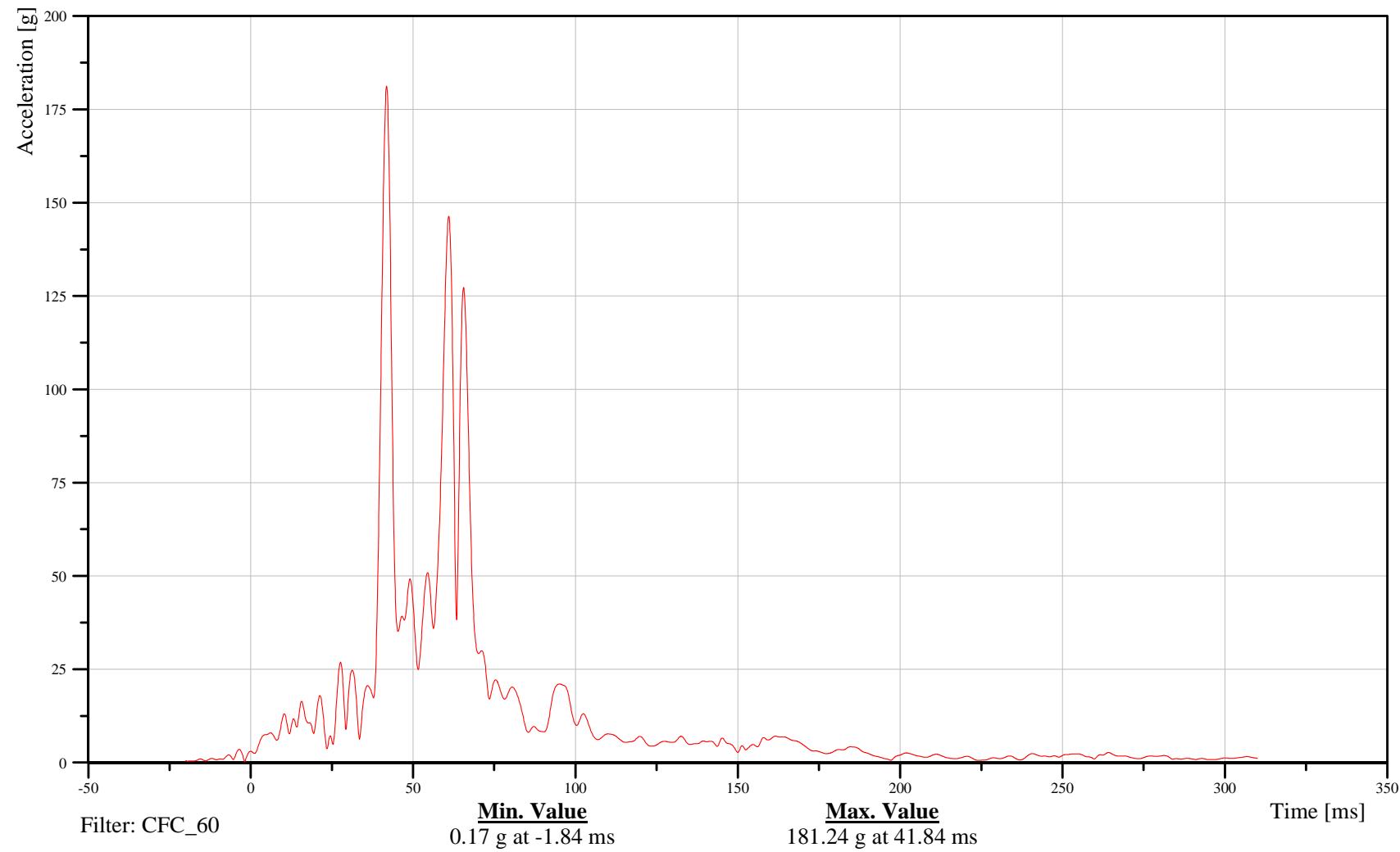
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10VEHCCG0000ACRD

B-172

101116





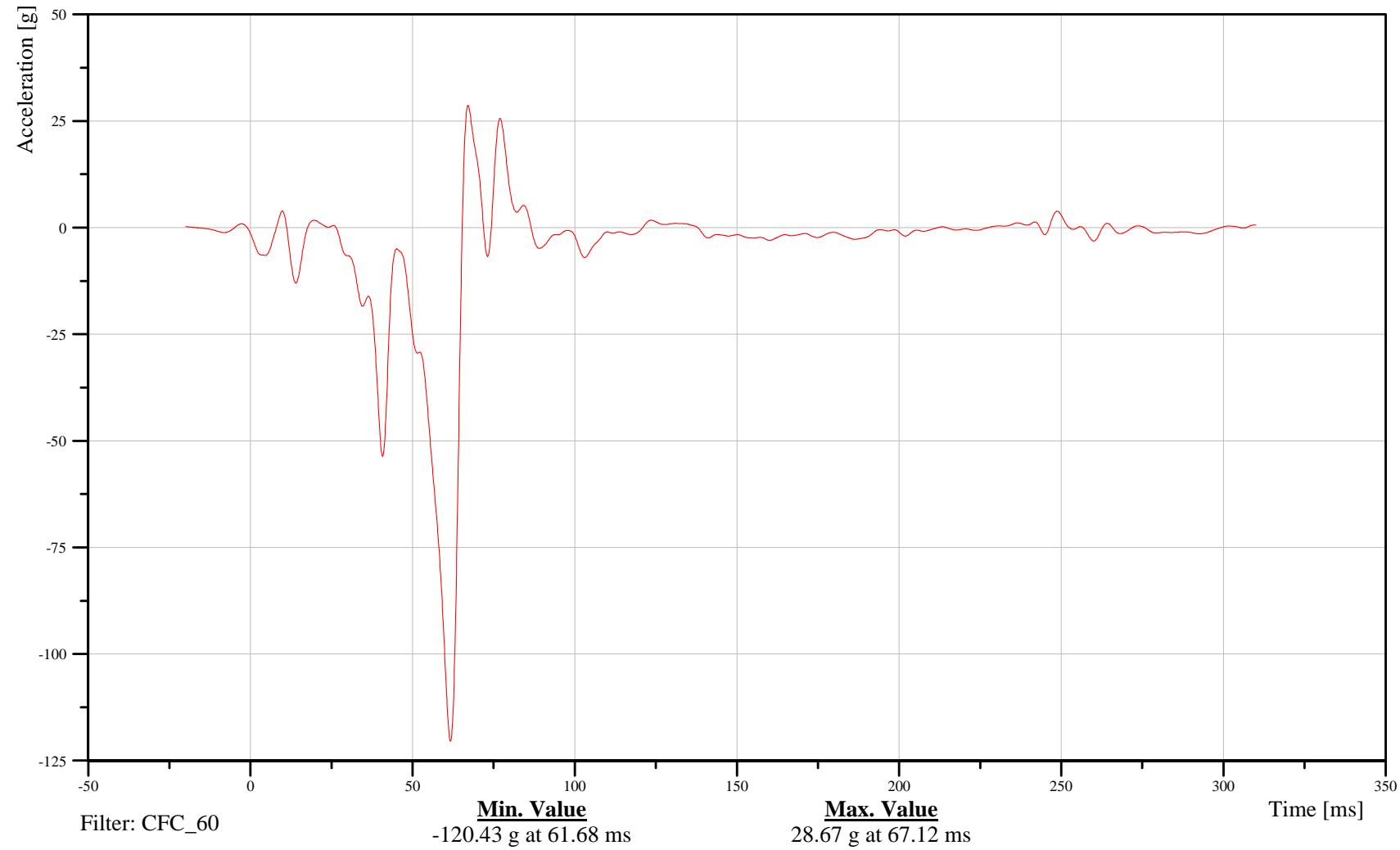
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Footrest X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10FOOTLE0000ACXD



B-173

101116



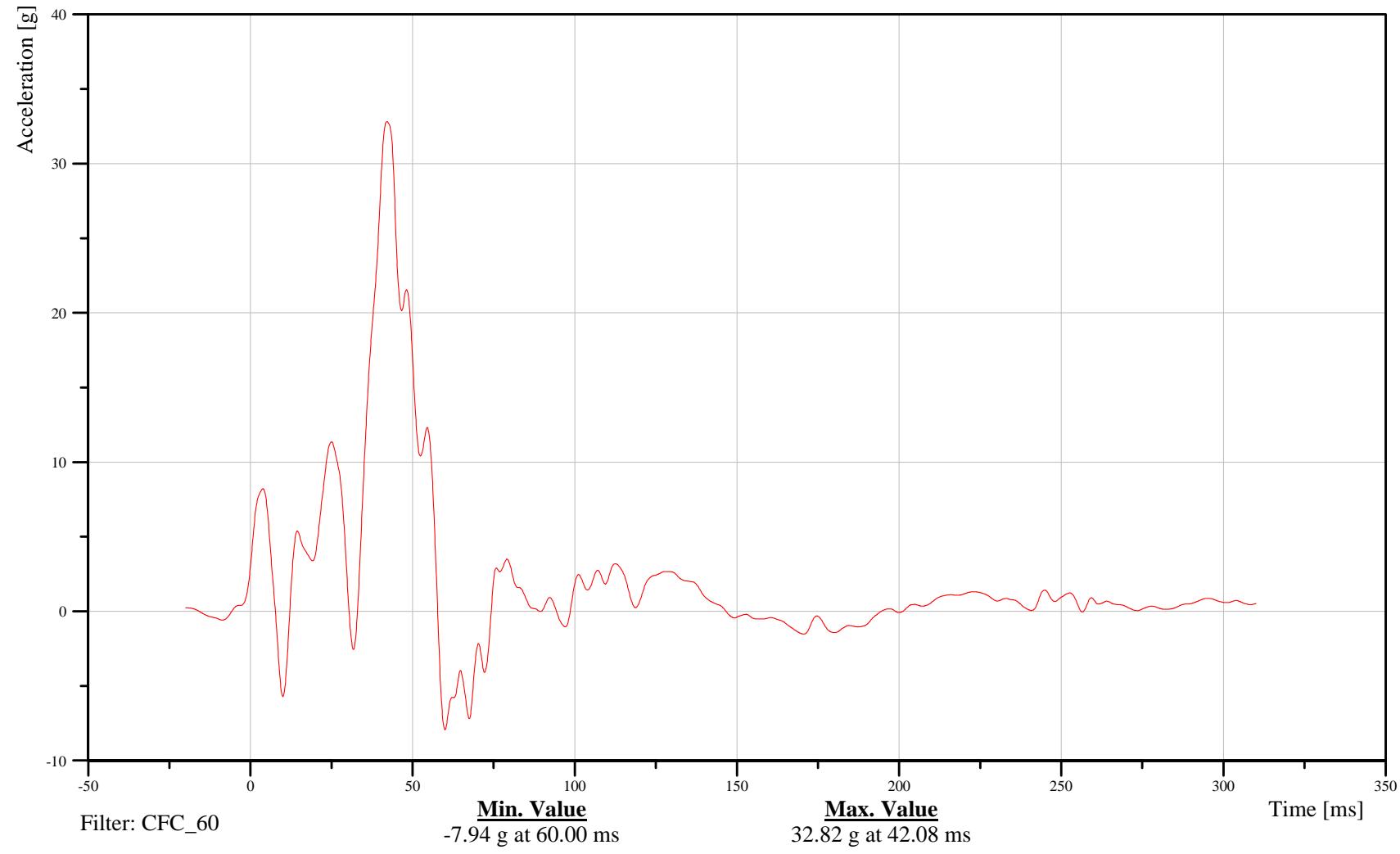
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Footrest Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10FOOTLE0000ACZD





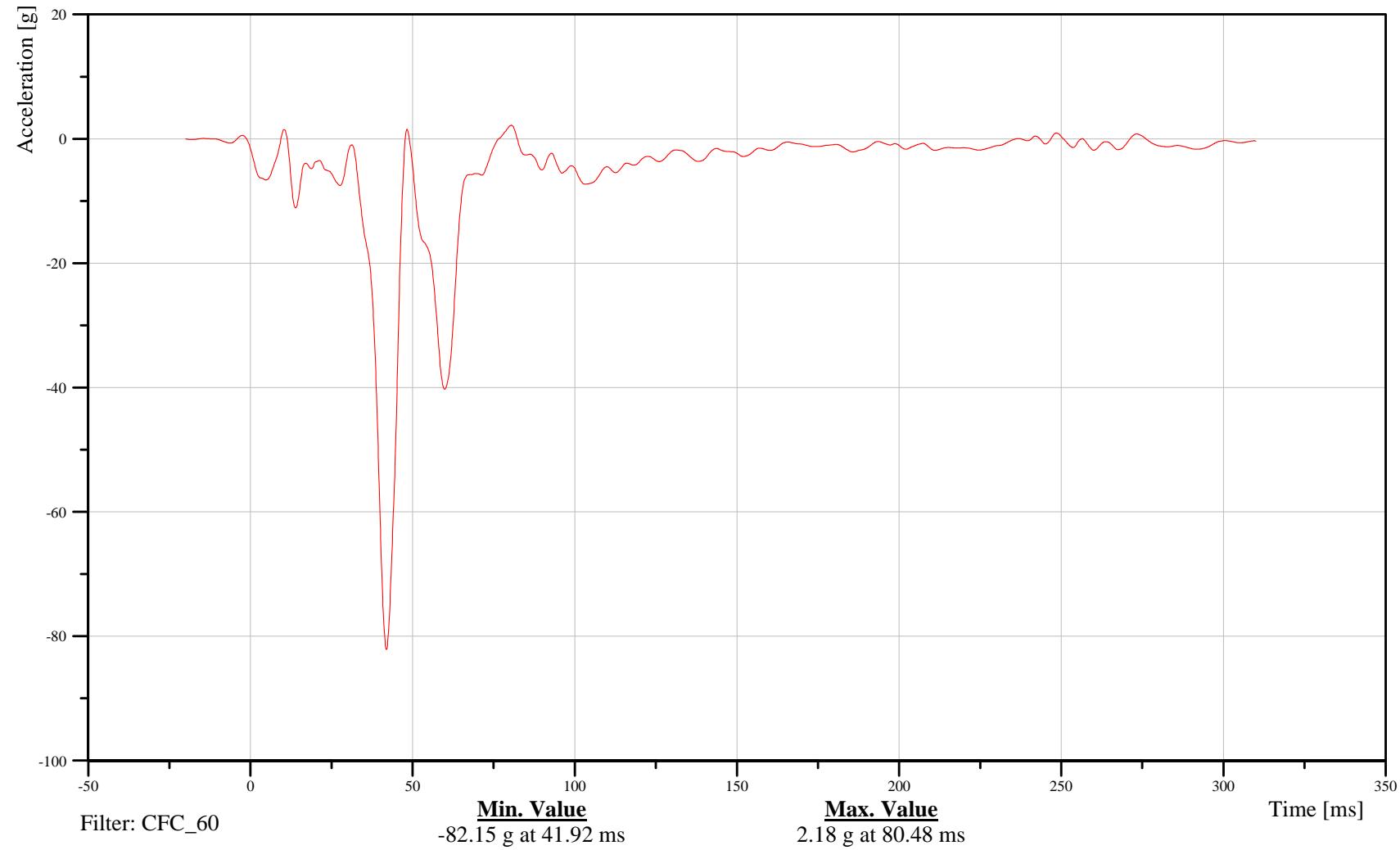
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Toepan Behind Center of Accelerator X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10TPANLE0000ACXD





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Toepan Behind Center of Accelerator Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

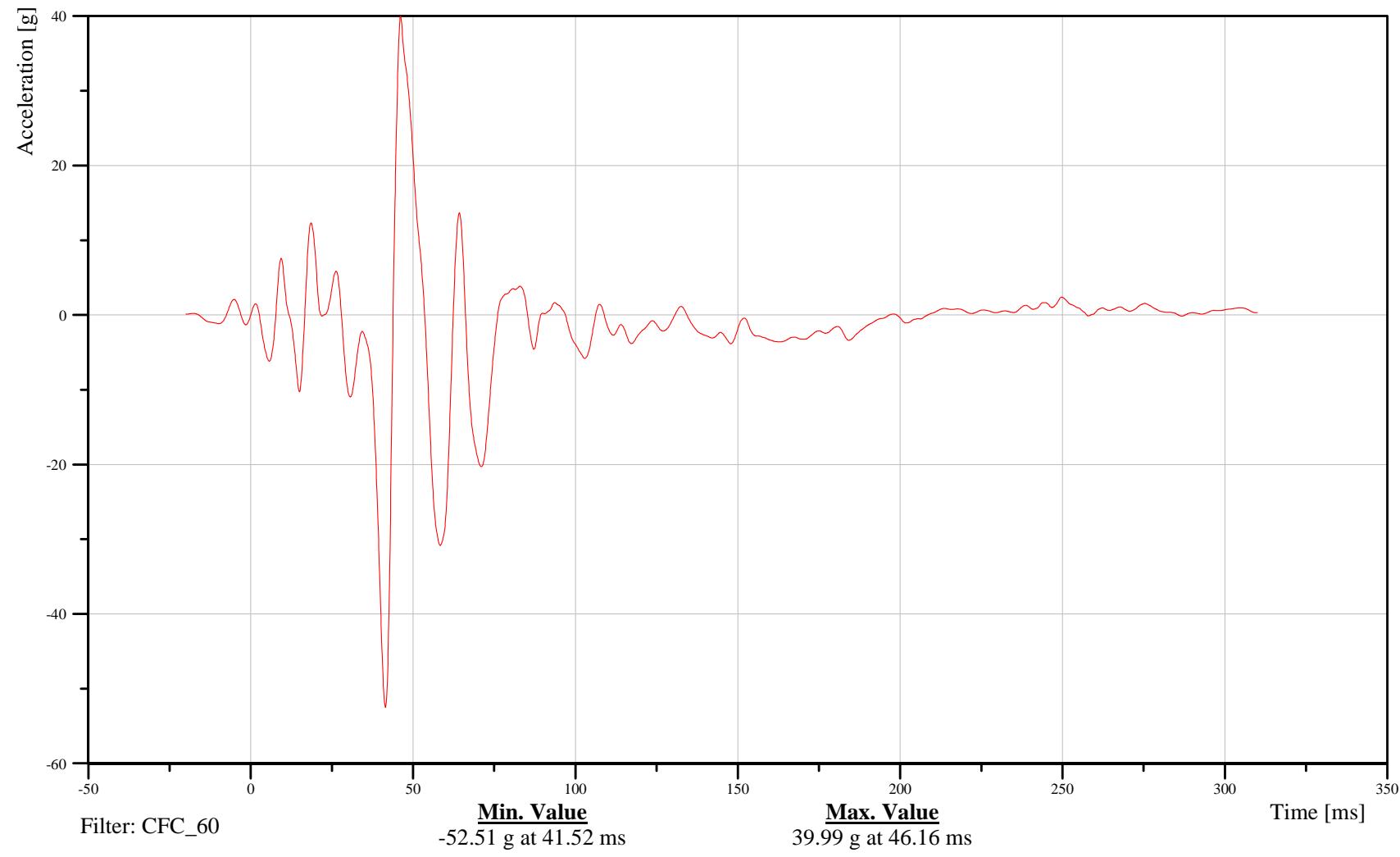
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10TPANLE0000ACZD

B-176

101116





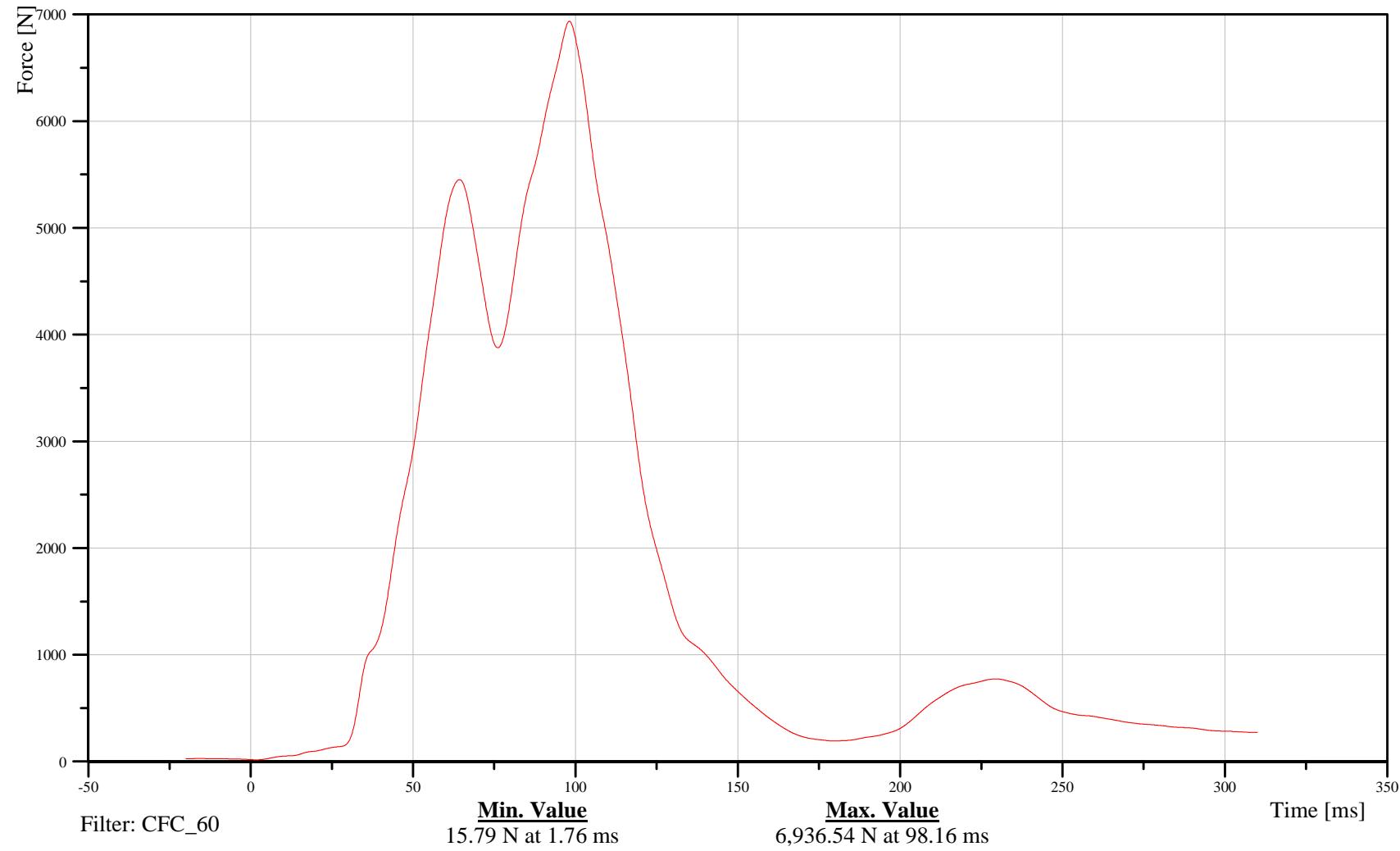
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Lap Belt Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11SEBE0000B5FOOD

TRC Inc. Test Lab: CTF  
Test Number: 101116





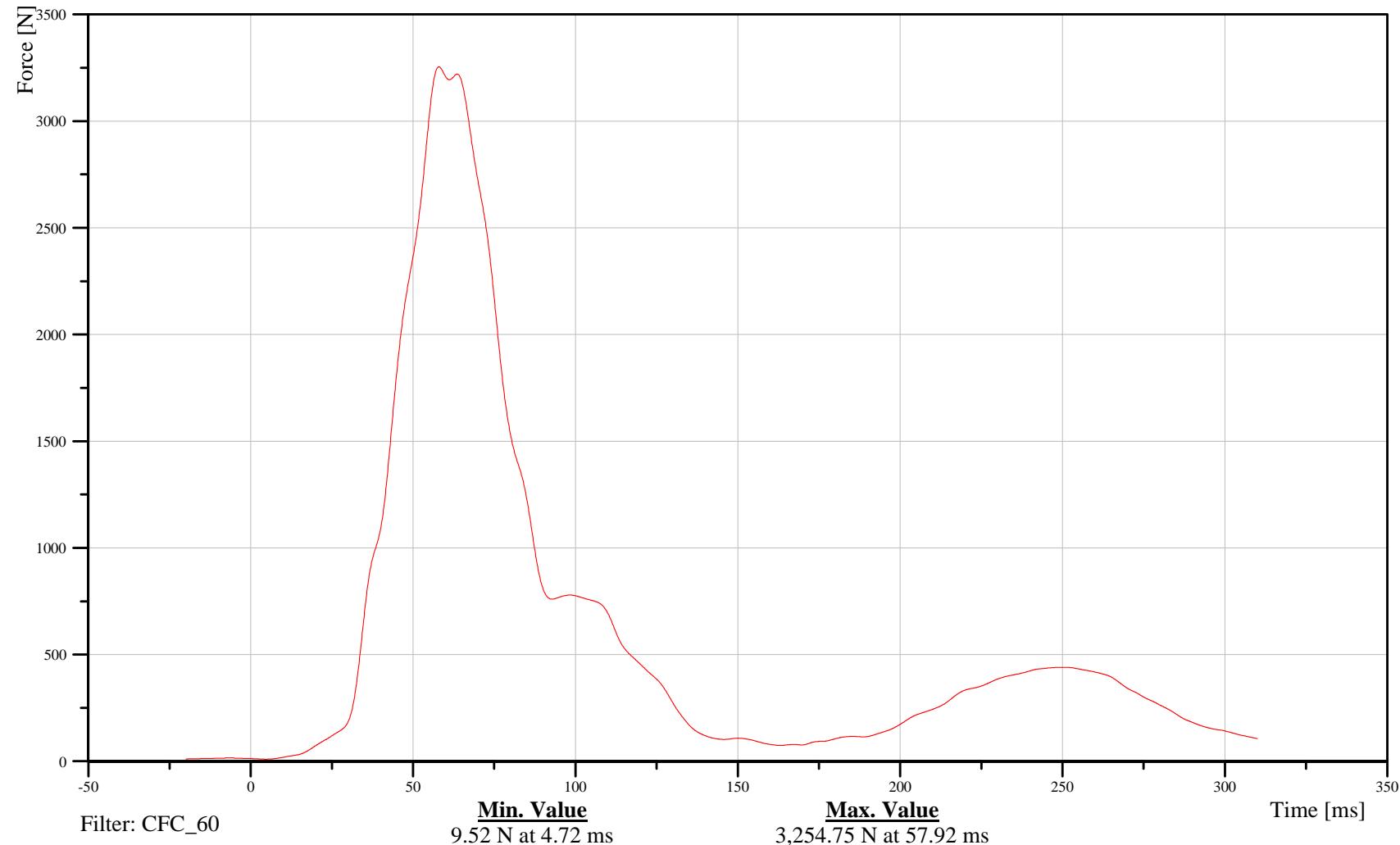
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Lap Belt Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13SEBE0000B5FOOD

TRC Inc. Test Lab: CTF  
Test Number: 101116



B-178

101116



# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

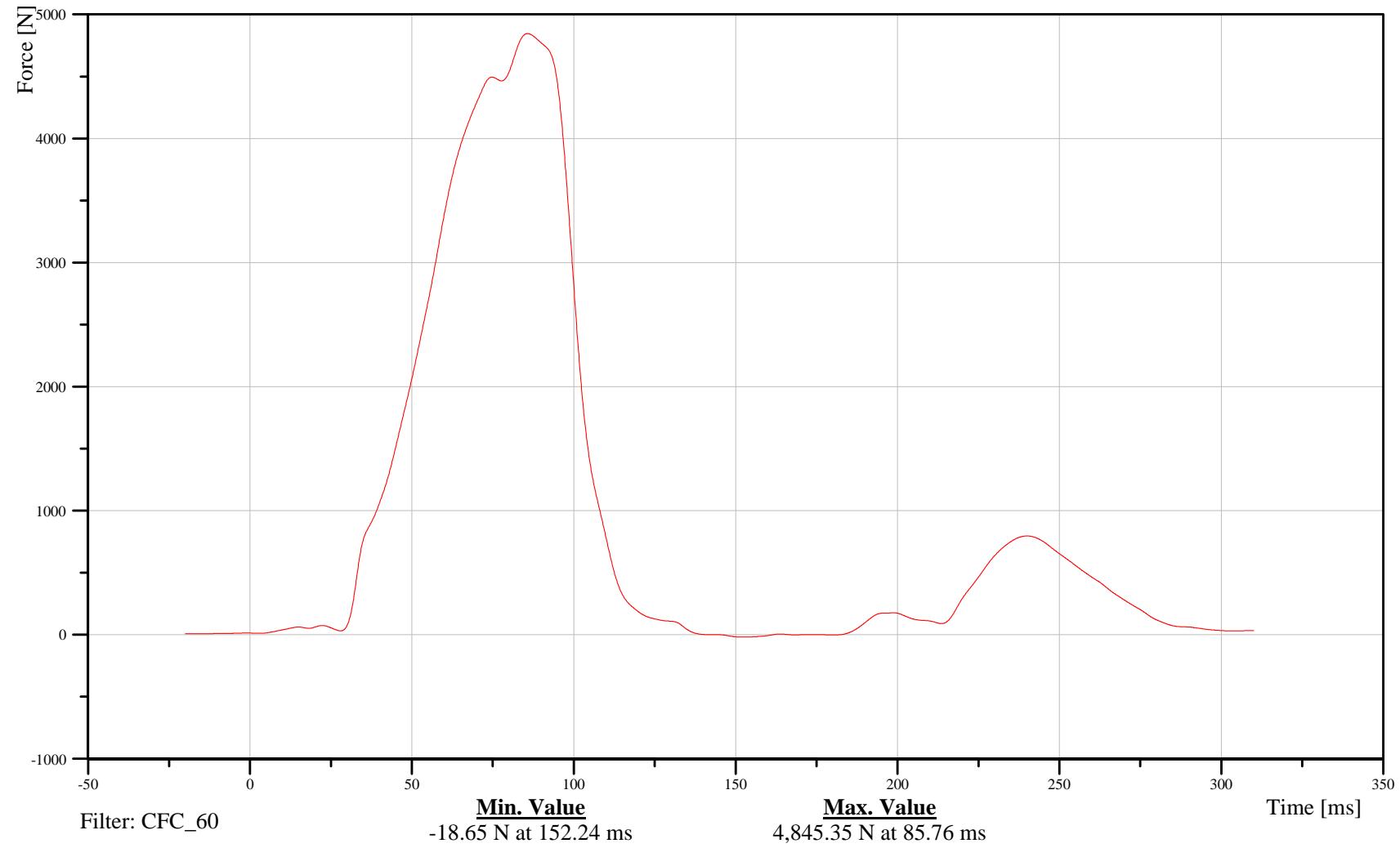
## Bullet Vehicle Driver Shoulder Belt Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

11SEBE0000B3FOOD

TRC Inc. Test Lab: CTF  
Test Number: 101116





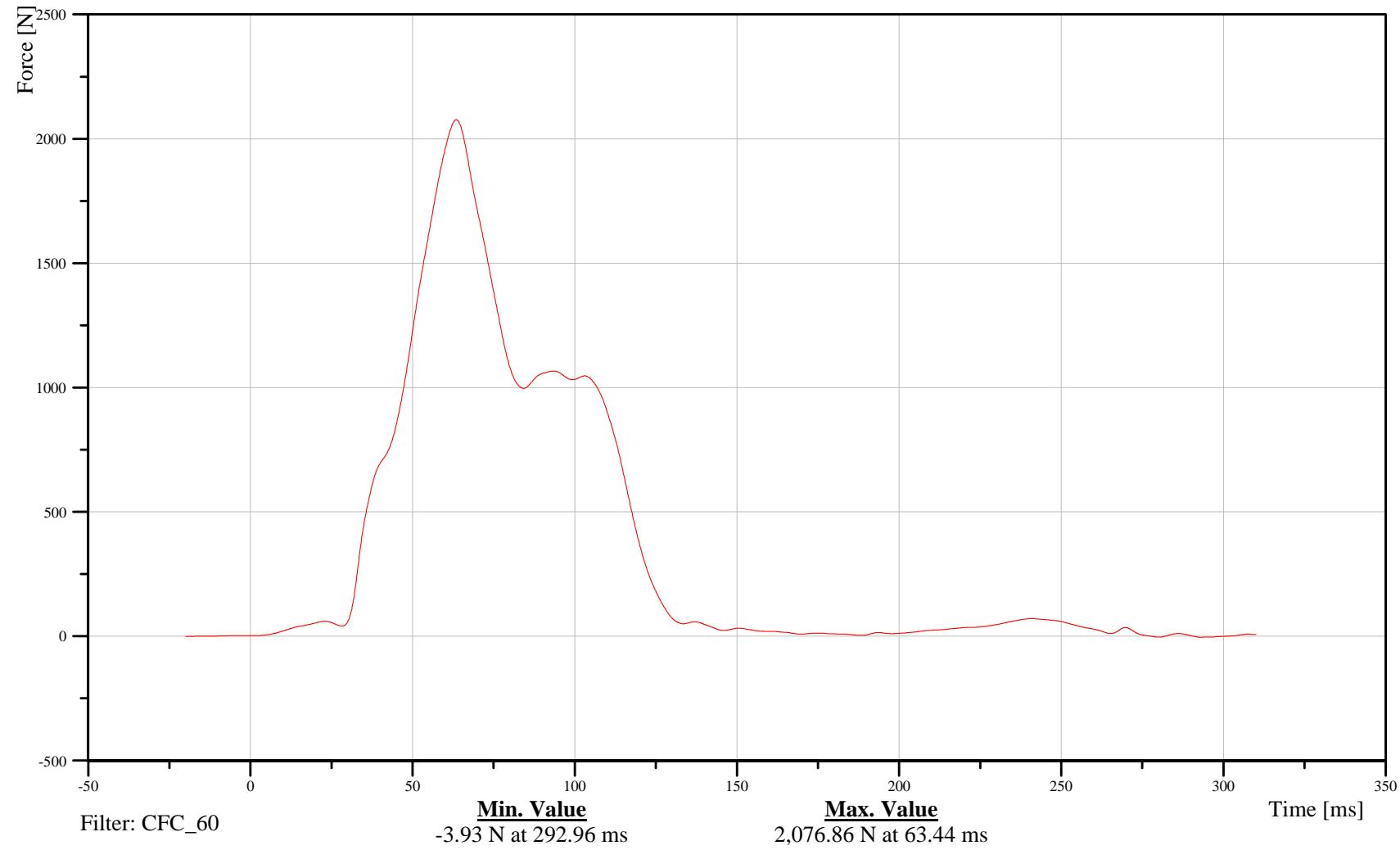
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Shoulder Belt Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

13SEBE0000B3FOOD

TRC Inc. Test Lab: CTF  
Test Number: 101116





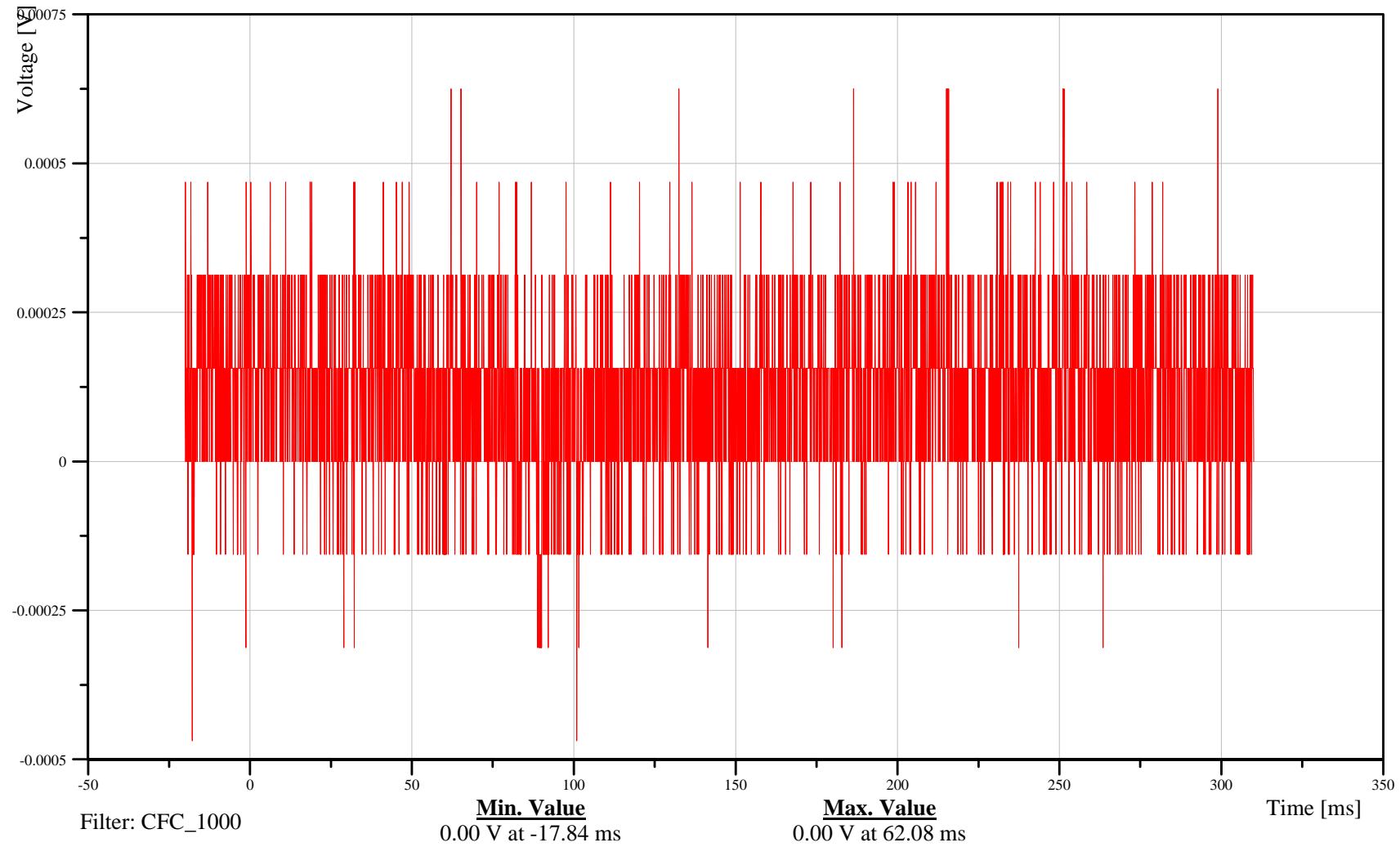
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Airbag 1st Stage Fire Time

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10AIRBLEFR25VO0A





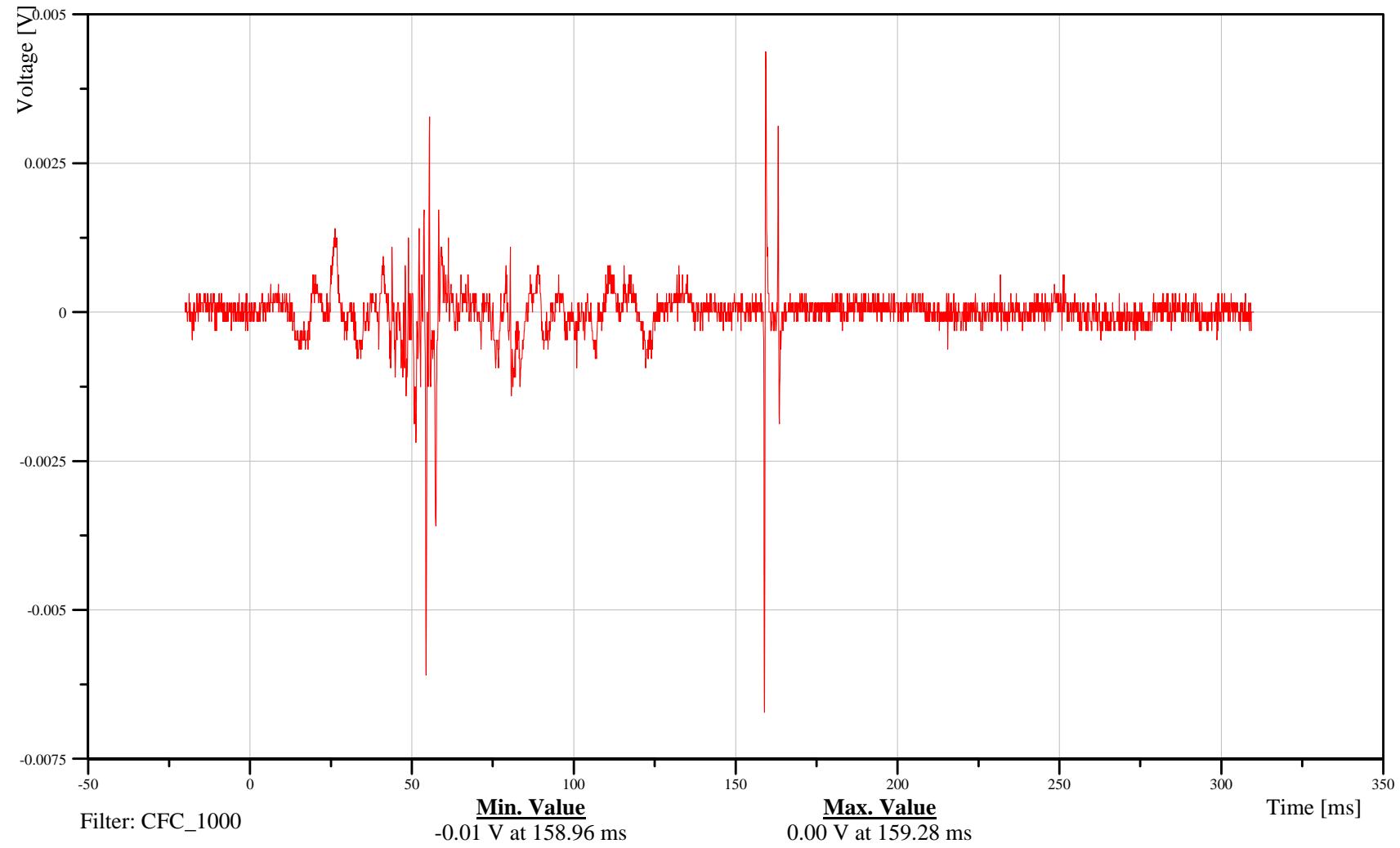
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Driver Airbag 2nd Stage Fire Time

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10AIRBLEFR26VO0A





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Airbag 1st Stage Fire Time

Date: 11/17/2010  
Time: 14:40

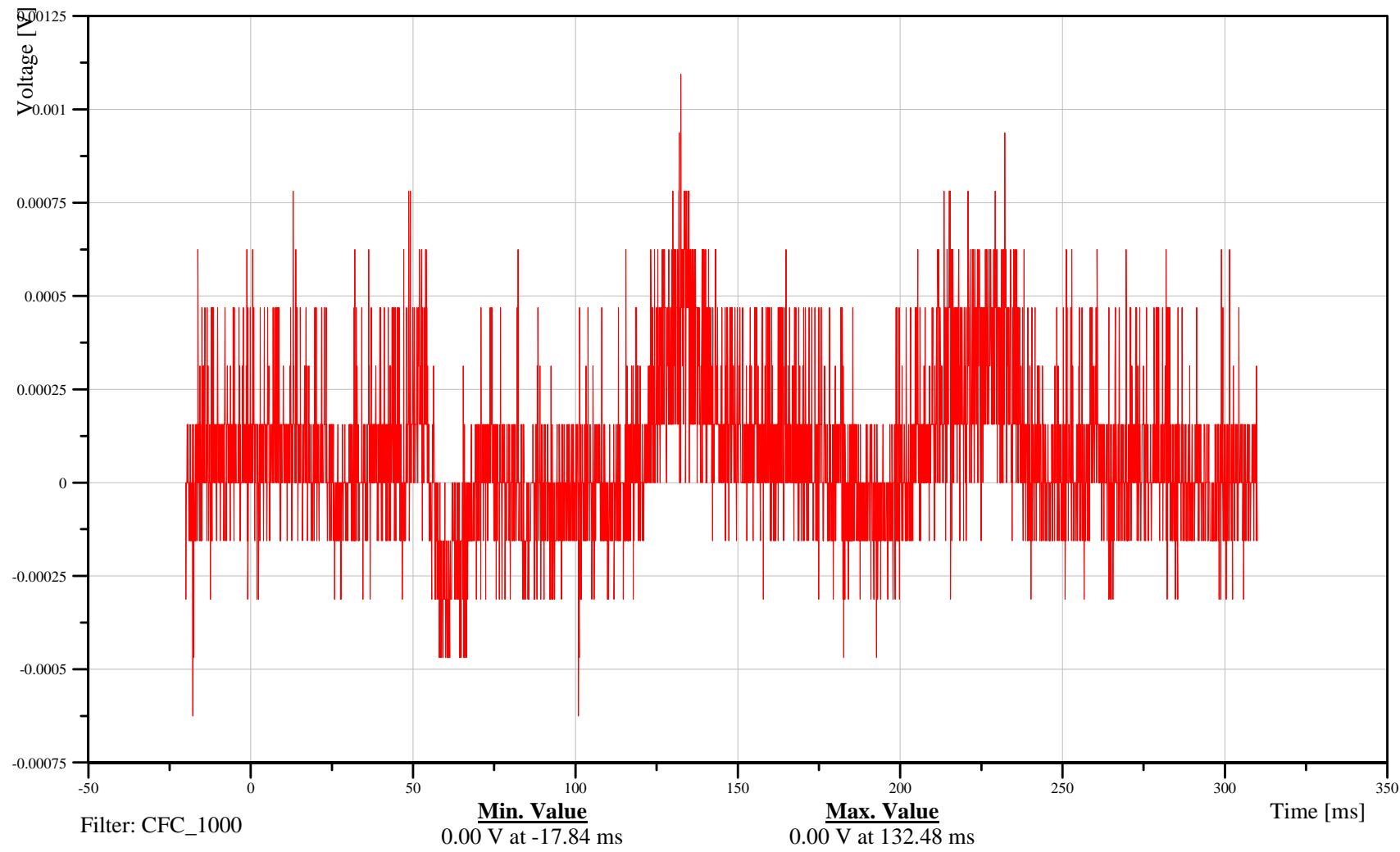
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10AIRBRIFR25VO0A

B-183

101116





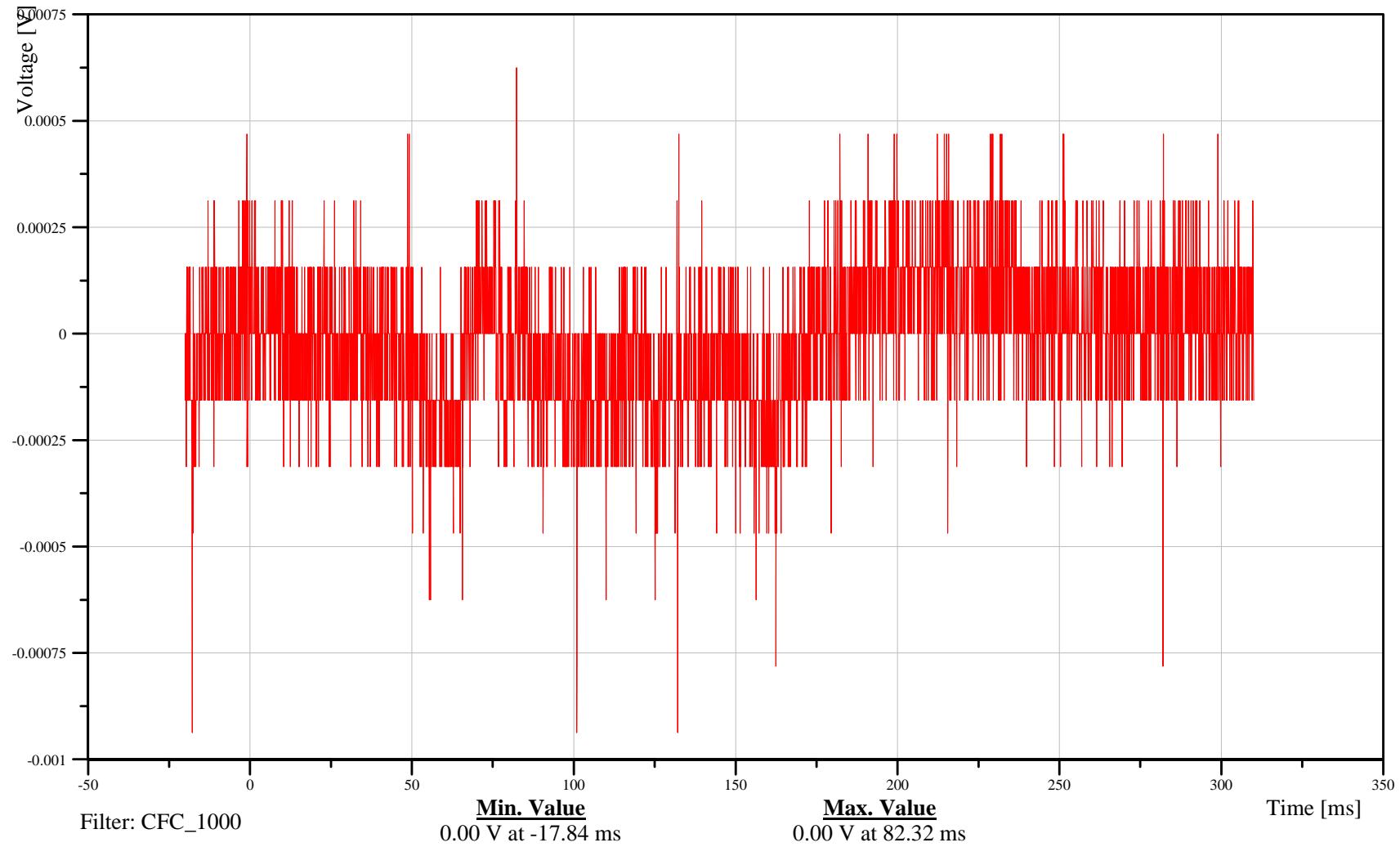
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Bullet Vehicle Right Front Passenger Airbag 2nd Stage Fire Time

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

10AIRBRIFR26VO0A





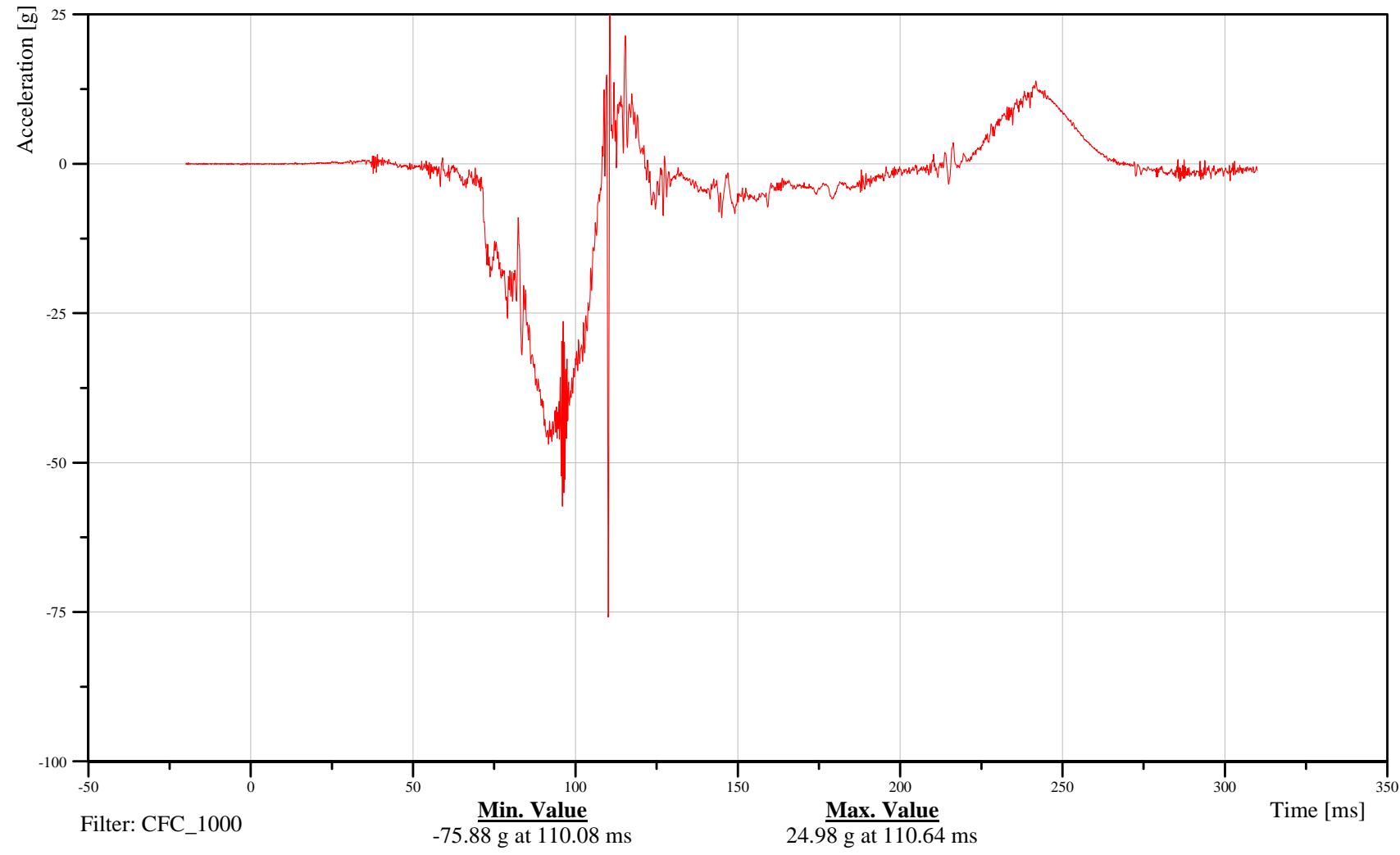
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21HEADCG00THACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Y-Axis Acceleration

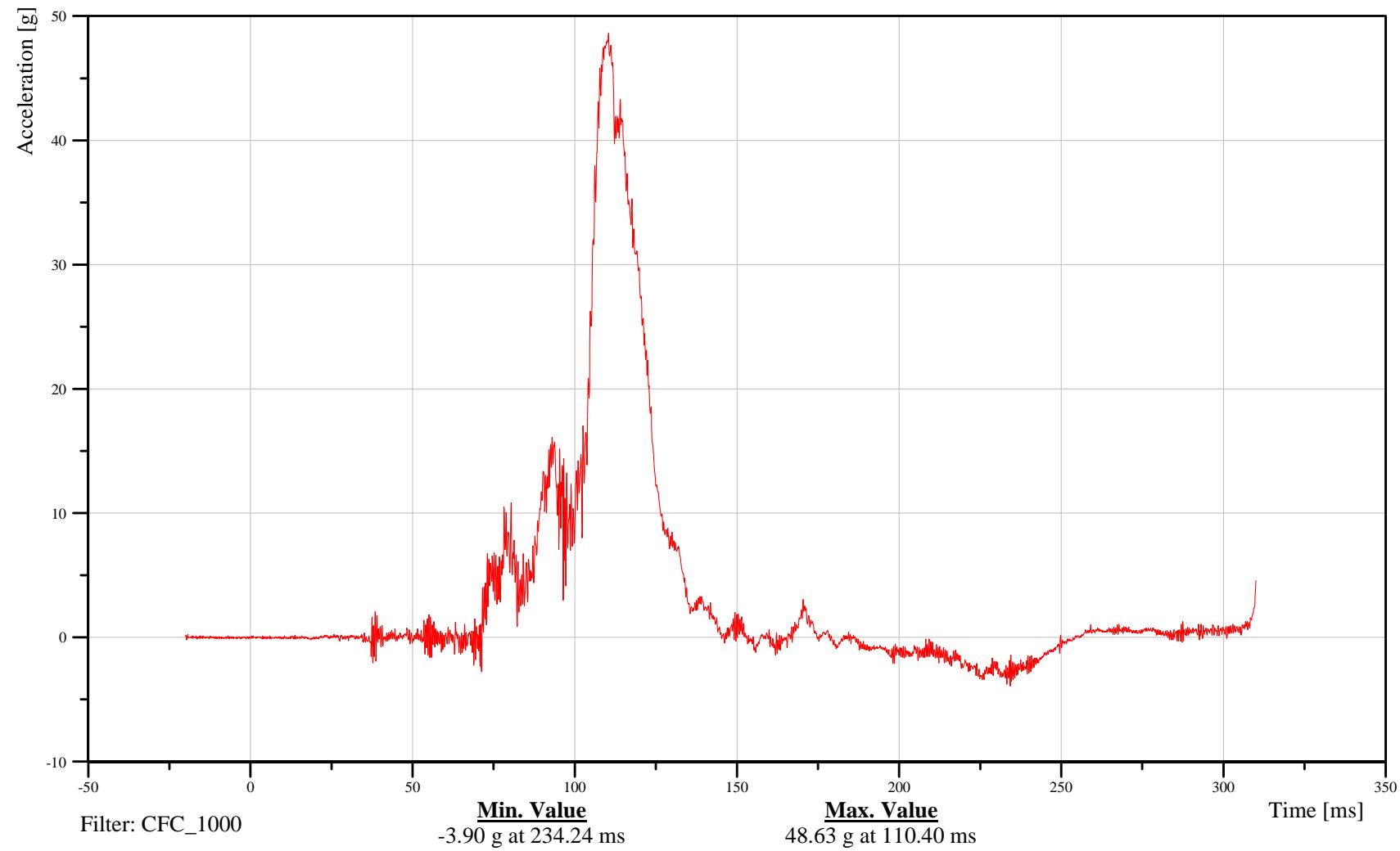
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADCG00THACYA

B-186  
101116





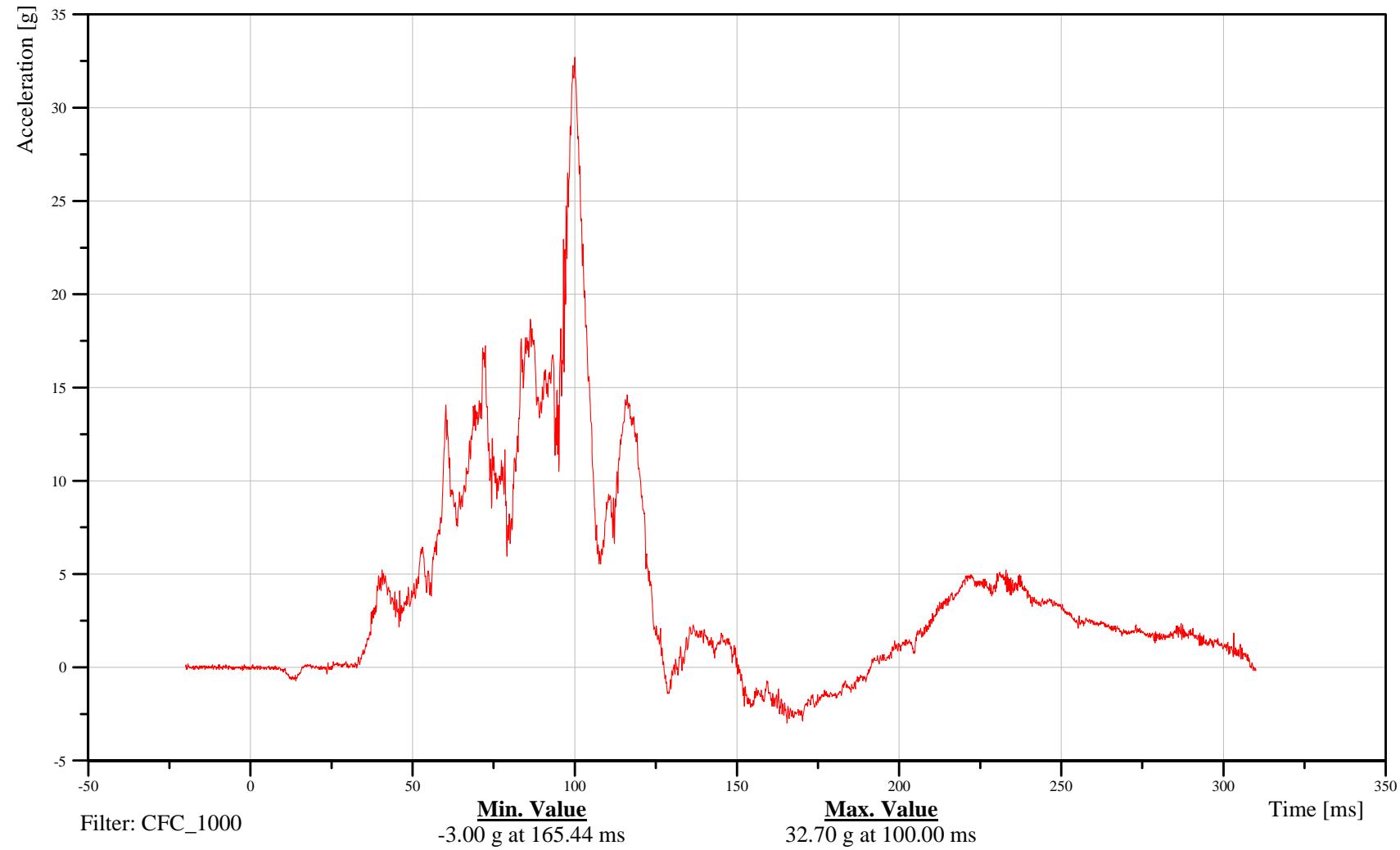
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21HEADCG00THACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

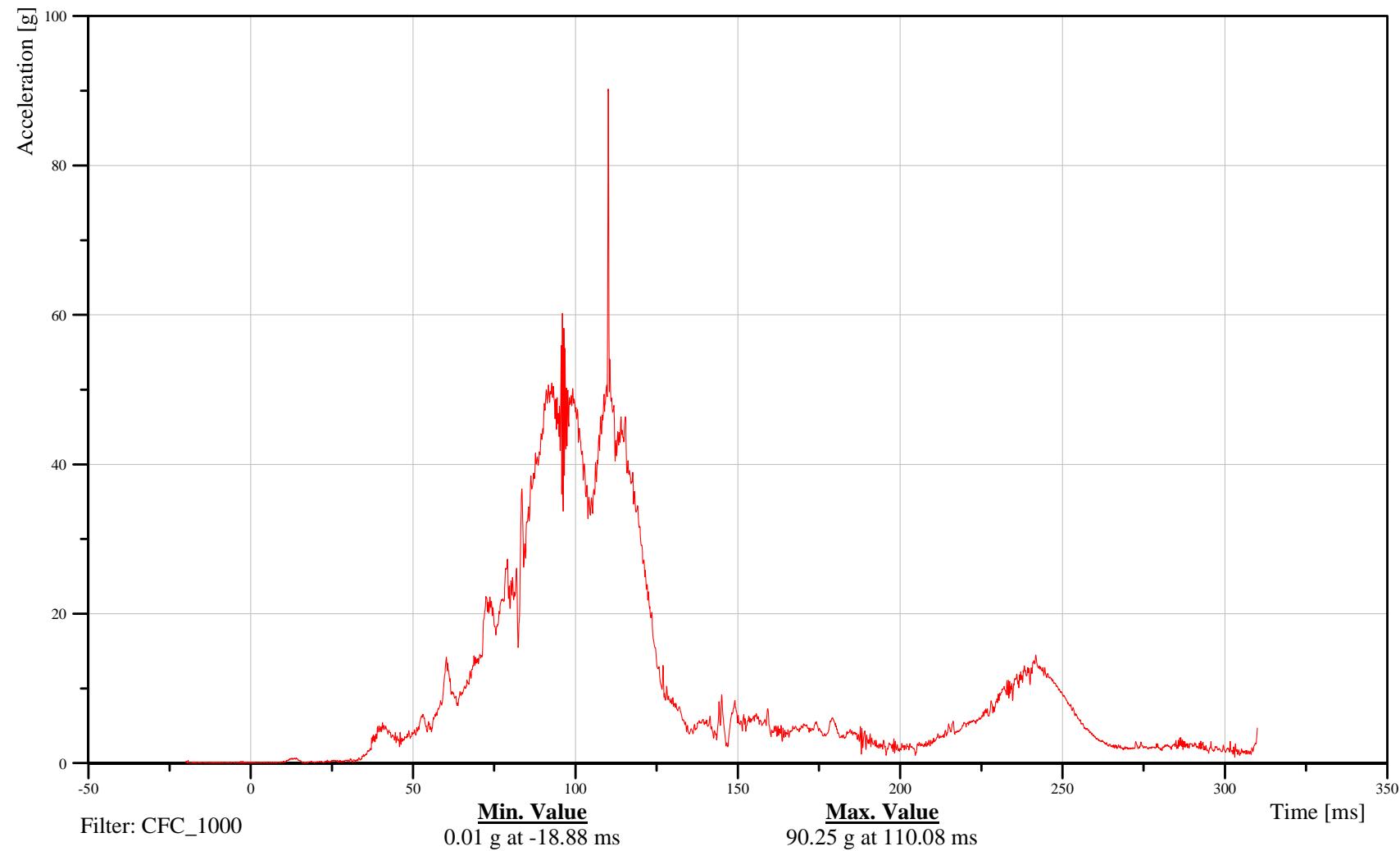
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADCG00THACRA

B-188

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Left X-Axis Acceleration

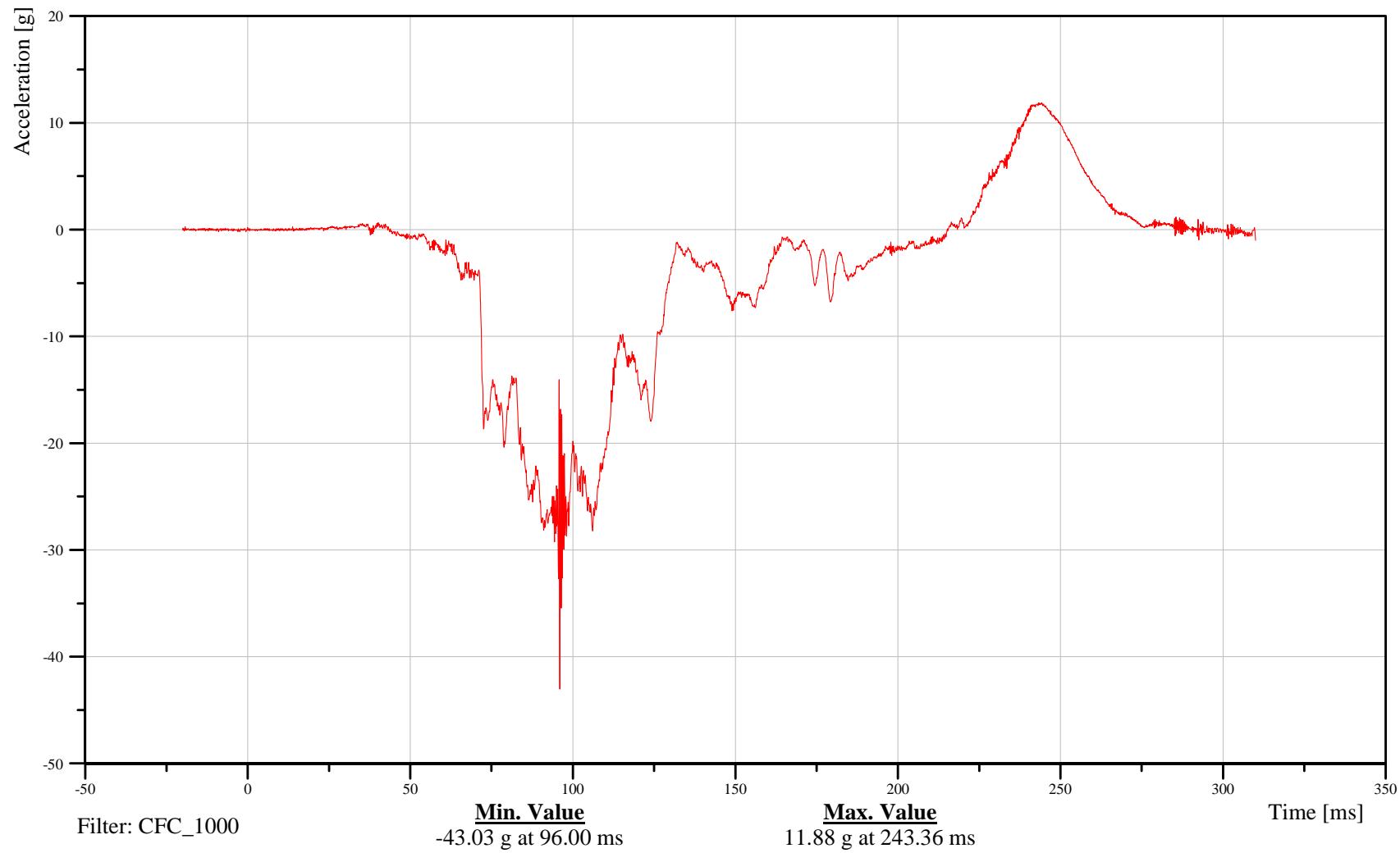
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADLE00THACXA

B-149  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Left Z-Axis Acceleration

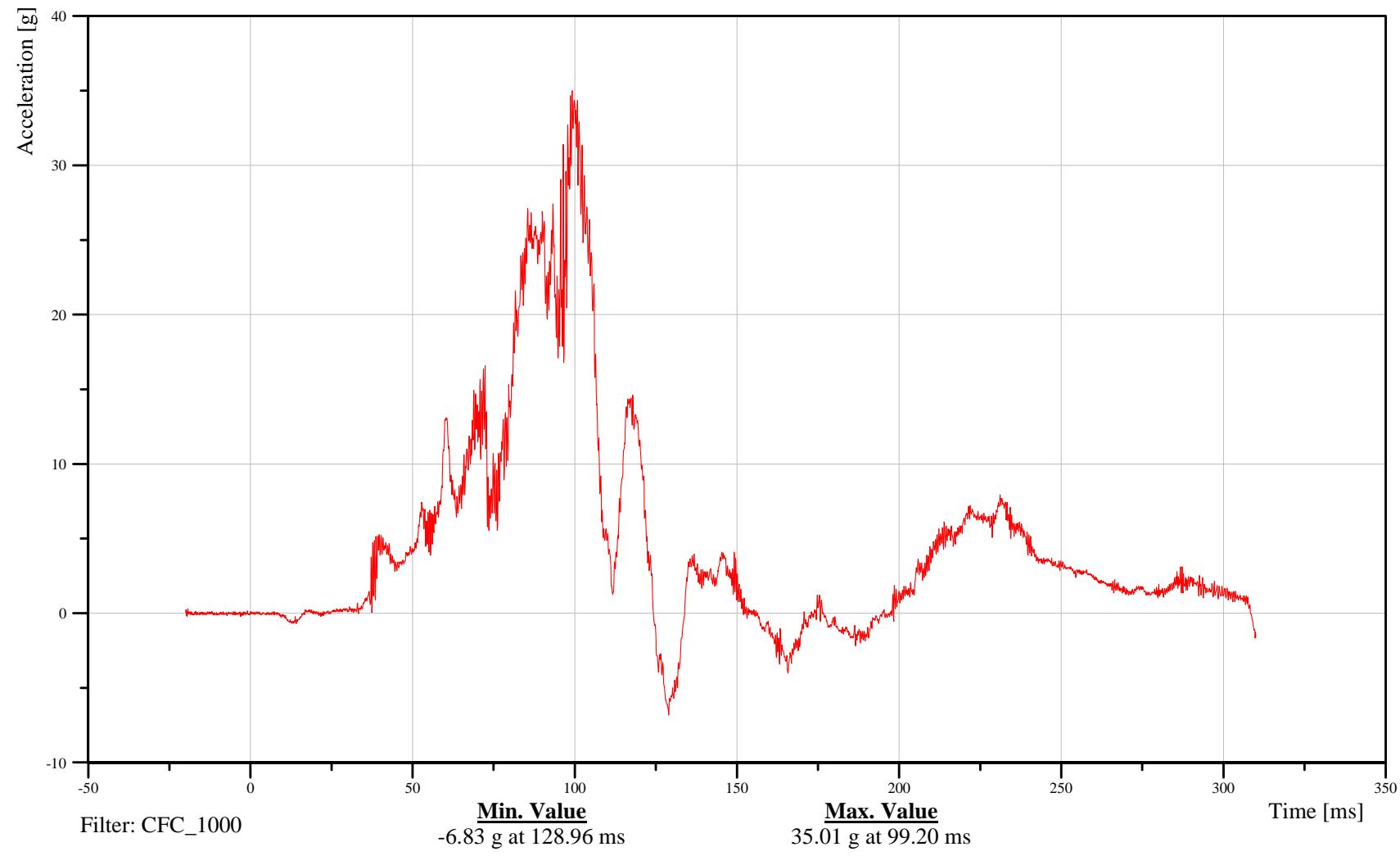
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21HEADLE00THACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-190  
101116





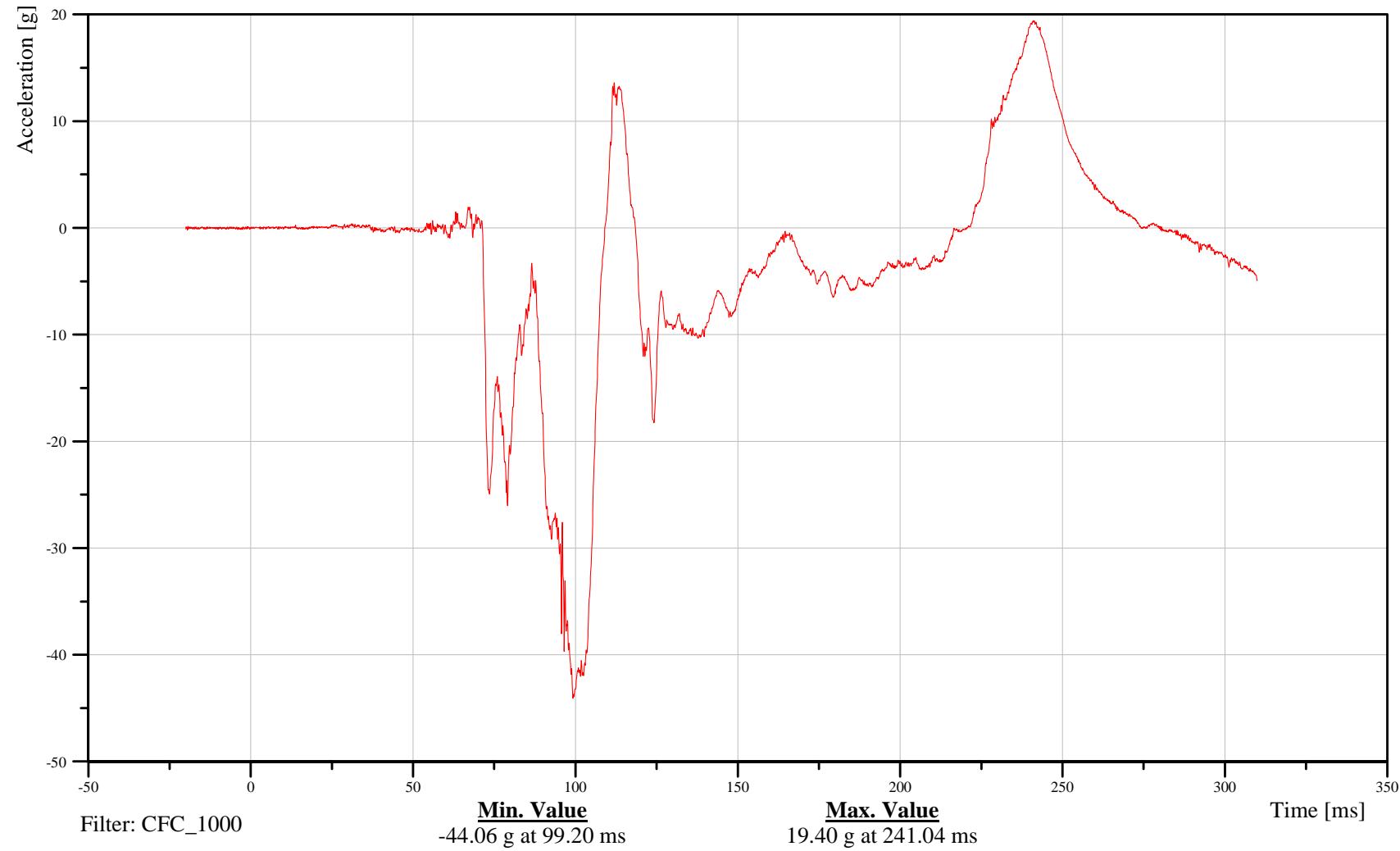
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Top X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADUP00THACXA





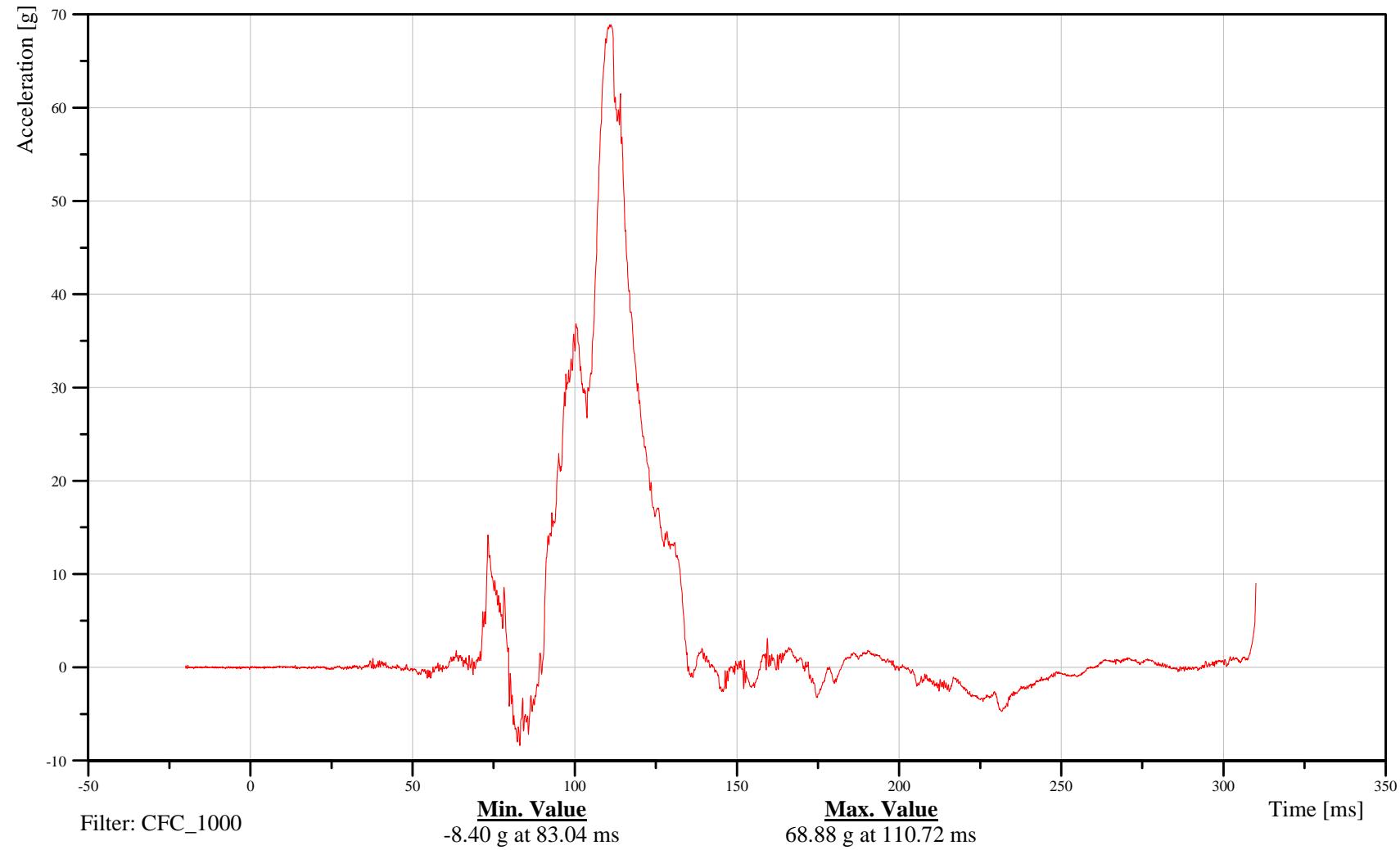
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Top Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADUP00THACYA





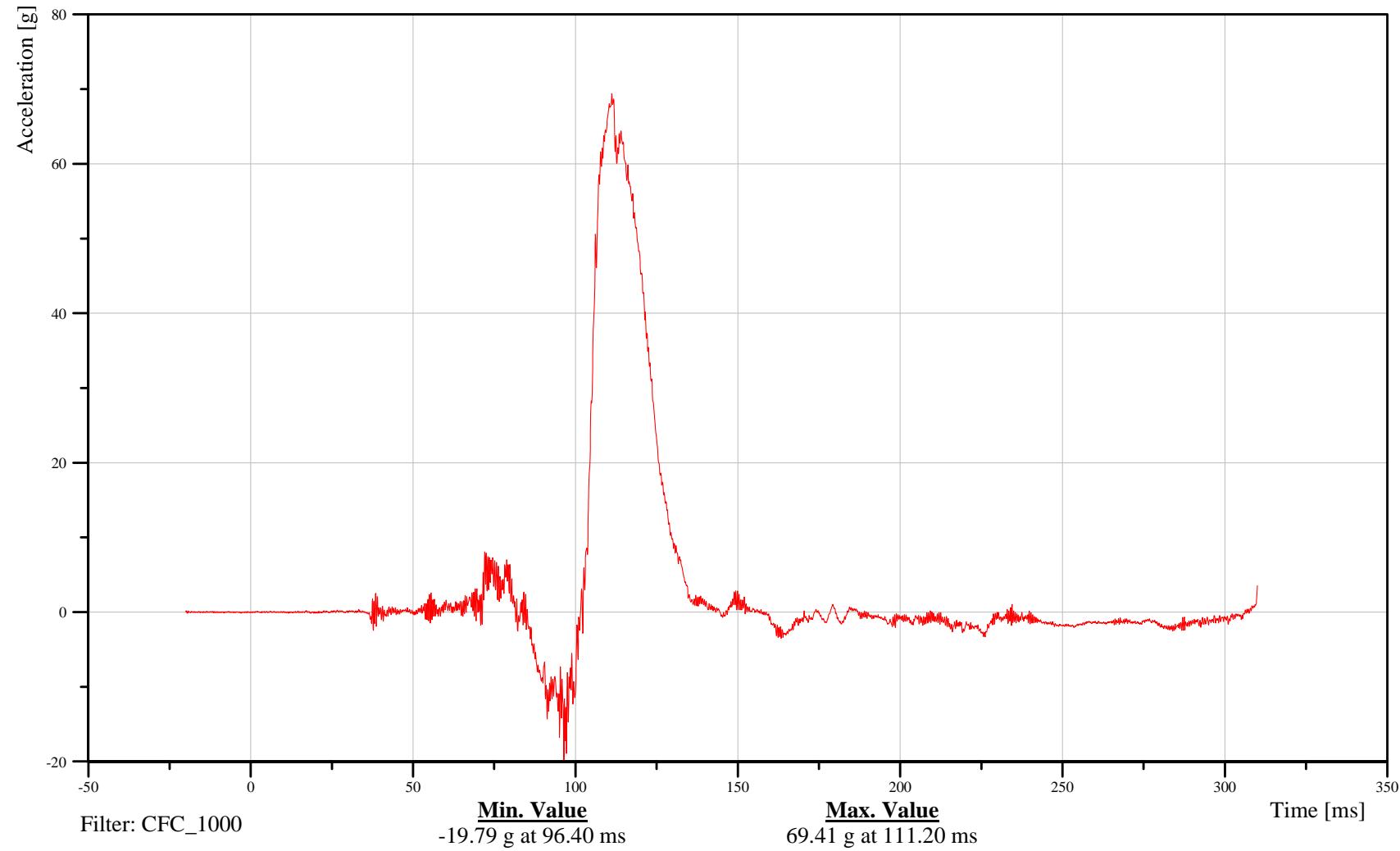
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Rear Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADRE00THACYA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Head Rear Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

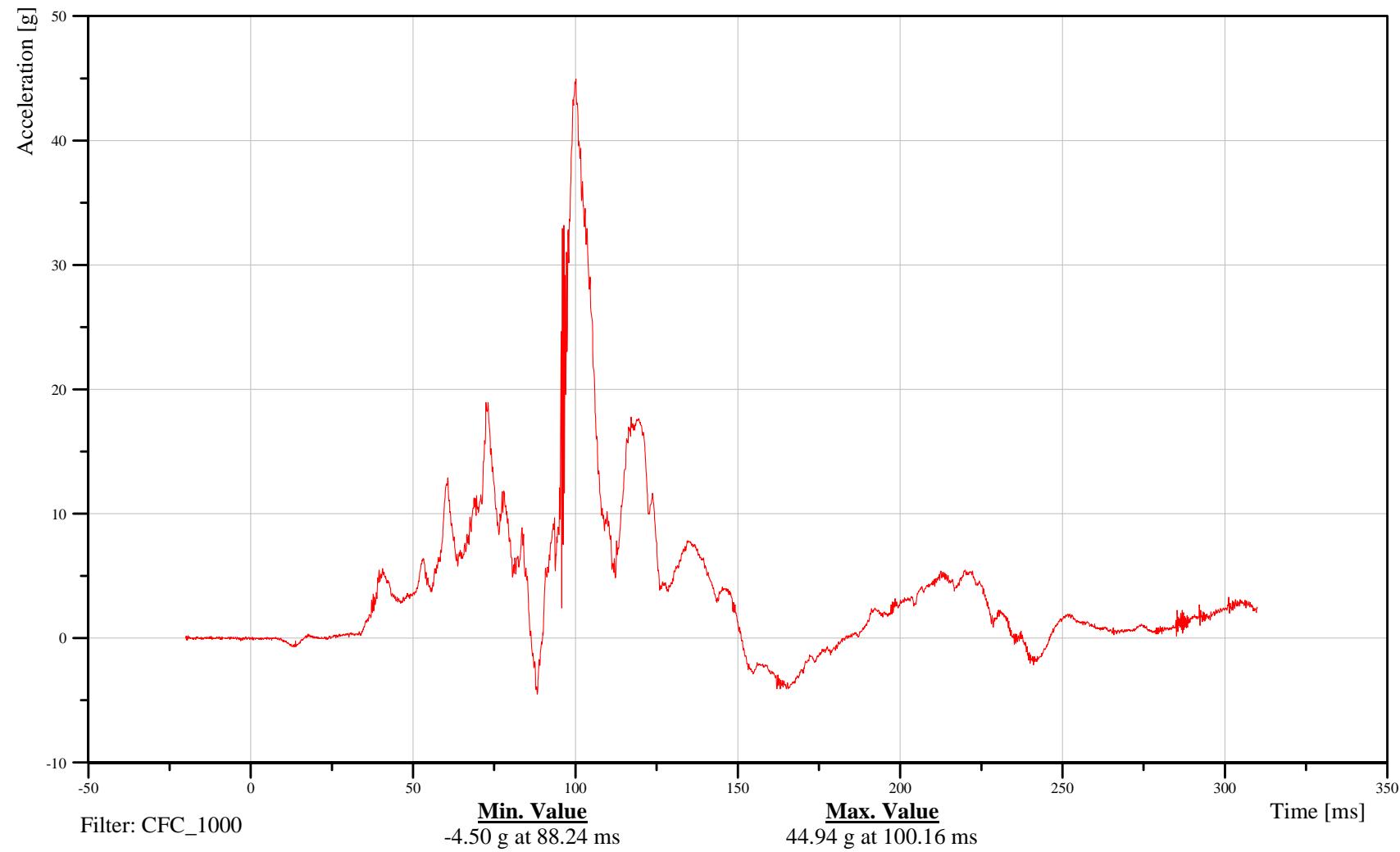
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21HEADRE00THACZA

B-194

101116





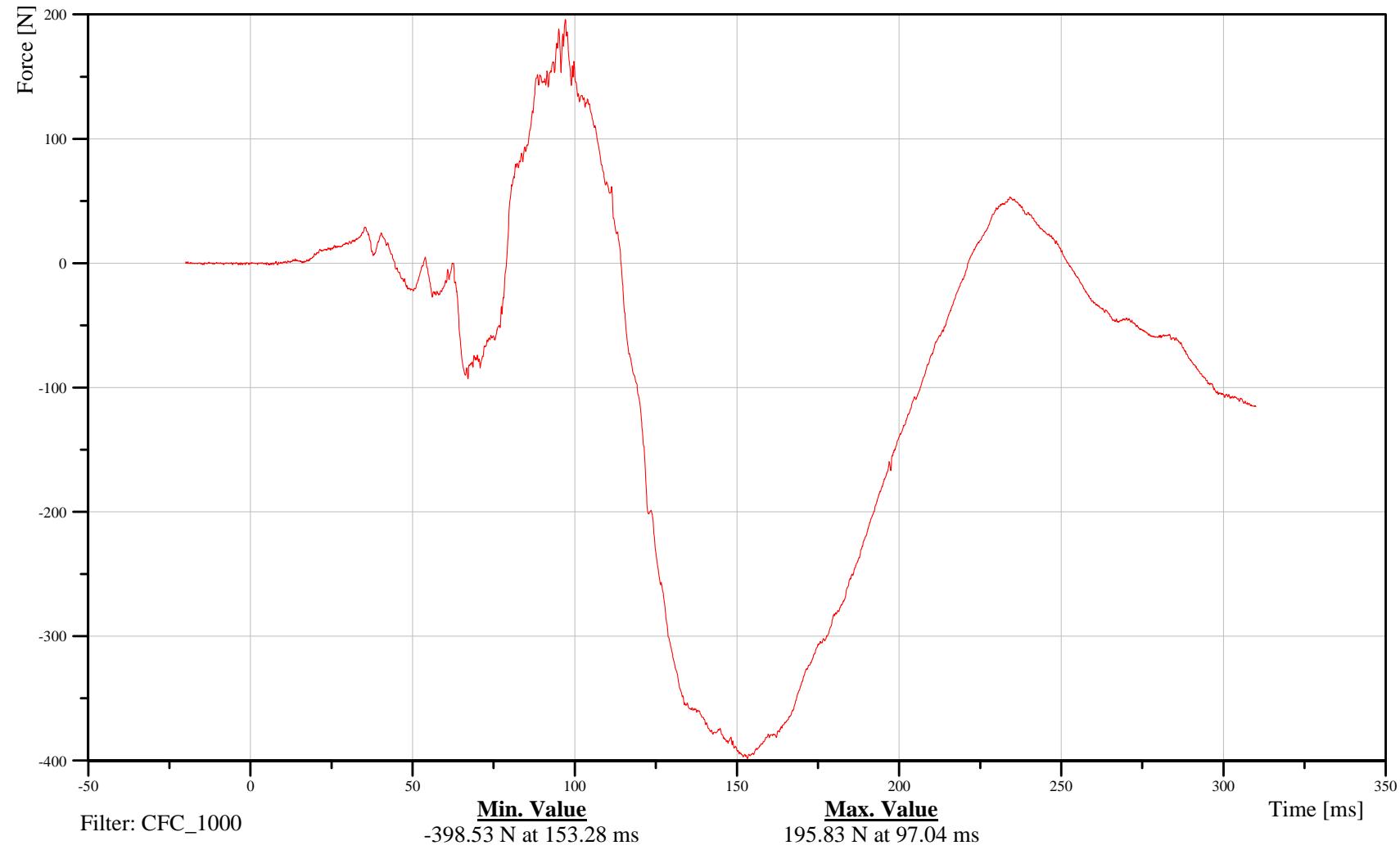
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Neck X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUP00THFOXA





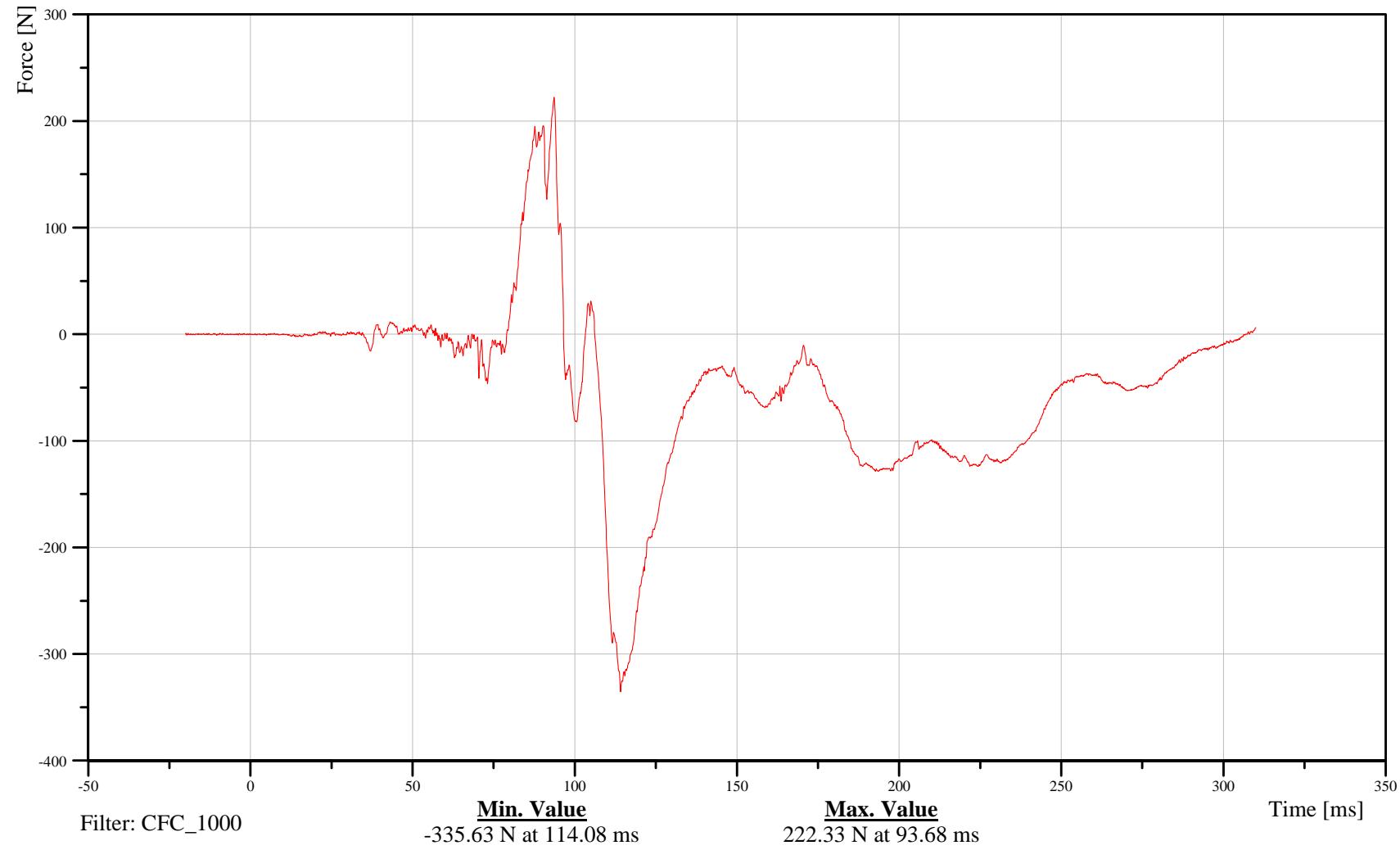
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Neck Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUP00THFOYA





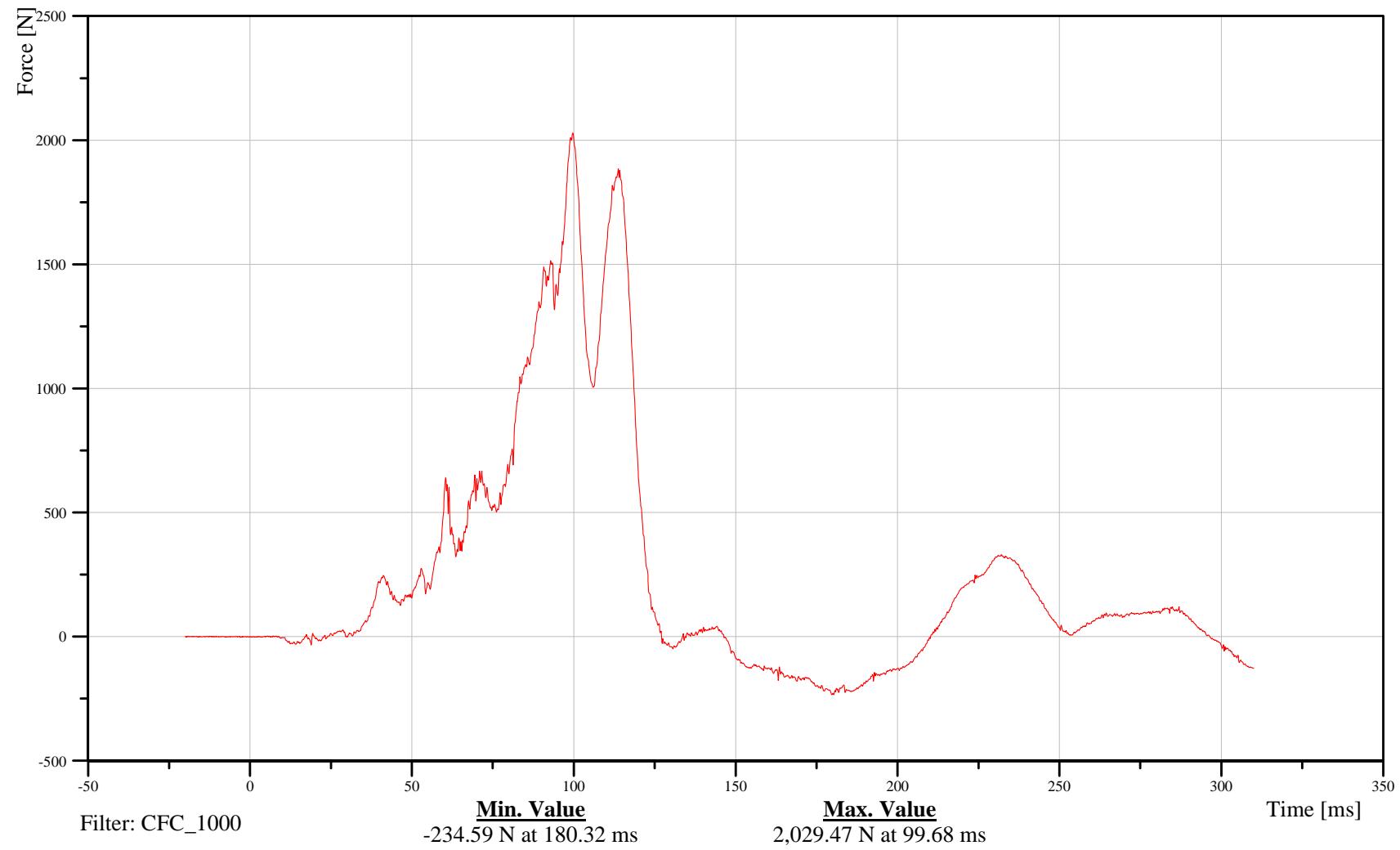
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Neck Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUP00THFOZA





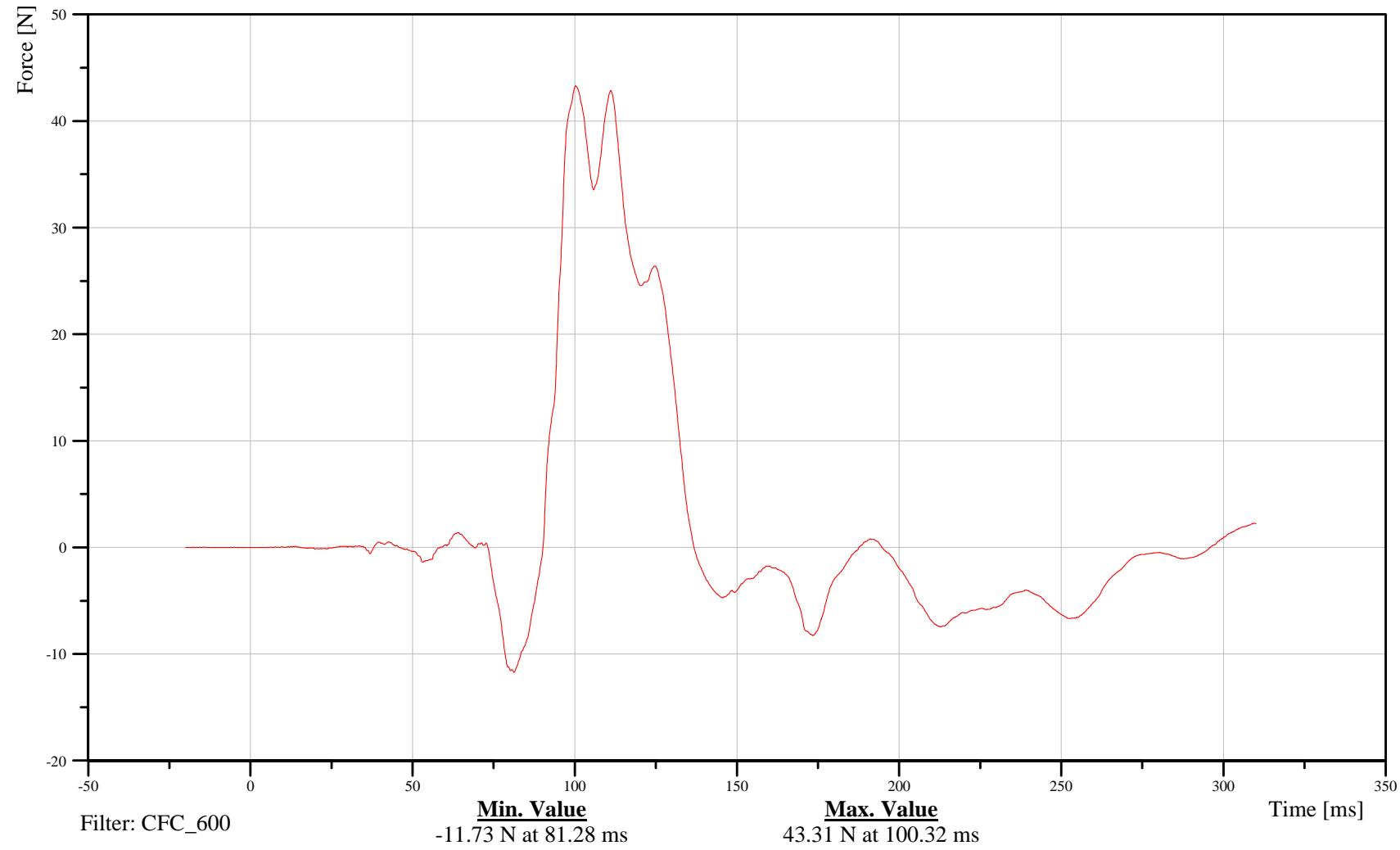
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Neck Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUP00THMOXB





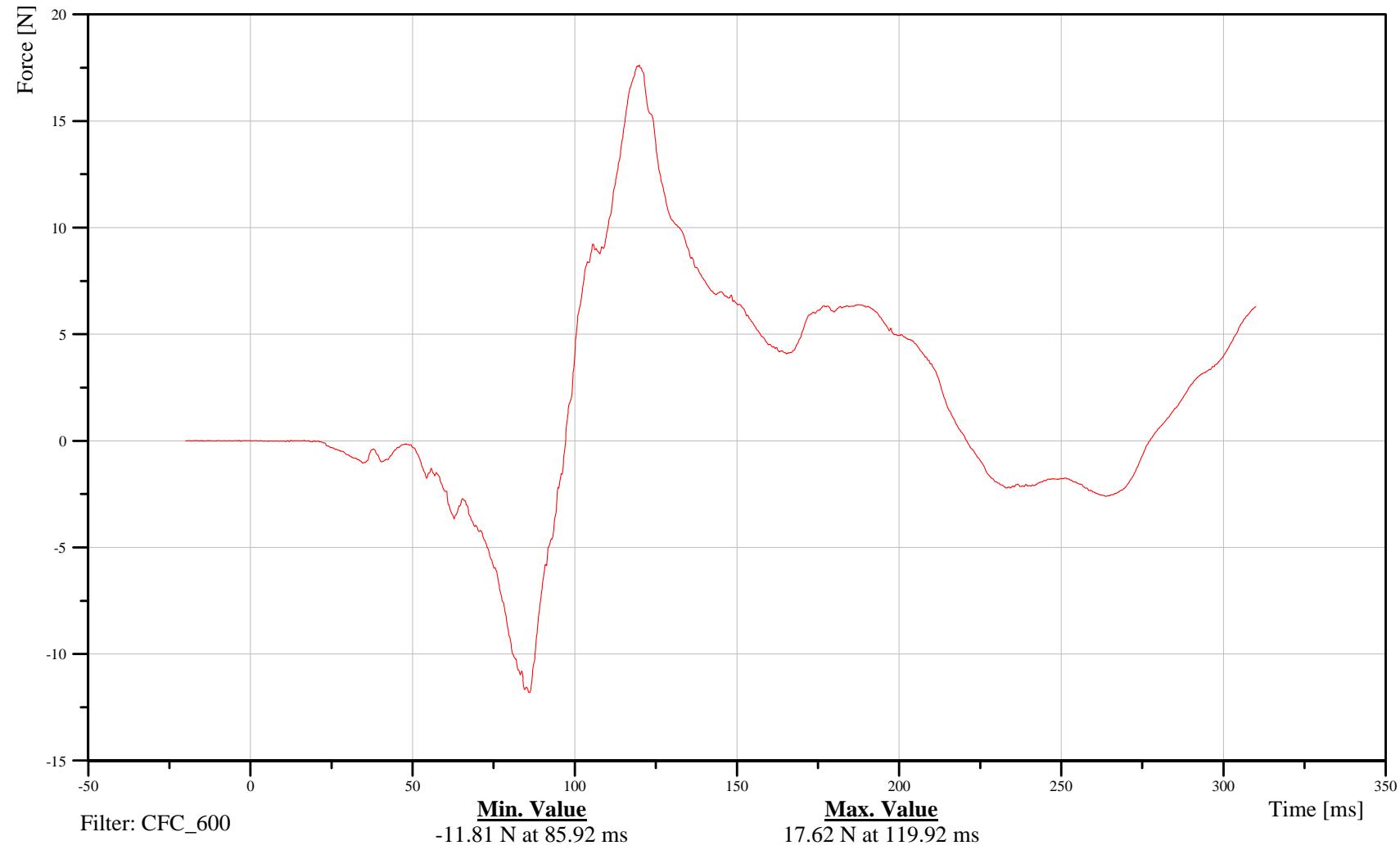
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Neck Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUP00THMOYB





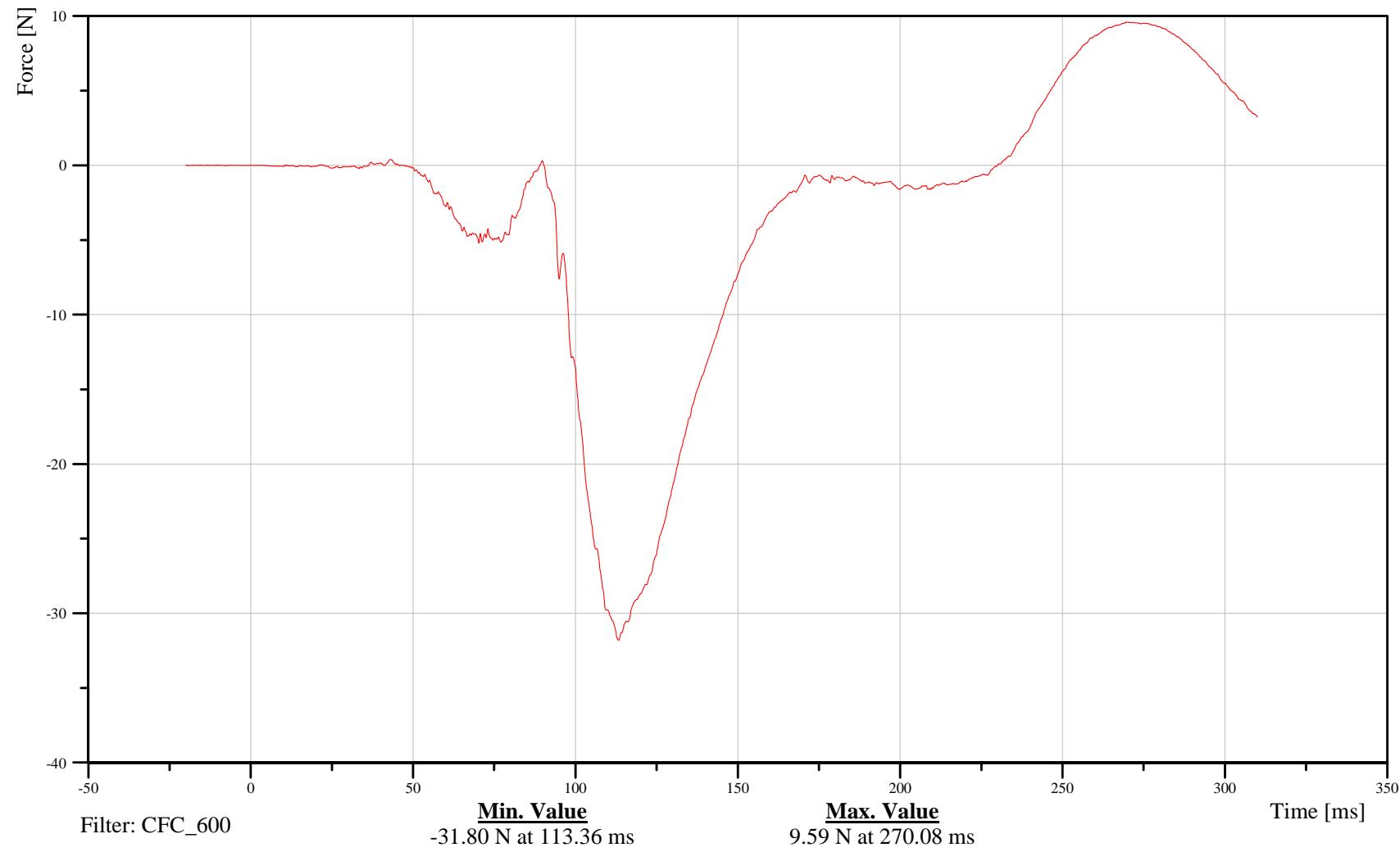
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Neck Moment About Z Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKUP00THMOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





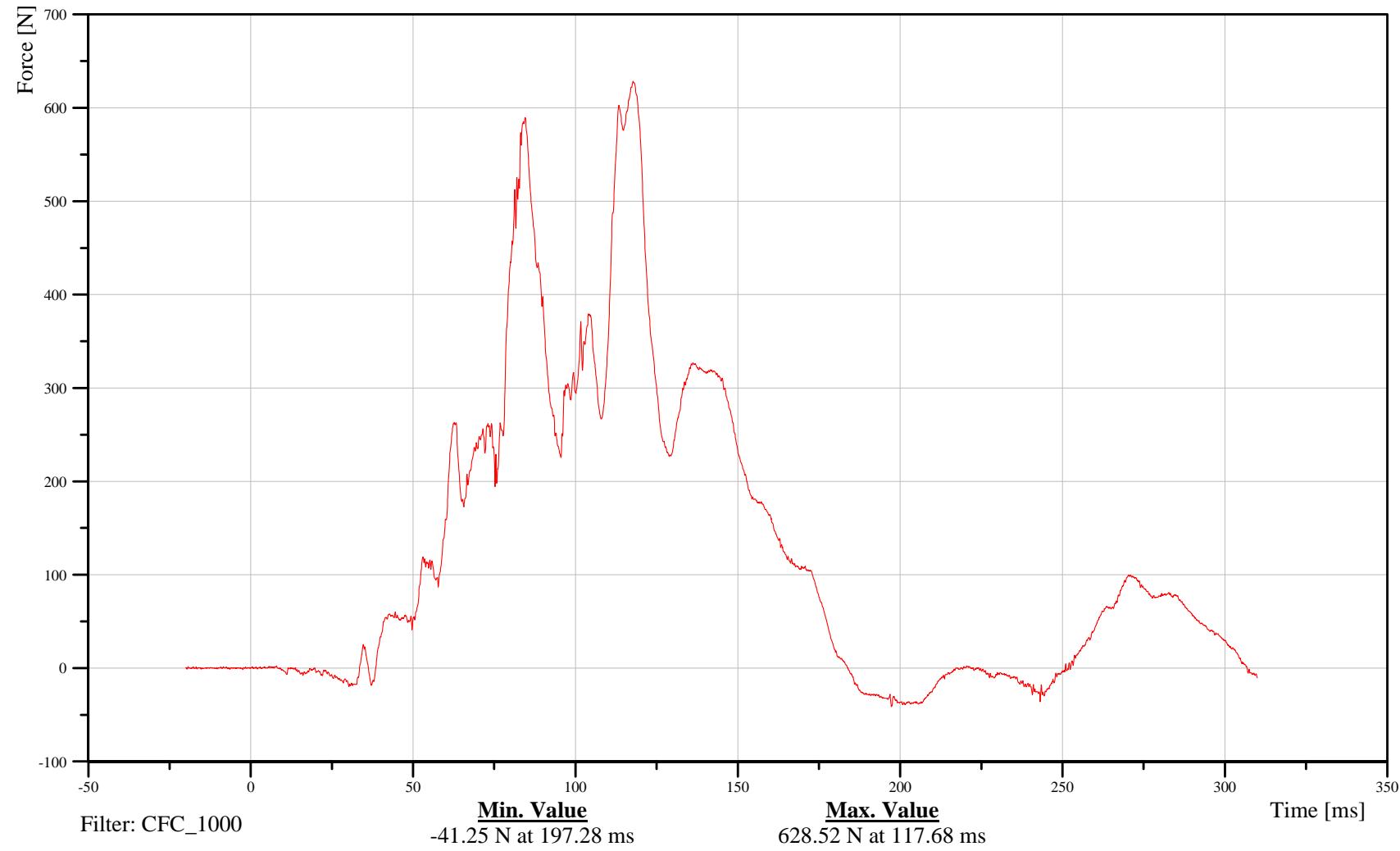
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Neck X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKLO00THFOXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





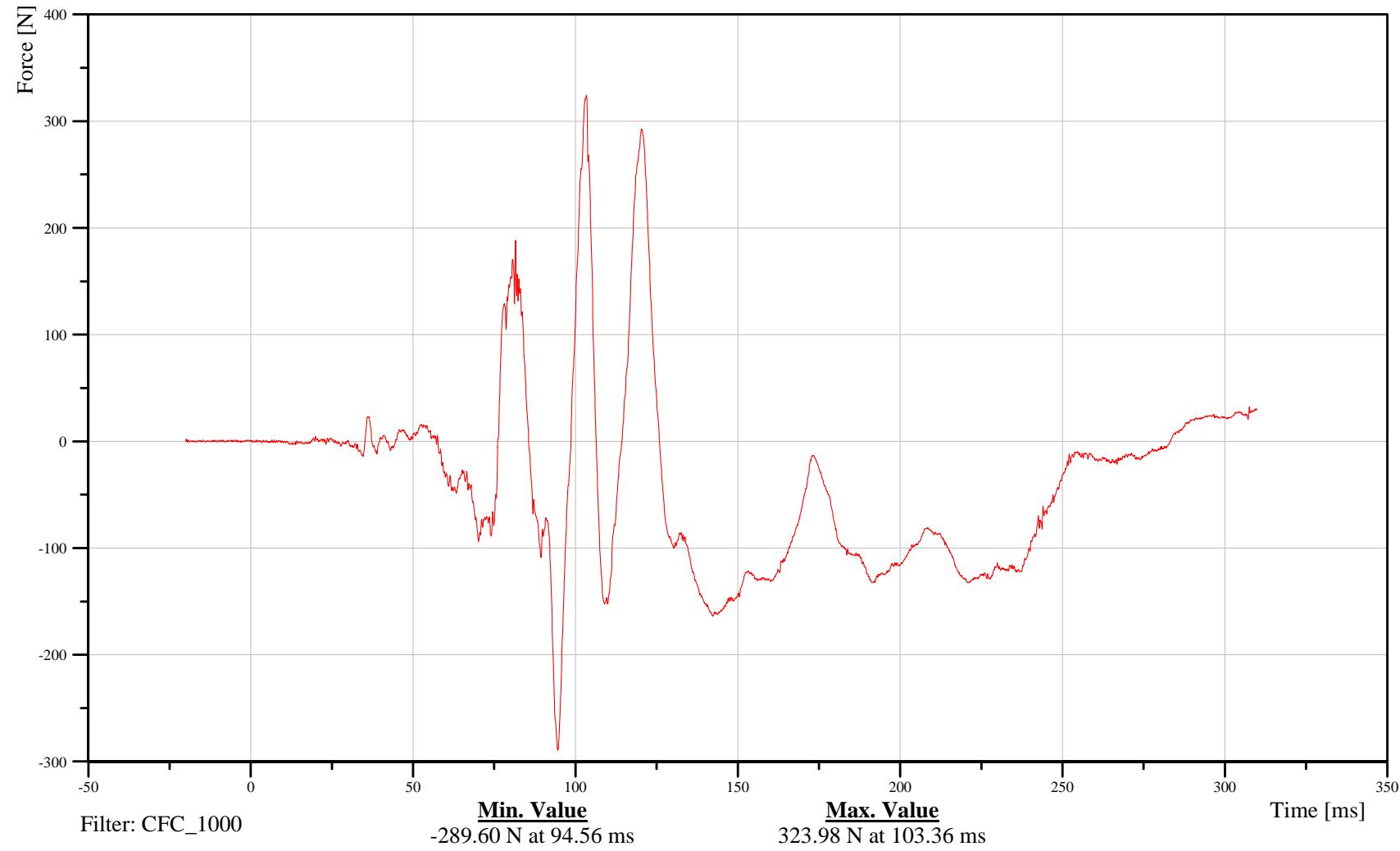
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Neck Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKLO00THFOYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





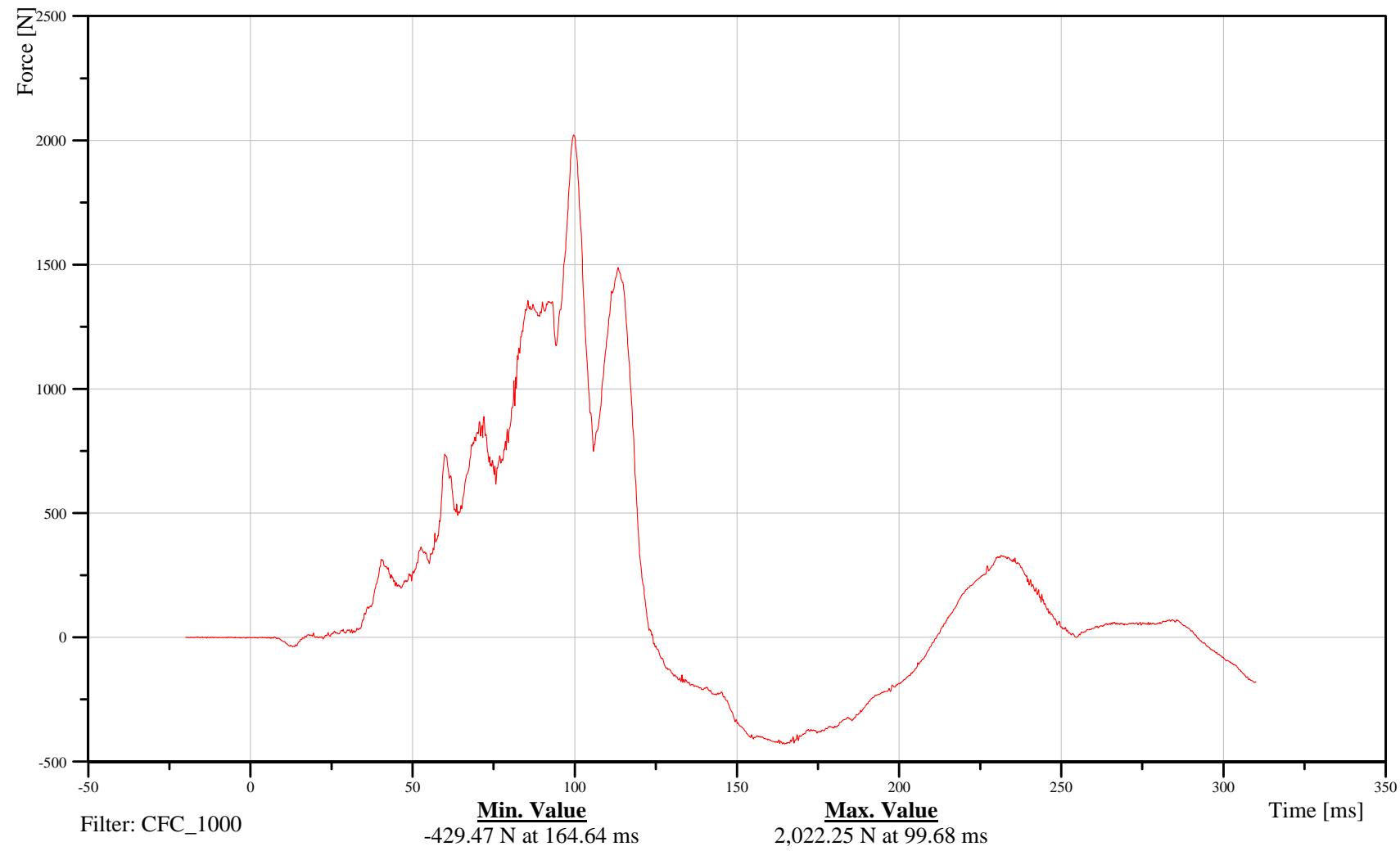
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Neck Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKLO00THFOZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Neck Moment About X Axis

Date: 11/17/2010  
Time: 14:40

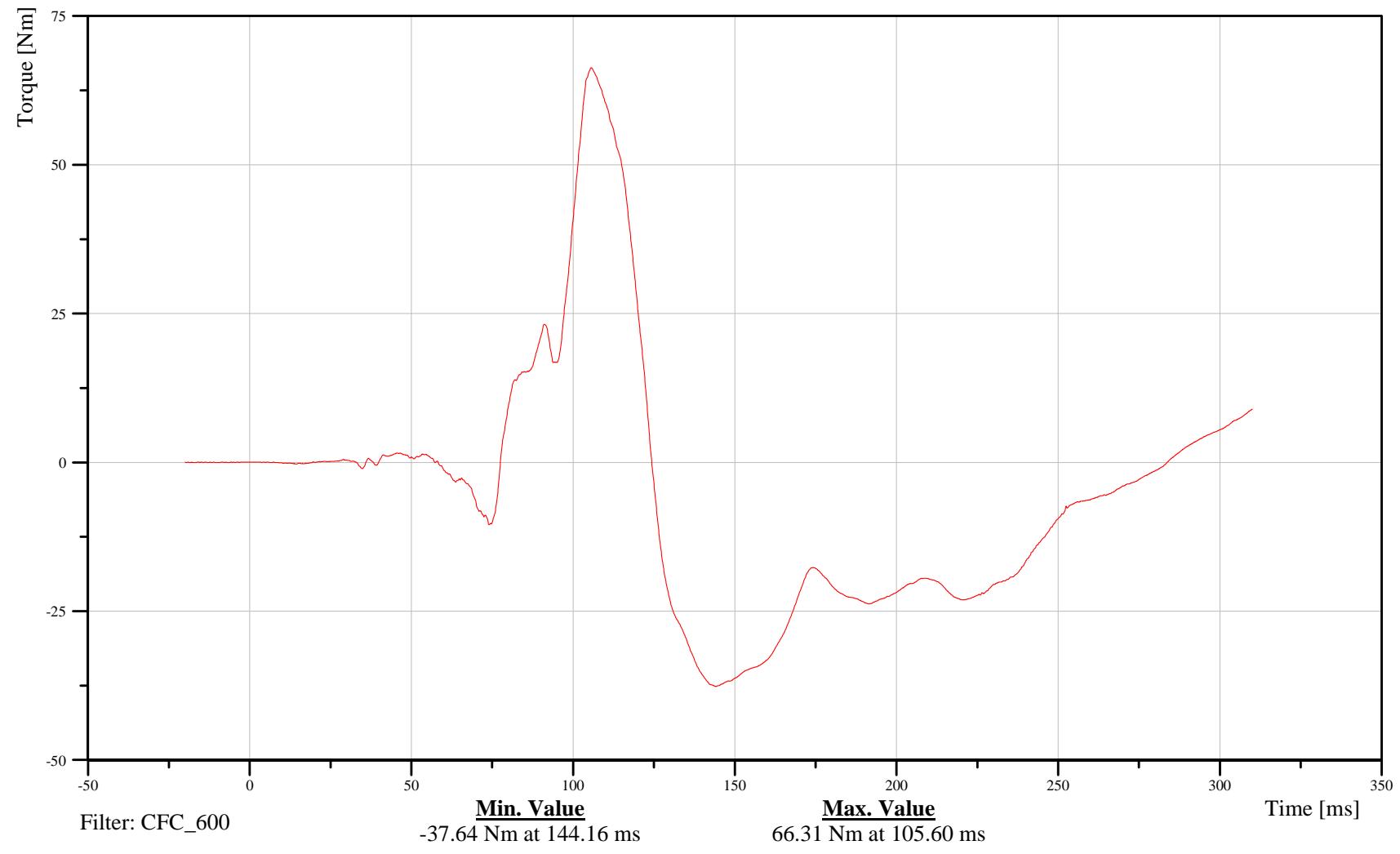
Customer: VRTC

21NECKLO00THMOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-204

101116





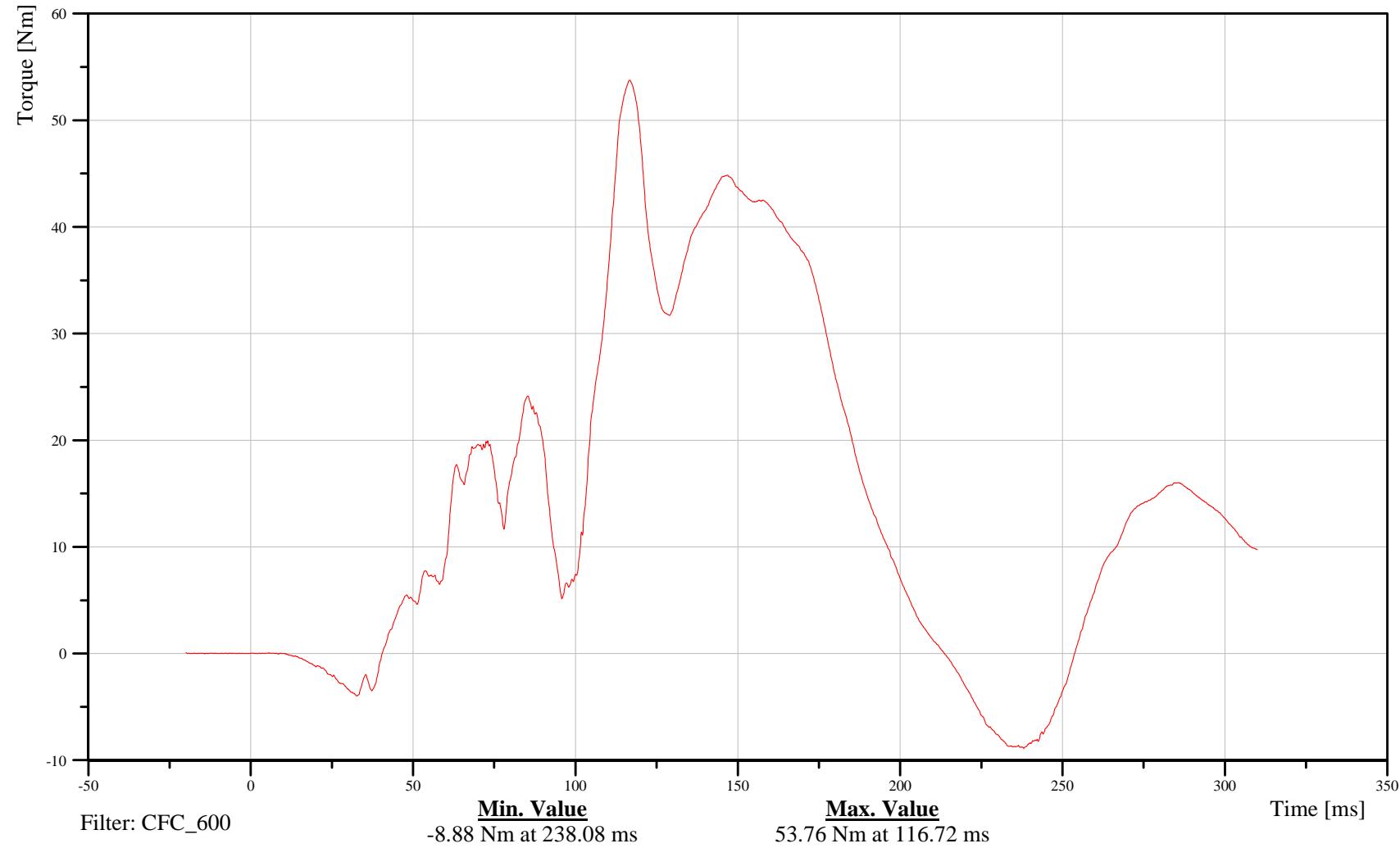
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Neck Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKLO00THMOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





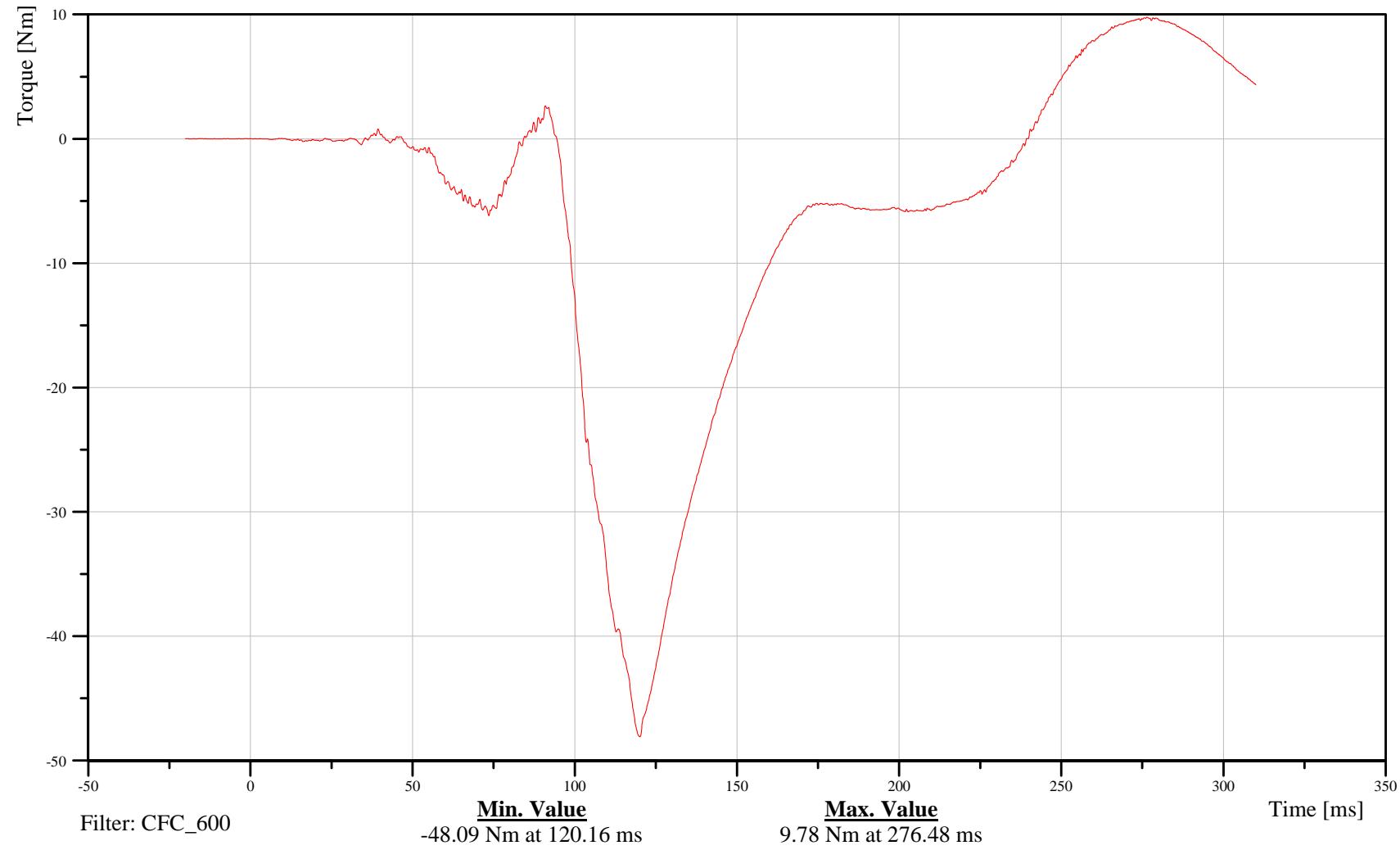
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Neck Moment About Z Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKLO00THMOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





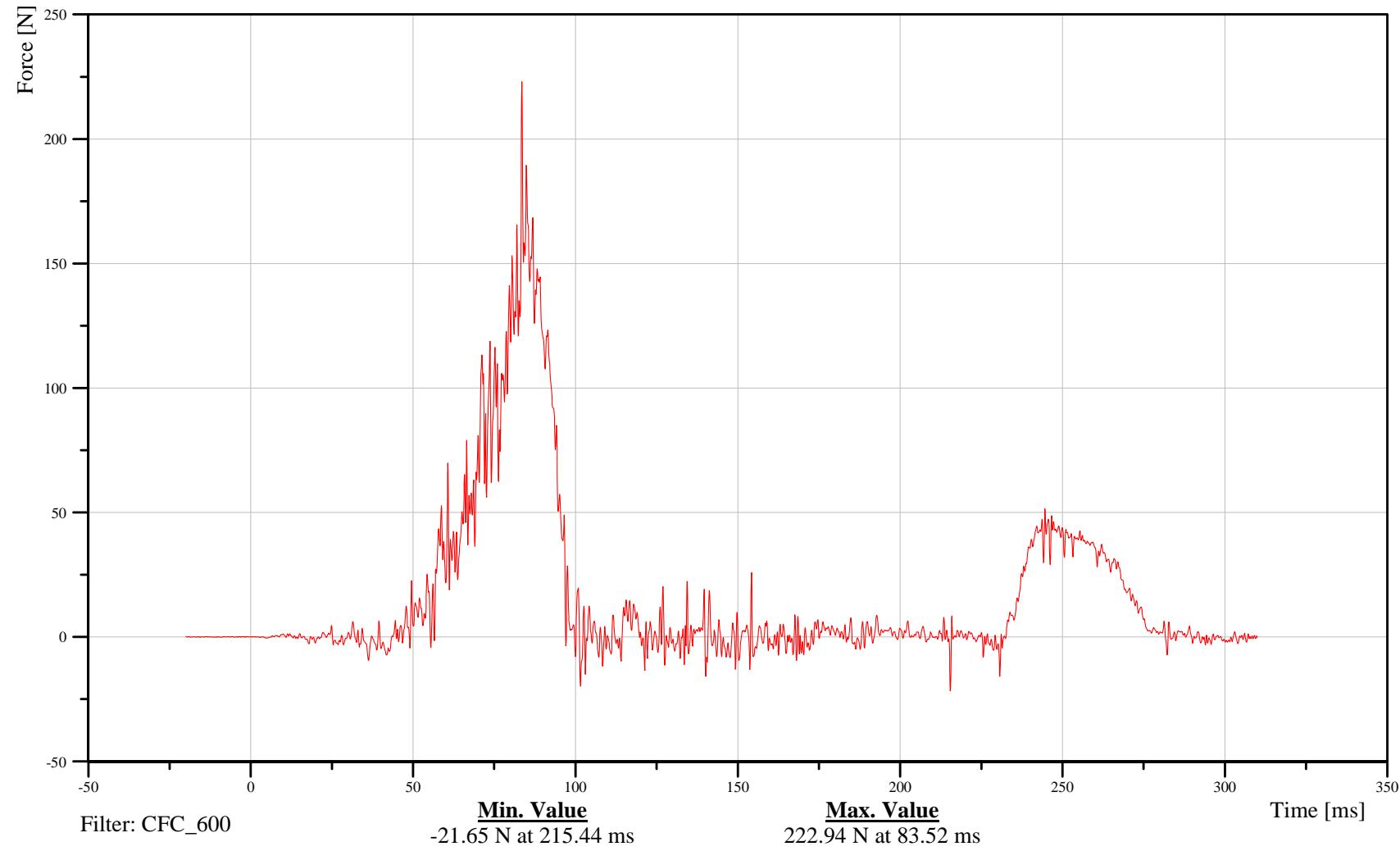
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Rear Skull Spring Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKRE00THFO0B

TRC Inc. Test Lab: CTF  
Test Number: 101116





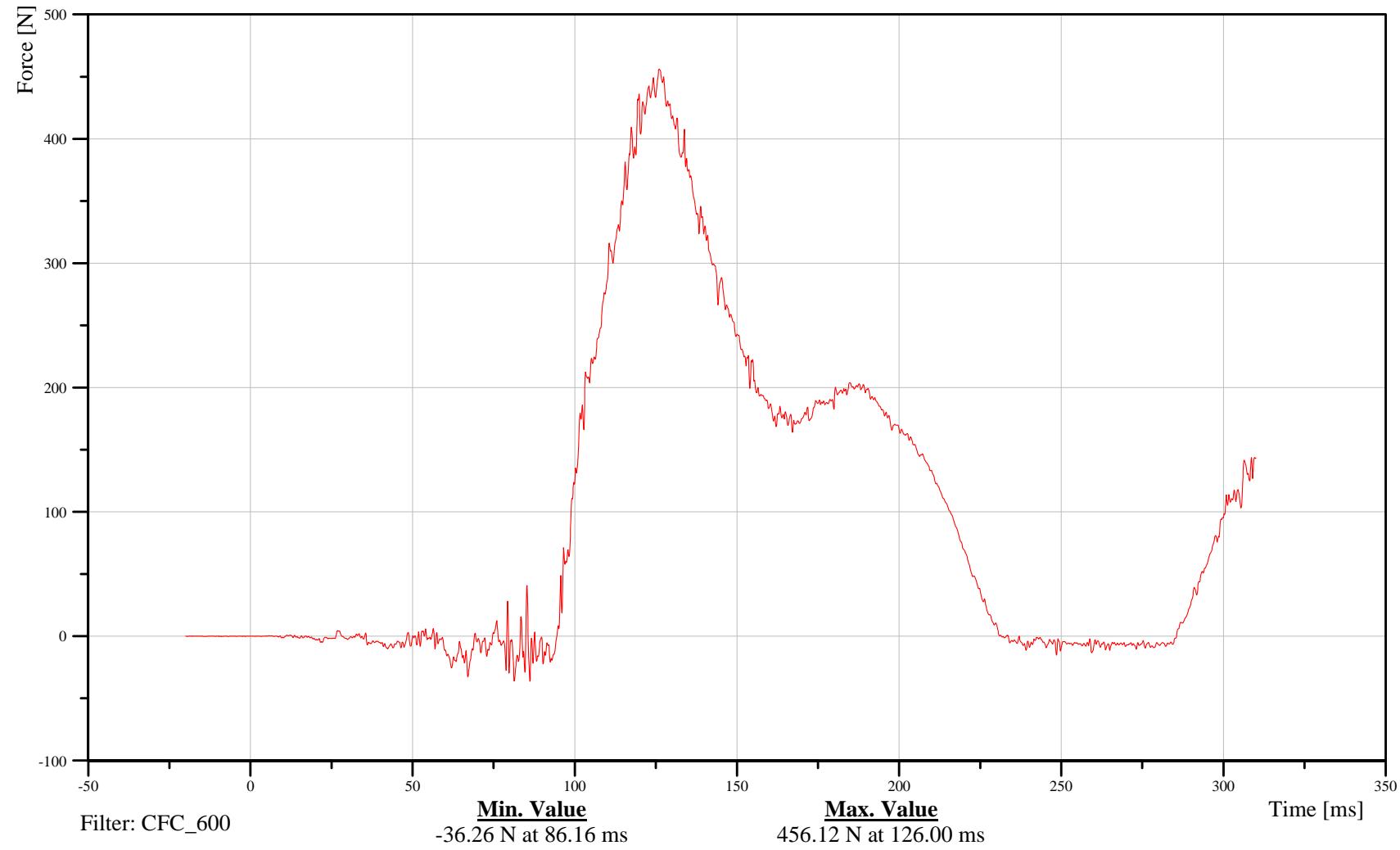
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Front Skull Spring Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKFR00THFO0B

TRC Inc. Test Lab: CTF  
Test Number: 101116





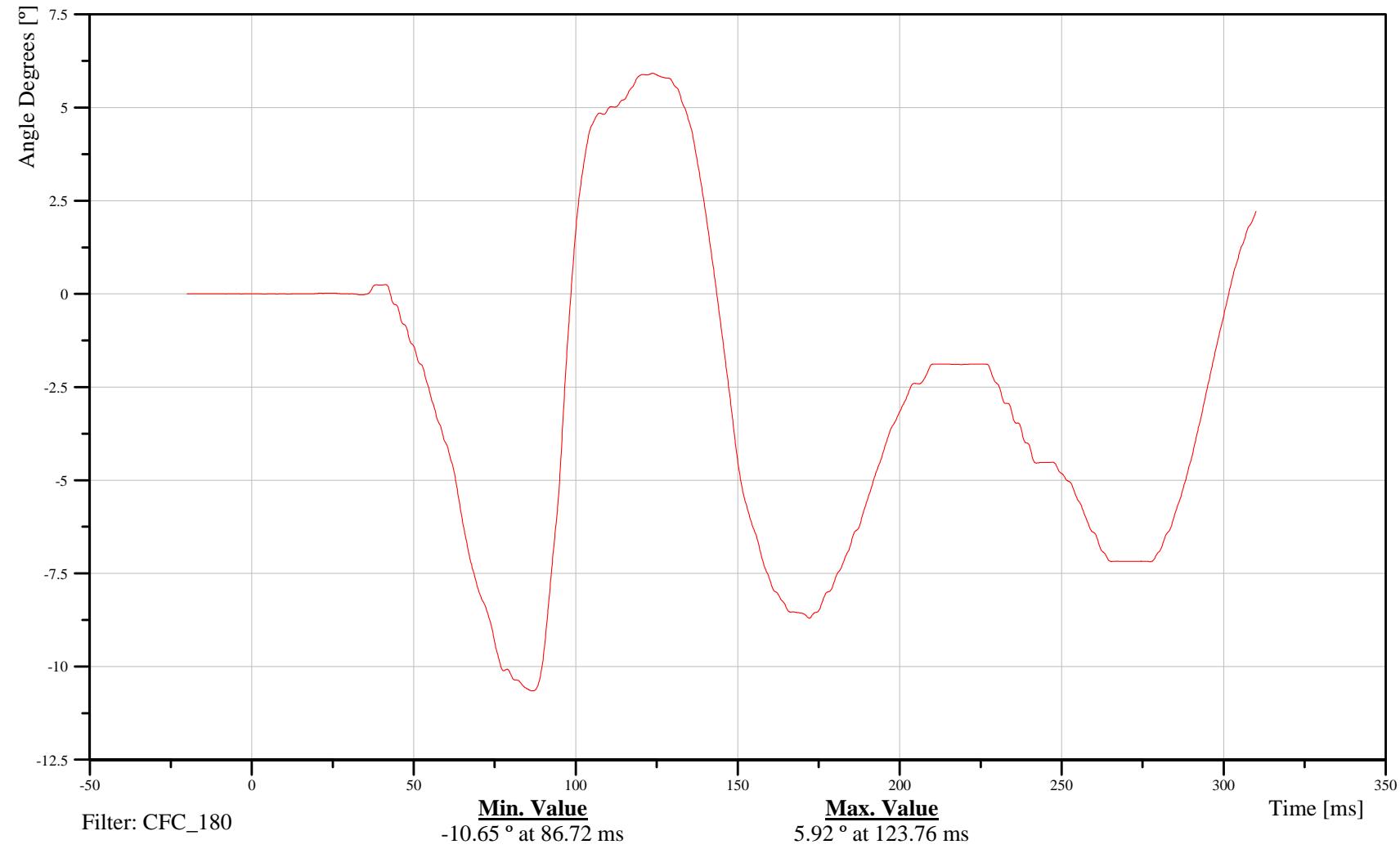
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Occipital Condyle Rotary Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKUP00THANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





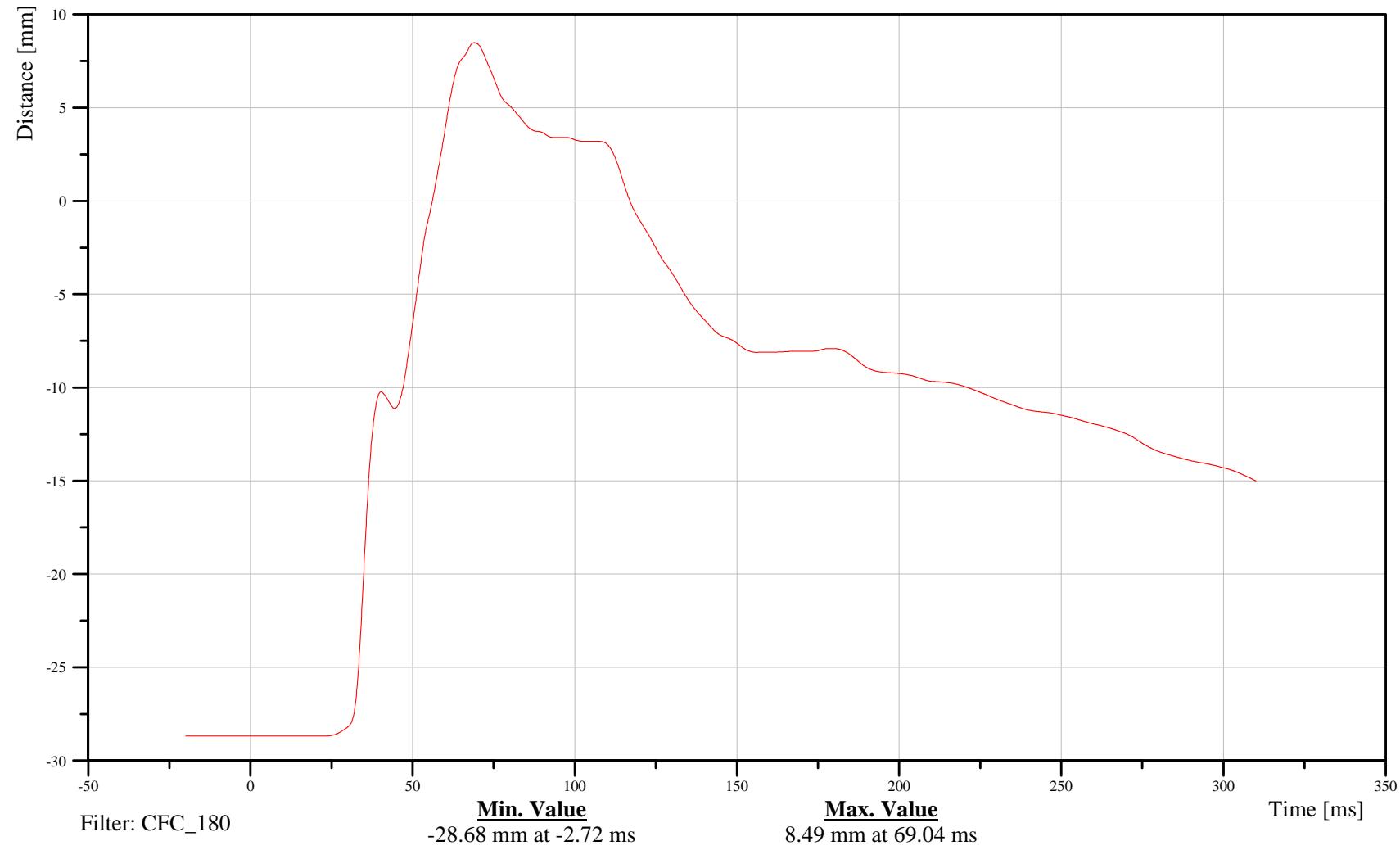
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Abdomen DGSP Right Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDORL00THDS0C

TRC Inc. Test Lab: CTF  
Test Number: 101116





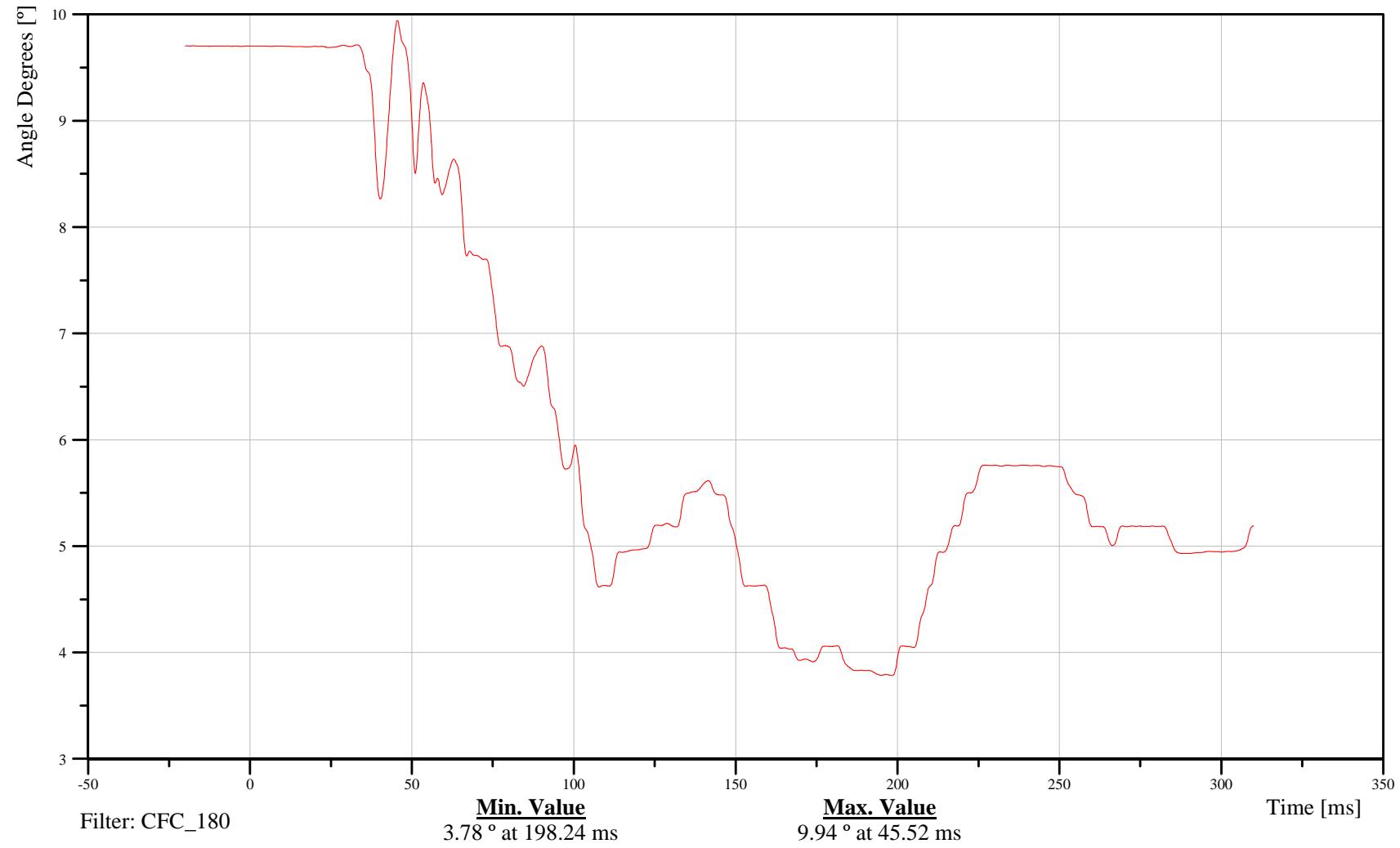
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Abdomen DGSP Right Pitch

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21ABDORL00THANYC





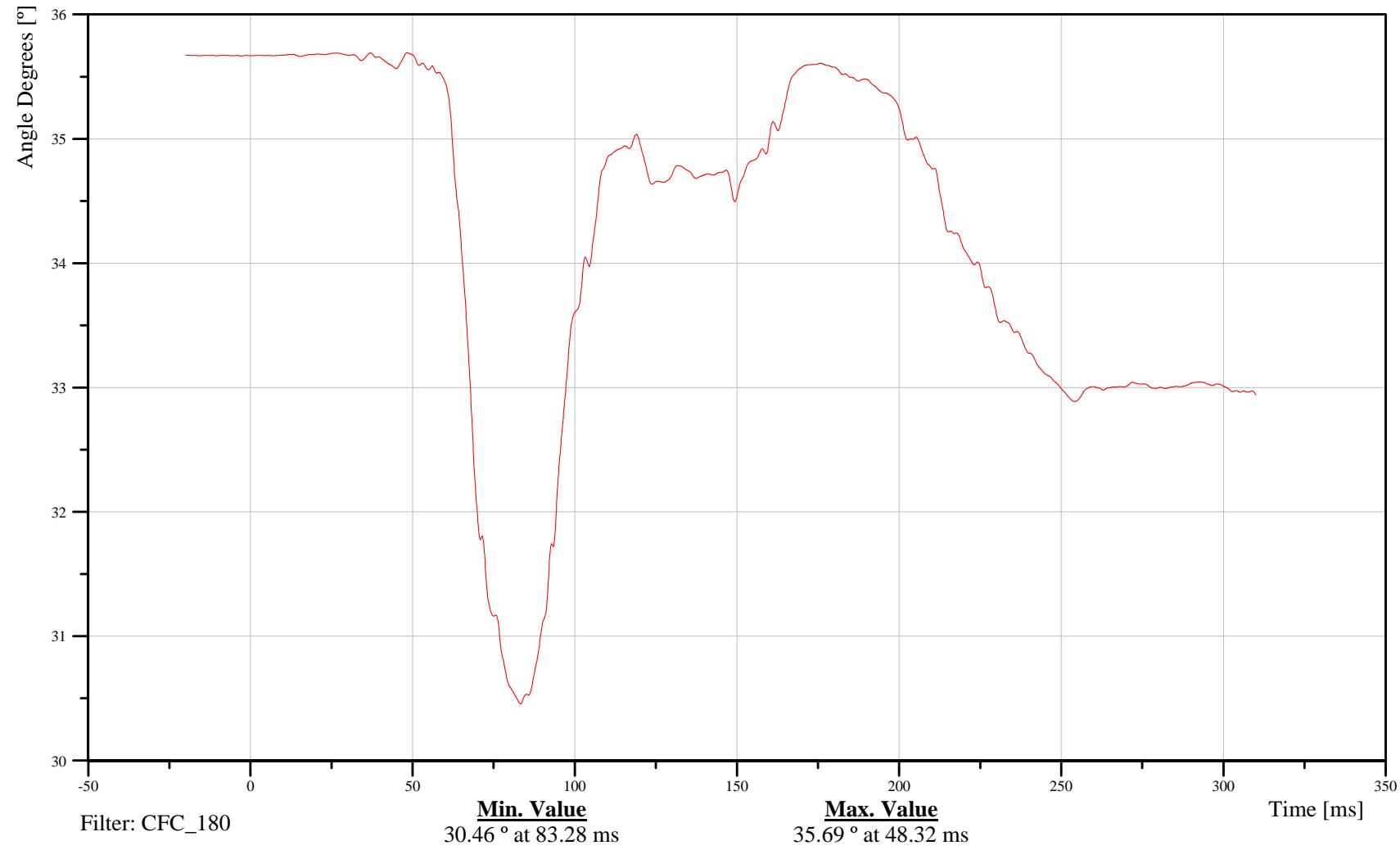
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Abdomen DGSP Right Yaw

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDORL00THANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





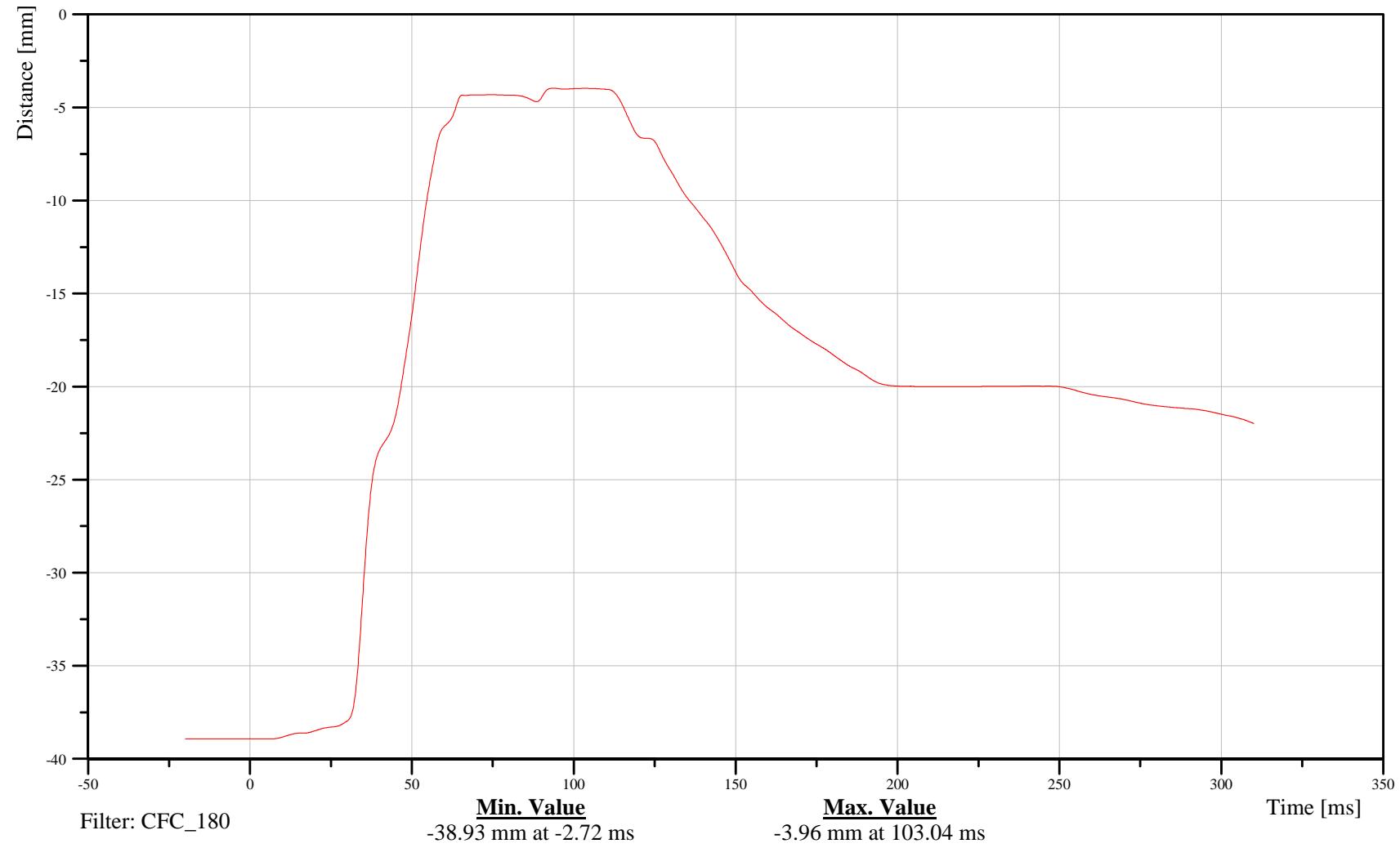
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Abdomen DGSP Left Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDOLL00THDS0C

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Abdomen DGSP Left Pitch

Date: 11/17/2010  
Time: 14:40

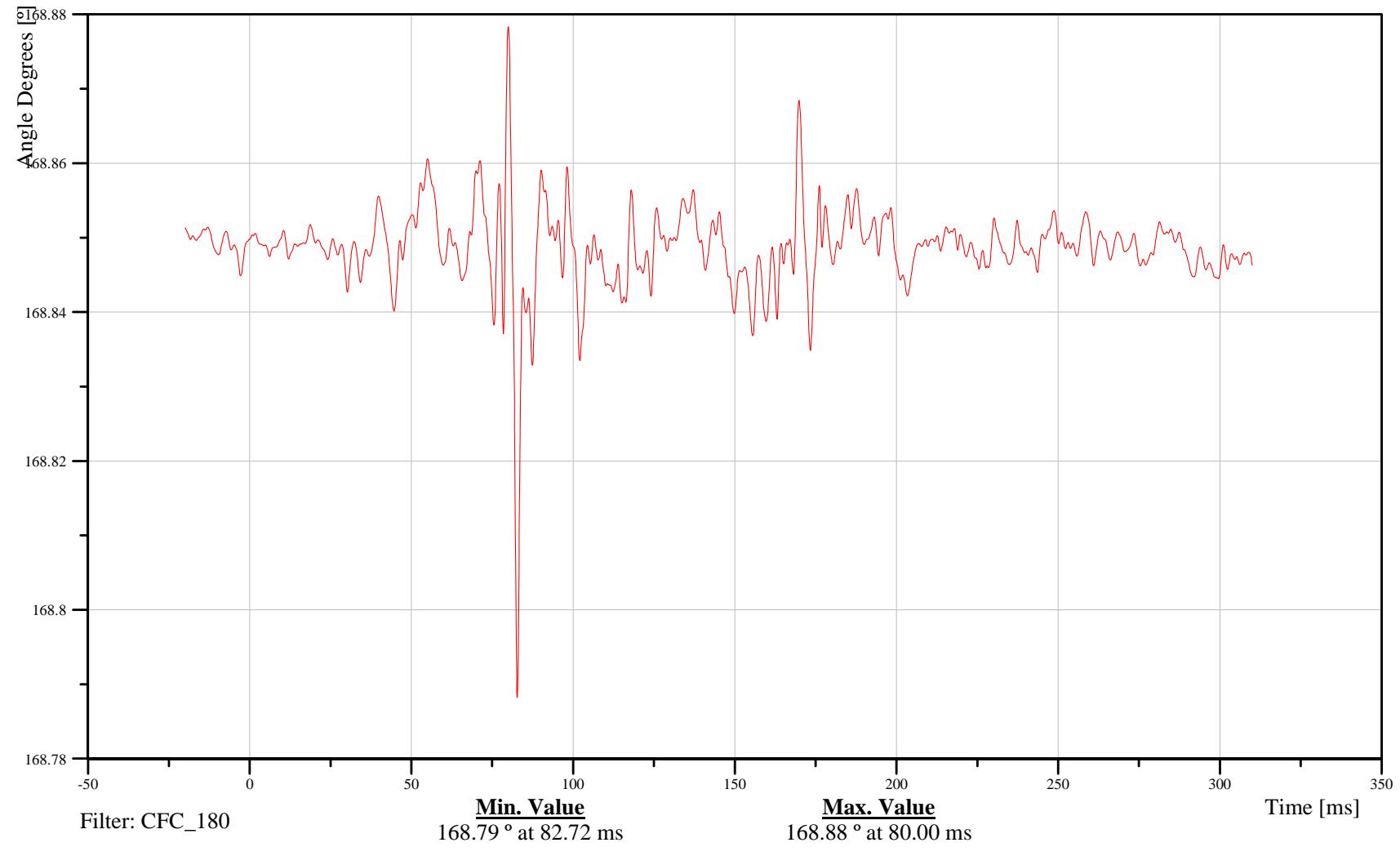
Customer: VRTC

21ABDOLL00THANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-214

101116





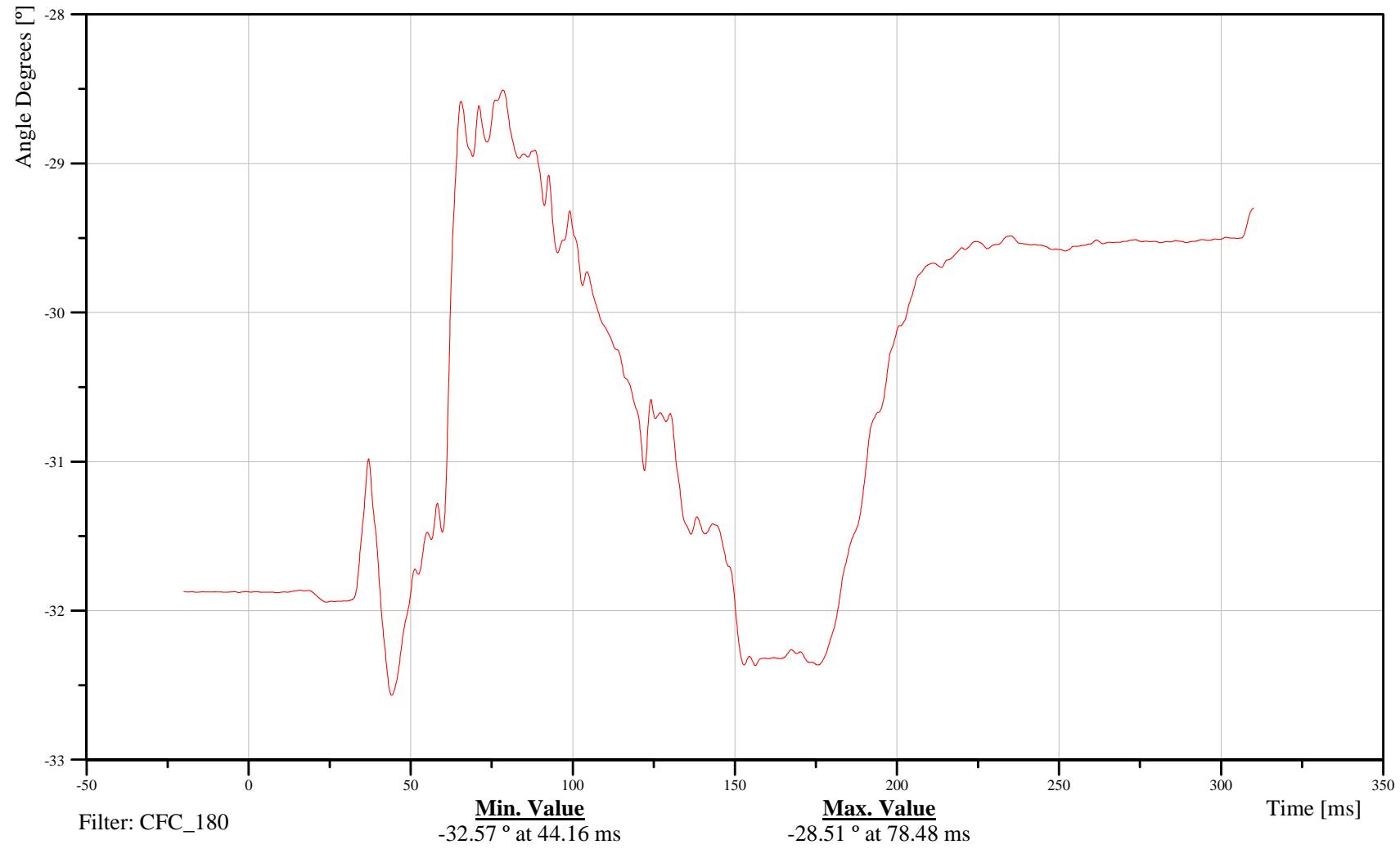
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Lower Abdomen DGSP Left Yaw

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDOLL00THANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T6 Mid Spine X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

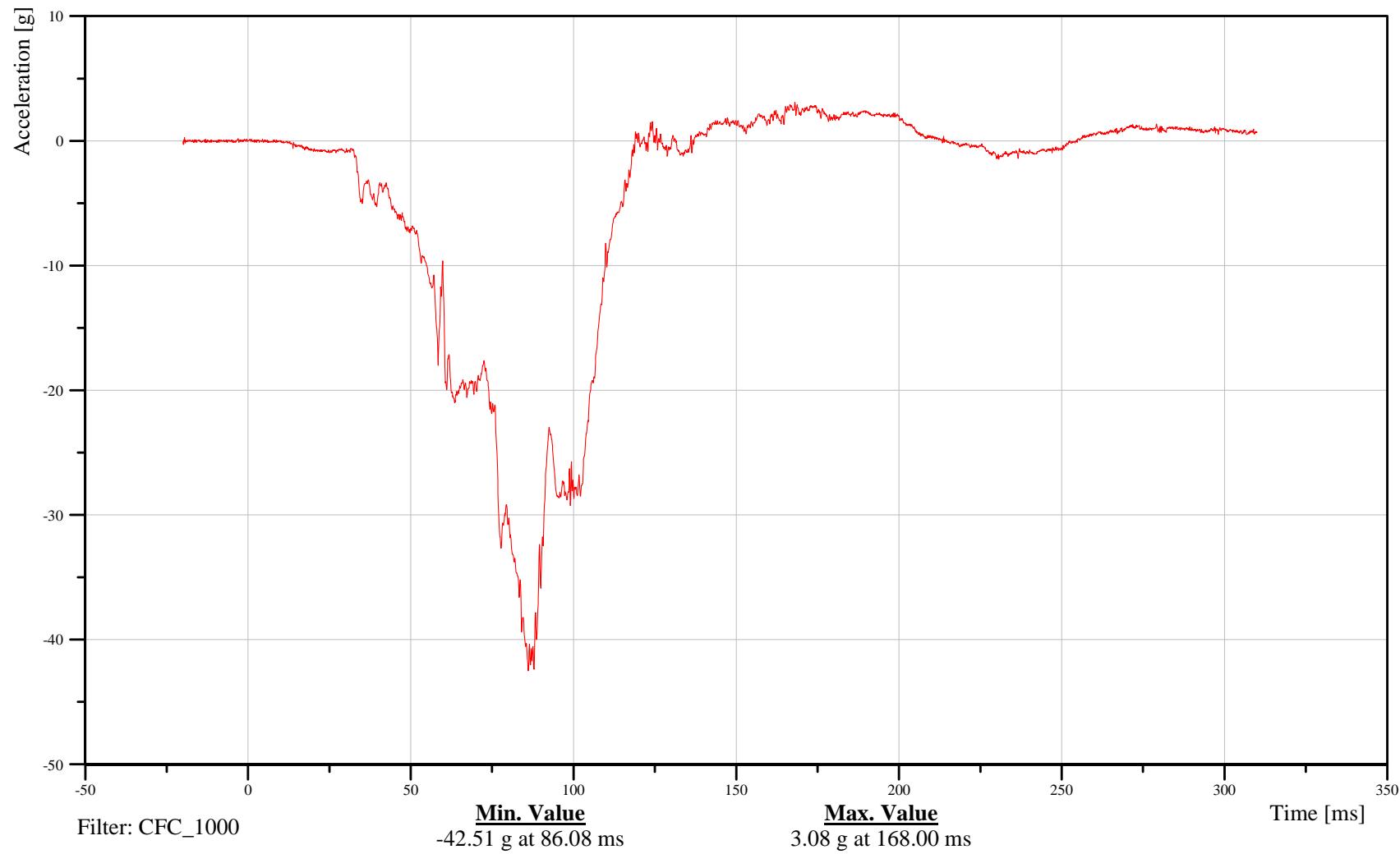
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINMI00THACXA

B-216

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T6 Mid Spine Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

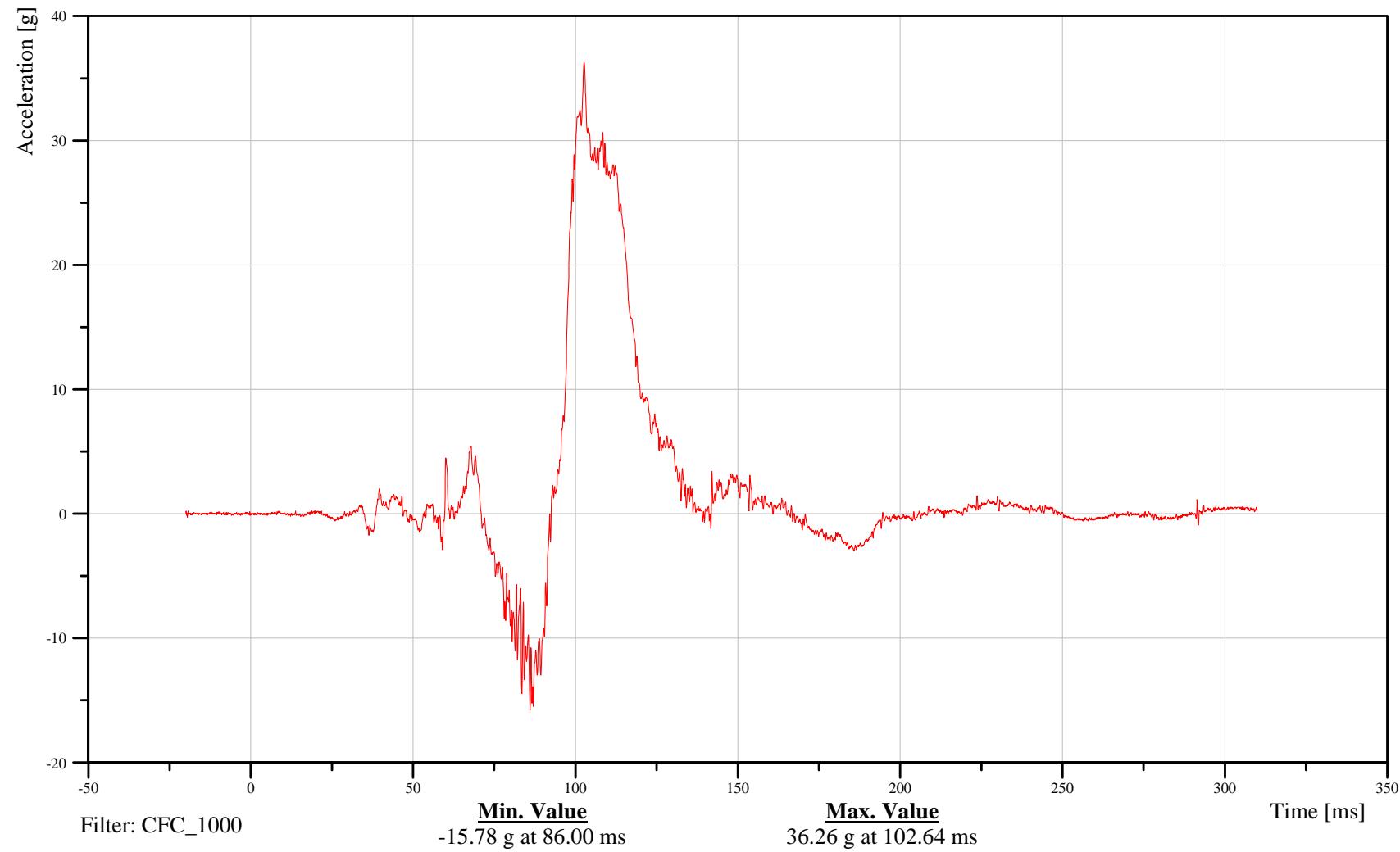
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINMI00THACYA

B-217

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T6 Mid Spine Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

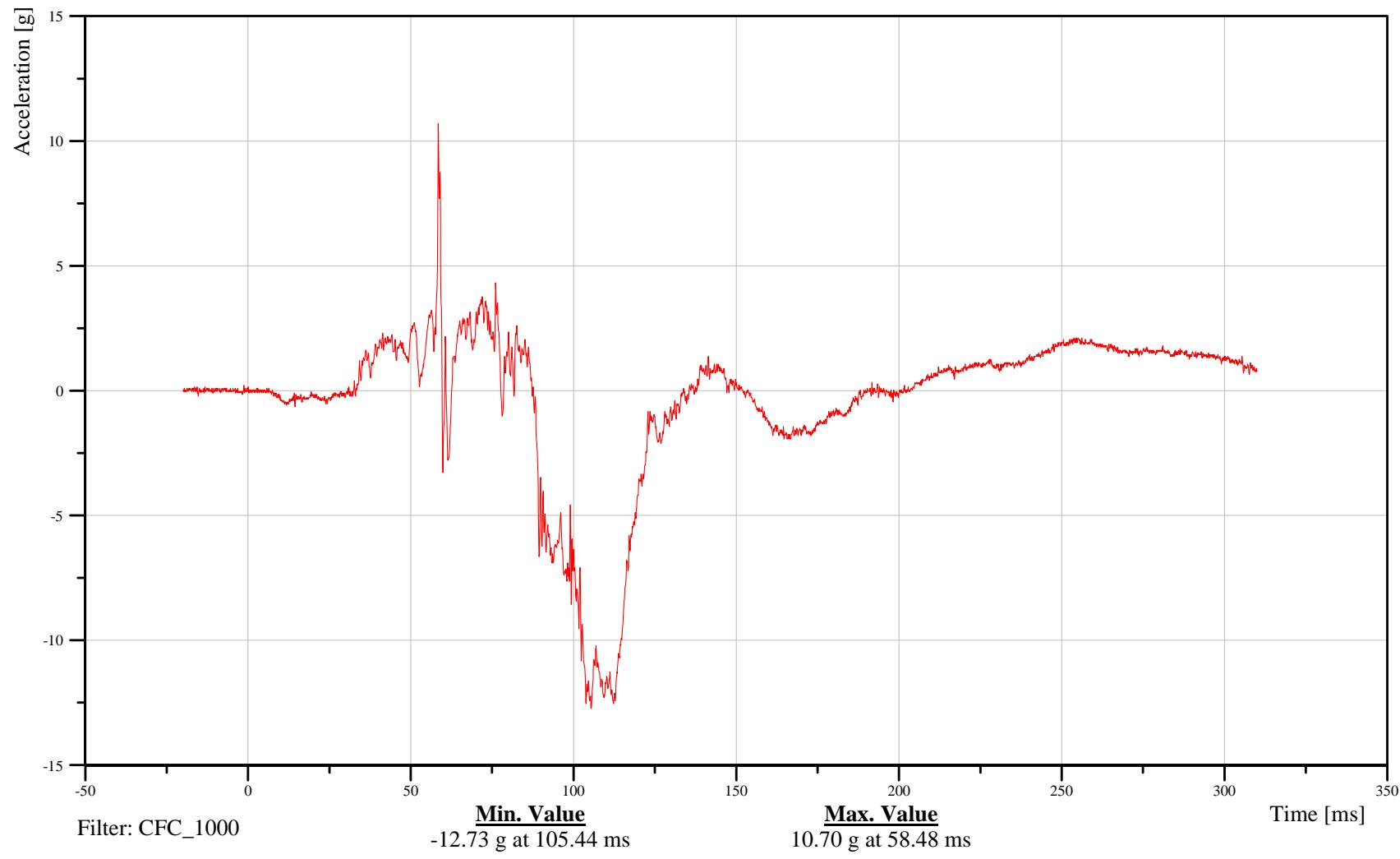
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINMI00THACZA

B-218

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T6 Mid Spine Resultant Acceleration

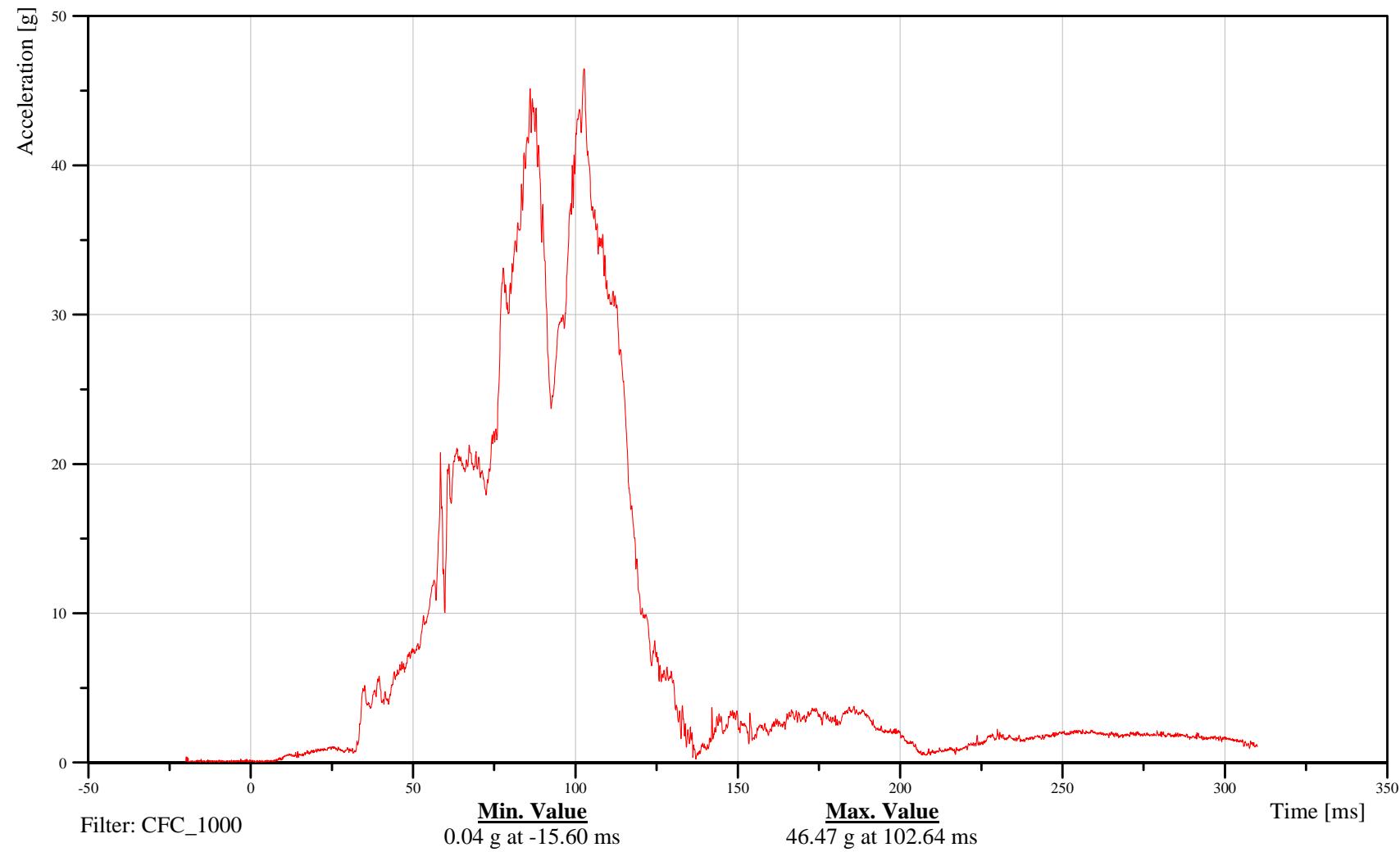
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINMI00THACRA

B-219  
101116





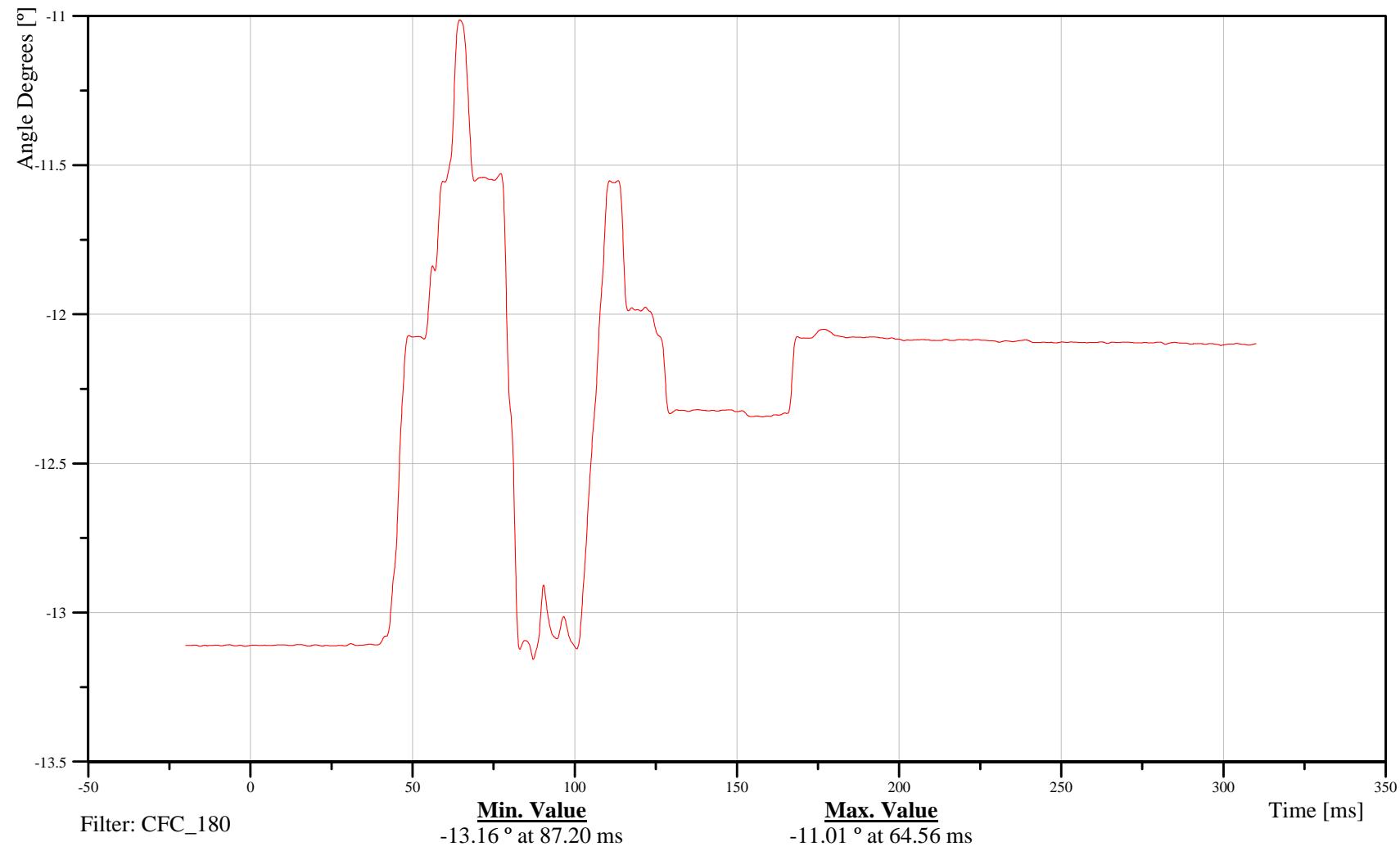
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Base Upper Left Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILU01THAN0C





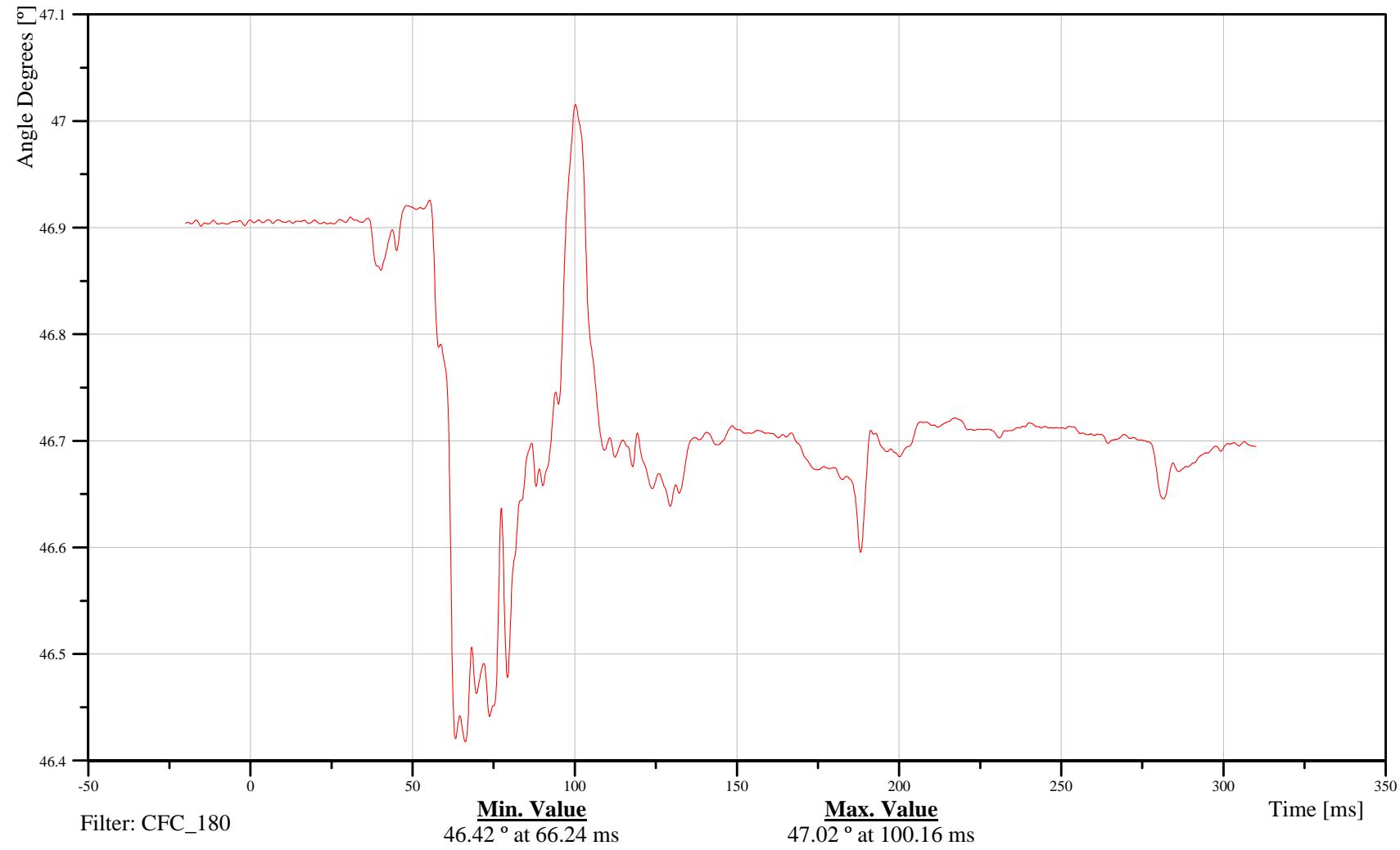
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Mid Upper Left Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILU02THAN0C





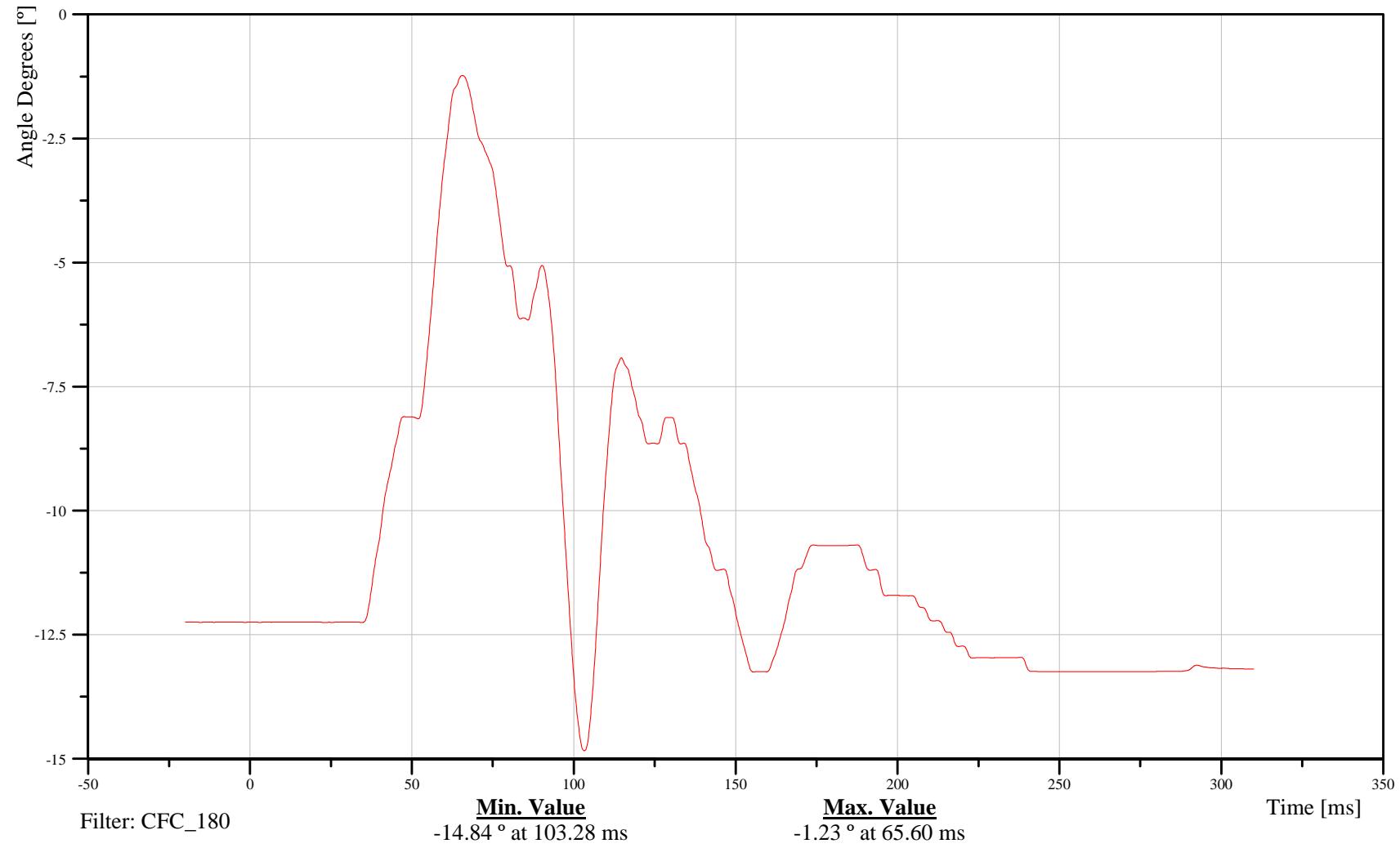
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Elbow Upper Left Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILU03THAN0C





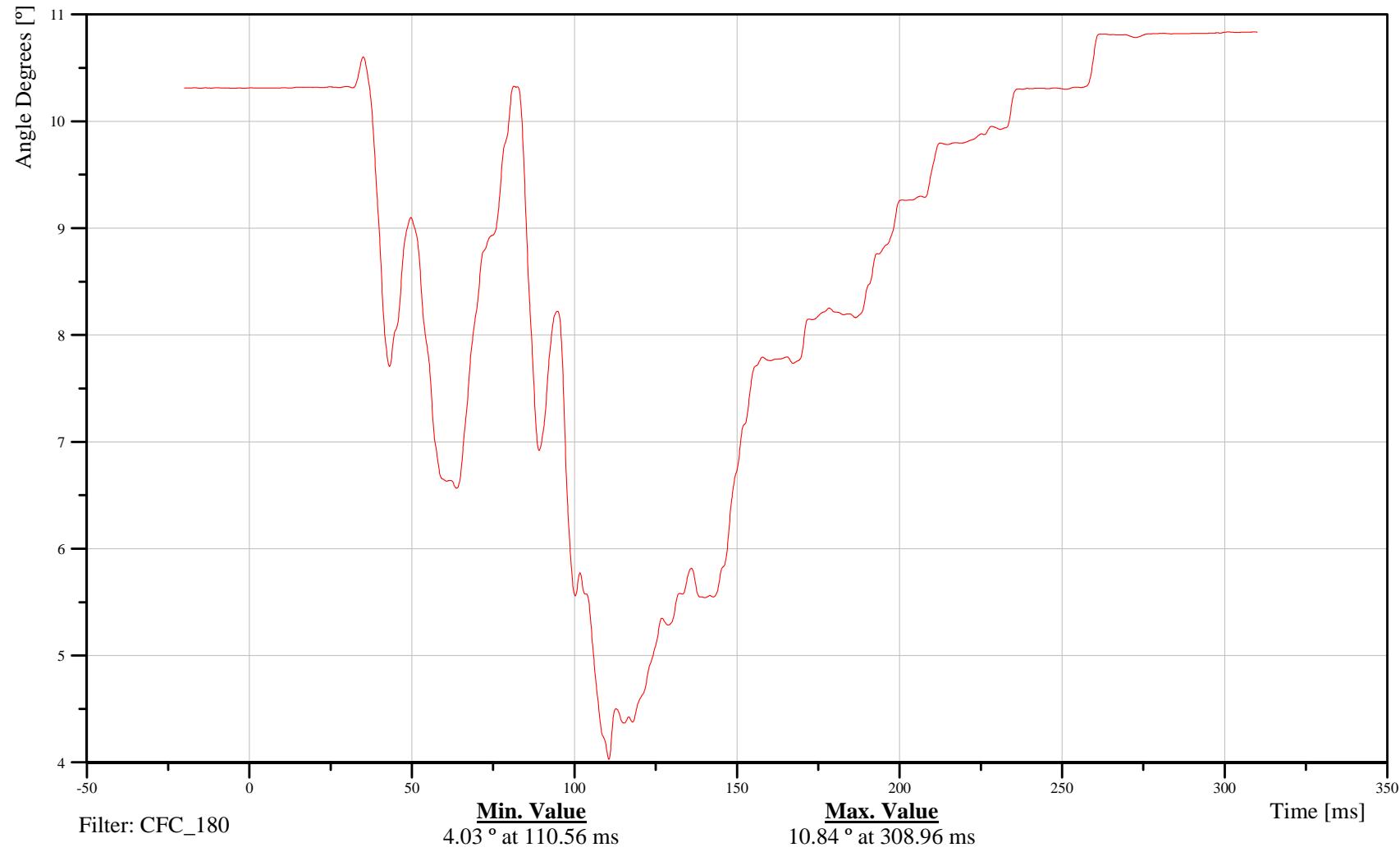
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Base Upper Right Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRIRU01THAN0C



B-223

101116



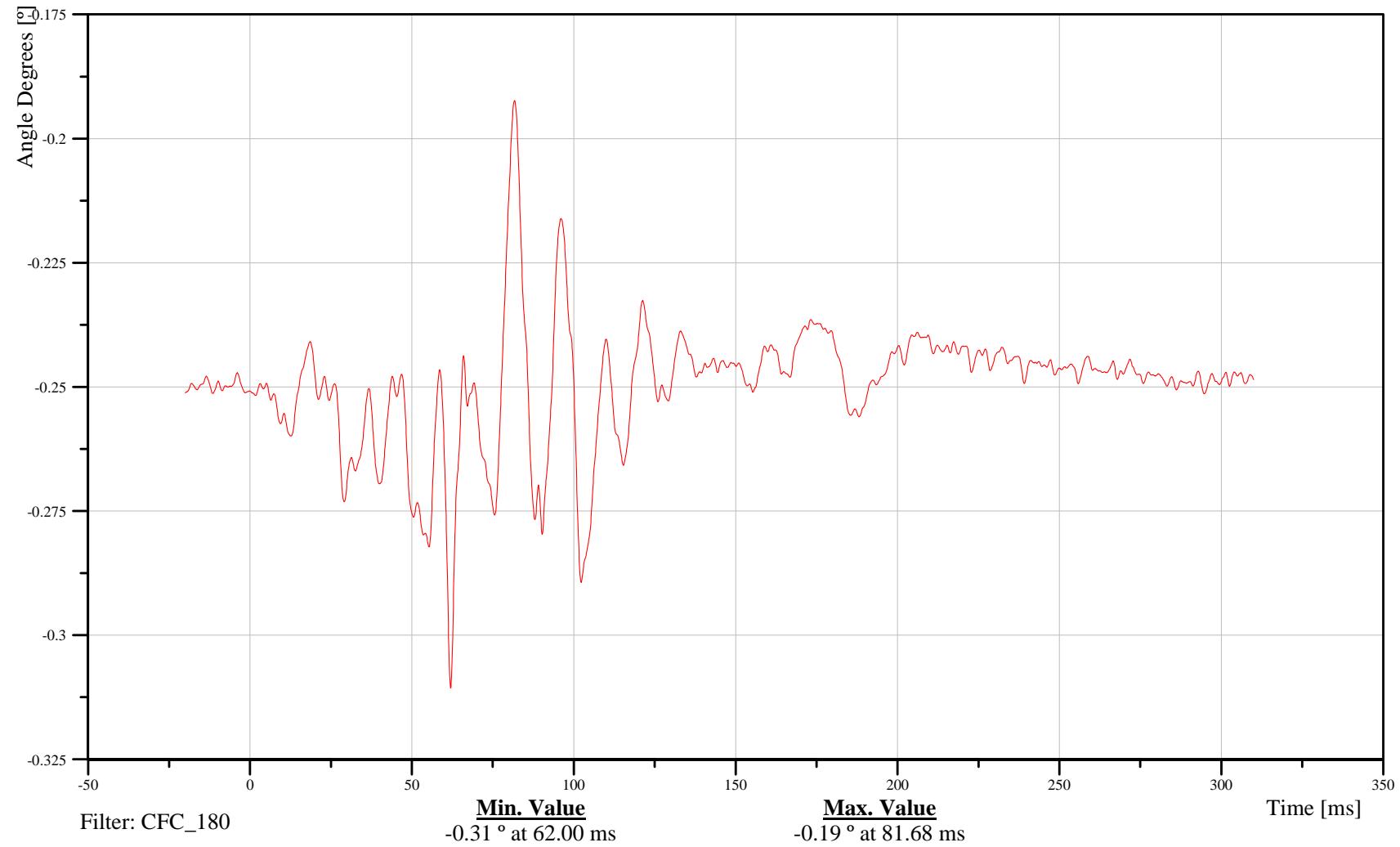
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Mid Upper Right Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRIRU02THAN0C

TRC Inc. Test Lab: CTF  
Test Number: 101116





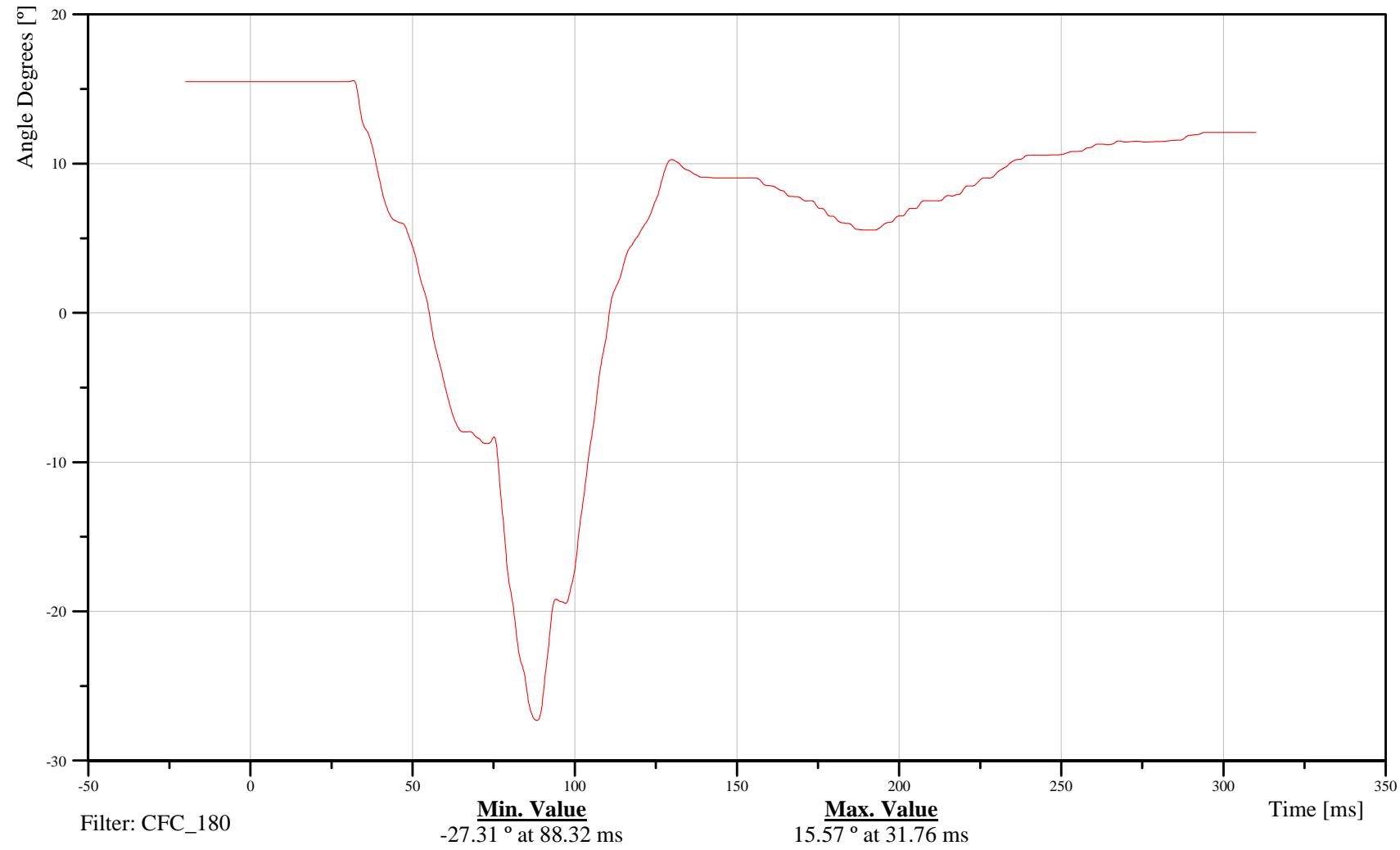
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Elbow Upper Right Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRIRU03THAN0C





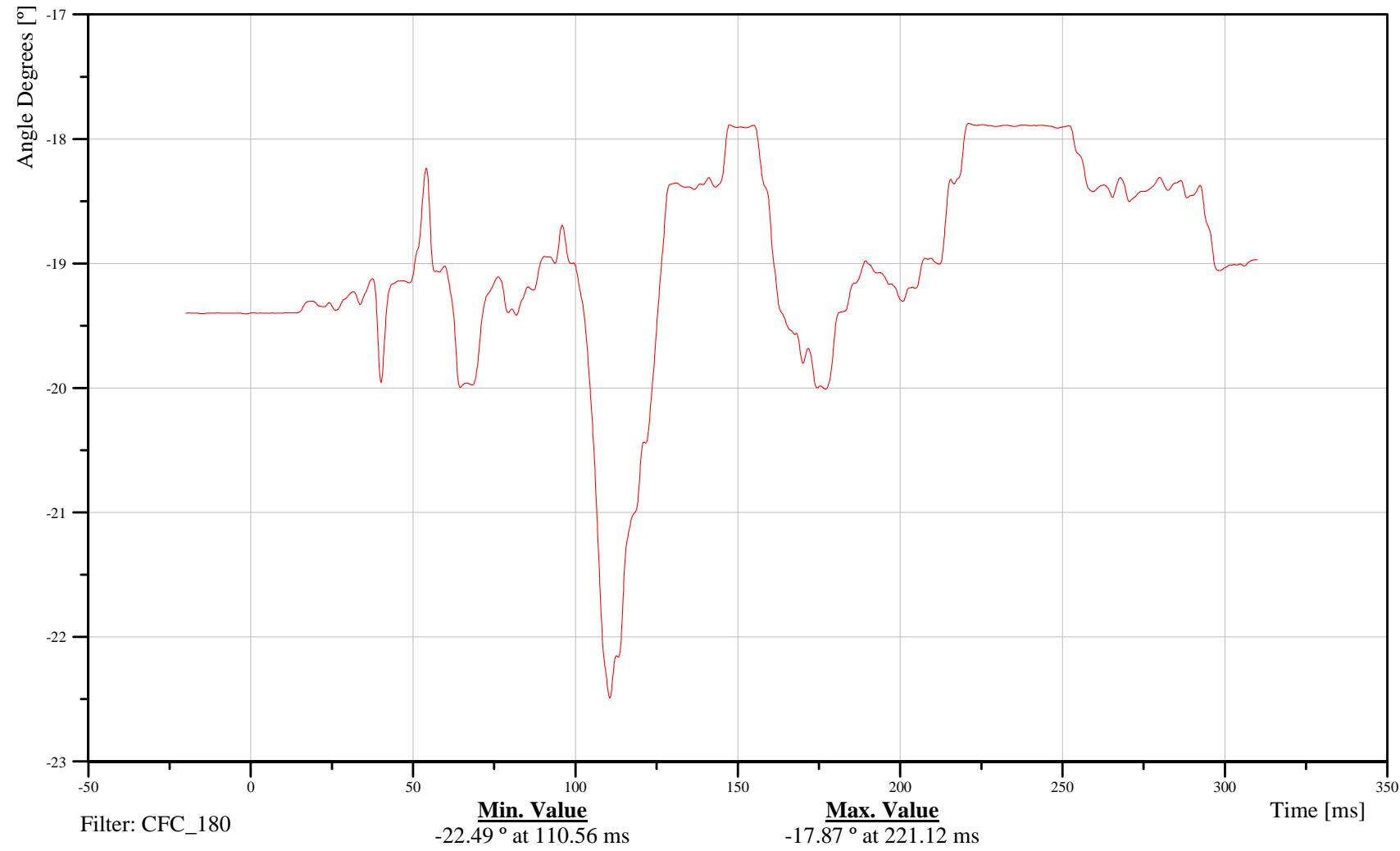
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Base Lower Left Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRILL01THAN0C

TRC Inc. Test Lab: CTF  
Test Number: 101116





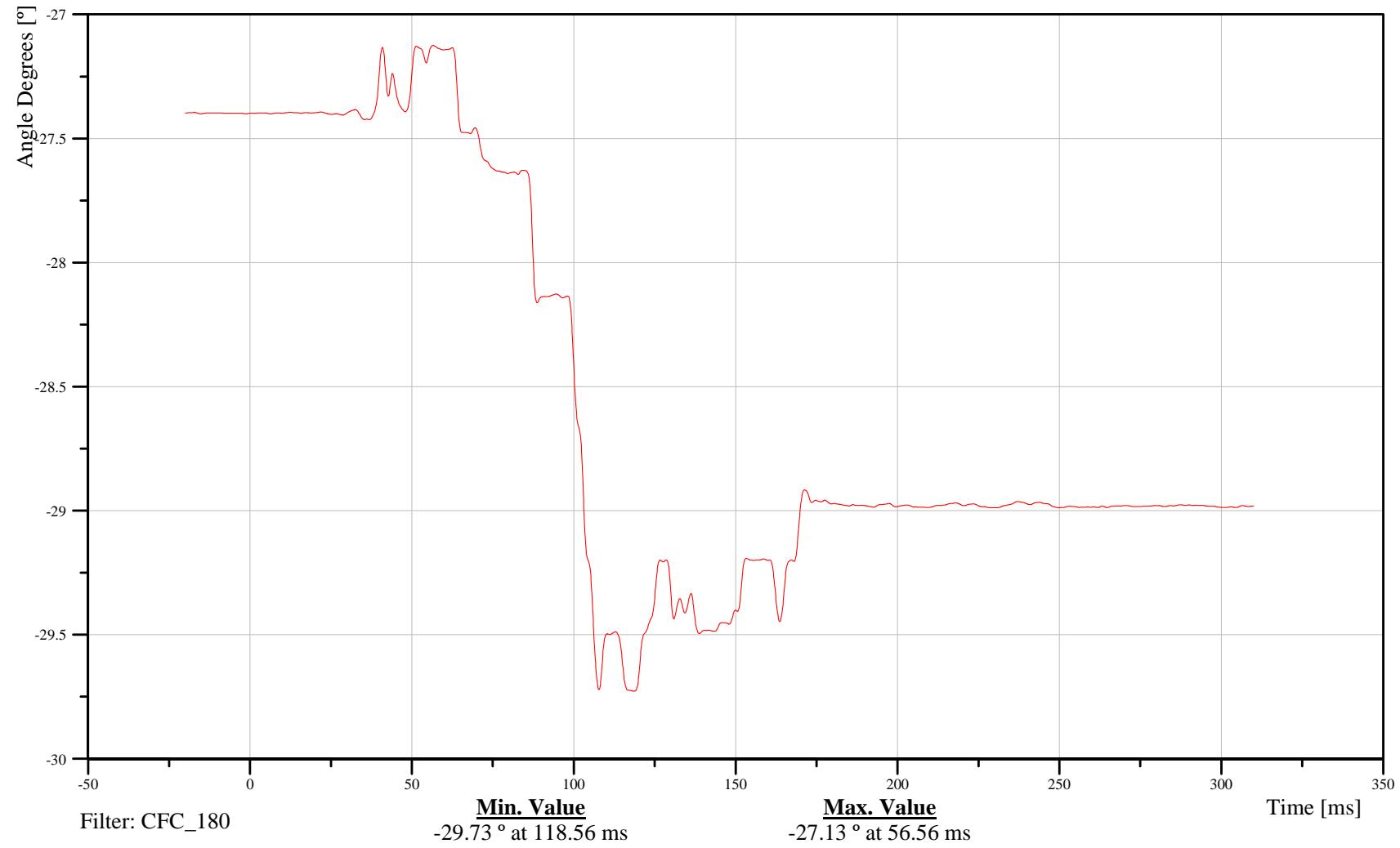
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Mid Lower Left Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILL02THAN0C





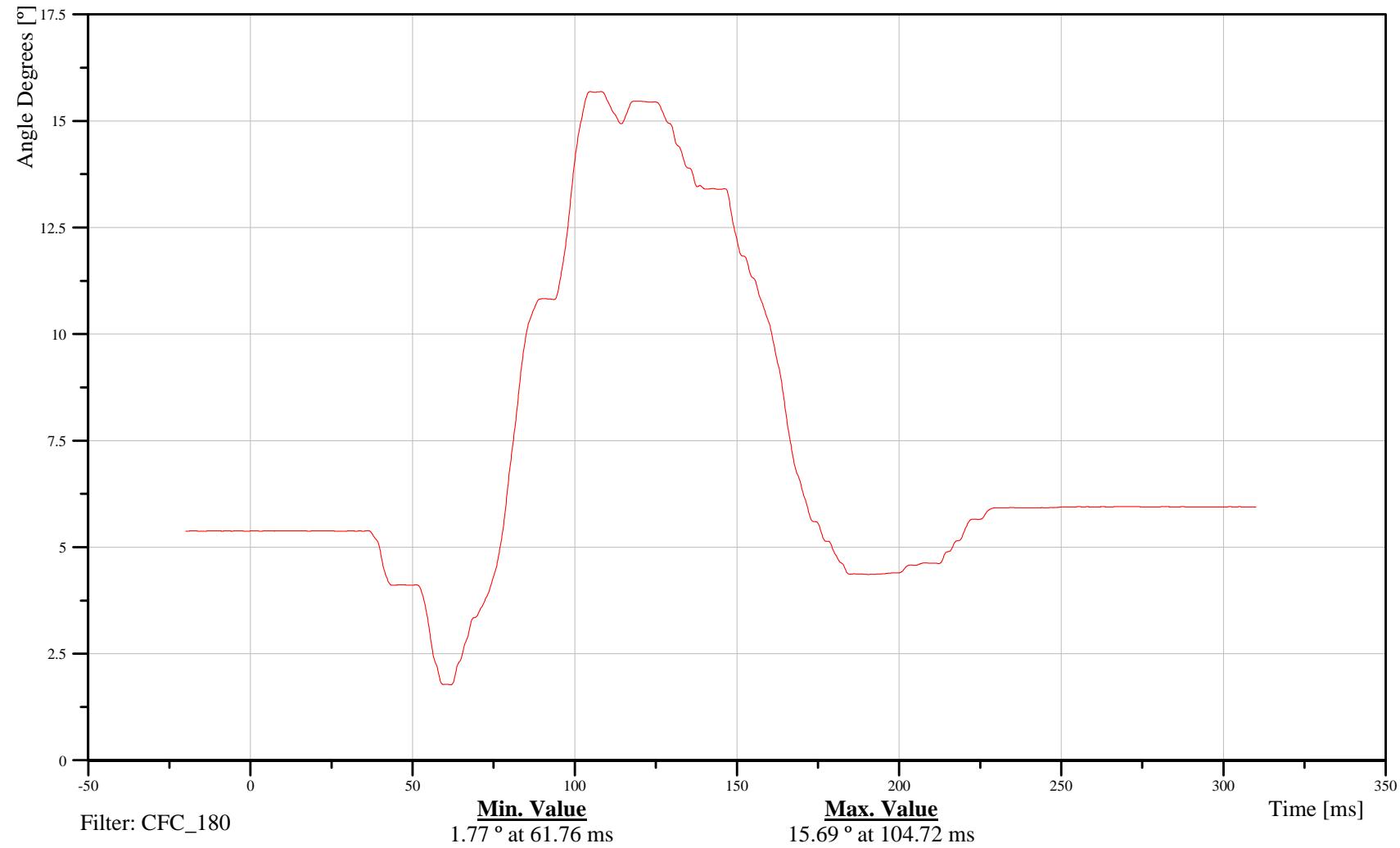
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Elbow Lower Left Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILL03THAN0C





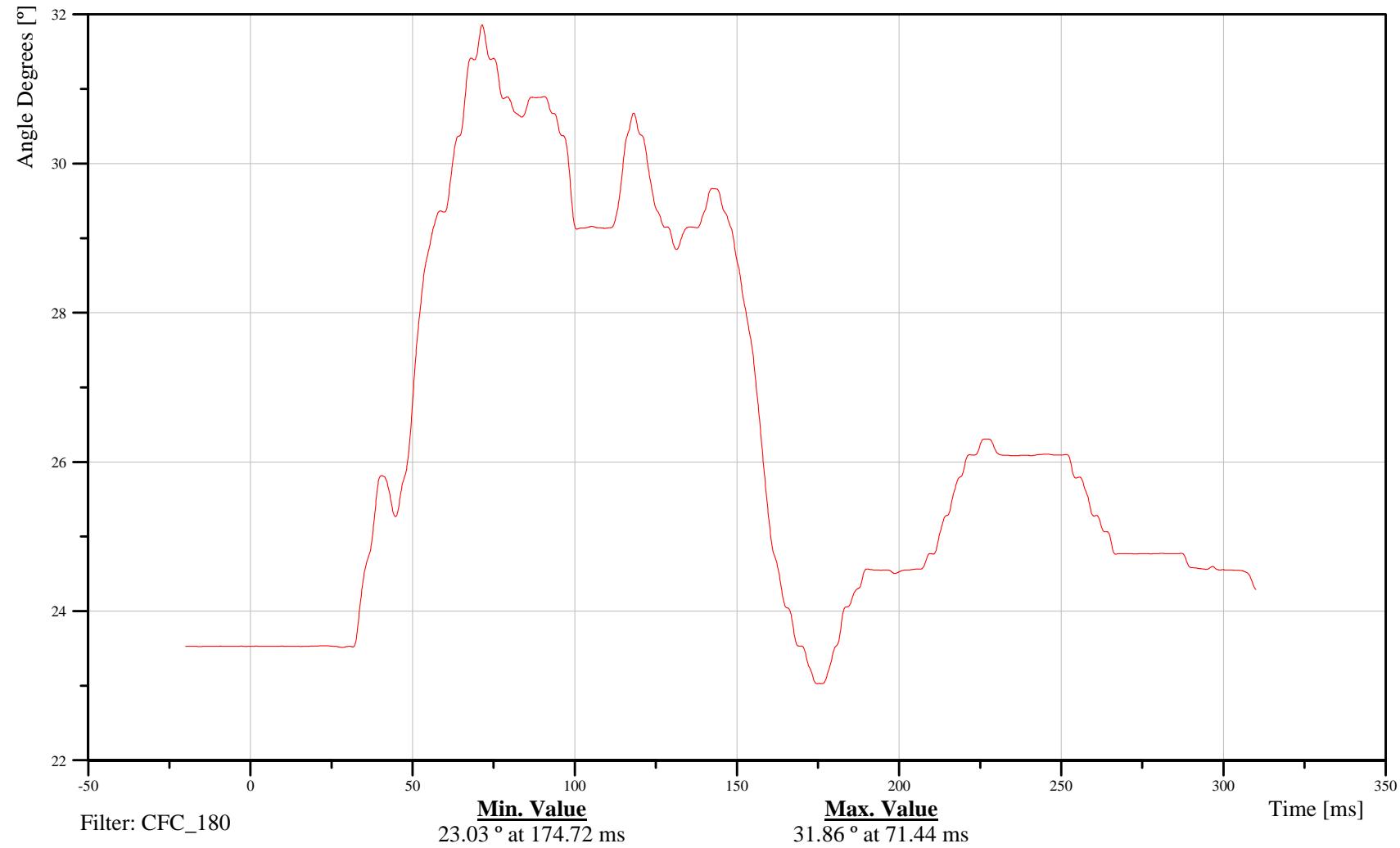
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Base Lower Right Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRIRL01THAN0C





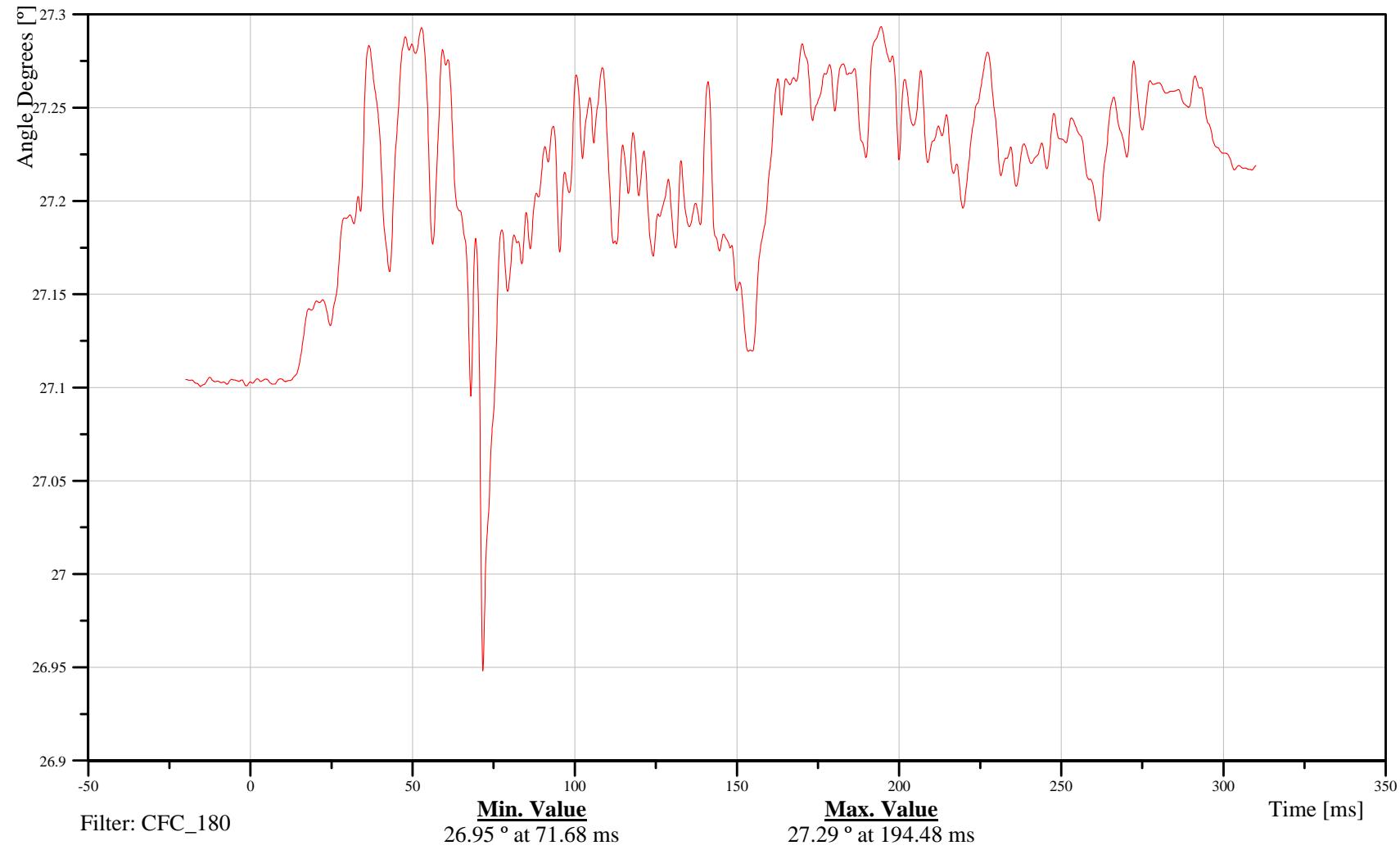
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Mid Lower Right Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRIRL02THAN0C





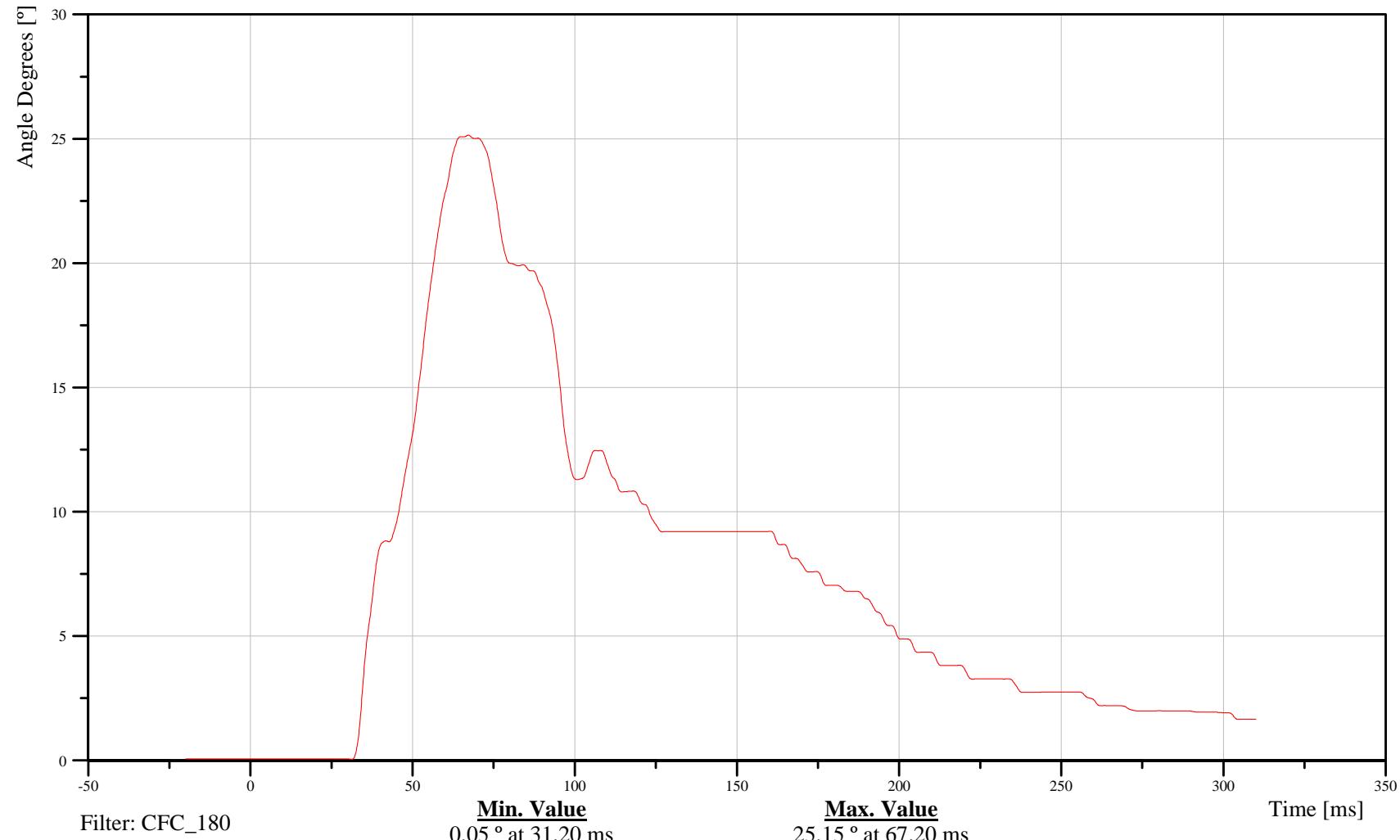
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver CRUX T016 Elbow Lower Right Thorax Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRIRL03THAN0C



B-231

101116



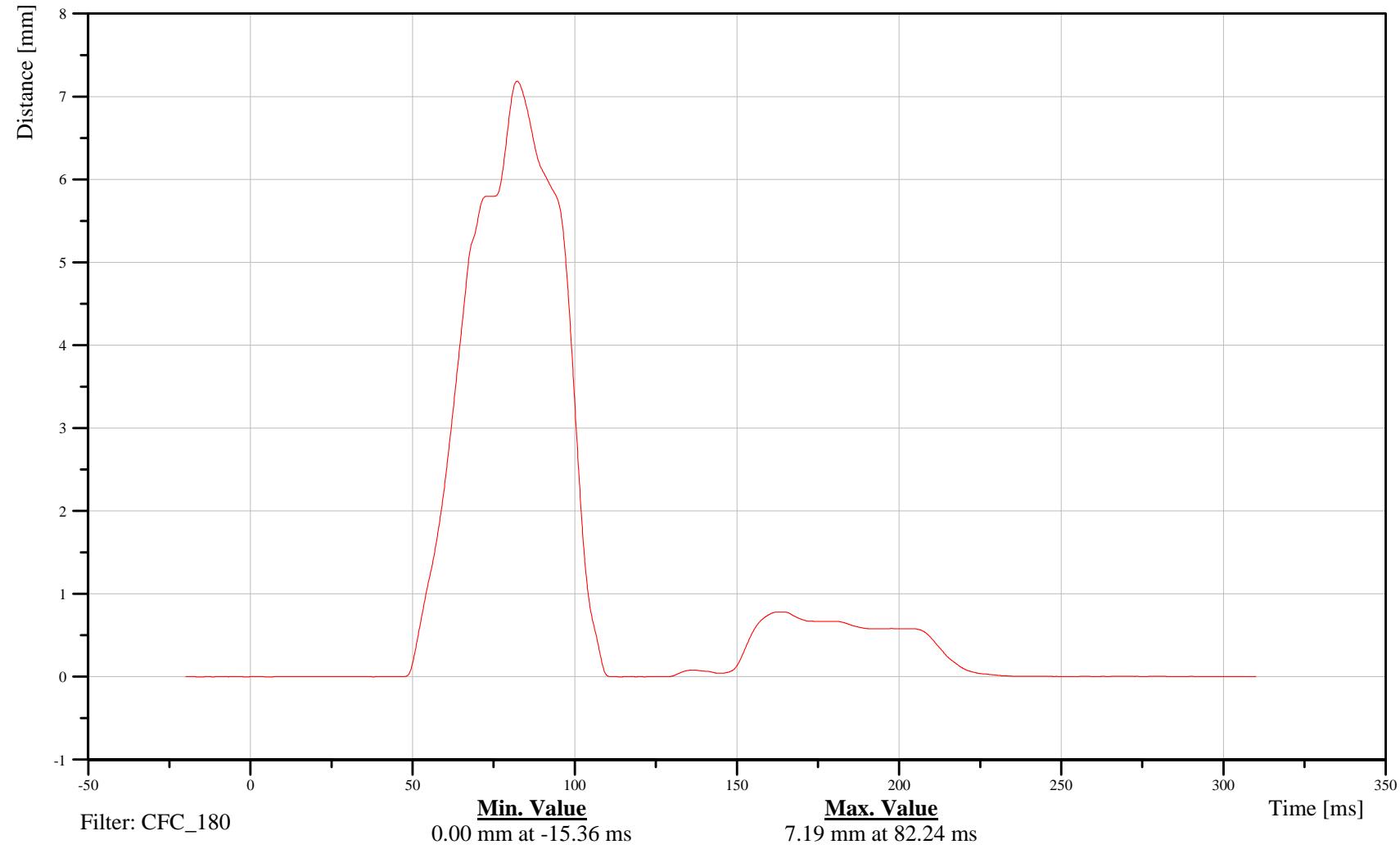
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Upper Abdomen String Pot

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDOUP00THDS0C

TRC Inc. Test Lab: CTF  
Test Number: 101116





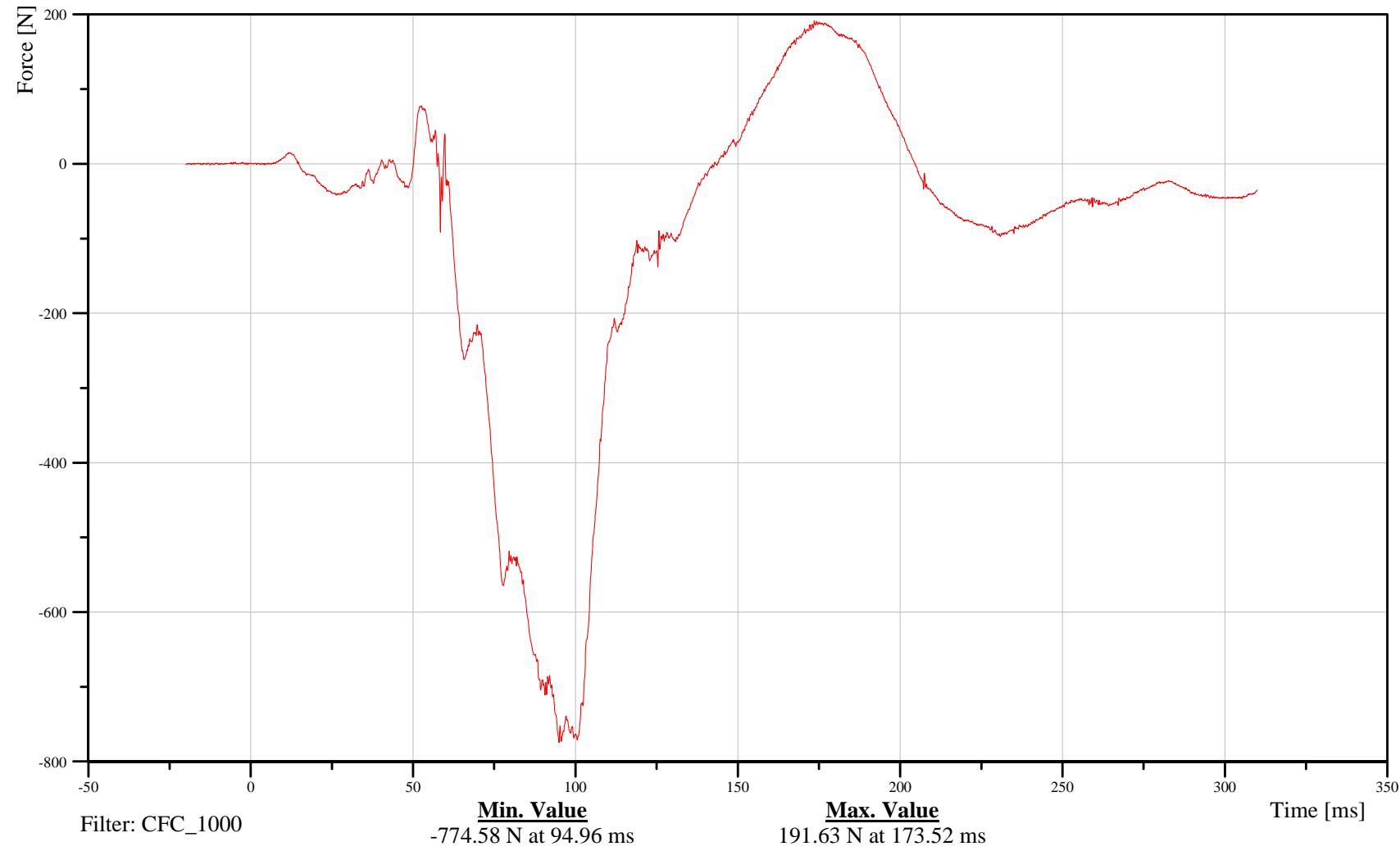
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T12 Thoracic Spine X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21THSP1200THFOXA





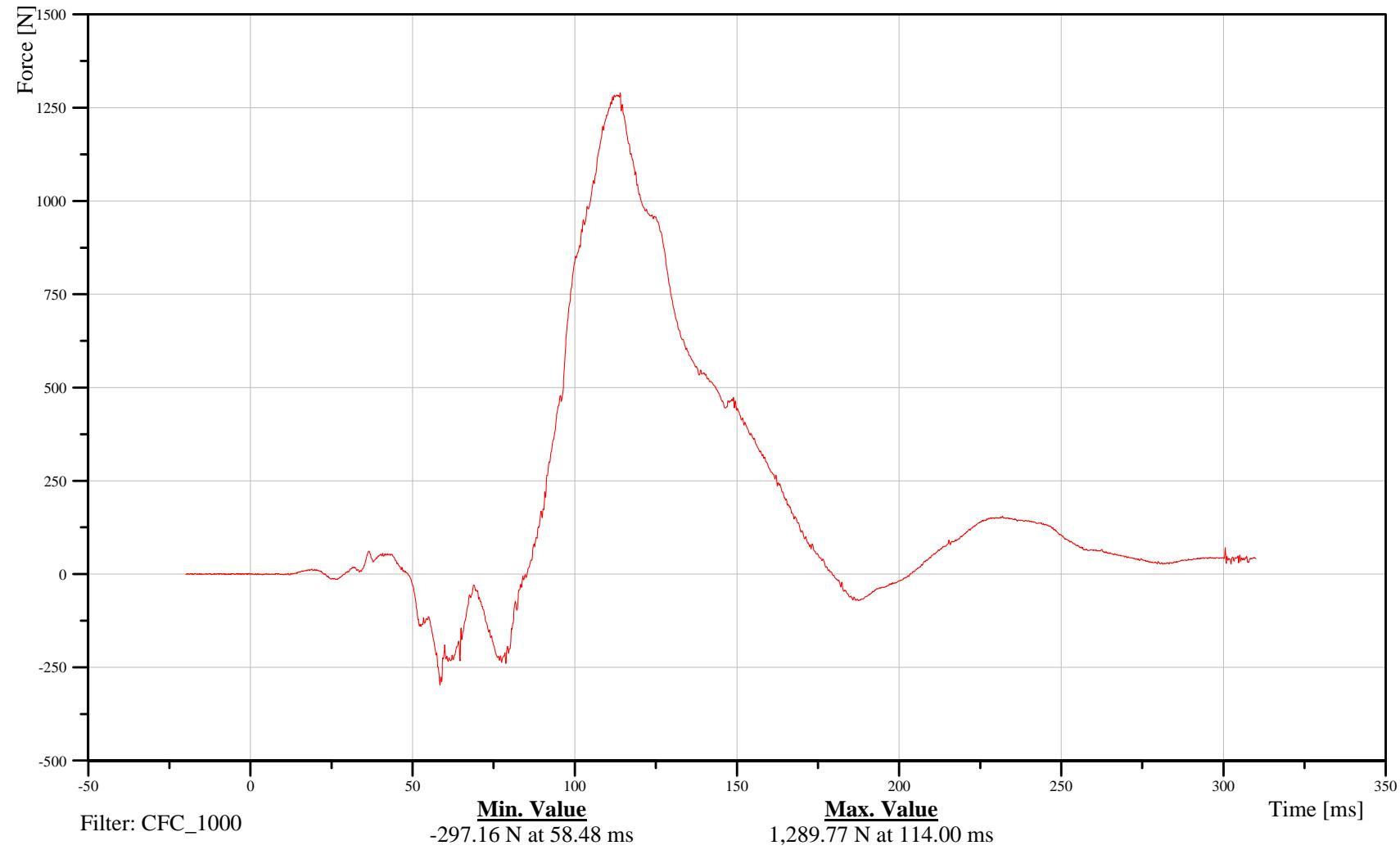
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T12 Thoracic Spine Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21THSP1200THFOYA





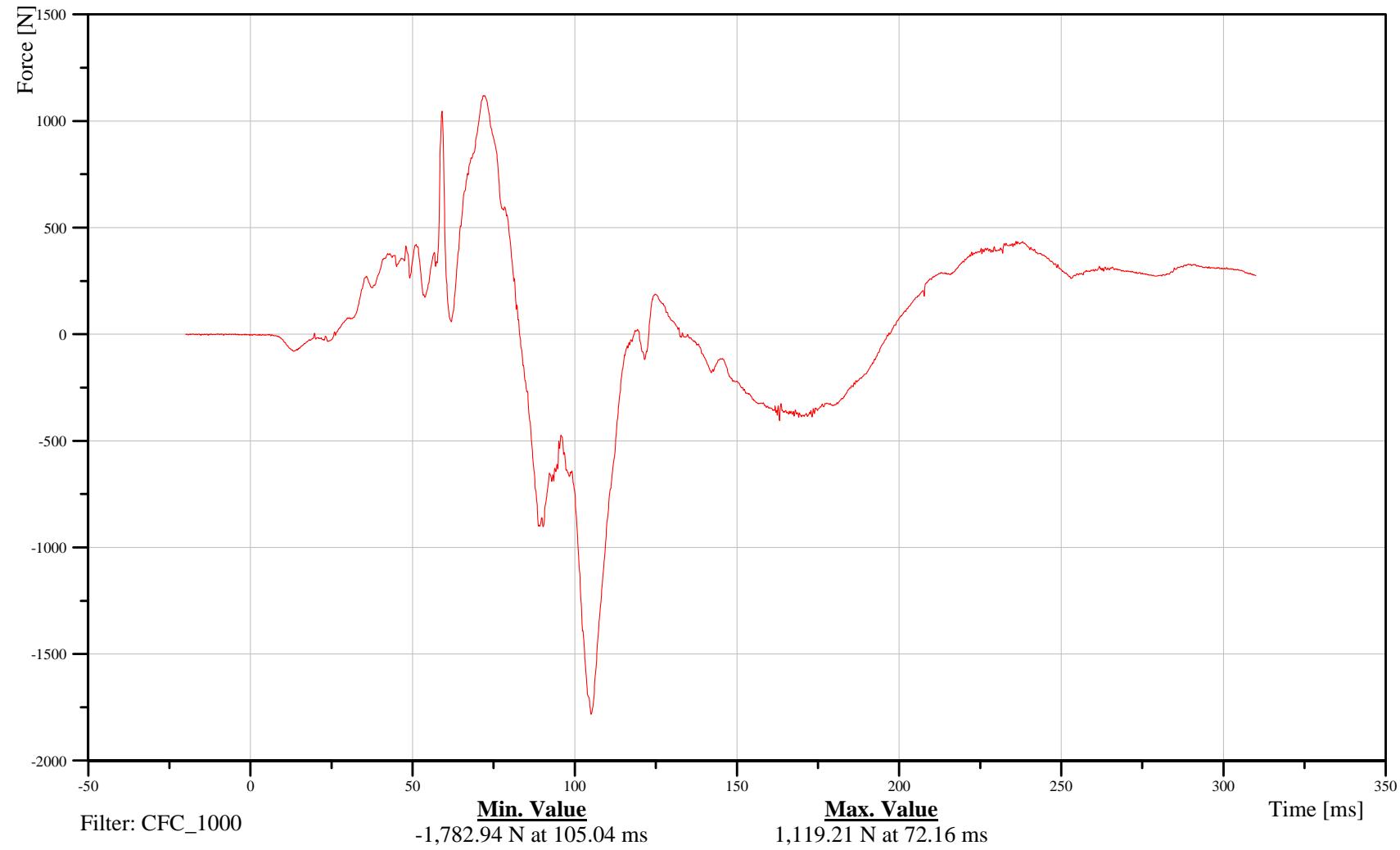
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T12 Thoracic Spine Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21THSP1200THFOZA





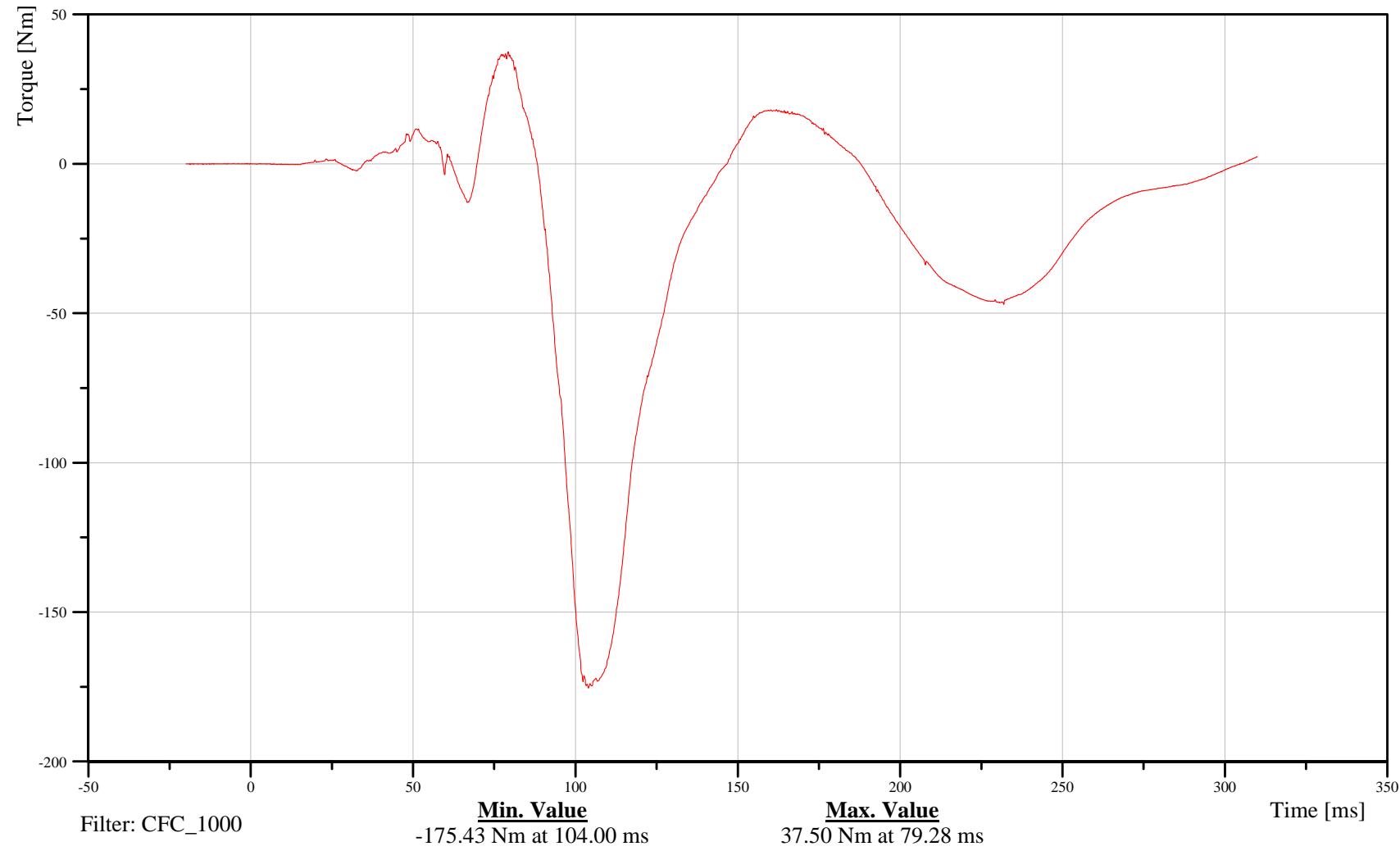
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T12 Thoracic Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21THSP12000HMOXA





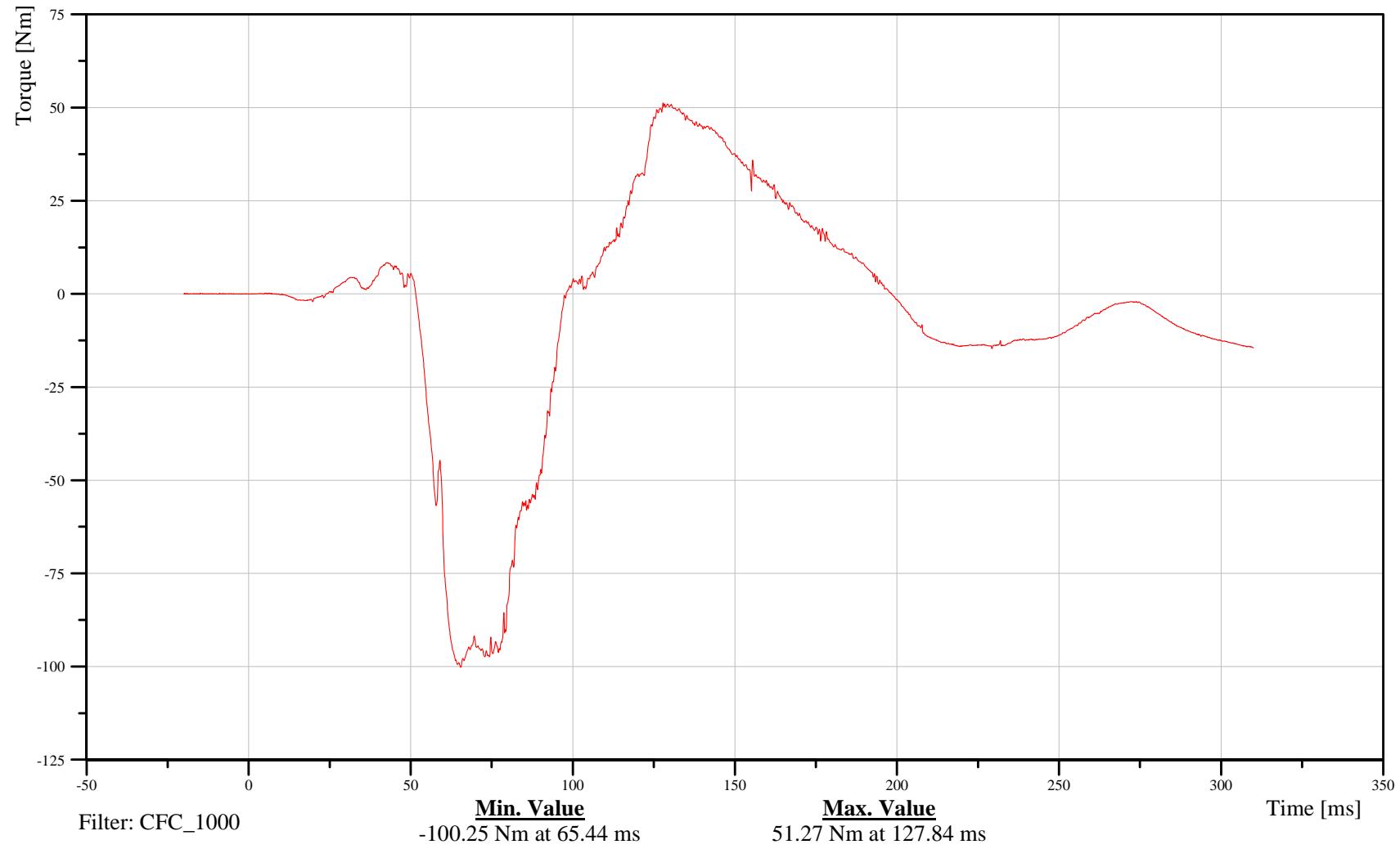
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T12 Thoracic Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21THSP12000HMOYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





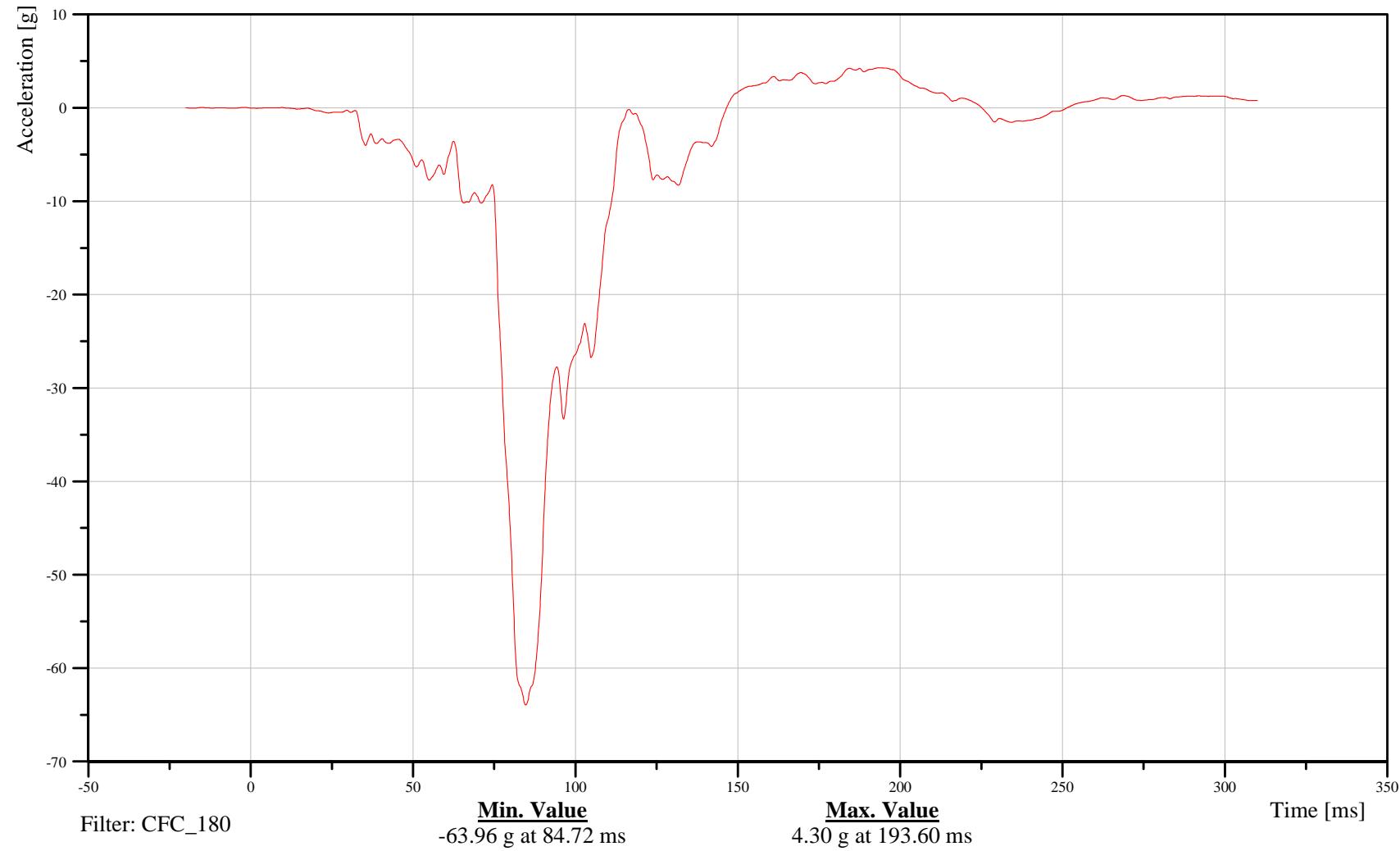
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T1 Upper Spine X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINUP00THACXC





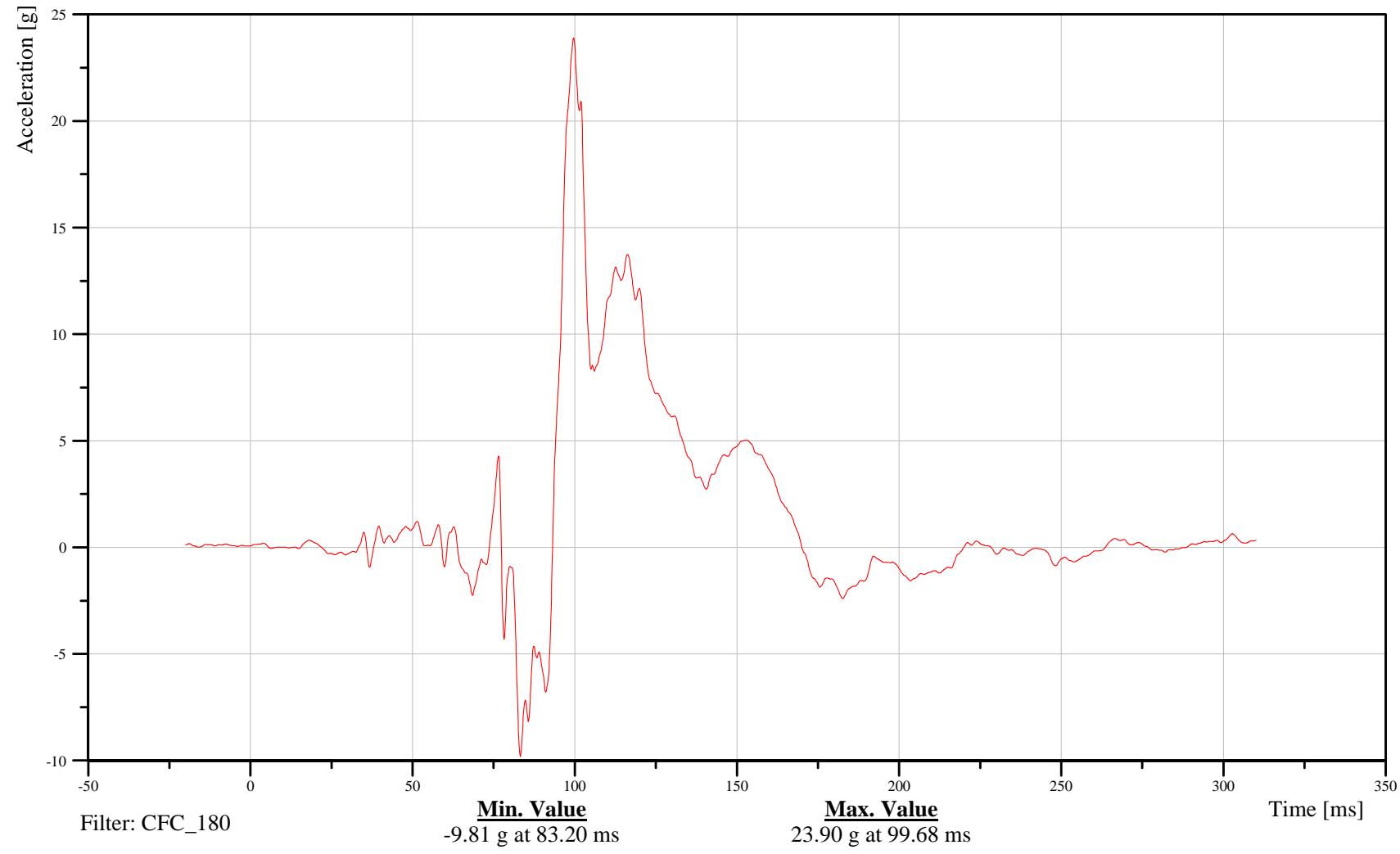
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T1 Upper Spine Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINUP00THACYC





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T1 Upper Spine Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

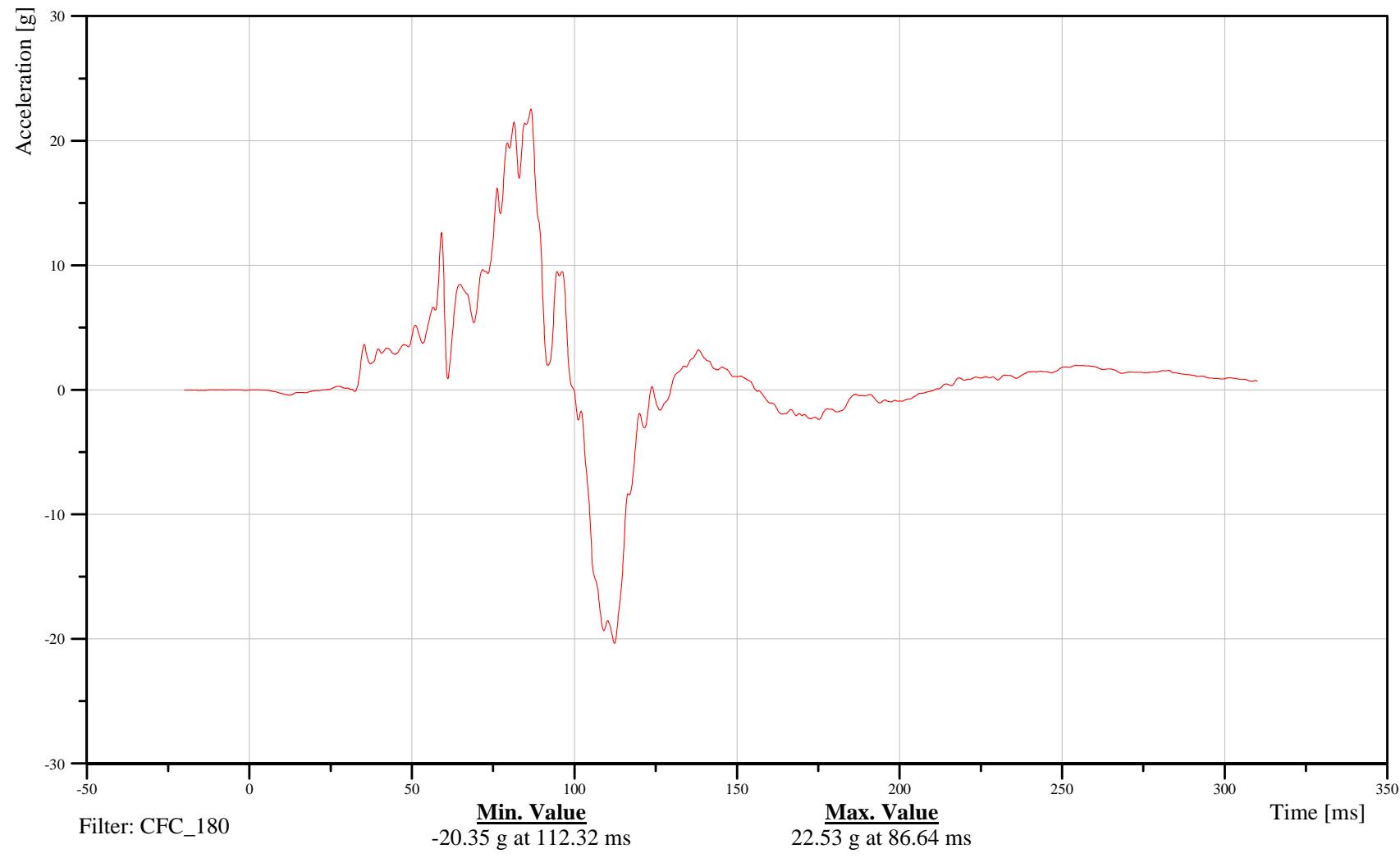
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINUP00THACZC

B-240

101116





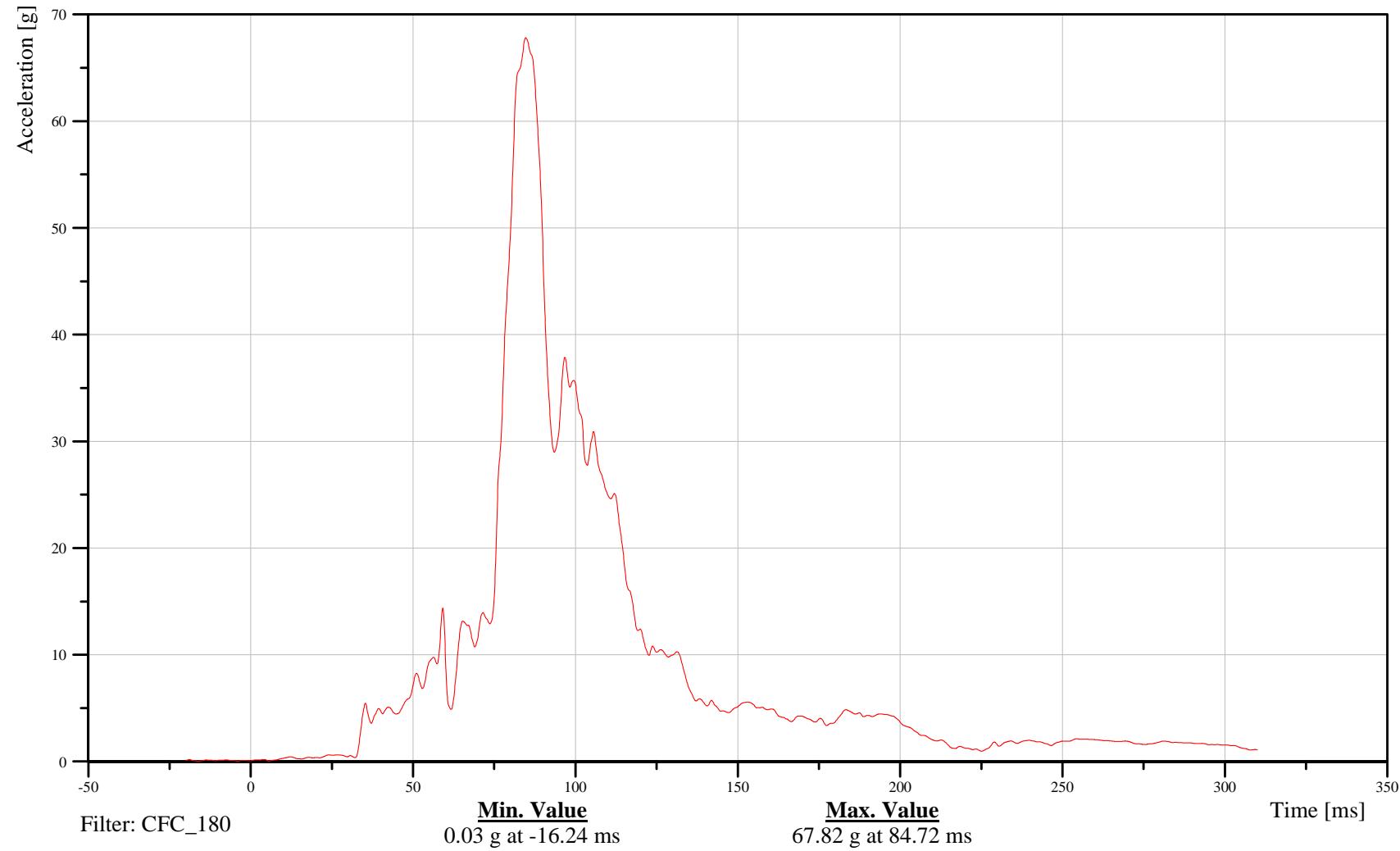
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver T1 Upper Spine Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21SPINUP00THACRC





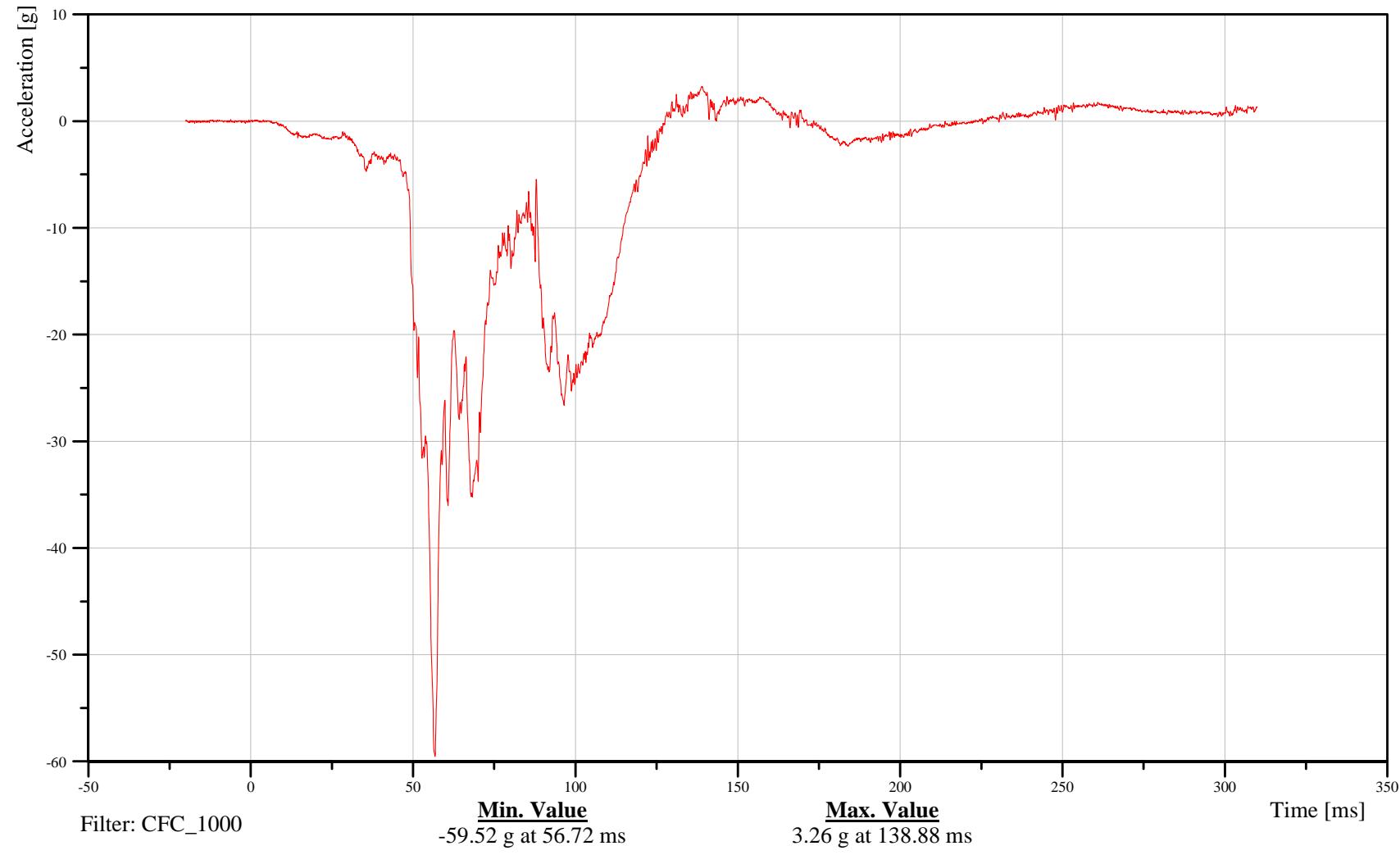
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21PELV0000THACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





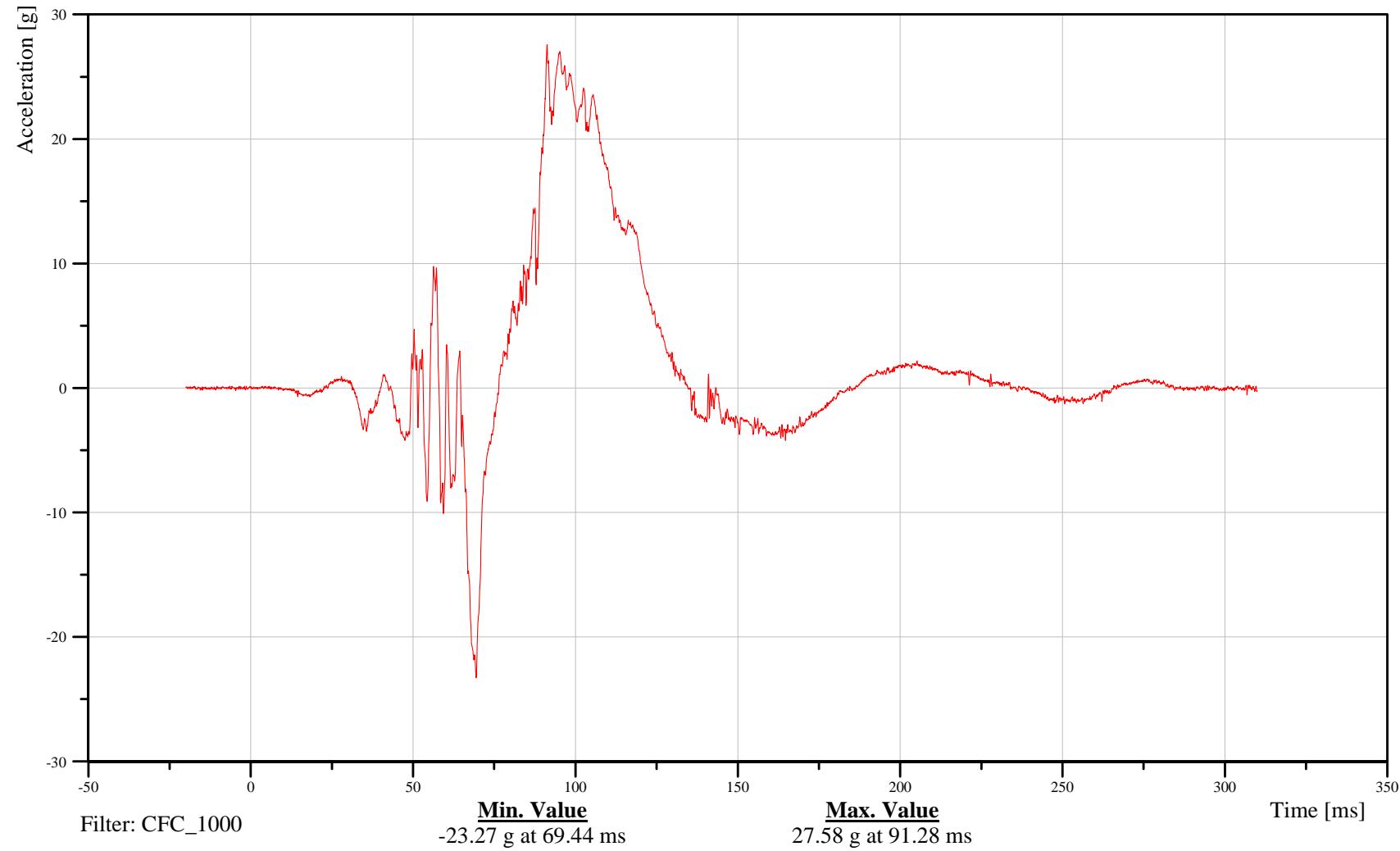
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21PELV0000THACYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

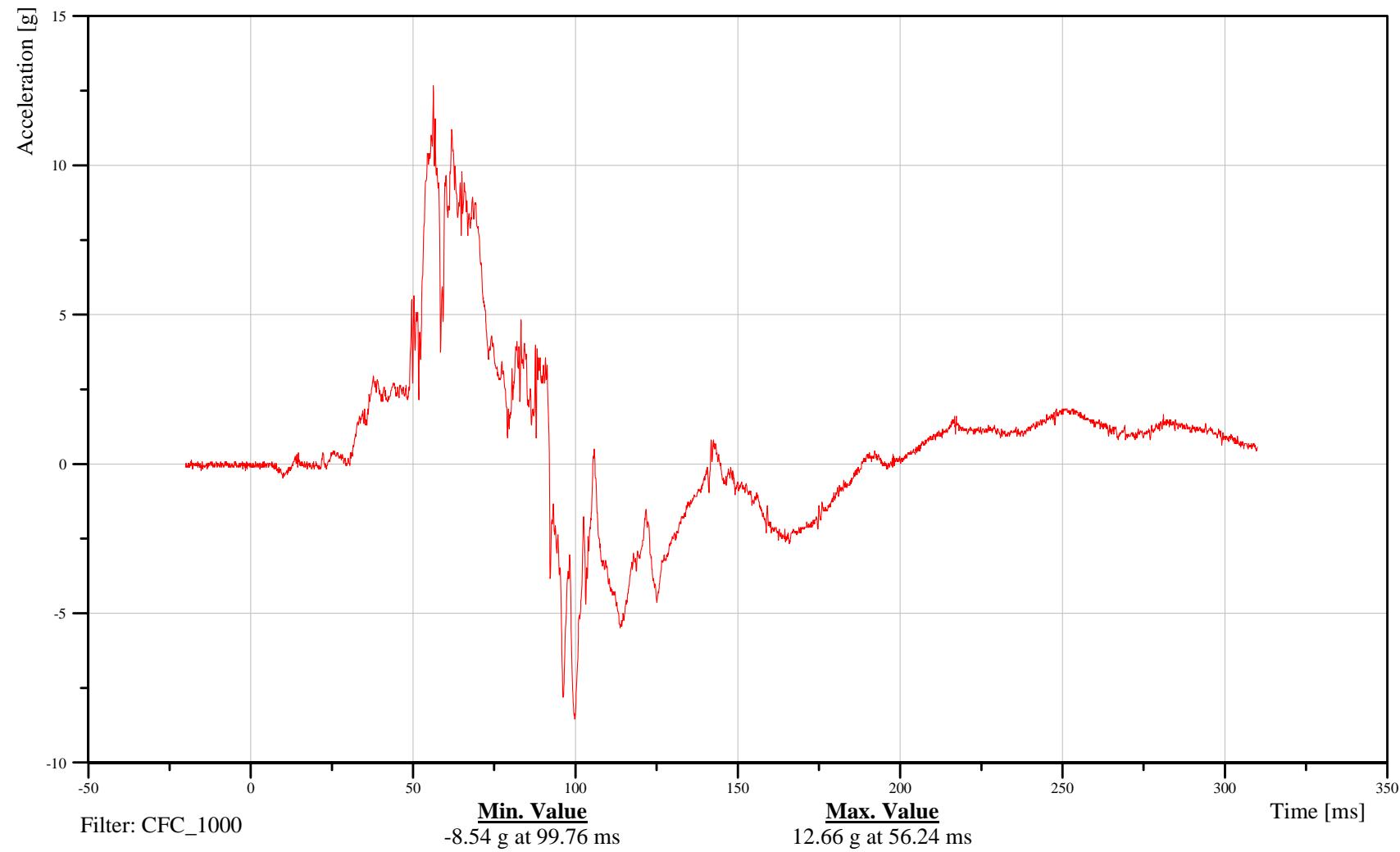
Customer: VRTC

21PELV0000THACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-244

101116





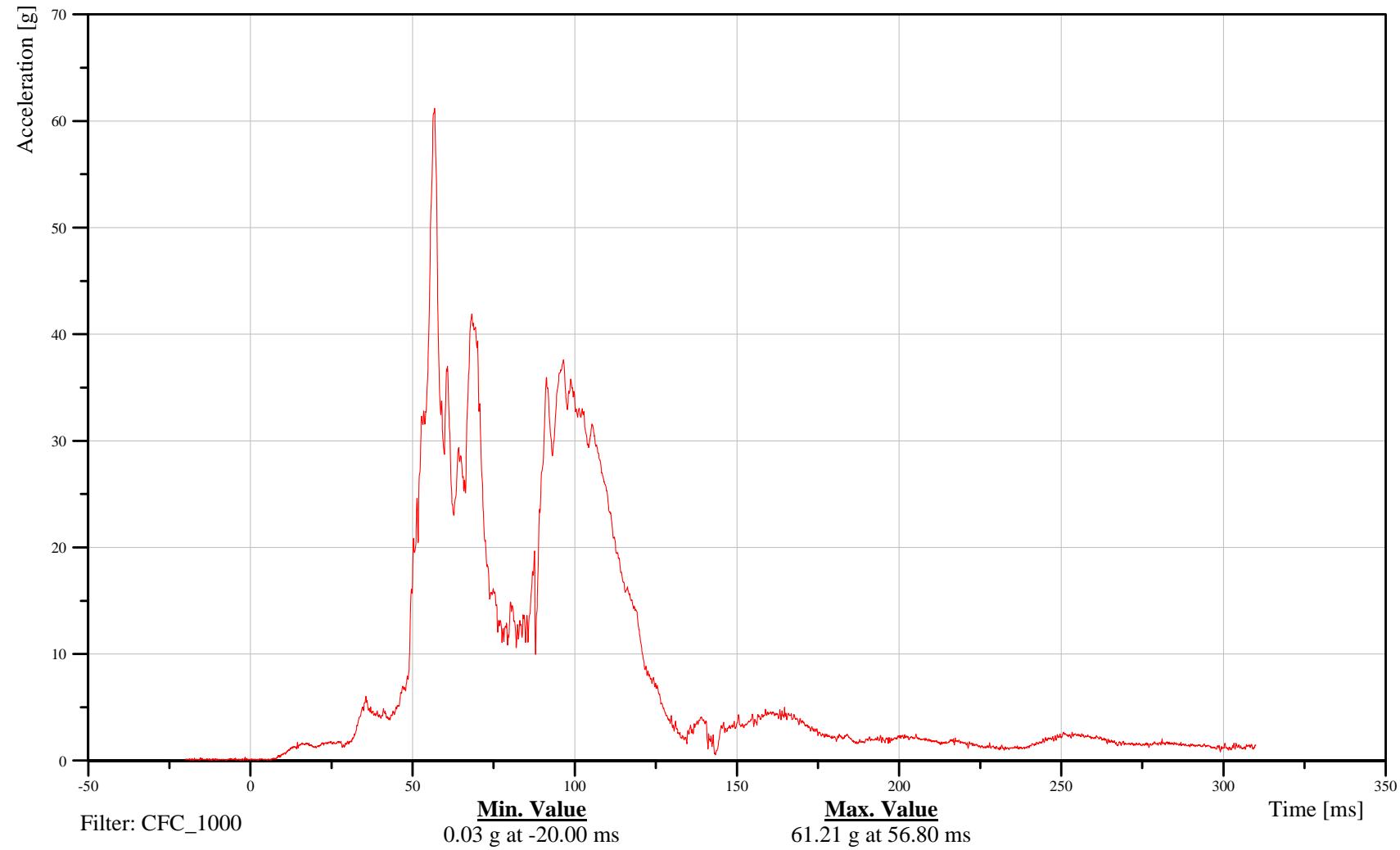
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21PELV0000THACRA





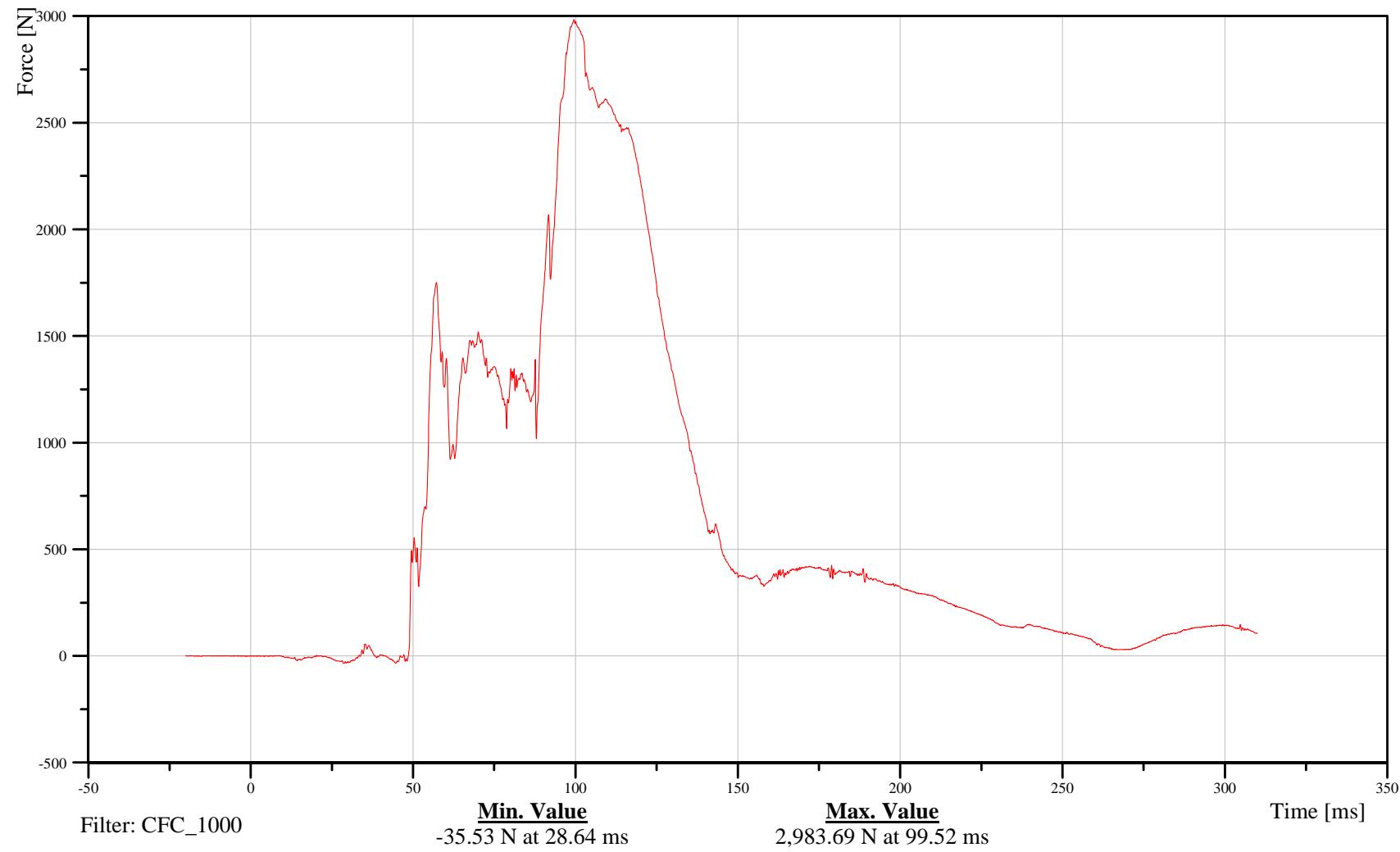
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis/Aacetabulum Left X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ACTBLE00THFOXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





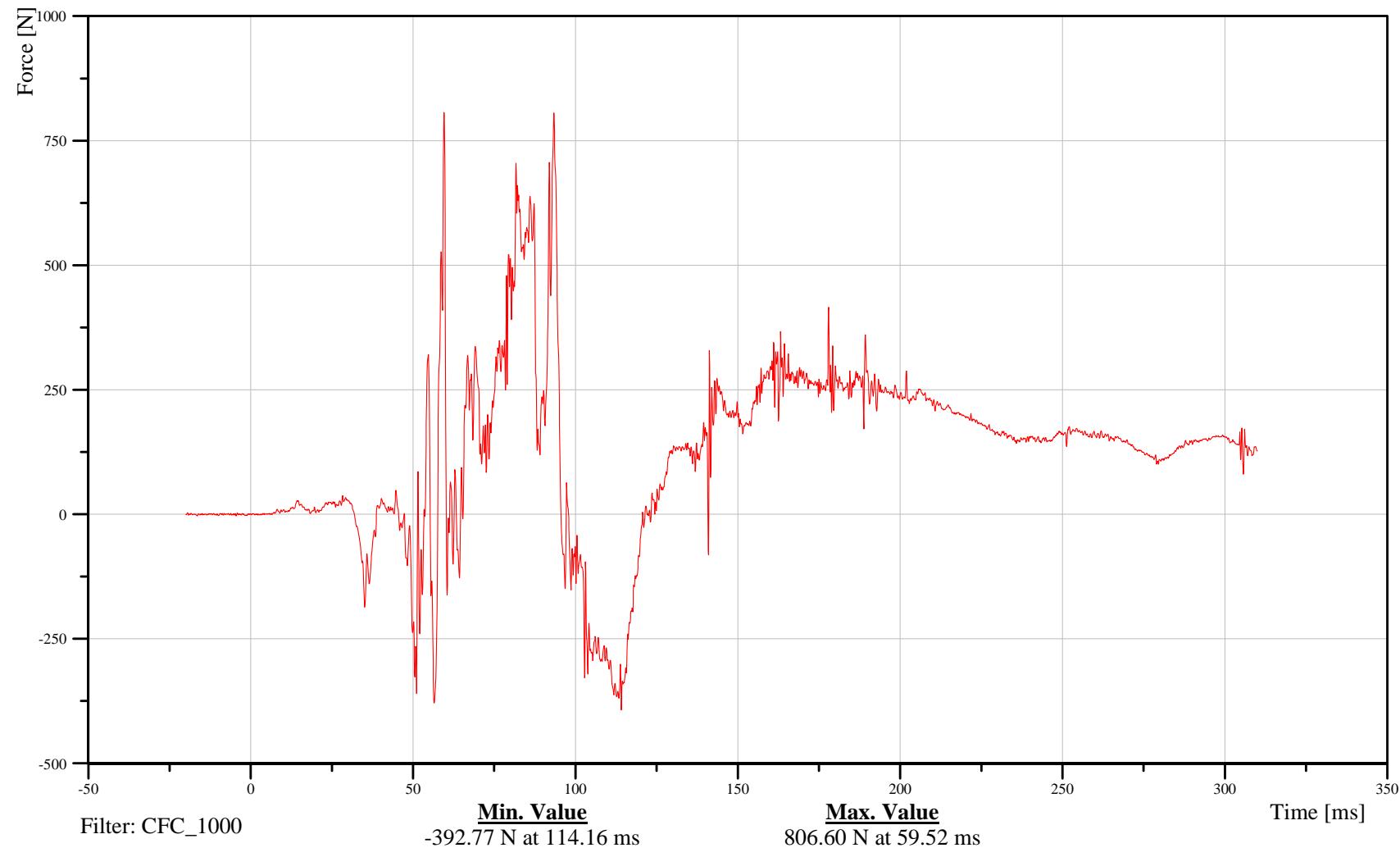
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis/Aacetabulum Left Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ACTBLE00THFOYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





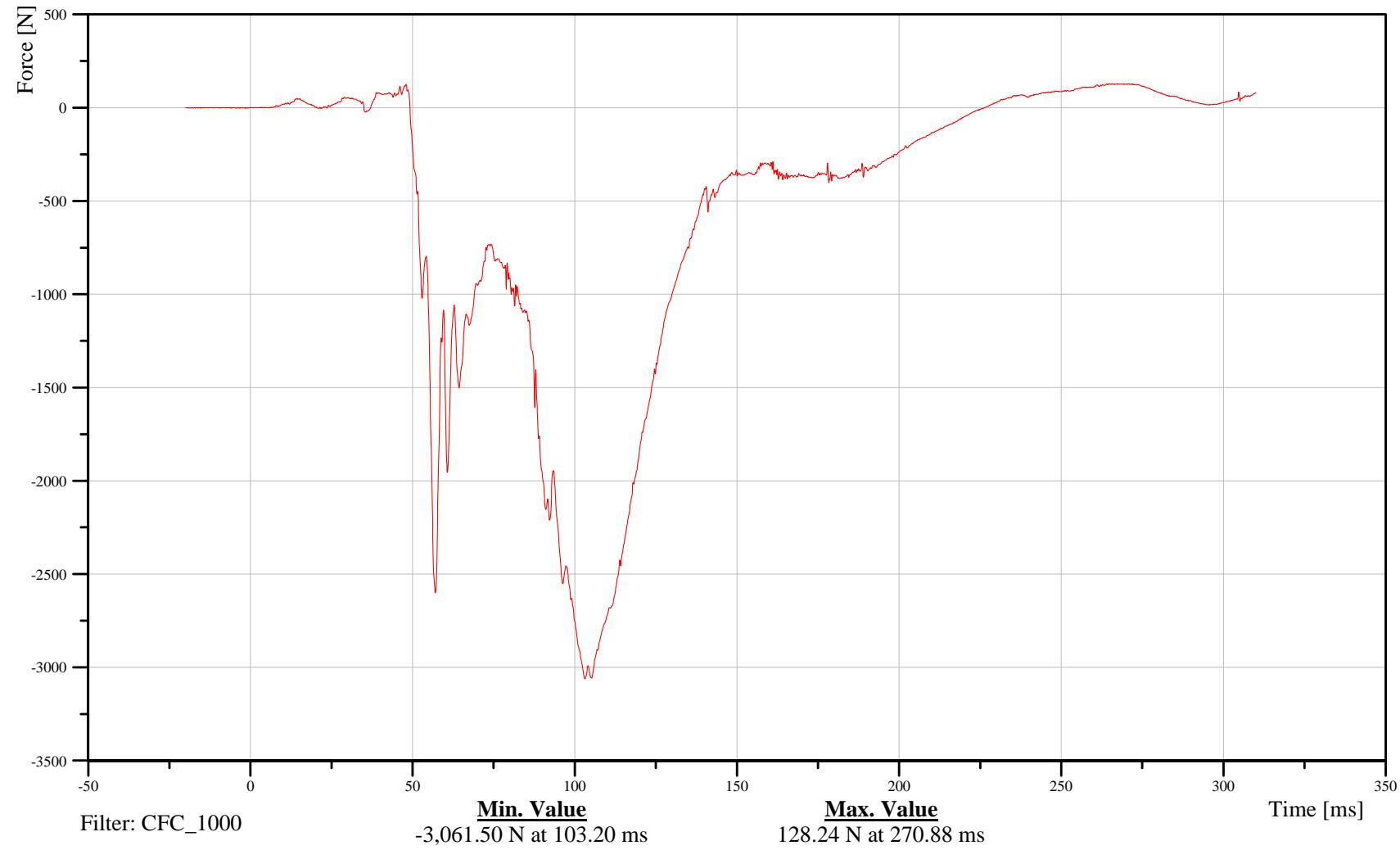
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis/Aacetabulum Left Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21ACTBLE00THFOZA



B-248

101116



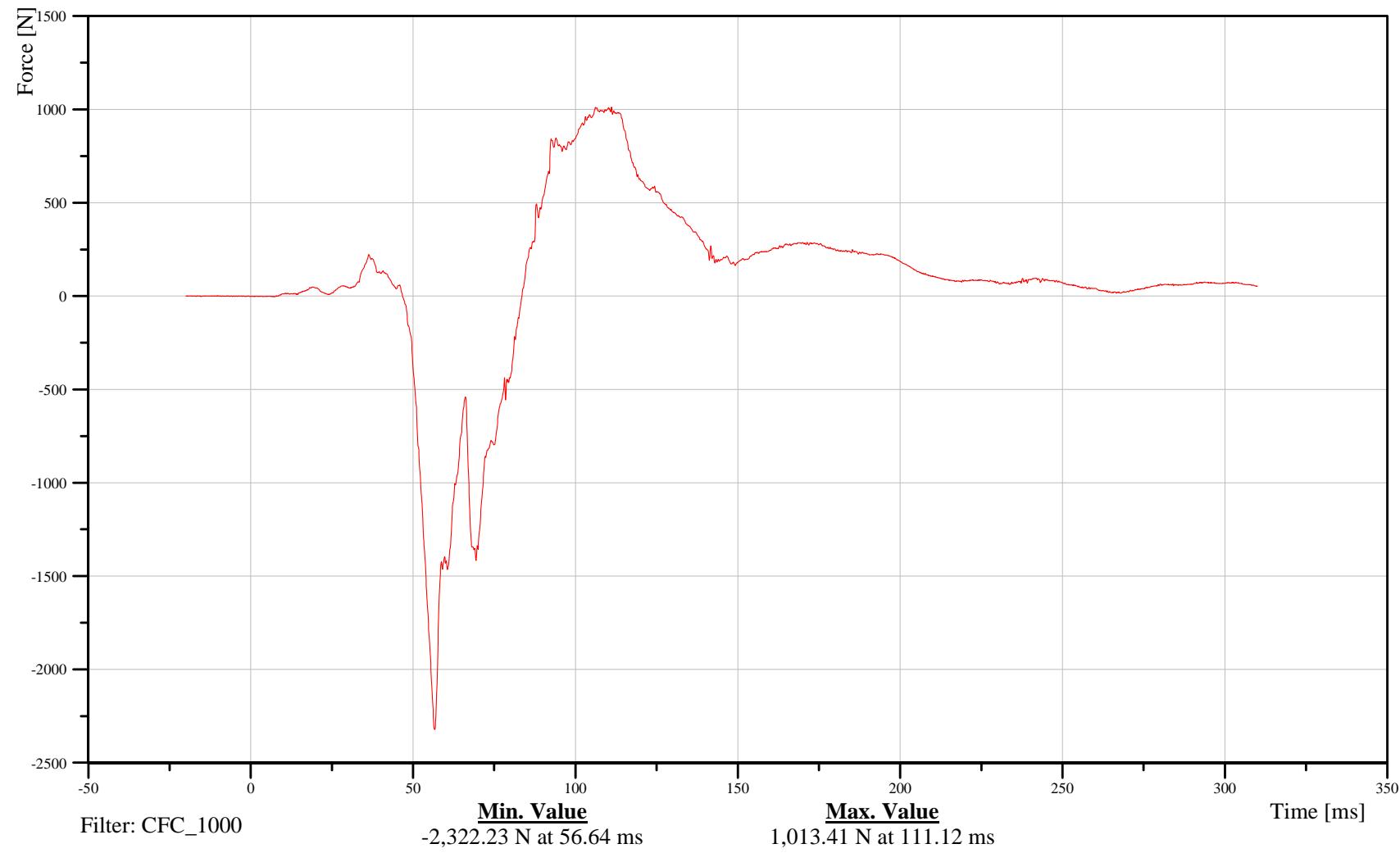
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis/Acetabulum Right X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21ACTBRI00THFOXA





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis/Acetabulum Right Y-Axis Force

Date: 11/17/2010  
Time: 14:40

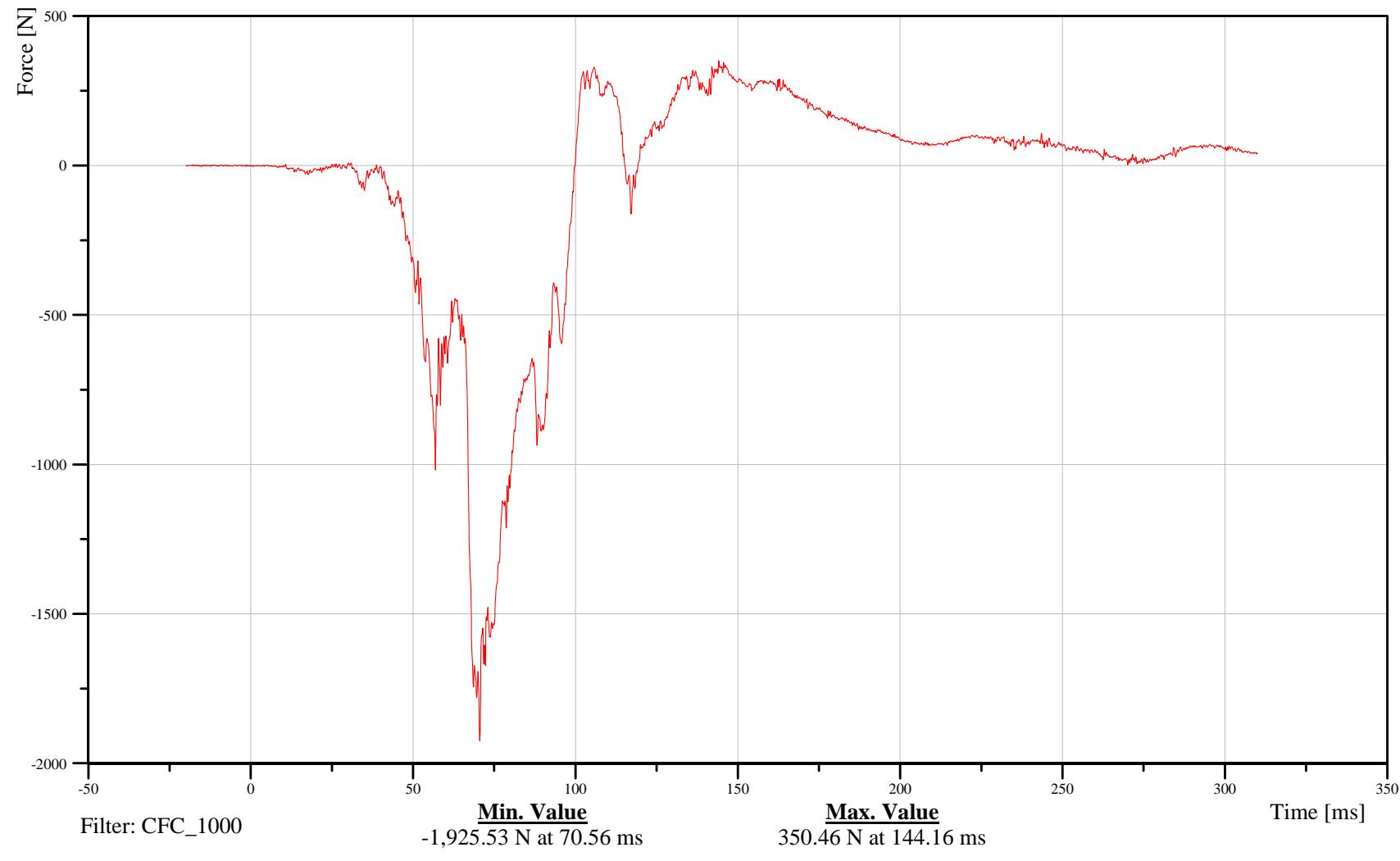
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21ACTBRI00THFOYA

B-250

101116





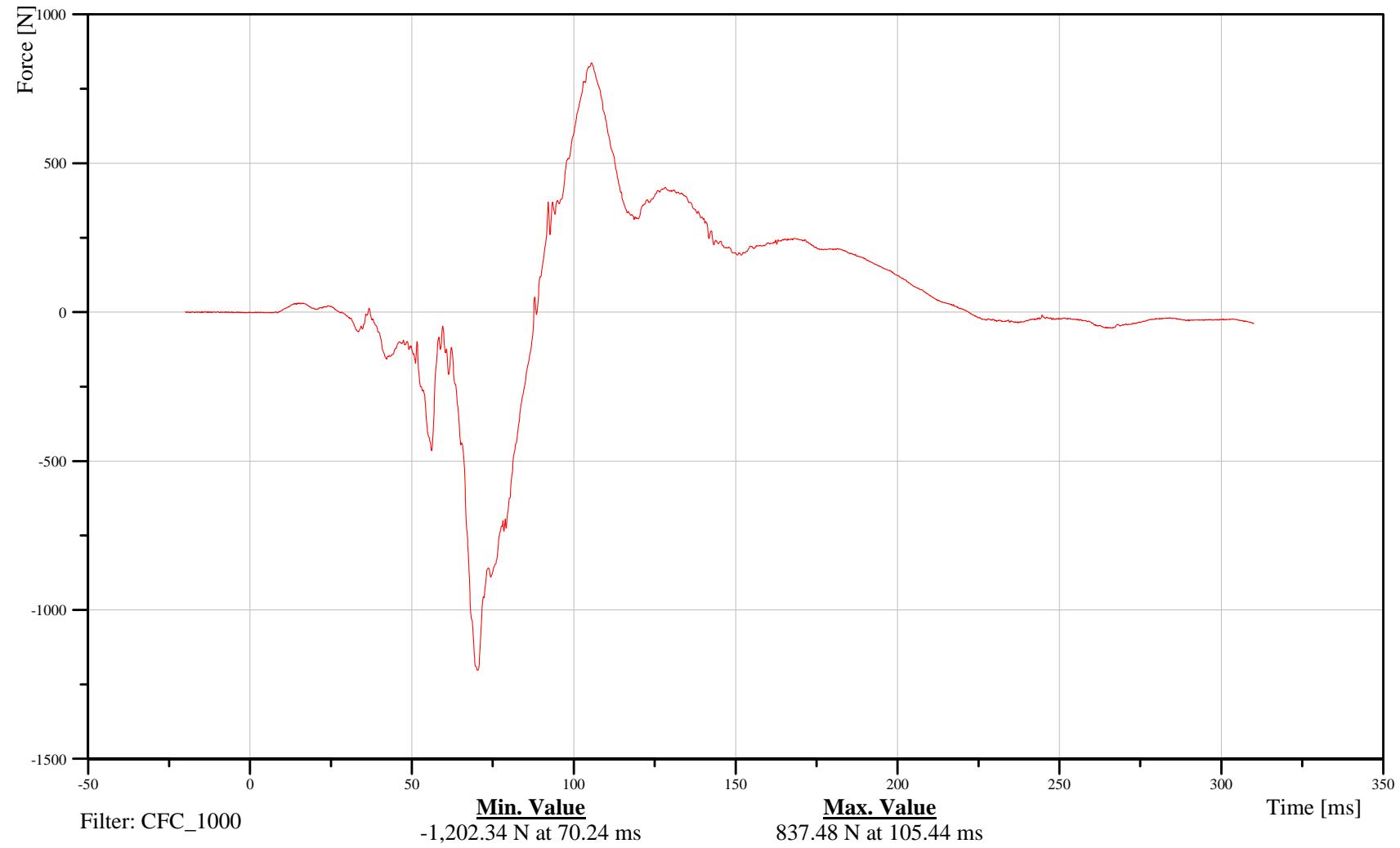
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Pelvis/Acetabulum Right Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21ACTBRI00THFOZA





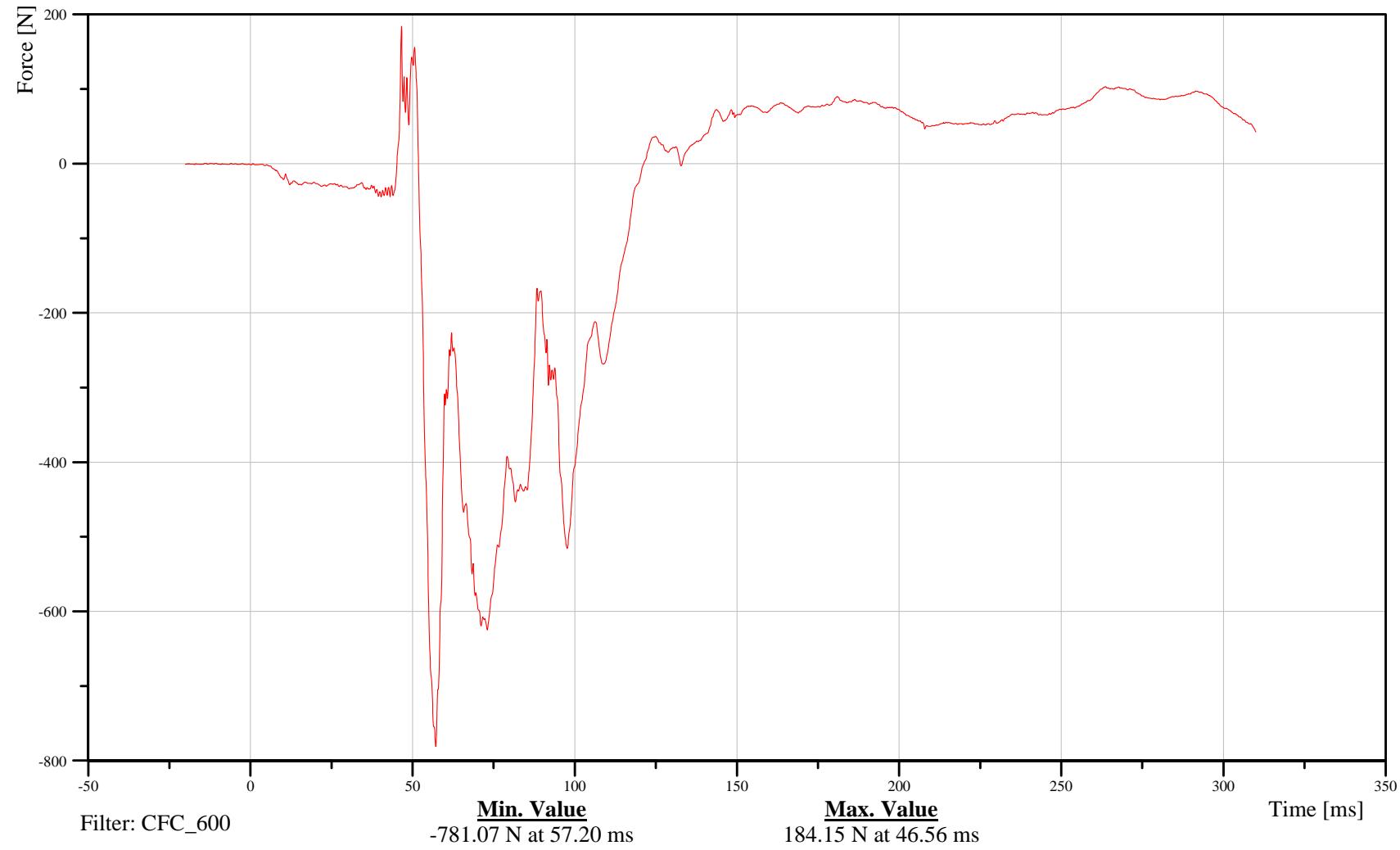
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Femur X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FEMRLL00THFOXB





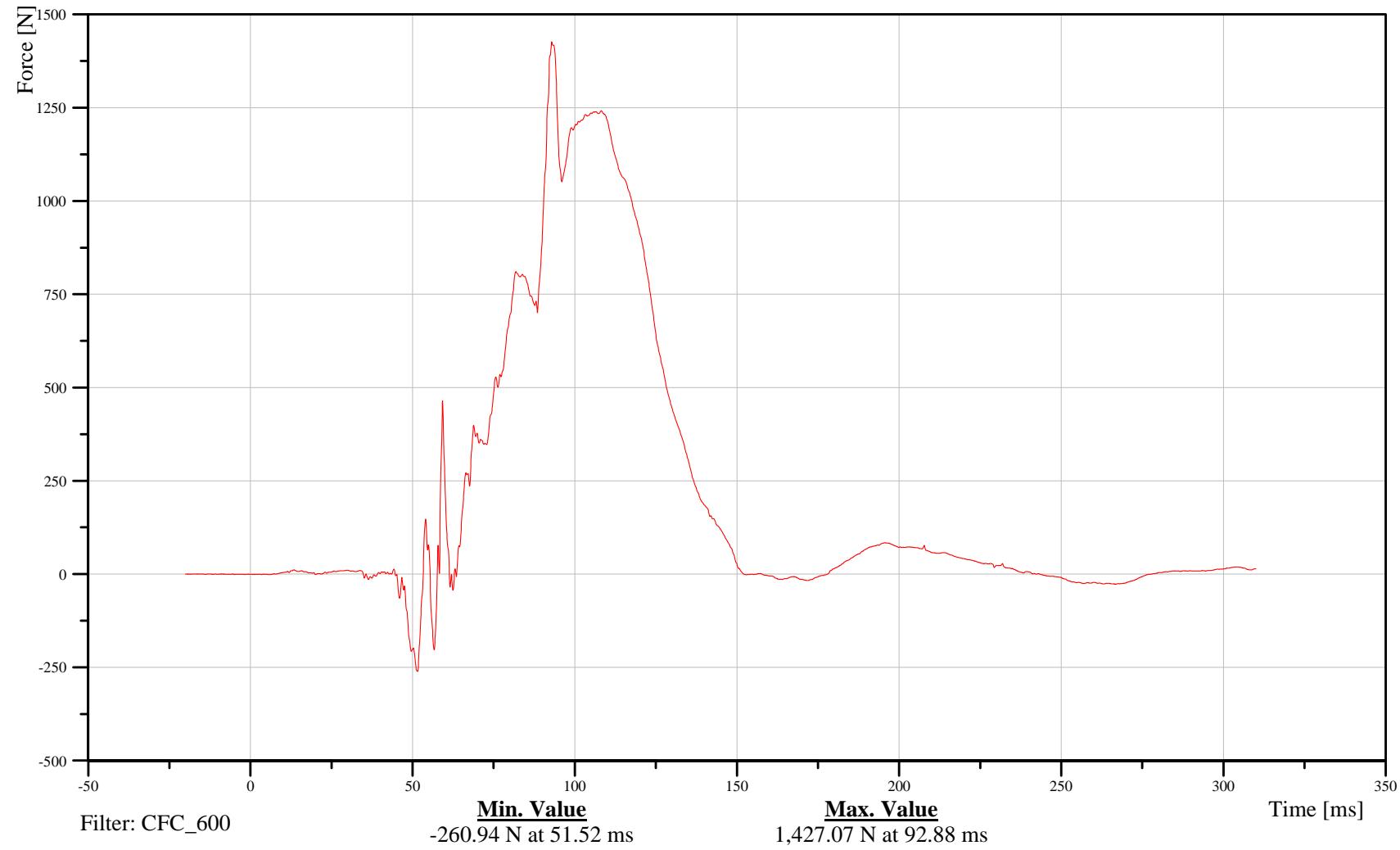
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Femur Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRLL00THFOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





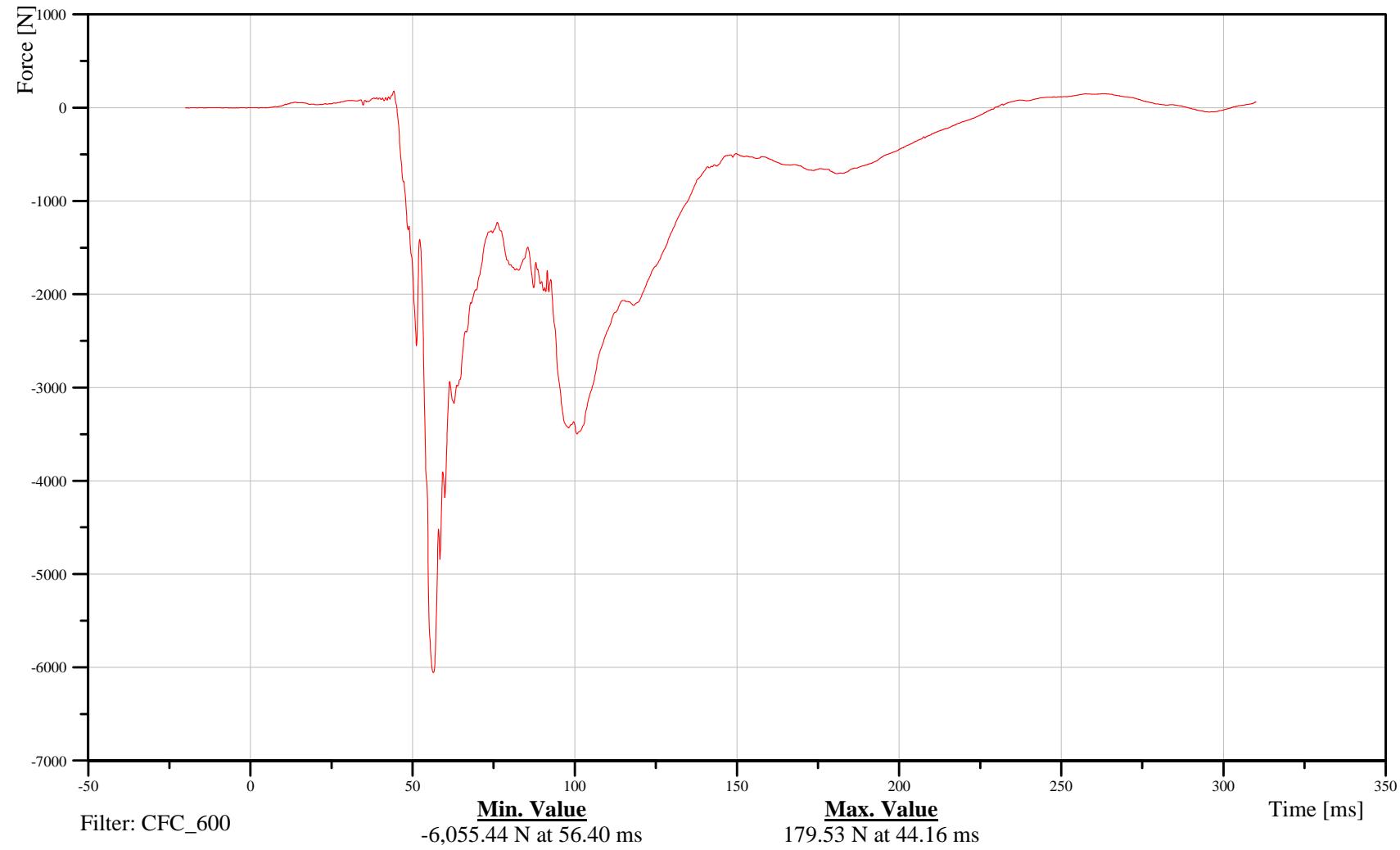
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FEMRLL00THFOZB





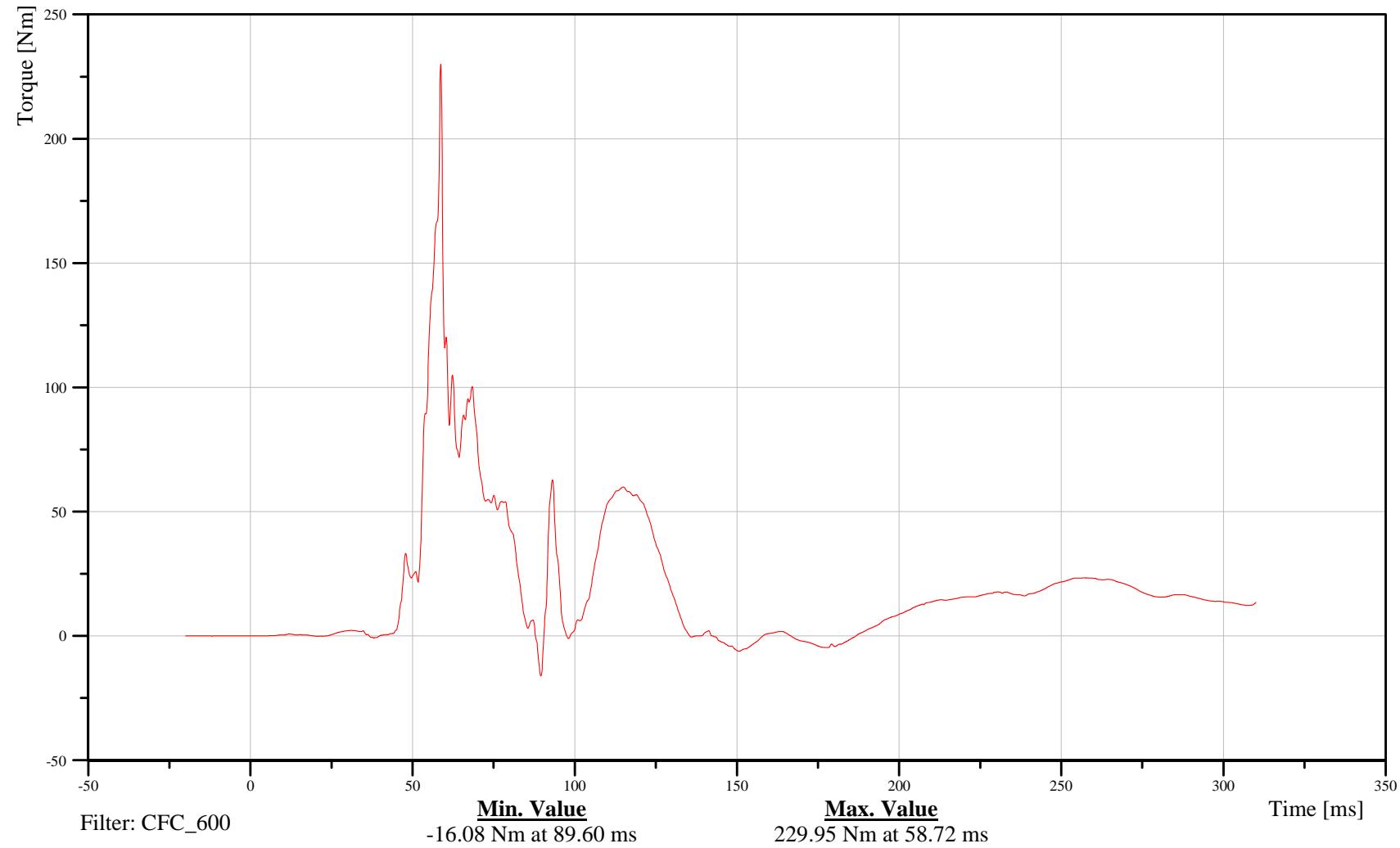
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Femur Moment About X-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FEMRLL00THMOXB





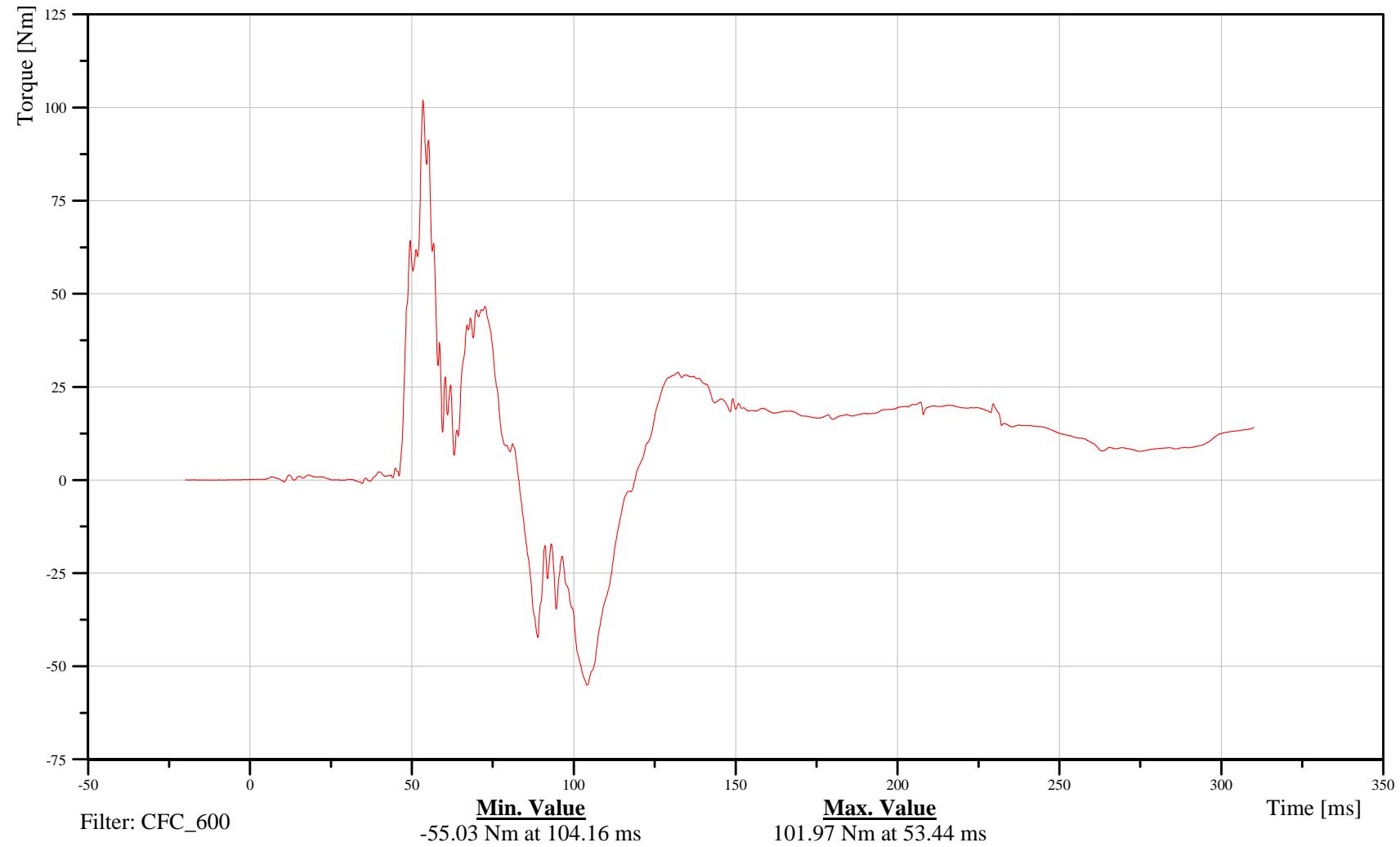
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Femur Moment About Y-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRLL00THMOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





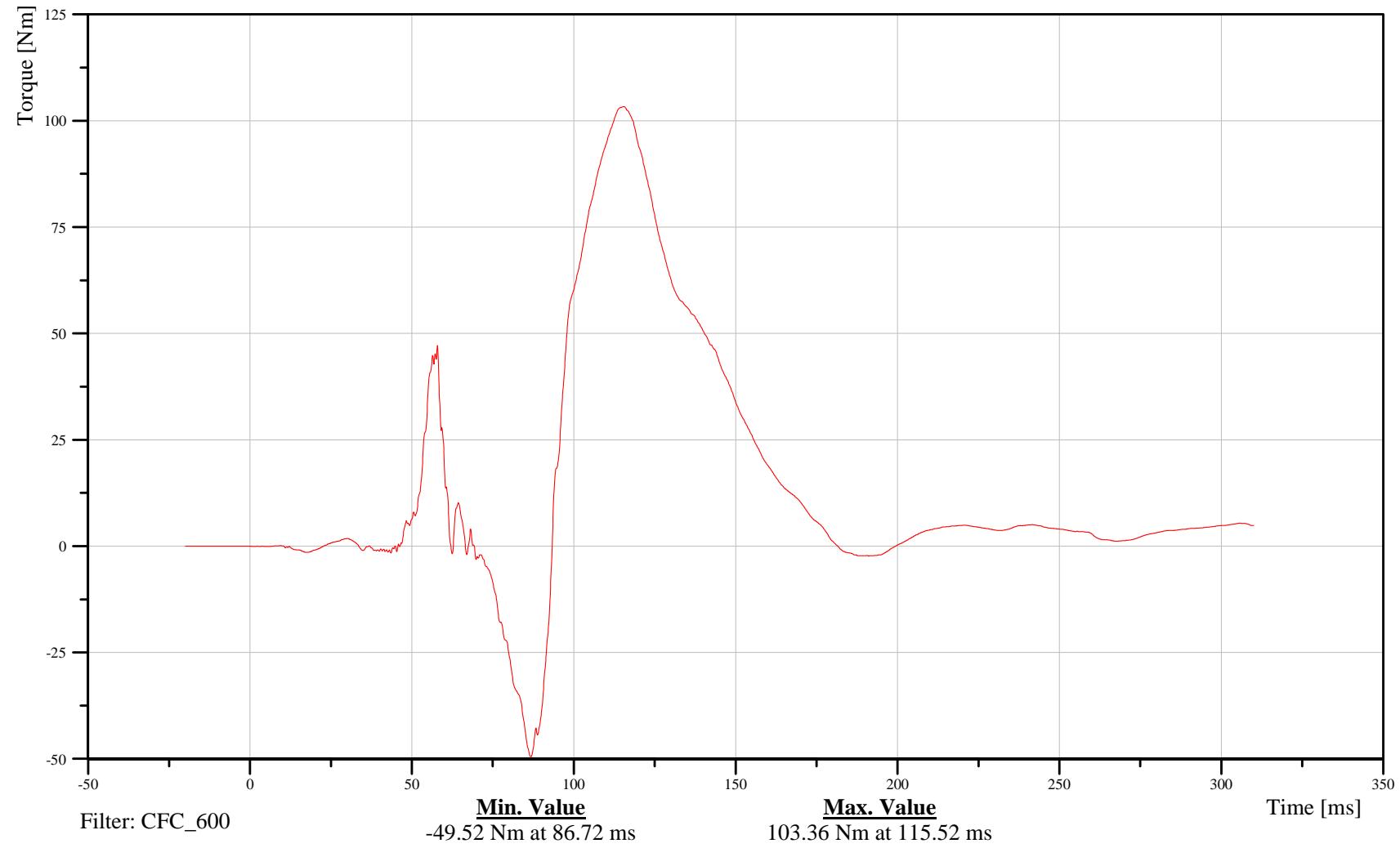
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Femur Moment About Z-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRLL00THMOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





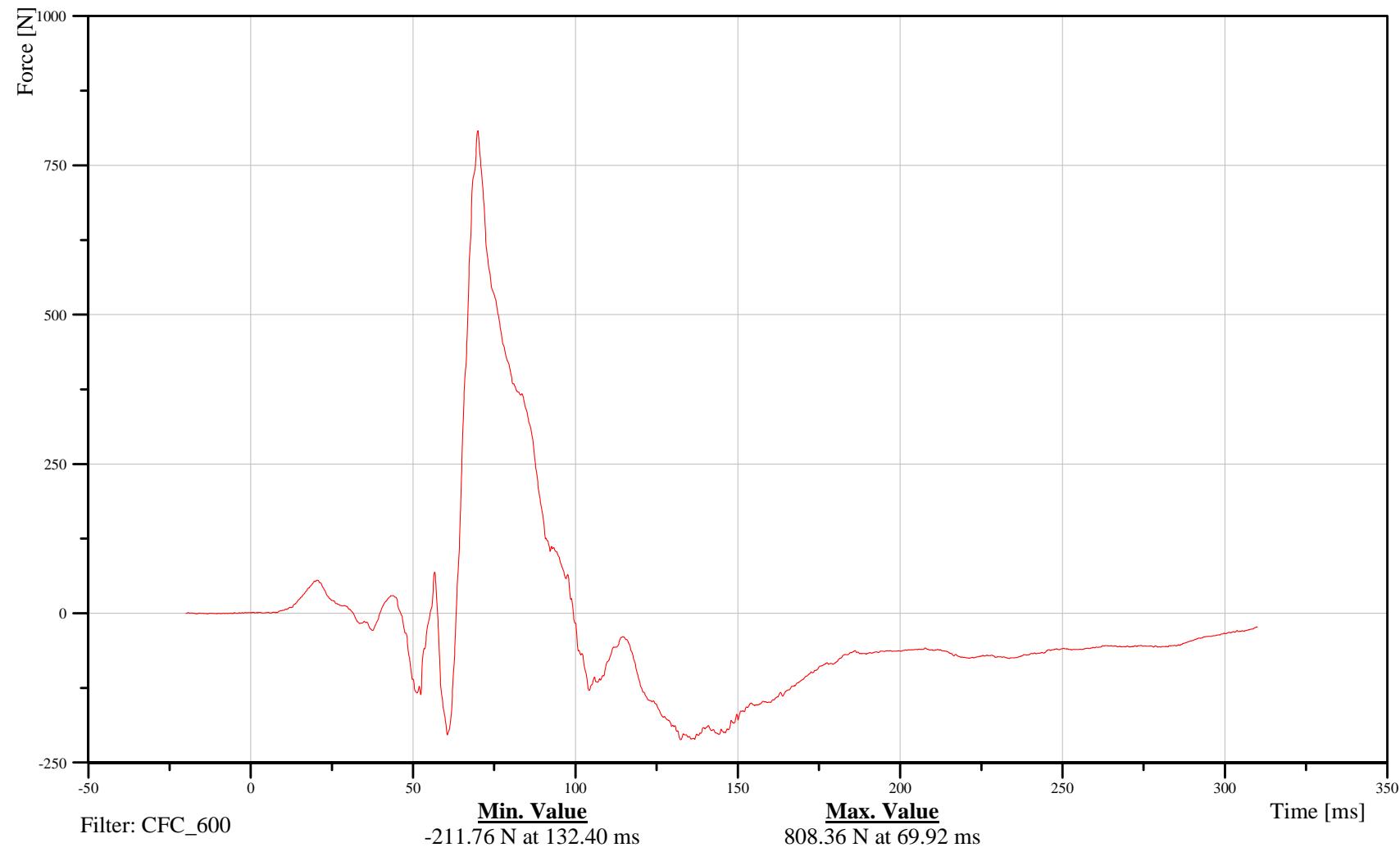
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Femur X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRRL00THFOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





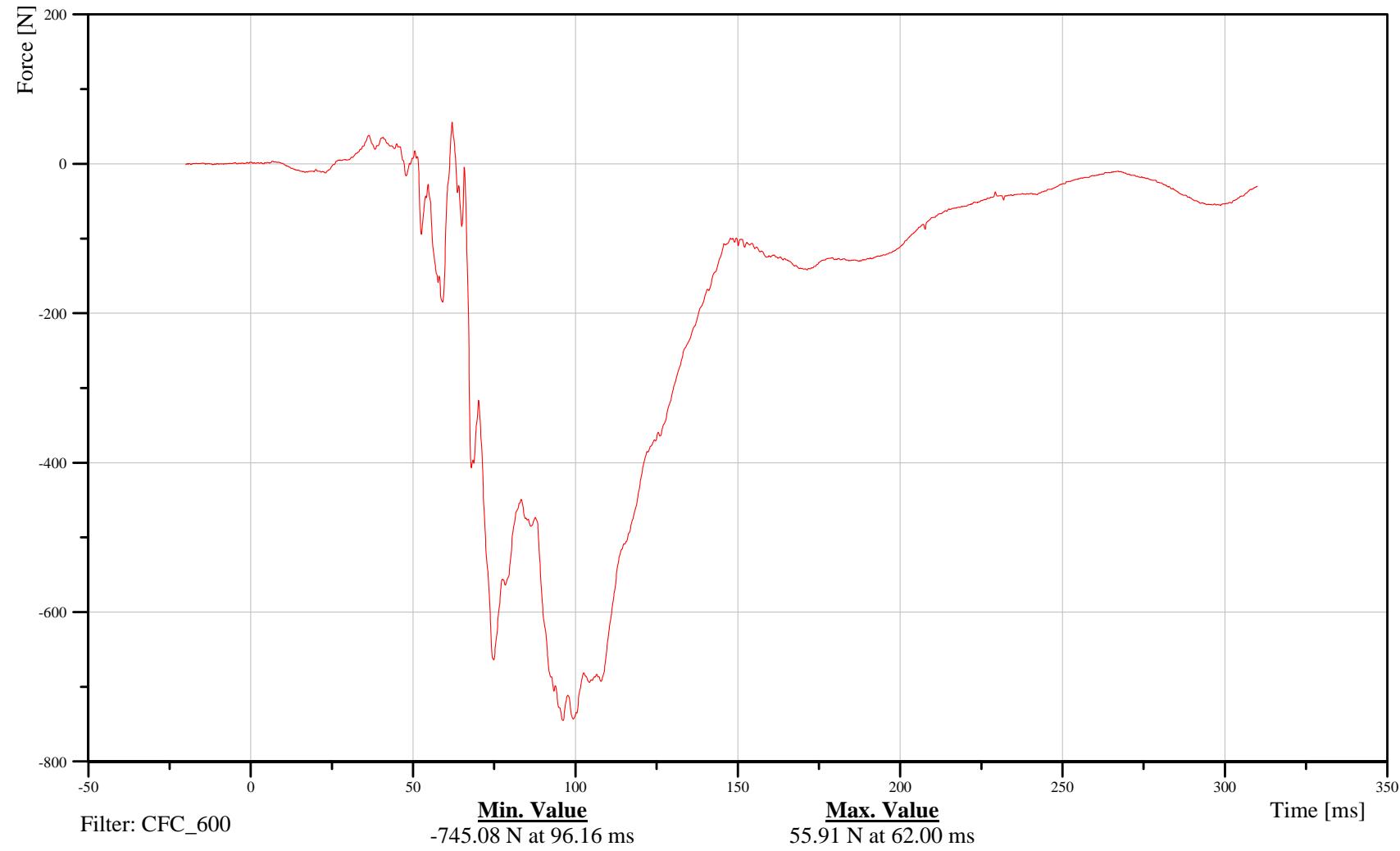
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Femur Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRRL00THFOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





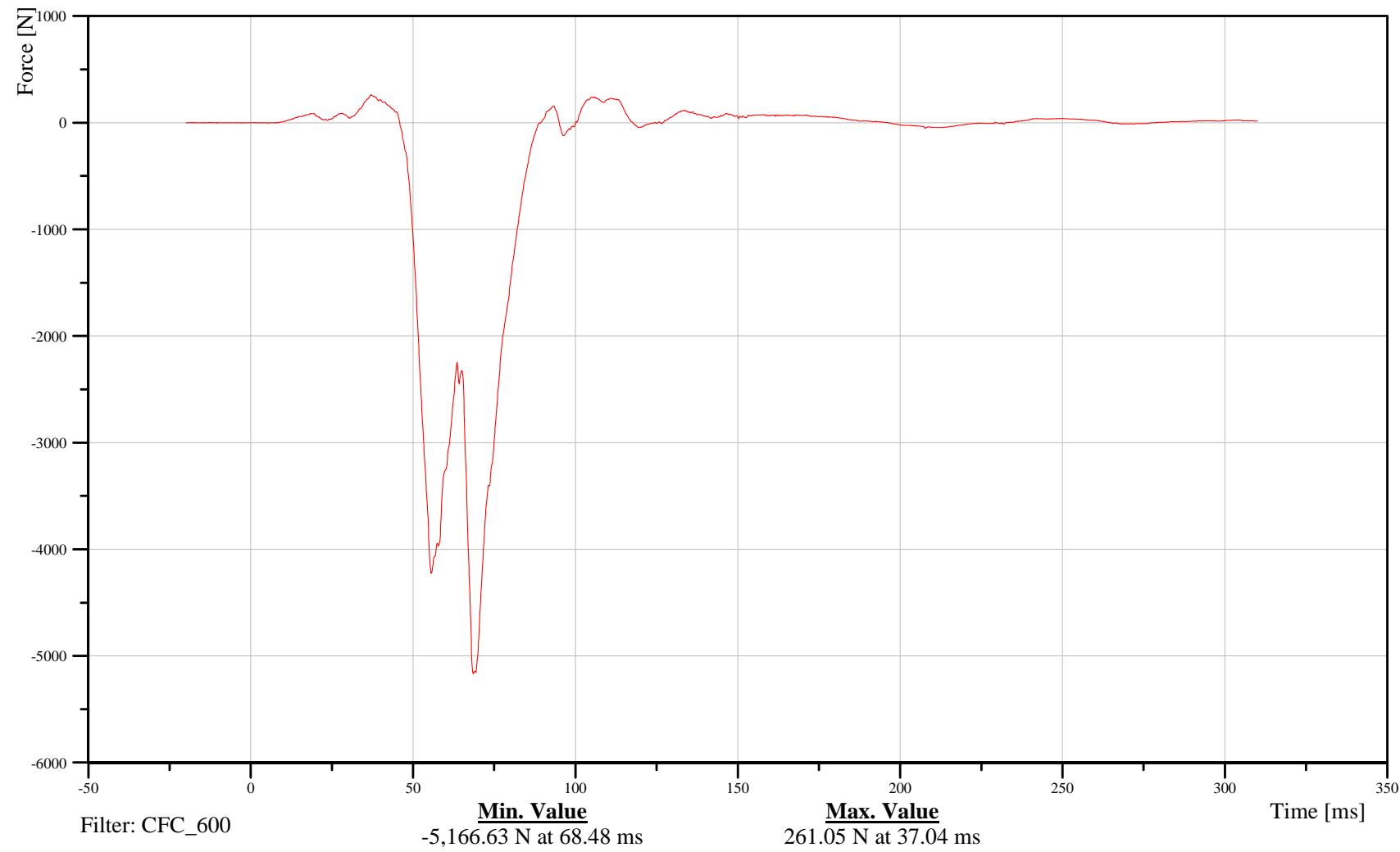
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Femur Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRRL00THFOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





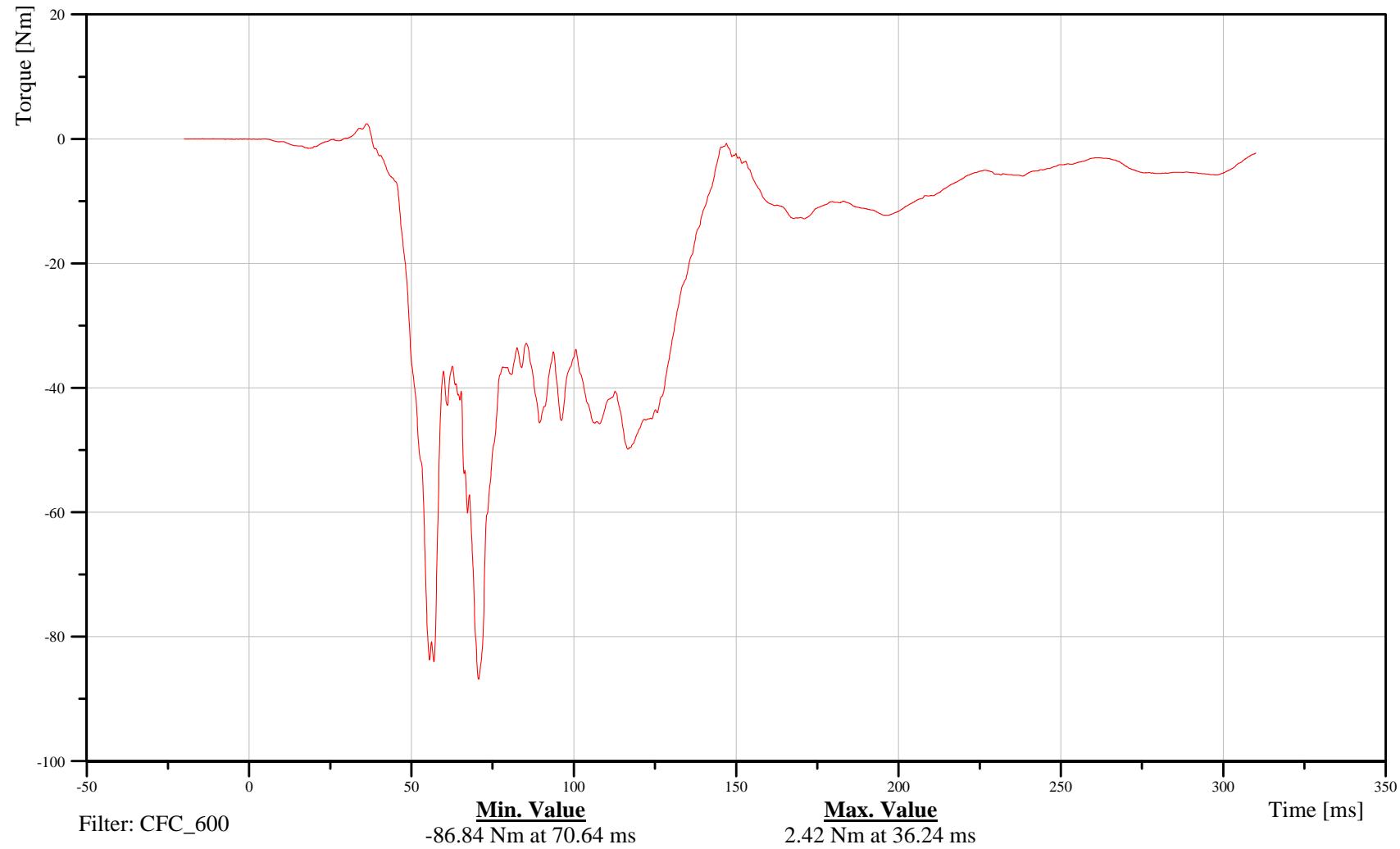
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Femur Moment About X-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FEMRRL00THMOXB





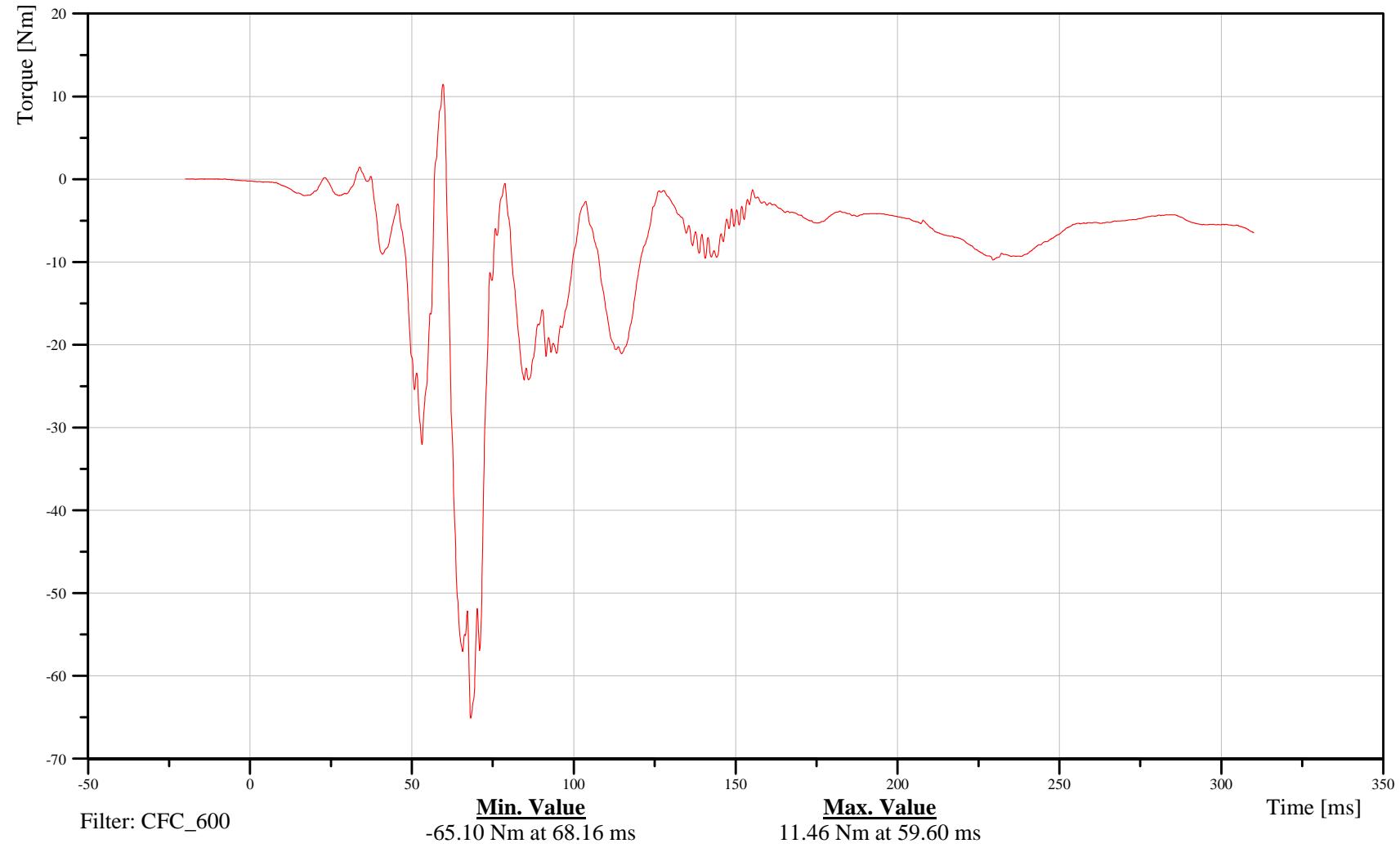
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Femur Moment About Y-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FEMRRL00THMOYB





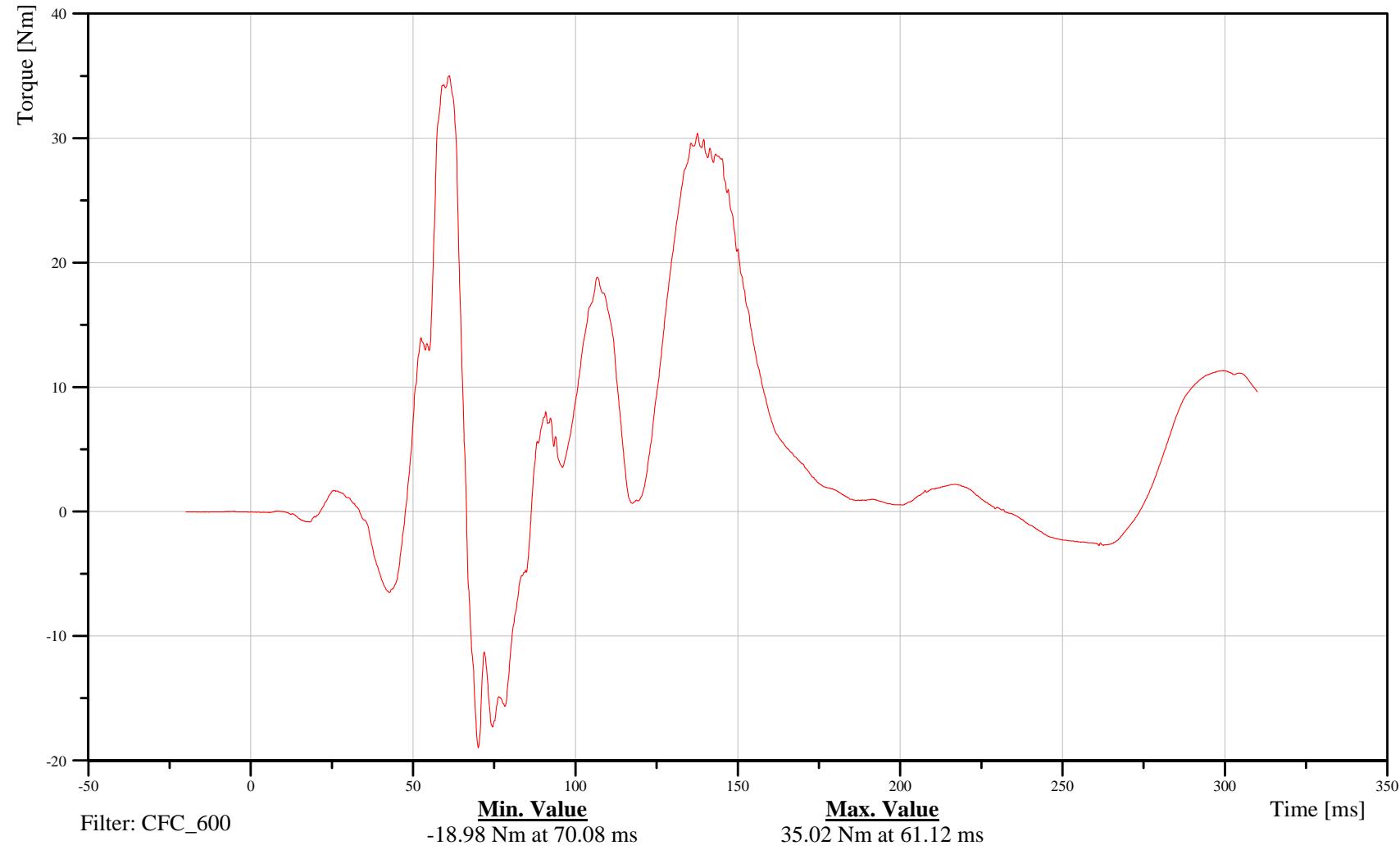
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Femur Moment About Z-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FEMRRL00THMOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116





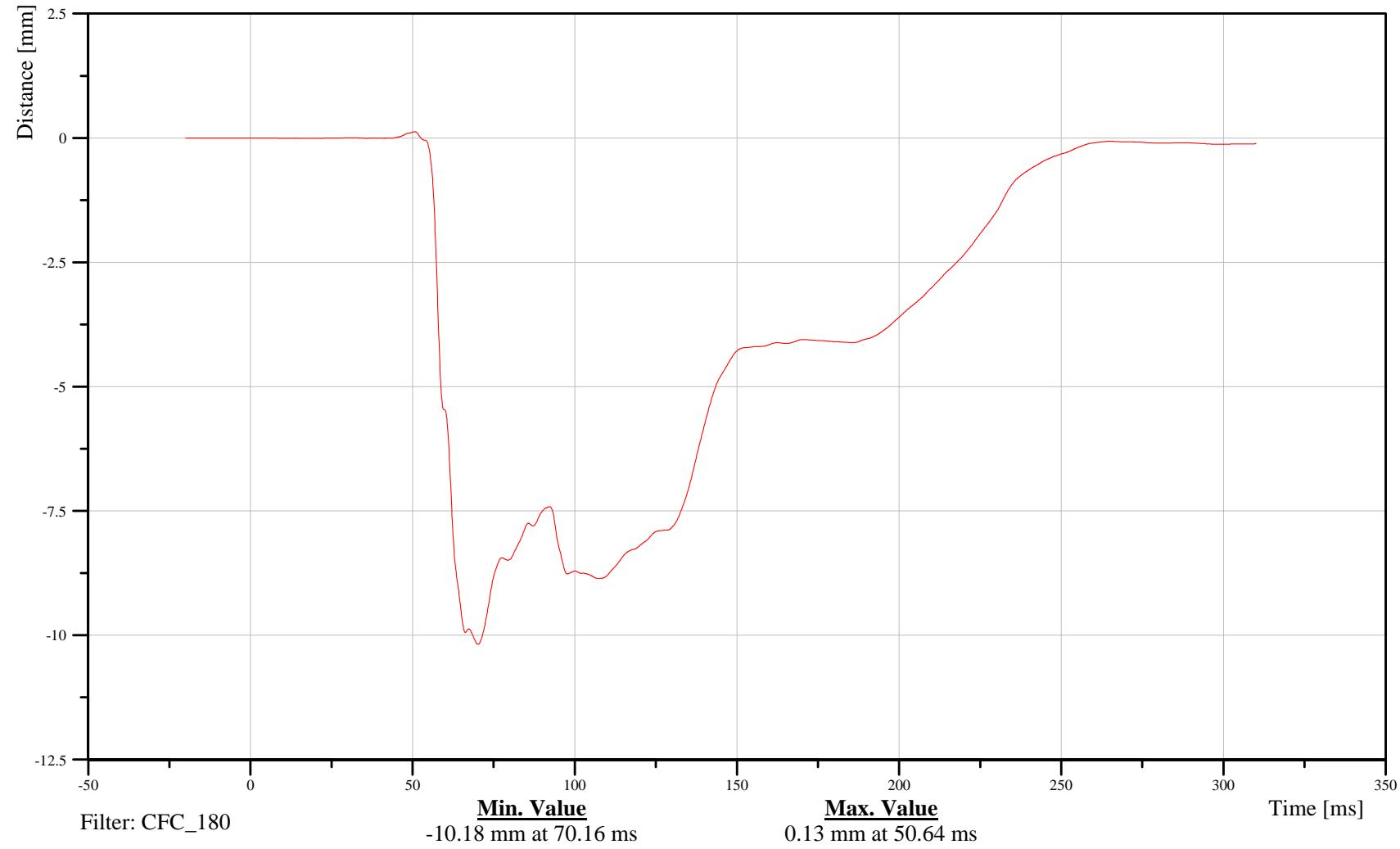
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Knee X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116



B-264  
101116



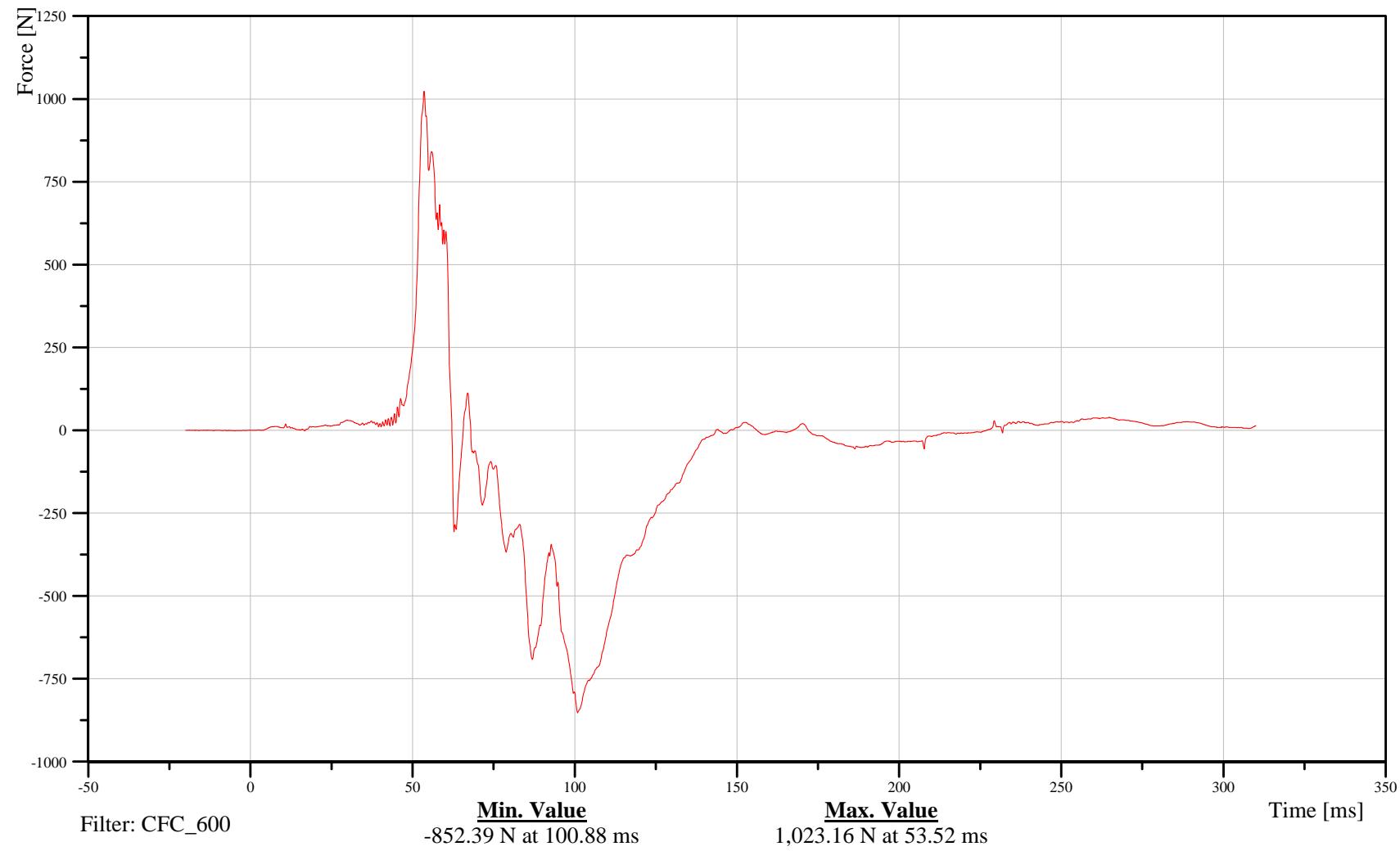
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Upper Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBILULXH3FOXB



B-265  
101116



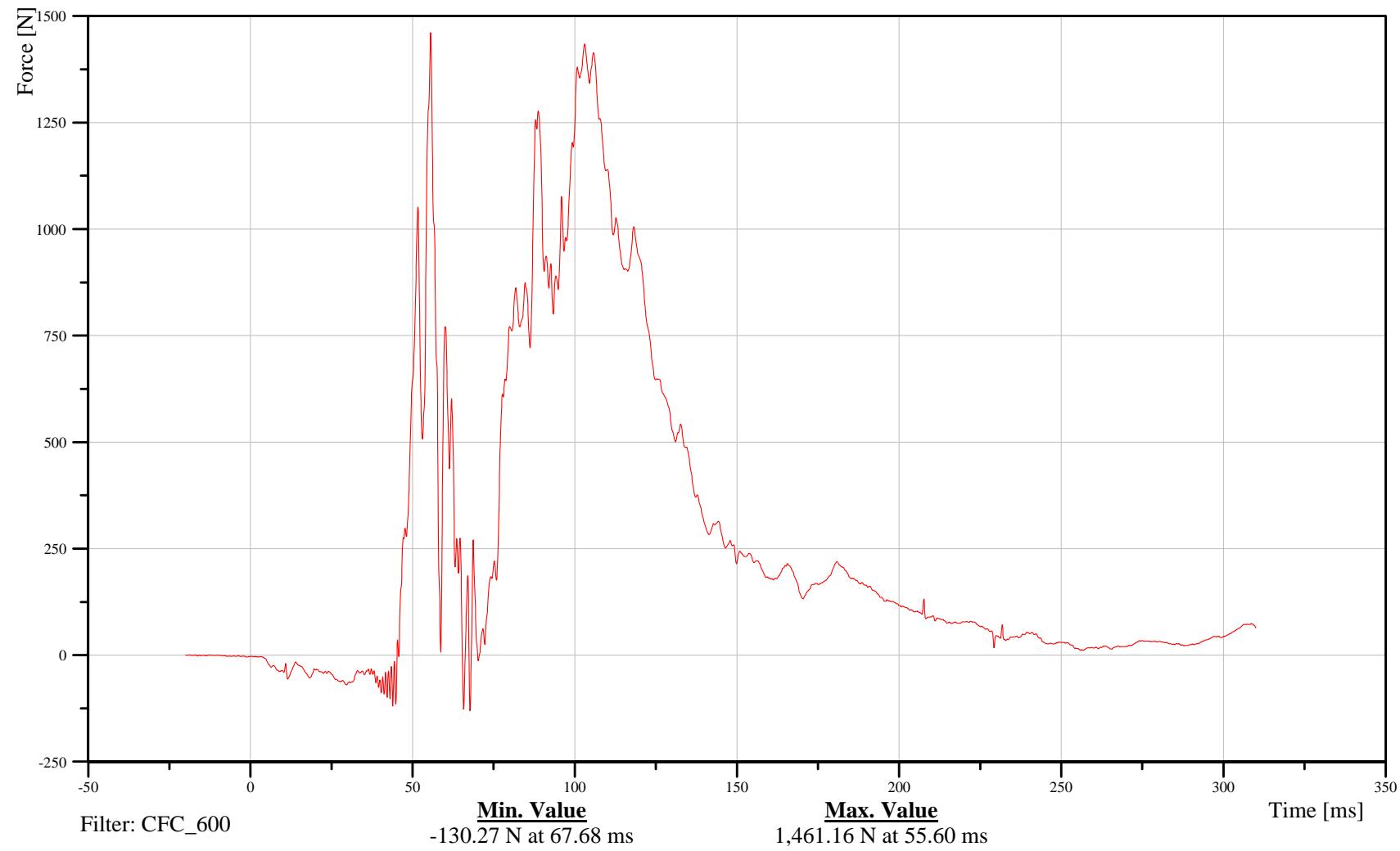
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Upper Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBILULXH3FOZB





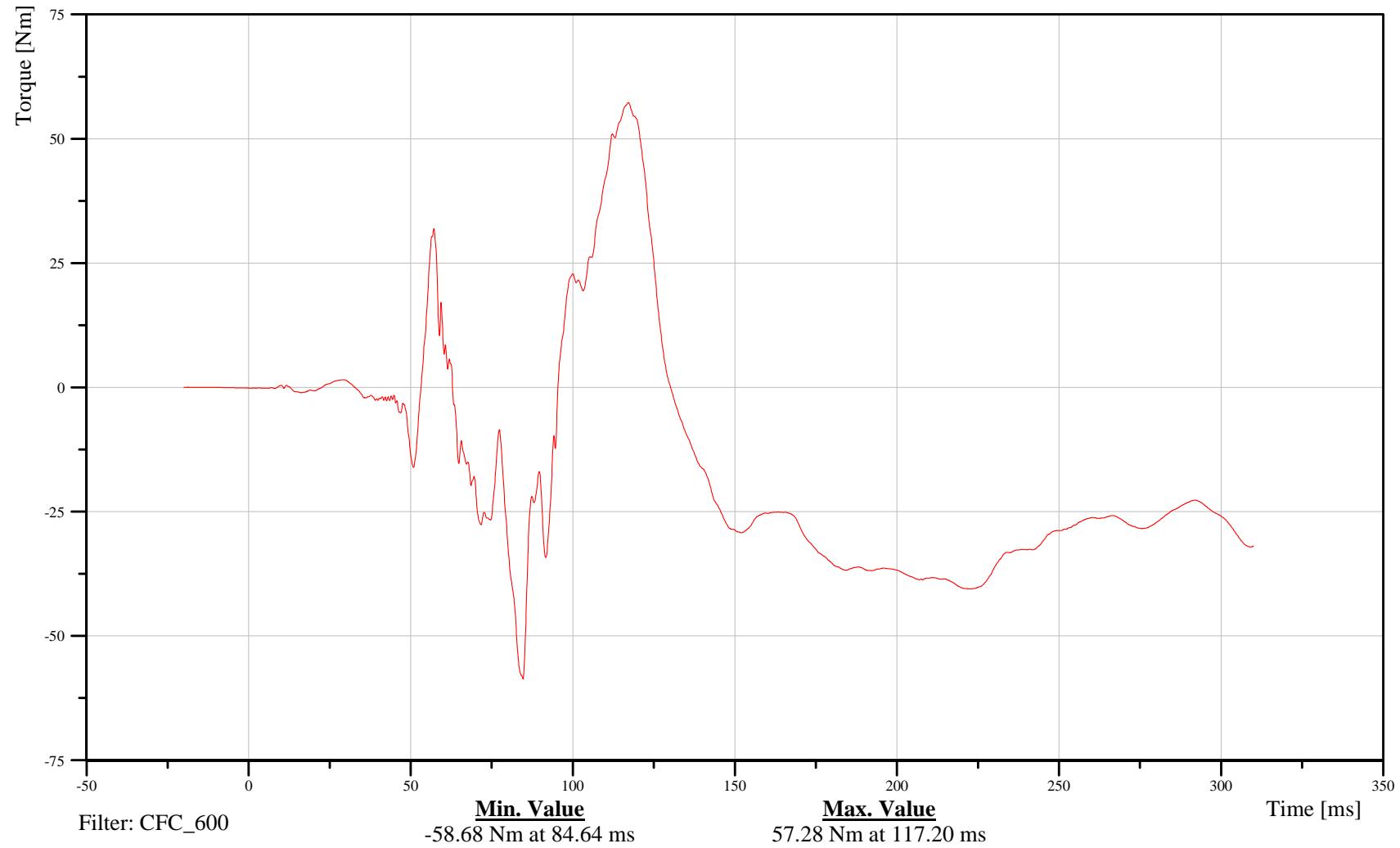
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Upper Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TIBILULXH3MOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





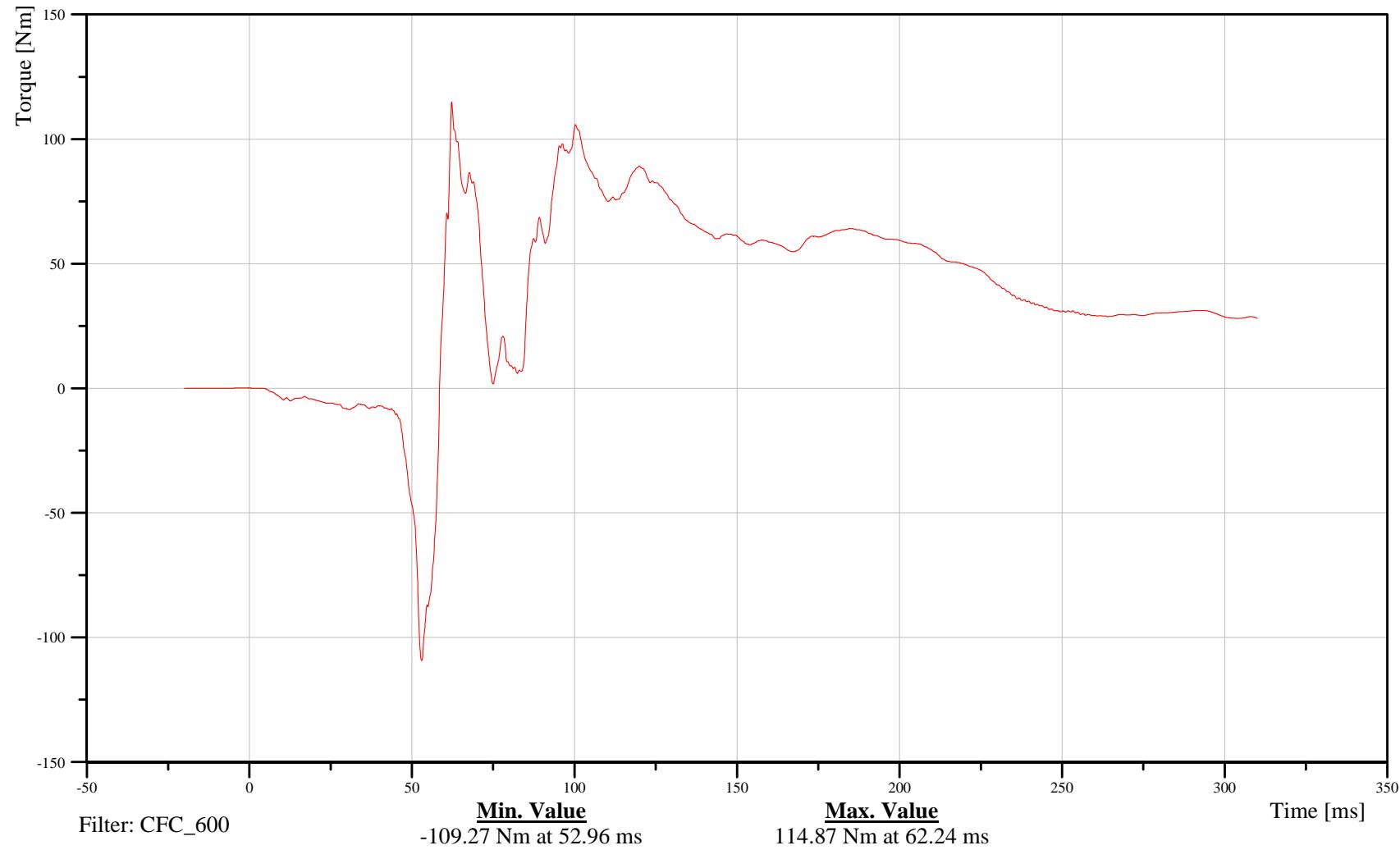
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Upper Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TIBILULXH3MOYB

TRC Inc. Test Lab: CTF  
Test Number: 101116





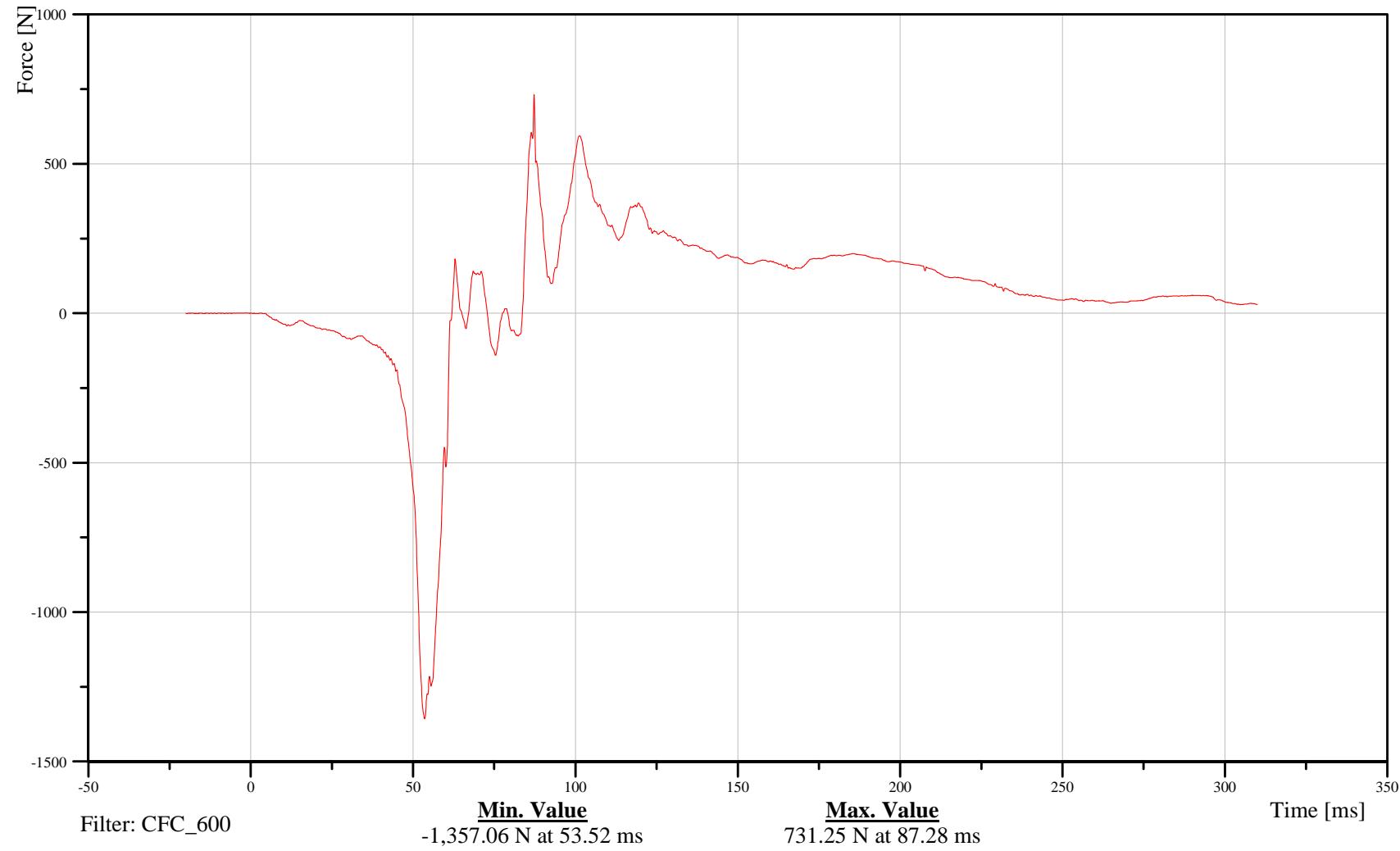
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Lower Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBILLXH3FOXB



101116



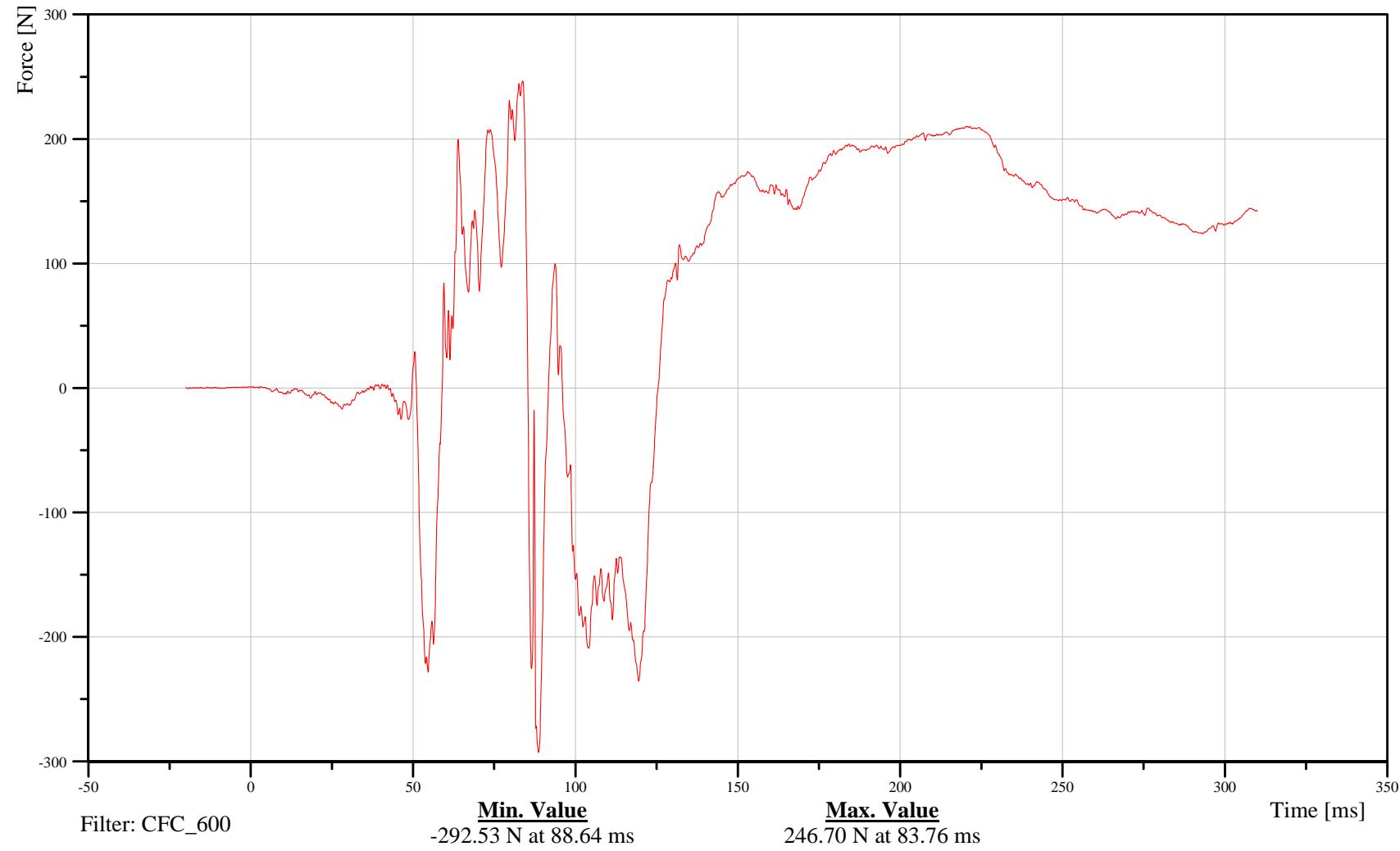
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Lower Tibia Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBILLXH3FOYB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Lower Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

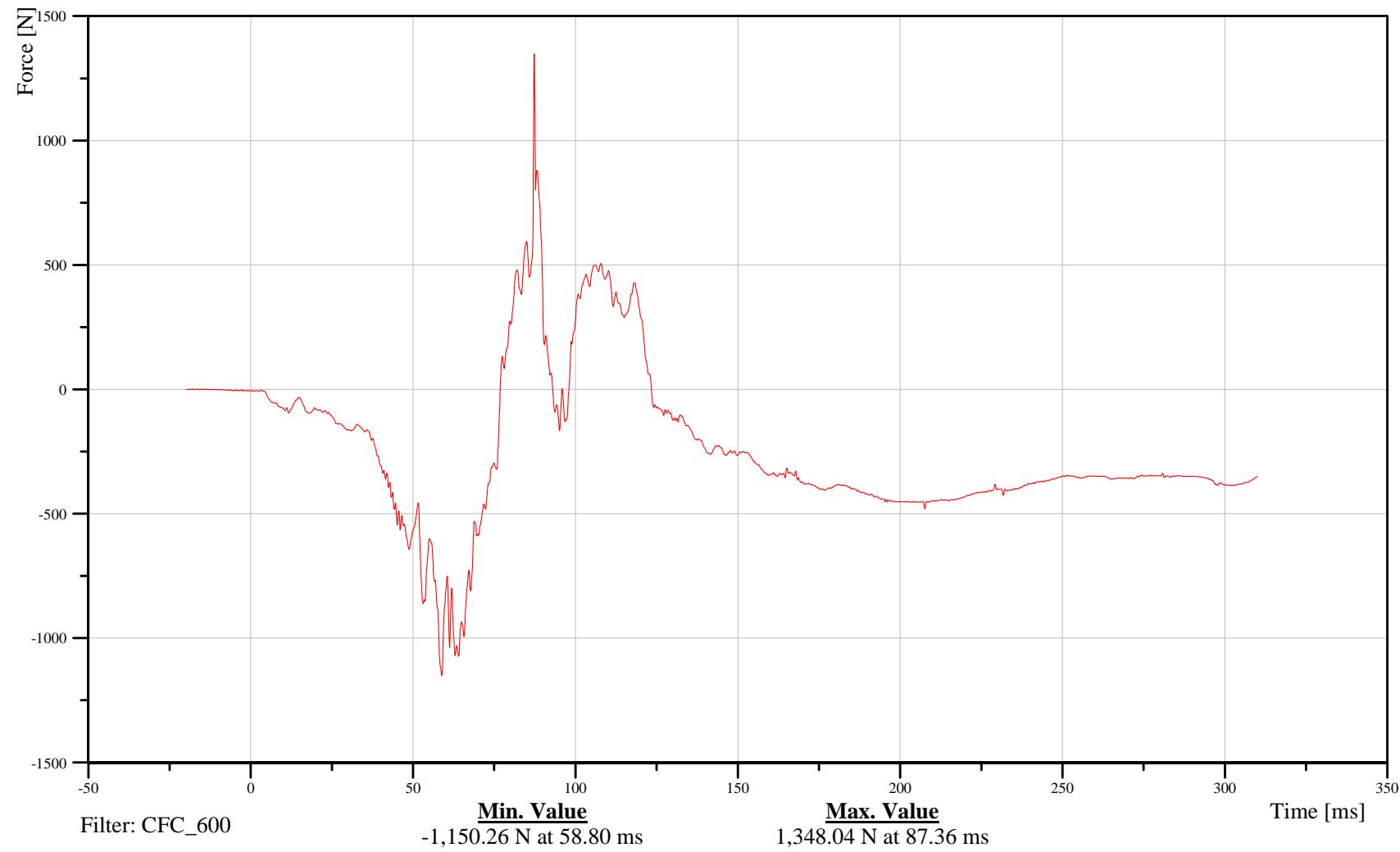
Customer: VRTC

21TIBILLXH3FOZB

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-271

101116





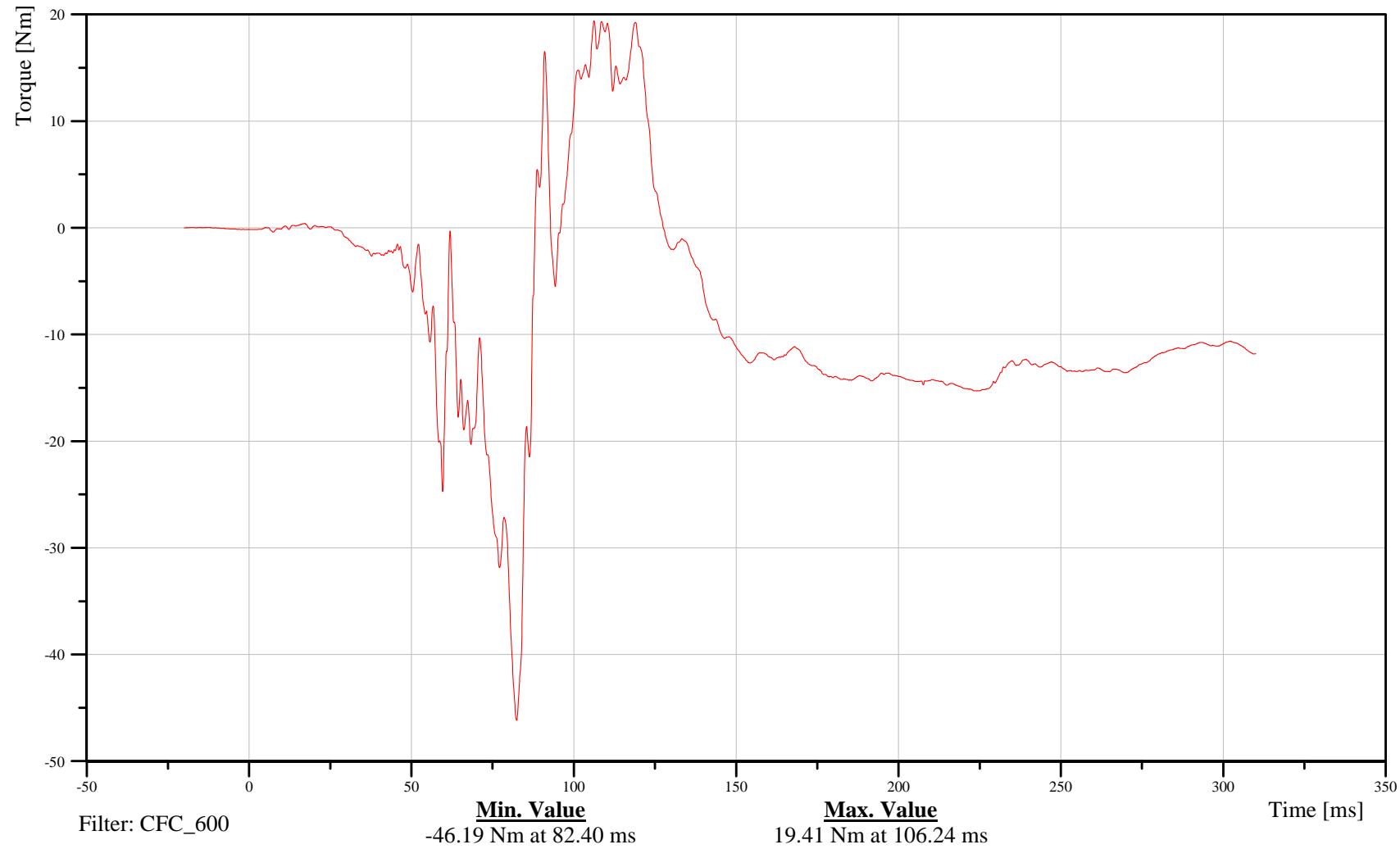
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Lower Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBILLXH3MOXB





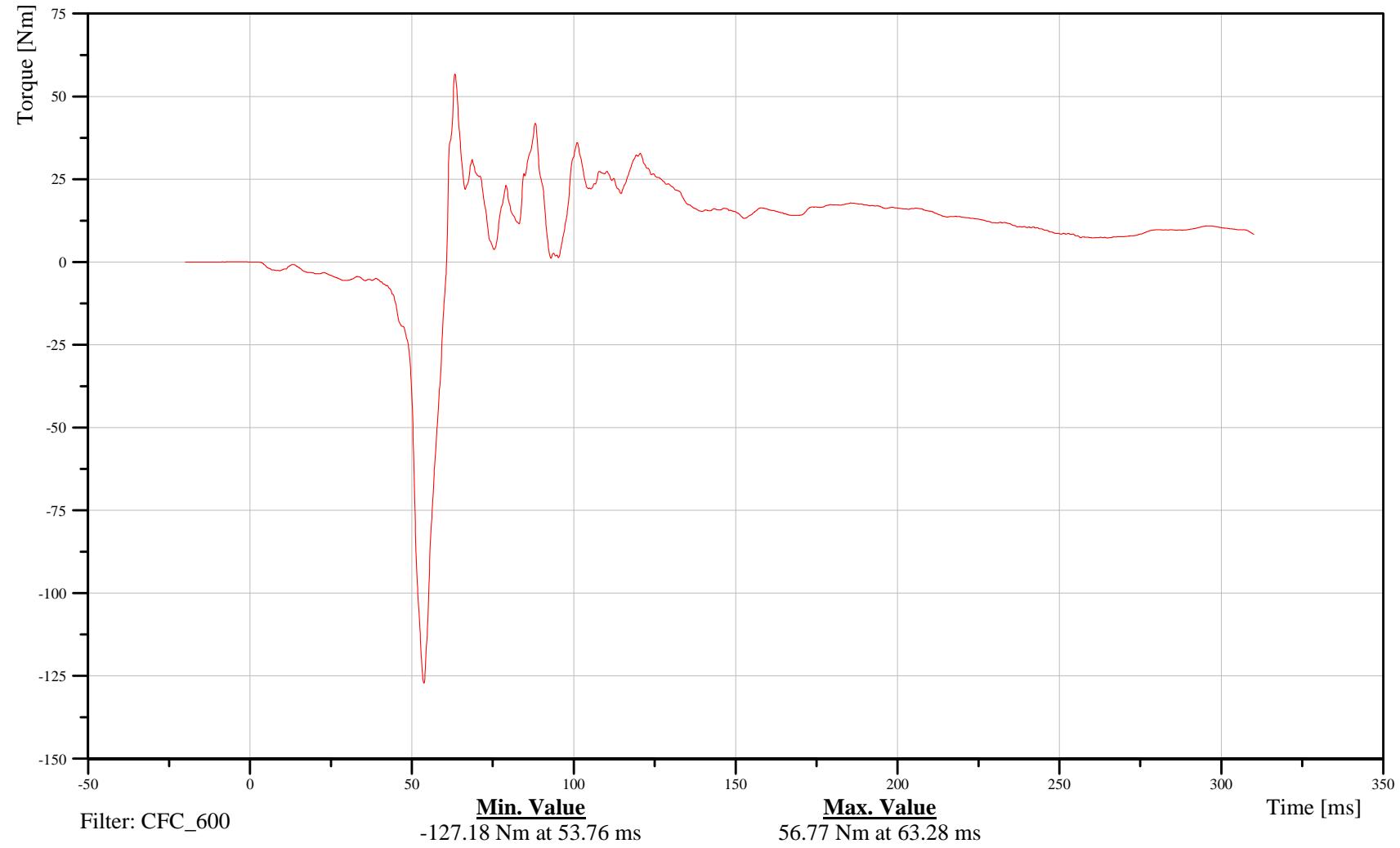
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Lower Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBILLXH3MOYB





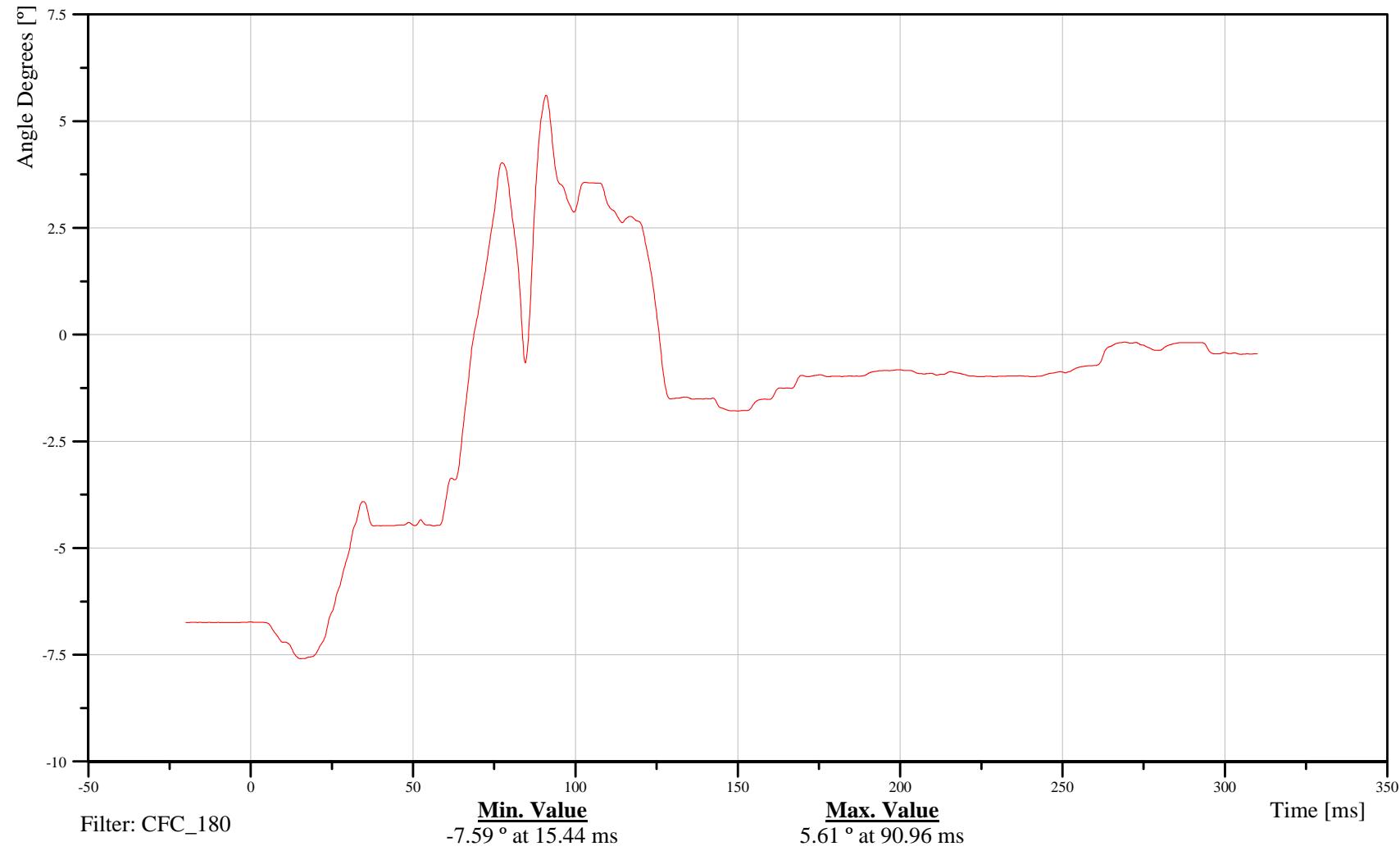
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot Angular X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





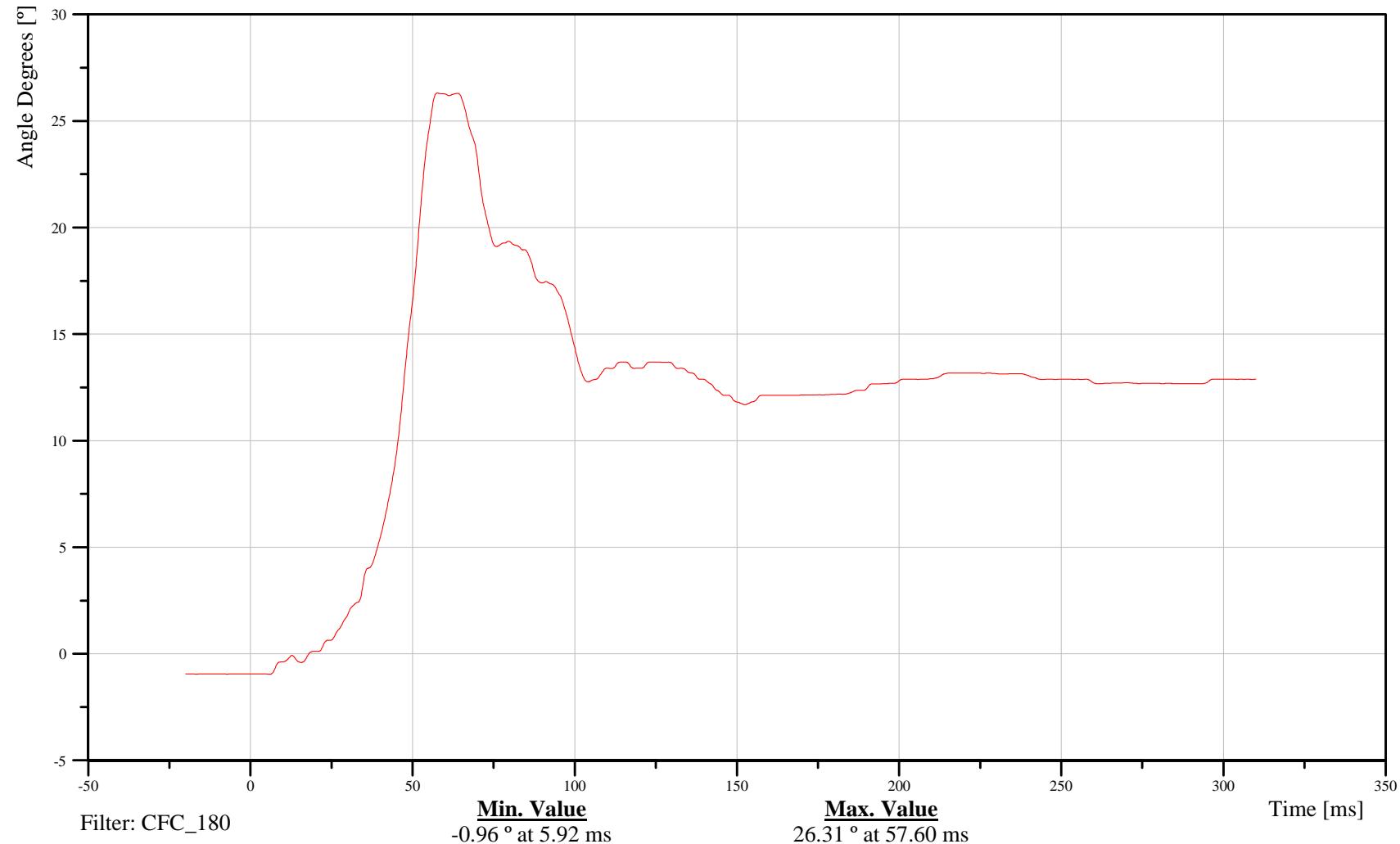
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot Angular Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





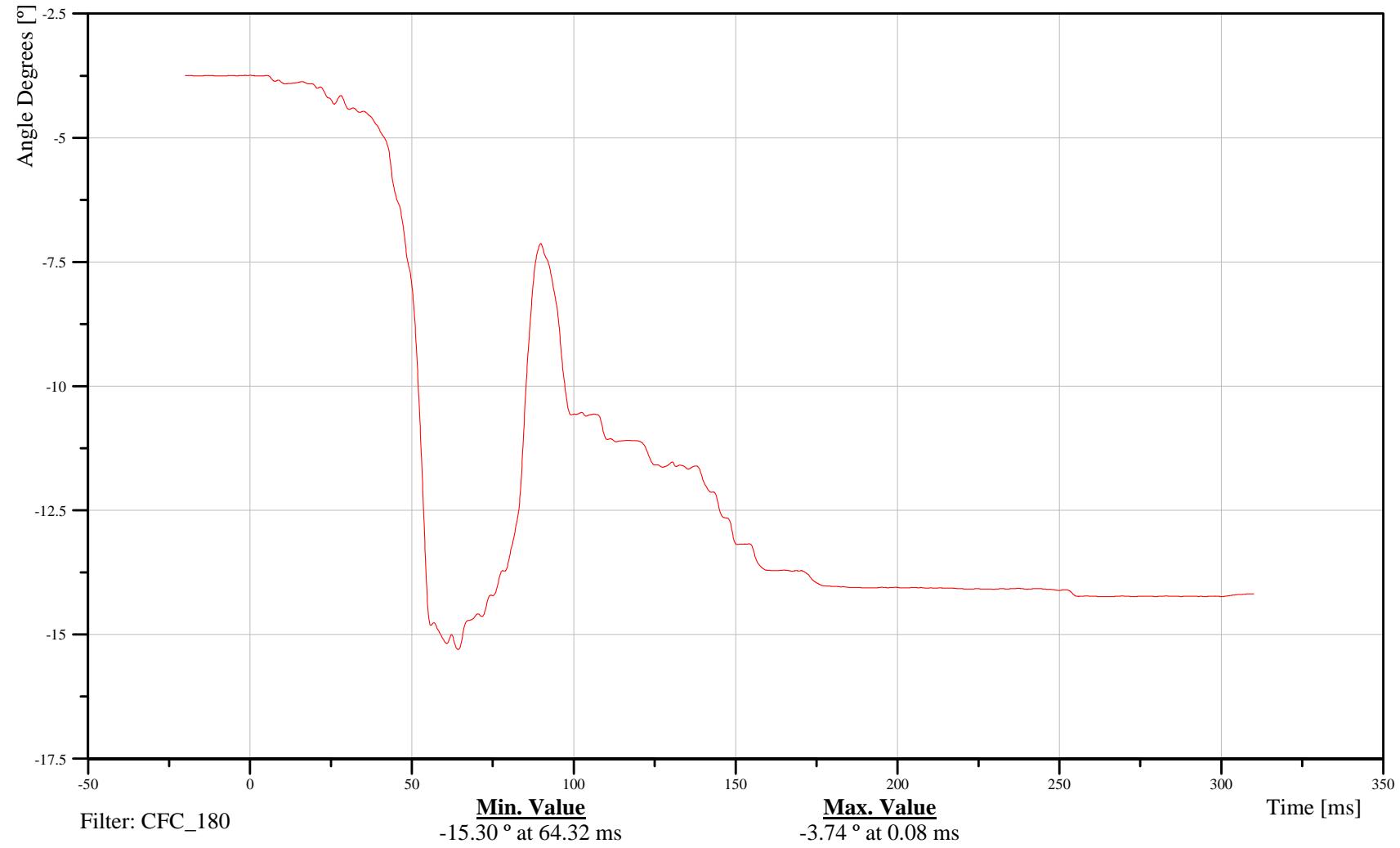
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot Angular Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

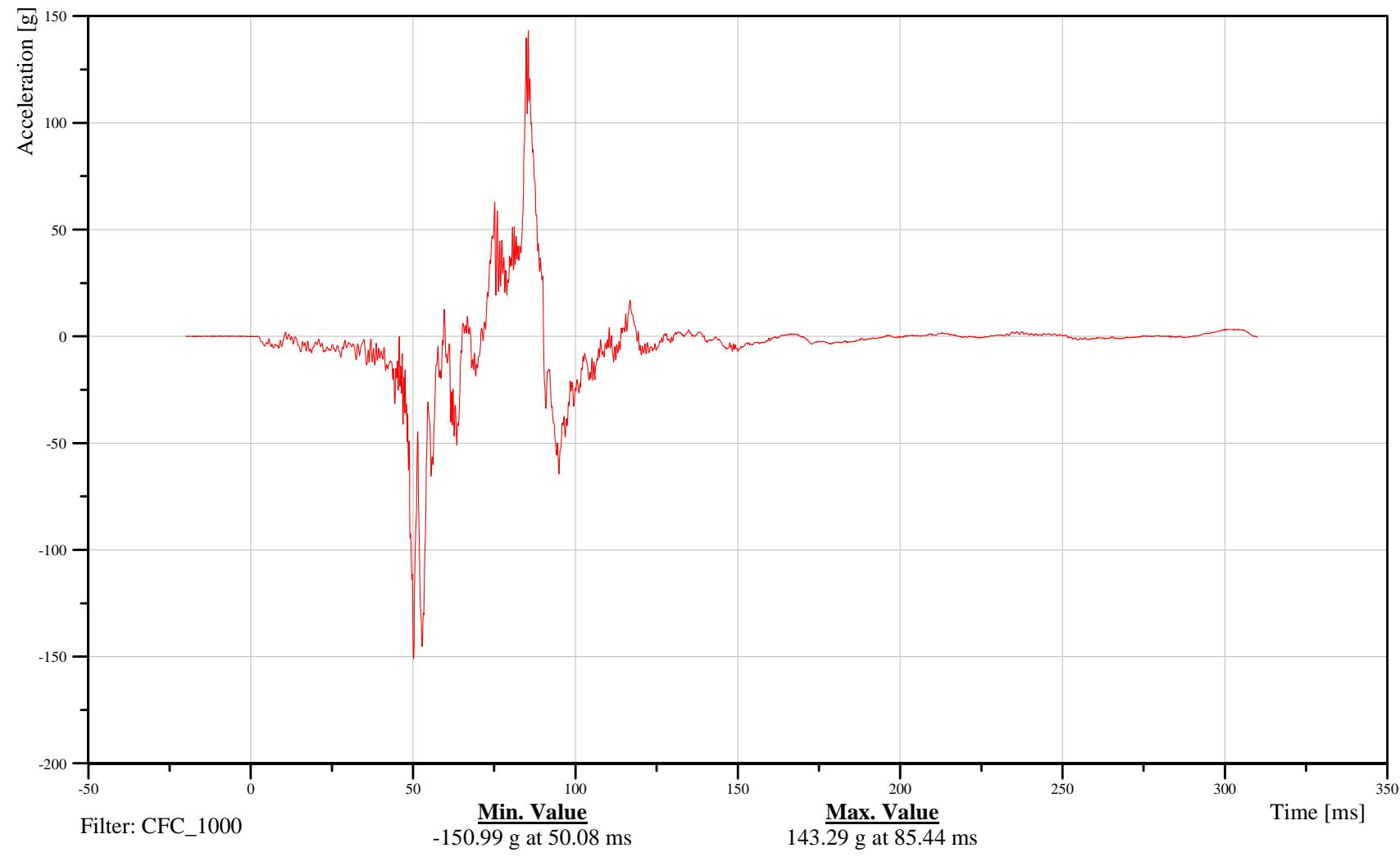
Customer: VRTC

21FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-277

101116





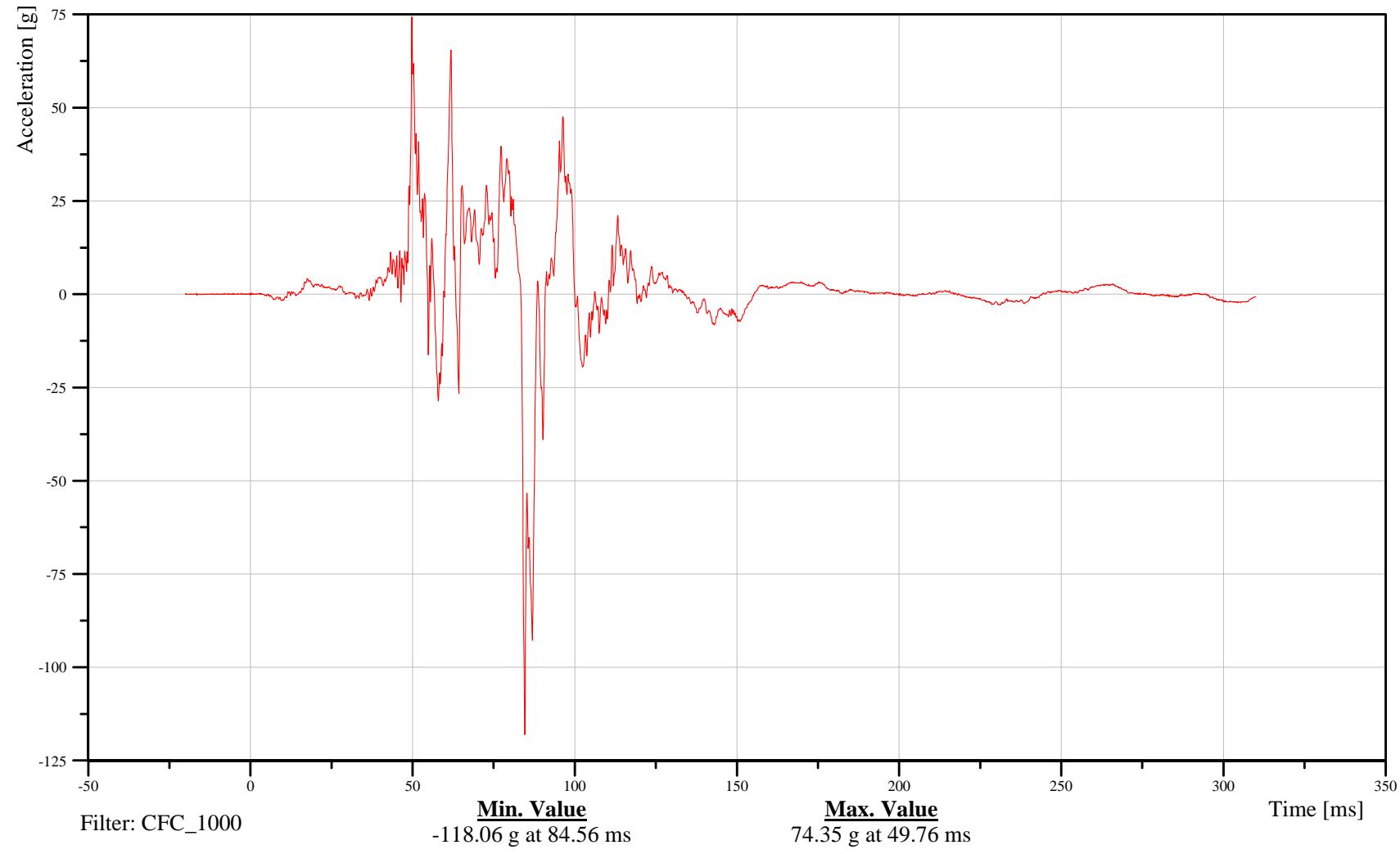
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FOOTLELXH3ACYA





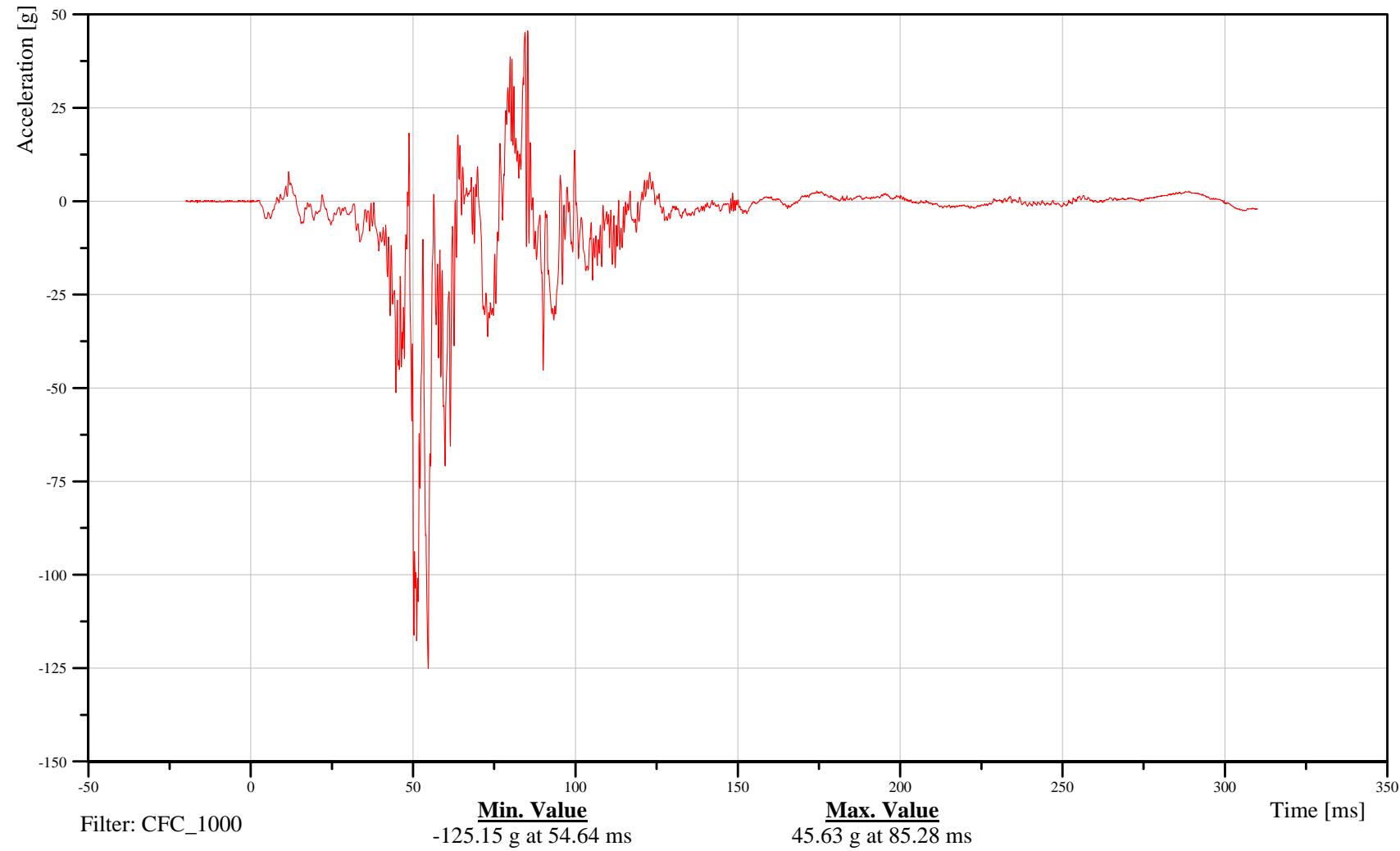
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Left Foot Resultant Acceleration

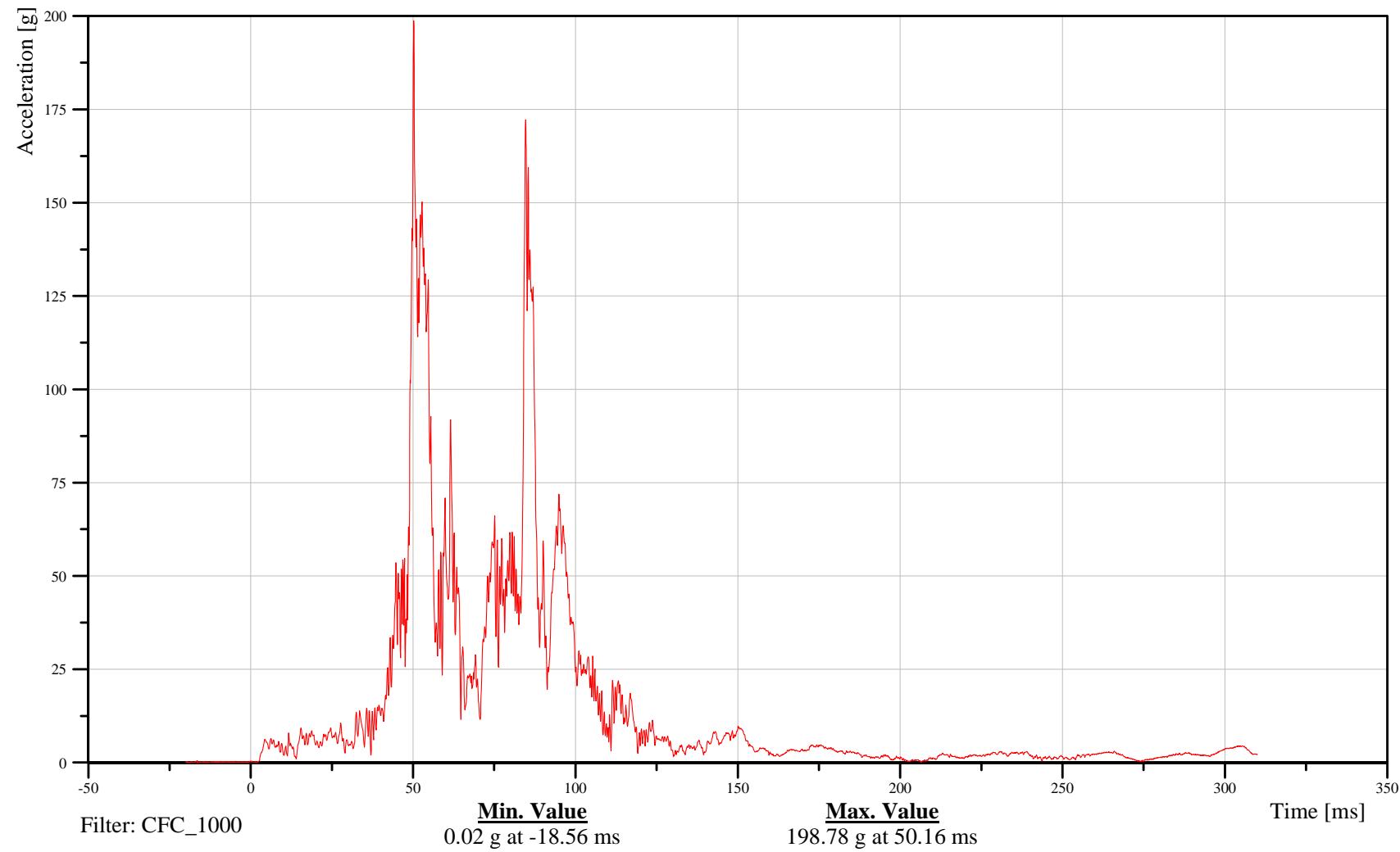
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FOOTLELXH3ACRA

B-280  
101116





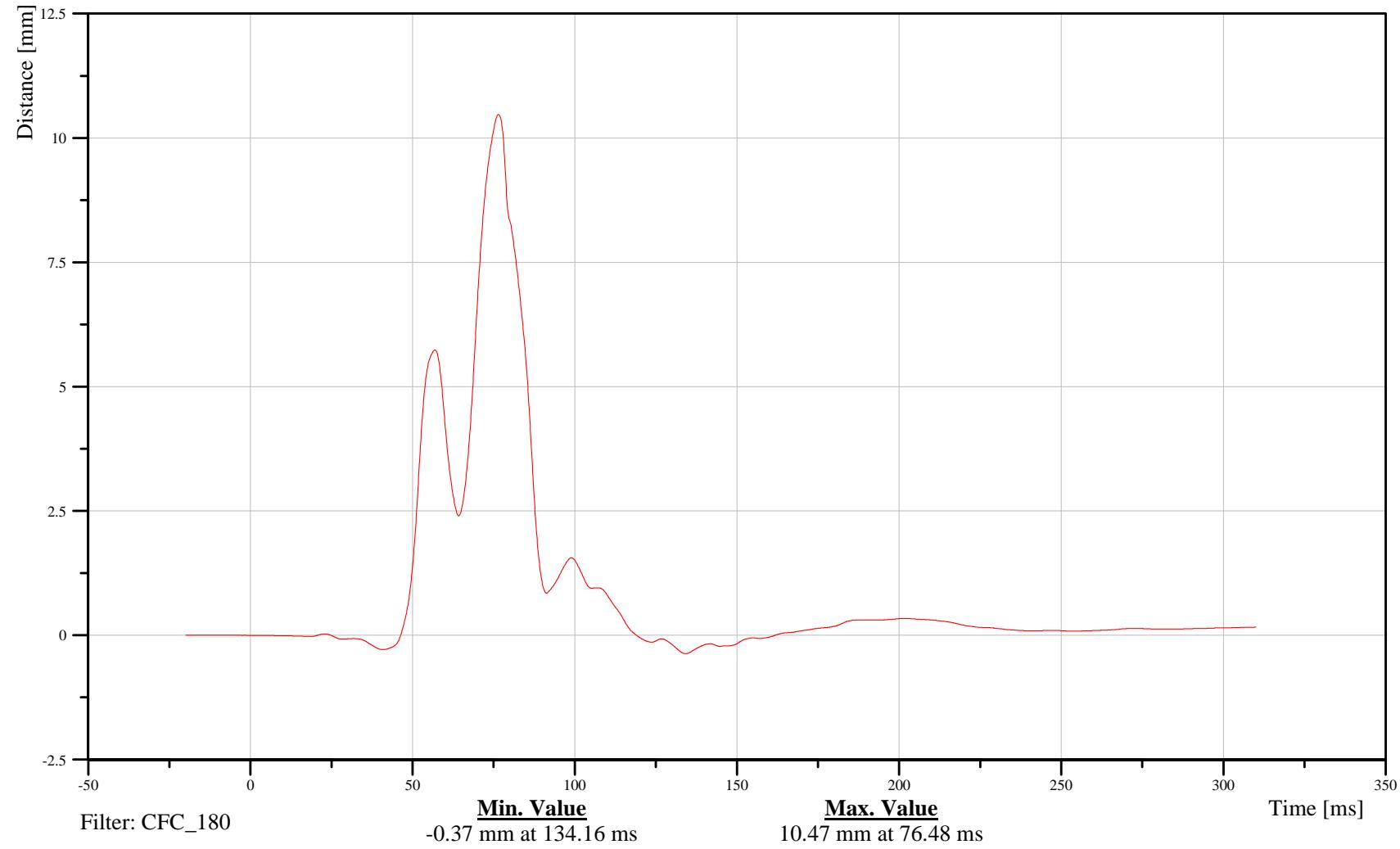
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Knee X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





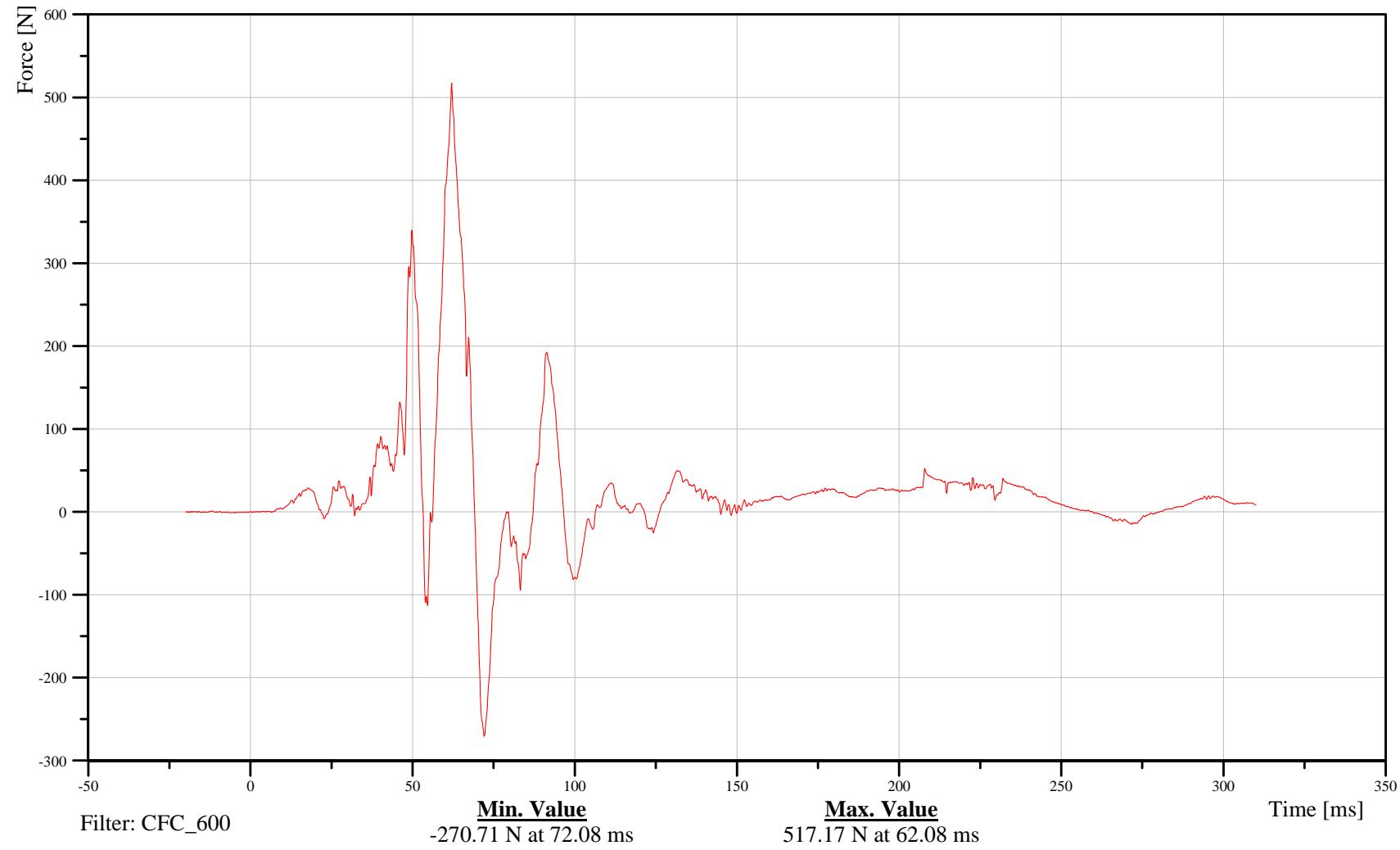
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Upper Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRULXH3FOXB





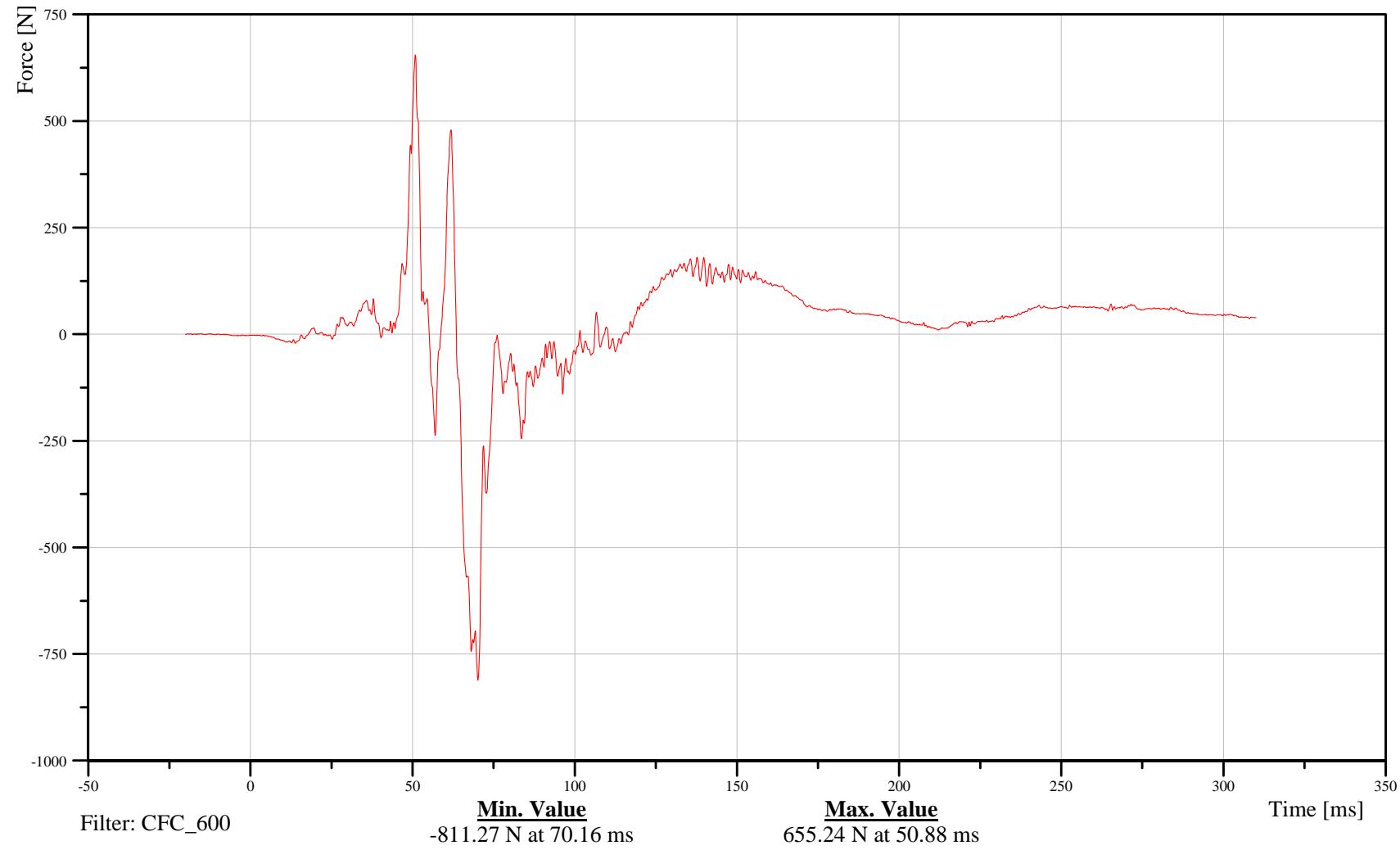
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Upper Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRULXH3FOZB





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Upper Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

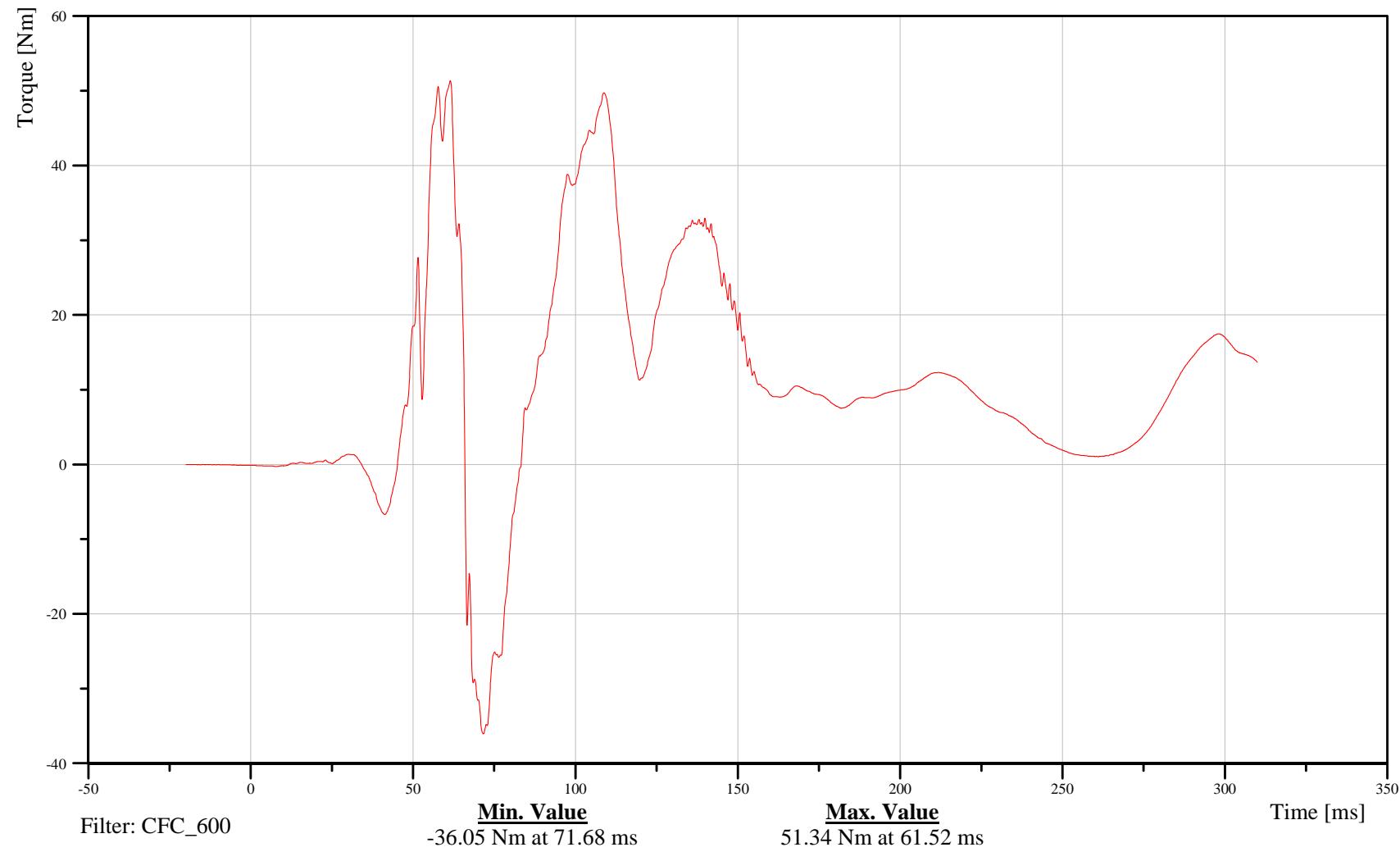
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRULXH3MOXB

B-284

101116





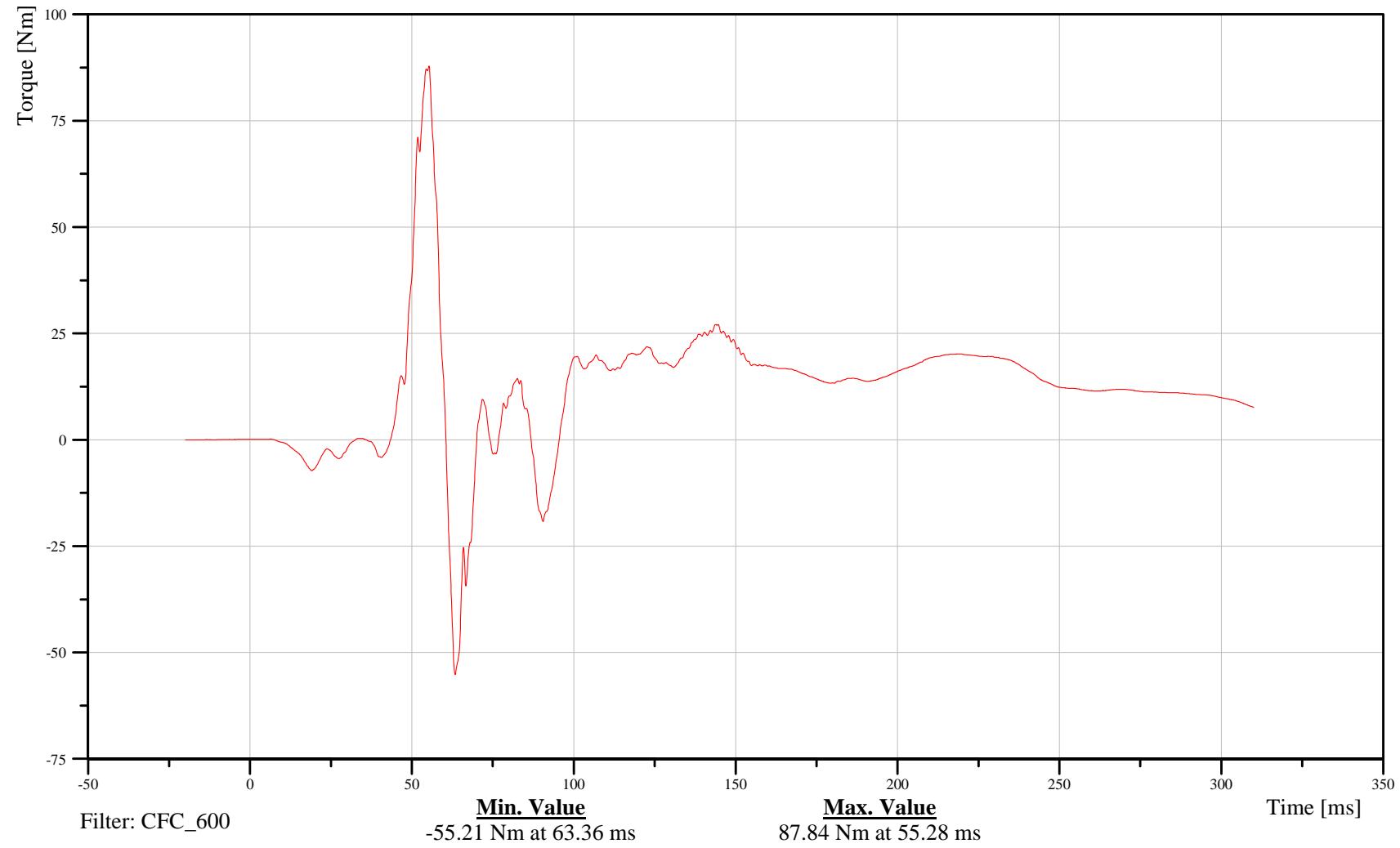
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Upper Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRULXH3MOYB





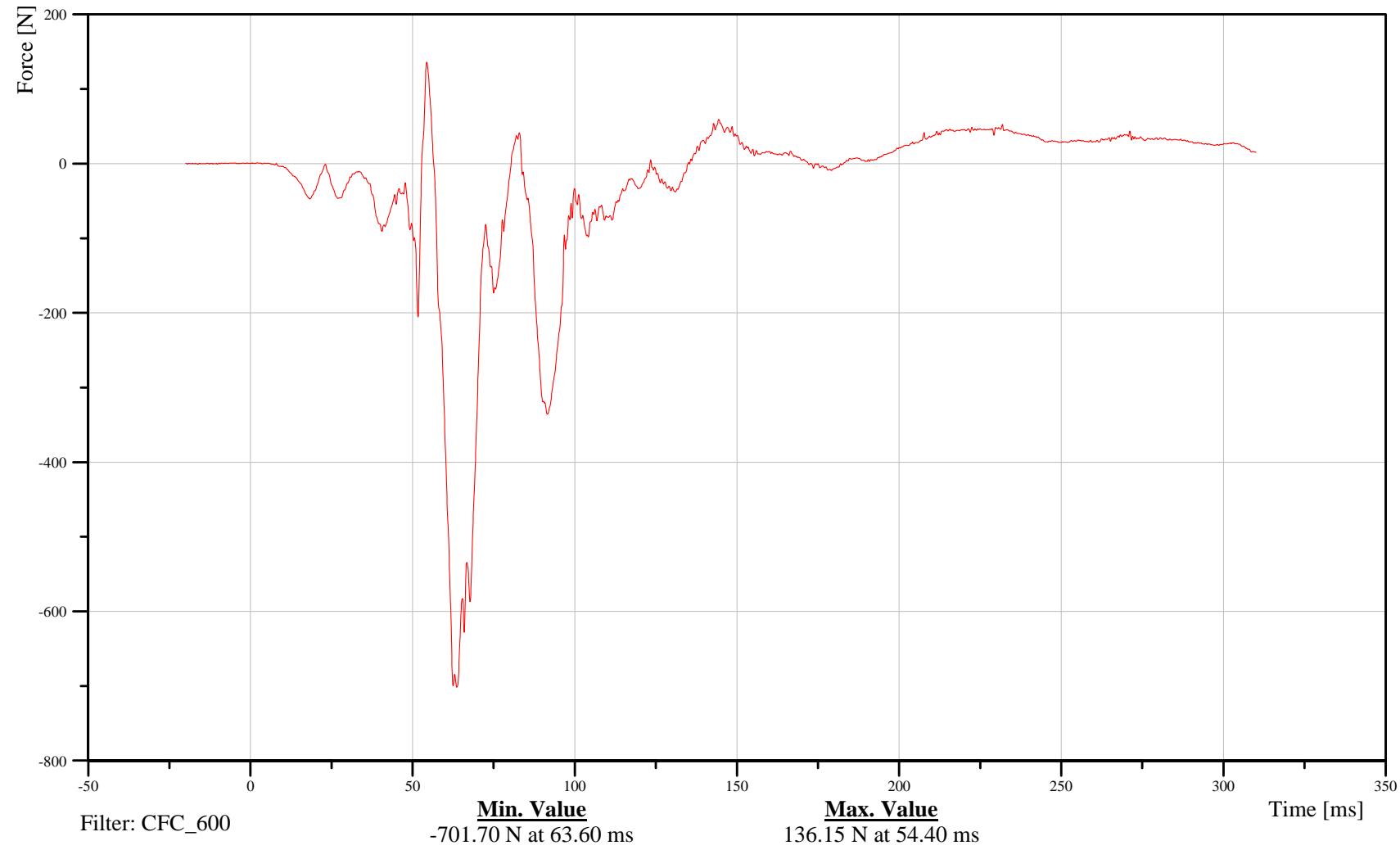
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Lower Tibia X-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRLLXH3FOXB





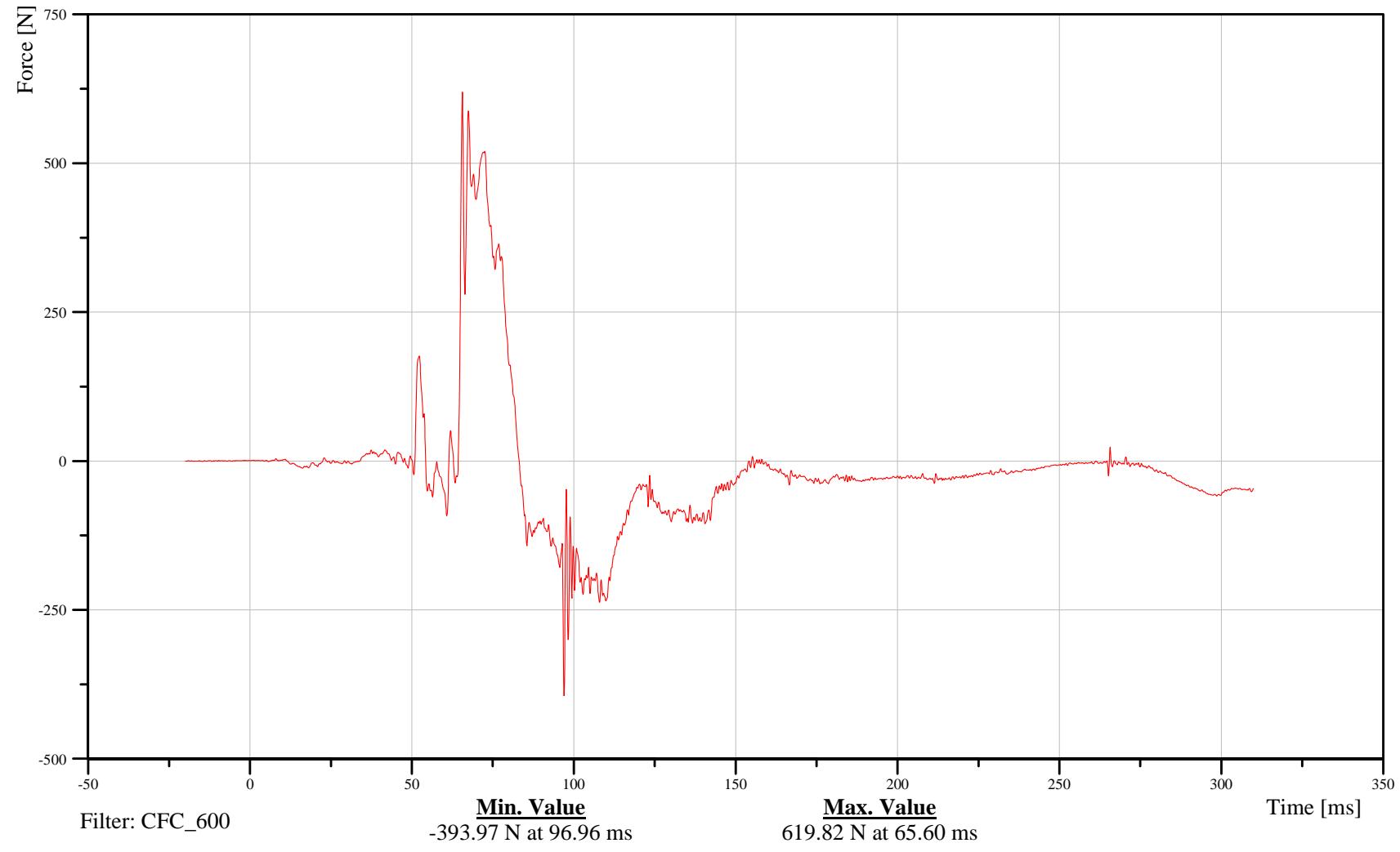
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Lower Tibia Y-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRLLXH3FOYB





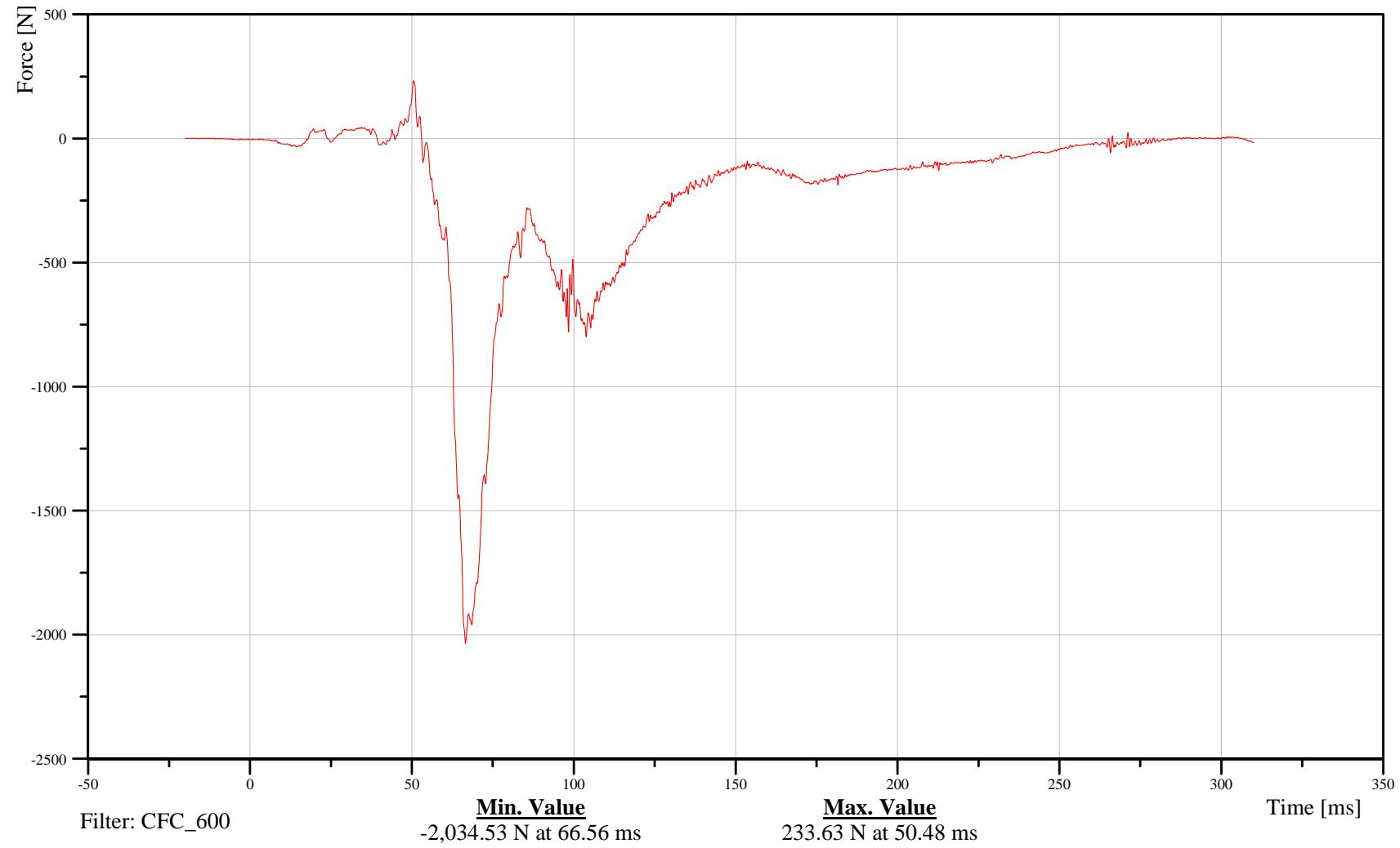
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Lower Tibia Z-Axis Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRLLXH3FOZB





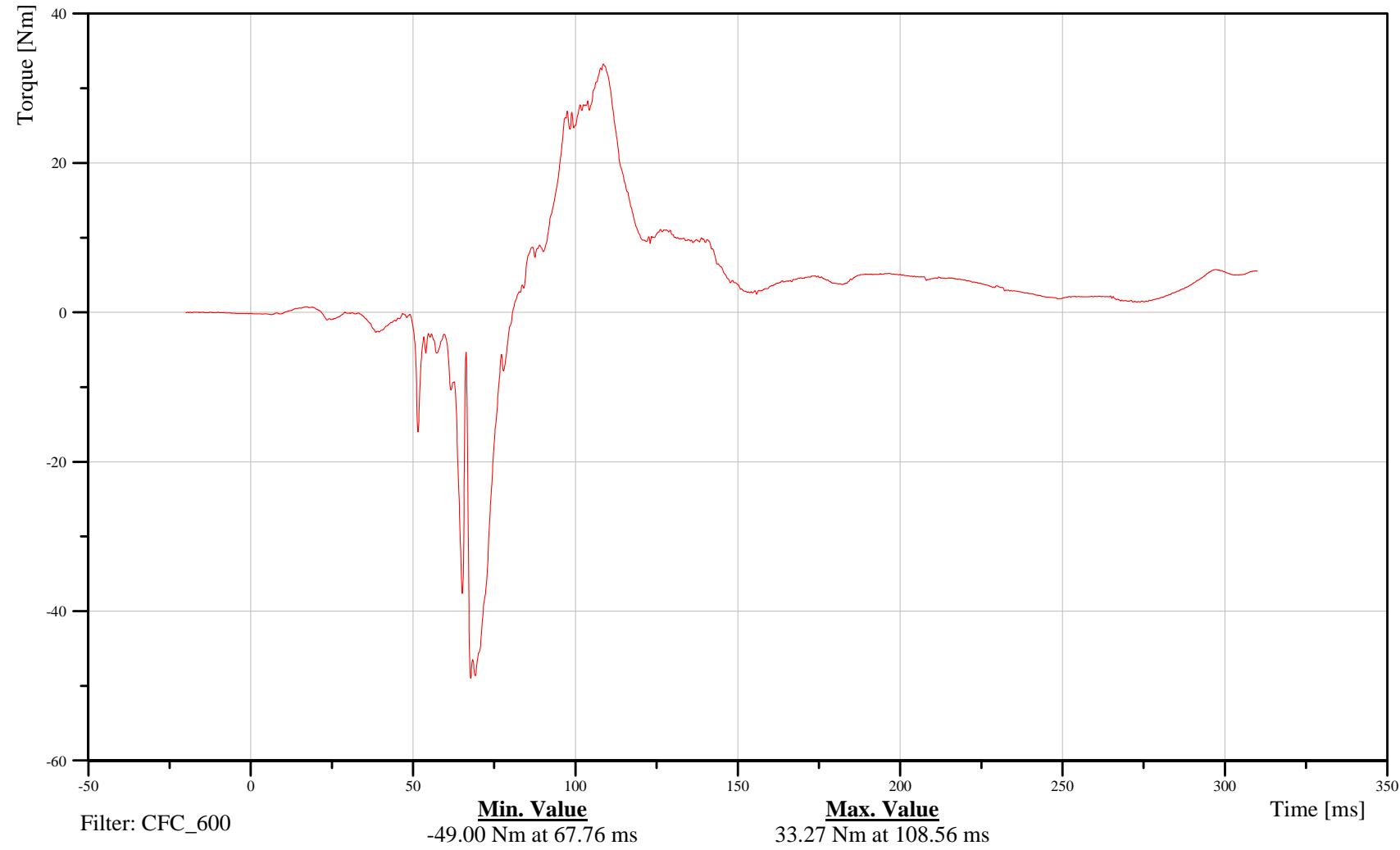
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Lower Tibia Moment About X Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF  
Test Number: 101116





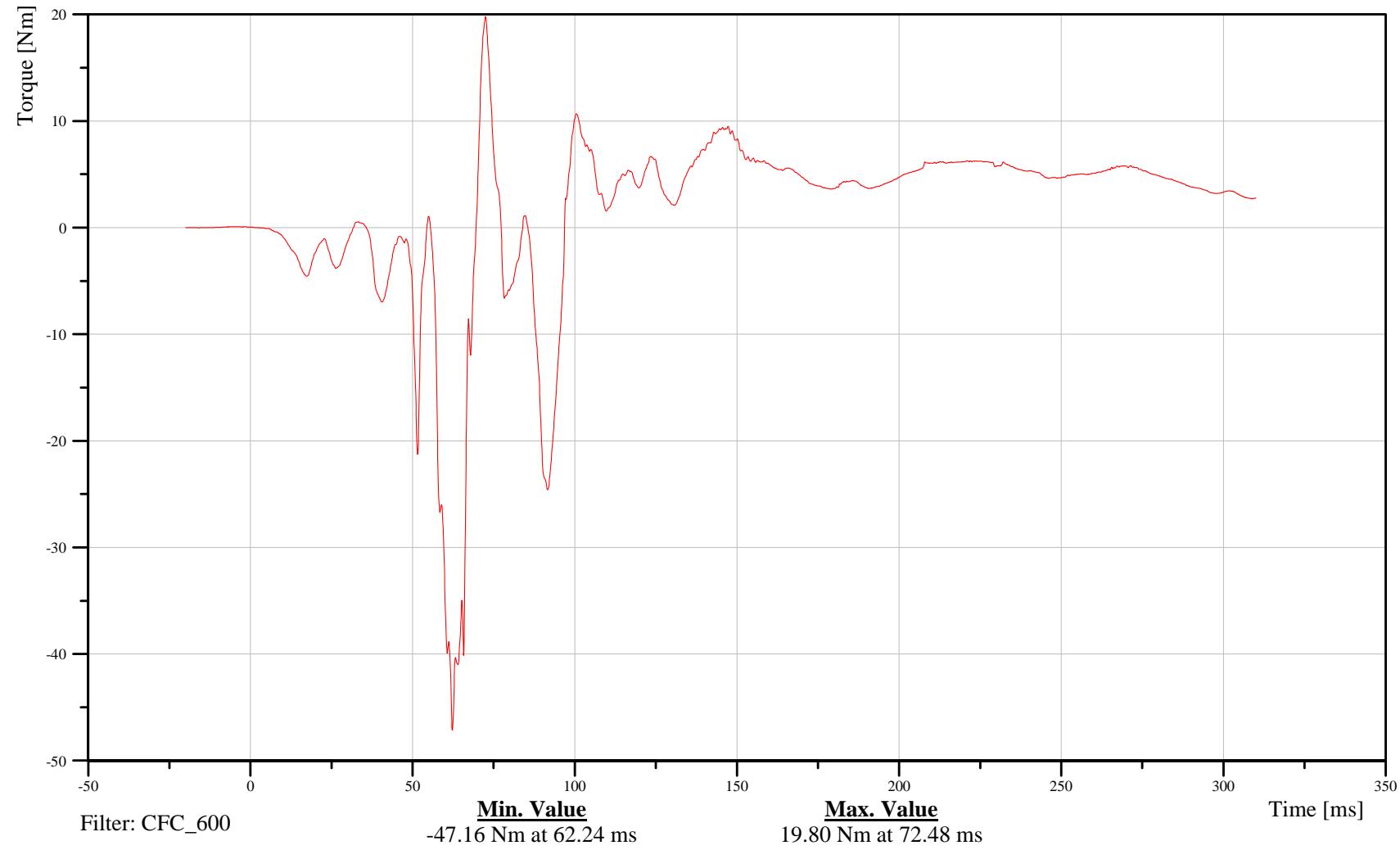
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Lower Tibia Moment About Y Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21TIBIRLLXH3MOYB



101116



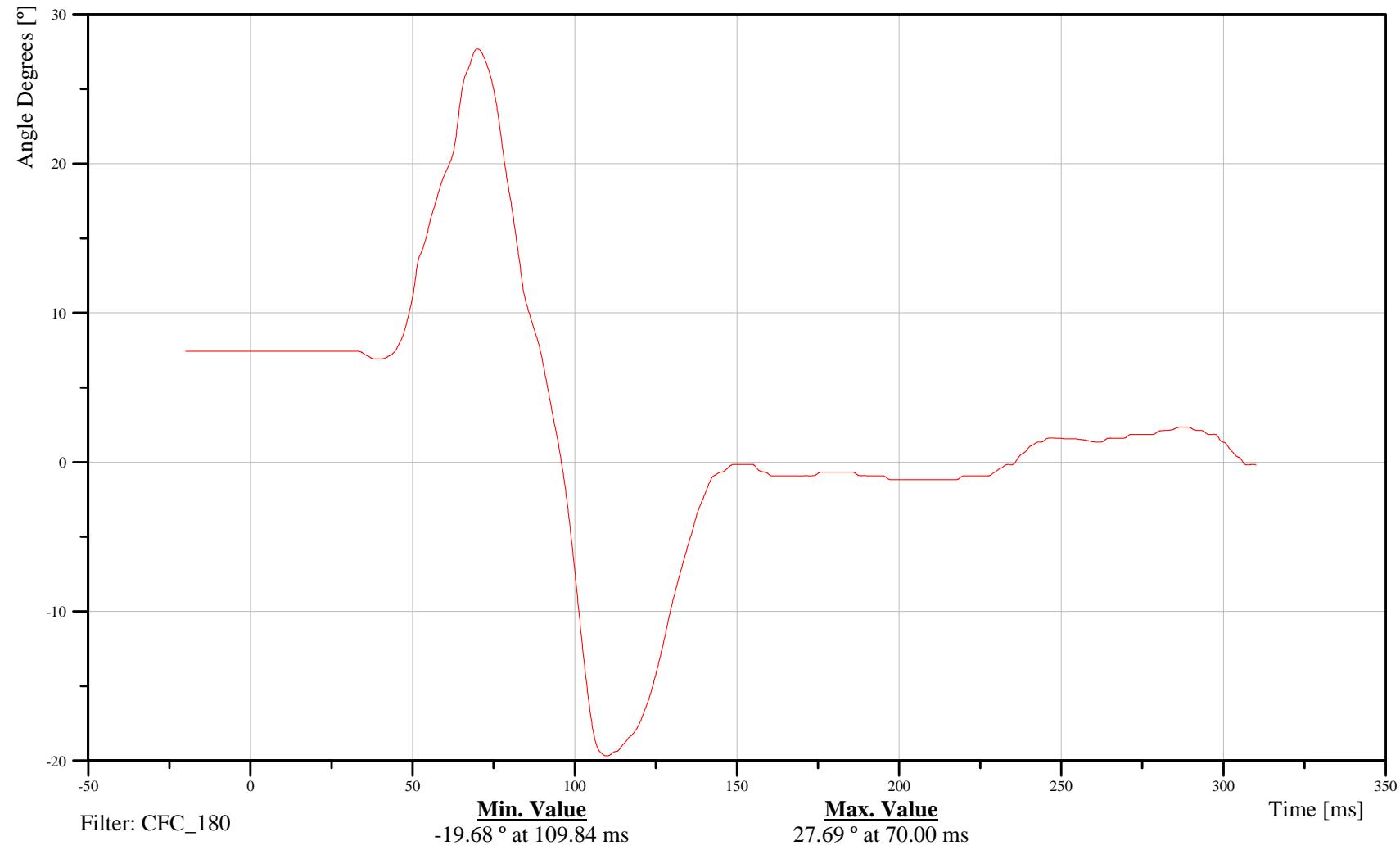
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot Angular X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





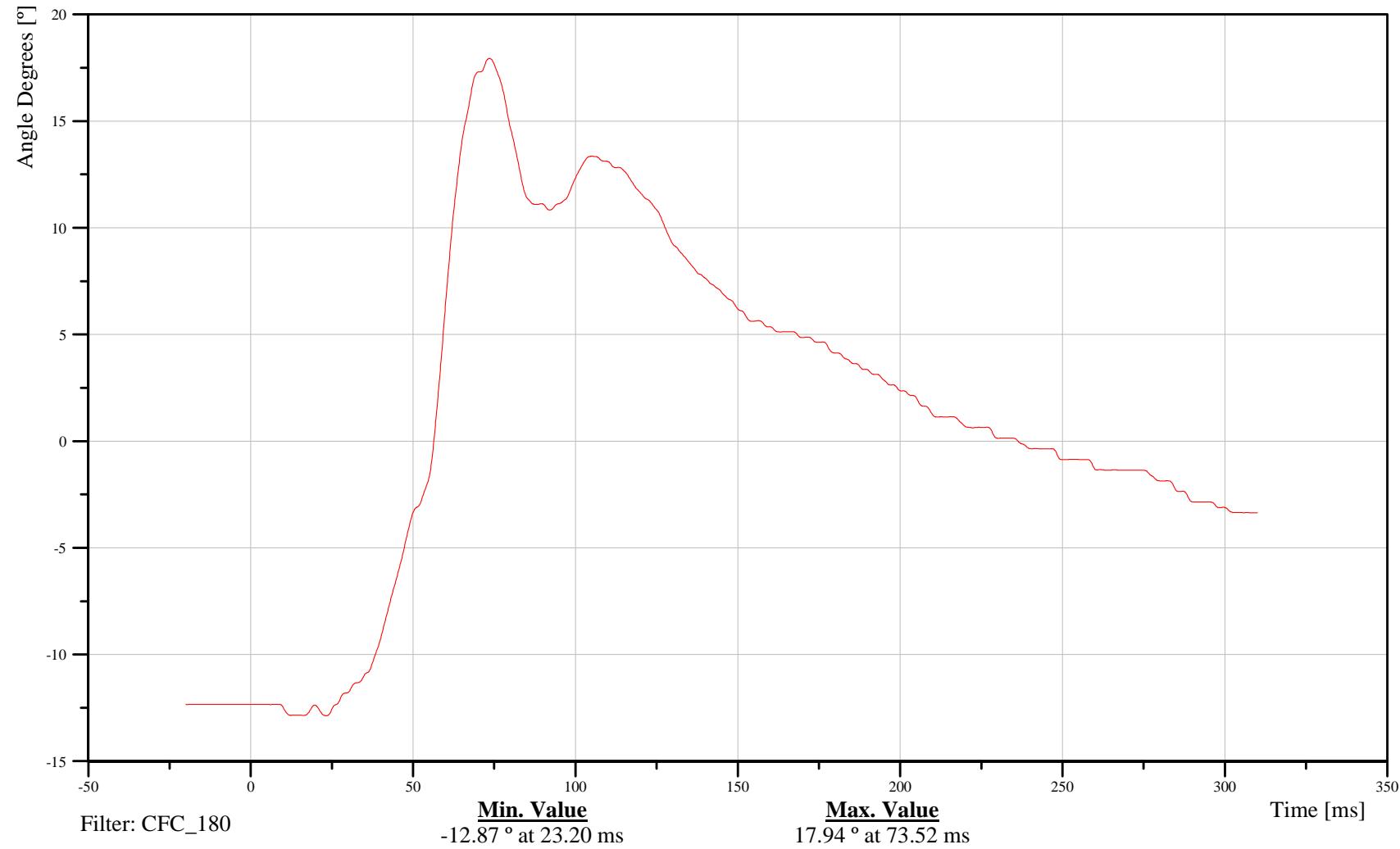
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot Angular Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





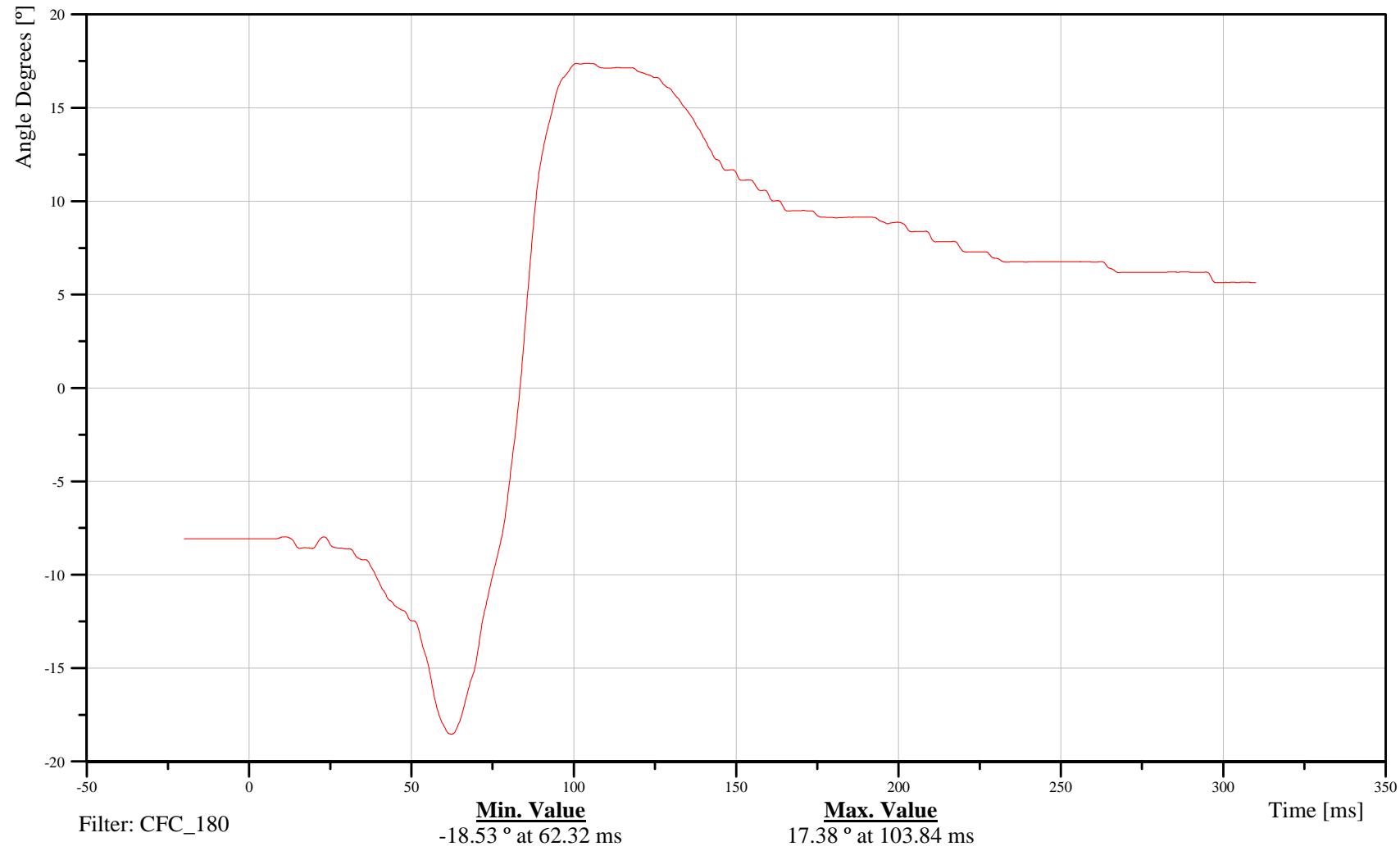
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot Angular Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

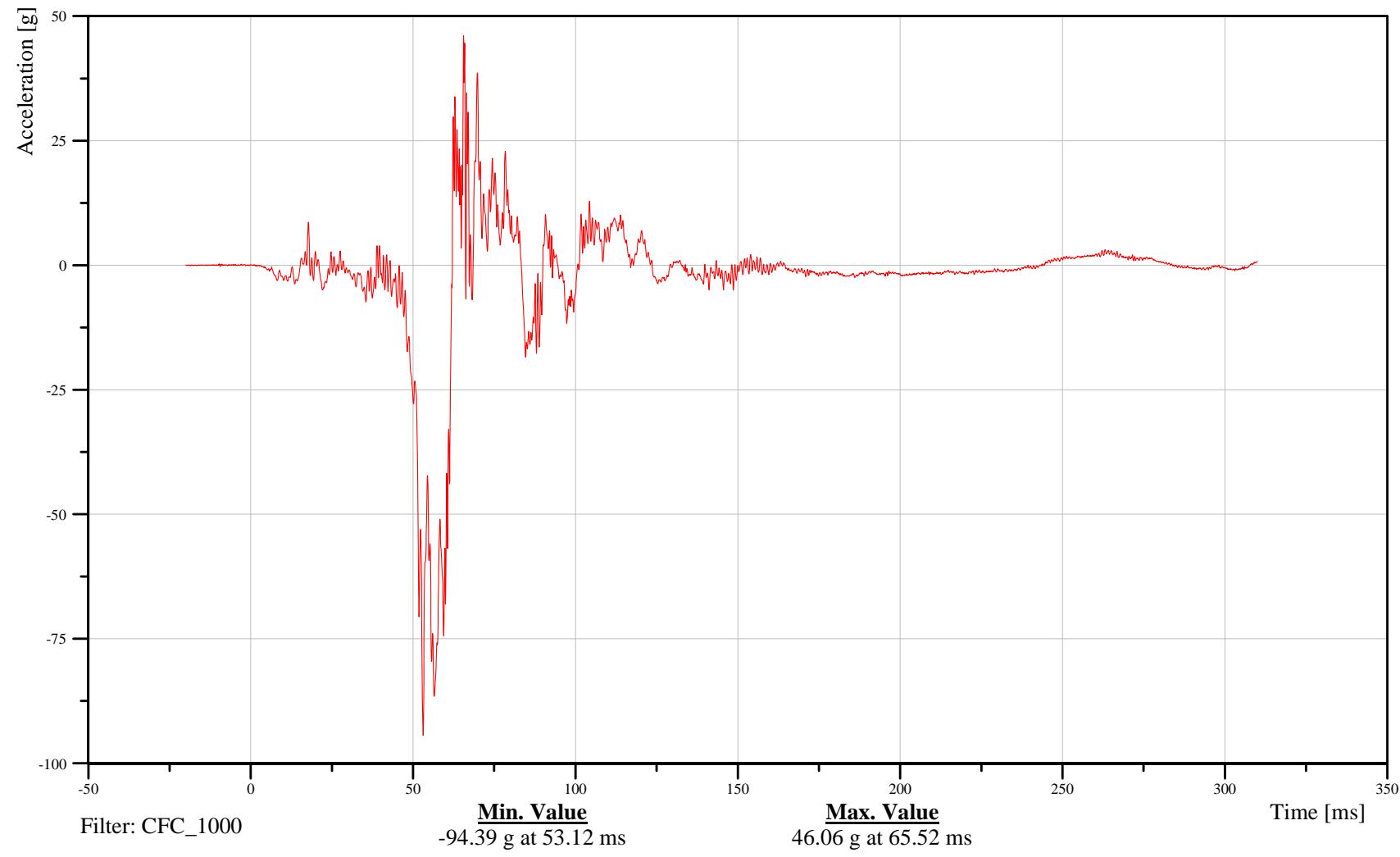
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FOOTRILXH3ACXA

B-294

101116





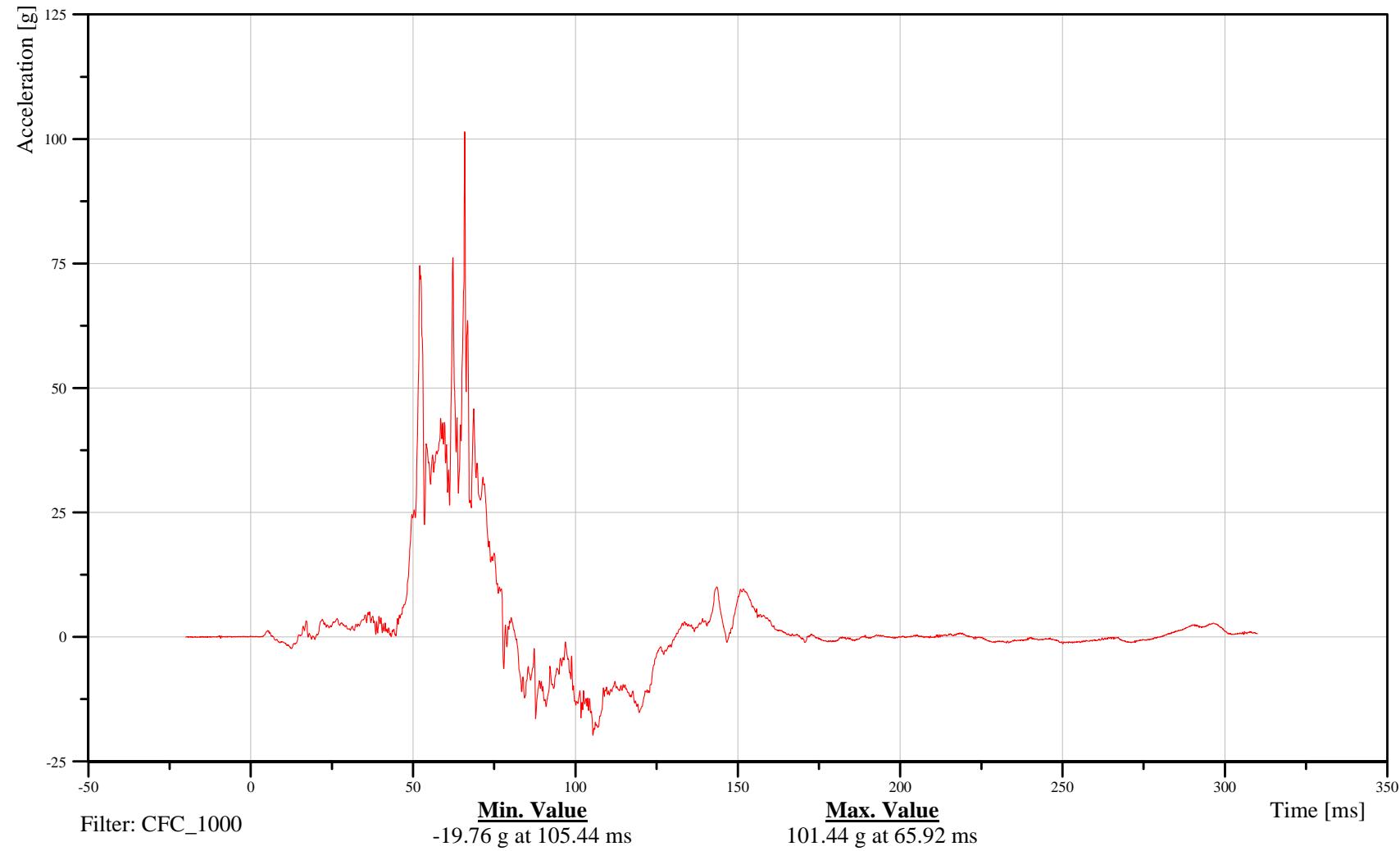
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF  
Test Number: 101116



101116



Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot Z-Axis Acceleration

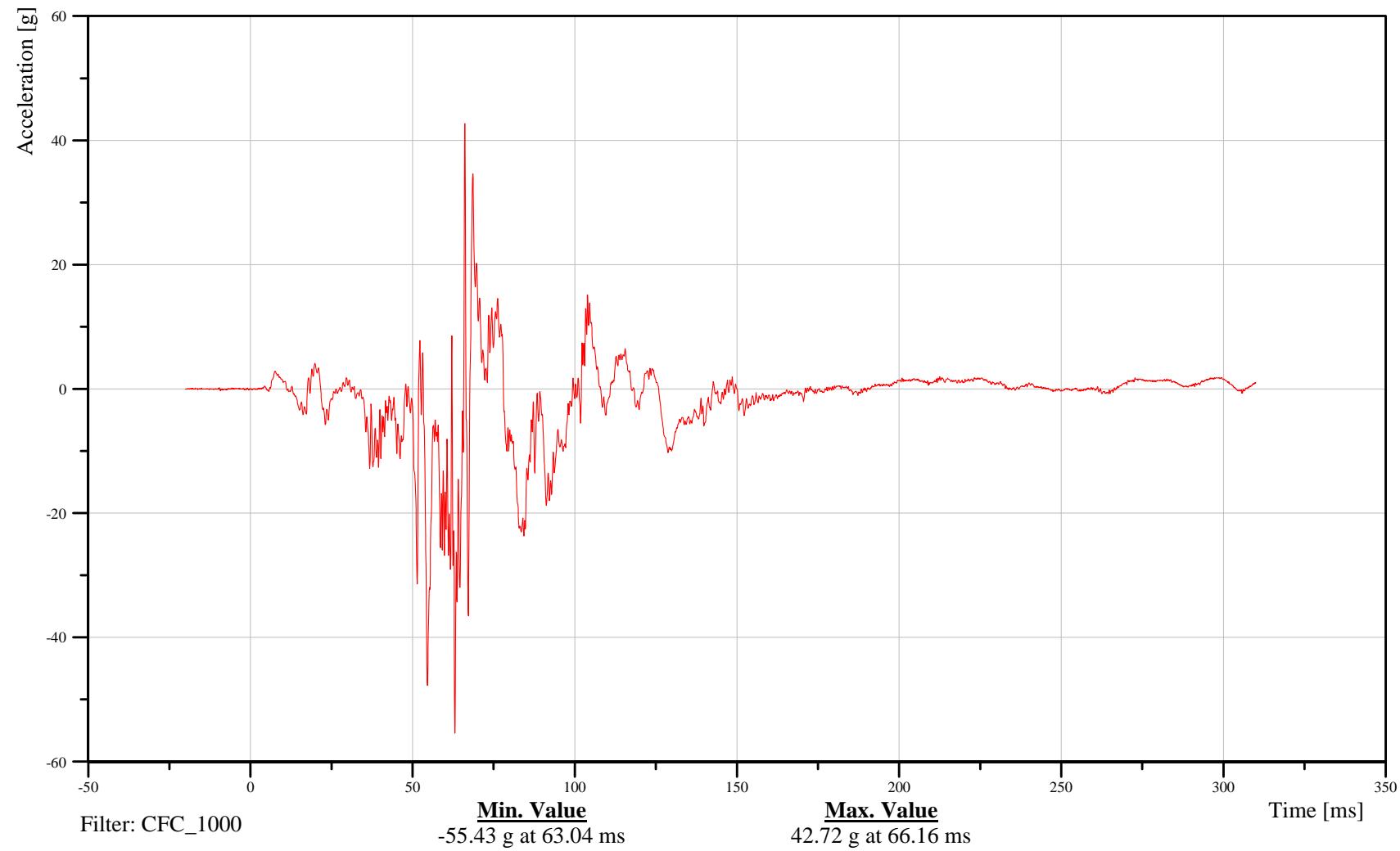
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-296  
101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Right Foot Resultant Acceleration

Date: 11/17/2010  
Time: 14:40

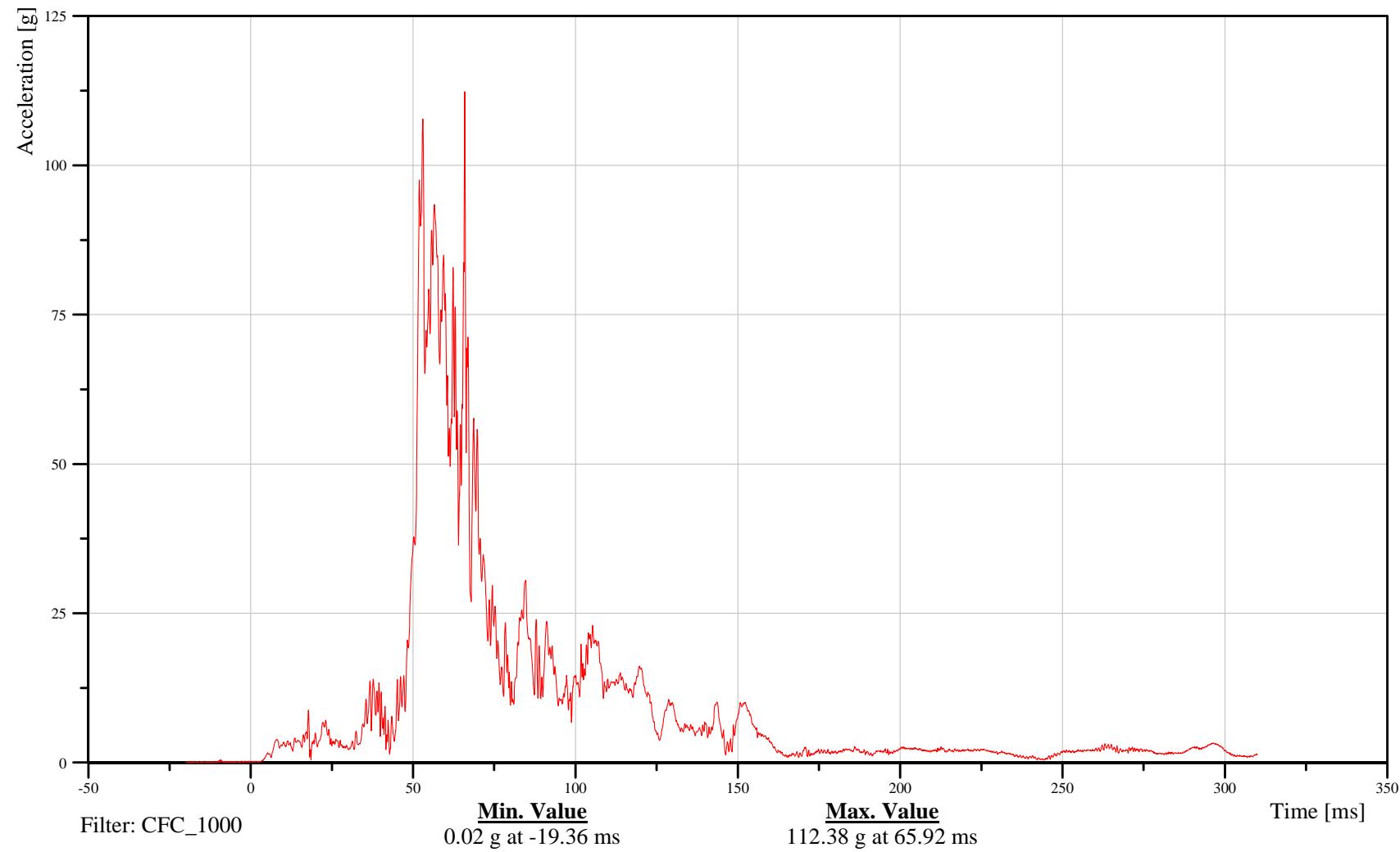
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21FOOTRILXH3ACRA

B-297

101116





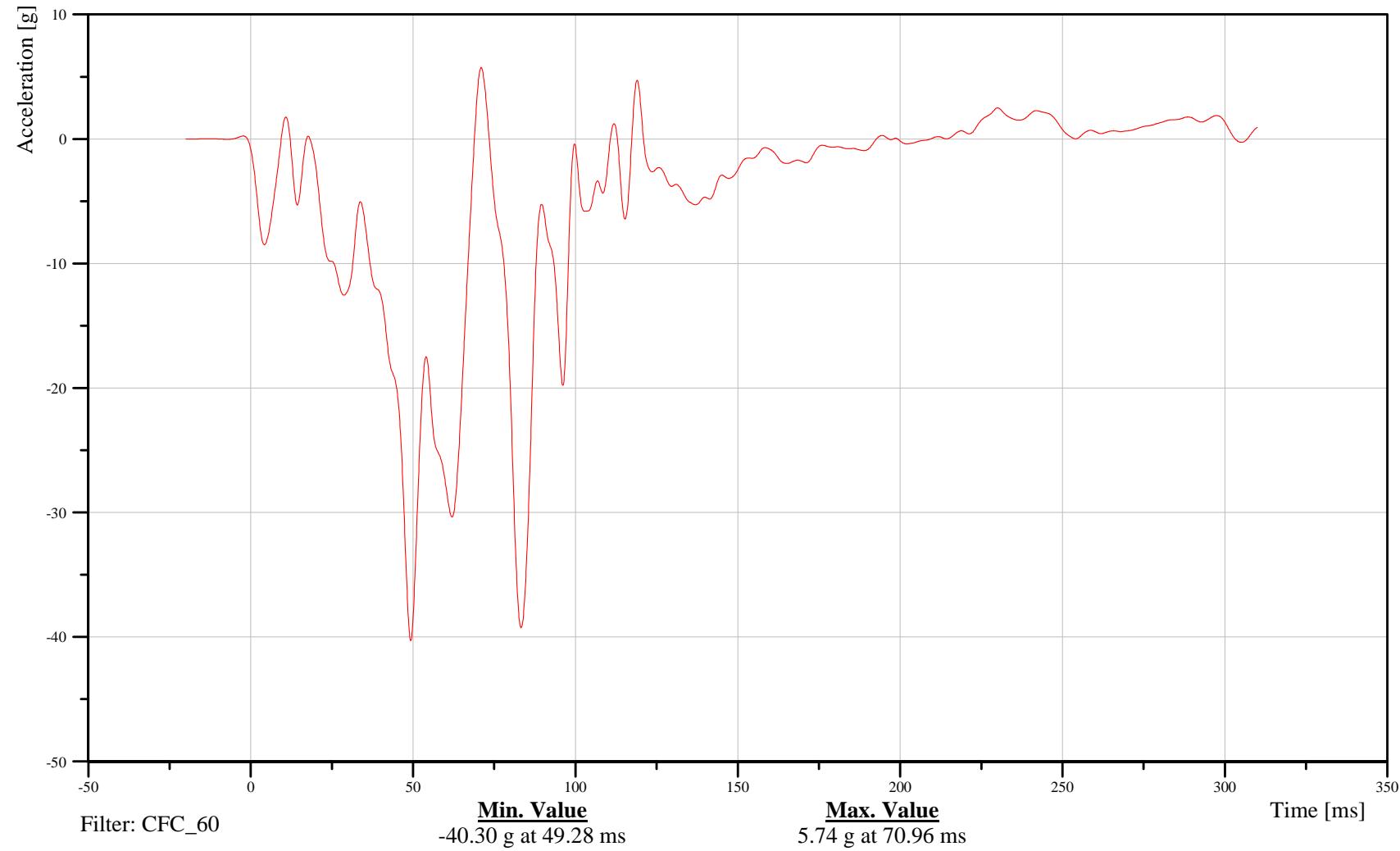
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Left Sill X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20SILLLE0000ACXD

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Left Sill Y-Axis Acceleration

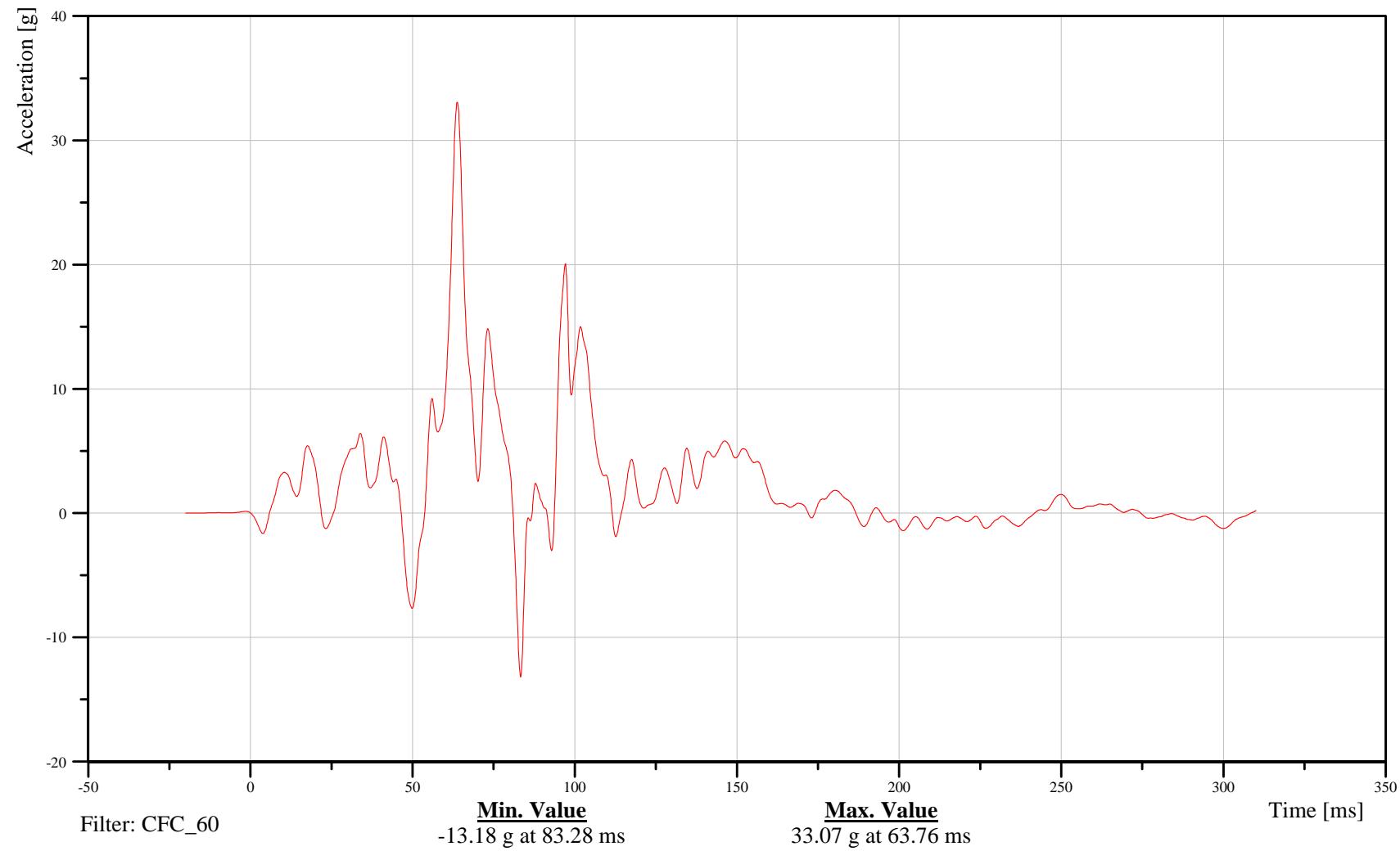
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

20SILLLE0000ACYD

B-299  
101116





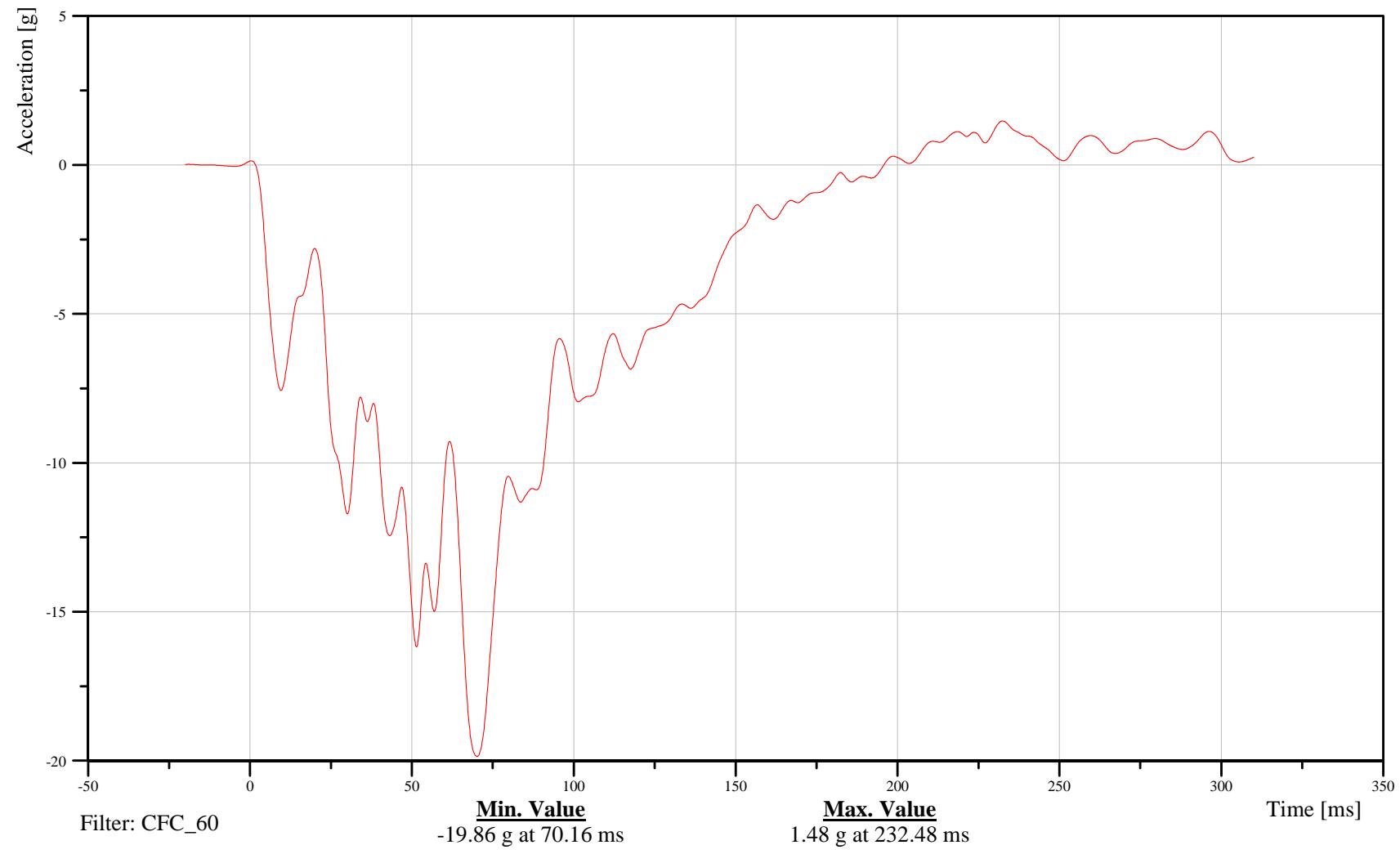
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Right Sill X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20SILLRI0000ACXD

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Right Sill Y-Axis Acceleration

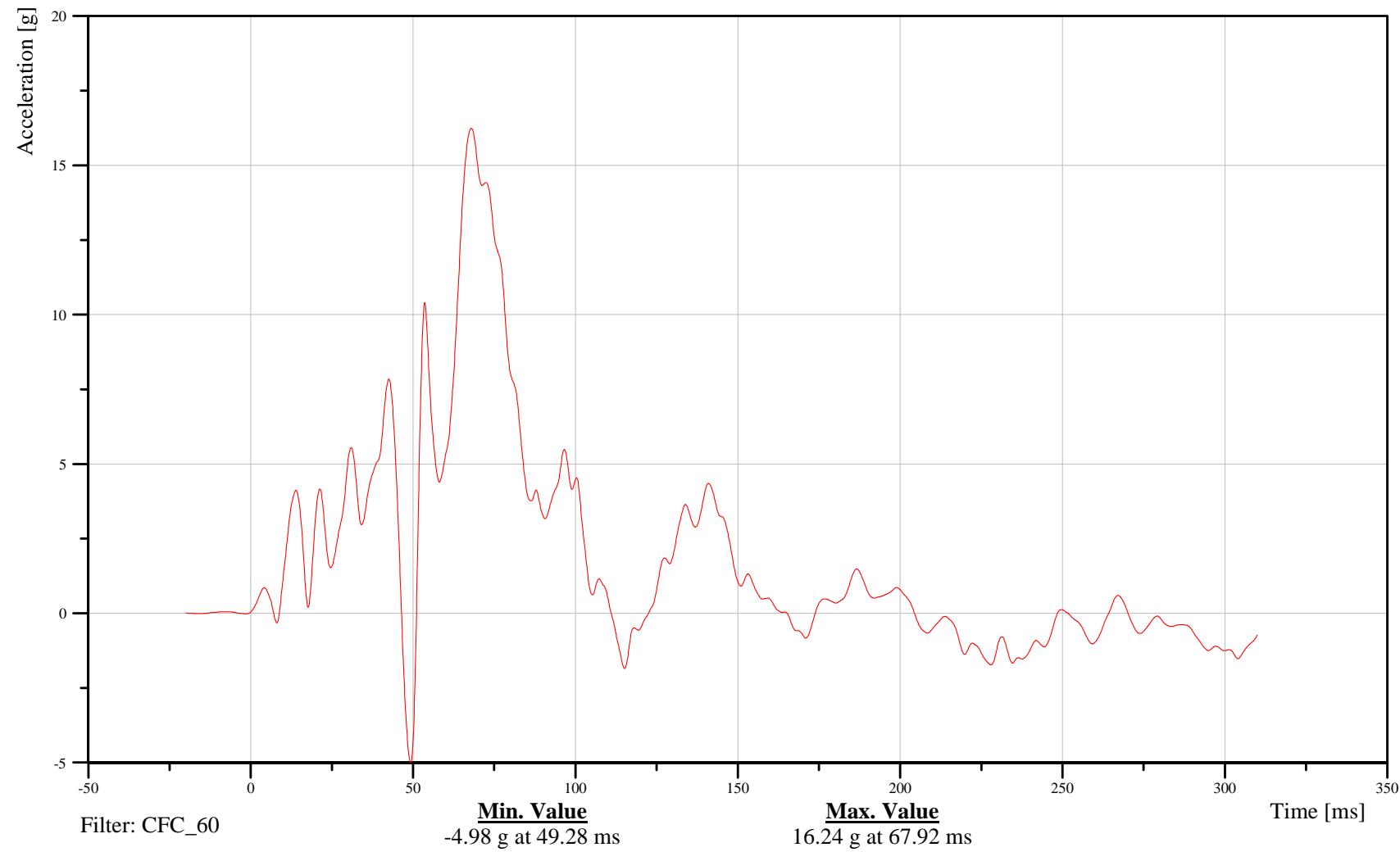
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20SILLRI0000ACYD

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-301  
101116





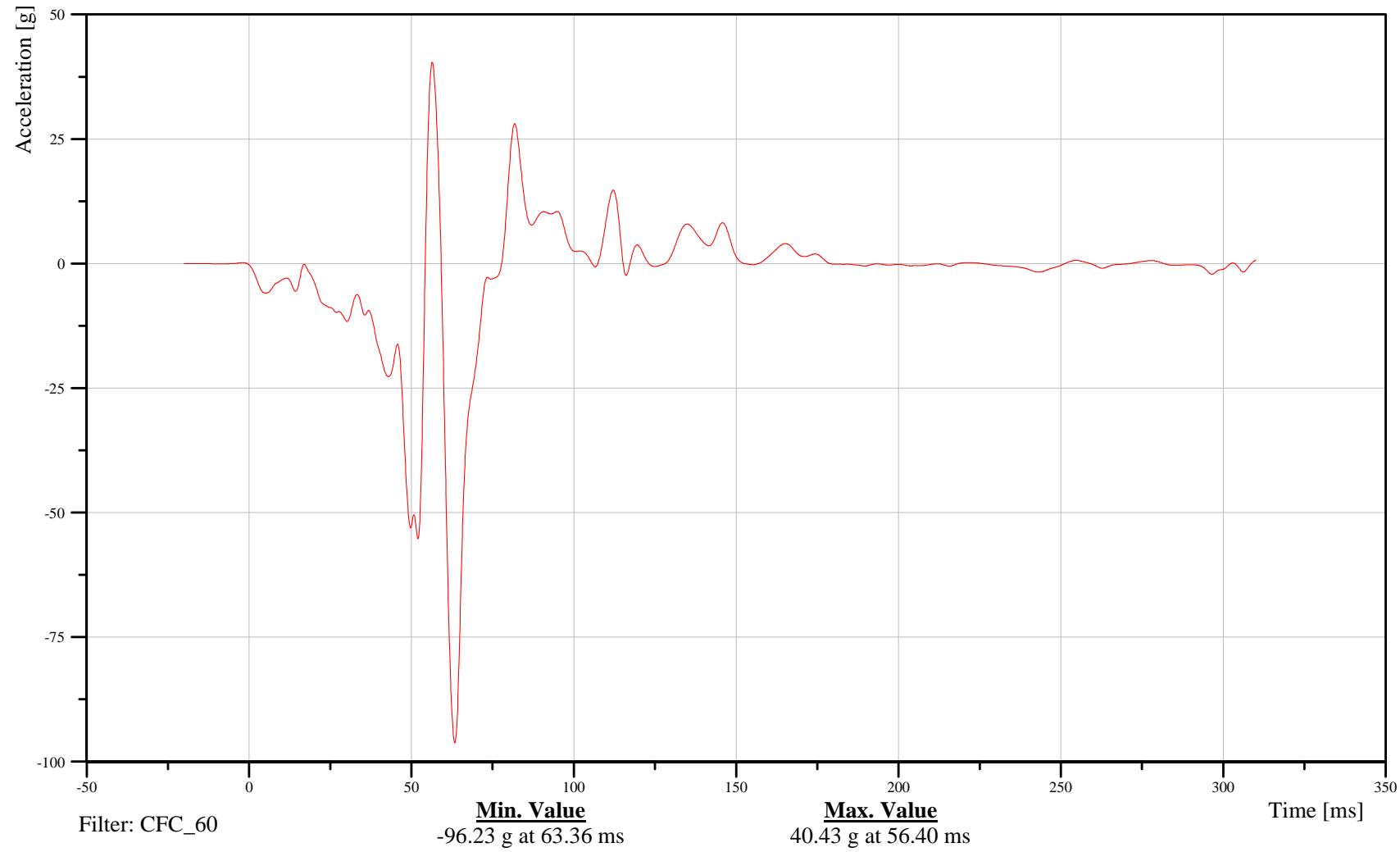
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Vehicle Center of Gravity X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20VEHCCG0000ACXD

TRC Inc. Test Lab: CTF  
Test Number: 101116





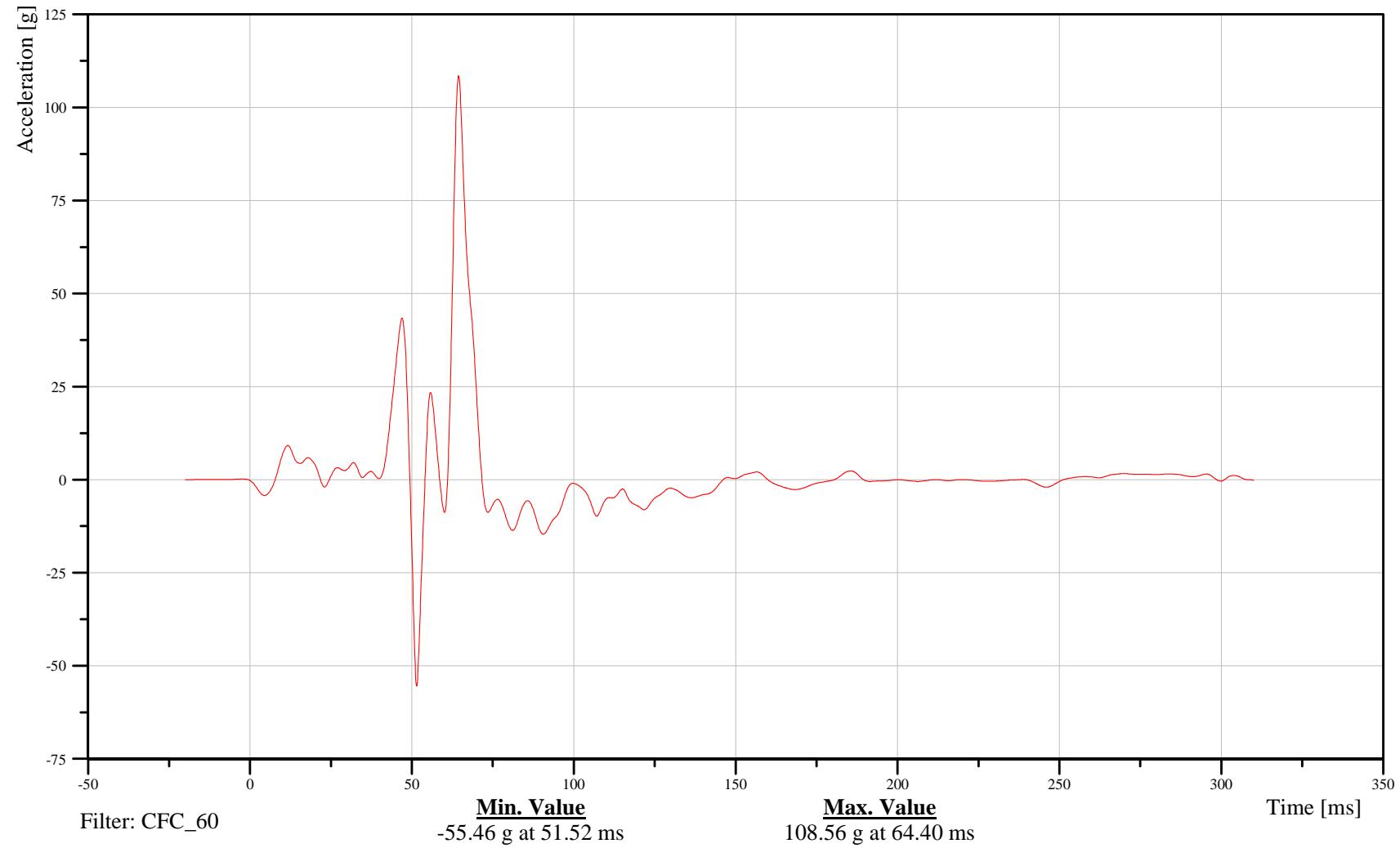
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Vehicle Center of Gravity Y-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20VEHCCG0000ACYD

TRC Inc. Test Lab: CTF  
Test Number: 101116





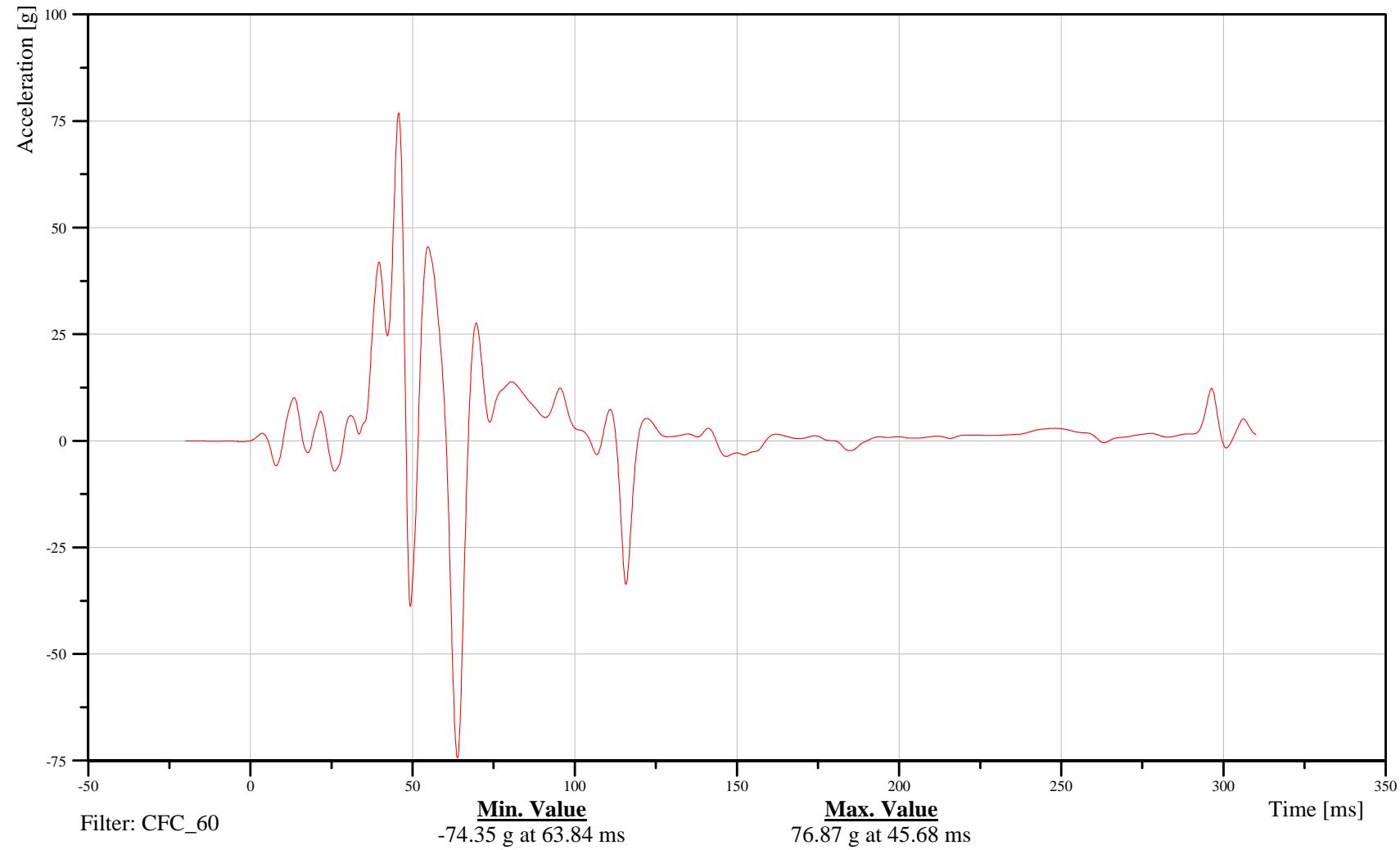
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Vehicle Center of Gravity Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20VEHCCG0000ACZD

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Vehicle Center of Gravity Resultant Acceleration

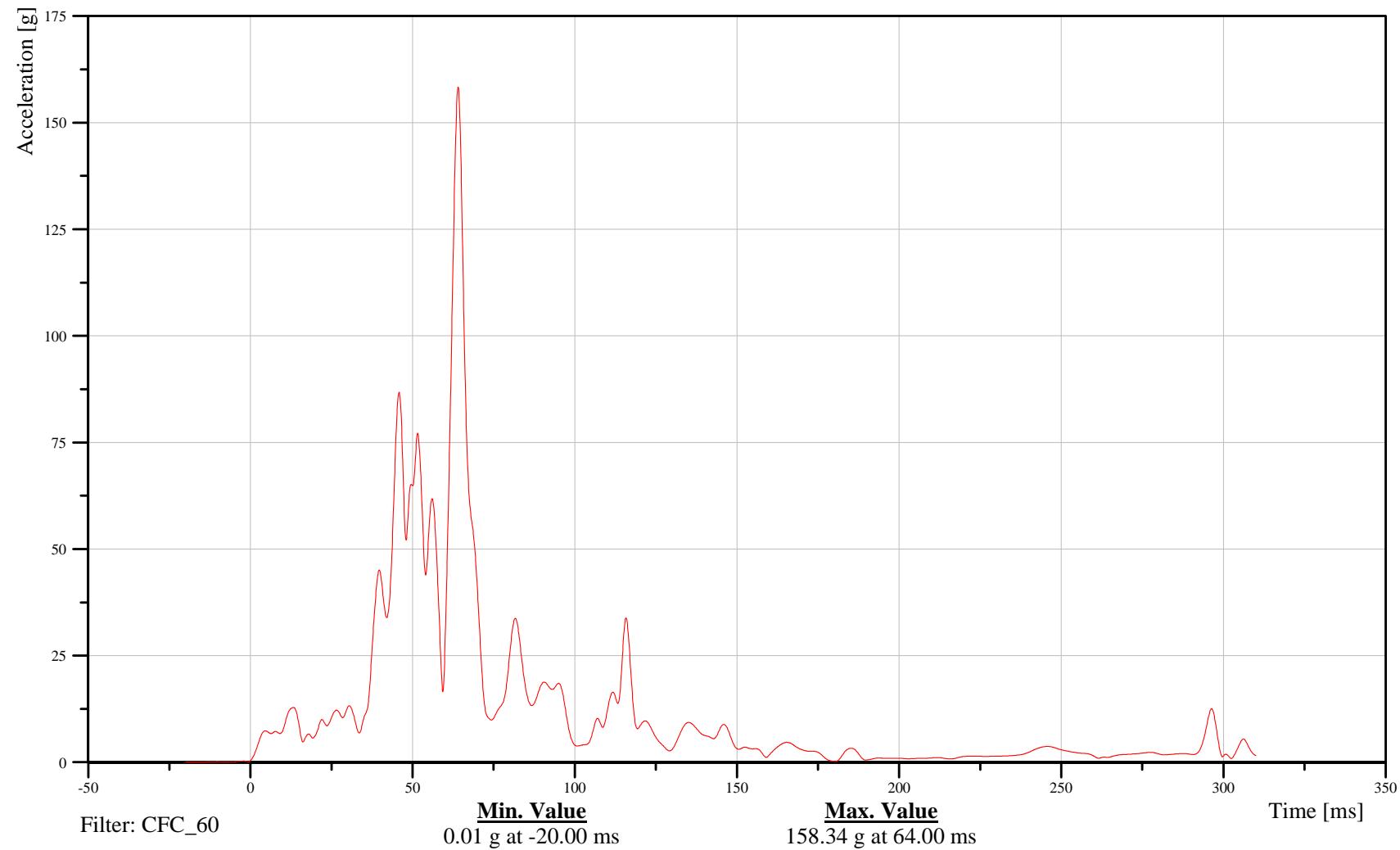
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20VEHCCG0000ACRD

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-305  
101116





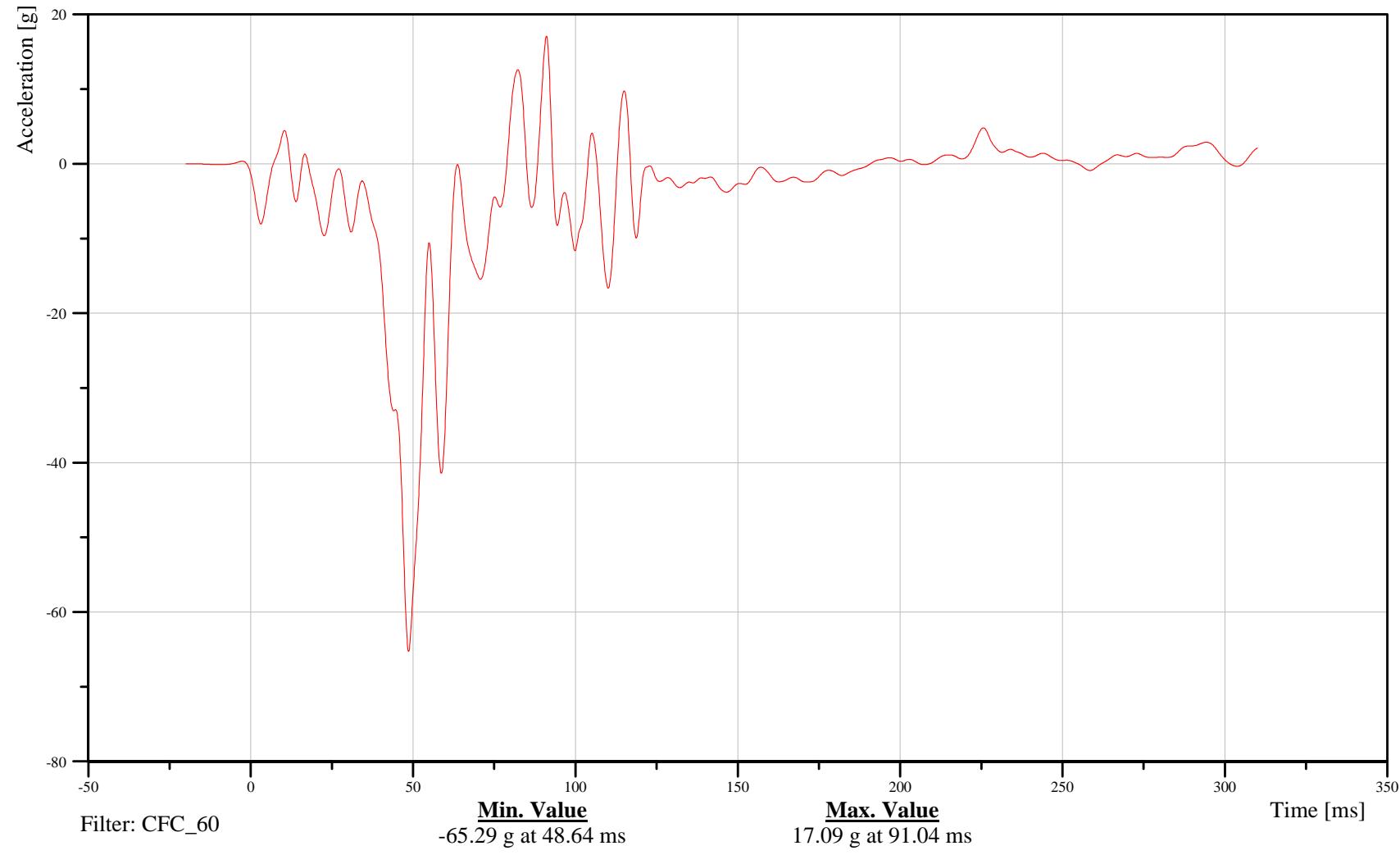
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Footrest X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

20FOOTLE0000ACXD





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Footrest Z-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

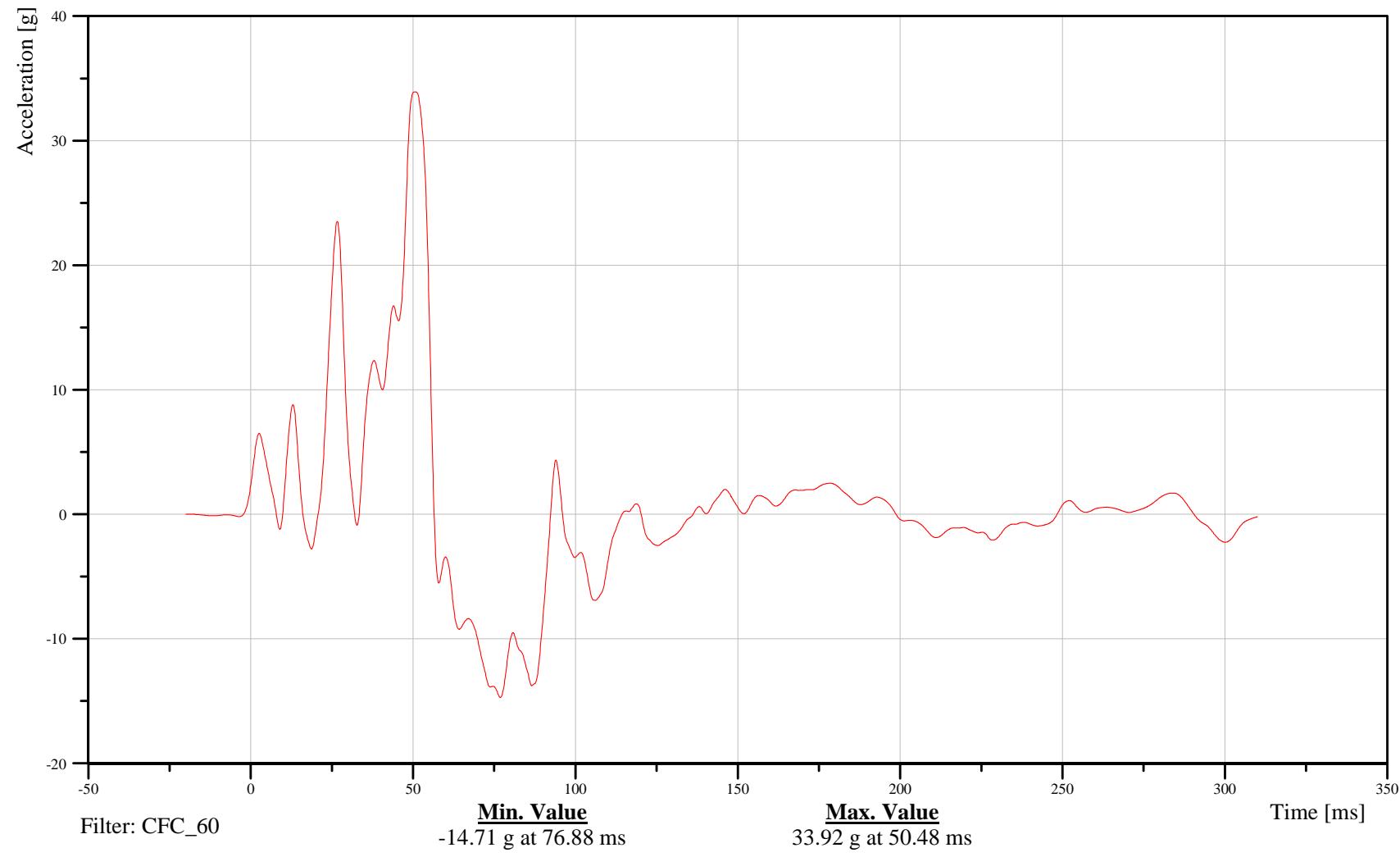
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

20FOOTLE0000ACZD

B-307

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Toepan Behind Center of Accelerator X-Axis Acceleration

Date: 11/17/2010  
Time: 14:40

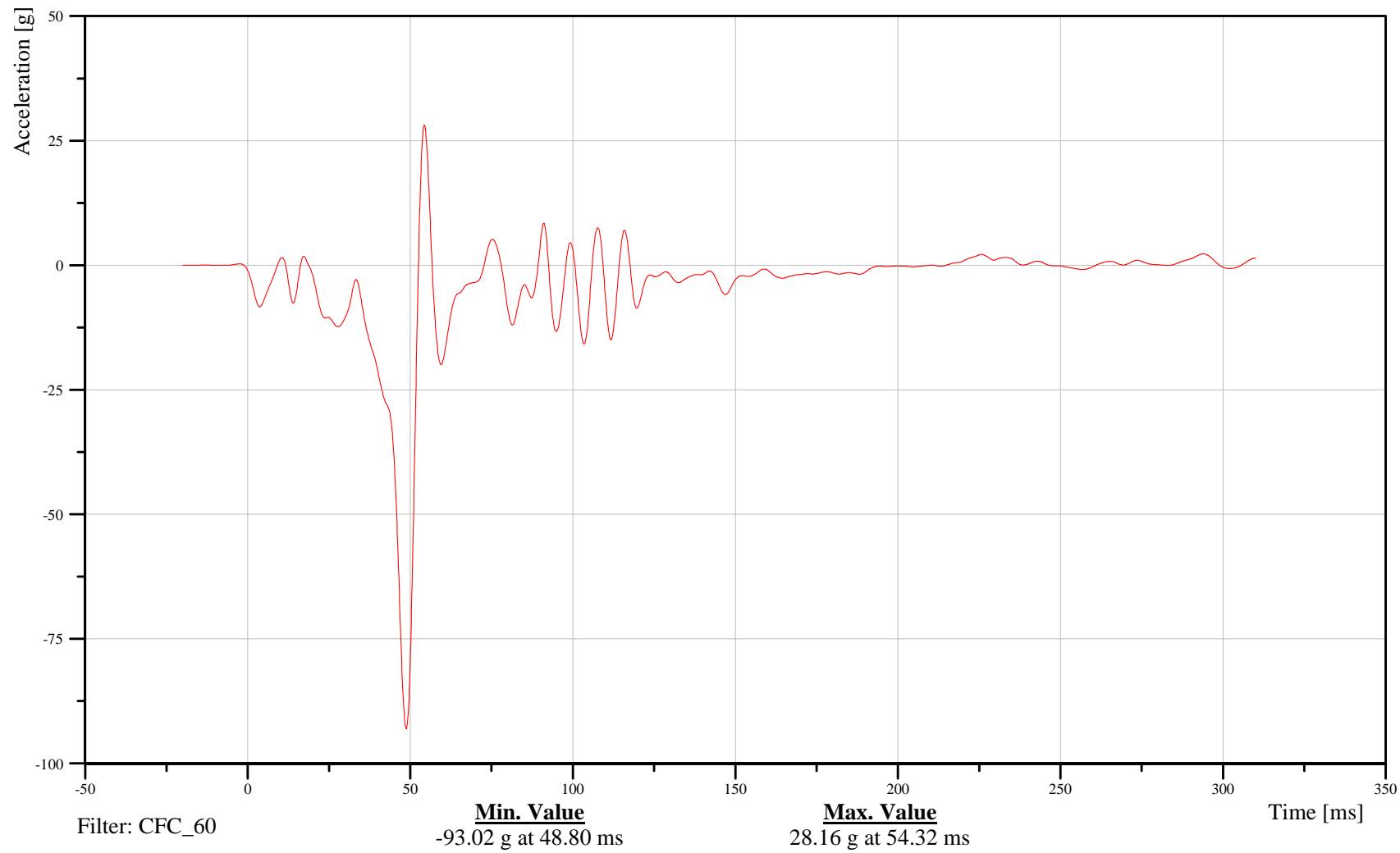
Customer: VRTC

20TPANLE0000ACXD

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-308

101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Toepan Behind Center of Accelerator Z-Axis Acceleration

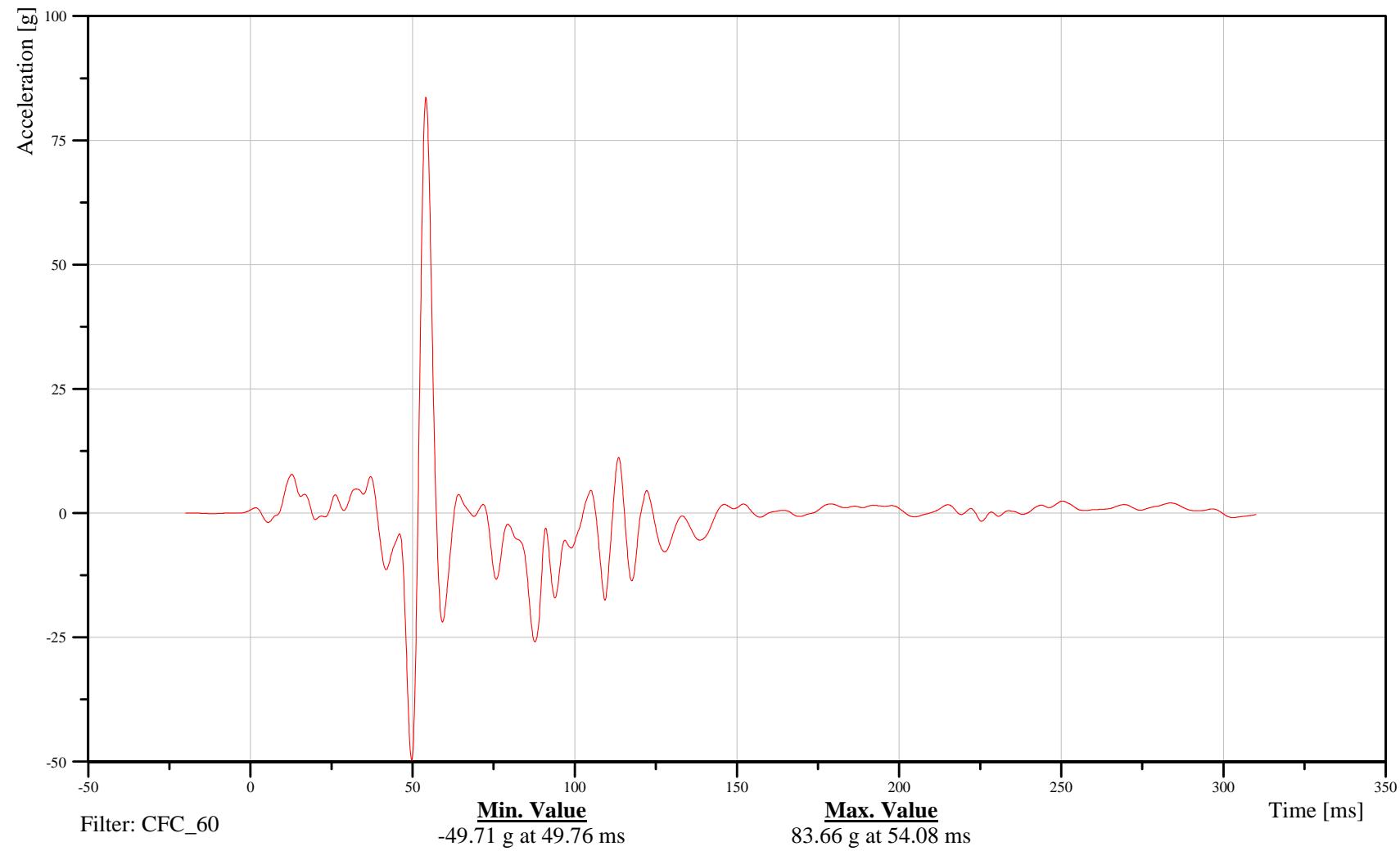
Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20TPANLE0000ACZD

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-309  
101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

## Target Vehicle Driver Lap Belt Force

Date: 11/17/2010  
Time: 14:40

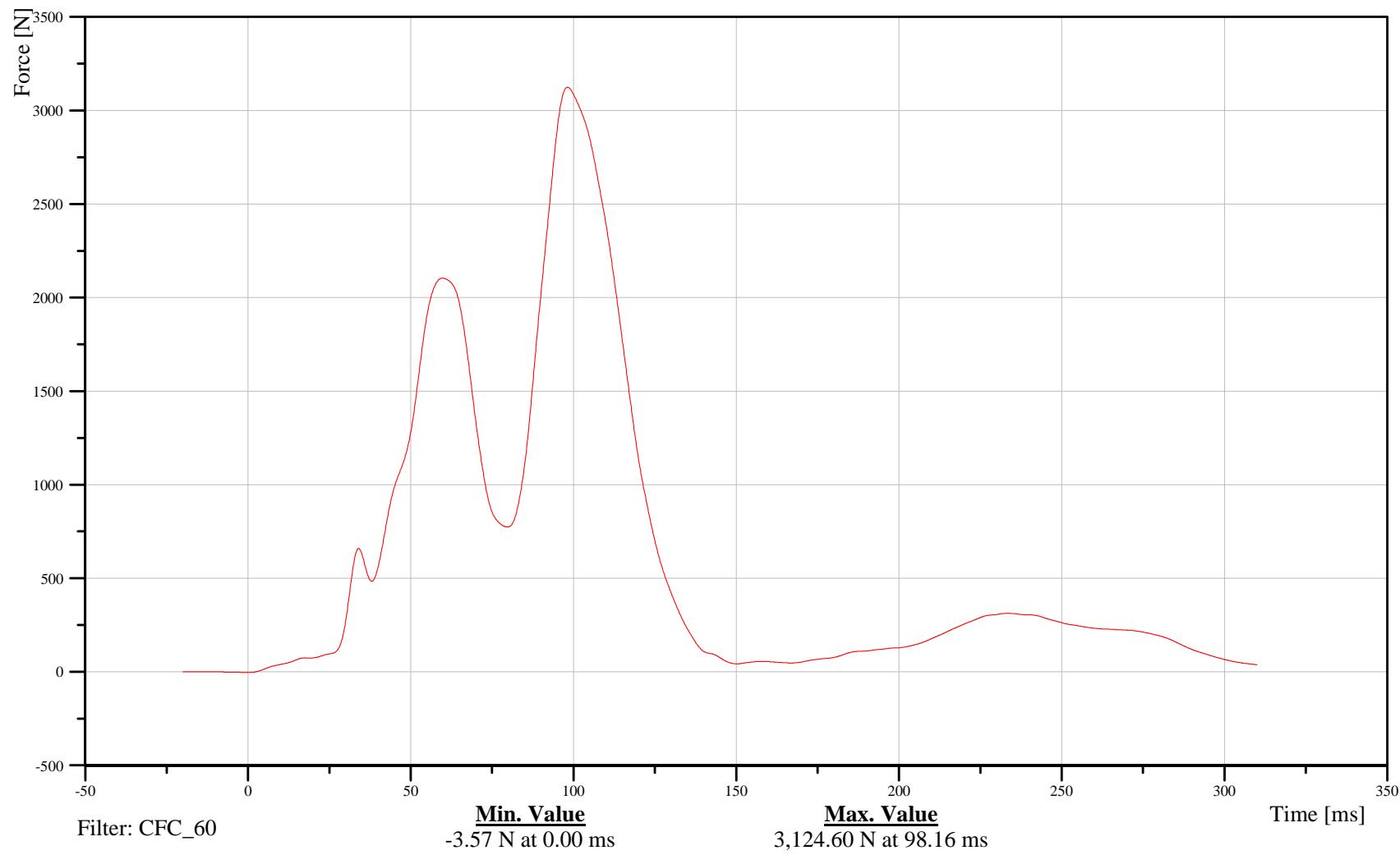
Customer: VRTC

**21SEBE0000B5FOOD**

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-310

101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

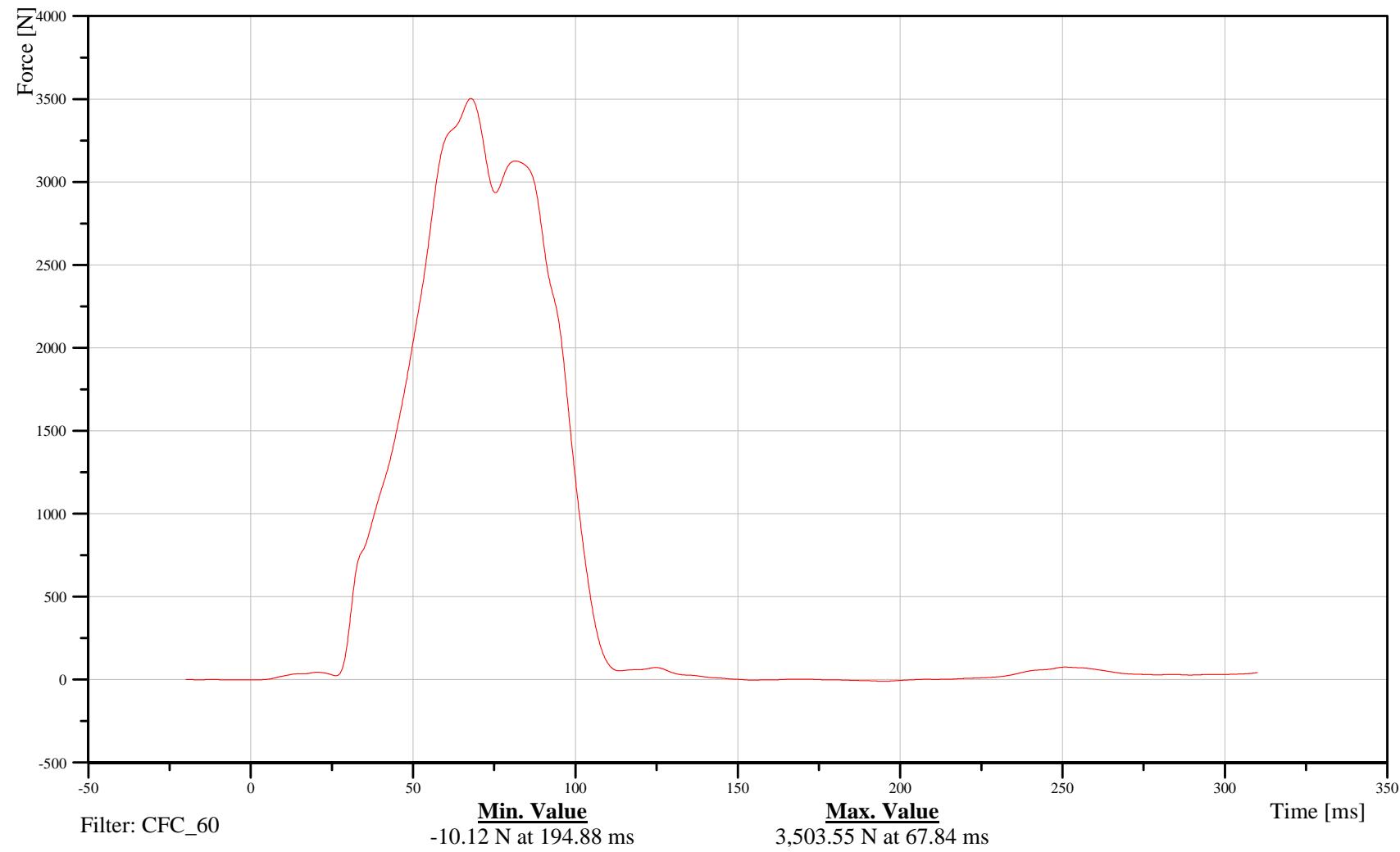
## Target Vehicle Driver Shoulder Belt Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

**21SEBE0000B3FOOD**

TRC Inc. Test Lab: CTF  
Test Number: 101116





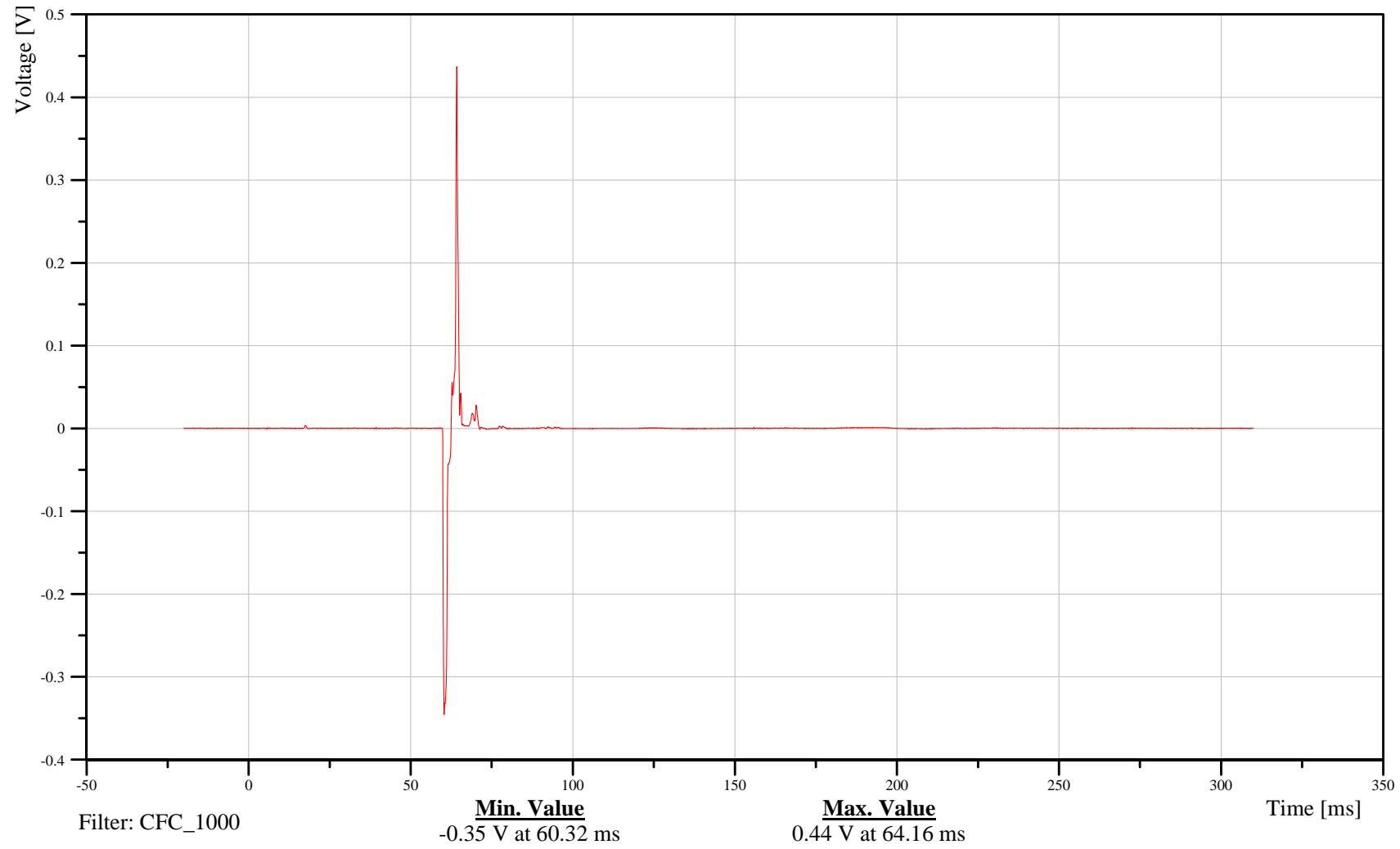
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Airbag 1st Stage Fire Time

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

20AIRBLEFR25VO0A





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

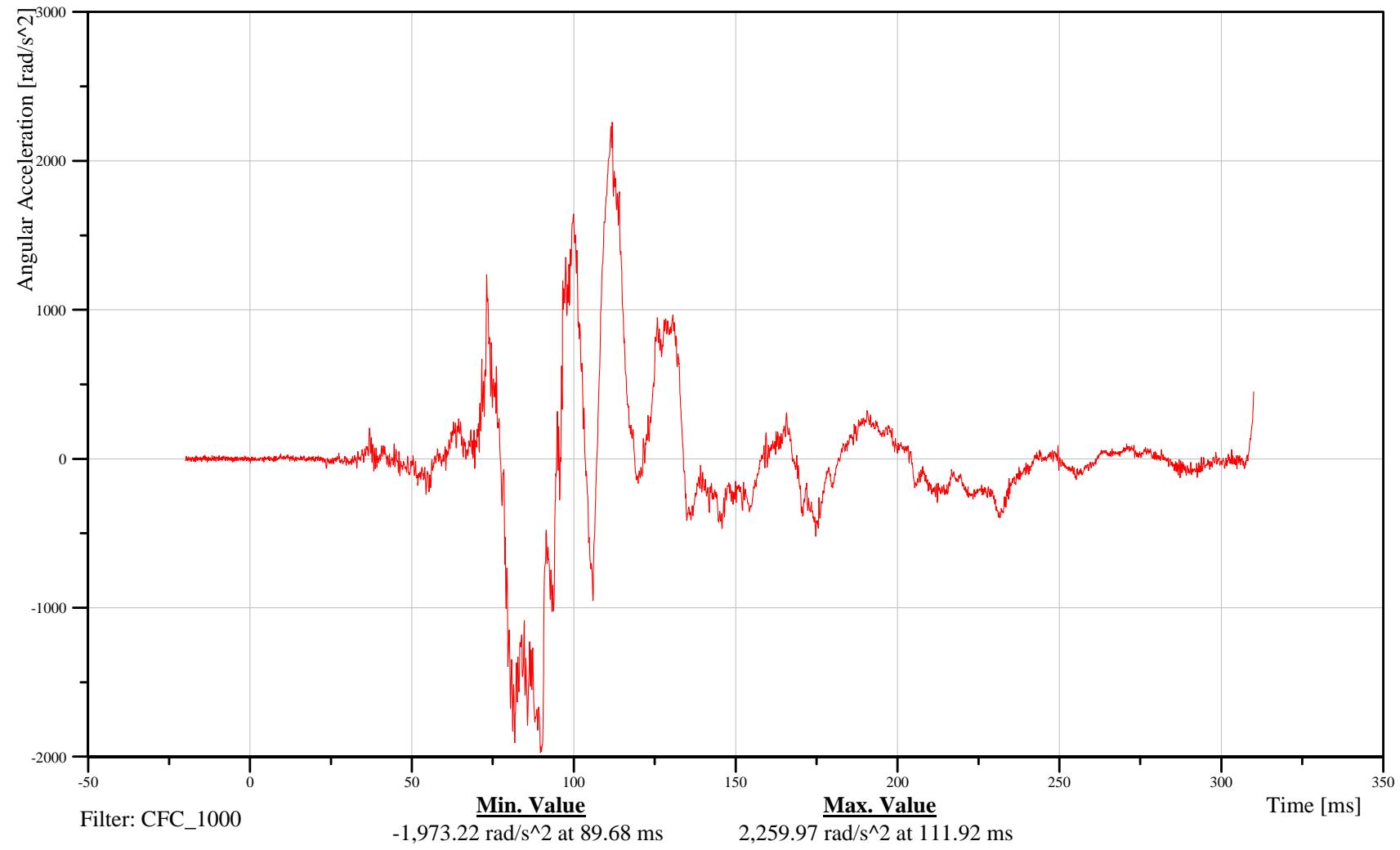
## Calculated Head Angular X-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21HEAD0000THAAXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

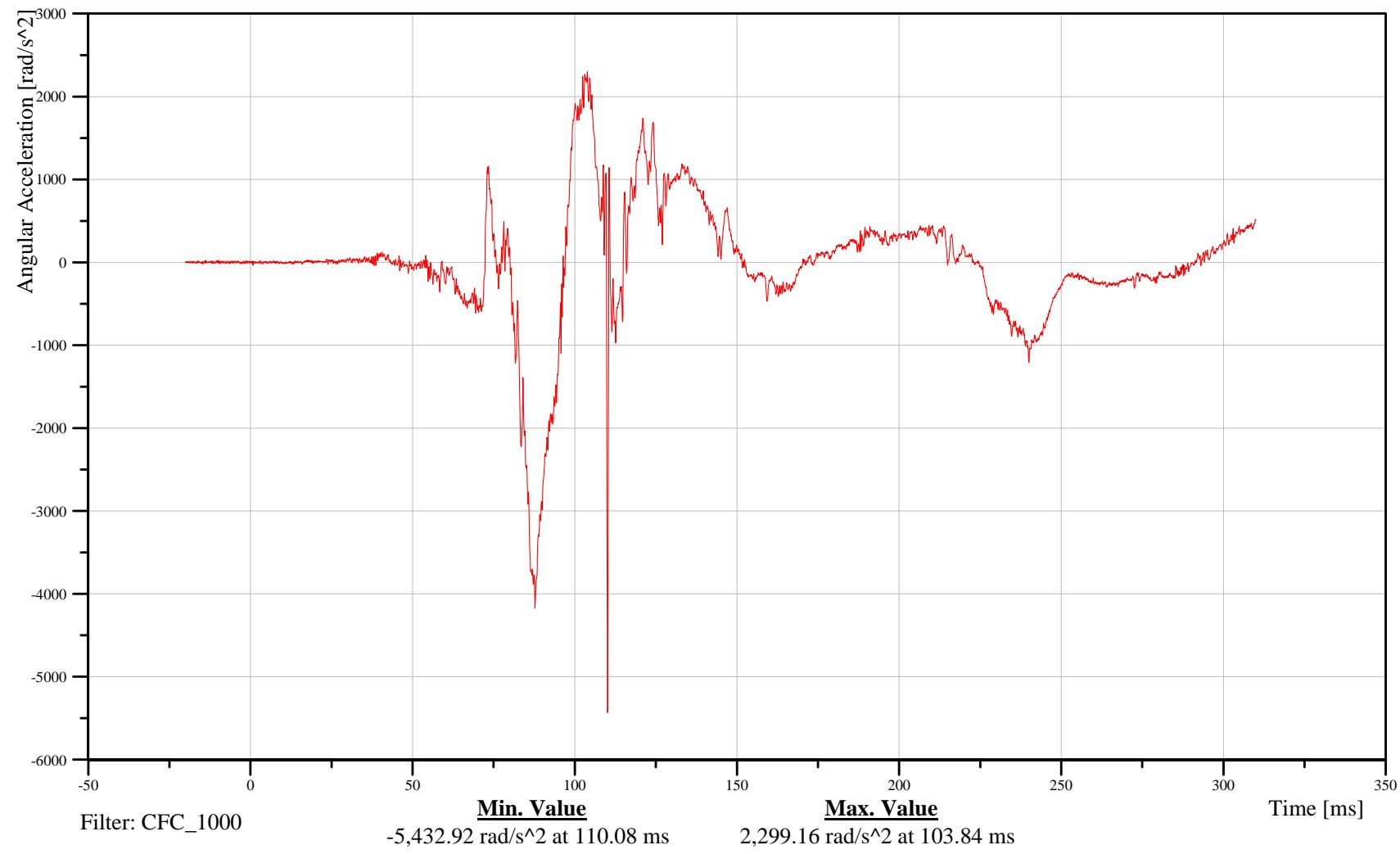
## Calculated Head Angular Y-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21HEAD0000THAAAYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

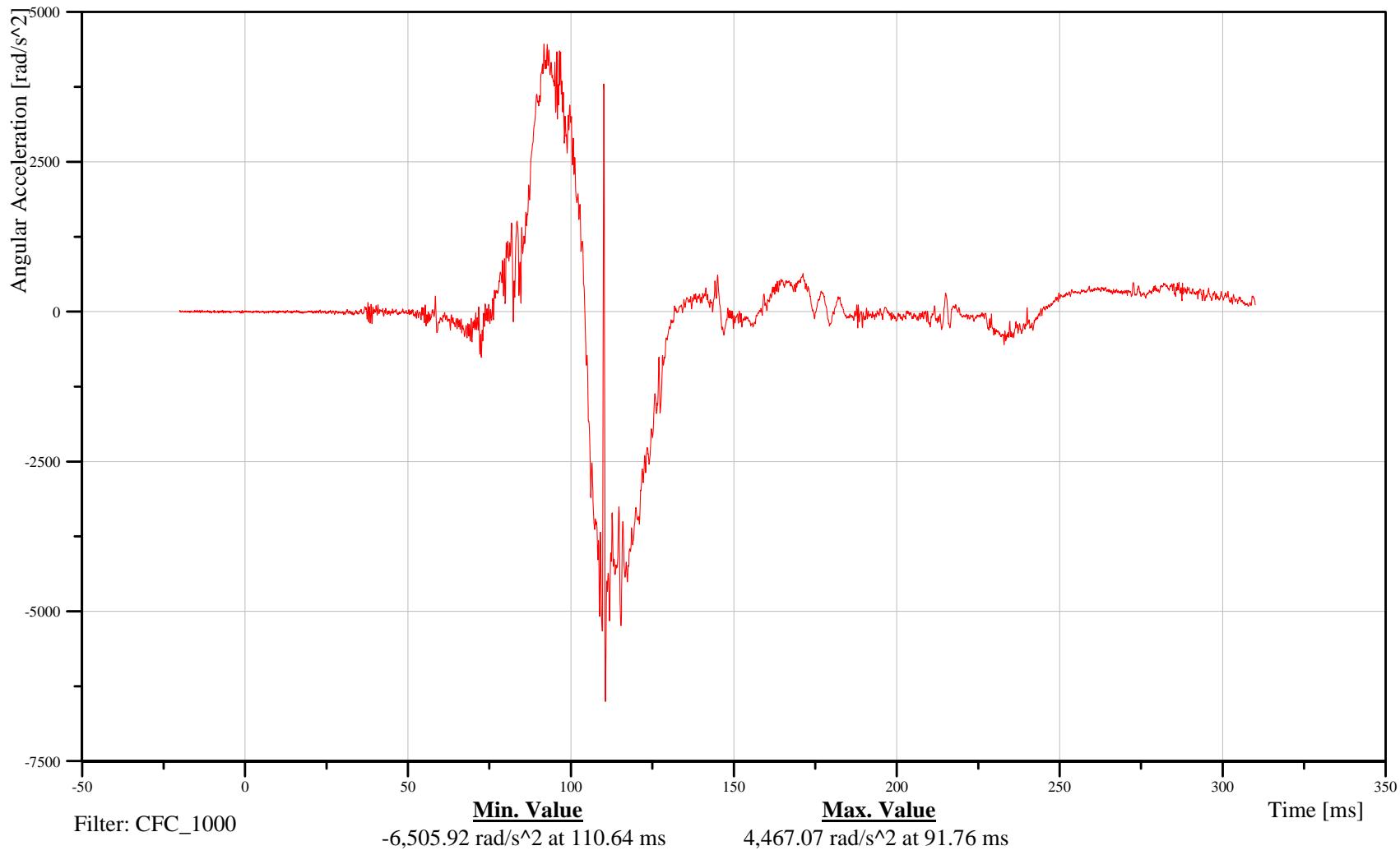
Calculated Head Angular Z-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21HEAD0000THAAZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

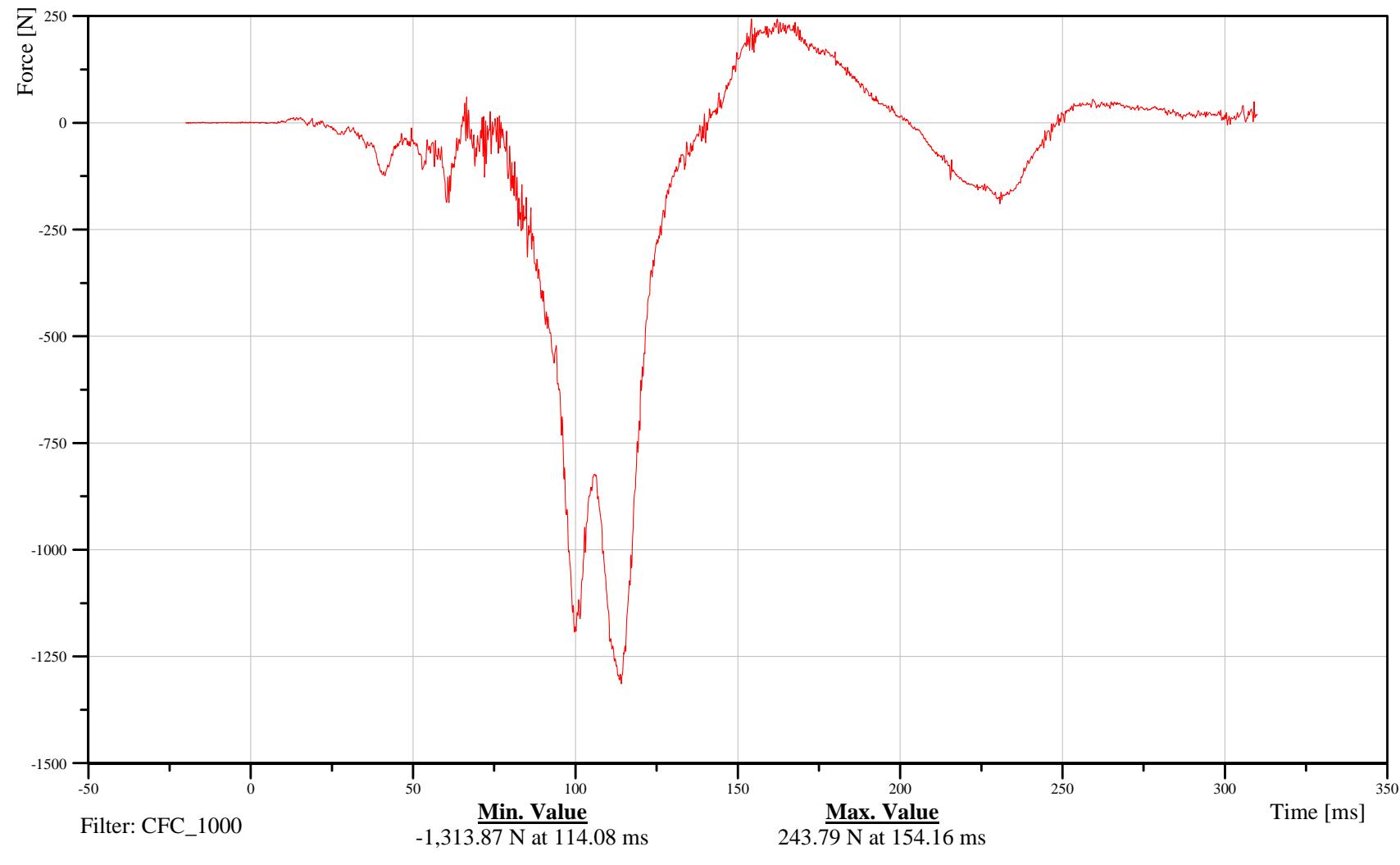
## Calculated Neck Force Component X-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUPSUTHFOXA





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

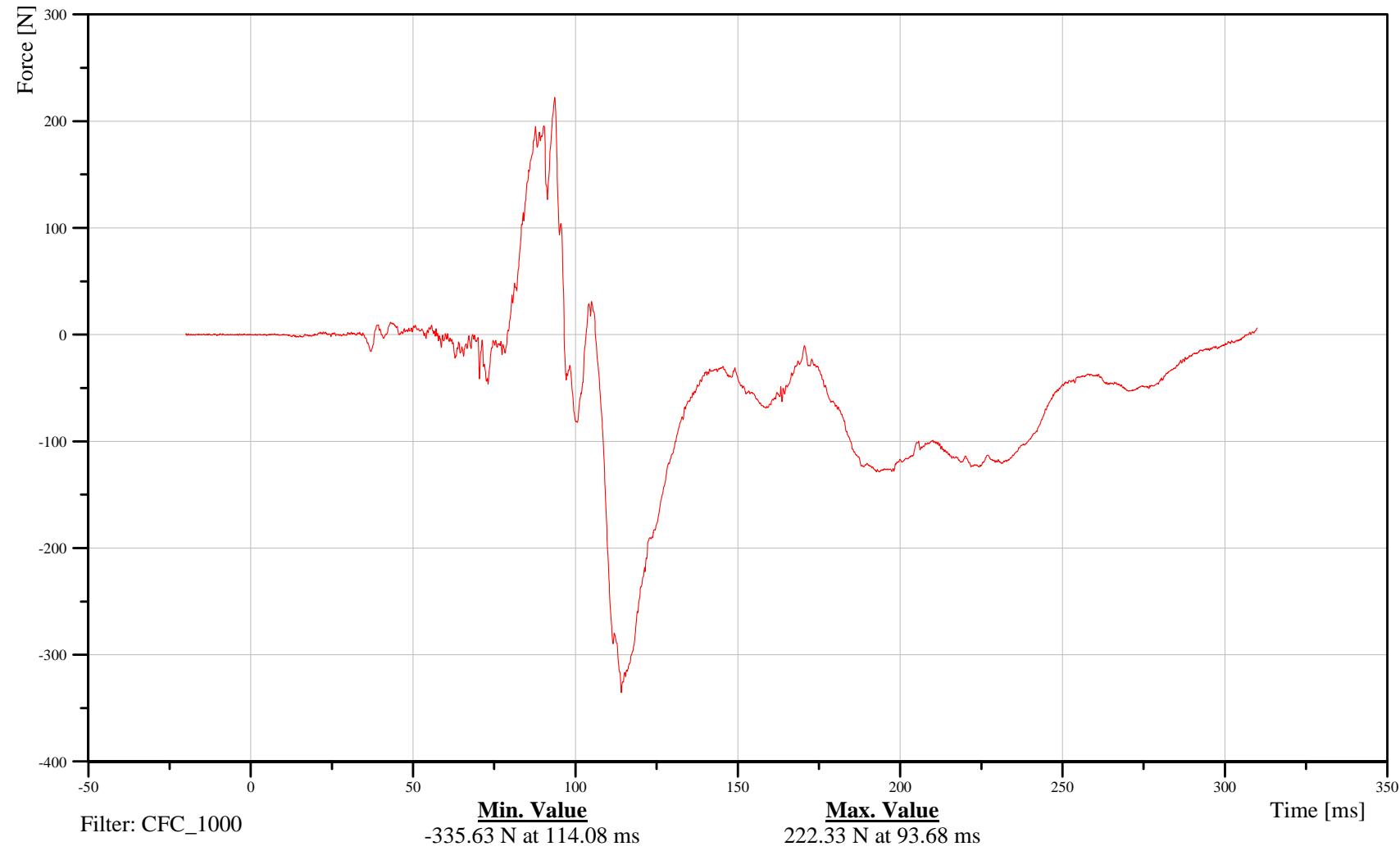
## Calculated Neck Force Component Y-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21NECKUPSUTHFOYA



B-317

101116



# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

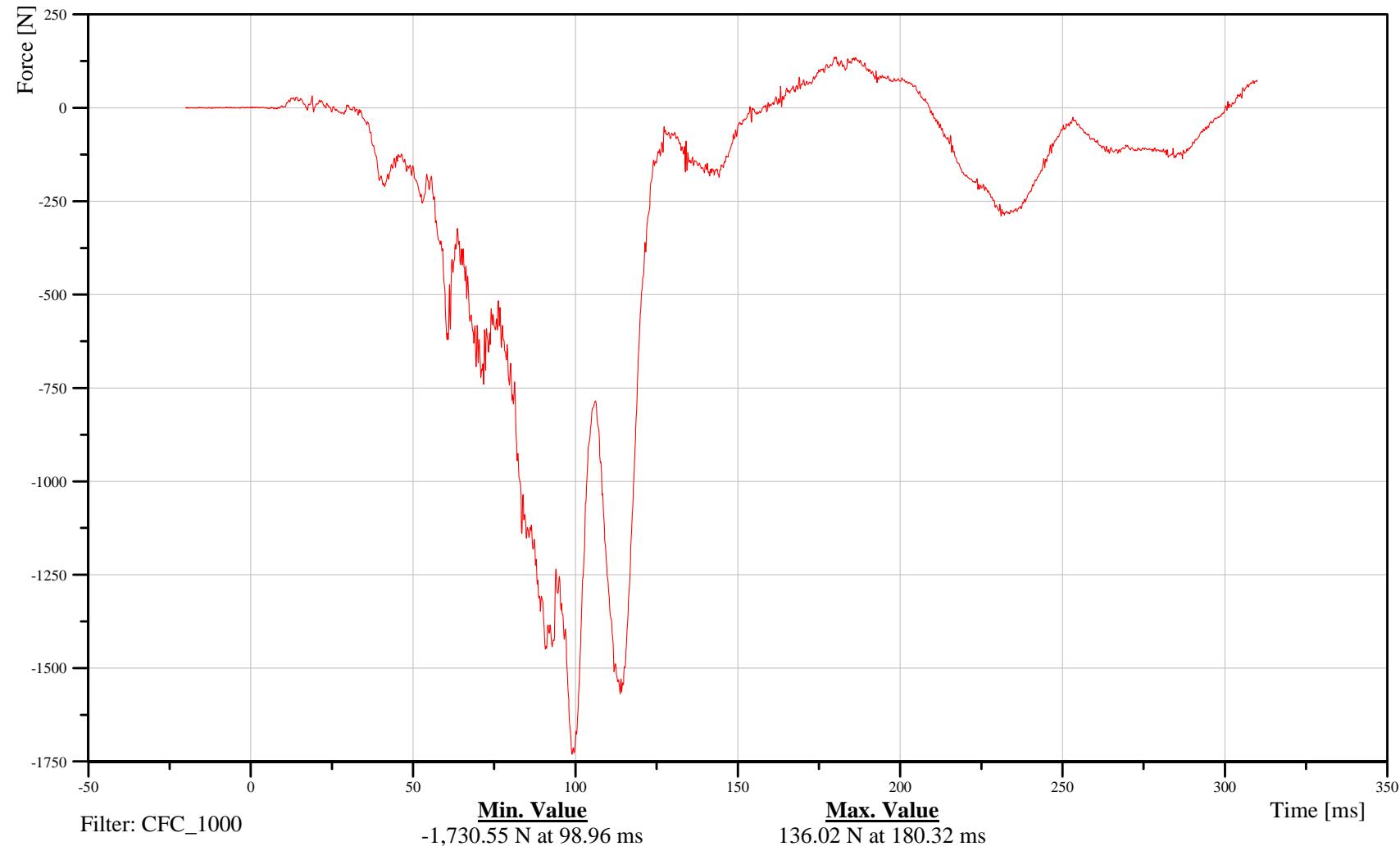
## Calculated Neck Force Component Z-Axis

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21NECKUPSUTHFOZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

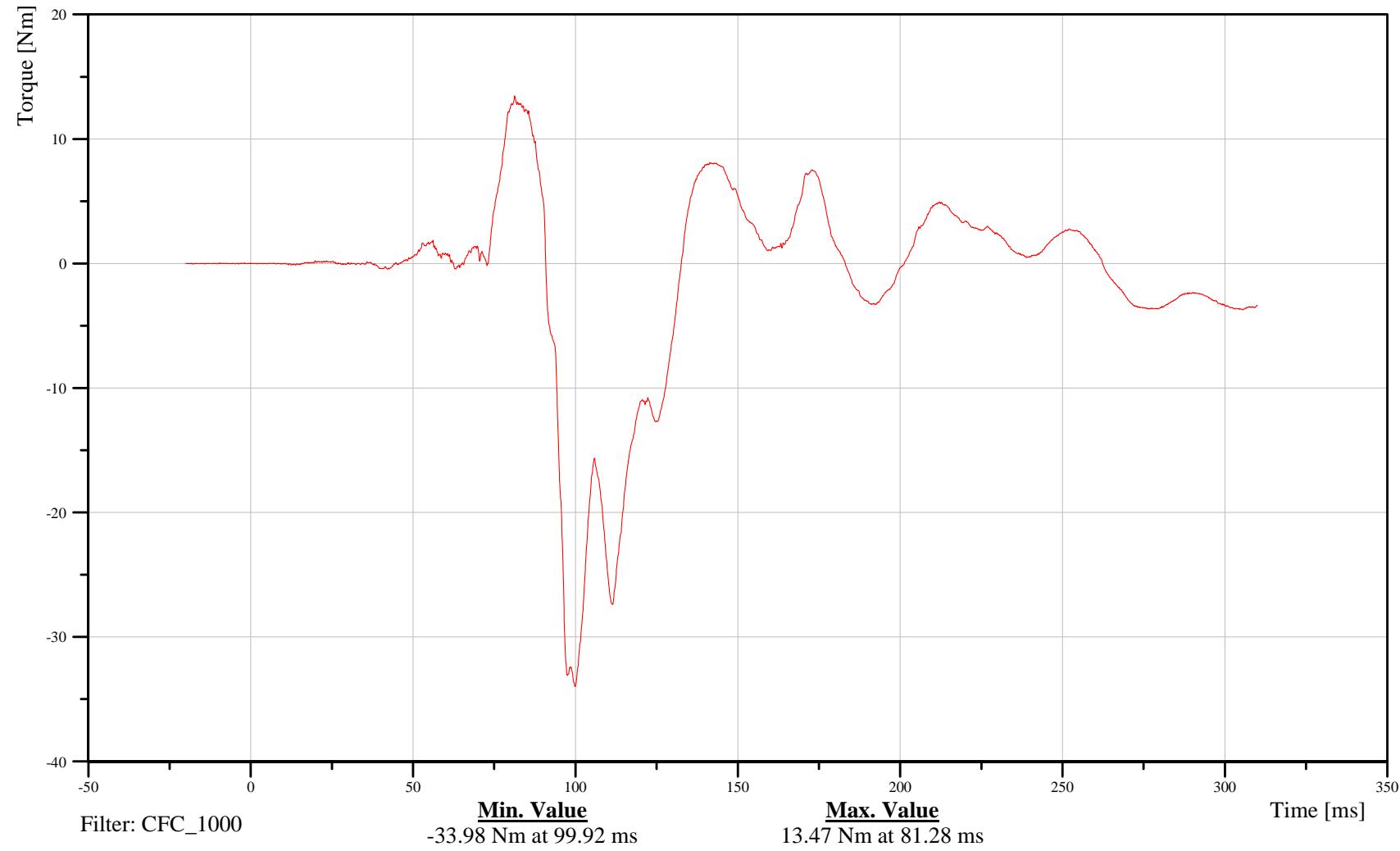
## Calculated Neck Moment Component About X

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

# 21NECKUPSUTHMOXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

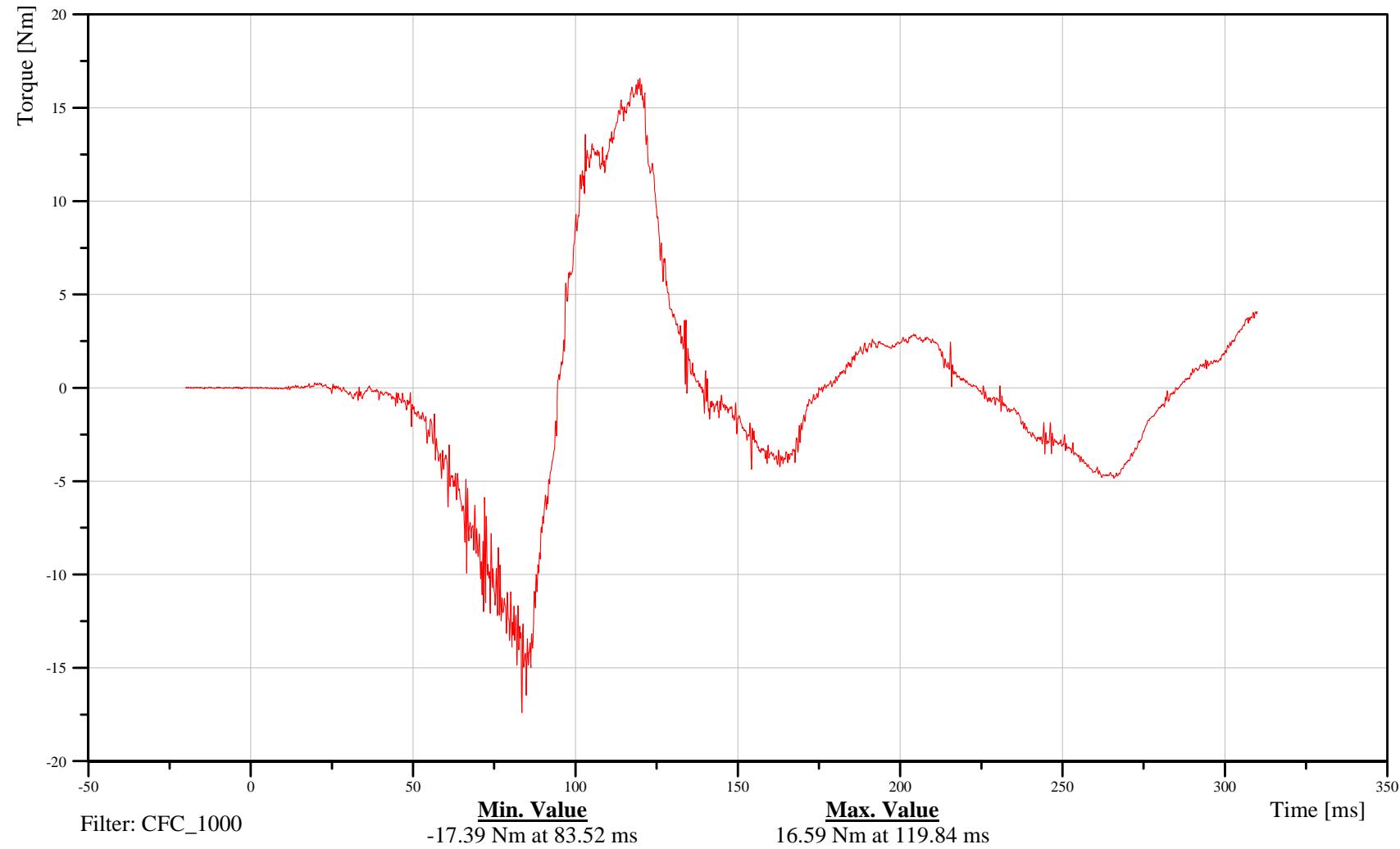
## Calculated Neck Moment Component About Y

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

# 21NECKUPSUTHMOYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

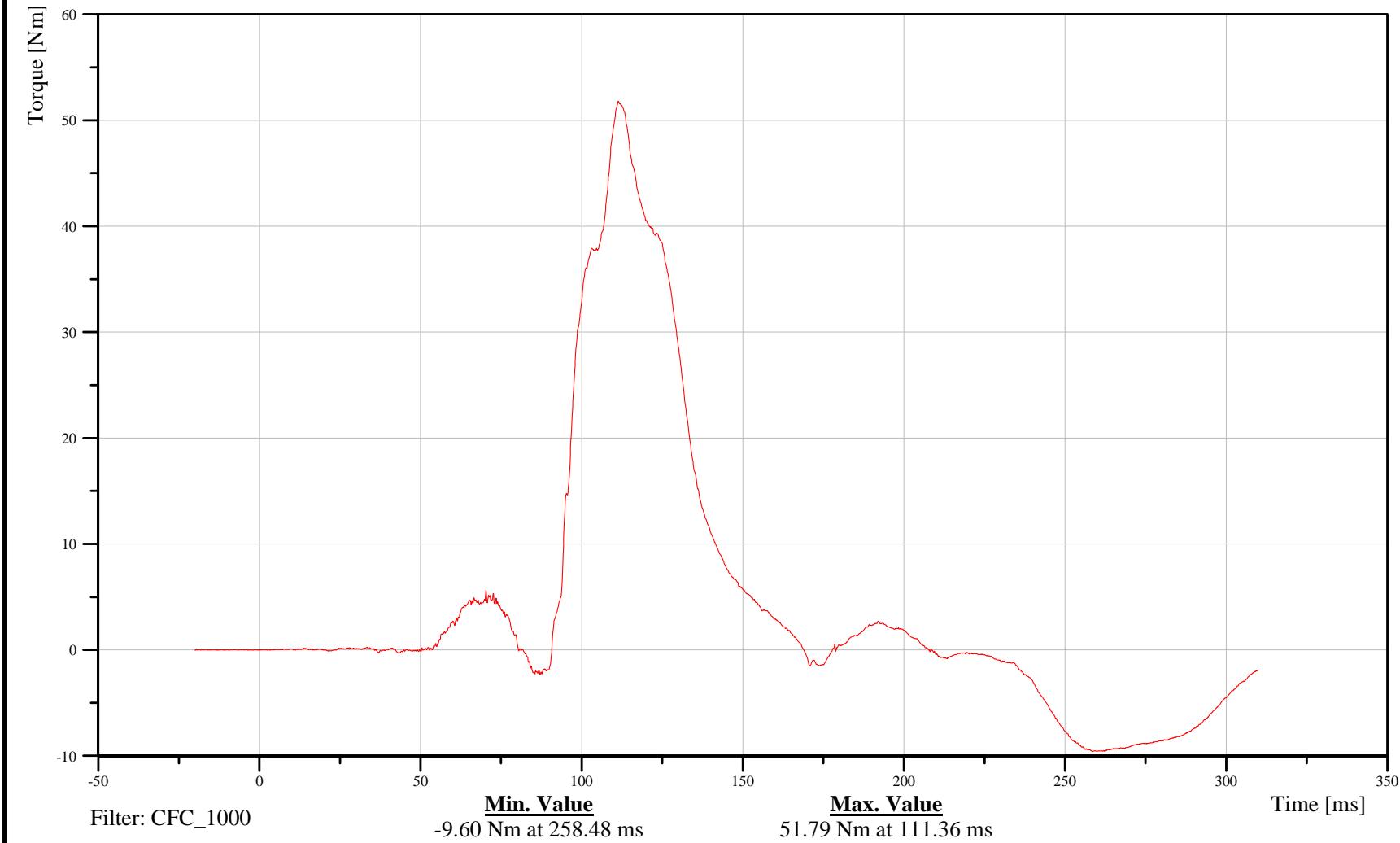
## Calculated Neck Moment Component About Z

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

# 21NECKUPSUTHMOZA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

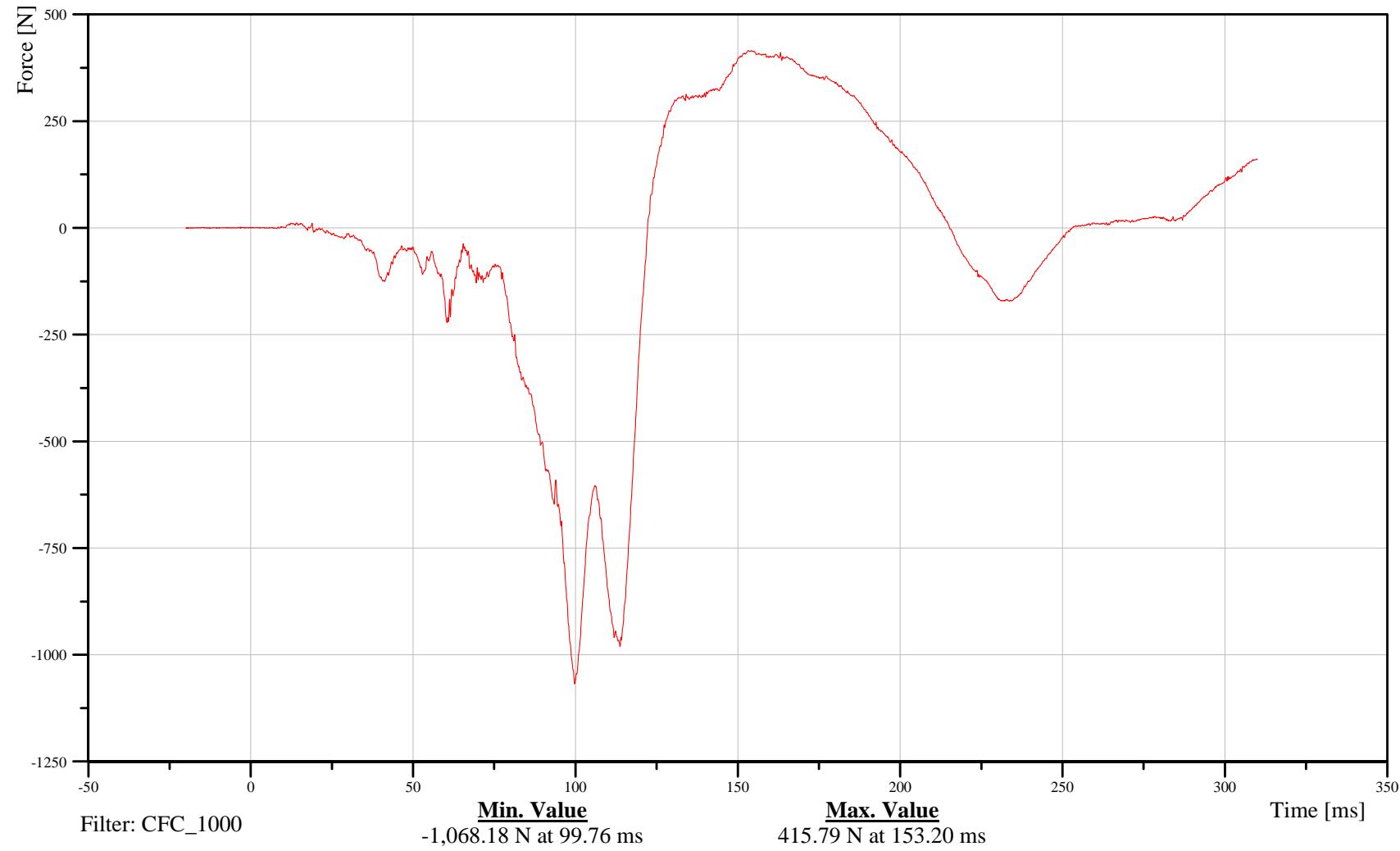
Calculated NeckOM X Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TMONUP00THFOXA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

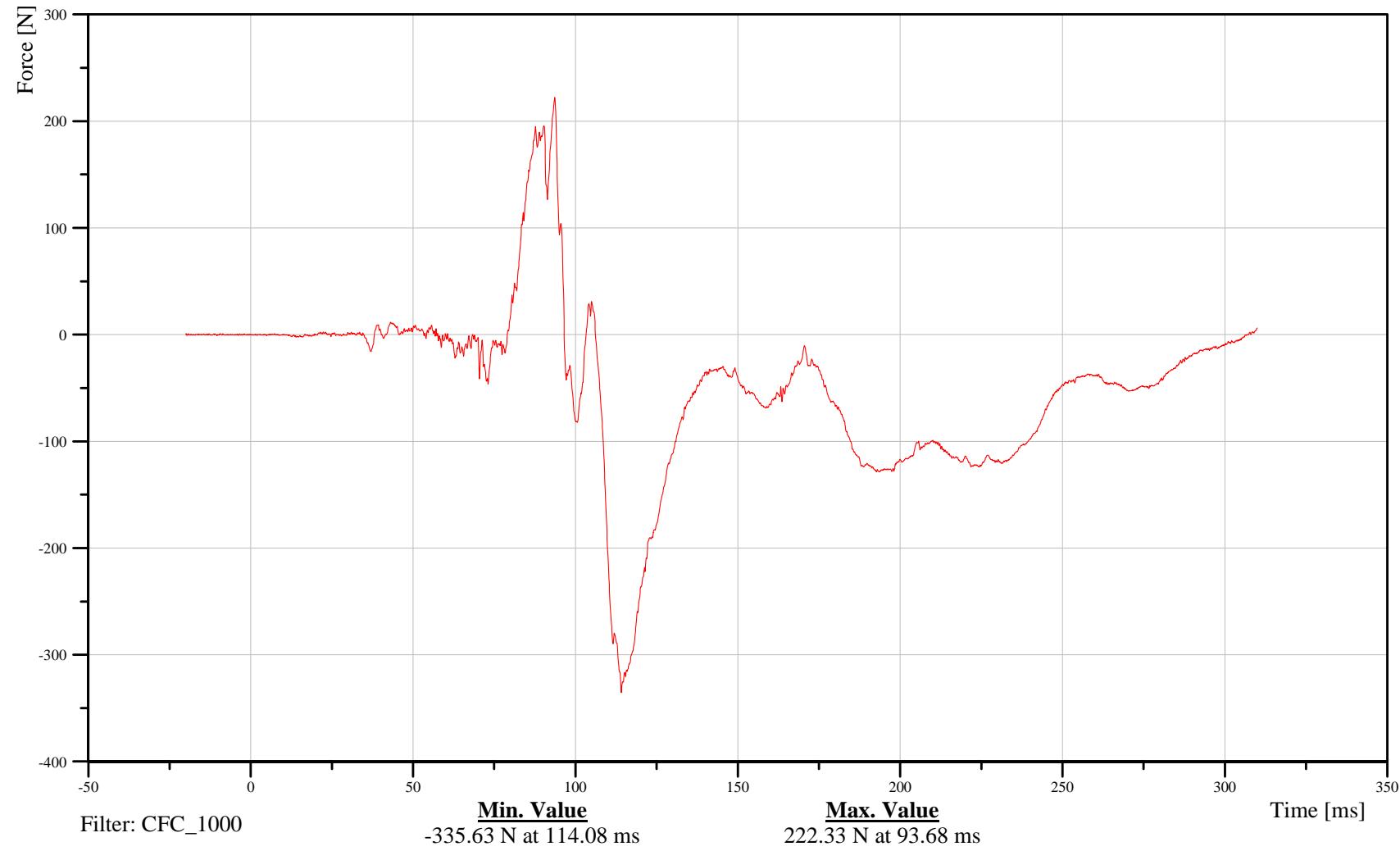
Calculated NeckOM Y Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TMONUP00THFOYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

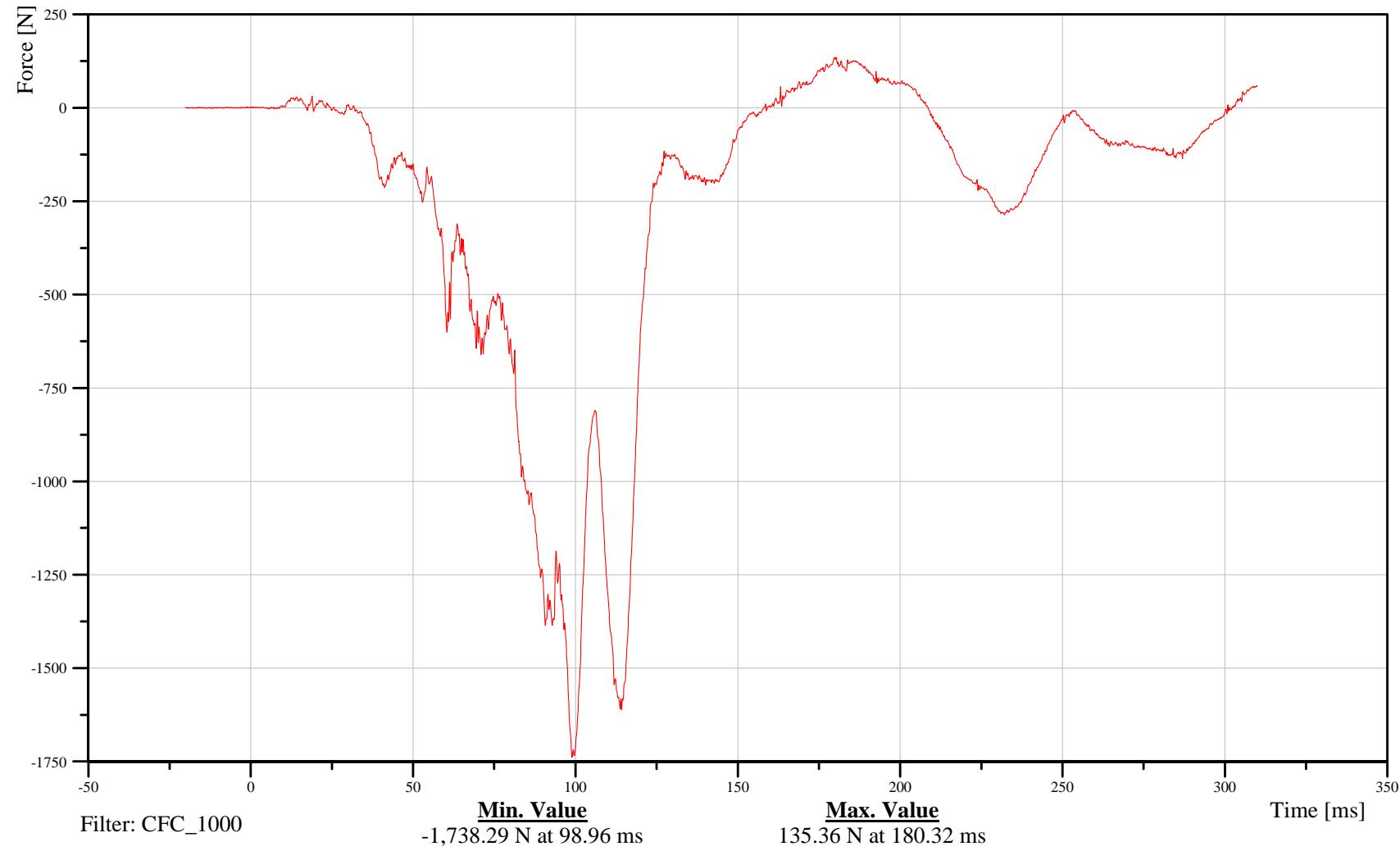
Calculated NeckOM Z Force

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TMONUP00THFOZA

TRC Inc. Test Lab: CTF  
Test Number: 101116



B-324

101116



# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

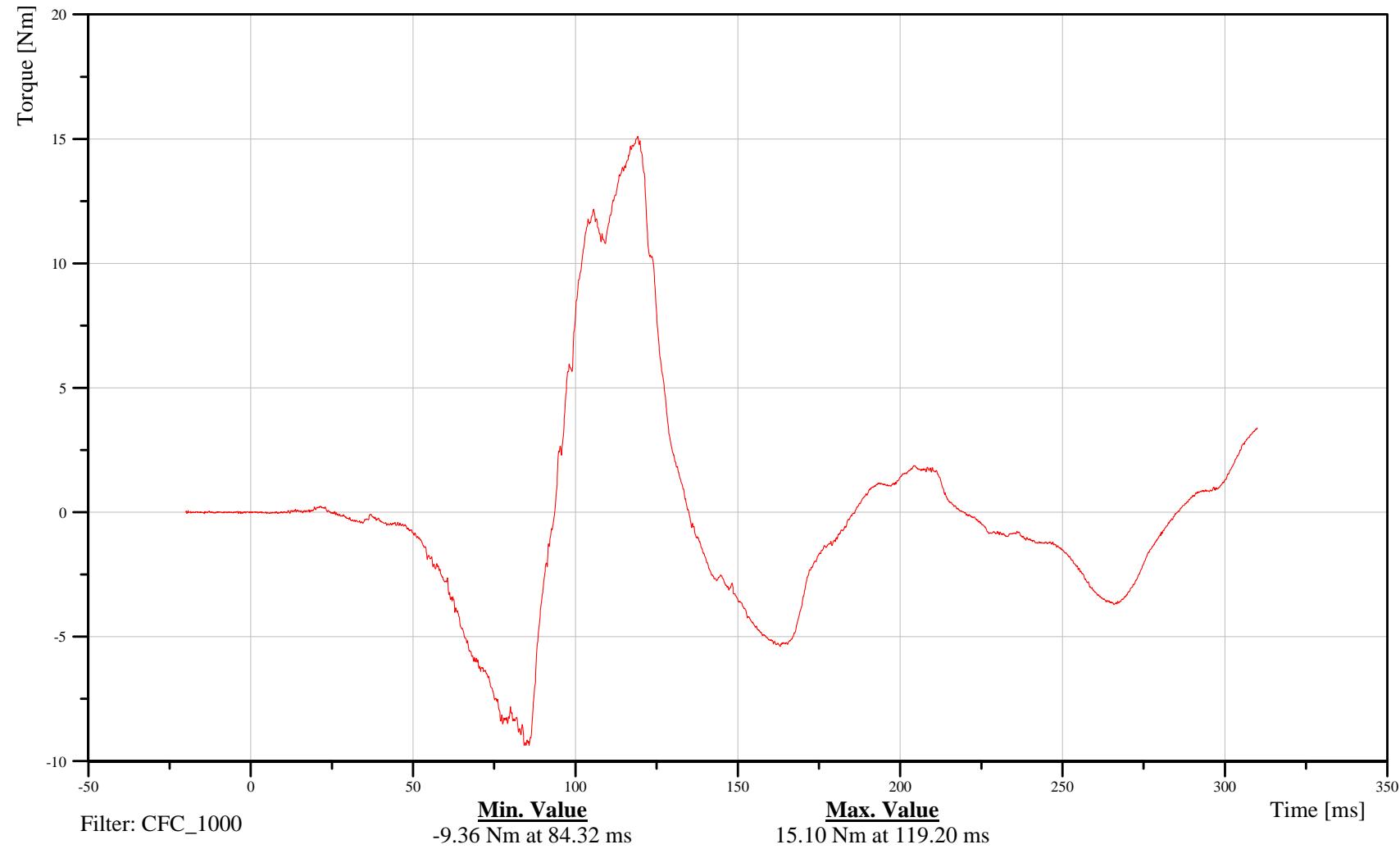
## Calculated NeckOM Moment About Y

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21TMONUP00THMOYA

TRC Inc. Test Lab: CTF  
Test Number: 101116





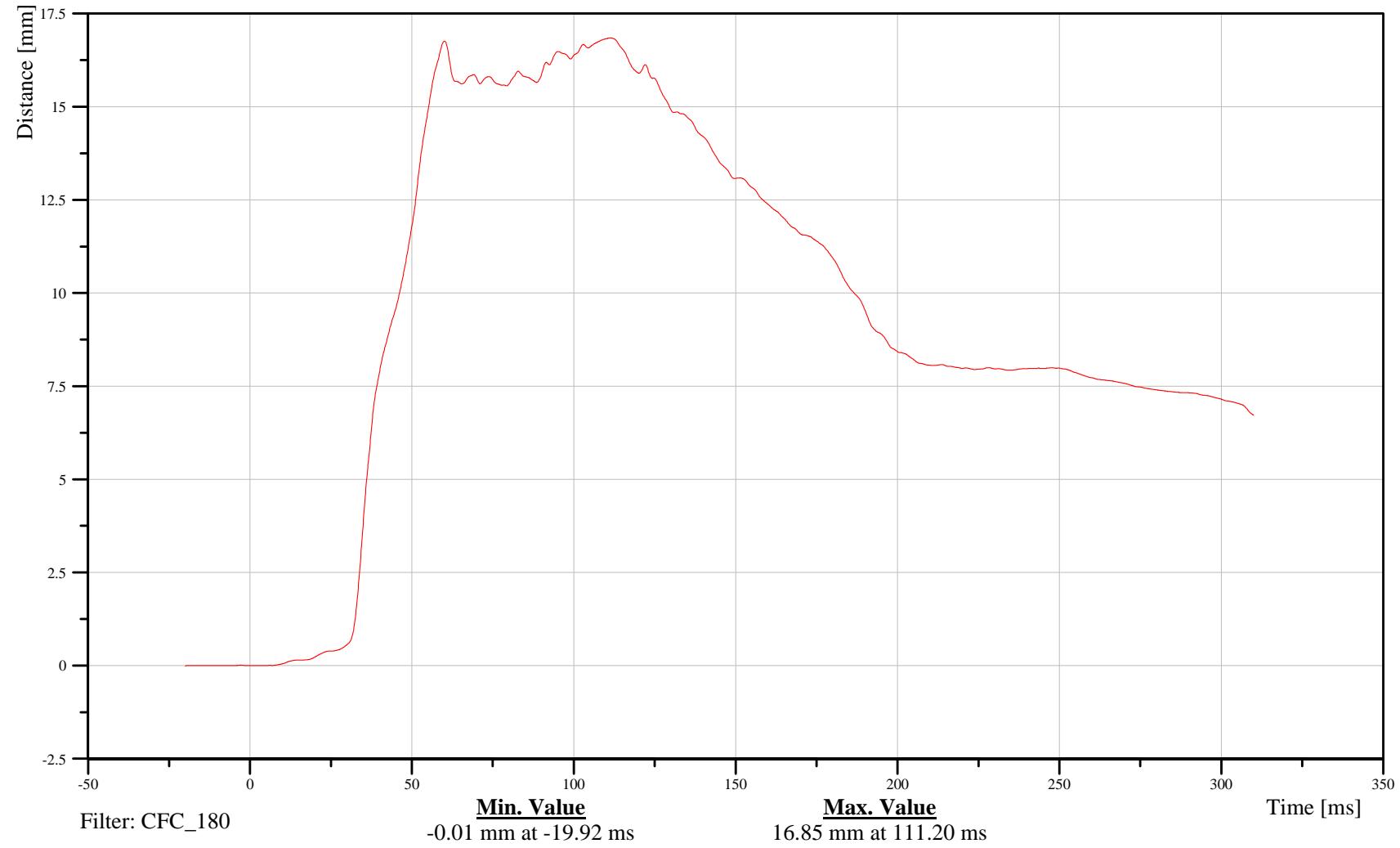
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Left Lower Abdominal X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDOLL00THDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





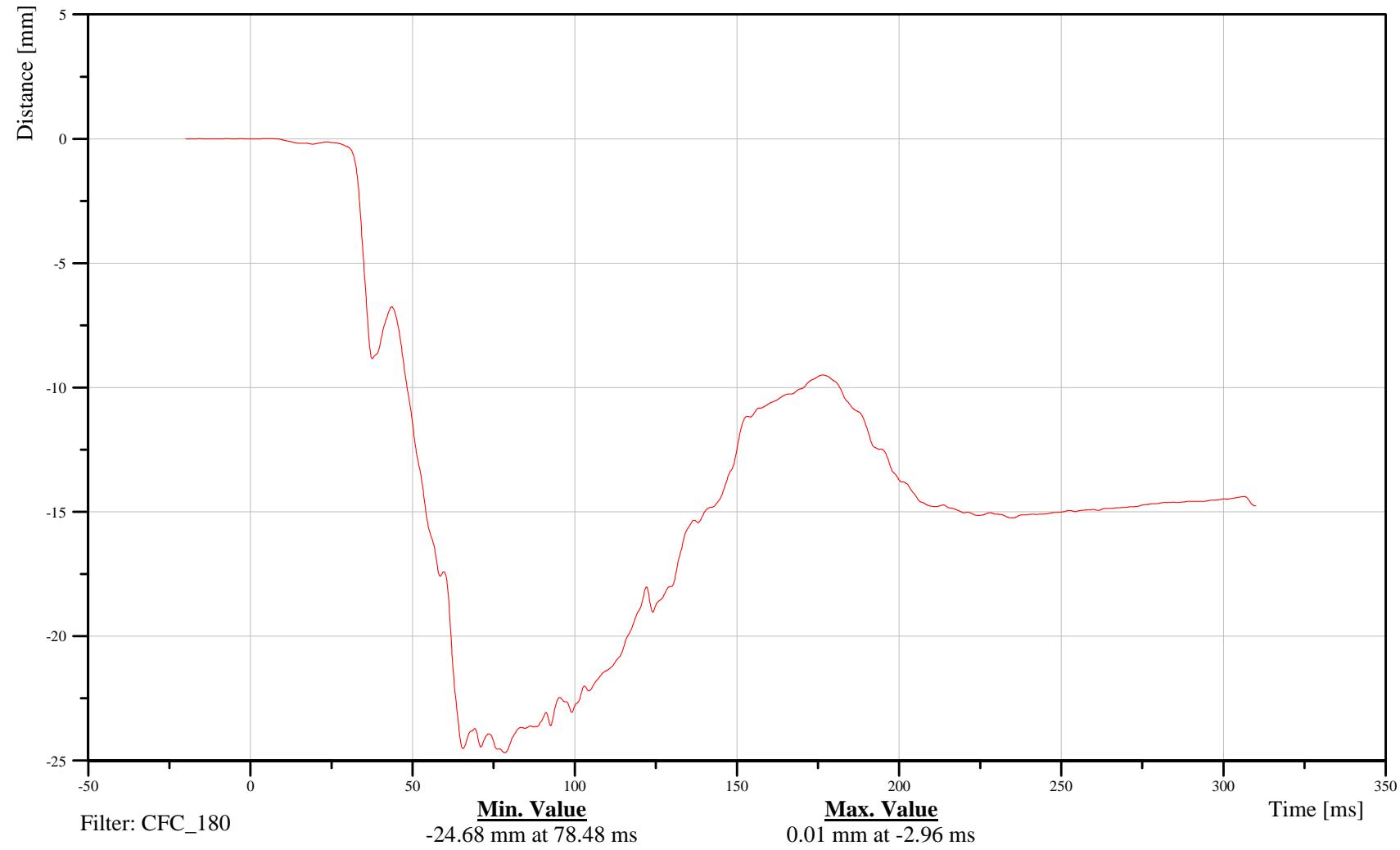
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Left Lower Abdominal Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDOLL00THDSYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





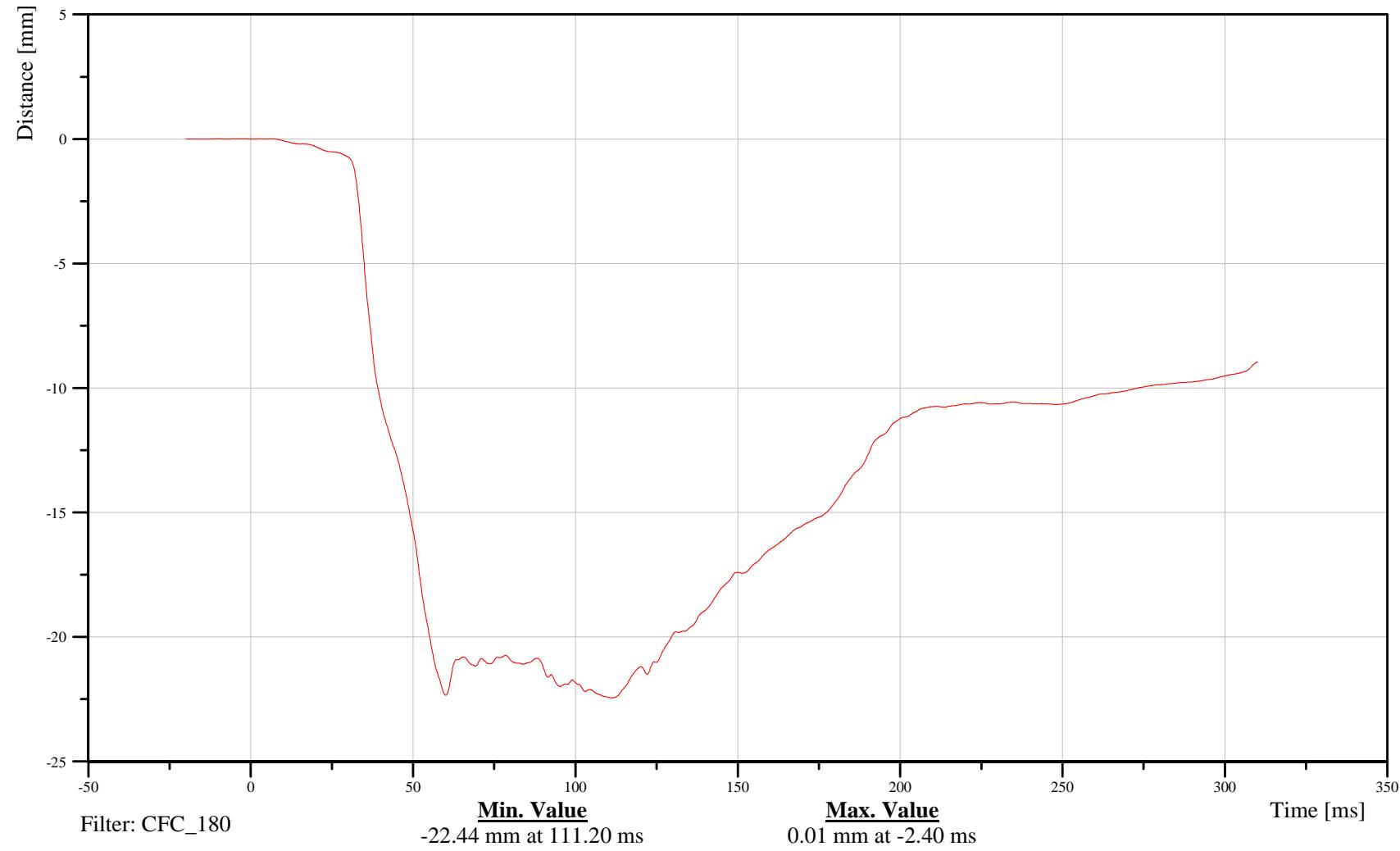
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Left Lower Abdominal Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDOLL00THDSZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





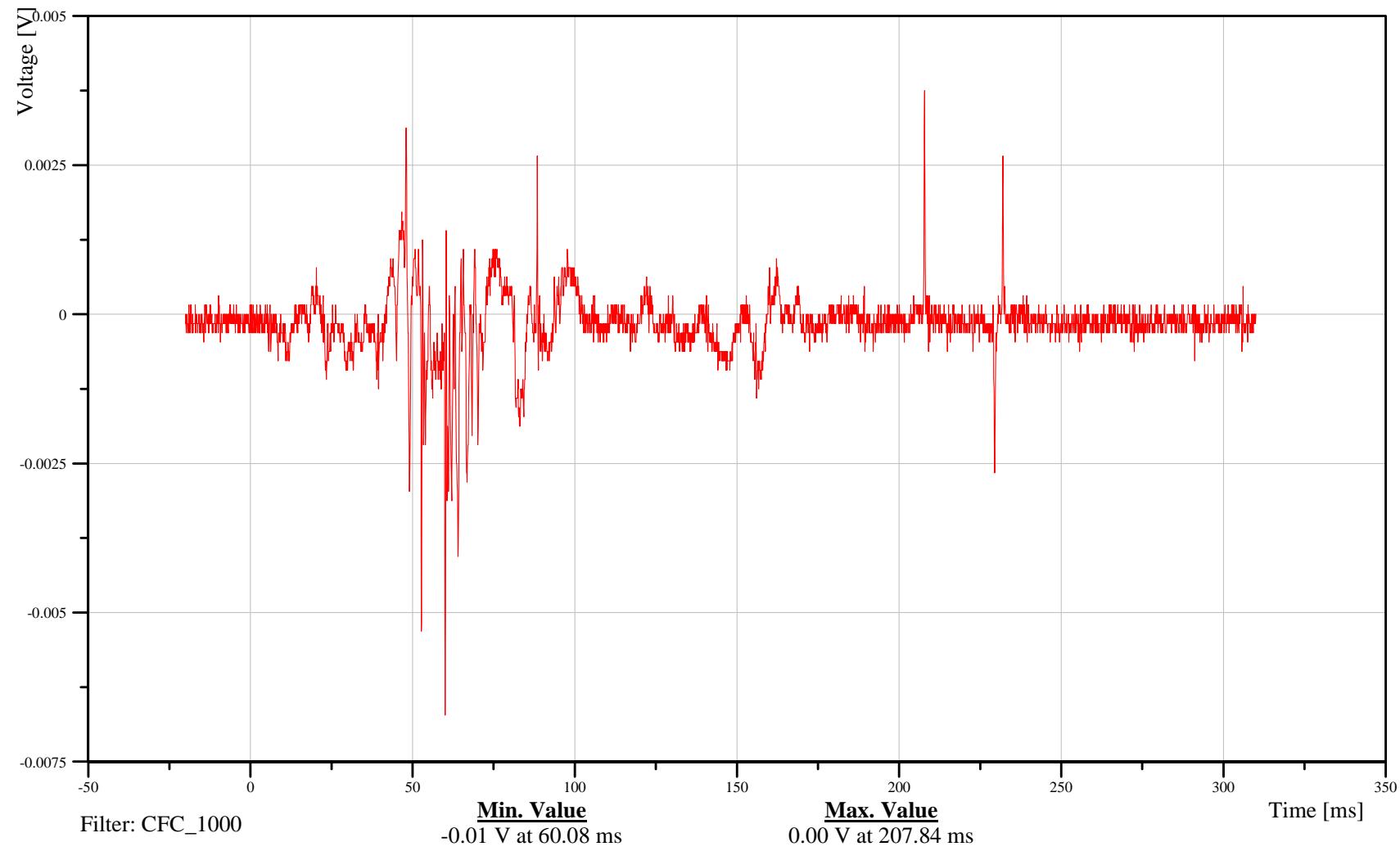
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Target Vehicle Driver Airbag 2nd Stage Fire Time

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

20AIRBLEFR26VO0A

TRC Inc. Test Lab: CTF  
Test Number: 101116





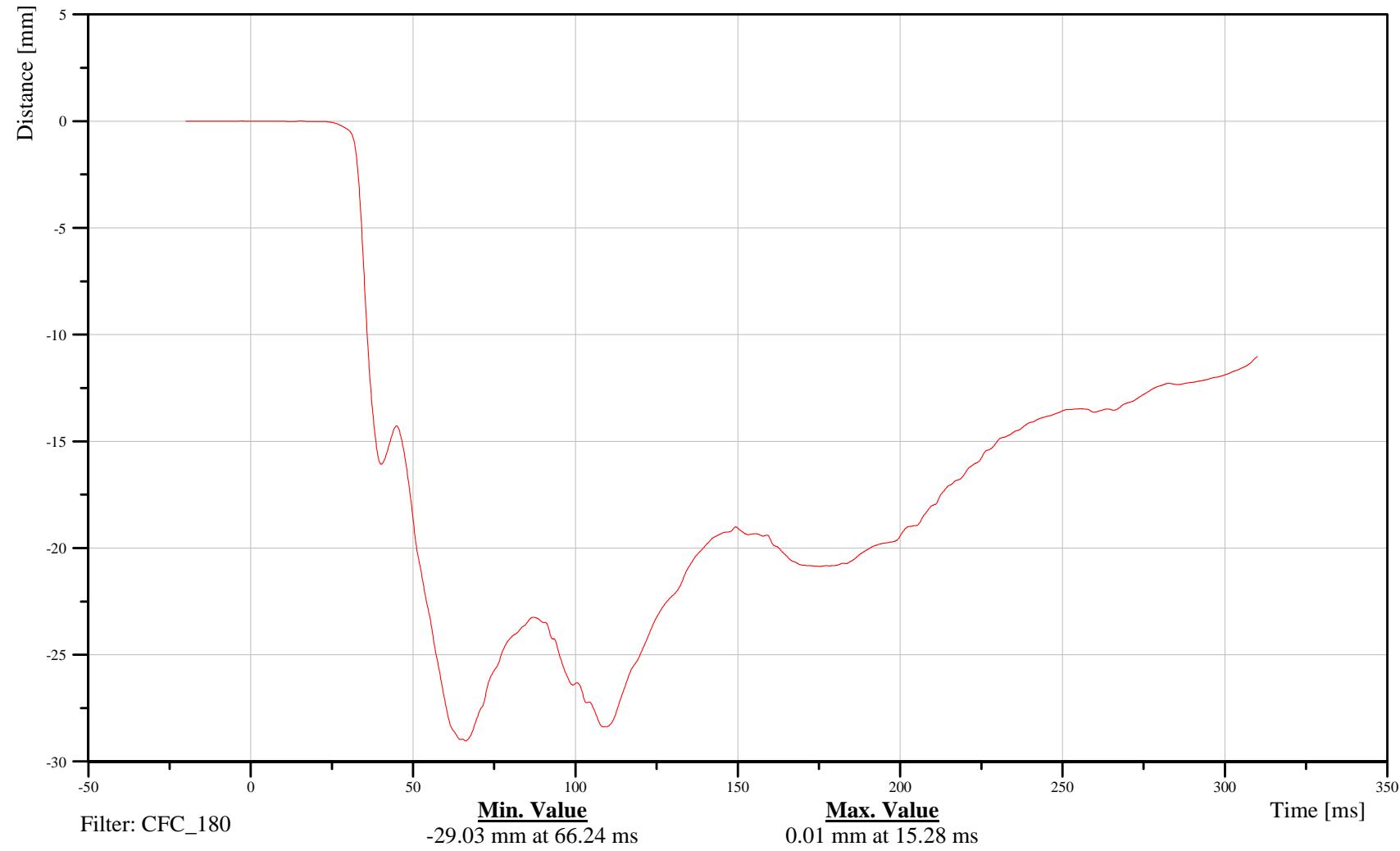
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Lower Abdominal X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDORL00THDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





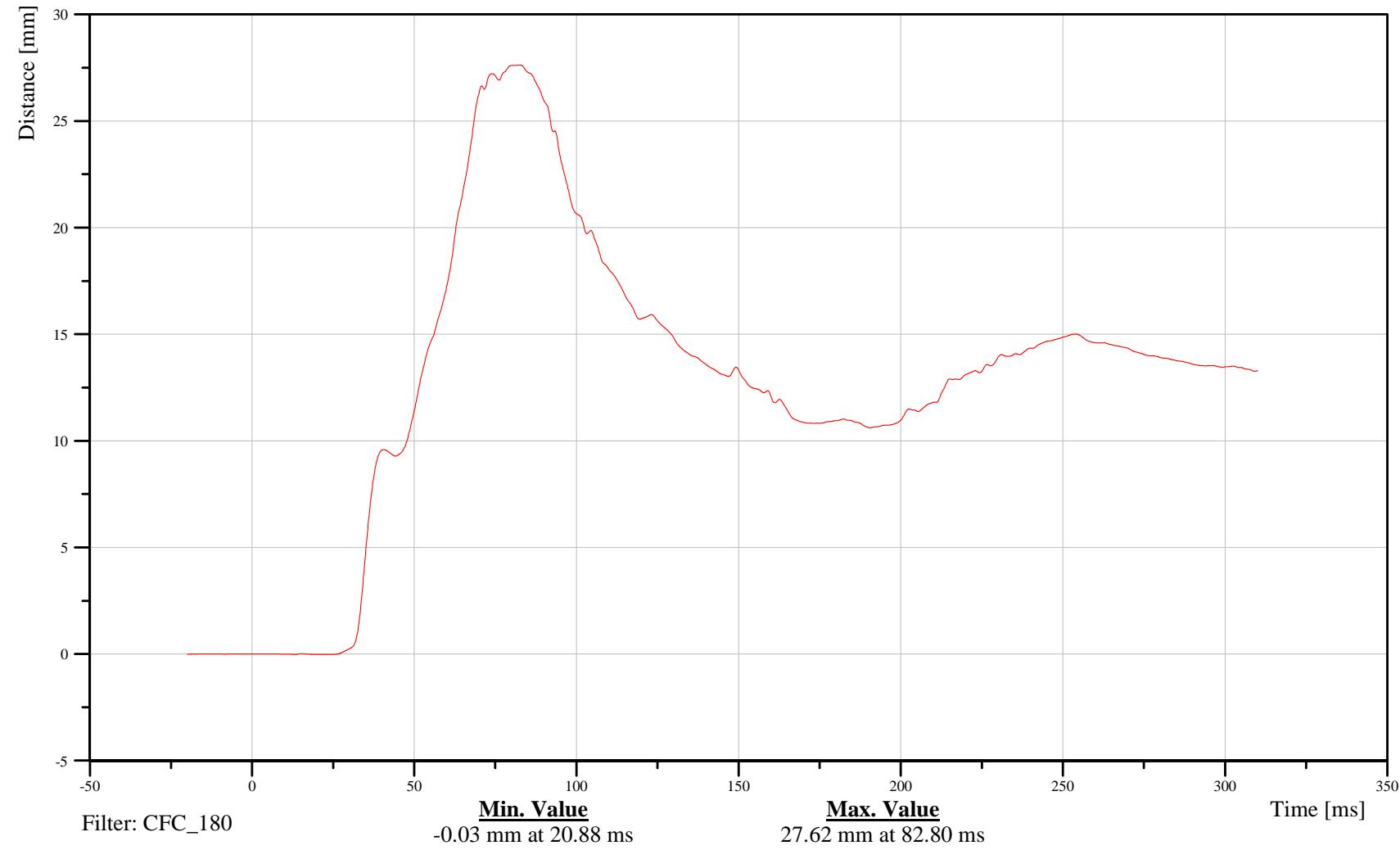
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Lower Abdominal Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDORL00THDSYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





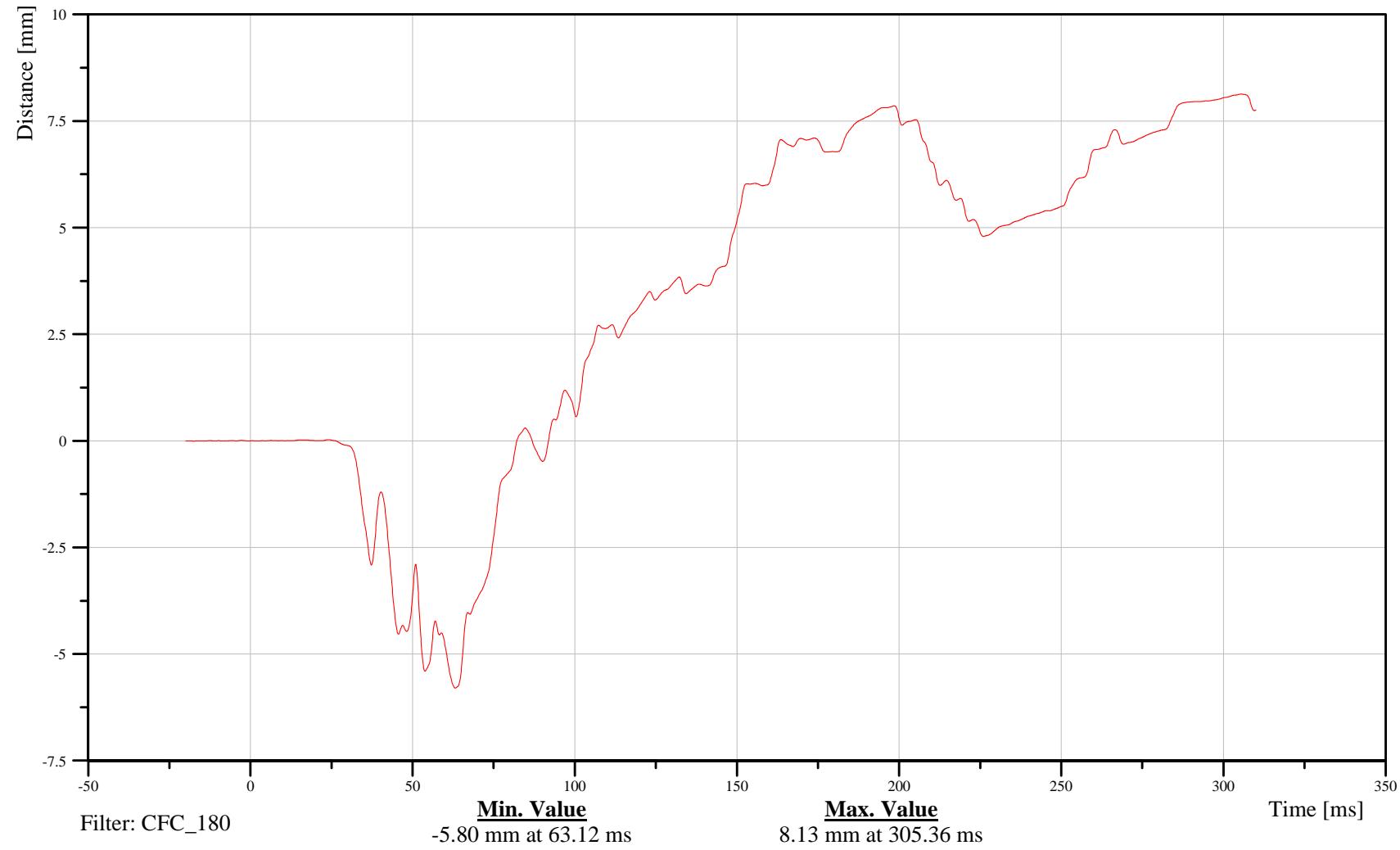
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Lower Abdominal Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21ABDORL00THDSZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





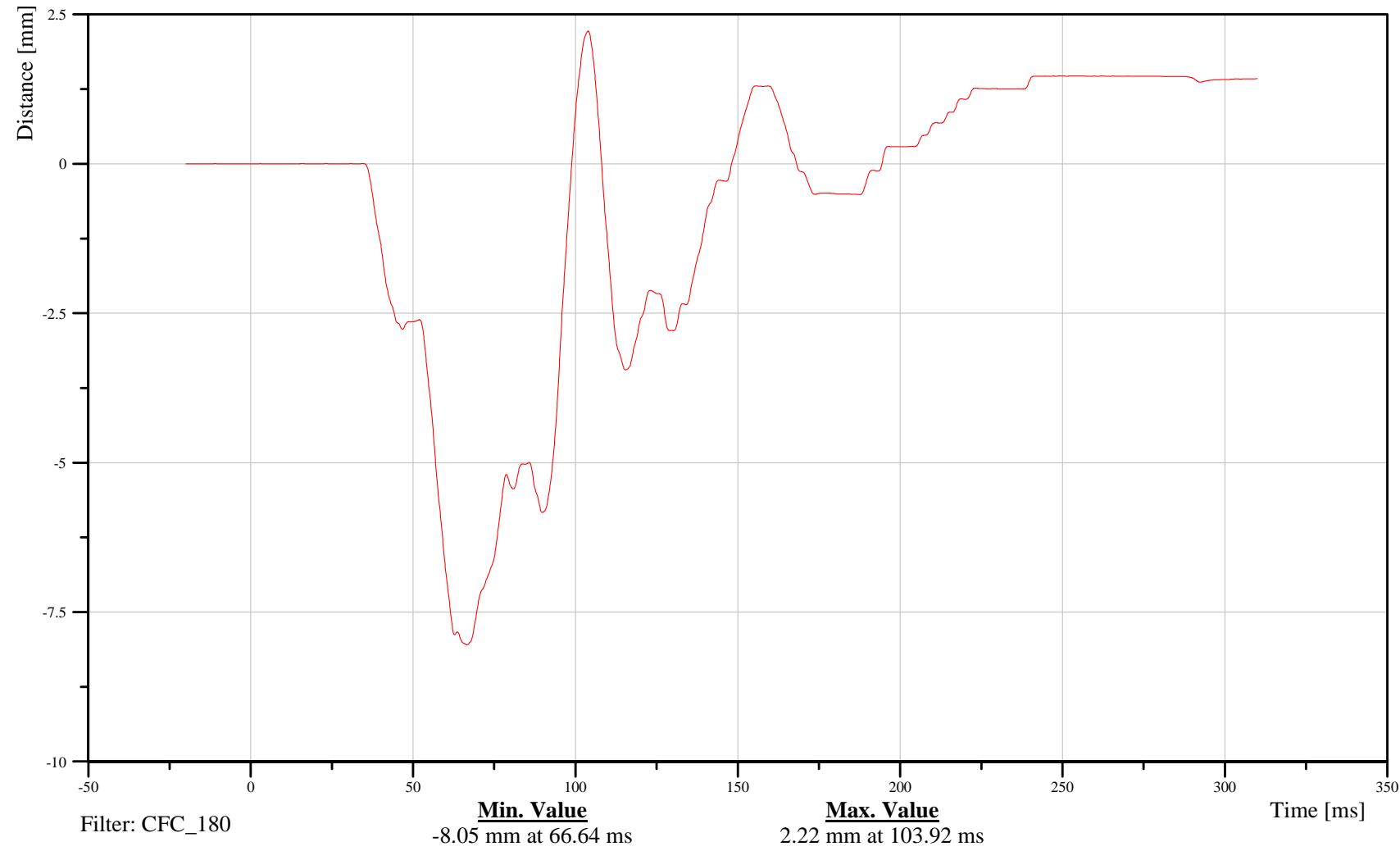
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Left Upper Chest Rib X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRILU00THDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





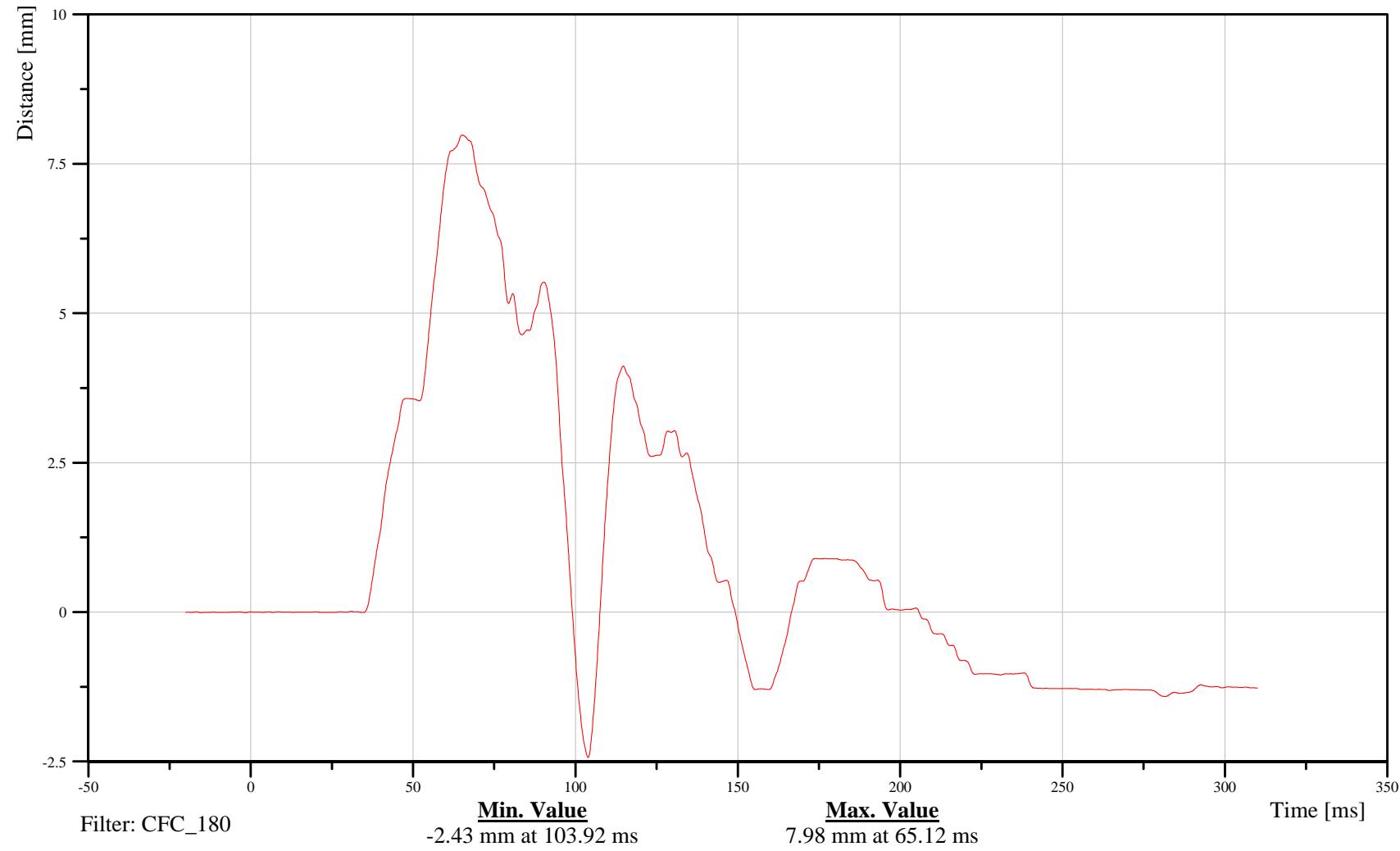
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Left Upper Chest Rib Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILU00THDSYC





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Left Upper Chest Rib Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

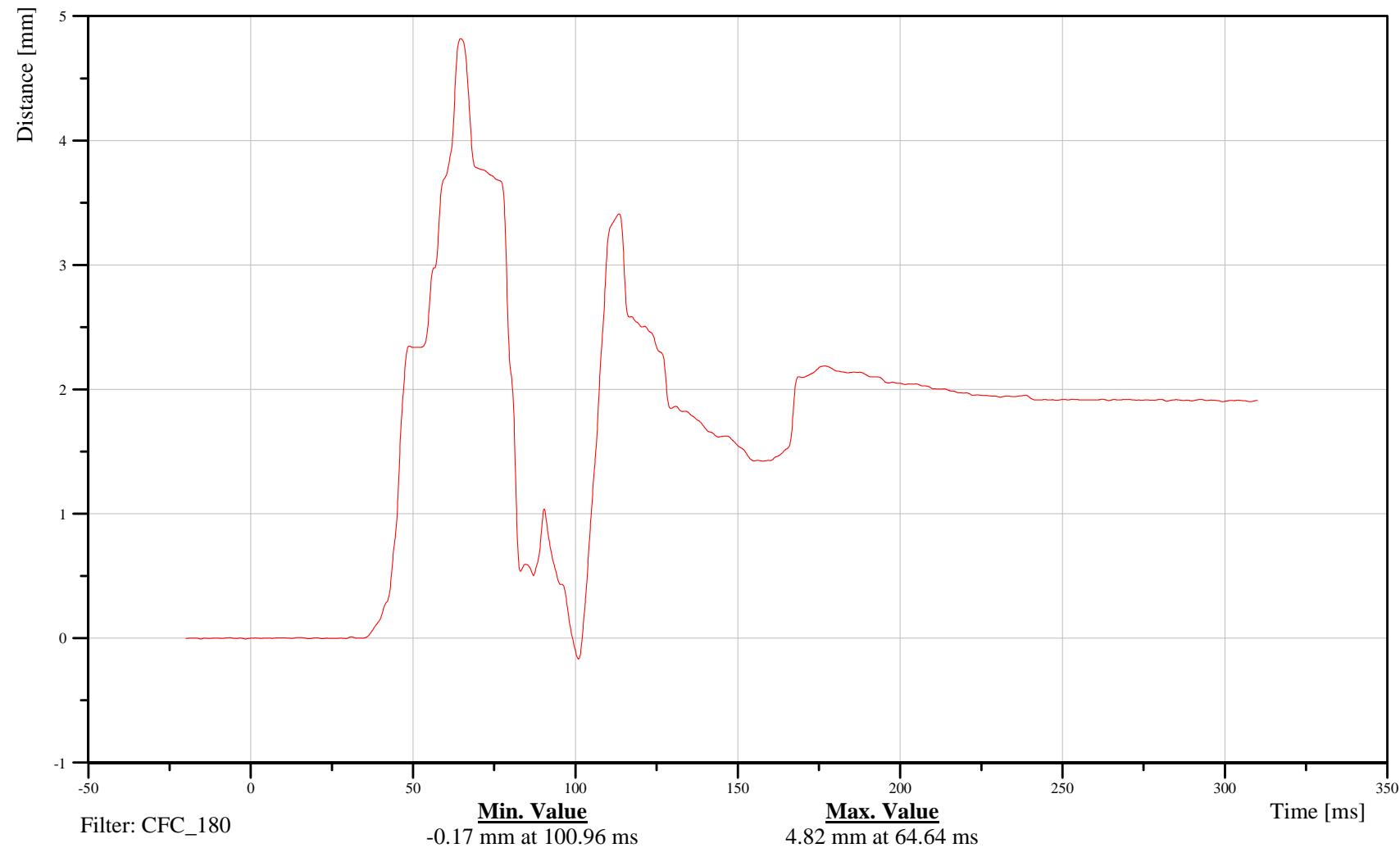
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILU00THDSZC

B-335

101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

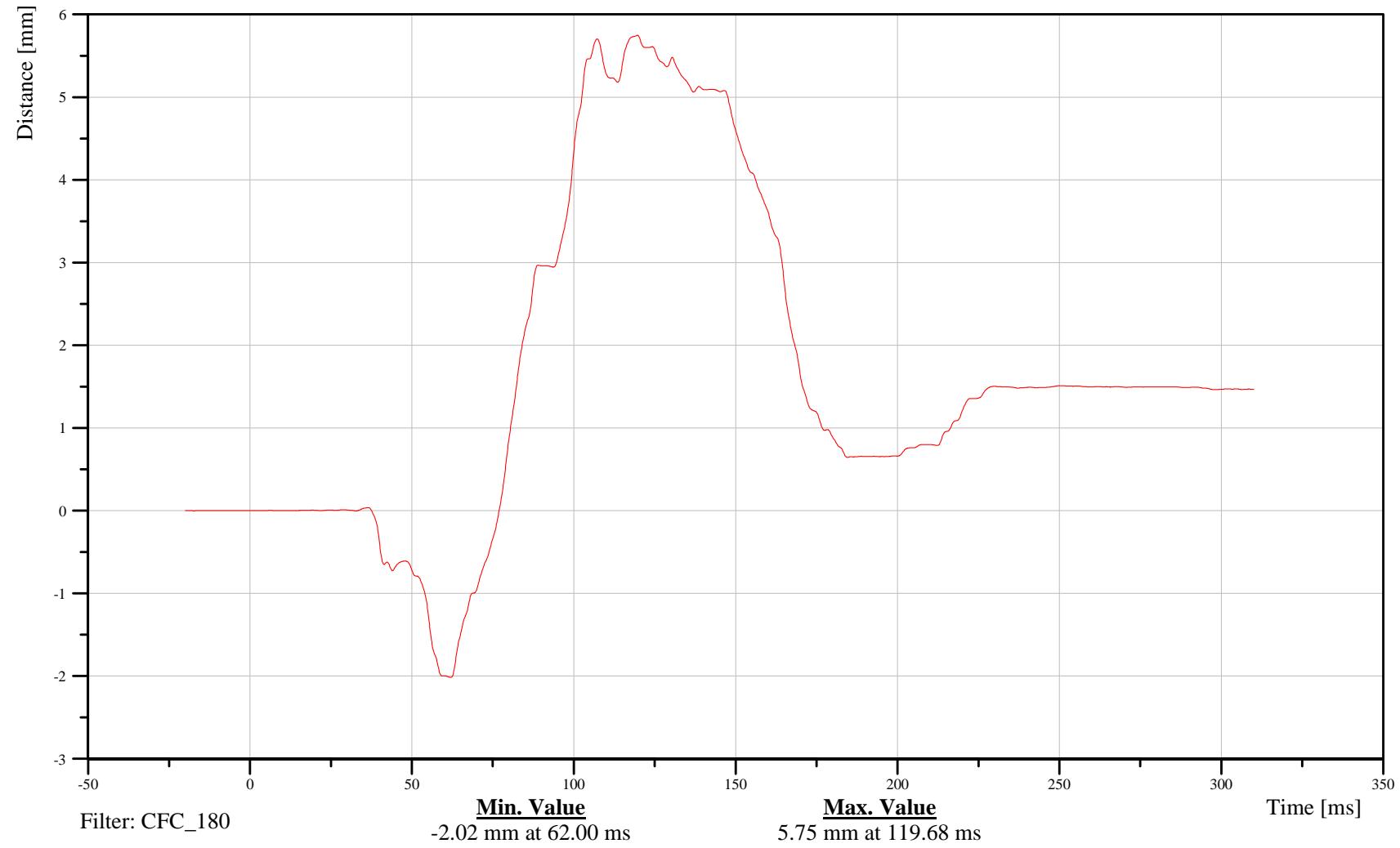
## Calculated Left Lower Chest Rib X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILL00THDSXC





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

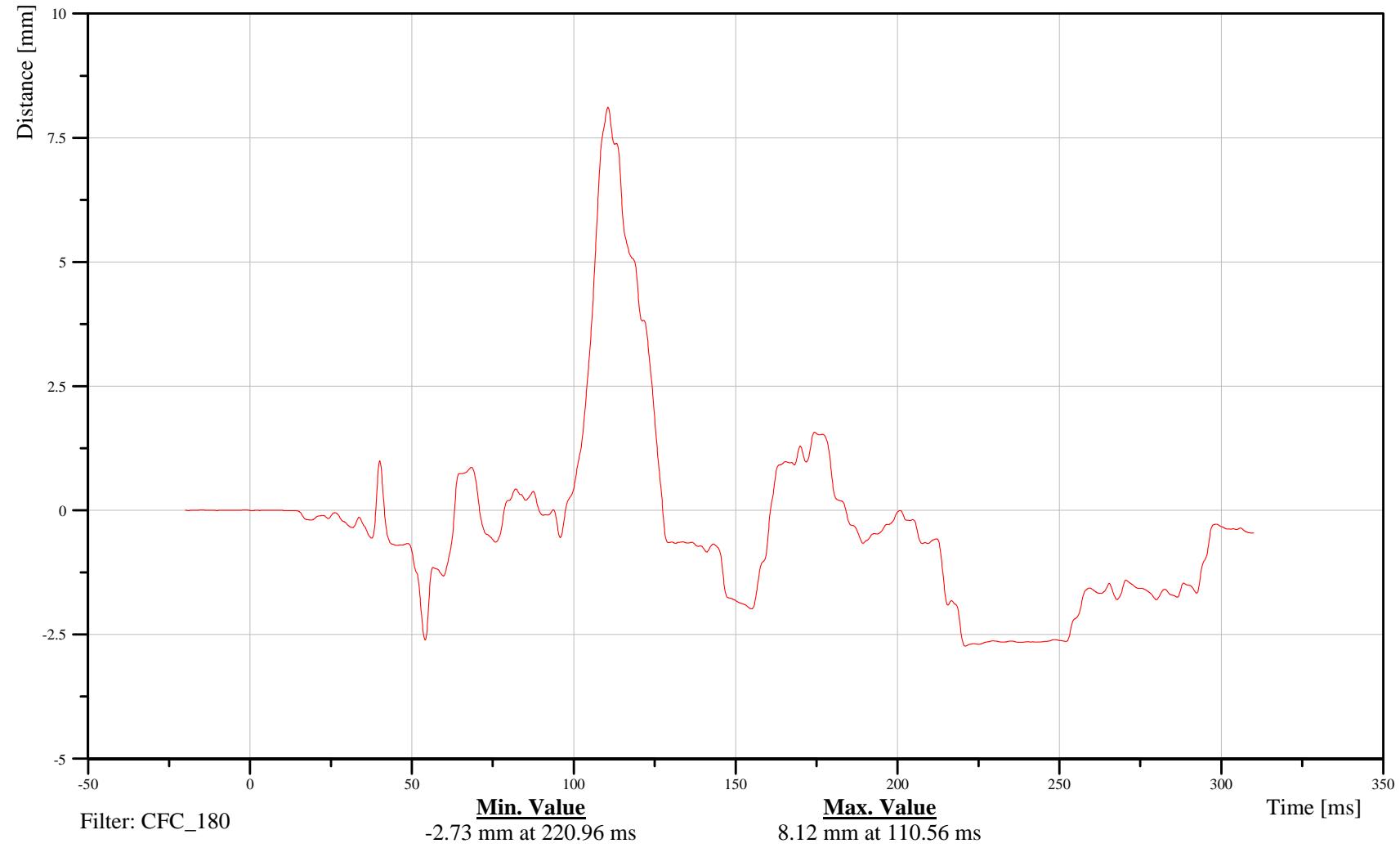
## Calculated Left Lower Chest Rib Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

# 21CHRILL00THDSYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

## Calculated Left Lower Chest Rib Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

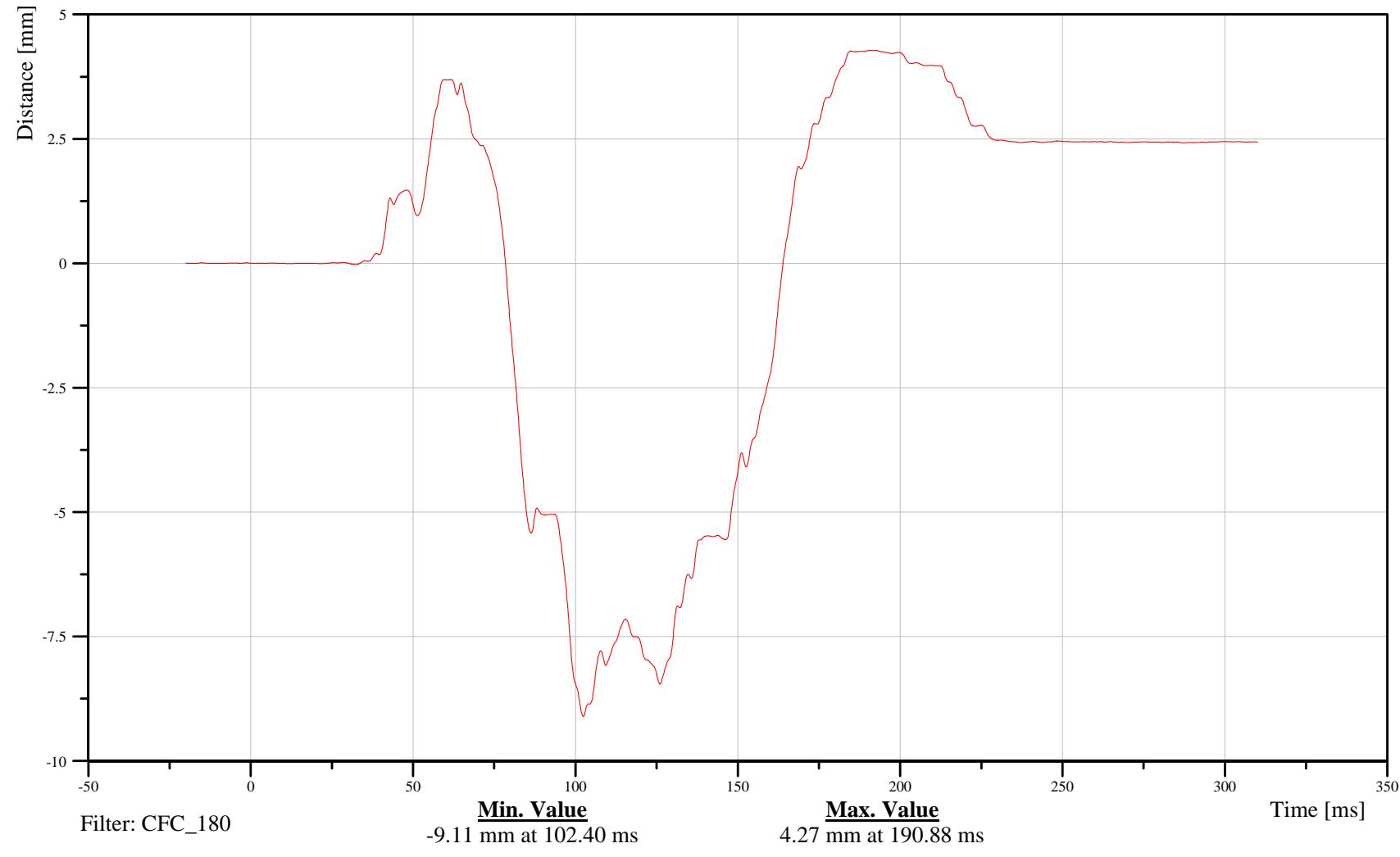
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRILL00THDSZC

B-338

101116





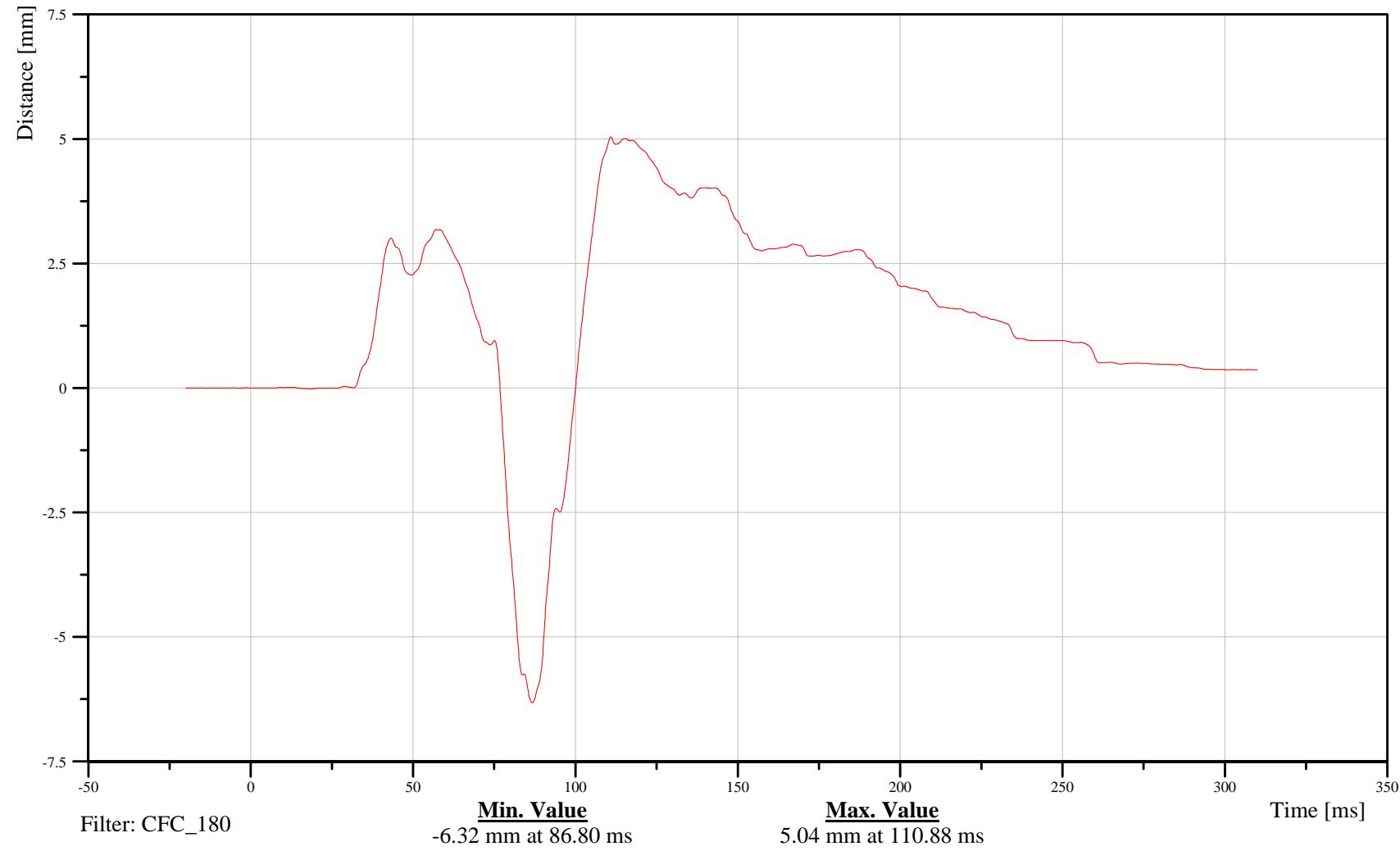
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Upper Chest Rib X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRIRU00THDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





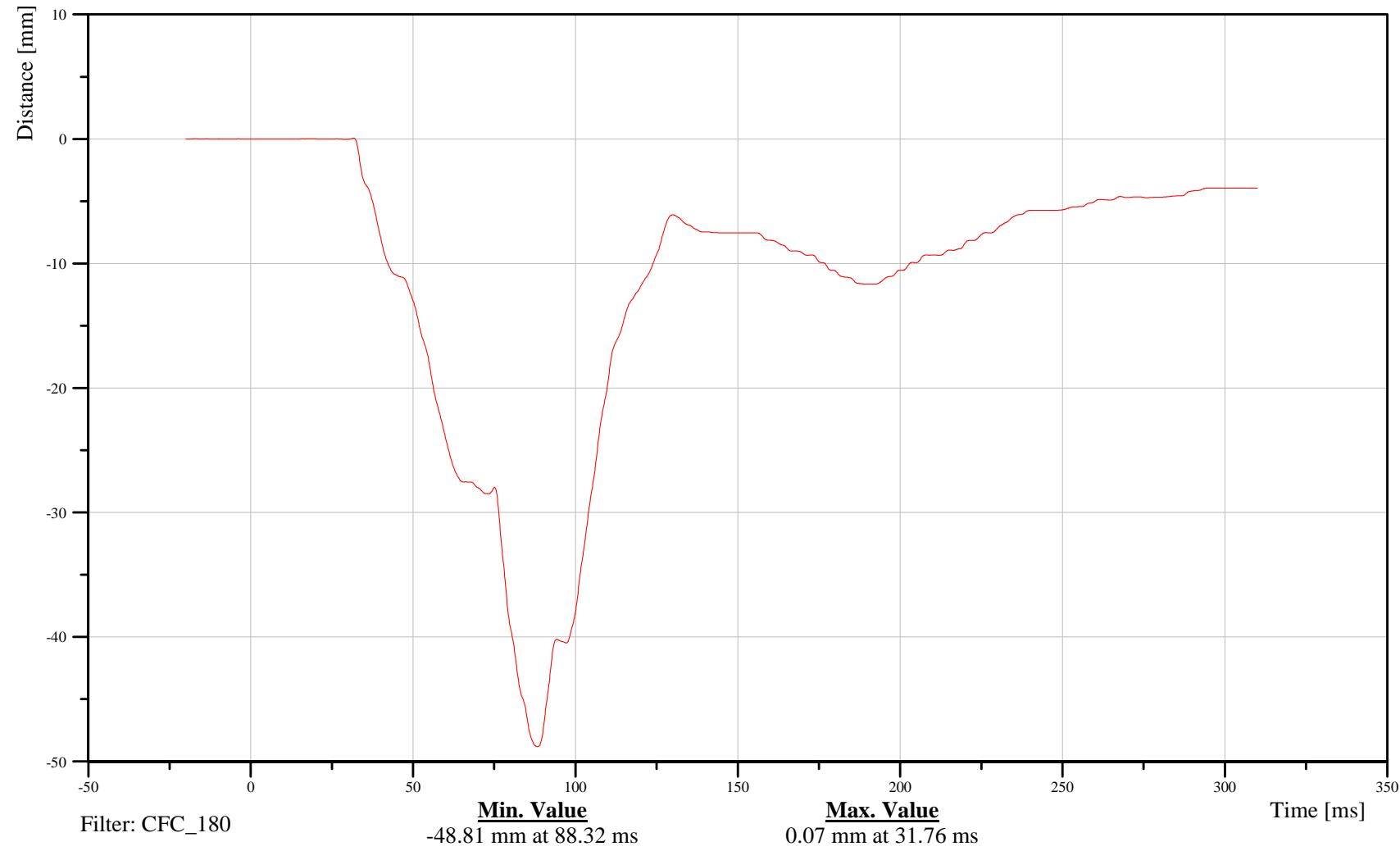
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Upper Chest Rib Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRIRU00THDSYC

TRC Inc. Test Lab: CTF  
Test Number: 101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

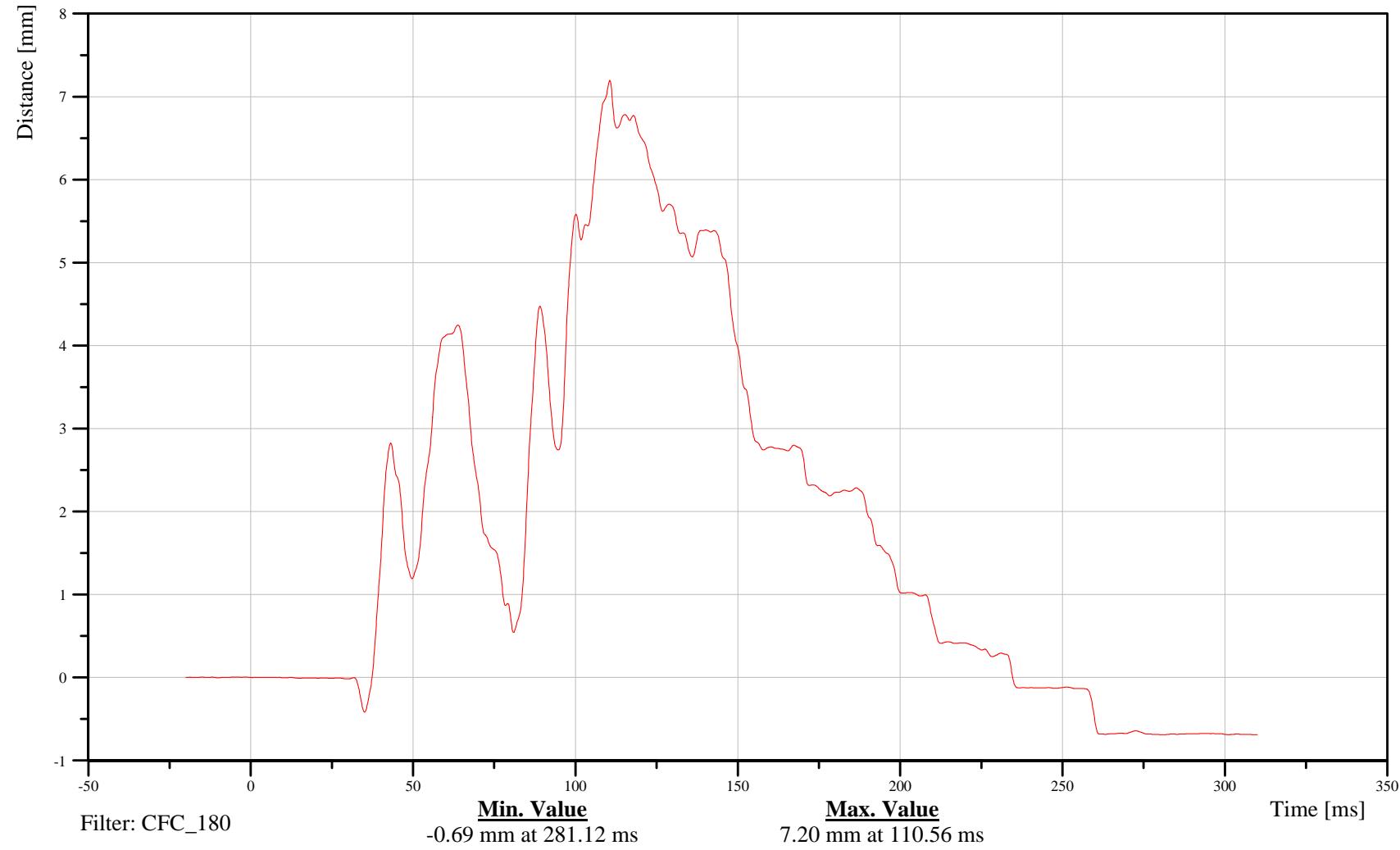
## Calculated Right Upper Chest Rib Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRIRU00THDSZC

TRC Inc. Test Lab: CTF  
Test Number: 101116





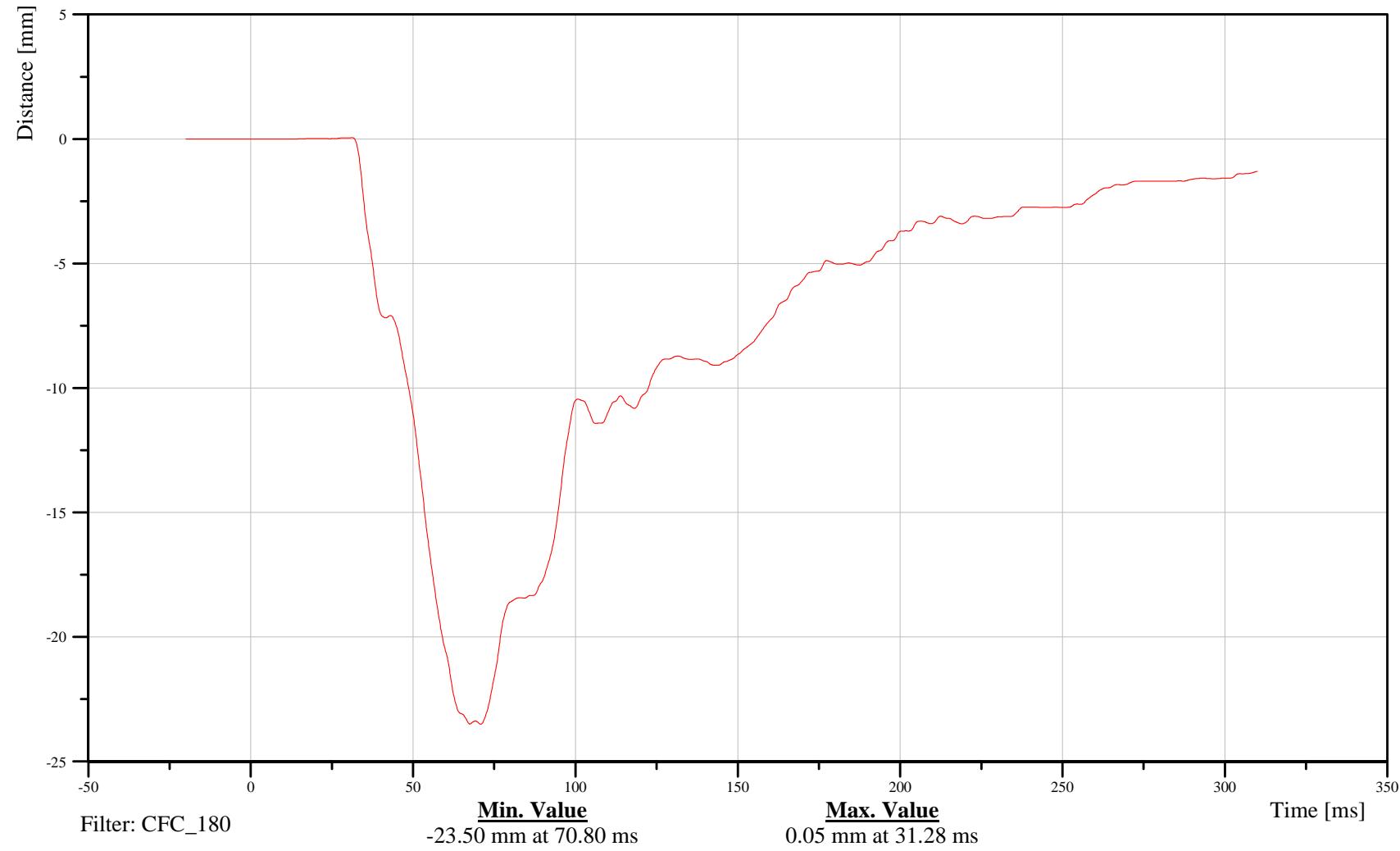
Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Lower Chest Rib X-Axis Displacement

Date: 11/17/2010  
Time: 14:40

Customer: VRTC

21CHRIRL00THDSXC

TRC Inc. Test Lab: CTF  
Test Number: 101116





Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap  
Calculated Right Lower Chest Rib Y-Axis Displacement

Date: 11/17/2010  
Time: 14:40

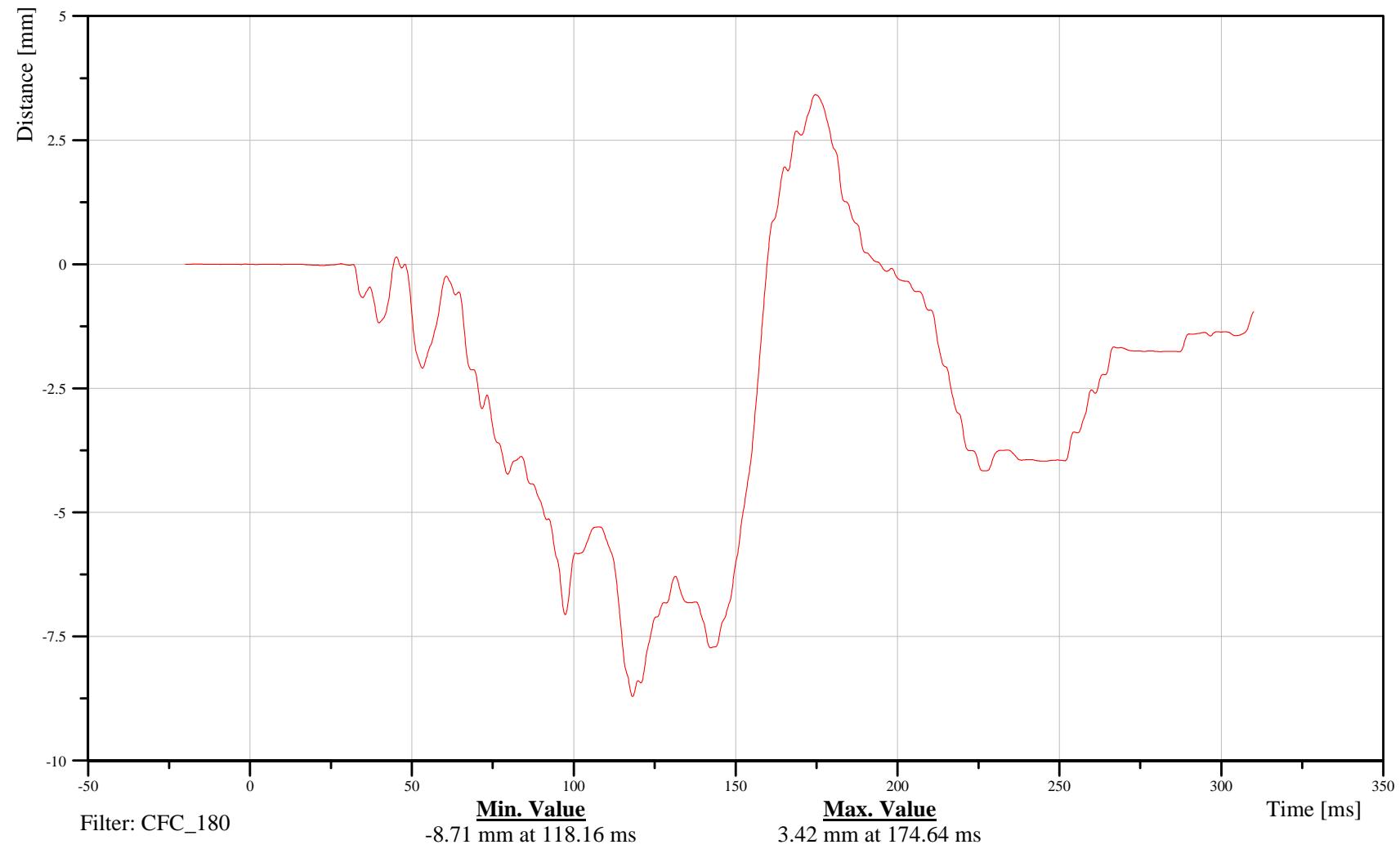
Customer: VRTC

21CHRIRL00THDSYC

TRC Inc. Test Lab: CTF  
Test Number: 101116

B-343

101116





# Taurus into Taurus at 7 Degrees, 70 mph, No Frame Rail Overlap

## Calculated Right Lower Chest Rib Z-Axis Displacement

Date: 11/17/2010  
Time: 14:40

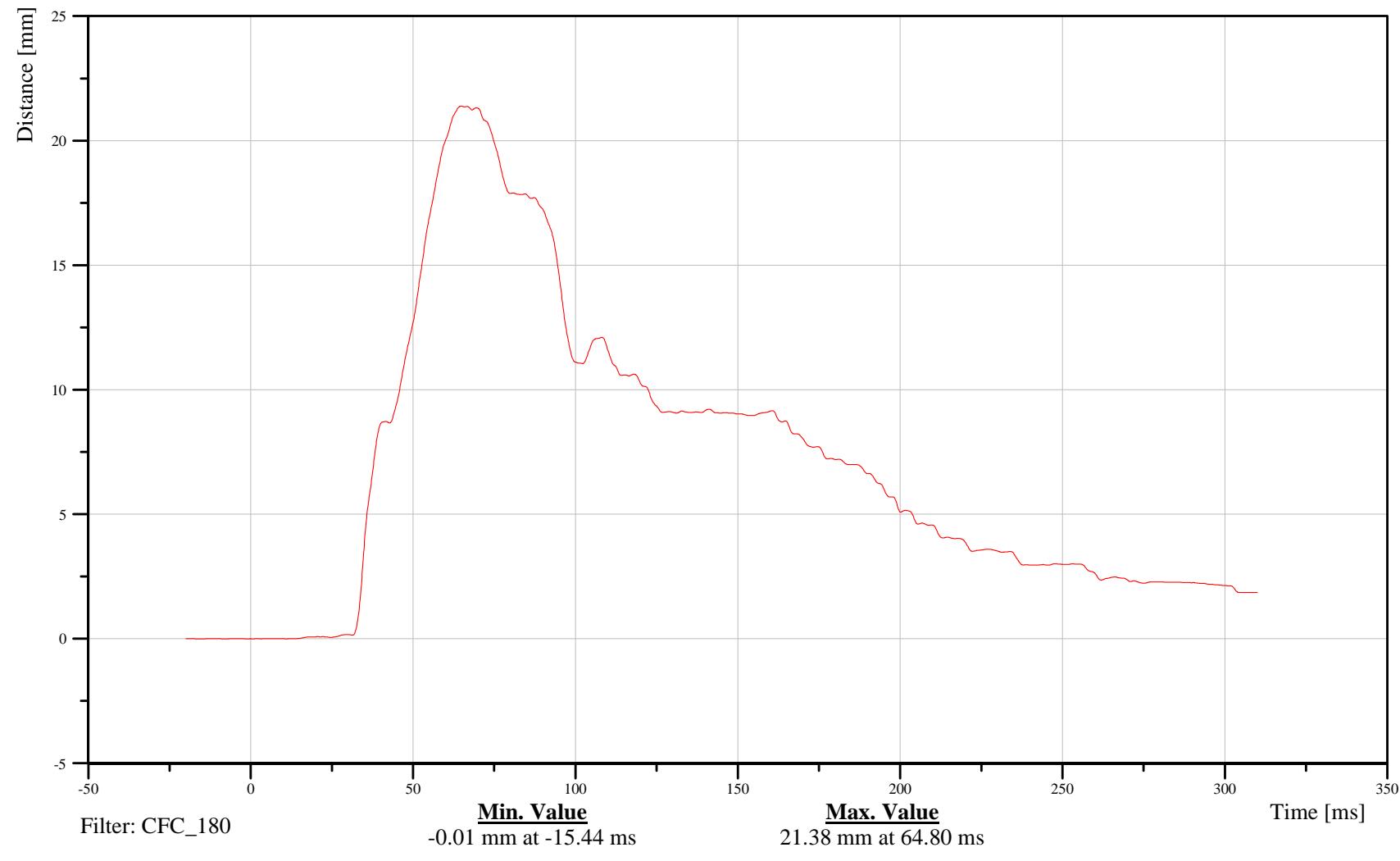
Customer: VRTC

TRC Inc. Test Lab: CTF  
Test Number: 101116

21CHRIRL00THDSZC

B-344

101116



## Appendix C

### Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Driver Dummy S/N: 168

## Transportation Research Center Inc.

Front Head Drop  
HIII 50th Serial No. 168 Certification No. 28-1  
Test Date: 8/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	257.0 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	4.4 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**

**Comments:**

Technician

Rex Berndt

Approved

J. H. J.

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

08.06.2010 08:20:44 601



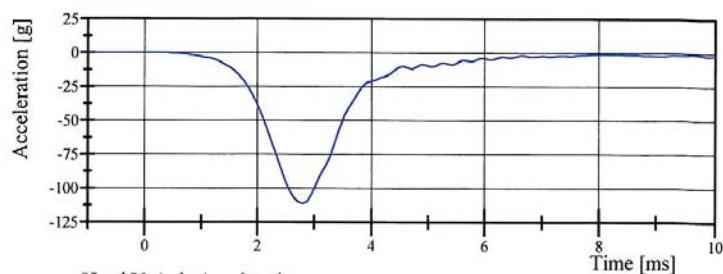
# Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 168 Certification No. 28-1

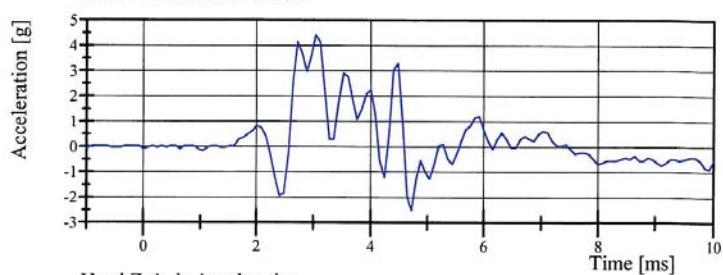
Test Date: 8/6/2010

Head X-Axis Acceleration



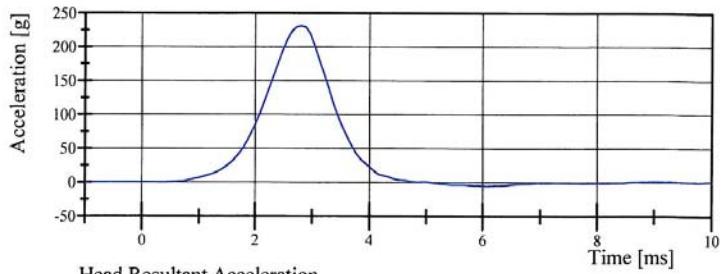
Filter Class: CFC\_1000  
Max: 0.1 g at -1.0 ms  
Min: -111.4 g at 2.8 ms

Head Y-Axis Acceleration



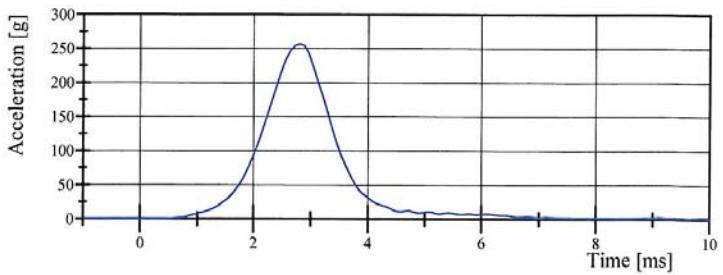
Filter Class: CFC\_1000  
Max: 4.4 g at 3.0 ms  
Min: -2.5 g at 4.7 ms

Head Z-Axis Acceleration



Filter Class: CFC\_1000  
Max: 231.6 g at 2.8 ms  
Min: -5.6 g at 6.1 ms

Head Resultant Acceleration



Filter Class: CFC\_1000  
Max: 257.0 g at 2.8 ms  
Min: 0.0 g at 0.2 ms

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

08.06.2010 08:20:51 601



## Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 168 Certification No. 28-1

Test Date: 8/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.920 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	38.8 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.93 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.59 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.29 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.29 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-72.2 °	Yes
Time of Peak	57 - 64 ms	60.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	117.3 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	95.8 N·m	Yes
Time of Peak	47 - 58 ms	51.2 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	104.6 ms	Yes

**Test meets specifications.**

**Comments:**

Technician

Rent Bensche

Approved

J. J.

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

08.06.2010 08:42:19 2975



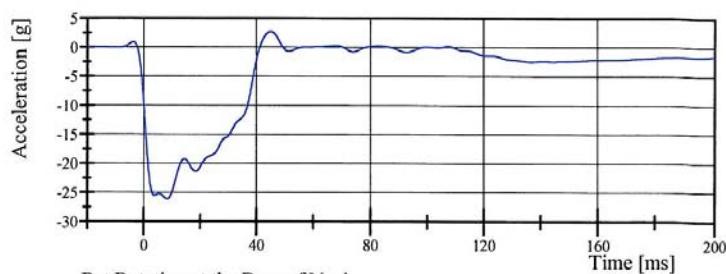
# Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 168 Certification No. 28-1

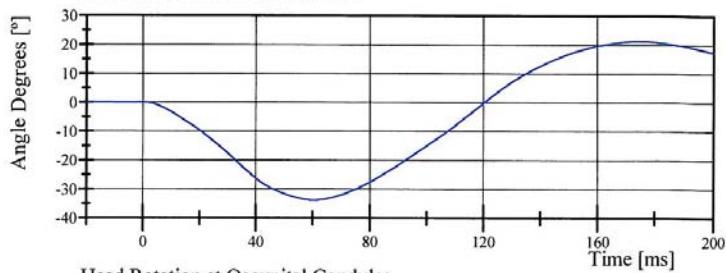
Test Date: 8/6/2010

Pendulum Acceleration



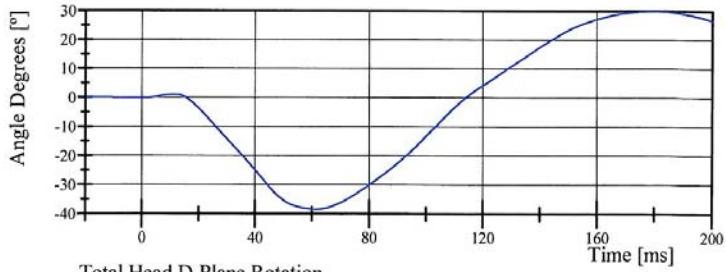
Filter Class: CFC\_60  
Max: 2.7 g at 45.0 ms  
Min: -26.1 g at 8.3 ms

Pot Rotation at the Base of Neck



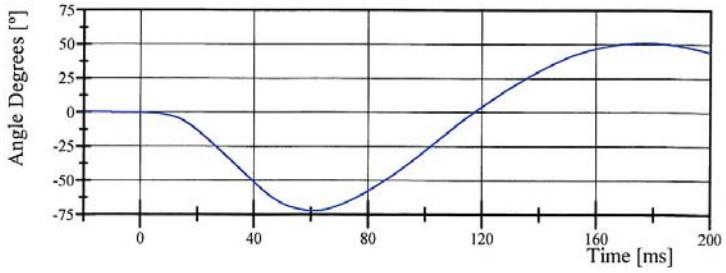
Filter Class: CFC\_60  
Max: 21.2 ° at 175.0 ms  
Min: -33.8 ° at 60.2 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 30.0 ° at 180.0 ms  
Min: -38.4 ° at 61.3 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 51.1 ° at 177.8 ms  
Min: -72.2 ° at 60.8 ms

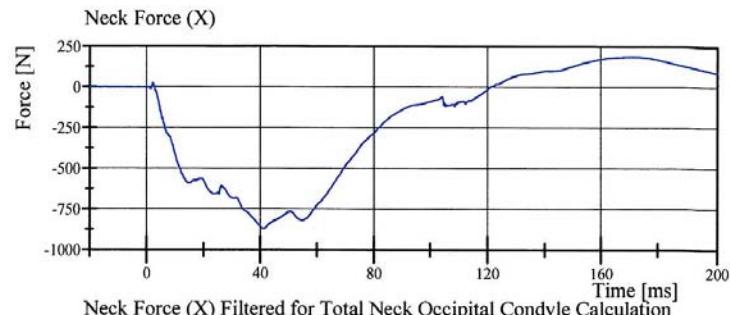
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

08.06.2010 08:42:26 2975

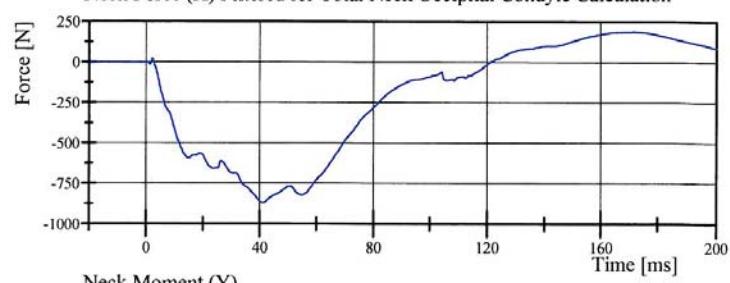


# Transportation Research Center Inc.

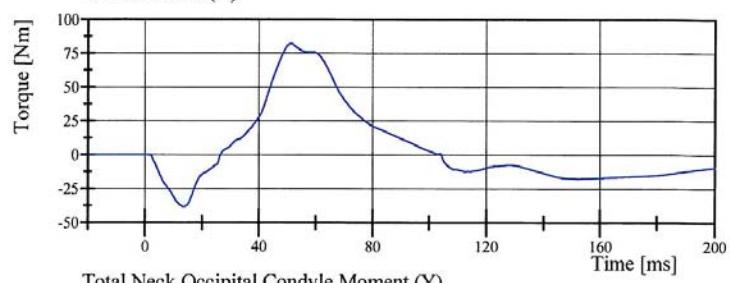
Neck Flexion  
 HIII 50th Serial No. 168 Certification No. 28-1  
 Test Date: 8/6/2010



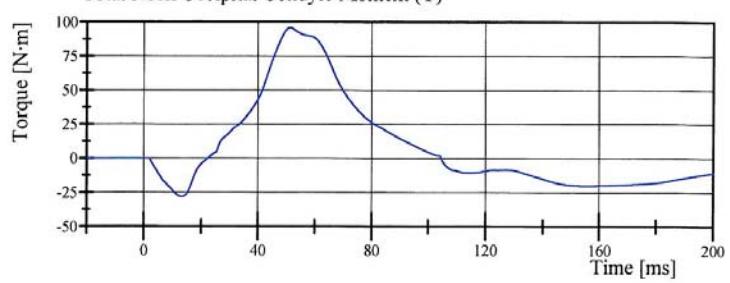
Filter Class: CFC\_1000  
 Max: 188.3 N at 171.8 ms  
 Min: -871.1 N at 41.2 ms



Filter Class: CFC\_600  
 Max: 187.8 N at 171.8 ms  
 Min: -870.8 N at 41.2 ms



Filter Class: CFC\_600  
 Max: 82.3 Nm at 51.1 ms  
 Min: -38.3 Nm at 13.7 ms



Filter Class: CFC\_600  
 Max: 95.8 N·m at 51.2 ms  
 Min: -28.3 N·m at 13.2 ms

Specification Source: CFR49 Part 572 Subpart E  
 with Polarity in accordance with J211

08.06.2010 08:42:27 2975



## Transportation Research Center Inc.

Neck Extension  
HIII 50th Serial No. 168 Certification No. 28-2  
Test Date: 8/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.005 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	44.7 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.24 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.17 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.65 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.65 g	Yes
Total Head D-Plane Rotation Peak	81 - 106 °	97.6 °	Yes
Time of Peak	72 - 82 ms	79.0 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	156.7 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-53) - (-80) N·m	-68.0 N·m	Yes
Time of Peak	65 - 79 ms	72.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	145.1 ms	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



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Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

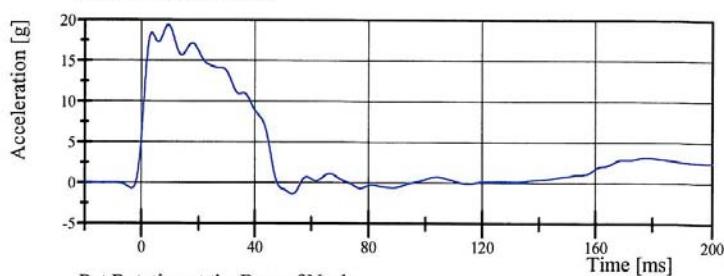
08.06.2010 10:11:53 3047



# Transportation Research Center Inc.

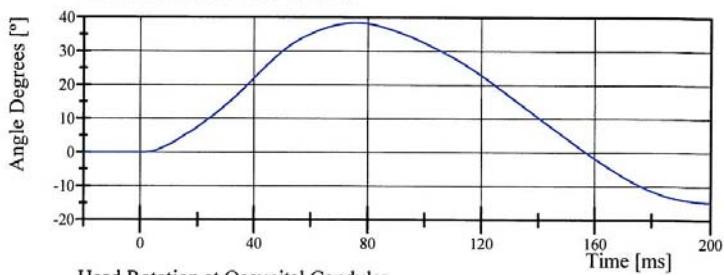
Neck Extension  
 HIII 50th Serial No. 168 Certification No. 28-2  
 Test Date: 8/6/2010

Pendulum Acceleration



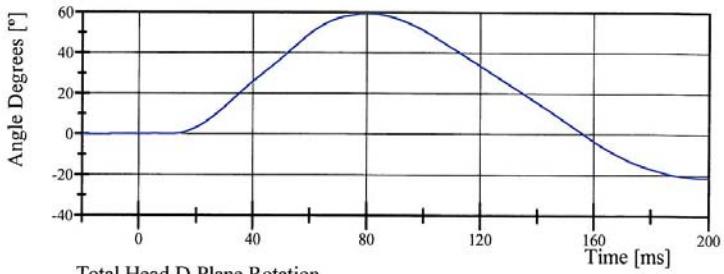
Filter Class: CFC\_60  
 Max: 19.4 g at 9.4 ms  
 Min: -1.4 g at 53.1 ms

Pot Rotation at the Base of Neck



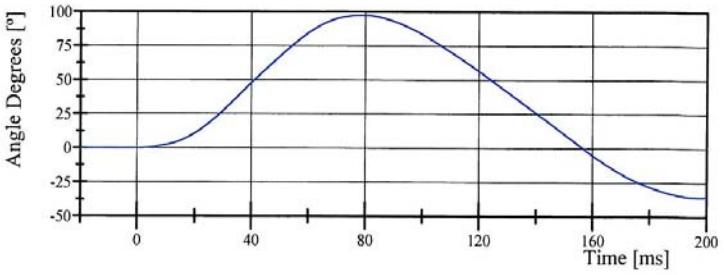
Filter Class: CFC\_60  
 Max: 38.4 ° at 76.3 ms  
 Min: -14.7 ° at 200.0 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
 Max: 59.4 ° at 80.6 ms  
 Min: -21.2 ° at 198.1 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
 Max: 97.6 ° at 79.0 ms  
 Min: -35.8 ° at 199.0 ms

Specification Source: CFR49 Part 572 Subpart E  
 with Polarity in accordance with J211

08.06.2010 10:12:00 3047

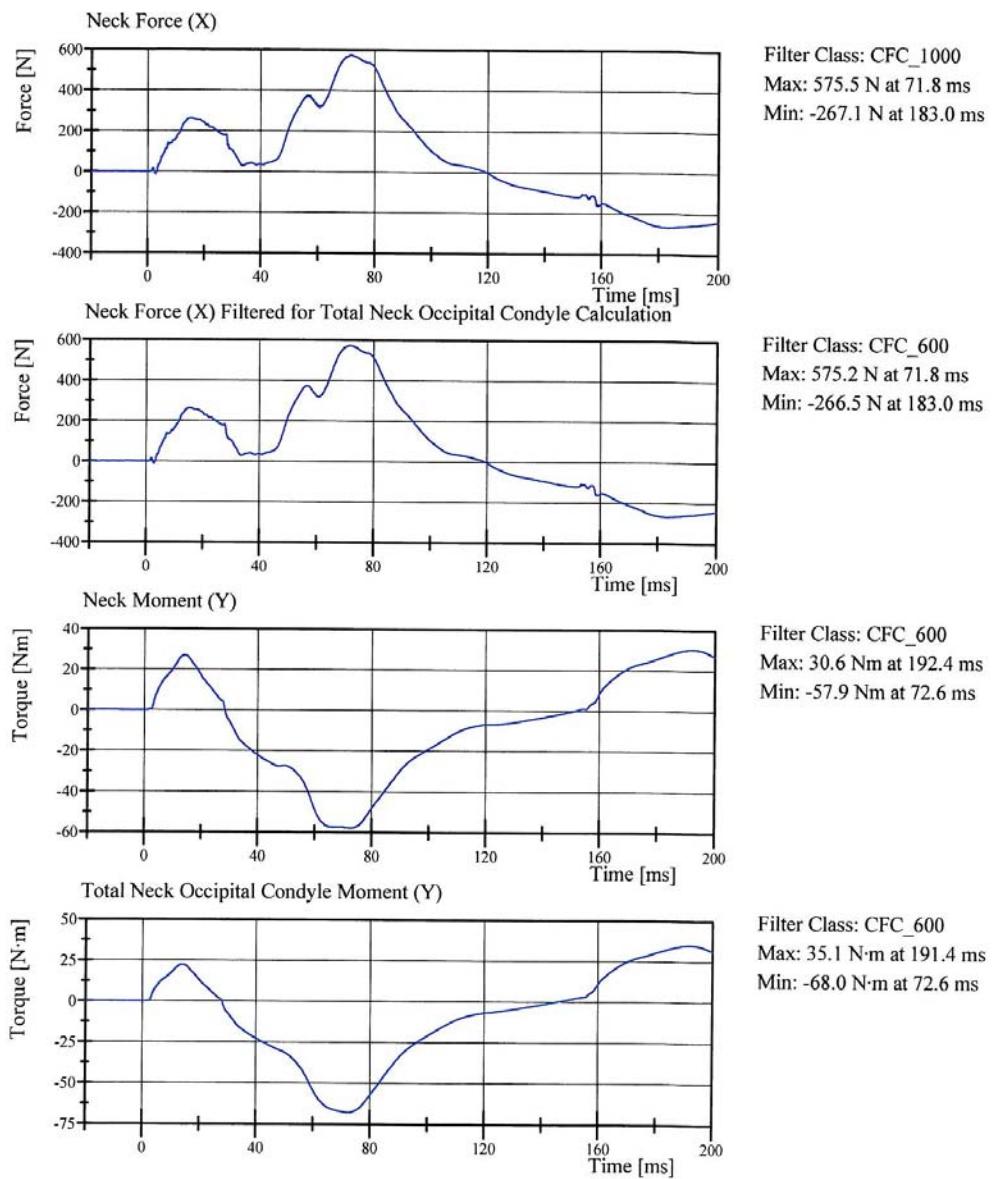


# Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 168 Certification No. 28-2

Test Date: 8/6/2010



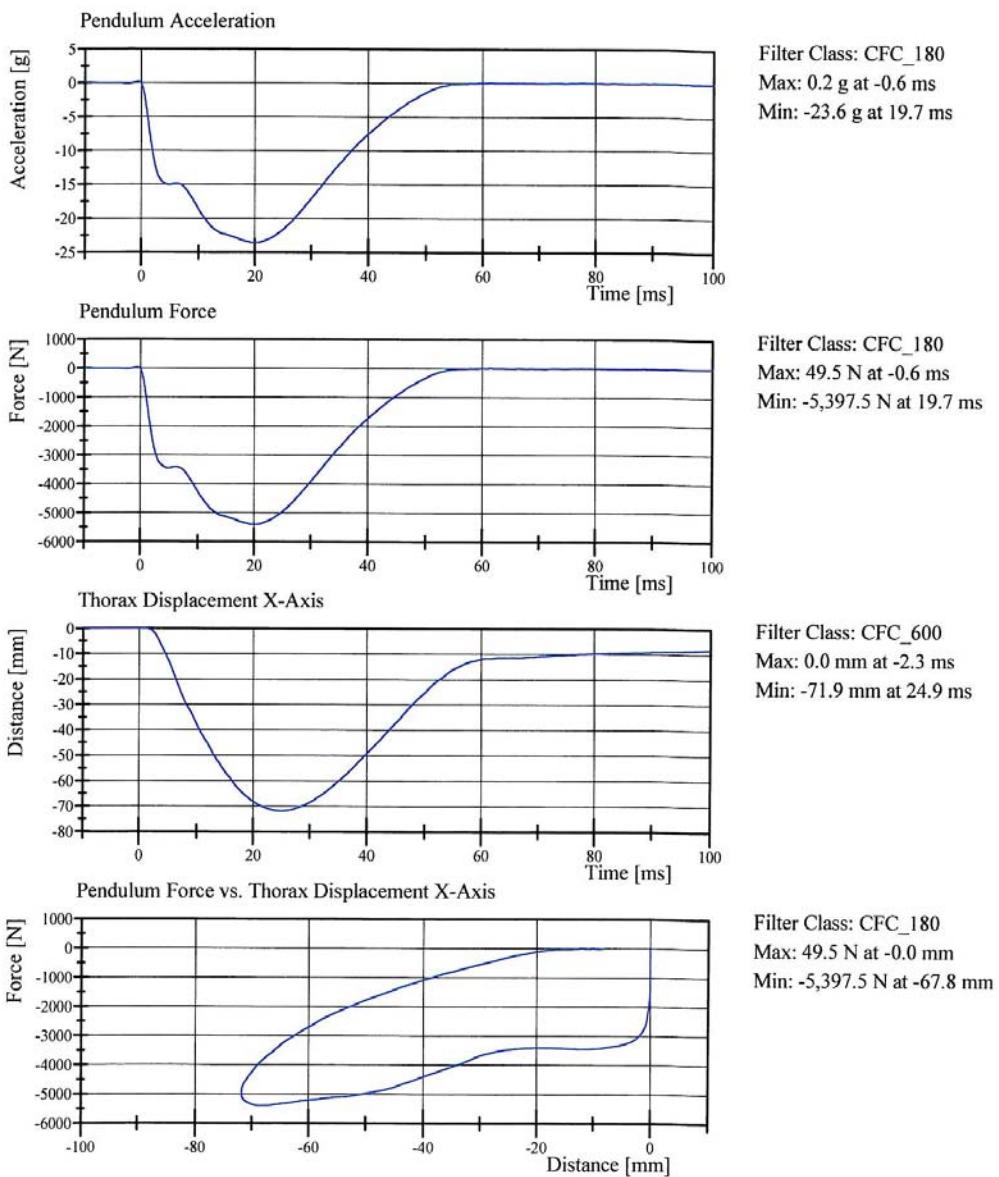
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

08.06.2010 10:12:01 3047



# Transportation Research Center Inc.

Front Thorax  
HIII 50th Serial No. 168 Certification No. 28-1  
Test Date: 8/6/2010



Specification Source: CFR49 Part 572 Subpart P  
with Polarity in accordance with J211

08.06.2010 10:51:54 386



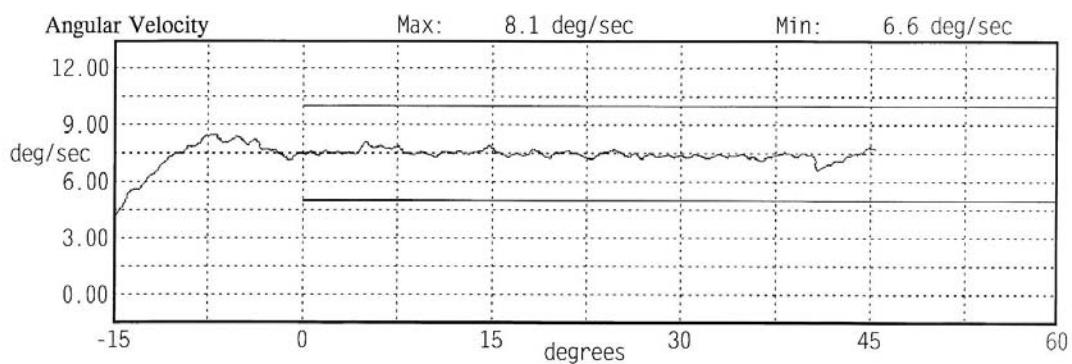
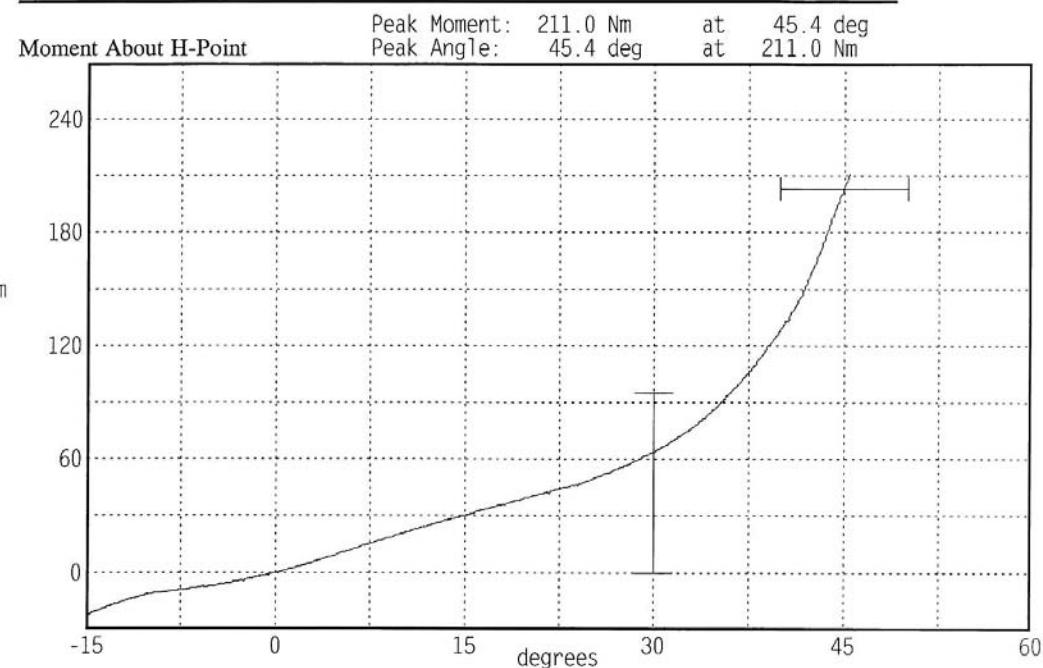
# Transportation Research Center Inc

Hybrid III Hip Range of Motion

Serial Number: 168L  
 Test Number: 168C28  
 Comments:

Date: 08/05/2010  
 Time: 15:07

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7	°C Pass
Humidity	10 - 70	56	% Pass
Moment at 30 deg	<= 94.9	63.5	Nm Pass
Angle at 203 Nm	40.0 - 50.0	45.0	deg Pass
Average Velocity	5.0 - 10.0	7.5	deg/sec Pass



# Transportation Research Center Inc

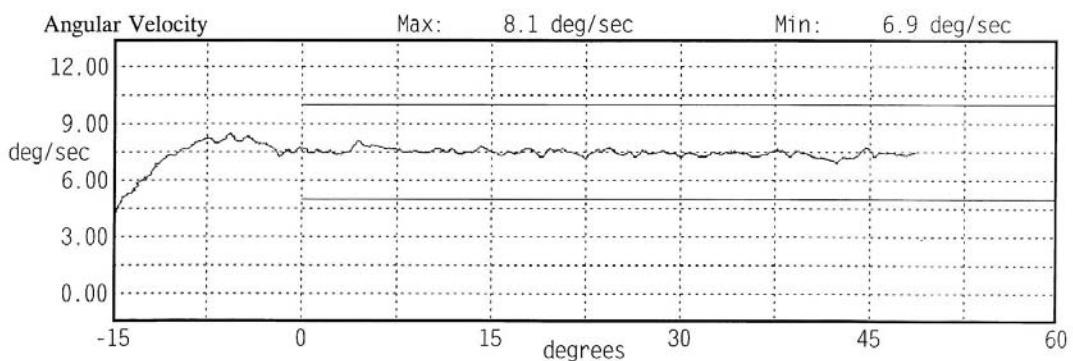
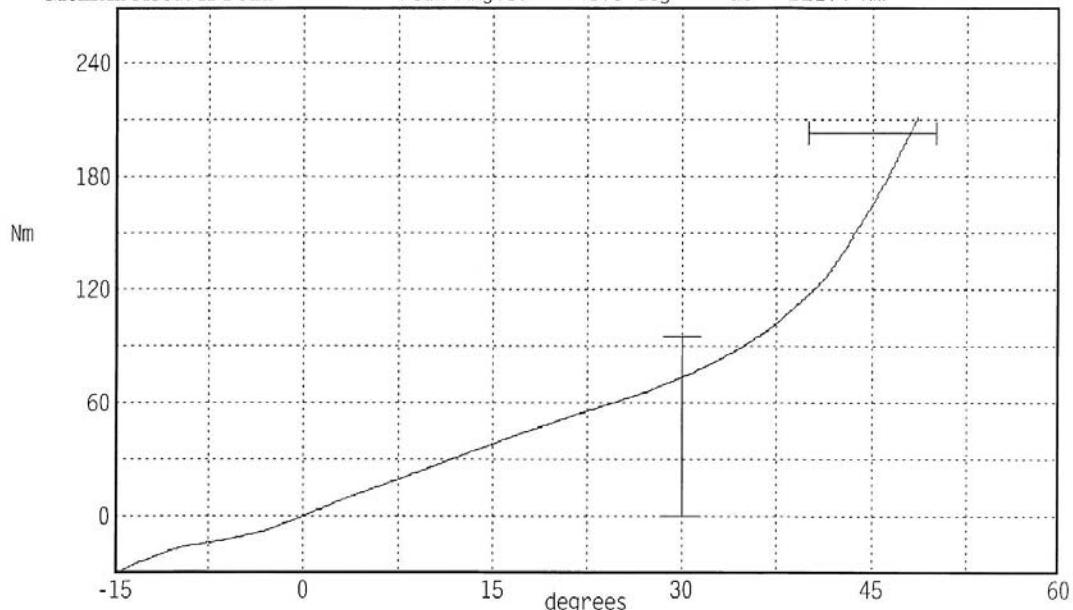
Hybrid III Hip Range of Motion

Serial Number: 168R  
Test Number: 168C28  
Comments:

Date: 08/06/2010  
Time: 07:34

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.5 °C	Pass
Humidity	10 - 70	60 %	Pass
Moment at 30 deg	<= 94.9	73.9 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	48.0 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point      Peak Moment: 211.4 Nm      at 48.5 deg  
                                Peak Angle: 48.5 deg      at 211.4 Nm



## **Transportation Research Center Inc.**

Left Knee Femur Response Test  
HIII 50th Serial No. 168 Certification No. 28-1  
Test Date: 8/6/2010

<b>Test Parameter</b>	<b>Specification</b>	<b>Test Results</b>	<b>Pass</b>
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.098 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,150.33 N	Yes

**Test meets specifications.**

**Comments:**

Technician

Dave Bernards

Approved

J. D. H.

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

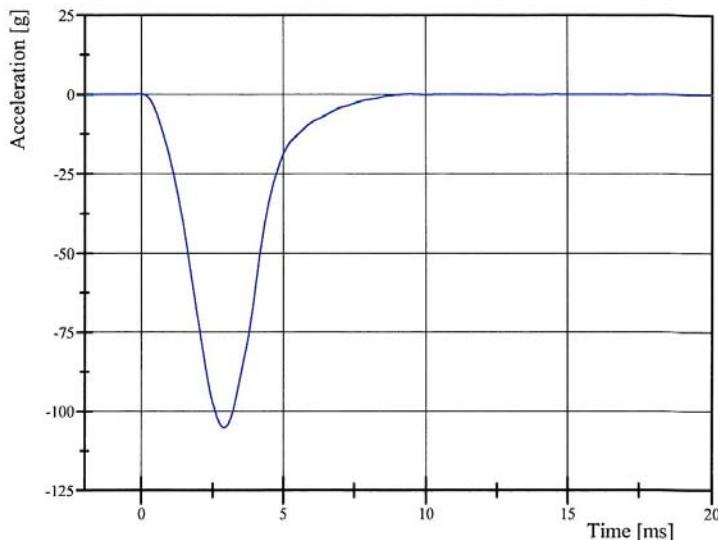
08.06.2010 07:44:02 1769



# Transportation Research Center Inc.

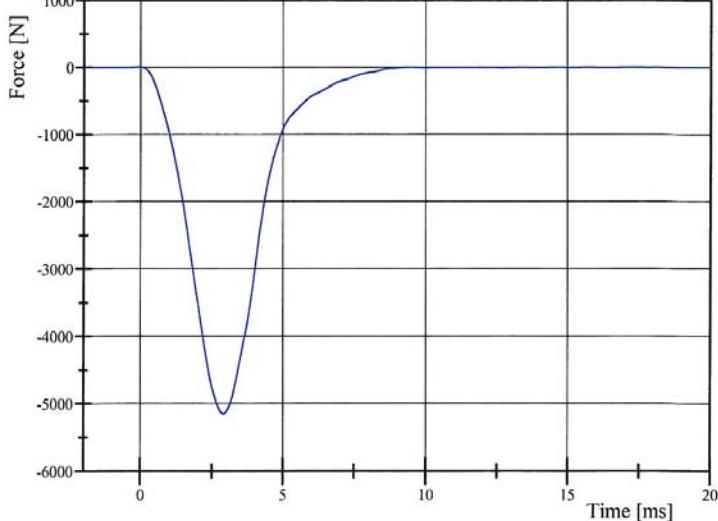
Left Knee Femur Response Test  
HIII 50th Serial No. 168 Certification No. 28-1  
Test Date: 8/6/2010

Pendulum Acceleration



Filter Class: CFC\_600  
Max: 0.1 g at -0.1 ms  
Min: -105.3 g at 2.9 ms

Pendulum Force



Filter Class: CFC\_600  
Max: 5.8 N at -0.1 ms  
Min: -5,150.3 N at 2.9 ms

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

08.06.2010 07:44:12 1769



## Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 50th Serial No. 168 Certification No. 28-1  
Test Date: 8/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.109 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,290.20 N	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

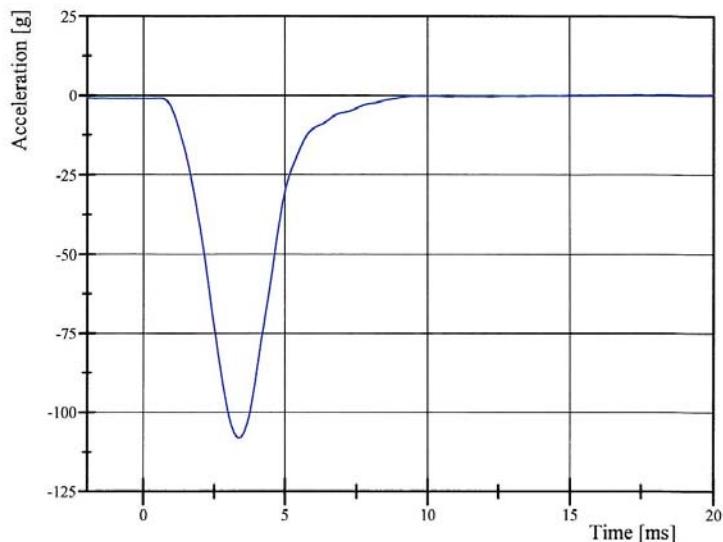
08.06.2010 07:49:44 1760



# Transportation Research Center Inc.

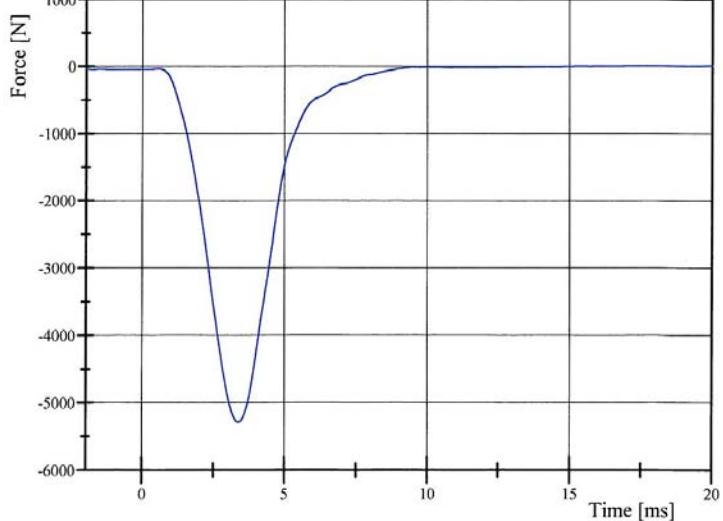
Right Knee Femur Response Test  
HIII 50th Serial No. 168 Certification No. 28-1  
Test Date: 8/6/2010

Pendulum Acceleration



Filter Class: CFC\_600  
Max: 0.3 g at 20.0 ms  
Min: -108.1 g at 3.4 ms

Pendulum Force



Filter Class: CFC\_600  
Max: 12.5 N at 20.0 ms  
Min: -5,290.2 N at 3.4 ms

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

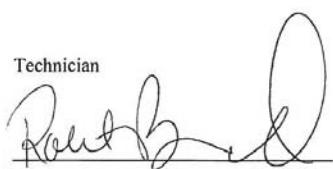
08.06.2010 07:49:52 1760



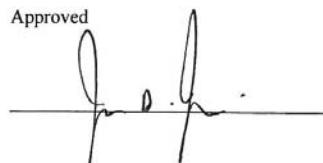
**Transportation Research Center Inc.**  
**572E HIII 50th Male Dummy**  
**External Dimensions**  
**Serial No. 168 Calibration No. 28**

<b>Symbol</b>	<b>Description</b>	<b>Specification</b>	<b>Results</b>	<b>Pass</b>
		mm		
A	Total Sitting Height	878.8 - 889.0	884	Yes
B	Shoulder Pivot Height	505.5 - 520.7	514	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	595	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	492	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	222	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	428	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	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician



Approved




Revised 3/13/2003

## Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 50th Serial No. LX00180019 Certification No. 3-1  
Test Date: 11/8/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.094 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,307.11 N	Yes

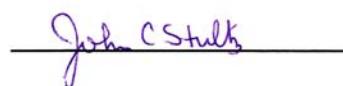
**Test meets specifications.**

**Comments:**

Technician



Approved



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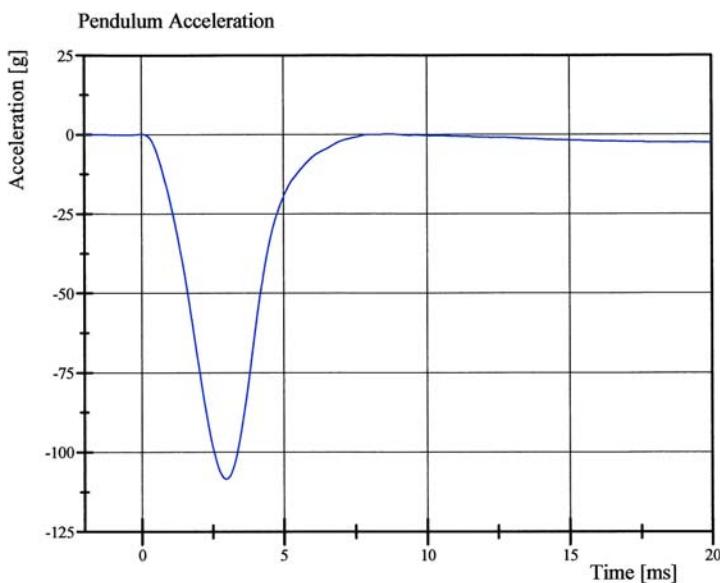
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

11.08.2010 08:14:29 1696

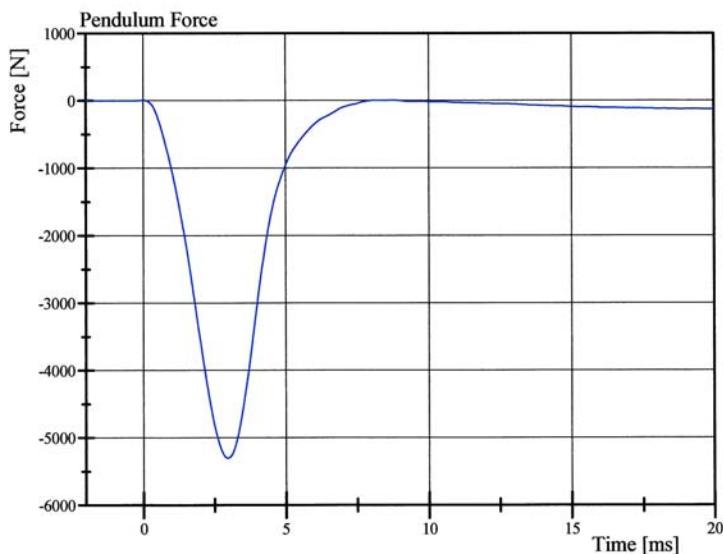


# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 50th Serial No. LX00180019 Certification No. 3-1  
Test Date: 11/8/2010



Filter Class: CFC\_600  
Max: 0.1 gn at 0.0 ms  
Min: -108.5 gn at 3.0 ms



Filter Class: CFC\_600  
Max: 5.3 N at 0.0 ms  
Min: -5,307.1 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

11.08.2010 08:14:41 1696



## Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 50th Serial No. LX00180019 Certification No. 3-1  
Test Date: 11/8/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.093 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,087.49 N	Yes

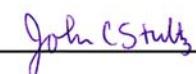
**Test meets specifications.**

**Comments:**

Technician



Approved



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Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

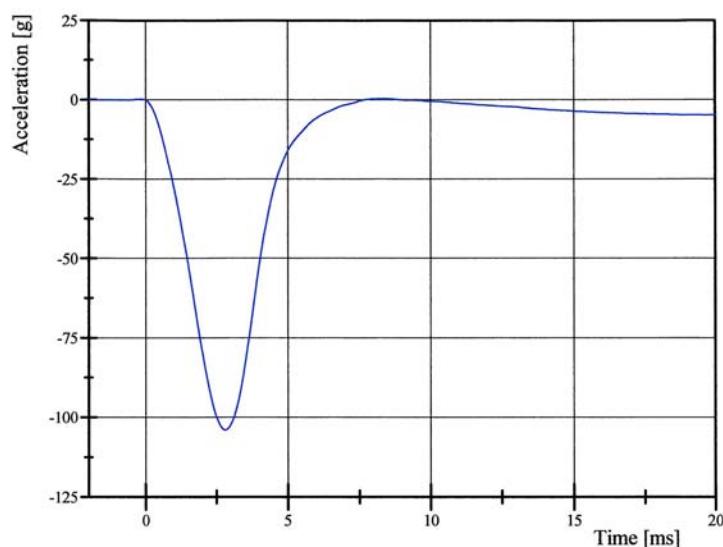
11.08.2010 08:24:17 1698



# Transportation Research Center Inc.

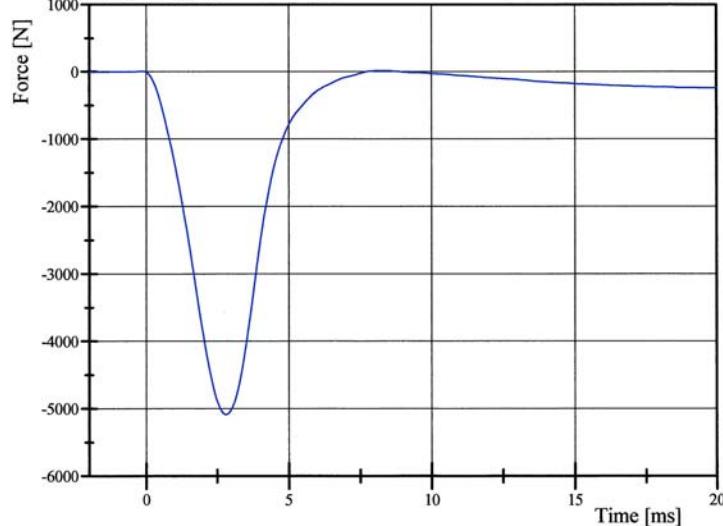
Right Knee Femur Response Test  
HIII 50th Serial No. LX00180019 Certification No. 3-1  
Test Date: 11/8/2010

Pendulum Acceleration



Filter Class: CFC\_600  
Max: 0.3 gn at 8.3 ms  
Min: -104.0 gn at 2.8 ms

Pendulum Force



Filter Class: CFC\_600  
Max: 16.0 N at 8.3 ms  
Min: -5,087.5 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

11.08.2010 08:24:27 1698



## Transportation Research Center Inc.

Left Knee Slider  
HIII 50th Serial No. LX00180019 Certification No. 3-6  
Test Date: 11/8/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.710 m/s	Yes
Force Peak at 10.0 mm Deflection	(-1,260) - (-1,720) N	-1,692.0 N	Yes
Force Peak at 18.0 mm Deflection	(-2,270) - (-3,100) N	-3,092.0 N	Yes

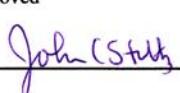
**Test meets specifications.**

**Comments:**

Technician



Approved



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Specification Source: SAE User's Manual with Polarity in Accordance with J211

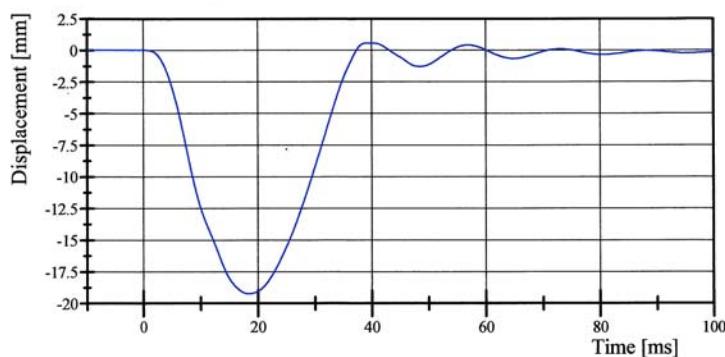
11.08.2010 12:37:47 1460



# Transportation Research Center Inc.

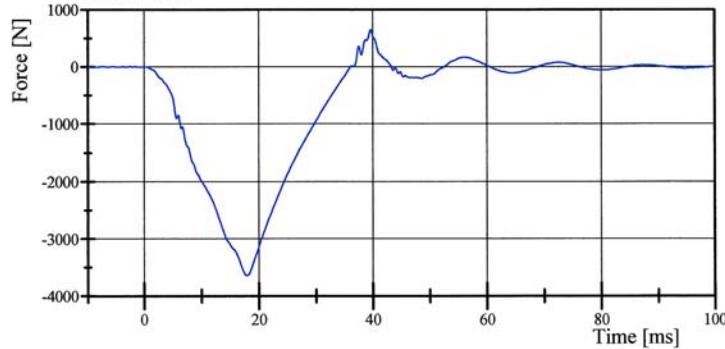
Left Knee Slider  
HIII 50th Serial No. LX00180019 Certification No. 3-6  
Test Date: 11/8/2010

Knee Slider Displacement



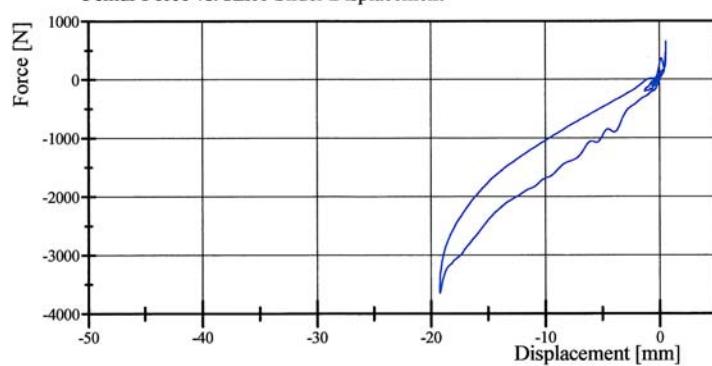
Filter Class: CFC\_180  
Max: 0.6 mm at 39.6 ms  
Min: -19.2 mm at 18.5 ms

Femur Force



Filter Class: CFC\_600  
Max: 649.4 N at 39.7 ms  
Min: -3,641.9 N at 17.9 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC\_600  
Max: 649.4 N at 0.6 mm  
Min: -3,641.9 N at -19.2 mm

Specification Source: SAE User's Manual with Polarity in Accordance with J211

11.08.2010 12:37:57 1460



## Transportation Research Center Inc.

Right Knee Slider  
HIII 50th Serial No. LX00180019 Certification No. 3-2  
Test Date: 11/8/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.713 m/s	Yes
Force Peak at 10.0 mm Deflection	(-1,260) - (-1,720) N	-1,325.8 N	Yes
Force Peak at 18.0 mm Deflection	(-2,270) - (-3,100) N	-2,556.3 N	Yes

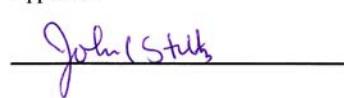
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: SAE User's Manual with Polarity in Accordance with J211

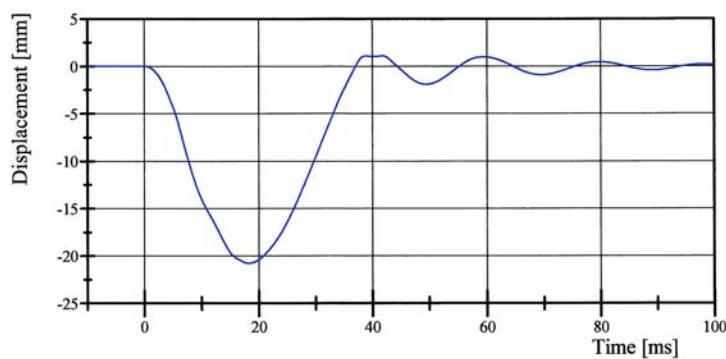
11.08.2010 09:12:43 1460



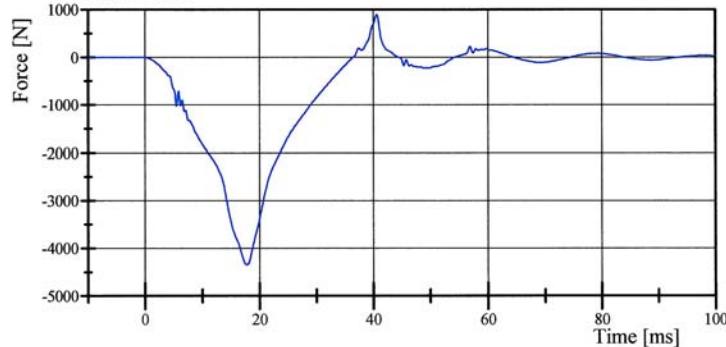
# Transportation Research Center Inc.

Right Knee Slider  
HIII 50th Serial No. LX00180019 Certification No. 3-2  
Test Date: 11/8/2010

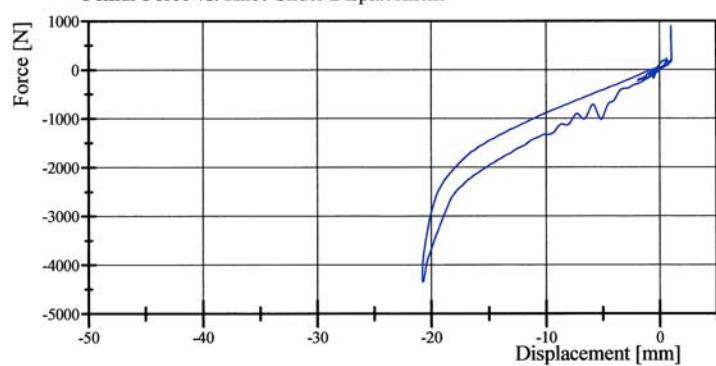
Knee Slider Displacement



Femur Force



Femur Force vs. Knee Slider Displacement



Specification Source: SAE User's Manual with Polarity in Accordance with J211

11.08.2010 09:12:50 1460



Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Left Rear Passenger Dummy S/N: 426

## Transportation Research Center Inc.

Front Head Drop  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	279.2 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.1 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

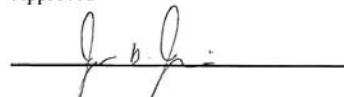
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

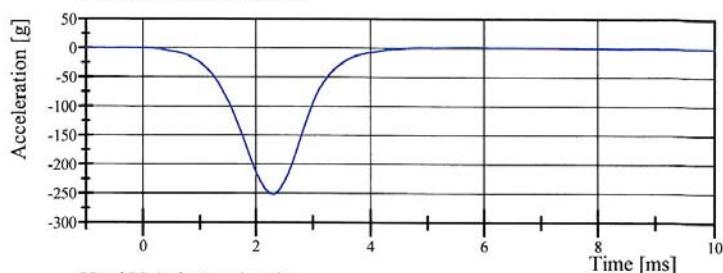
10.06.2010 12:27:25 610



# Transportation Research Center Inc.

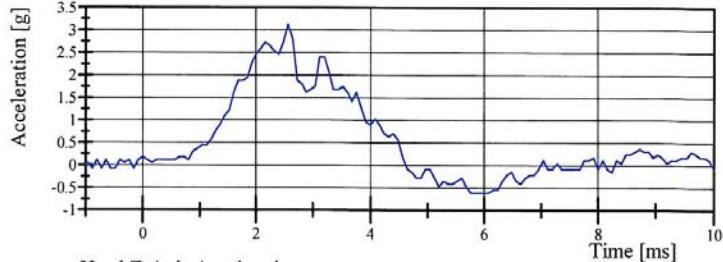
Front Head Drop  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010

Head X-Axis Acceleration



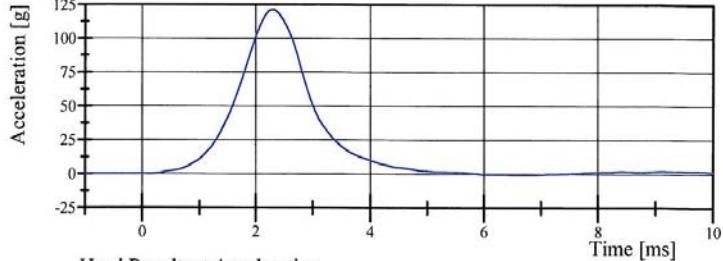
Filter Class: CFC\_1000  
Max: 1.9 gn at 5.8 ms  
Min: -251.3 gn at 2.3 ms

Head Y-Axis Acceleration



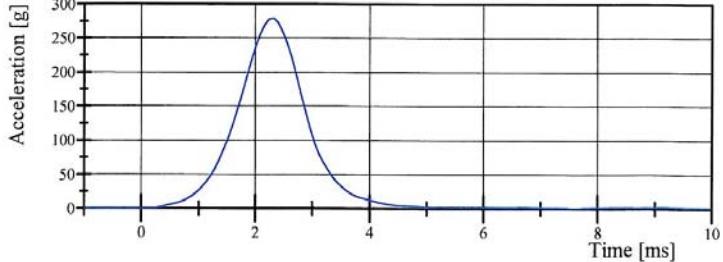
Filter Class: CFC\_1000  
Max: 3.1 gn at 2.6 ms  
Min: -0.6 gn at 5.8 ms

Head Z-Axis Acceleration



Filter Class: CFC\_1000  
Max: 121.5 gn at 2.3 ms  
Min: -0.9 gn at 6.6 ms

Head Resultant Acceleration



Filter Class: CFC\_1000  
Max: 279.2 gn at 2.3 ms  
Min: 0.1 gn at -0.3 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 12:27:38 610



## Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 8-2

Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.941 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.45 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.71 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.60 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	71.8 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	85.7 ms	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 14:54:21 1094



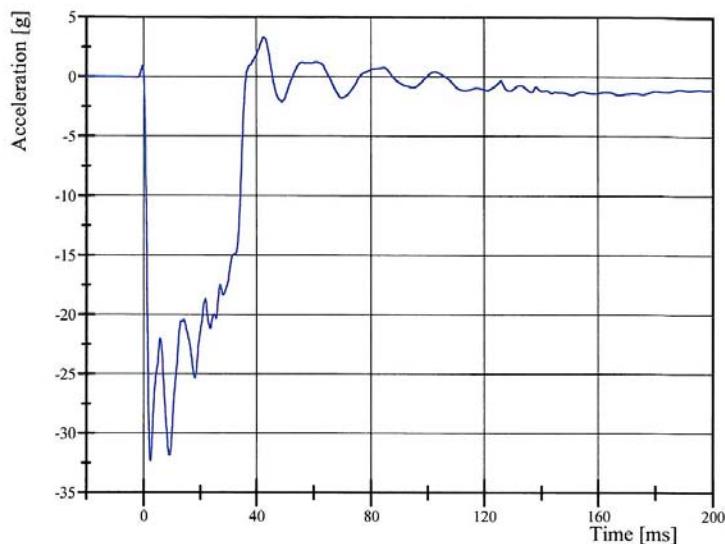
# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 8-2

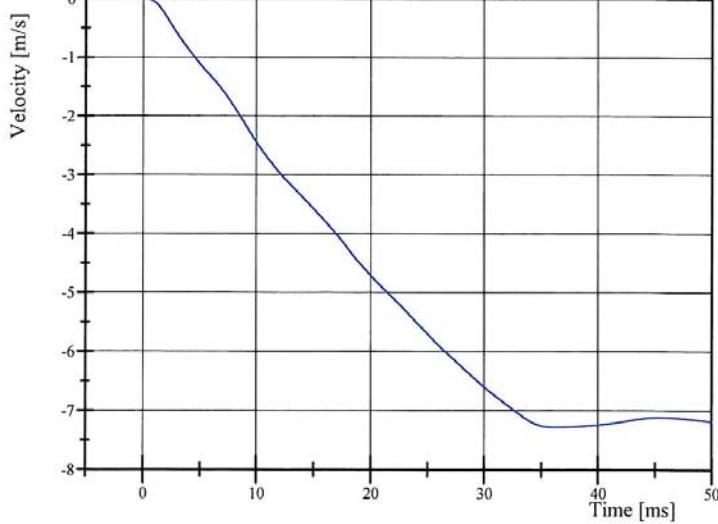
Test Date: 10/6/2010

Pendulum Acceleration



Filter Class: CFC\_180  
Max: 3.3 gn at 42.4 ms  
Min: -32.3 gn at 2.3 ms

Pendulum Integrated Velocity Change



Filter Class: CFC\_180  
Max: 0.0 m/s at 0.0 ms  
Min: -7.3 m/s at 36.2 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 14:54:35 1094



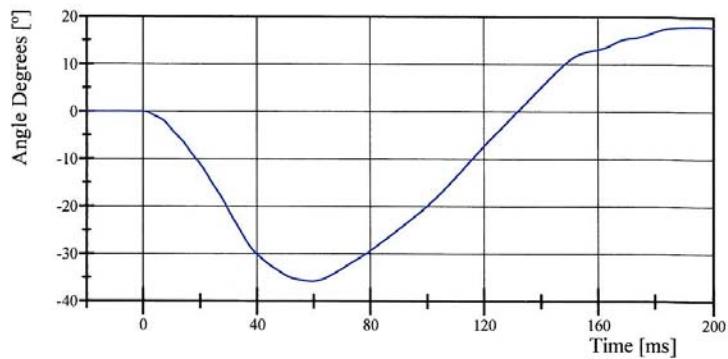
# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 8-2

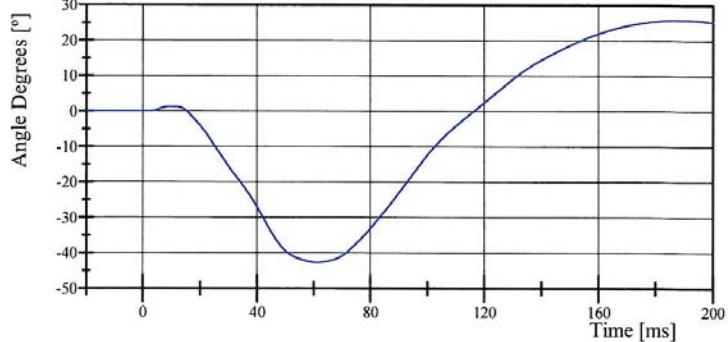
Test Date: 10/6/2010

Pot Rotation at the Base of Neck



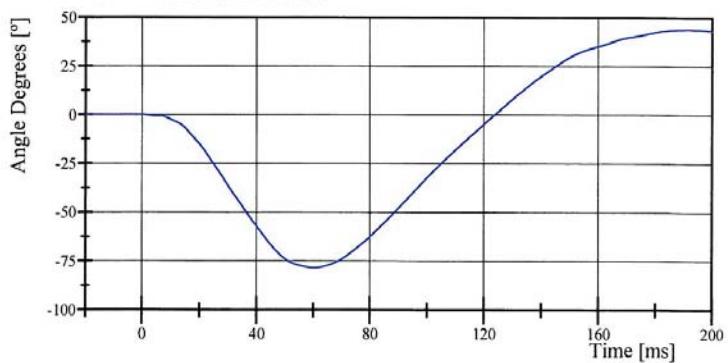
Filter Class: CFC\_60  
Max: 18.1 ° at 194.0 ms  
Min: -35.8 ° at 59.3 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 25.9 ° at 188.6 ms  
Min: -42.7 ° at 61.1 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 43.9 ° at 191.5 ms  
Min: -78.4 ° at 60.2 ms

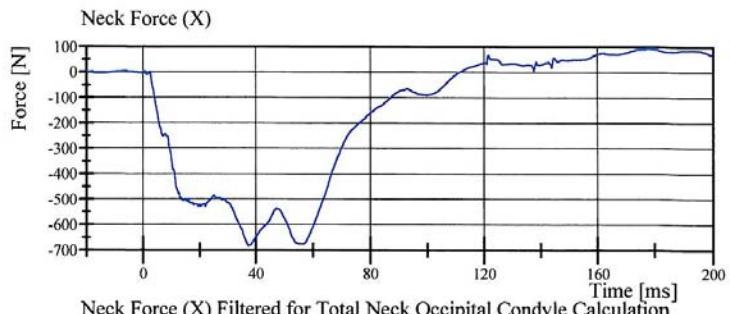
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 14:54:35 1094

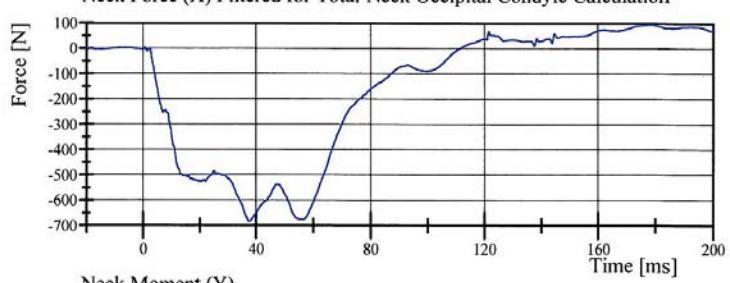


# Transportation Research Center Inc.

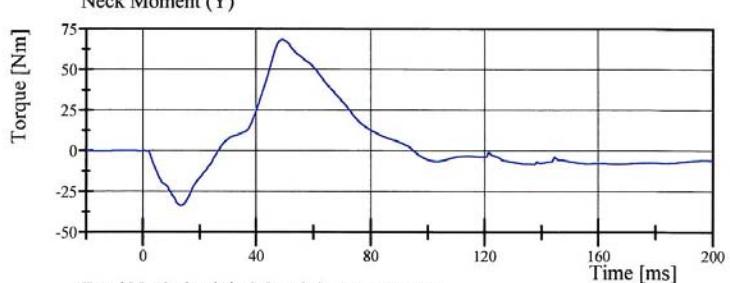
Neck Flexion  
HIII 5th Serial No. 426 Certification No. 8-2  
Test Date: 10/6/2010



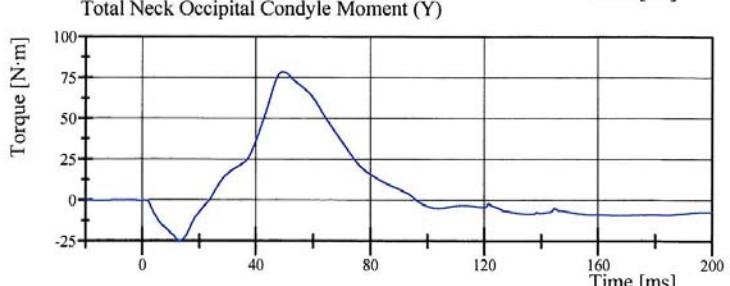
Filter Class: CFC\_1000  
Max: 95.3 N at 178.9 ms  
Min: -683.0 N at 37.2 ms



Filter Class: CFC\_600  
Max: 94.8 N at 178.9 ms  
Min: -682.8 N at 37.4 ms



Filter Class: CFC\_600  
Max: 68.6 Nm at 49.2 ms  
Min: -33.7 Nm at 13.1 ms



Filter Class: CFC\_600  
Max: 78.5 N·m at 49.3 ms  
Min: -24.9 N·m at 13.2 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 14:54:36 1094



## Transportation Research Center Inc.

Neck Extension  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.075 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.87 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.82 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.50 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	113.3 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-61.4 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	102.0 ms	Yes

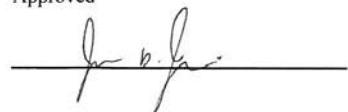
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 15:47:33 1863



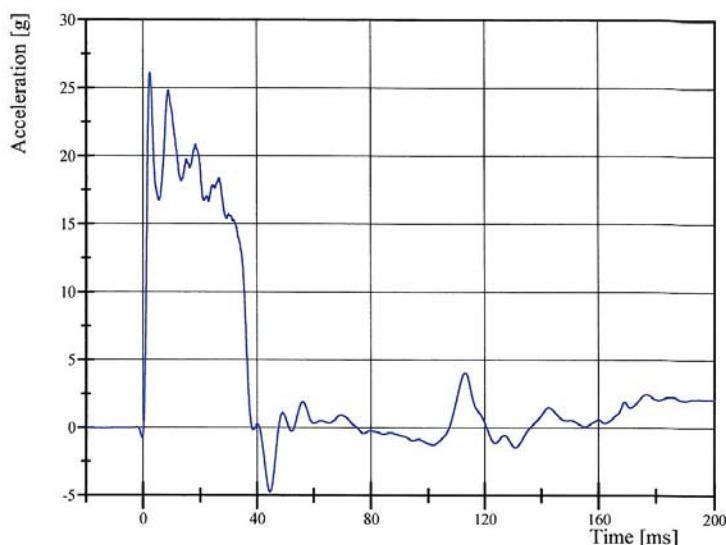
# Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 426 Certification No. 8-1

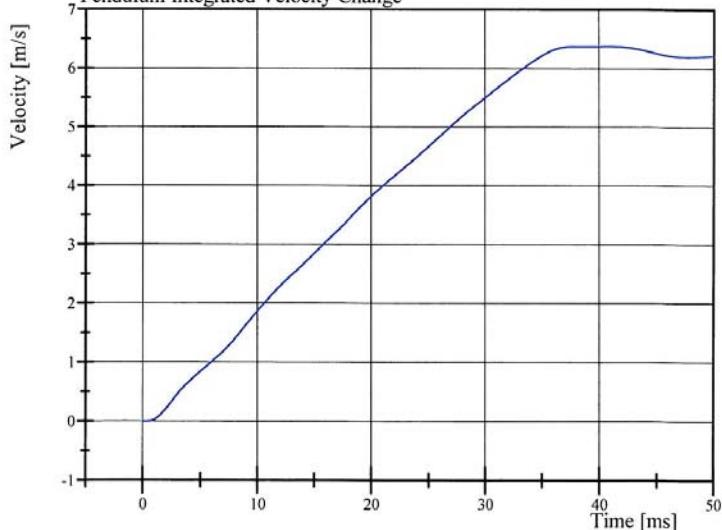
Test Date: 10/6/2010

Pendulum Acceleration



Filter Class: CFC\_180  
Max: 26.1 gn at 2.4 ms  
Min: -4.8 gn at 44.5 ms

Pendulum Integrated Velocity Change



Filter Class: CFC\_180  
Max: 6.4 m/s at 40.9 ms  
Min: -0.0 m/s at 0.1 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 15:47:46 1863



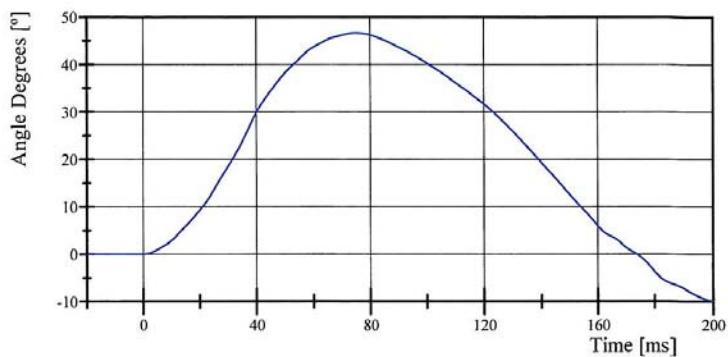
# Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 426 Certification No. 8-1

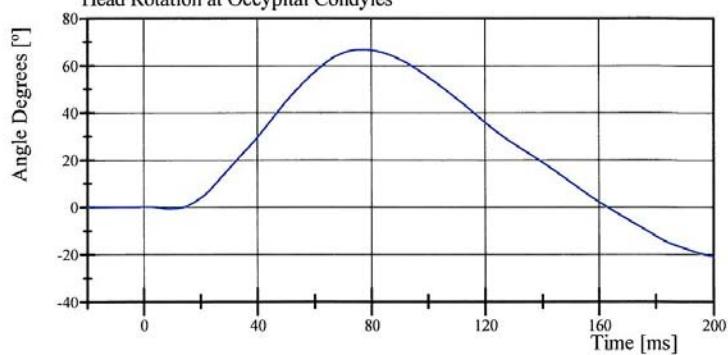
Test Date: 10/6/2010

Pot Rotation at the Base of Neck



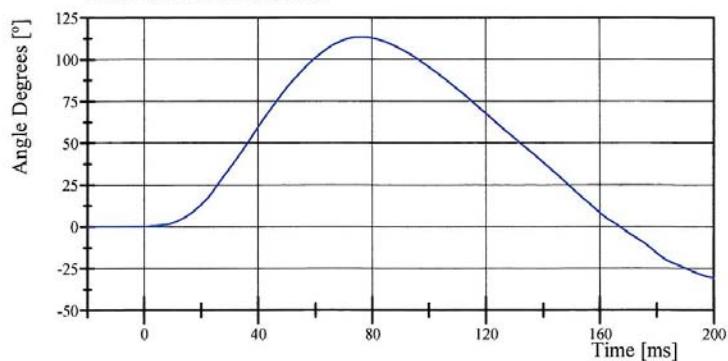
Filter Class: CFC\_60  
Max: 46.6 ° at 74.7 ms  
Min: -9.9 ° at 200.0 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 66.7 ° at 76.8 ms  
Min: -20.9 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 113.3 ° at 76.0 ms  
Min: -30.8 ° at 200.0 ms

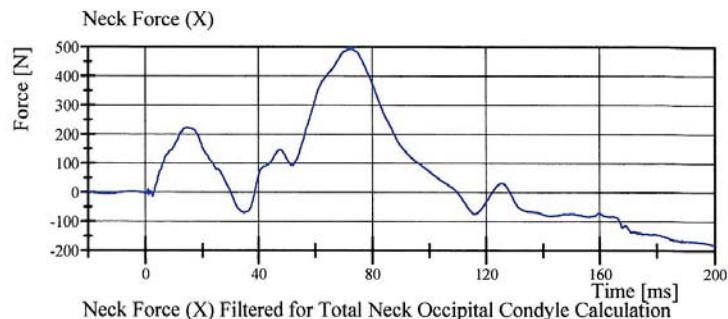
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 15:47:46 1863

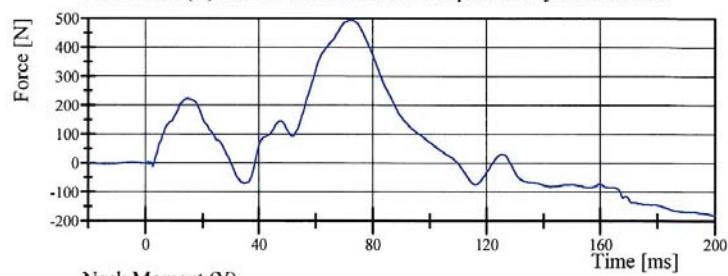


# Transportation Research Center Inc.

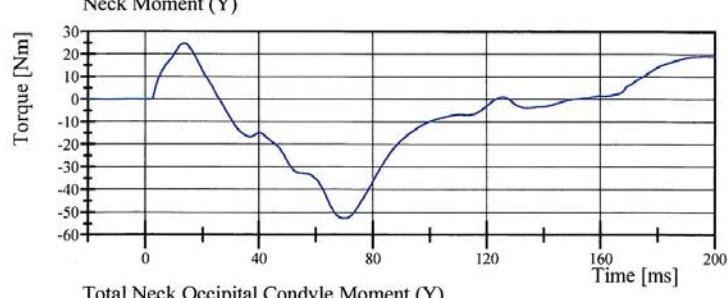
Neck Extension  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010



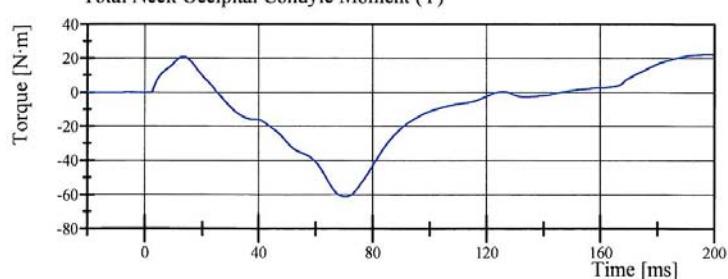
Filter Class: CFC\_1000  
Max: 494.3 N at 71.8 ms  
Min: -180.5 N at 199.6 ms



Filter Class: CFC\_600  
Max: 493.9 N at 71.8 ms  
Min: -180.1 N at 199.6 ms



Filter Class: CFC\_600  
Max: 24.8 Nm at 13.5 ms  
Min: -52.8 Nm at 70.3 ms



Filter Class: CFC\_600  
Max: 22.2 N·m at 197.4 ms  
Min: -61.4 N·m at 70.4 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 15:47:47 1863



## Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 426 Certification No. 8-13

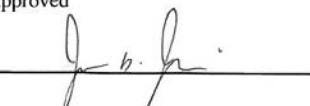
Test Date: 10/8/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.723 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,206.1 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-4,380.6 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-50.2 mm	Yes
Internal Hysteresis	69 - 85 %	74.6 %	Yes

Test meets specifications.

Comments:

Technician  


Approved  


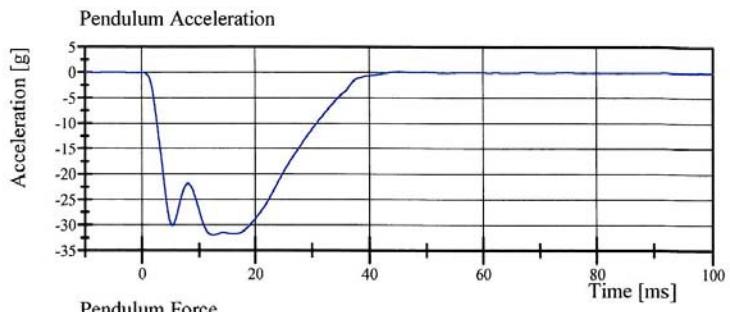
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.08.2010 15:36:48 392

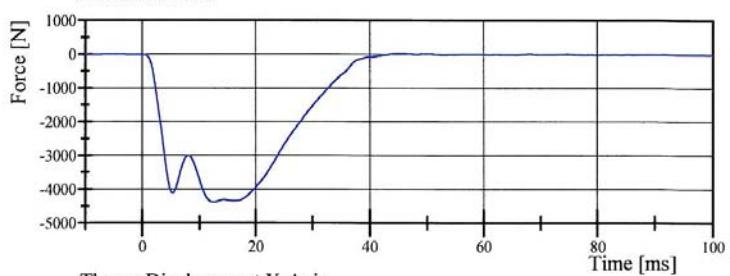


# Transportation Research Center Inc.

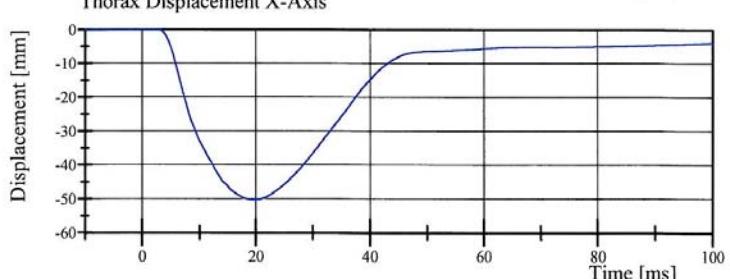
Front Thorax  
 HIII 5th Serial No. 426 Certification No. 8-13  
 Test Date: 10/8/2010



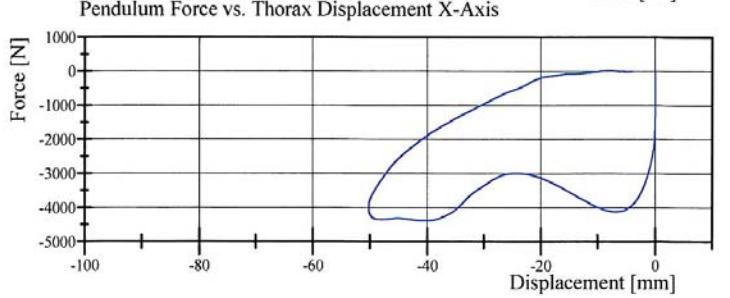
Filter Class: CFC\_180  
 Max: 0.2 gn at 45.1 ms  
 Min: -32.0 gn at 12.5 ms



Filter Class: CFC\_180  
 Max: 28.0 N at 45.1 ms  
 Min: -4,380.6 N at 12.5 ms



Filter Class: CFC\_600  
 Max: 0.0 mm at -8.5 ms  
 Min: -50.2 mm at 19.5 ms



Filter Class: CFC\_180  
 Max: 28.0 N at -8.0 mm  
 Min: -4,380.6 N at -40.5 mm

Specification Source: CFR49 Part 572 Subpart O  
 with Polarity in accordance with J211

10.08.2010 15:37:09 392



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 06-Oct-10

TRC, INC.      TEST NO: TOFL-02      572 O SN426 TORSO FLEX CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TIME		1030
TEMPERATURE	20.6 – 22.2° C	21.6 ° C
RELATIVE HUMIDITY	10 – 70 %	35 %
INITIAL ANGLE OF UNSUPPORTED DUMMY <u>START ANGLE</u>	<= 20° REFERENCED TO VERTICAL	16.5 °
DIFFERENCE BETWEEN <u>RETURN</u> <u>ANGLE</u> & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	2.9 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	371.1 N
RATE	0.5° - 1.5 °/sec	0.98°/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN Rut Bens

## **Transportation Research Center Inc.**

Left Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010

<b>Test Parameter</b>	<b>Specification</b>	<b>Test Results</b>	<b>Pass</b>
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.127 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,746.2 N	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

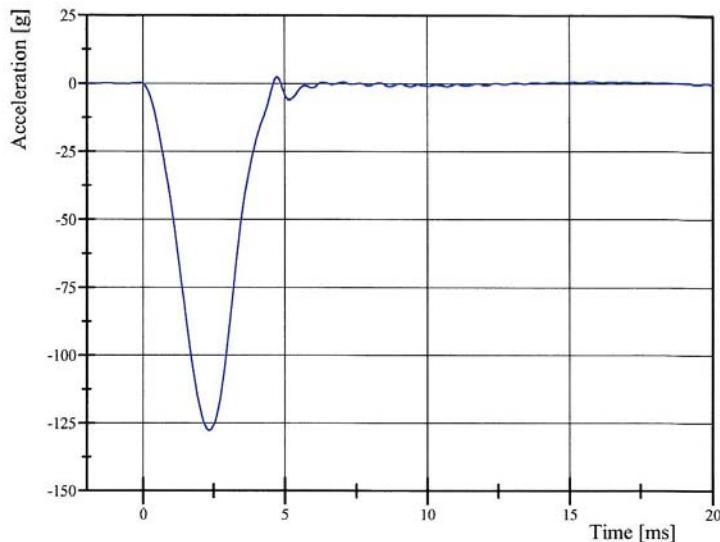
10/06/2010 10:16:06 1718



# Transportation Research Center Inc.

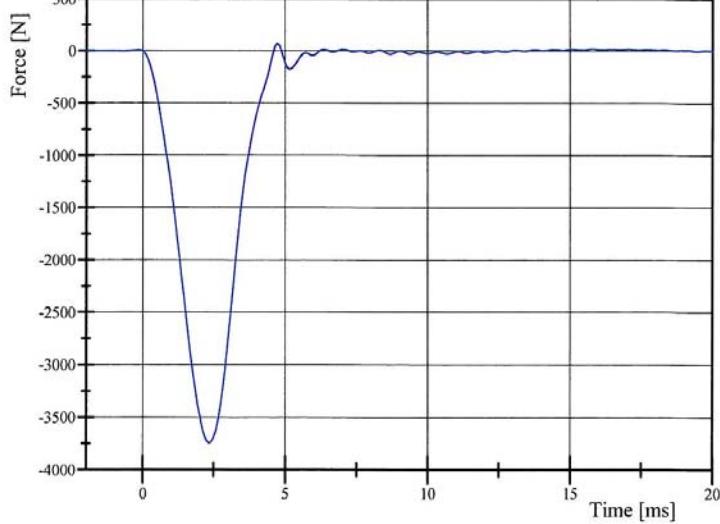
Left Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010

Pendulum Acceleration



Filter Class: CFC\_600  
Max: 2.4 gn at 4.7 ms  
Min: -127.8 gn at 2.3 ms

Pendulum Force



Filter Class: CFC\_600  
Max: 70.7 N at 4.7 ms  
Min: -3,746.2 N at 2.3 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 10:16:27 1718



## **Transportation Research Center Inc.**

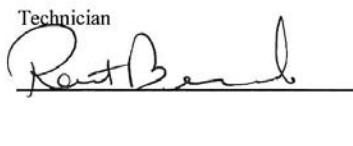
Right Knee Femur Response Test  
HILL 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010

<b>Test Parameter</b>	<b>Specification</b>	<b>Test Results</b>	<b>Pass</b>
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.128 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,549.2 N	Yes

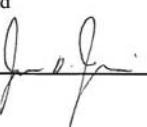
**Test meets specifications.**

**Comments:**

Technician



Approved



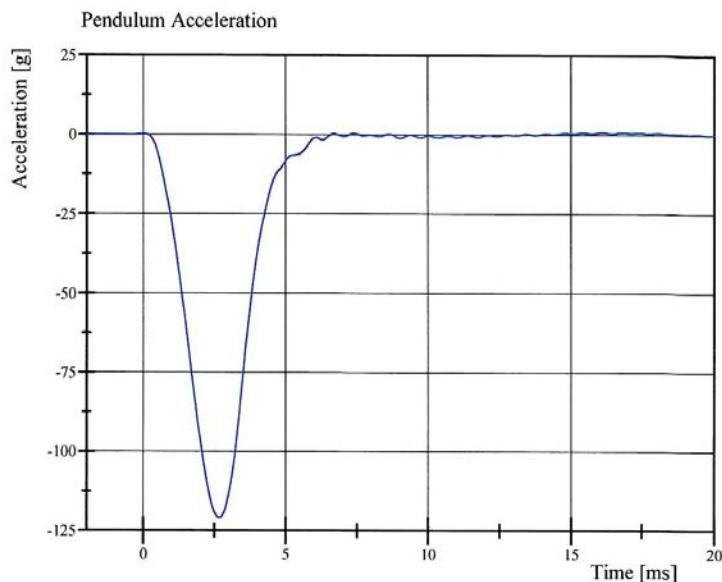
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10/06/2010 10:24:06 1712

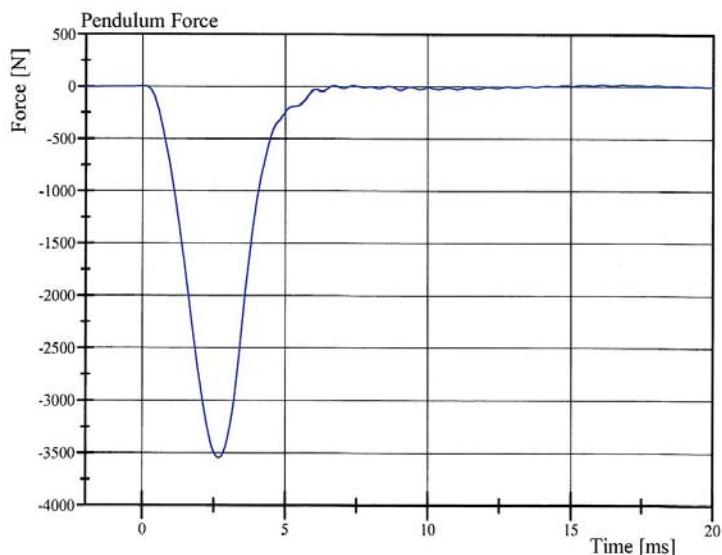


# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 8-1  
Test Date: 10/6/2010



Filter Class: CFC\_600  
Max: 0.8 gn at 16.2 ms  
Min: -121.0 gn at 2.6 ms



Filter Class: CFC\_600  
Max: 22.9 N at 16.2 ms  
Min: -3,549.2 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

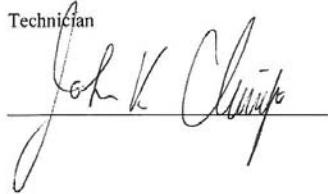
10.06.2010 10:24:17 1712



**Transportation Research Center Inc.**  
**572O HIII 5th Dummy**  
**External Dimensions**  
**Serial No. 426 Calibration No. 08**

<b>Symbol</b>	<b>Description</b>	<b>Specification</b>	<b>Results</b>	<b>Pass</b>
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	785	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	148	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	81	Yes
F	Thigh Clearance	119.4 - 134.6	129	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	251	Yes
H	Head Back to Backline	43.2 - 48.2	46	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	283	Yes
J	Elbow Rest Height	182.8 - 203.2	199	Yes
K	Buttock Knee Length	520.7 - 546.1	535	Yes
L	Popliteal Height	355.6 - 376.0	371	Yes
M	Knee Pivot Height	393.7 - 419.1	417	Yes
N	Buttock Popliteal Length	414.0 - 439.4	436	Yes
O	Chest Depth without Jacket	175.3 - 190.5	185	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	475	Yes
S	Head Breadth	137.1 - 147.3	140	Yes
T	Head Depth	177.8 - 188.0	182	Yes
U	Hip Breadth	299.7 - 314.9	307	Yes
V	Shoulder Breadth	350.5 - 365.7	362	Yes
W	Foot Breadth	78.8 - 94.0	83	Yes
X	Head Circumference	528.3 - 548.7	539	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	863	Yes
Z	Waist Circumference	759.5 - 789.9	770	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	345	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician



Approved



**TRC**

Revised 3/19/3003

## Transportation Research Center Inc.

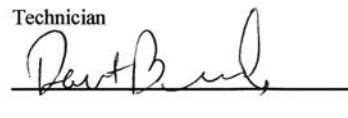
Left Knee Femur Response Test  
HIII 5th Serial No. FLXD001D002 Certification No. 1-1  
Test Date: 11/9/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,674.0 N	Yes

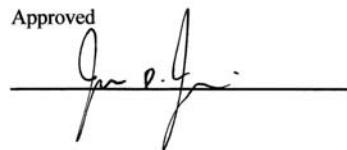
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

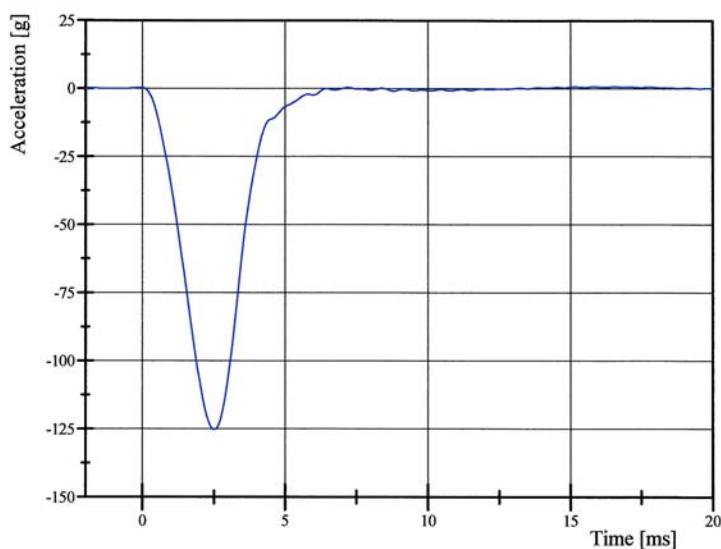
11.09.2010 09:17:24 1695



# Transportation Research Center Inc.

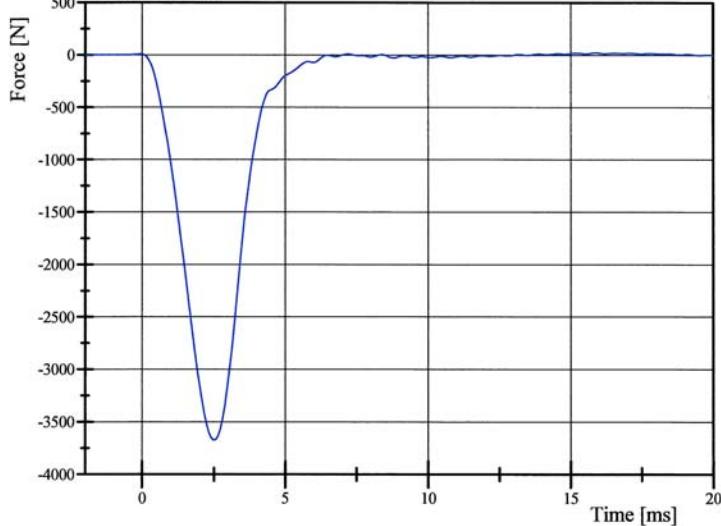
Left Knee Femur Response Test  
HIII 5th Serial No. FLXD001D002 Certification No. 1-1  
Test Date: 11/9/2010

Pendulum Acceleration



Filter Class: CFC\_600  
Max: 0.8 gn at 15.8 ms  
Min: -125.3 gn at 2.5 ms

Pendulum Force



Filter Class: CFC\_600  
Max: 22.1 N at 15.8 ms  
Min: -3,674.0 N at 2.5 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

11.09.2010 09:17:39 1695



## Transportation Research Center Inc.

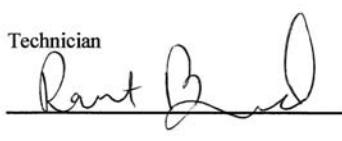
Right Knee Femur Response Test  
HIII 5th Serial No. FLXD001D002 Certification No. 1-1  
Test Date: 11/9/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.111 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,700.7 N	Yes

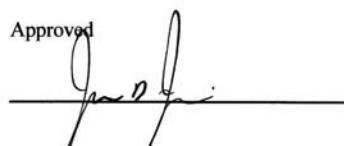
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

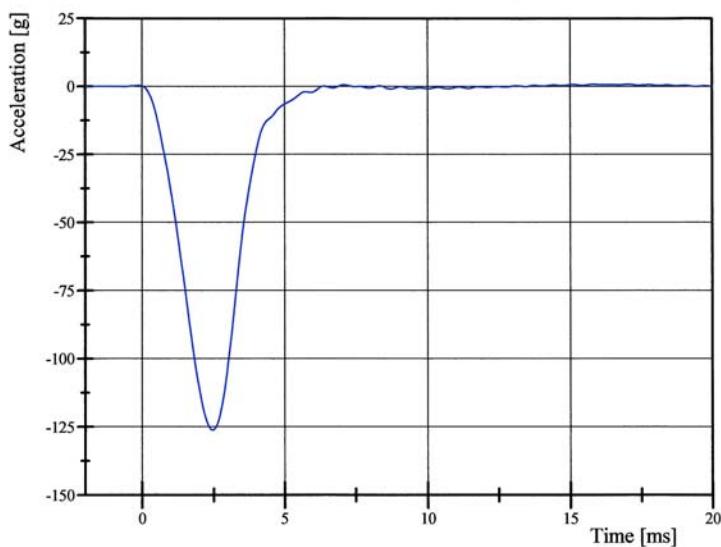
11.09.2010 10:22:31 1704



# Transportation Research Center Inc.

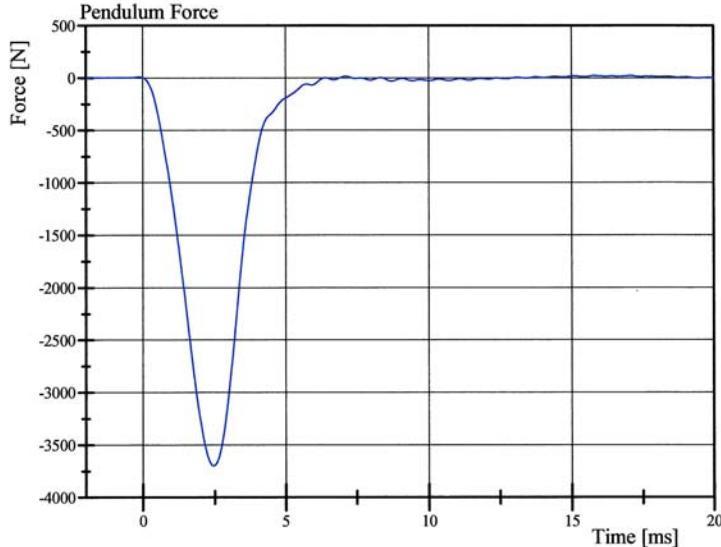
Right Knee Femur Response Test  
HIII 5th Serial No. FLXD001D002 Certification No. 1-1  
Test Date: 11/9/2010

Pendulum Acceleration



Filter Class: CFC\_600  
Max: 0.8 gn at 17.0 ms  
Min: -126.2 gn at 2.5 ms

Pendulum Force



Filter Class: CFC\_600  
Max: 22.3 N at 17.0 ms  
Min: -3,700.7 N at 2.5 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

11.09.2010 10:22:53 1704



## **Transportation Research Center Inc.**

Left Knee Slider  
HIII 5th Serial No. FLXD001D002 Certification No. 1-11  
Test Date: 11/10/2010

<b>Test Parameter</b>	<b>Specification</b>	<b>Test Results</b>	<b>Pass</b>
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.790 m/s	Yes
Peak Deflection	(-12.7) - (-15.5) mm	-13.41 mm	Yes

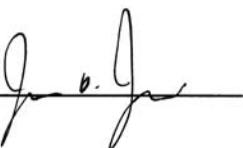
**Test meets specifications.**

**Comments:**

Technician



Approved



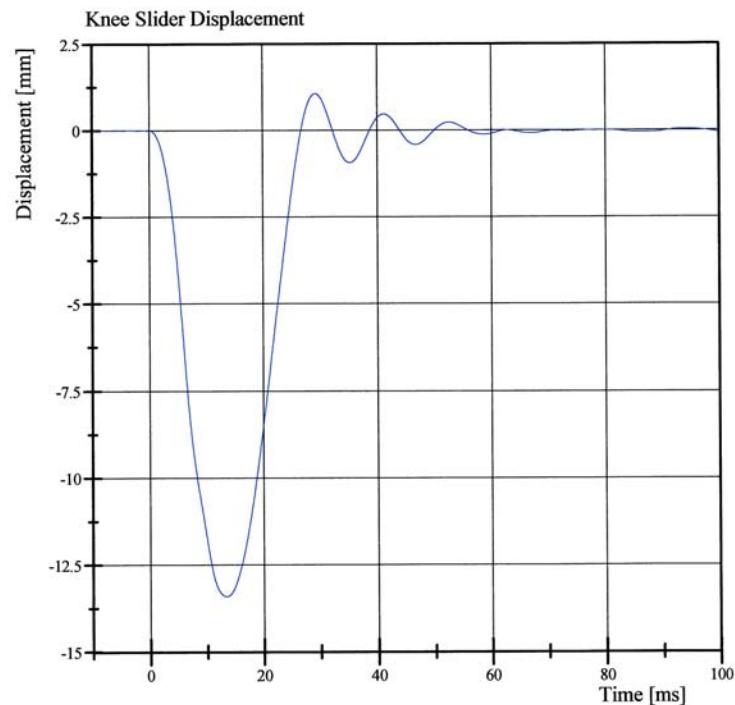
Specification Source: SAE Engineering Aide 25 with Polarity in Accordance with J211

11.10.2010 12:22:22 1483



# Transportation Research Center Inc.

Left Knee Slider  
HIII 5th Serial No. FLXD001D002 Certification No. I-11  
Test Date: 11/10/2010



Filter Class: CFC\_180  
Max: 1.1 mm at 29.3 ms  
Min: -13.4 mm at 13.4 ms

Specification Source: SAE Engineering Aide 25 with Polarity in Accordance with J211

11.10.2010 12:22:30 1483



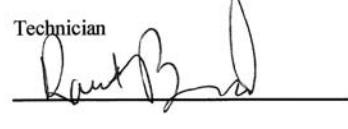
## Transportation Research Center Inc.

Right Knee Slider  
HIII 5th Serial No. FLXD001D002 Certification No. 1-3  
Test Date: 11/9/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.790 m/s	Yes
Peak Deflection	(-12.7) - (-15.5) mm	-12.71 mm	Yes

**Test meets specifications.**

**Comments:**

Technician  


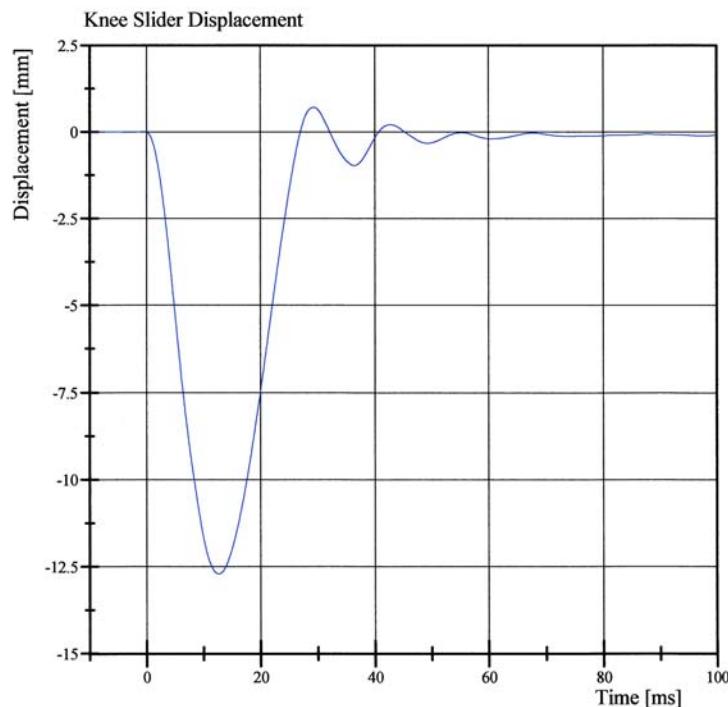
Approved  


Specification Source: SAE Engineering Aide 25 with Polarity in Accordance with J211      11.09.2010 16:01:03 1477



# Transportation Research Center Inc.

Right Knee Slider  
HIII 5th Serial No. FLXD001D002 Certification No. 1-3  
Test Date: 11/9/2010



Filter Class: CFC\_180  
Max: 0.7 mm at 29.4 ms  
Min: -12.7 mm at 12.6 ms

Specification Source: SAE Engineering Aide 25 with Polarity in Accordance with J211

11.09.2010 16:01:47 1477



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. 15-1  
Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	271.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.1 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

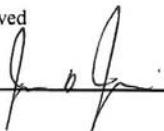
Test meets specifications.

Comments:

Technician



Approved



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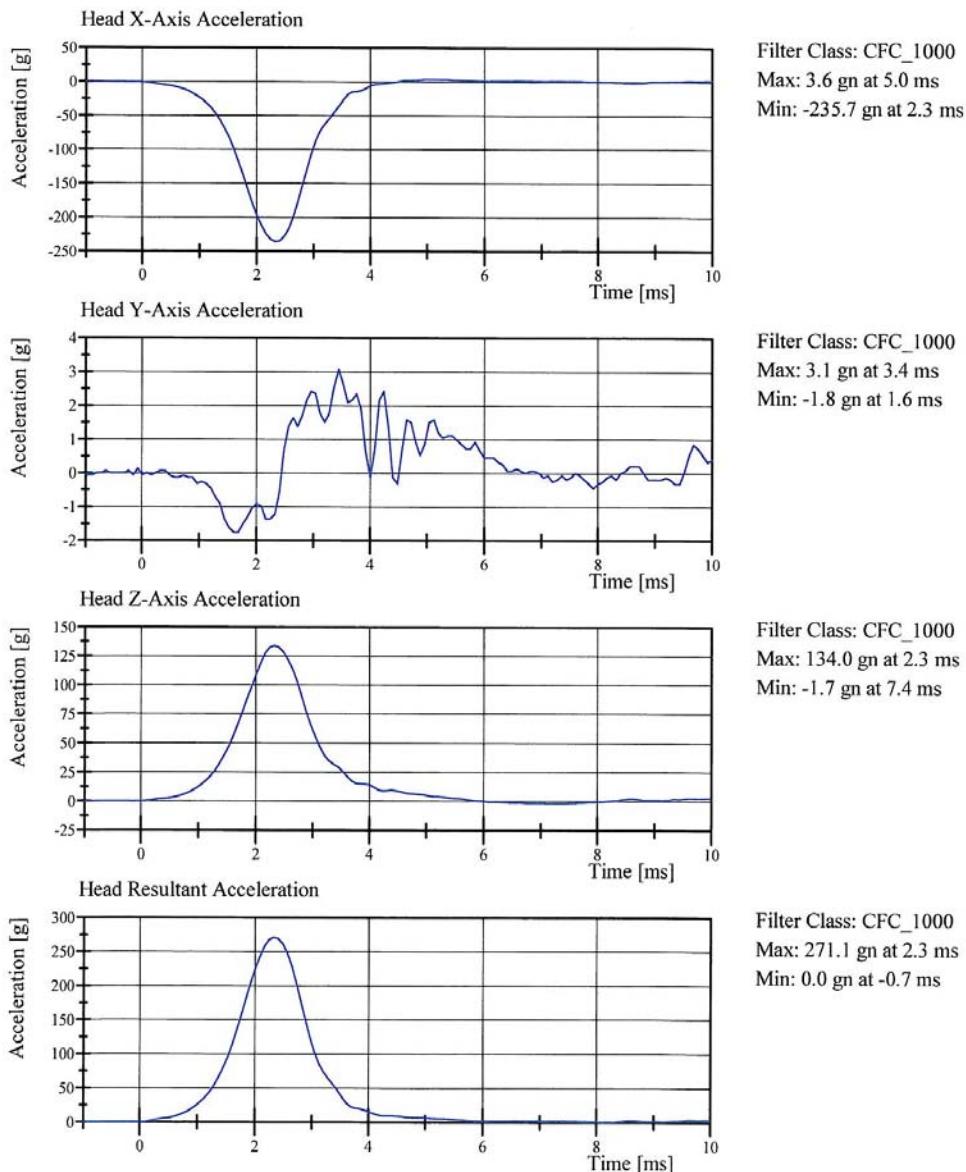
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 10:46:59 610



# Transportation Research Center Inc.

Front Head Drop  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 10:47:10 610



## Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 329 Certification No. 15-1

Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.065 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.48 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.67 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.43 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-80.0 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	79.6 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	84.2 ms	Yes

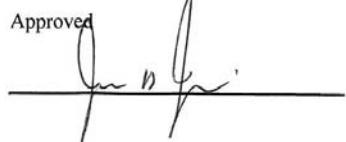
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 11:09:17 1748



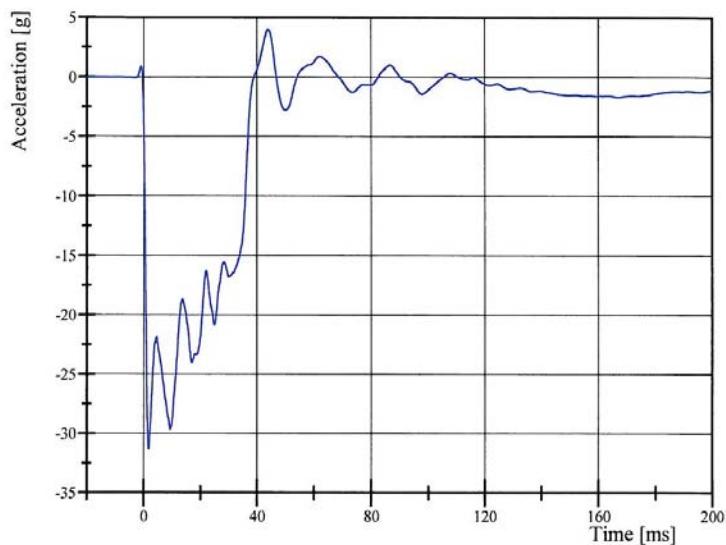
# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 329 Certification No. 15-1

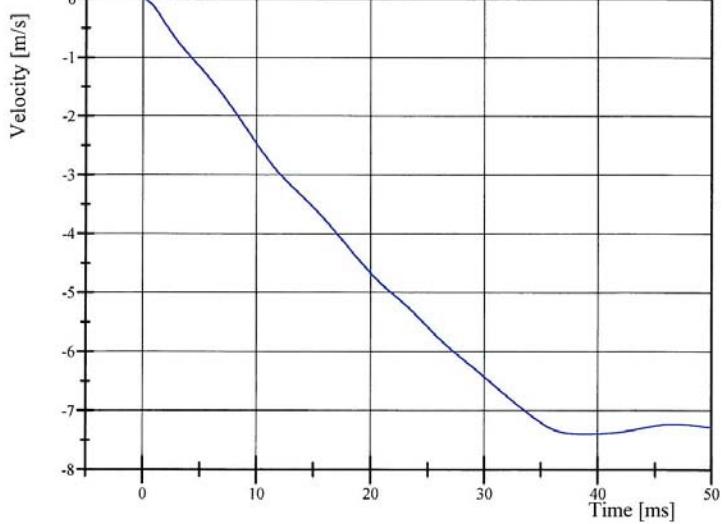
Test Date: 10/6/2010

Pendulum Acceleration



Filter Class: CFC\_180  
Max: 4.0 gn at 43.8 ms  
Min: -31.3 gn at 1.7 ms

Pendulum Integrated Velocity Change



Filter Class: CFC\_180  
Max: 0.0 m/s at 0.0 ms  
Min: -7.4 m/s at 38.9 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

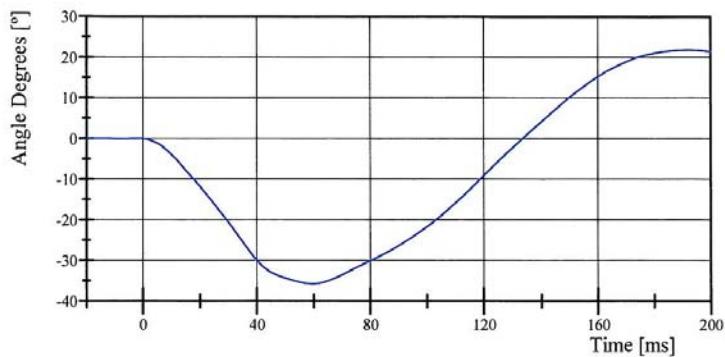
10.06.2010 11:09:24 1748



# Transportation Research Center Inc.

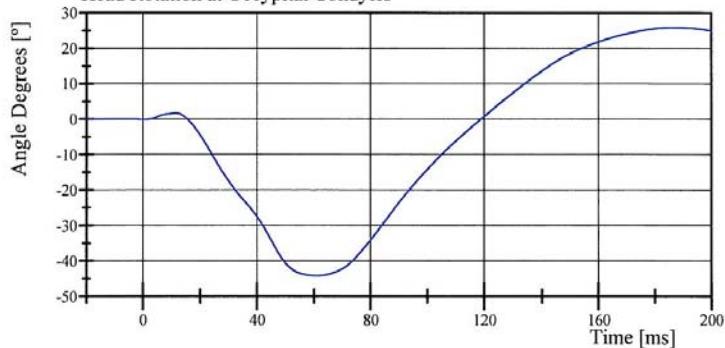
Neck Flexion  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010

Pot Rotation at the Base of Neck



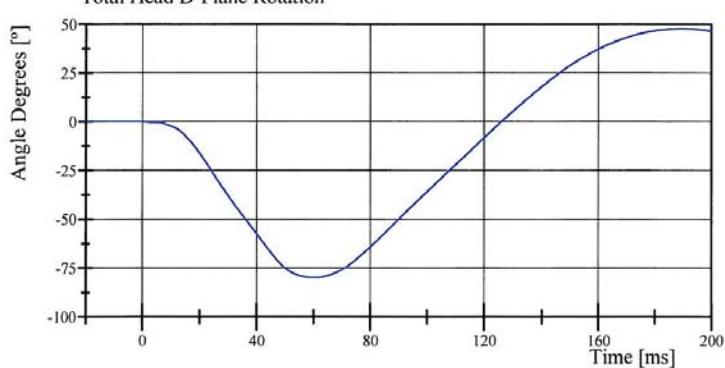
Filter Class: CFC\_60  
Max: 21.8 ° at 192.0 ms  
Min: -35.7 ° at 59.5 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 25.9 ° at 187.4 ms  
Min: -44.3 ° at 60.9 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 47.6 ° at 189.4 ms  
Min: -80.0 ° at 60.3 ms

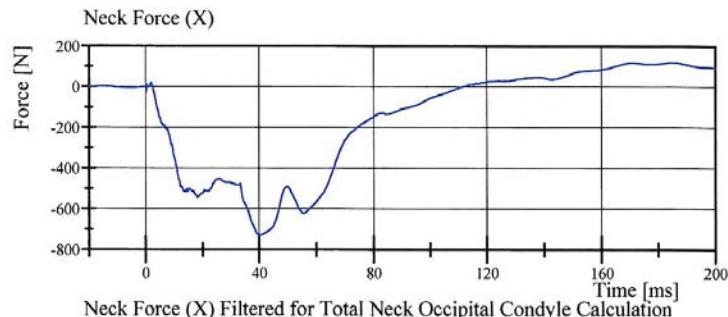
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 11:09:24 1748

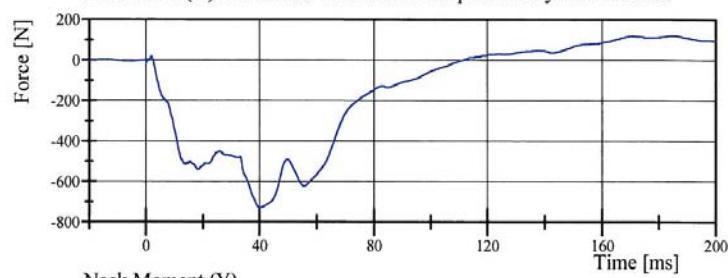


# Transportation Research Center Inc.

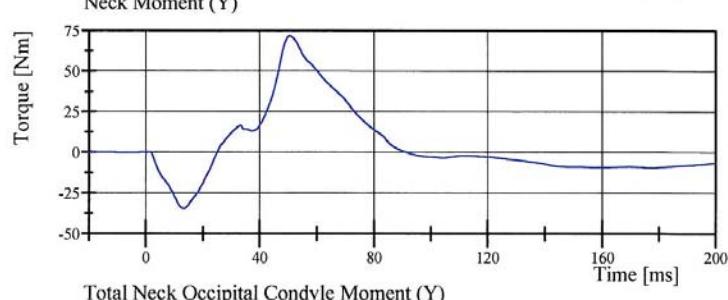
Neck Flexion  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010



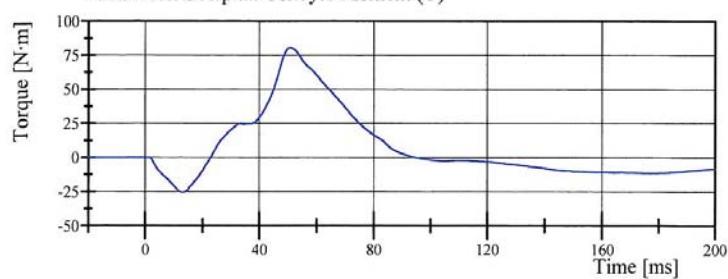
Filter Class: CFC\_1000  
Max: 122.3 N at 186.3 ms  
Min: -728.8 N at 40.3 ms



Filter Class: CFC\_600  
Max: 121.7 N at 186.3 ms  
Min: -727.7 N at 40.4 ms



Filter Class: CFC\_600  
Max: 71.6 N·m at 50.5 ms  
Min: -34.6 N·m at 13.3 ms



Filter Class: CFC\_600  
Max: 80.6 N·m at 50.7 ms  
Min: -25.6 N·m at 13.2 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 11:09:25 1748



## Transportation Research Center Inc.

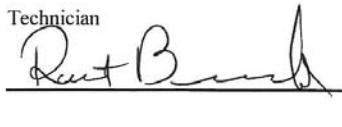
Neck Extension  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.052 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.85 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.62 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.20 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	101.8 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-54.3 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	102.5 ms	Yes

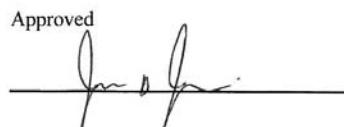
**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

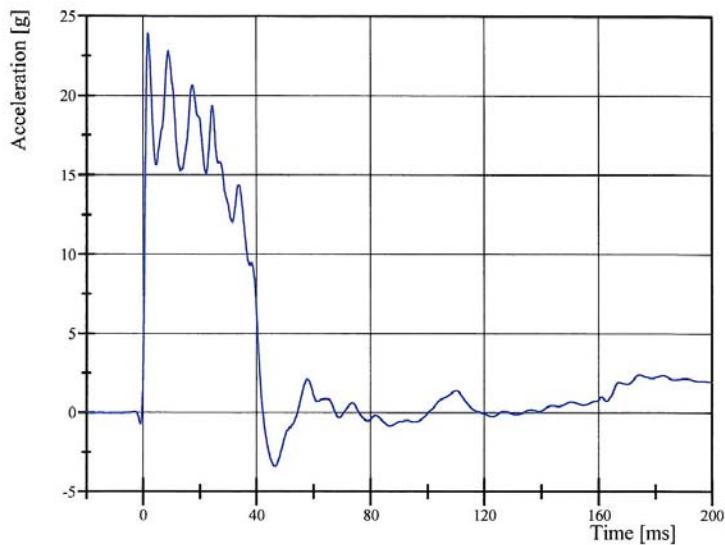
10.06.2010 12:11:11 1878



# Transportation Research Center Inc.

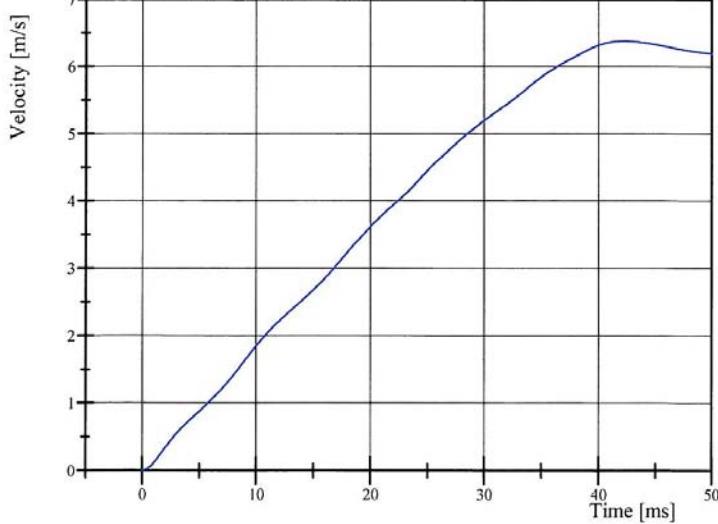
Neck Extension  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010

Pendulum Acceleration



Filter Class: CFC\_180  
Max: 23.9 gn at 1.7 ms  
Min: -3.4 gn at 46.1 ms

Pendulum Integrated Velocity Change



Filter Class: CFC\_180  
Max: 6.4 m/s at 42.2 ms  
Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

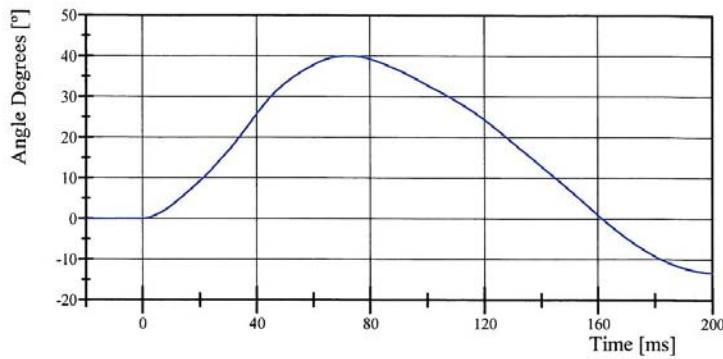
10.06.2010 12:11:18 1878



# Transportation Research Center Inc.

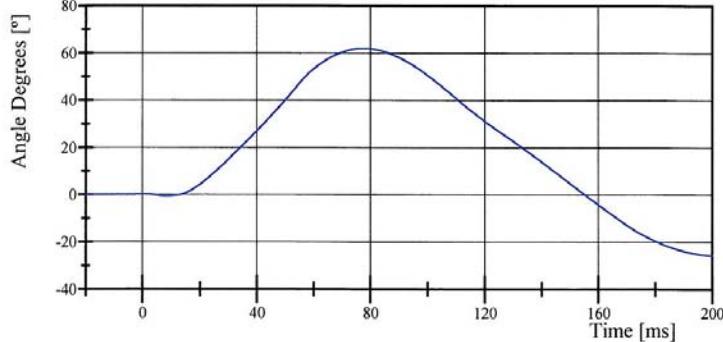
Neck Extension  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010

Pot Rotation at the Base of Neck



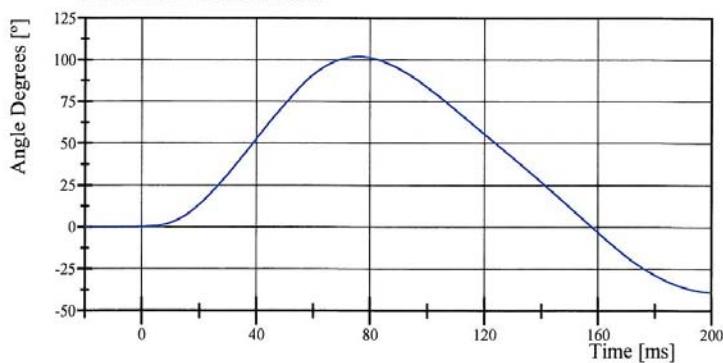
Filter Class: CFC\_60  
Max: 40.1 ° at 72.7 ms  
Min: -13.3 ° at 200.0 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 62.0 ° at 77.6 ms  
Min: -25.7 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 101.8 ° at 75.8 ms  
Min: -39.0 ° at 200.0 ms

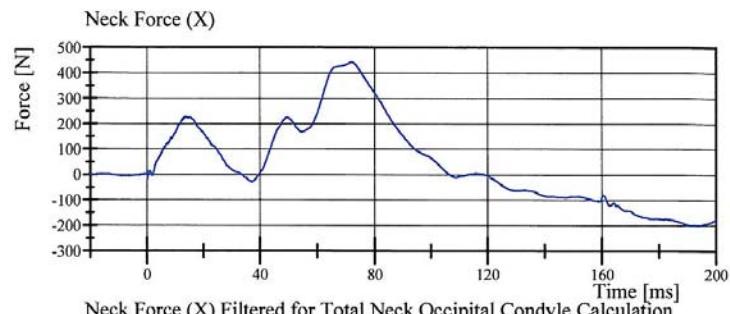
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 12:11:18 1878

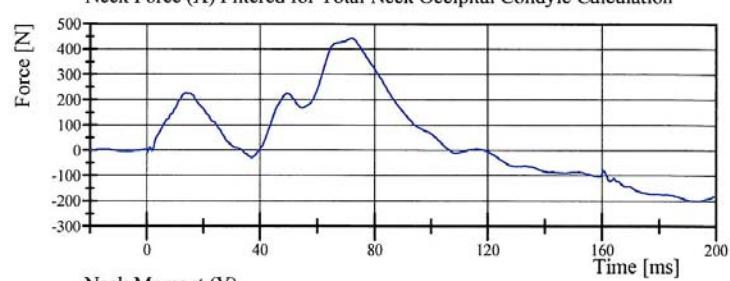


# Transportation Research Center Inc.

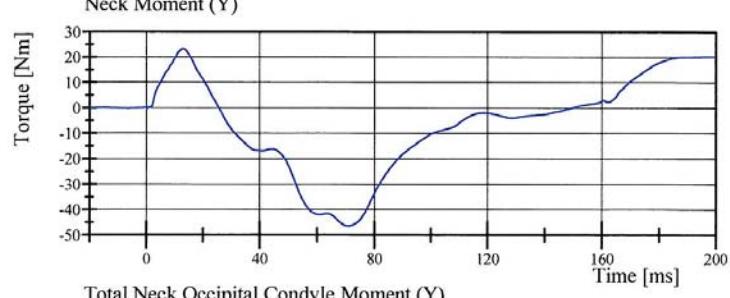
Neck Extension  
 HILL 5th Serial No. 329 Certification No. 15-1  
 Test Date: 10/6/2010



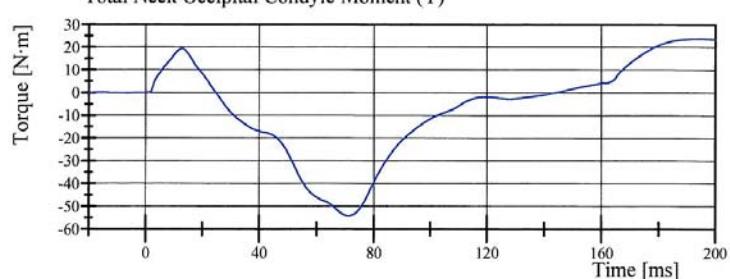
Filter Class: CFC\_1000  
 Max: 443.8 N at 71.7 ms  
 Min: -200.5 N at 192.0 ms



Filter Class: CFC\_600  
 Max: 443.8 N at 71.9 ms  
 Min: -200.4 N at 193.4 ms



Filter Class: CFC\_600  
 Max: 23.3 Nm at 12.7 ms  
 Min: -46.5 Nm at 70.6 ms



Filter Class: CFC\_600  
 Max: 23.7 N·m at 194.2 ms  
 Min: -54.3 N·m at 71.0 ms

Specification Source: CFR49 Part 572 Subpart O  
 with Polarity in accordance with J211

10.06.2010 12:11:19 1878



## Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 329 Certification No. 15-1

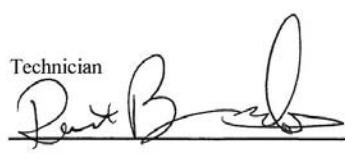
Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.736 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-3,931.6 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-3,781.5 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-57.2 mm	Yes
Internal Hysteresis	69 - 85 %	70.9 %	Yes

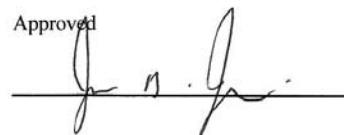
**Test meets specifications.**

**Comments:**

Technician



Approved



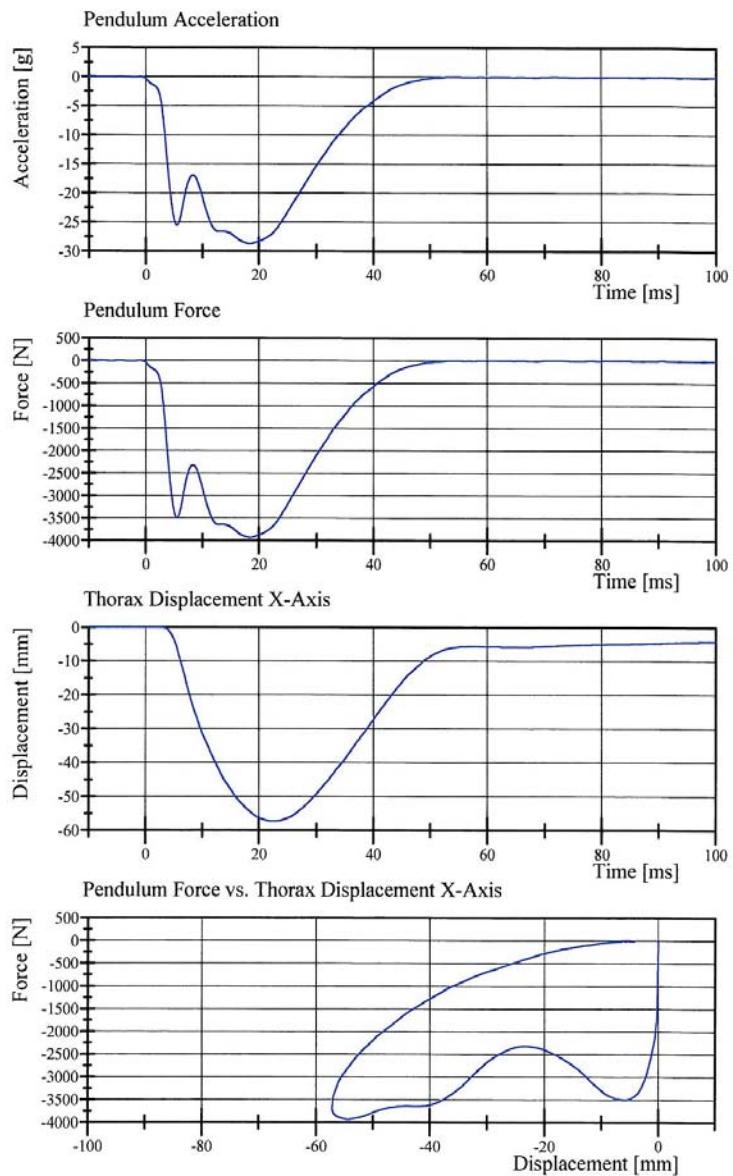
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 12:48:18 387



# Transportation Research Center Inc.

Front Thorax  
 HIII 5th Serial No. 329 Certification No. 15-1  
 Test Date: 10/6/2010



Filter Class: CFC\_180  
 Max: 0.1 gn at 71.8 ms  
 Min: -28.7 gn at 18.3 ms

Filter Class: CFC\_180  
 Max: 8.5 N at 71.8 ms  
 Min: -3,931.6 N at 18.3 ms

Filter Class: CFC\_600  
 Max: 0.0 mm at -3.0 ms  
 Min: -57.2 mm at 22.2 ms

Filter Class: CFC\_180  
 Max: 8.5 N at -5.4 mm  
 Min: -3,931.6 N at -54.4 mm

Specification Source: CFR49 Part 572 Subpart O  
 with Polarity in accordance with J211

10.06.2010 12:48:30 387



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 06-Oct-10

TRC, INC.      TEST NO: TOFL-01      572 O SN329 TORSO FLEX CAL 15

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TIME		1615
TEMPERATURE	20.6 – 22.2° C	21.8 ° C
RELATIVE HUMIDITY	10 – 70 %	35 %
INITIAL ANGLE OF UNSUPPORTED DUMMY <u>START ANGLE</u>	<= 20° REFERENCED TO VERTICAL	17.7 °
DIFFERENCE BETWEEN <u>RETURN</u> <u>ANGLE &amp; INTIAL ANGLE</u>	+/- 8 ° OF INTIAL ANGLE	3.1 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	362.6 N
RATE	0.5° - 1.5 °/sec	0.99°/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN Randy B. Johnson

## **Transportation Research Center Inc.**

Left Knee Femur Response Test  
HILL 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010

<b>Test Parameter</b>	<b>Specification</b>	<b>Test Results</b>	<b>Pass</b>
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.116 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,988.6 N	Yes

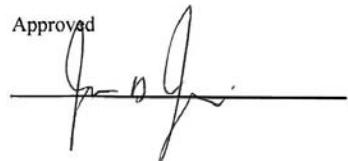
**Test meets specifications.**

**Comments:**

Technician



Approved



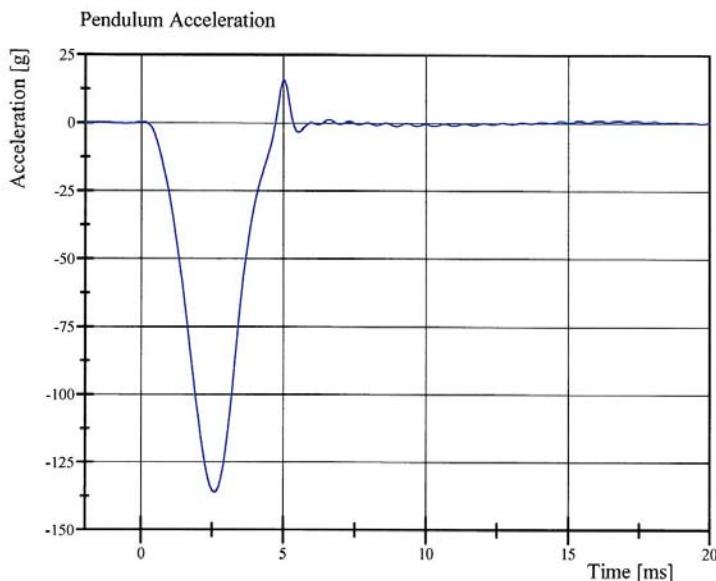
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 09:34:26 1716

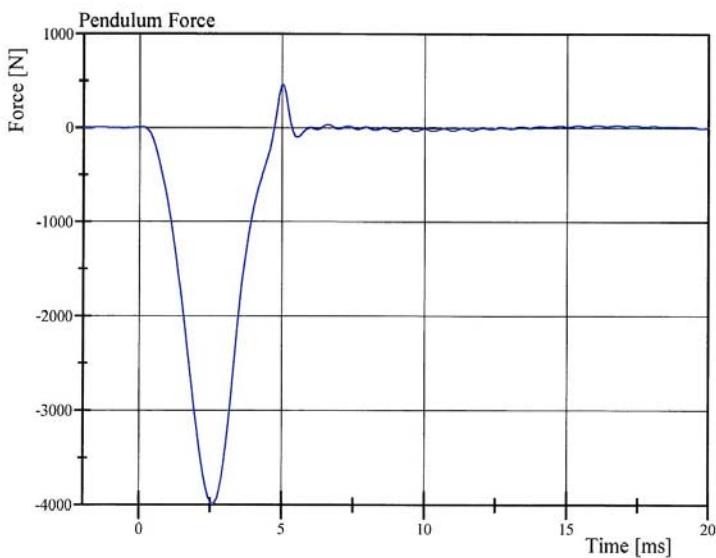


# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010



Filter Class: CFC\_600  
Max: 15.6 gn at 5.0 ms  
Min: -136.0 gn at 2.6 ms



Filter Class: CFC\_600  
Max: 457.3 N at 5.0 ms  
Min: -3,988.6 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 09:34:44 1716



## Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,879.3 N	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



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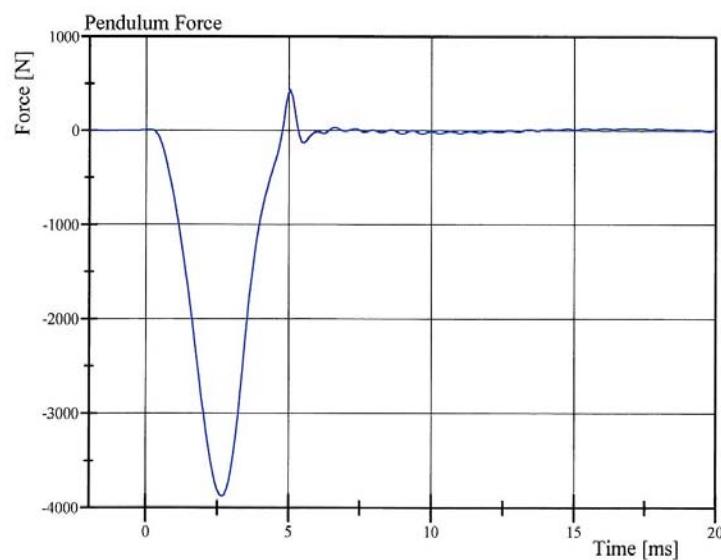
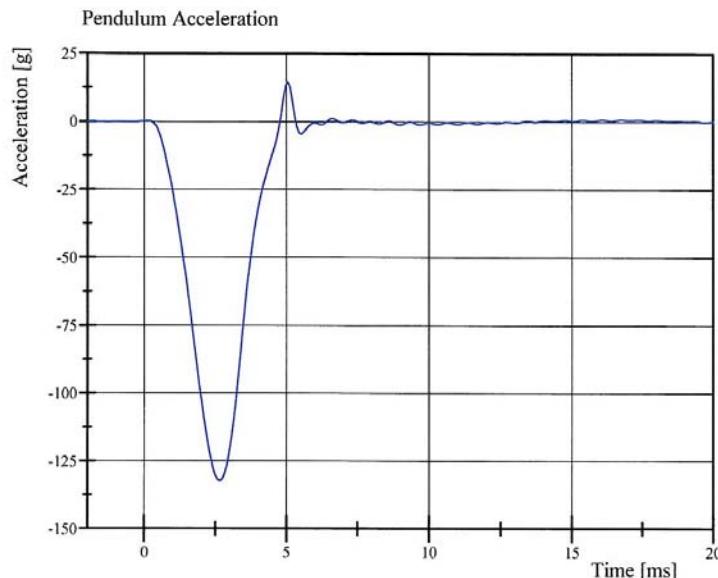
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 09:40:35 1720



# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 5th Serial No. 329 Certification No. 15-1  
Test Date: 10/6/2010



Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.06.2010 09:40:48 1720



**Transportation Research Center Inc.**  
**572O HIII 5th Female Dummy**  
**External Dimensions**  
**Serial No. 329 Calibration No. 15**

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	449	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	80	Yes
F	Thigh Clearance	119.4 - 134.6	127	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	247	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	282	Yes
J	Elbow Rest Height	182.8 - 203.2	190	Yes
K	Buttock Knee Length	520.7 - 546.1	539	Yes
L	Popliteal Height	355.6 - 376.0	359	Yes
M	Knee Pivot Height	393.7 - 419.1	396	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	469	Yes
S	Head Breadth	137.1 - 147.3	142	Yes
T	Head Depth	177.8 - 188.0	183	Yes
U	Hip Breadth	299.7 - 314.9	307	Yes
V	Shoulder Breadth	350.5 - 365.7	361	Yes
W	Foot Breadth	78.8 - 94.0	83	Yes
X	Head Circumference	528.3 - 548.7	532	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	861	Yes
Z	Waist Circumference	759.5 - 789.9	775	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



Approved




Revised 3/19/3003

## Appendix D

### Test Equipment and Instrumentation Calibration Information

Sign Convention  
SAE J211 MAR95

<u>Accelerometers:</u>	+X: Forward +Y: Rightward +Z: Downward
<u>Potentiometers:</u>	+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)
<u>Rotation potentiometers:</u>	+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
<u>Load cells:</u>	+Femur force: Tension +Seat belt force: Tension +Barrier force: Tension
<u>Neck load cells:</u>	+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
<u>Tibia load cells:</u>	+X force: Ankle forward, knee rearward +Y force: Ankle rightward, knee leftward +Z force: Tension +X moment: Bottom of tibia moving leftward +Y moment: Bottom of tibia moving rearward

Frequency Response Classes  
SAE J211 MAR95

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

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

## Channel Report Test Number 101116

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Polarity	Units	Assembly
1	Trg D1	10ZER000000VVOA	EVENT	1	Bipolar	Logic	
2	P13574	11HEADCG00H3ACXA	Head Accel X	2000	-Bipolar	g	1-168 Hili 50th VRTC.001
3	AIGR67	11HEADCG00H3ACYA	Head Accel Y	2000	-Bipolar	g	1-168 Hili 50th VRTC.002
4	AAKDO	11HEADCG00H3ACZA	Head Accel Z	2000	-Bipolar	g	1-168 Hili 50th VRTC.003
5	J20382	11HEADCGRDH3ACXA	Head Accel X Red	2000	Bipolar	g	1-168 Hili 50th VRTC.004
6	J55562	11HEADCGRDH3ACYA	Head Accel Y Red	2000	-Bipolar	g	1-168 Hili 50th VRTC.005
7	J32157	11HEADCGRDH3ACZA	Head Accel Z Red	2000	-Bipolar	g	1-168 Hili 50th VRTC.006
8	1716A-1647-FX	11NECKUP00H3FOXA	Upper Neck Force X	8896	-Bipolar	N	1-168 Hili 50th VRTC.009
9	1716A-1647-FY	11NECKUP00H3FOYA	Upper Neck Force Y	8896	Bipolar	N	1-168 Hili 50th VRTC.010
10	1716A-1647-FZ	11NECKUP00H3FOZA	Upper Neck Force Z	13344	Bipolar	N	1-168 Hili 50th VRTC.011
11	1716A-1647-MX	11NECKUP00H3MOXA	Upper Neck Moment X	282	-Bipolar	Nm	1-168 Hili 50th VRTC.012
12	1716A-1647-MY	11NECKUP00H3MOYA	Upper Neck Moment Y	282	Bipolar	Nm	1-168 Hili 50th VRTC.013
13	1716A-1647-MZ	11NECKUP00H3MOZA	Upper Neck Moment Z	282	Bipolar	Nm	1-168 Hili 50th VRTC.014
14	J28708	11CHSTCG00H3ACXA	Chest Accel X	2000	Bipolar	g	1-168 Hili 50th VRTC.021
15	P16493	11CHSTCG00H3ACYA	Chest Accel Y	2000	-Bipolar	g	1-168 Hili 50th VRTC.022
16	P51684	11CHSTCGRDH3ACZA	Chest Accel Z	2000	-Bipolar	g	1-168 Hili 50th VRTC.023
17	01G19-F03	11CHSTCGRDH3ACYA	Chest Accel X Red	2000	-Bipolar	g	1-168 Hili 50th VRTC.024
18	00L20-A11	11CHSTCGRDH3ACYA	Chest Accel Y Red	2000	-Bipolar	g	1-168 Hili 50th VRTC.025
19	9908-F28	11CHSTCGRDH3ACZA	Chest Accel Z Red	2000	-Bipolar	g	1-168 Hili 50th VRTC.026
20	14CB1-2897-CST168	11CHSTT000H3DSXA	Chest Deflection X	84	Bipolar	mm	1-168 Hili 50th VRTC.030
21	P52020	11PELVCG00H3ACXA	Pelvis Accel X	2000	-Bipolar	g	1-168 Hili 50th VRTC.031
22	05G15-L04	11PELVCG00H3ACYA	Pelvis Accel Y	2000	-Bipolar	g	1-168 Hili 50th VRTC.032
23	0E03E20-N13	11PELVCG00H3ACZA	Pelvis Accel Z	2000	-Bipolar	g	1-168 Hili 50th VRTC.033
24	1914A-134-FZ	11FEMRLL00H3FOZA	Left Femur Force Z	22240	Bipolar	N	1-168 Hili 50th VRTC.039
25	1914A-0257-FZ	11FEMRLL00H3FOZA	Right Femur Force Z	22240	Bipolar	N	1-168 Hili 50th VRTC.045
26	150-0121VR-019664	11KNISLLE00H3DSXA	Left Knee Displacement X	30	-Bipolar	mm	1-LX0018 & 0019 VRTC.001
27	4508-J-134-FX	11TBILULXH3FOXA	Left Upper Tibia Force X	11120	Bipolar	N	1-LX0018 & 0019 VRTC.002
28	4508-J-134-FZ	11TBILULXH3FOZA	Left Upper Tibia Force Z	11120	Bipolar	N	1-LX0018 & 0019 VRTC.004
29	4508-J-134-MX	11TBILULXH3MOXA	Left Upper Tibia Moment X	395	Bipolar	Nm	1-LX0018 & 0019 VRTC.005
30	4508-J-134-MY	11TBILULXH3MOYA	Left Upper Tibia Moment Y	395	Bipolar	Nm	1-LX0018 & 0019 VRTC.006
31	4929-J-79-FX	11TBILULLXH3FOXA	Left Lower Tibia Force X	11120	Bipolar	N	1-LX0018 & 0019 VRTC.009
32	4929-J-79-FY	11TBILULLXH3FOYA	Left Lower Tibia Force Y	11120	Bipolar	N	1-LX0018 & 0019 VRTC.010
33	4929-J-79-FZ	11TBILULLXH3FOZA	Left Lower Tibia Force Z	11120	Bipolar	N	1-LX0018 & 0019 VRTC.011
34	4929-J-79-MX	11TBILULLXH3MOXA	Left Lower Tibia Moment X	395	Bipolar	Nm	1-LX0018 & 0019 VRTC.012
35	4929-J-79-MY	11TBILULLXH3MOYA	Left Lower Tibia Moment Y	395	Bipolar	Nm	1-LX0018 & 0019 VRTC.013
36	P53847	11TBILELUXH3ACXA	Left Tibia Accel X	2000	Bipolar	g	1-LX0018 & 0019 VRTC.007
37	P64002	11TBILELUXH3ACYA	Left Tibia Accel Y	2000	Bipolar	g	1-LX0018 & 0019 VRTC.008

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Ref	Transducer ID	ISO Signal Identifier	Description	F Scale	Polarity	Units	Assembly
38	P52039	11FOOTLELXH3ACXA	Left Foot Accel X	2000	Bipolar	g	1-LX0018 & 0019 VRTC.017
39	P58851	11FOOTLELXH3ACYA	Left Foot Accel Y	2000	Bipolar	g	1-LX0018 & 0019 VRTC.018
40	P51737	11FOOTLELXH3ACZA	Left Foot Accel Z	2000	Bipolar	g	1-LX0018 & 0019 VRTC.019
41	PD210-4B-ANKLX	11FOOTLELXH3ANXA	Left Foot Angular Dis. X	LX0019X	-Bipolar	□	1-LX0018 & 0019 VRTC.014
42	PD210-4B-ANKLY	11FOOTLELXH3ANYA	Left Foot Angular Dis. Y	LX0019Y	-Bipolar	□	1-LX0018 & 0019 VRTC.015
43	PD210-4B-ANKLZ	11FOOTLELXH3ANZA	Left Foot Angular Dis. Z	LX0019Z	-Bipolar	□	1-LX0018 & 0019 VRTC.016
44	150-0121VYL-019597	11KNSLR00K3DSXA	Right Knee Displacement X	33-Bipolar	mm	1-LX0018 & 0019 VRTC.020	
45	4508-J-133-FX	11TIBIRULXH3FOXA	Right Upper Tibia Force X	11120 Bipolar	N	1-LX0018 & 0019 VRTC.021	
46	4508-J-133-FZ	11TIBIRULXH3FOZA	Right Upper Tibia Force Z	11120 Bipolar	N	1-LX0018 & 0019 VRTC.023	
47	4509-J-133-MX	11TIBIRULXH3MOXA	Right Upper Tibia Moment X	395 Bipolar	Nm	1-LX0018 & 0019 VRTC.024	
48	4508-J-133-MY	11TIBIRULXH3MOYA	Right Upper Tibia Moment Y	395 Bipolar	Nm	1-LX0018 & 0019 VRTC.025	
49	4929-J-127-FX	11TIBIRULXH3FOXA	Right Lower Tibia Force X	11120.5 Bipolar	N	1-LX0018 & 0019 VRTC.028	
50	4929-J-127-FY	11TIBIRULXH3FOZA	Right Lower Tibia Force Y	11120.5 Bipolar	N	1-LX0018 & 0019 VRTC.029	
51	4929-J-127-FZ	11TIBIRULXH3FOZA	Right Lower Tibia Force Z	11120.5 Bipolar	N	1-LX0018 & 0019 VRTC.030	
52	4929-J-127-MX	11TIBIRULXH3MOXA	Right Lower Tibia Moment X	395.4 Bipolar	Nm	1-LX0018 & 0019 VRTC.031	
53	4929-J-127-MY	11TIBIRULXH3MOYA	Right Lower Tibia Moment Y	395.4 Bipolar	Nm	1-LX0018 & 0019 VRTC.032	
54	00L20-A07	11TIBIRULXH3ACXA	Right Tibia Accel X	2000 Bipolar	g	1-LX0018 & 0019 VRTC.026	
55	00L20-A04	11TIBIRULXH3ACYA	Right Tibia Accel Y	2000 Bipolar	g	1-LX0018 & 0019 VRTC.027	
56	03F03F17-N32	11FOOTRILXH3ACXA	Right Foot Accel X	2000 Bipolar	g	1-LX0018 & 0019 VRTC.036	
57	05G20-L06	11FOOTRILXH3ACYA	Right Foot Accel Y	2000 Bipolar	g	1-LX0018 & 0019 VRTC.037	
58	02020210-N01	11FOOTRILXH3ACZA	Right Foot Accel Z	2000 Bipolar	g	1-LX0018 & 0019 VRTC.038	
59	PD210-4B-ANKRX	11FOOTRILXH3ANXA	Right Foot Angular Dis. X	Ak037X	-Bipolar	□	1-LX0018 & 0019 VRTC.033
60	PD210-4B-ANKRY	11FOOTRILXH3ANYA	Right Foot Angular Dis. Y	Ak225Y	-Bipolar	□	1-LX0018 & 0019 VRTC.034
61	PD210-4B-ANKRZ	11FOOTRILXH3ANZA	Right Foot Angular Dis. Z	Ak039Z	-Bipolar	□	1-LX0018 & 0019 VRTC.035
62	P51986	13HEADCG00HFACXA	Head Accel X	2000 -Bipolar	g	3-426 Hili 5th FTSS.001	
63	P54092	13HEADCG00HFACYA	Head Accel Y	2000 -Bipolar	g	3-426 Hili 5th FTSS.002	
64	P51878	13HEADCG00HFACZA	Head Accel Z	2000 -Bipolar	g	3-426 Hili 5th FTSS.003	
65	P54787	13HEADGRDHFACXA	Head Red. Accel X	2000 -Bipolar	g	3-426 Hili 5th FTSS.004	
66	P54136	13HEADGRDHFACYA	Head Red. Accel Y	2000 -Bipolar	g	3-426 Hili 5th FTSS.005	
67	00L13-F22	13HEADGRDHFACZA	Head Red. Accel Z	2000 -Bipolar	g	3-426 Hili 5th FTSS.006	
68	1716A-1746-FX	13NECKUP00HFFOXA	Neck Force X	8896.4 -Bipolar	N	3-426 Hili 5th FTSS.007	
69	1716A-1746-FY	13NECKUP00HFFOYA	Neck Force Y	8896.4 -Bipolar	N	3-426 Hili 5th FTSS.008	
70	1716A-1746-FZ	13NECKUP00HFFOZA	Neck Force Z	13344.6 Bipolar	N	3-426 Hili 5th FTSS.009	
71	1716A-1746-MX	13NECKUP00HFMOXA	Neck Moment X	282.5 -Bipolar	Nm	3-426 Hili 5th FTSS.010	
72	1716A-1746-MY	13NECKUP00HFMOYA	Neck Moment Y	282.5 Bipolar	Nm	3-426 Hili 5th FTSS.011	
73	1716A-1746-MZ	13NECKUP00HFMOZA	Neck Moment Z	282.5 Bipolar	Nm	3-426 Hili 5th FTSS.012	
74	P51687	13CHSTCG00HFACXA	Chest Accel X	2000 Bipolar	g	3-426 Hili 5th FTSS.019	

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Polarity	Units	Assembly
75	P9459	13CHSTCG00HFACTA	Chest Accel Y	2000	-Bipolar	g	3-426 Hili 5th FTSS.020
76	P58669	13CHSTCG00HFACTA	Chest Accel Z	2000	-Bipolar	g	3-426 Hili 5th FTSS.021
77	P58661	13CHSTCGRDHFACXA	Chest Red. Accel X	2000	-Bipolar	g	3-426 Hili 5th FTSS.022
78	P58608	13CHSTCGRDHFACYA	Chest Red. Accel Y	2000	-Bipolar	g	3-426 Hili 5th FTSS.023
79	P53851	13CHSTCGRDHFACZA	Chest Red. Accel Z	2000	-Bipolar	g	3-426 Hili 5th FTSS.024
80	14C-B1-289/-CST426	13CHST000HFDXA	Chest Deflection X	81	Bipolar	mm	3-426 Hili 5th FTSS.025
81	02102105-F11	13PELVCG00HFACTA	Pelvis Accel X	2000	-Bipolar	g	3-426 Hili 5th FTSS.026
82	03E03D30-N22	13PELVCG00HFACTA	Pelvis Accel Y	2000	-Bipolar	g	3-426 Hili 5th FTSS.027
83	03E03E21-M15	13PELVCG00HFACTA	Pelvis Accel Z	2000	-Bipolar	g	3-426 Hili 5th FTSS.028
84	2121A-1394	13FEMRL00HFFC0ZA	Left Femur Force Z	13344	Bipolar	N	3-426 Hili 5th FTSS.029
85	2121A-1395	13KNSLLE00HFFDSXA	Right Femur Force Z	33	-Bipolar	mm	3-FLXD001 & D002 VRTC.001
86	150-0121VVR-030589	13TIBILUXHFFFOXA	Left Knee Displacement X	8896	Bipolar	N	3-FLXD001 & D002 VRTC.002
87	4825J-97-FX	13TIBILUXHFFFOXA	Left Upper Tibia Force X	8896	Bipolar	N	3-FLXD001 & D002 VRTC.003
88	4825J-97-FZ	13TIBILUXHFFFOZA	Left Upper Tibia Force Z	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.004
89	4825J-97-MX	13TIBILUXHFMOXA	Left Upper Tibia Moment X	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.005
90	4825J-97-MY	13TIBILUXHFMOYA	Left Upper Tibia Moment Y	8896	Bipolar	N	3-FLXD001 & D002 VRTC.006
91	4826J-108-FX	13TIBILUXHFFF0XA	Left Lower Tibia Force X	8896	Bipolar	N	3-FLXD001 & D002 VRTC.008
92	4826J-108-FY	13TIBILUXHFFF0YA	Left Lower Tibia Force Y	8896	Bipolar	N	3-FLXD001 & D002 VRTC.009
93	4826J-108-FZ	13TIBILUXHFFF0ZA	Left Lower Tibia Force Z	8896	Bipolar	N	3-FLXD001 & D002 VRTC.010
94	4826J-108-MX	13TIBILUXHFMOXA	Left Lower Tibia Moment X	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.011
95	4826J-108-MY	13TIBILUXHFMOYA	Left Lower Tibia Moment Y	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.012
96	P53954	13TIBILEXHFACXA	Left Tibia Accel X	2000	Bipolar	g	3-FLXD001 & D002 VRTC.006
97	P84001	13TIBILEXHFACYA	Left Tibia Accel Y	2000	Bipolar	g	3-FLXD001 & D002 VRTC.007
98	P84008	13FOOTLELXHFACXA	Left Foot Accel X	2000	Bipolar	g	3-FLXD001 & D002 VRTC.016
99	P53989	13FOOTLELXHFACYA	Left Foot Accel Y	2000	Bipolar	g	3-FLXD001 & D002 VRTC.017
100	P56807	13FOOTLELXHFACZA	Left Foot Accel Z	2000	Bipolar	g	3-FLXD001 & D002 VRTC.018
101	PD210-4B-7921-0179	13FOOTLELXHANXA	Left Foot Angular Dis. X	318	-Bipolar	□	3-FLXD001 & D002 VRTC.013
102	PD210-4B-7921-0184	13FOOTLELXHANYA	Left Foot Angular Dis. Y	318	Bipolar	□	3-FLXD001 & D002 VRTC.014
103	PD210-4B-7921-0183	13FOOTLELXHANZA	Left Foot Angular Dis. Z	318	-Bipolar	□	3-FLXD001 & D002 VRTC.015
104	15G-0121VVL-030583	13KNSLR00HFDXA	Right Knee Displacement X	33	-Bipolar	mm	3-FLXD001 & D002 VRTC.019
105	4825J-89-FX	13TIBIRULXHFFOXA	Right Upper Tibia Force X	8896	Bipolar	N	3-FLXD001 & D002 VRTC.020
106	4825J-89-FZ	13TIBIRULXHFFOZA	Right Upper Tibia Force Z	8896	Bipolar	N	3-FLXD001 & D002 VRTC.021
107	4825J-89-MX	13TIBIRULXHFMOXA	Right Upper Tibia Moment X	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.022
108	4825J-89-MY	13TIBIRULXHFMOYA	Right Upper Tibia Moment Y	8896	Bipolar	Nm	3-FLXD001 & D002 VRTC.023
109	4826J-107-FX	13TIBIRULXHFFOXA	Right Lower Tibia Force X	8896	Bipolar	N	3-FLXD001 & D002 VRTC.026
110	4826J-107-FY	13TIBIRULXHFFOYA	Right Lower Tibia Force Y	8896	Bipolar	N	3-FLXD001 & D002 VRTC.027
111	4826J-107-FZ	13TIBIRULXHFFFOZA	Right Lower Tibia Force Z	8896	Bipolar	N	3-FLXD001 & D002 VRTC.028

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Ref	Transducer ID	ISO Signal Identifier	Description	F-Scale	Polarity	Units	Assembly
112	4836J-107-MX	13TIBRLLXHFMOXA	Right Lower Tibia Moment X	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.029
113	4836J-107-MY	13TIBRLLXHFMOYA	Right Lower Tibia Moment Y	282	Bipolar	Nm	3-FLXD001 & D002 VRTC.030
114	P5987	13TIBRLLXHFACXA	Right Tibia Accel X	2000	Bipolar	g	3-FLXD001 & D002 VRTC.024
115	P5991	13TIBRLLXHFACYA	Right Tibia Accel Y	2000	Bipolar	g	3-FLXD001 & D002 VRTC.025
116	P52061	13FOOTRILXHFACXA	Right Foot Accel X	2000	Bipolar	g	3-FLXD001 & D002 VRTC.034
117	P51925	13FOOTRILXHFACYA	Right Foot Accel Y	2000	Bipolar	g	3-FLXD001 & D002 VRTC.035
118	P58836	13FOOTRILXHFACZA	Right Foot Accel Z	318	-Bipolar	g	3-FLXD001 & D002 VRTC.036
119	PD210-4B-7921-0180	13FOOTRILXHFANXA	Right Foot Angular Dis. X	Ak037X		g	3-FLXD001 & D002 VRTC.031
120	PD210-4B-7921-0181	13FOOTRILXHFANYA	Right Foot Angular Dis. Y	Ak225Y		g	3-FLXD001 & D002 VRTC.032
121	PD210-4B-7921-0182	13FOOTRILXHFANZA	Right Foot Angular Dis. Z	Ak039Z		g	3-FLXD001 & D002 VRTC.033
122	P50066	14ADC00HFACXA	Head Accel X	2000	-Bipolar	g	4-329 Hill 5th VRTC.001
123	P49232	14ADC00HFACYA	Head Accel Y	2000	-Bipolar	g	4-329 Hill 5th VRTC.002
124	P50077	14ADC00HFACZA	Head Accel Z	2000	-Bipolar	g	4-329 Hill 5th VRTC.003
125	P51716	14HEADCGRDHFACXA	Head Red. Accel X	2000	-Bipolar	g	4-329 Hill 5th VRTC.004
126	P16155	14HEADCGRDHFACYA	Head Red. Accel Y	2000	-Bipolar	g	4-329 Hill 5th VRTC.005
127	P56732	14HEADCGRDHFACZA	Head Red. Accel Z	2000	-Bipolar	g	4-329 Hill 5th VRTC.006
128	1716A-1035-FX	14NECKUP00HFFOXA	Neck Force X	8896.4	Bipolar	N	4-329 Hill 5th VRTC.007
129	1716A-1035-FY	14NECKUP00HFFOYA	Neck Force Y	8896.4	Bipolar	N	4-329 Hill 5th VRTC.008
130	1716A-1035-FZ	14NECKUP00HFFOZA	Neck Force Z	13344.6	Bipolar	N	4-329 Hill 5th VRTC.009
131	1716A-1035-MX	14NECKUP00HFMOXA	Neck Moment X	282.5	-Bipolar	Nm	4-329 Hill 5th VRTC.010
132	1716A-1035-MY	14NECKUP00HFMOYA	Neck Moment Y	282.5	Bipolar	Nm	4-329 Hill 5th VRTC.011
133	1716A-1035-MZ	14NECKUP00HFMOZA	Neck Moment Z	282.5	Bipolar	Nm	4-329 Hill 5th VRTC.012
134	P49164	14CHSTCG00HFACXA	Chest Accel X	2000	Bipolar	g	4-329 Hill 5th VRTC.019
135	P51871	14CHSTCG00HFACYA	Chest Accel Y	2000	Bipolar	g	4-329 Hill 5th VRTC.020
136	P53842	14CHSTCG00HFACZA	Chest Accel Z	2000	Bipolar	g	4-329 Hill 5th VRTC.021
137	0210210-N14	14CHSTCGRDHFACXA	Chest Red. Accel X	2000	-Bipolar	g	4-329 Hill 5th VRTC.022
138	J20209	14CHSTCGRDHFACYA	Chest Red. Accel Y	2000	-Bipolar	g	4-329 Hill 5th VRTC.023
139	DC33J	14CHSTCGRDHFACZA	Chest Red. Accel Z	2000	-Bipolar	g	4-329 Hill 5th VRTC.024
140	14CB1-2897-CST329	14CHST0000HFDSXA	Chest Deflection X	81	Bipolar	mm	4-329 Hill 5th VRTC.025
141	J18059	14PELVCG00HFACXA	Pelvis Accel X	2000	-Bipolar	g	4-329 Hill 5th VRTC.026
142	Bi30J	14PELVCG00HFACYA	Pelvis Accel Y	2000	-Bipolar	g	4-329 Hill 5th VRTC.027
143	A535	14PELVCG00HFACZA	Pelvis Accel Z	2000	-Bipolar	g	4-329 Hill 5th VRTC.028
144	2121AJ-1700	14FEMRLU00HFFOZA	Left Femur Force Z	13344	Bipolar	N	4-329 Hill 5th VRTC.029
145	2430-560	14FEMRRU00HFFOZA	Right Femur Force Z EXT P11	13344	Bipolar	N	4-329 Hill 5th VRTC.030
146	(unknown)	14KNSLLE00HFDSXA	Left Knee X-Axis Displacement	0	Bipolar	N/A	
147	(unknown)	14KNSLR100HFDSXA	Right Knee X-Axis Displacement	0	Bipolar	N/A	
148	P56886	10SILLE0000ACXA	Bullet Left Sill X-Axis Acceleration	2000	-Bipolar	g	

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Ref	Transducer ID	ISO Signal Identifier	Description	F-Scale	Polarity	Units	Assembly
149	P84906	10SILLLE0000ACAYA	Bullet Left Sill Y-Axis Acceleration	2000	Bipolar	g	
150	P82671	10SILLR0000ACXA	Bullet Right Sill X-Axis Acceleration	2000	Bipolar	g	
151	P86705	10SILLR0000ACAYA	Bullet Right Sill Y-Axis Acceleration	2000	-Bipolar	g	
152	P81295	10VEHCCG0000ACXA	Bullet Center of Gravity X-Axis Acceleration	2000	Bipolar	g	
153	P81288	10VEHCCG0000ACAYA	Bullet Center of Gravity Y-Axis Acceleration	2000	-Bipolar	g	
154	P86611	10VEHCCG0000ACZA	Bullet Center of Gravity Z-Axis Acceleration	2000	-Bipolar	g	
155	P82546	10FOOTLE0000ACXA	Bullet Driver Footrest X-Axis Acceleration	2000	-Bipolar	g	
156	P83176	10FOOTLE0000ACZA	Bullet Driver Footrest Z-Axis Acceleration	2000	-Bipolar	g	
157	P82559	10TPANLE0000ACXA	Bullet Toepan Behind Center of Accelerator	2000	Bipolar	g	
158	P87027	10TPANLE0000ACZA	Bullet Toepan Behind Center of Accelerator	2000	-Bipolar	g	
159	EL20-S458-16KN-N100E9	13SEBE0000BF5F00A	Bullet Driver Lap Belt Force	16000	Bipolar	N	
160	EL20-S458-16KN-N100ED	13SEBE0000BF5F00A	Bullet Right Front Passenger Lap Belt Force	16000	Bipolar	N	
161	EL20-S458-16KN-N100E8	13SEBE0000BF3F00A	Bullet Driver Shoulder Belt Force	16000	Bipolar	N	
162	EL20-S458-16KN-N100E7	13SEBE0000BF3F00A	Bullet Right Front Passenger Shoulder Belt	16000	Bipolar	N	
163	ABFile1	10AIRBLEFR25V00A	Bullet Driver Airbag 1st Stage Fire Time 1	5	Bipolar	V	
164	ABFire2	10AIRBLEFR26V00A	Bullet Driver Airbag 2nd Stage Fire Time 1	5	Bipolar	V	
165	ABFire3	10AIRBRIFR25V00A	Bullet Right Front Pass Airbag 1st Stage F	5	Bipolar	V	
166	ABFire4	10AIRBRIFR26V00A	Bullet Right Front Pass Airbag 2nd Stage F	5	Bipolar	V	
167	P51989	21HEADCG00THACXA	Head Accel X	2000	Bipolar	g	
168	P49237	21HEADCG00THACYA	Head Accel Y	2000	Bipolar	g	
169	P49213	21HEADLE00THACZA	Head Accel Z	2000	Bipolar	g	
170	P52055	21HEADLE00THACXA	Head (LT) Accel X	2000	Bipolar	g	
171	P51962	21HEADLE00THACZA	Head (LT) Accel Z	2000	Bipolar	g	
172	P58787	21HEADUP00THACXA	Head (TP) Accel X	2000	Bipolar	g	
173	P59000	21HEADUP00THACYA	Head (TP) Accel Y	2000	Bipolar	g	
174	P49197	21HEADRE00THACYA	Head (RR) Accel Y	2000	Bipolar	g	
175	P7196	21HEADRE00THACZA	Head (RR) Accel Z	2000	Bipolar	g	
176	3454J-75-FX	21NECKUP00THFOXA	Up Neck Force X	8896	Bipolar	N	
177	3454J-75-FY	21NECKUP00THFOYA	Up Neck Force Y	8896	Bipolar	N	
178	3454J-75-FZ	21NECKUP00THFOZA	Up Neck Force Z	13340	Bipolar	N	
179	3454J-75-MX	21NECKUP00THMOXA	Up Neck Moment X	282	Bipolar	N	
180	3454J-75-MY	21NECKUP00THMOYA	Up Neck Moment Y	282	Bipolar	N	
181	3454J-75-MZ	21NECKUP00THMOZA	Up Neck Moment Z	282	Bipolar	N	
182	4386J-80-FX	21NECKLO00THFOXA	Lwr Neck Force X	13340	Bipolar	N	
183	4386J-80-FY	21NECKLO00THFOYA	Lwr Neck Force Y	13340	Bipolar	N	
184	4386J-80-FZ	21NECKLO00THFOZA	Lwr Neck Force Z	13340	Bipolar	N	
185	4386J-80-MX	21NECKLO00THMOXA	Lwr Neck Moment X	452	Bipolar	Nm	

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186	4386L-J80-MY	21NECKL00THMOYA	Lwr Neck Moment Y	452	Bipolar	Nm	1-Thor 016 NT VRTC.020
187	4386L-J80-MZ	21NECKL00THMOZA	Lwr Neck Moment Z	226	Bipolar	Nm	1-Thor 016 NT VRTC.021
188	6005L-J-75	21NECKRE00THFOOA	Rear Skull Spring Comp Force Z	4448	Bipolar	N	1-Thor 016 NT VRTC.022
189	6005L-J80	21NECKFR00THFOOA	Front Skull Spring Comp Force Z	4448	Bipolar	N	1-Thor 016 NT VRTC.023
190	PD210-4B-7921-0521	21NECKUP00THANYA	Occipital Condle Rotary Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.024
191	DGSP-010809	21ABDORL00THDSOA	Lwr Abd DGSP Rgt Disp	100	Bipolar	mm	1-Thor 016 NT VRTC.025
192	DGSP-01038a	21ABDORL00THANYA	Lwr Abd DGSP Rgt Pitch	180	Bipolar	mm	1-Thor 016 NT VRTC.026
193	DGSP-0380	21ABDORL00THANZA	Lwr Abd DGSP Rgt Yaw	180	Bipolar	mm	1-Thor 016 NT VRTC.027
194	DGSP-010808	21ABDOLL00THDSOA	Lwr Abd DGSP Lft Disp	100	Bipolar	mm	1-Thor 016 NT VRTC.028
195	DGSP-0103	21ABDOLL00THANYA	Lwr Abd DGSP Lft Pitch	180	Bipolar	mm	1-Thor 016 NT VRTC.029
196	DGSP-0359	21ABDOLL00THANZA	Lwr Abd DGSP Lft Yaw	180	Bipolar	mm	1-Thor 016 NT VRTC.030
197	J23772	21SPINM00THACXA	T6 Mid Spine X	2000	-Bipolar	g	1-Thor 016 NT VRTC.035
198	J17988	21SPINM00THACYA	T6 Mid Spine Y	2000	Bipolar	g	1-Thor 016 NT VRTC.036
199	J14234	21SPINM00THACZA	T6 Mid Spine Z	2000	Bipolar	g	1-Thor 016 NT VRTC.037
200	CRUX-0502	21CHRILU01THANOA	CRUX T016 Base Upper Left Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.034
201	CRUX-0398	21CHRILU02THANOA	CRUX T016 Mid Upper Left Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.035
202	CRUX-0295	21CHRILU03THANOA	CRUX T016 Elbow Upper Left Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.036
203	CRUX-0402	21CHIRILU01THANDA	CRUX T016 Base Upper Right Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.037
204	CRUX-0404	21CHIRILU02THANDA	CRUX T016 Mid Upper Right Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.038
205	CRUX-0405	21CHIRILU03THANDA	CRUX T016 Elbow Upper Right Thorax Po	180	Bipolar	mm	1-Thor 016 NT VRTC.039
206	CRUX-0308	21CHIRILU01THANDA	CRUX T016 Base Lower Left Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.040
207	CRUX-0309	21CHIRILU02THANDA	CRUX T016 Mid Lower Left Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.041
208	CRUX-0310	21CHIRILU03THANDA	CRUX T016 Elbow Lower Left Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.042
209	CRUX-0406	21CHIRILU01THANOA	CRUX T016 Base Lower Right Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.043
210	CRUX-0407	21CHIRILU02THANOA	CRUX T016 Mid Lower Right Thorax Pot	180	Bipolar	mm	1-Thor 016 NT VRTC.044
211	CRUX-0313	21CHIRILU03THANOA	CRUX T016 Elbow Lower Right Thorax Po	180	Bipolar	mm	1-Thor 016 NT VRTC.045
212	300647-039185	21ABDOUP00THDSOA	Upper Abdomen String Pot	100	Bipolar	mm	1-Thor 016 NT VRTC.046
213	1911A-123-FX	21THSP1200THFOXA	T12 Thoracic Spine FX	13344	Bipolar	N	1-Thor 016 NT VRTC.047
214	1911A-123-FY	21THSP1200THFOYA	T12 Thoracic Spine FY	17793	Bipolar	N	1-Thor 016 NT VRTC.048
215	1911A-123-FZ	21THSP1200THFOZA	T12 Thoracic Spine FZ	565	Bipolar	Nm	1-Thor 016 NT VRTC.049
216	1911A-123-NX	21THSP1200HMOXA	T12 Thoracic Moment X	903.9	Bipolar	Nm	1-Thor 016 NT VRTC.050
217	1911A-123-NY	21THSP1200HMOYA	T12 Thoracic Moment Y				1-Thor 016 NT VRTC.051
218	04/04/01-R06	21SPINUP00THACXA	T1 Upper Spine X	2000	-Bipolar	g	1-Thor 016 NT VRTC.052
219	04/04/20-223	21SPINUP00THACYA	T1 Upper Spine Y	2000	Bipolar	g	1-Thor 016 NT VRTC.053
220	02/02/10-N25	21SPINUP00THACZA	T1 Upper Spine Z	2000	Bipolar	g	1-Thor 016 NT VRTC.054
221	J14384	21PELV0000THACXA	Pelvis Accel X	2000	Bipolar	g	1-Thor 016 NT VRTC.061
222	J32126	21PELV0000THACYA	Pelvis Accel Y	2000	Bipolar	g	1-Thor 016 NT VRTC.062

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Polarity	Units	Assembly
223	DE54J	21PELV0000THACZA	Pelvis Accel Z	200	Bipolar	g	1-Thor 016 NT VRTC.063
224	3455L-J-76-FX	21ACTBLE00THFOXA	Pelvis/Aacetabulum Left FX	22240	Bipolar	N	1-Thor 016 NT VRTC.064
225	3455L-J-76-FY	21ACTBLE00THFOYA	Pelvis/Aacetabulum Left FY	13340	Bipolar	N	1-Thor 016 NT VRTC.065
226	3455L-J-76-FZ	21ACTBLE00THFOZA	Pelvis/Aacetabulum Left FZ	13340	Bipolar	N	1-Thor 016 NT VRTC.066
227	3455L-J-77-FX	21ACTBRI00THFOXA	Pelvis/Aacetabulum Right FX	22240	Bipolar	N	1-Thor 016 NT VRTC.067
228	3455L-J-77-FY	21ACTBRI00THFOYA	Pelvis/Aacetabulum Right FY	13340	Bipolar	N	1-Thor 016 NT VRTC.068
229	3455L-J-77-FZ	21ACTBRI00THFOZA	Pelvis/Aacetabulum Right FZ	13340	Bipolar	N	1-Thor 016 NT VRTC.069
230	1914A-412-FX	21FEMRL00THFOXA	Left Femur FX	13344	Bipolar	N	1-Thor 016 NT VRTC.070
231	1914A-412-FY	21FEMRL00THFOYA	Left Femur FY	13344	Bipolar	N	1-Thor 016 NT VRTC.071
232	1914A-412-FZ	21FEMRL00THFOZA	Left Femur FZ	22240	Bipolar	N	1-Thor 016 NT VRTC.072
233	1914A-412-MX	21FEMRL00THMOXA	Left Femur MX	339	Bipolar	Nm	1-Thor 016 NT VRTC.073
234	1914A-412-MY	21FEMRL00THMOYA	Left Femur MY	339	Bipolar	Nm	1-Thor 016 NT VRTC.074
235	1914A-412-MZ	21FEMRL00THMOZA	Left Femur MZ	339	Bipolar	Nm	1-Thor 016 NT VRTC.075
236	1F-625-142-FX	21FEMRRL00THFOXA	Right Femur FX	13344	Bipolar	N	1-Thor 016 NT VRTC.076
237	1F-625-142-FY	21FEMRRL00THFOYA	Right Femur FY	13344	Bipolar	N	1-Thor 016 NT VRTC.077
238	1F-625-142-FZ	21FEMRRL00THFOZA	Right Femur FZ	22240	Bipolar	N	1-Thor 016 NT VRTC.078
239	1F-625-142-MX	21FEMRRL00THMOXA	Right Femur MX	339	Bipolar	Nm	1-Thor 016 NT VRTC.079
240	1F-625-142-MY	21FEMRRL00THMOYA	Right Femur MY	339	Bipolar	Nm	1-Thor 016 NT VRTC.080
241	1F-625-142-MZ	21FEMRRL00THMOZA	Right Femur MZ	339	Bipolar	Nm	1-Thor 016 NT VRTC.081
242	150-0121VR-022701	21KNSLLE00H3DSXA	Left Knee Displacement X	30	-Bipolar	mm	1-LX 103 & 104 VRTC.001
243	4509L-J-110-FX	21TBILUXH3FOXA	Left Upper Tibia Force X	11120	Bipolar	N	1-LX 103 & 104 VRTC.002
244	4509L-J-110-FZ	21TBILUXH3FOZA	Left Upper Tibia Force Z	11120	Bipolar	N	1-LX 103 & 104 VRTC.004
245	4509L-J-110-MX	21TBILUXH3MOXA	Left Upper Tibia Moment X	395	Bipolar	Nm	1-LX 103 & 104 VRTC.005
246	4509L-J-110-MY	21TBILUXH3MOYA	Left Upper Tibia Moment Y	395	Bipolar	Nm	1-LX 103 & 104 VRTC.006
247	4929L-J-78-FX	21TBILUXH3FOXA	Left Lower Tibia Force X	11120	Bipolar	N	1-LX 103 & 104 VRTC.009
248	4929L-J-78-FY	21TBILUXH3FOYA	Left Lower Tibia Force Y	11120	Bipolar	N	1-LX 103 & 104 VRTC.010
249	4929L-J-78-FZ	21TBILUXH3FOZA	Left Lower Tibia Force Z	395	Bipolar	Nm	1-LX 103 & 104 VRTC.011
250	4929L-J-78-MX	21TBILUXH3MOXA	Left Lower Tibia Moment X	395	Bipolar	Nm	1-LX 103 & 104 VRTC.012
251	4929L-J-78-MY	21TBILUXH3MOYA	Left Lower Tibia Moment Y	395	Bipolar	Nm	1-LX 103 & 104 VRTC.013
252	PD210-4B-7921-0118	21FOOTLELXH3ANXA	Left Foot Angular Dis. X	318	Bipolar	□	1-LX 103 & 104 VRTC.014
253	PD210-4B-7921-0229	21FOOTLELXH3ANYA	Left Foot Angular Dis. Y	318	Bipolar	□	1-LX 103 & 104 VRTC.015
254	PD210-4B-7921-0224	21FOOTLELXH3ANZA	Left Foot Angular Dis. Z	318	Bipolar	□	1-LX 103 & 104 VRTC.016
255	P64087	21FOOTLELXH3ACXA	Left Foot Accel X	2000	Bipolar	g	1-LX 103 & 104 VRTC.017
256	P49194	21FOOTLELXH3ACYA	Left Foot Accel Y	2000	Bipolar	g	1-LX 103 & 104 VRTC.018
257	P49463	21FOOTLELXH3ACZA	Left Foot Accel Z	30	-Bipolar	mm	1-LX 103 & 104 VRTC.019
258	150-0121VL-030577	21KNSLR100H3DSXA	Right Knee Displacement X	11120	Bipolar	N	1-LX 103 & 104 VRTC.020
259	4509L-J-108-FX	21TBIRULXH3FOXA	Right Upper Tibia Force X				1-LX 103 & 104 VRTC.021

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Polarity	Units	Assembly
260	45084-J-108-FZ	21TIBIRULXH3FOZA	Right Upper Tibia Force Z	11120	Bipolar	N	1-LX 103 & 104 VRTC.023
261	45084-J-108-MX	21TIBIRULXH3MOXA	Right Upper Tibia Mement X	395	Bipolar	Nm	1-LX 103 & 104 VRTC.024
262	45084-J-108-MY	21TIBIRULXH3MOYA	Right Upper Tibia Mement Y	395	Bipolar	Nm	1-LX 103 & 104 VRTC.025
263	4929-76-FX	21TIBIRLLXH3FOXA	Right Lower Tibia Force X	11120	Bipolar	N	1-LX 103 & 104 VRTC.026
264	4929-76-FY	21TIBIRLLXH3FOYA	Right Lower Tibia Force Y	11120	Bipolar	N	1-LX 103 & 104 VRTC.029
265	4929-76-FZ	21TIBIRLLXH3FOZA	Right Lower Tibia Force Z	11120	Bipolar	N	1-LX 103 & 104 VRTC.030
266	4929-76-MX	21TIBIRLLXH3MOXA	Right Lower Tibia Mement X	395	Bipolar	Nm	1-LX 103 & 104 VRTC.031
267	4929-76-MY	21TIBIRLLXH3MOYA	Right Lower Tibia Mement Y	395	Bipolar	Nm	1-LX 103 & 104 VRTC.032
268	PD210-4B-7921-0037	21FOOTRILXH3ANXA	Right Foot Angular Dis. X	Ak037X	318	Bipolar	□
269	PD210-4B-7921-0225	21FOOTRILXH3ANYA	Right Foot Angular Dis. Y	AK225Y	318	Bipolar	□
270	PD210-4B-7921-0539	21FOOTRILXH3ANZA	Right Foot Angular Dis. Z	AK539Z	318	Bipolar	□
271	P53926	21FOOTRILXH3ACXA	Right Foot Accel X	2000	Bipolar	9	1-LX 103 & 104 VRTC.035
272	P52050	21FOOTRILXH3ACYA	Right Foot Accel Y	2000	Bipolar	9	1-LX 103 & 104 VRTC.036
273	P54132	21FOOTRILXH3ACZA	Right Foot Accel Z	2000	Bipolar	9	1-LX 103 & 104 VRTC.037
274	P57028	20SILLLE0000ACXA	Target Left Sill X-Axis Acceleration	2000	Bipolar	9	1-LX 103 & 104 VRTC.038
275	P57031	20SILLLE0000ACYA	Target Left Sill Y-Axis Acceleration	2000	Bipolar	9	1-LX 103 & 104 VRTC.039
276	P52215	20SILLLR0000ACXA	Target Right Sill X-Axis Acceleration	2000	Bipolar	9	1-LX 103 & 104 VRTC.040
277	P57876	20SILLLR0000ACYA	Target Right Sill Y-Axis Acceleration	2000	Bipolar	9	1-LX 103 & 104 VRTC.041
278	P56891	20VEHCCG0000ACXA	Target Center of Gravity X-Axis Acceleratic	2000	Bipolar	9	1-LX 103 & 104 VRTC.042
279	P51996	20VEHCCG0000ACYA	Target Center of Gravity Y-Axis Acceleratic	2000	-Bipolar	9	1-LX 103 & 104 VRTC.043
280	P52004	20VEHCCG0000ACZA	Target Center of Gravity Z-Axis Acceleratic	2000	-Bipolar	9	1-LX 103 & 104 VRTC.044
281	P53134	20FOOTLE0000ACXA	Target Driver Footrest X-Axis Acceleration	2000	-Bipolar	9	1-LX 103 & 104 VRTC.045
282	P45012	20FOOTLE0000ACZA	Target Driver Footrest Z-Axis Acceleration	2000	-Bipolar	9	1-LX 103 & 104 VRTC.046
283	P56880	20TPANLE0000ACXA	Target ToePan Behind Center of Accelerat	2000	Bipolar	9	1-LX 103 & 104 VRTC.047
284	P51940	20TPANLE0000ACZA	Target ToePan Behind Center of Accelerat	2000	-Bipolar	9	1-LX 103 & 104 VRTC.048
285	EL20-S458-16KN-N100EC	21SEBE0000B5F00A	Target Driver Lap Belt Force	16000	Bipolar	N	1-LX 103 & 104 VRTC.049
286	EL20-S458-16KN-N100EA	21SEBE0000B3F00A	Target Driver Shoulder Belt Force	16000	Bipolar	N	1-LX 103 & 104 VRTC.050
287	ABFire5	20AIRBLEFR25V00A	Target Driver Airbag 1st Stage Fire Time 1	5	Bipolar	V	1-LX 103 & 104 VRTC.051
288	ABFire6	20AIRBLEFR25V00A	Target Driver Airbag 2nd Stage Fire Time 1	5	Bipolar	V	1-LX 103 & 104 VRTC.052

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Channel ISO mnemonic	Channel Title	Driver	Head	X-Axis Acceleration	Y-Axis Acceleration	Z-Axis Acceleration	Filter	Flip	Zero	Full Scale	V5	Index
1 11HEADCG00H3ACXA	Bullet Vehicle	Driver	Head	X-Axis Acceleration			1000 +		yes	2000		1
2 11HEADCG00H3ACYA	Bullet Vehicle	Driver	Head	Y-Axis Acceleration			1000 +		yes	2000		2
3 11HEADCG00H3ACZA	Bullet Vehicle	Driver	Head	Z-Axis Acceleration			1000 +		yes	2000		3
3A 11HEADCG00H3ACRA	Bullet Vehicle	Driver	Head	Resultant Acceleration			1000		yes	2000		4
4 11HEADCGRDH3ACXA	Bullet Vehicle	Driver	Head	Redundant X-Axis Acceleration			1000 +		yes	2000		5
5 11HEADCGRDH3ACYA	Bullet Vehicle	Driver	Head	Redundant Y-Axis Acceleration			1000 +		yes	2000		6
6 11HEADCGRDH3ACZA	Bullet Vehicle	Driver	Head	Redundant Z-Axis Acceleration			1000 +		yes	2000		
6A 11HEADCGRDH3ACRA	Bullet Vehicle	Driver	Head	Resultant Acceleration			1000		yes	2000		
7 11NECKKUP00H3FOXA	Bullet Vehicle	Driver	Upper Neck	X-Axis Force			1000 +		yes	8896		7
8 11NECKKUP00H3FOYA	Bullet Vehicle	Driver	Upper Neck	Y-Axis Force			1000 +		yes	8896		8
9 11NECKKUP00H3FOZA	Bullet Vehicle	Driver	Upper Neck	Z-Axis Force			1000 +		yes	13344		9
10 11NECKKUP00H3MOXA	Bullet Vehicle	Driver	Upper Neck	Moment About X Axis			600 +		yes	282		10
11 11NECKKUP00H3MOYA	Bullet Vehicle	Driver	Upper Neck	Moment About Y Axis			600 +		yes	282		11
12 11NECKKUP00H3MOZA	Bullet Vehicle	Driver	Upper Neck	Moment About Z Axis			600 +		yes	282		12
13 11CHSTCG00H3ACXA	Bullet Vehicle	Driver	Chest	X-Axis Acceleration			180 +		yes	2000		13
14 11CHSTCG00H3ACYA	Bullet Vehicle	Driver	Chest	Y-Axis Acceleration			180 +		yes	2000		14
15 11CHSTCG00H3ACZA	Bullet Vehicle	Driver	Chest	Z-Axis Acceleration			180 +		yes	2000		15
15A 11CHSTCG00H3ACRA	Bullet Vehicle	Driver	Chest	Resultant Acceleration			180					
16 11CHSTCGRDH3ACXA	Bullet Vehicle	Driver	Chest	Redundant X-Axis Acceleration			180 +		yes	2000		16
17 11CHSTCGRDH3ACYA	Bullet Vehicle	Driver	Chest	Redundant Y-Axis Acceleration			180 +		yes	2000		17
18 11CHSTCGRDH3ACZA	Bullet Vehicle	Driver	Chest	Redundant Z-Axis Acceleration			180 +		yes	2000		18
18A 11CHSTCGRDH3ACRA	Bullet Vehicle	Driver	Chest	Resultant Acceleration			180					
19 11CHSTT000H3DSXA	Bullet Vehicle	Driver	Chest	X-Axis Displacement			600 +		yes	84		19
20 11PELVCG00H3ACXA	Bullet Vehicle	Driver	Pelvis	X-Axis Acceleration			1000 +		yes	2000		20
21 11PELVCG00H3ACYA	Bullet Vehicle	Driver	Pelvis	Y-Axis Acceleration			1000 +		yes	2000		21
22 11PELVCG00H3ACZA	Bullet Vehicle	Driver	Pelvis	Z-Axis Acceleration			1000 +		yes	2000		22
22A 11PELVCG00H3ACRA	Bullet Vehicle	Driver	Pelvis	Resultant Acceleration			1000					
23 11FEMRLL00H3FOZA	Bullet Vehicle	Driver	Left Femur	Z-Axis Force			600 +		yes	22240		23
24 11FEMRRL00H3FOZA	Bullet Vehicle	Driver	Right Femur	Z-Axis Force			600 +		yes	22240		24
25 11KNSL1LE0H3DSXA	Bullet Vehicle	Driver	Left Knee	X-Axis Displacement			180 +		yes	30		25
26 11TIBILULXH3FOXA	Bullet Vehicle	Driver	Left Upper Tibia	X-Axis Force			600 +		yes	11120		26
27 11TIBILULXH3FOZA	Bullet Vehicle	Driver	Left Upper Tibia	Z-Axis Force			600 +		yes	11120		27
28 11TIBILULXH3MOXA	Bullet Vehicle	Driver	Left Upper Tibia	Moment About X Axis			600 +		yes	395		28
29 11TIBILULXH3MOYA	Bullet Vehicle	Driver	Left Upper Tibia	Moment About Y Axis			600 +		yes	395		29
30 11TIBILULXH3FOXA	Bullet Vehicle	Driver	Left Lower Tibia	X-Axis Force			600 +		yes	11120		30
31 11TIBILULXH3FOYA	Bullet Vehicle	Driver	Left Lower Tibia	Y-Axis Force			600 +		yes	11120		31
32 11TIBILULXH3FOZA	Bullet Vehicle	Driver	Left Lower Tibia	Z-Axis Force			600 +		yes	11120		32
33 11TIBILULXH3MOXA	Bullet Vehicle	Driver	Left Lower Tibia	Moment About X Axis			600 +		yes	395		33
34 11TIBILULXH3MOYA	Bullet Vehicle	Driver	Left Lower Tibia	Moment About Y Axis			600 +		yes	395		34
35 11TIBILELXH3ACXA	Bullet Vehicle	Driver	Left Tibia	X-Axis Acceleration			1000 +		yes	2000		35
36 11TIBILELXH3ACYA	Bullet Vehicle	Driver	Left Tibia	Y-Axis Acceleration			1000 +		yes	2000		36
37 11FOOTLELXH3ACXA	Bullet Vehicle	Driver	Left Foot	X-Axis Acceleration			1000 +		yes	2000		37
38 11FOOTLELXH3ACYA	Bullet Vehicle	Driver	Left Foot	Y-Axis Acceleration			1000 +		yes	2000		38
39 11FOOTLELXH3ACZA	Bullet Vehicle	Driver	Left Foot	Z-Axis Acceleration			1000 +		yes	2000		39
39A 11FOOTLELXH3ACRA	Bullet Vehicle	Driver	Left Foot	Resultant Acceleration			1000					
40 11FOOTLELXH3ANXA	Bullet Vehicle	Driver	Left Foot	X-Axis Angular Displacement			180 +		no	180		40
41 11FOOTLELXH3ANYA	Bullet Vehicle	Driver	Left Foot	Y-Axis Angular Displacement			180 +		no	180		41
42 11FOOTLELXH3ANZA	Bullet Vehicle	Driver	Left Foot	Z-Axis Angular Displacement			180 +		no	180		42
43 11KNSLRL00H3DSXA	Bullet Vehicle	Driver	Right Knee	X-Axis Displacement			180 +		yes	33		43

44	11TIBIRULXH3FOXA	Bullet	Vehicle	Driver	Right	Upper Tibia	X-Axis Force	600 +	yes	11120	44
45	11TIBIRULXH3FOZA	Bullet	Vehicle	Driver	Right	Upper Tibia	Z-Axis Force	600 +	yes	11120	45
46	11TIBIRULXH3MOKA	Bullet	Vehicle	Driver	Right	Upper Tibia	Moment About X Axis	600 +	yes	395	46
47	11TIBIRULXH3MOYA	Bullet	Vehicle	Driver	Right	Upper Tibia	Moment About Y Axis	600 +	yes	395	47
48	11TIBIRULXH3FOXA	Bullet	Vehicle	Driver	Right	Lower Tibia	X-Axis Force	600 +	yes	11120.5	48
49	11TIBIRULXH3FOYA	Bullet	Vehicle	Driver	Right	Lower Tibia	Y-Axis Force	600 +	yes	11120.5	49
50	11TIBIRULXH3FOZA	Bullet	Vehicle	Driver	Right	Lower Tibia	Z-Axis Force	600 +	yes	11120.5	50
51	11TIBIRULXH3MOKA	Bullet	Vehicle	Driver	Right	Lower Tibia	Moment About X Axis	600 +	yes	395.4	51
52	11TIBIRULXH3MOYA	Bullet	Vehicle	Driver	Right	Lower Tibia	Moment About Y Axis	600 +	yes	395.4	52
53	11TIBIRULXH3ACKXA	Bullet	Vehicle	Driver	Right	Tibia X-Axis Acceleration	1000 +	yes	2000	53	
54	11TIBIRULXH3ACYA	Bullet	Vehicle	Driver	Right	Tibia Y-Axis Acceleration	1000 +	yes	2000	54	
55	11FOOTRILXH3ACKXA	Bullet	Vehicle	Driver	Right	Foot X-Axis Acceleration	1000 +	yes	2000	55	
56	11FOOTRILXH3ACYA	Bullet	Vehicle	Driver	Right	Foot Y-Axis Acceleration	1000 +	yes	2000	56	
57	11FOOTRILXH3ACTZA	Bullet	Vehicle	Driver	Right	Foot Z-Axis Acceleration	1000 +	yes	2000	57	
57A	11FOOTRILXH3ACRA	Bullet	Vehicle	Driver	Right	Foot Resultant Acceleration	1000	no	180	58	
58	11FOOTRILXH3ANXA	Bullet	Vehicle	Driver	Right	Foot X-Axis Angular Displacement	180 +	no	180	58	
59	11FOOTRILXH3ANZA	Bullet	Vehicle	Driver	Right	Foot Y-Axis Angular Displacement	180 +	no	180	59	
60	11FOOTRILXH3ANZZA	Bullet	Vehicle	Driver	Right	Foot Z-Axis Angular Displacement	180 +	no	180	60	
61	13HEADCG0OHFFACXA	Bullet	Vehicle	Right	Front	Passenger Head X-Axis Acceleration	1000 +	yes	2000	61	
62	13HEADCG0OHFFACYA	Bullet	Vehicle	Right	Front	Passenger Head Y-Axis Acceleration	1000 +	yes	2000	62	
63	13HEADCG0OHFFACZA	Bullet	Vehicle	Right	Front	Passenger Head Z-Axis Acceleration	1000 +	yes	2000	63	
63A	13HEADCG0OHFFACRA	Bullet	Vehicle	Right	Front	Passenger Head Resultant Acceleration	1000	no	180	64	
64	13HEADGRDHDFACXA	Bullet	Vehicle	Right	Front	Passenger Head Redundant X-Axis Accel.	1000 +	yes	2000	64	
65	13HEADGRDHDFACYA	Bullet	Vehicle	Right	Front	Passenger Head Redundant Y-Axis Accel.	1000 +	yes	2000	65	
66	13HEADGRDHDFACZA	Bullet	Vehicle	Right	Front	Passenger Head Redundant Z-Axis Accel.	1000 +	yes	2000	66	
66A	13HEADGRDHDFACRA	Bullet	Vehicle	Right	Front	Passenger Head Redundant Resultant Accel.	1000	yes	8896.4	67	
67	13NECKKUP0OHFFOXA	Bullet	Vehicle	Right	Front	Passenger Upper Neck X-Axis Force	1000 +	yes	8896.4	68	
68	13NECKKUP0OHFFOYA	Bullet	Vehicle	Right	Front	Passenger Upper Neck Y-Axis Force	1000 +	yes	8896.4	69	
69	13NECKKUP0OHFFOZA	Bullet	Vehicle	Right	Front	Passenger Upper Neck Z-Axis Force	1000 +	yes	13344.6	70	
70	13NECKKUP0OHFMOKA	Bullet	Vehicle	Right	Front	Passenger Upper Neck Moment About X Axis	600 +	yes	282.5	70	
71	13NECKKUP0OHFMOMYA	Bullet	Vehicle	Right	Front	Passenger Upper Neck Moment About Y Axis	600 +	yes	282.5	71	
72	13NECKKUP0OHFMOMZA	Bullet	Vehicle	Right	Front	Passenger Upper Neck Moment About Z Axis	600 +	yes	282.5	72	
73	13CHSTCG0OHFFACXA	Bullet	Vehicle	Right	Front	Passenger Chest X-Axis Acceleration	180 +	yes	2000	73	
74	13CHSTCG0OHFFACYA	Bullet	Vehicle	Right	Front	Passenger Chest Y-Axis Acceleration	180 +	yes	2000	74	
75	13CHSTCG0OHFFACZA	Bullet	Vehicle	Right	Front	Passenger Chest Z-Axis Acceleration	180 +	yes	2000	75	
75A	13CHSTCG0OHFFACRA	Bullet	Vehicle	Right	Front	Passenger Chest Resultant Acceleration	180	no	180	76	
76	13CHSTCGRDHFACXA	Bullet	Vehicle	Right	Front	Passenger Chest Redundant X-Axis Accel.	180 +	yes	2000	76	
77	13CHSTCGRDHFACYA	Bullet	Vehicle	Right	Front	Passenger Chest Redundant Y-Axis Accel.	180 +	yes	2000	77	
78	13CHSTCGRDHFACZA	Bullet	Vehicle	Right	Front	Passenger Chest Redundant Z-Axis Accel.	180 +	yes	2000	78	
79	13CHST0000HFDSDXA	Bullet	Vehicle	Right	Front	Passenger Chest X-Axis Displacement	600 +	yes	81	79	
80	13PELVCG0OHFFACXA	Bullet	Vehicle	Right	Front	Passenger Pelvis Y-Axis Acceleration	1000 +	yes	2000	80	
81	13PELVCG0OHFFACYA	Bullet	Vehicle	Right	Front	Passenger Pelvis Z-Axis Acceleration	1000 +	yes	2000	81	
82	13PELVCG0OHFFACZA	Bullet	Vehicle	Right	Front	Passenger Pelvis Resultant Acceleration	1000	yes	13344	82	
82A	13FEMRLL0OHFFOZA	Bullet	Vehicle	Right	Front	Passenger Right Femur Z-Axis Force	600 +	yes	13344	83	
83	13FEMRLL0OHFFOZA	Bullet	Vehicle	Right	Front	Passenger Left Knee X-Axis Displacement	180 +	yes	33	85	
84	13FEMRLL0OHFFOZA	Bullet	Vehicle	Right	Front	Passenger Left Upper Tibia X-Axis Force	600 +	yes	8896	86	
85	13KNSLLE0OHFDSDXA	Bullet	Vehicle	Right	Front	Passenger Left Upper Tibia Z-Axis Force	600 +	yes	8896	87	
86	13TIBILUXHFFOXA	Bullet	Vehicle	Right	Front	Passenger Left Upper Tibia Moment About X Axis	600 +	yes	282	88	
87	13TIBILUXHFFOZA	Bullet	Vehicle	Right	Front	Passenger Left Upper Tibia Moment About Y Axis	600 +	yes	282	89	
88	13TIBILUXHFMOKA	Bullet	Vehicle	Right	Front	Passenger Left Upper Tibia Moment About Z Axis	600 +	yes	282	89	
89	13TIBILUXHFMOMYA	Bullet	Vehicle	Right	Front	Passenger Left Upper Tibia Moment About X Axis	600 +	yes	282	89	

90	13TIBILELXHFACXA	Bullet	Vehicle	Right	Front	Passenger	Left	Tibia X-Axis Accelerat:	1000 +	yes	2000	90
91	13TIBILELXHFACYA	Bullet	Vehicle	Right	Front	Passenger	Left	Tibia Y-Axis Accelerat:	1000 +	yes	2000	91
92	13TIBILLLXHFFOXA	Bullet	Vehicle	Right	Front	Passenger	Left	Lower Tibia X-Axis For:	600 +	yes	8896	92
93	13TIBILLLXHFFOYA	Bullet	Vehicle	Right	Front	Passenger	Left	Lower Tibia Y-Axis For:	600 +	yes	8896	93
94	13TIBILLLXHFFOZA	Bullet	Vehicle	Right	Front	Passenger	Left	Lower Tibia Z-Axis For:	600 +	yes	8896	94
95	13TIBILLLXHFMOXA	Bullet	Vehicle	Right	Front	Passenger	Left	Lower Tibia Moment Abo:	600 +	yes	282	95
96	13TIBILLLXHFMOYA	Bullet	Vehicle	Right	Front	Passenger	Left	Lower Tibia Moment Abi:	600 +	yes	282	96
97	13FOOTLELXHFANXA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot X-Axis Angular Di:	180 +	no	318	97
98	13FOOTLELXHFANYA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot Y-Axis Angular Di:	180 +	no	318	98
99	13FOOTLELXHFANZA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot Z-Axis Angular Di:	180 +	no	318	99
100	13FOOTLELXHFACXA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot X-Axis Accelerat:	1000 +	yes	2000	100
101	13FOOTLELXHFACYA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot Y-Axis Accelerat:	1000 +	yes	2000	101
102	13FOOTLELXHFACZA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot Z-Axis Accelerat:	1000 +	yes	2000	102
102A	13FOOTLELXHFACRA	Bullet	Vehicle	Right	Front	Passenger	Left	Foot Resultant Acceler:	1000		2000	102
103	13KNSLR10OHFDSXA	Bullet	Vehicle	Right	Front	Passenger	Right	Knee X-Axis Displacem:	180 +	yes	33	103
104	13TIBIRULLXHF0XA	Bullet	Vehicle	Right	Front	Passenger	Right	Upper Tibia X-Axis Fo:	600 +	yes	8896	104
105	13TIBIRULLXHF0ZA	Bullet	Vehicle	Right	Front	Passenger	Right	Upper Tibia Z-Axis Fo:	600 +	yes	8896	105
106	13TIBIRULLXHFMOXA	Bullet	Vehicle	Right	Front	Passenger	Right	Upper Tibia Moment Ab:	600 +	yes	282	106
107	13TIBIRULLXHFMOYA	Bullet	Vehicle	Right	Front	Passenger	Right	Upper Tibia Moment Ab:	600 +	yes	282	107
108	13TIBIRULLXHFACXA	Bullet	Vehicle	Right	Front	Passenger	Right	Tibia X-Axis Accelerat:	1000 +	yes	2000	108
109	13TIBIRULLXHFACYA	Bullet	Vehicle	Right	Front	Passenger	Right	Tibia Y-Axis Accelerat:	1000 +	yes	2000	109
110	13TIBIRULLXHF0XA	Bullet	Vehicle	Right	Front	Passenger	Right	Lower Tibia X-Axis Fo:	600 +	yes	8896	110
111	13TIBIRULLXHF0YA	Bullet	Vehicle	Right	Front	Passenger	Right	Lower Tibia Y-Axis Fo:	600 +	yes	8896	111
112	13TIBIRULLXHF0ZA	Bullet	Vehicle	Right	Front	Passenger	Right	Lower Tibia Z-Axis Fo:	600 +	yes	8896	112
113	13TIBIRULLXHFMOXA	Bullet	Vehicle	Right	Front	Passenger	Right	Lower Tibia Moment Ab:	600 +	yes	282	113
114	13TIBIRULLXHFMOYA	Bullet	Vehicle	Right	Front	Passenger	Right	Lower Tibia Moment Ab:	600 +	yes	282	114
115	13FOOTTRLLXHFACXA	Bullet	Vehicle	Right	Front	Passenger	Right	Foot X-Axis Angular D:	180 +	no	318	115
116	13FOOTTRLLXHFACYA	Bullet	Vehicle	Right	Front	Passenger	Right	Foot Y-Axis Angular D:	180 +	no	318	116
117	13FOOTTRLLXHFACZA	Bullet	Vehicle	Right	Front	Passenger	Right	Foot Z-Axis Angular D:	180 +	no	318	117
118	13FOOTTRLLXHFMOYA	Bullet	Vehicle	Right	Front	Passenger	Right	Foot X-Axis Accelerat:	1000 +	yes	2000	118
119	13FOOTTRLLXHF0YA	Bullet	Vehicle	Right	Front	Passenger	Right	Foot Y-Axis Accelerat:	1000 +	yes	2000	119
120	13FOOTTRLLXHFACZA	Bullet	Vehicle	Right	Front	Passenger	Right	Foot Z-Axis Accelerat:	1000 +	yes	2000	120
120A	13FOOTTRLLXHFACRA	Bullet	Vehicle	Left	Rear	Passenger	Right	Foot Resultant Accele:	1000		2000	120
121	14HEADCG0OHFACXA	Bullet	Vehicle	Left	Rear	Passenger	Head	X-Axis Acceleration	1000 +	yes	2000	121
122	14HEADCG0OHFACYA	Bullet	Vehicle	Left	Rear	Passenger	Head	Y-Axis Acceleration	1000 +	yes	2000	122
123	14HEADCG0OHFACZA	Bullet	Vehicle	Left	Rear	Passenger	Head	Z-Axis Acceleration	1000 +	yes	2000	123
123A	14HEADCG0OHFACRA	Bullet	Vehicle	Left	Rear	Passenger	Head	Resultant X-Axis Acceler:	1000		2000	124
124	14HEADGRDHFACXA	Bullet	Vehicle	Left	Rear	Passenger	Head	Redundant Y-Axis Acceler:	1000 +	yes	2000	124
125	14HEADGRDHFACYA	Bullet	Vehicle	Left	Rear	Passenger	Head	Redundant Z-Axis Acceler:	1000 +	yes	2000	125
126	14HEADGRDHFACZA	Bullet	Vehicle	Left	Rear	Passenger	Head	Redundant Resultant Acce:	1000		2000	126
126A	14HEADGRDHFACRA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	X-Axis Force	1000 +	yes	8896	127
127	14NECKUP0OHFFOXA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	Y-Axis Force	1000 +	yes	8896	128
128	14NECKUP0OHFFOYA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	Z-Axis Force	1000 +	yes	13344	129
129	14NECKUP0OHFFOZA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	Moment About X Axis:	600 +	yes	282.5	130
130	14NECKUP0OHFM0XA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	Moment About Y Axis:	600 +	yes	282.5	131
131	14NECKUP0OHFM0YA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	Moment About Z Axis:	600 +	yes	282.5	132
132	14NECKUP0OHFM0ZA	Bullet	Vehicle	Left	Rear	Passenger	Upper Neck	Moment About Chest X-Axis:	180 +	yes	2000	133
133	14CHSTCG0OHFACXA	Bullet	Vehicle	Left	Rear	Passenger	Chest	X-Axis Acceleration	180 +	yes	2000	134
134	14CHSTCG0OHFACYA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Y-Axis Acceleration	180 +	yes	2000	135
135	14CHSTCG0OHFACZA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Z-Axis Acceleration	180 +	yes	2000	135
135A	14CHSTCG0OHFACRA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Resultant Acceleration	180 +	yes	2000	136
136	14CHSTCGRDHFACXA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Redundant X-Axis Accele:	180 +	yes	2000	136

137	14CHSTCGRDHFACYA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Redundant Y-Axis Acceleration	180 +	yes	2000	137
138	14CHSTCGRDHFACZA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Redundant Z-Axis Acceleration	180 +	yes	2000	138
138A	14CHSTCGRDHFACRA	Bullet	Vehicle	Left	Rear	Passenger	Chest	Redundant Resultant Acceleration	180			
139	14CHST0000HFD0XA	Bullet	Vehicle	Left	Rear	Passenger	Chest	X-Axis Displacement	600 +	yes	81	139
140	14PELVCG00HFACTXA	Bullet	Vehicle	Left	Rear	Passenger	Pelvis X-Axis Acceleration	1000 +	yes	2000	140	
141	14PELVCG00HFACTYA	Bullet	Vehicle	Left	Rear	Passenger	Pelvis Y-Axis Acceleration	1000 +	yes	2000	141	
142	14PELVCG00HFACTZA	Bullet	Vehicle	Left	Rear	Passenger	Pelvis Z-Axis Acceleration	1000 +	yes	2000	142	
142A	14PELVCG00HFACTRA	Bullet	Vehicle	Left	Rear	Passenger	Pelvis Resultant Acceleration	1000				
143	14FEMRLU00HFF0ZA	Bullet	Vehicle	Left	Rear	Passenger	Left Femur Z-Axis Force	600 +	yes	13344	143	
144	14FEMRRU00HFF0ZA	Bullet	Vehicle	Left	Rear	Passenger	Right Femur Z-Axis Force	600 +	yes	13344	144	
145	10SILL0000ACXA	Bullet	Vehicle	Left	Sill	X-Axis Acceleration	60 +	yes	2000	145		
146	10SILL0000ACYA	Bullet	Vehicle	Left	Sill	Y-Axis Acceleration	60 +	yes	2000	146		
147	10SILLR0000ACXA	Bullet	Vehicle	Right	Sill	X-Axis Acceleration	60 +	yes	2000	147		
148	10SILLR0000ACYA	Bullet	Vehicle	Right	Sill	Y-Axis Acceleration	60 +	yes	2000	148		
149	10VEHCCG0000ACXA	Bullet	Vehicle	Vehicle	Center of Gravity	X-Axis Acceleration	60 +	yes	2000	149		
150	10VEHCCG0000ACYA	Bullet	Vehicle	Vehicle	Center of Gravity	Y-Axis Acceleration	60 +	yes	2000	150		
151	10VEHCCG0000ACZA	Bullet	Vehicle	Vehicle	Center of Gravity	Z-Axis Acceleration	60 +	yes	2000	151		
151A	10VEHCCG0000ACRA	Bullet	Vehicle	Vehicle	Center of Gravity	Resultant Acceleration	60					
152	10FOOTLE0000ACXA	Bullet	Vehicle	Driver	Footrest	X-Axis Acceleration	60 +	yes	2000	152		
153	10FOOTLE0000ACZA	Bullet	Vehicle	Driver	Footrest	Z-Axis Acceleration	60 +	yes	2000	153		
154	10TPANL0000ACZA	Bullet	Vehicle	Toepan	Behind Center of Accelerator	X-Axis Acceleration	60 +	yes	2000	154		
155	10TPANL0000ACZA	Bullet	Vehicle	Toepan	Behind Center of Accelerator	Z-Axis Acceleration	60 +	yes	2000	155		
156	11SEBE0000B5F00A	Bullet	Vehicle	Right	Front	Passenger Lap Belt Force	60 +	yes	16000	156		
157	11SEBE0000B5F00A	Bullet	Vehicle	Right	Front	Passenger Lap Belt Force	60 +	yes	16000	157		
158	11SEBE0000B3F00A	Bullet	Vehicle	Driver	Shoulder	Belt Force	60 +	yes	16000	158		
159	13SEBE0000B3F00A	Bullet	Vehicle	Right	Front	Passenger Shoulder Belt Force	60 +	yes	16000	159		
160	10AIRBLEFR25Y00A	Bullet	Vehicle	Driver	Head	1st Stage Fire Time	1000 +	no	5	160		
161	10AIRBLEFR26Y00A	Bullet	Vehicle	Driver	Head	2nd Stage Fire Time	1000 +	no	5	161		
162	10AIRBRIFR25Y00A	Bullet	Vehicle	Right	Front	Passenger Airbag 1st Stage Fire Time	1000 +	no	5	162		
163	10AIRBRIFR26Y00A	Bullet	Vehicle	Right	Front	Passenger Airbag 2nd Stage Fire Time	1000 +	no	5	163		
164	21HEADCG00THACXA	Target	Vehicle	Driver	Head	X-Axis Acceleration	1000 +	yes	2000	164		
165	21HEADCG00THACYA	Target	Vehicle	Driver	Head	Y-Axis Acceleration	1000 +	yes	2000	165		
166	21HEADCG00THACZA	Target	Vehicle	Driver	Head	Z-Axis Acceleration	1000 +	yes	2000	166		
166A	21HEADCG00THACRA	Target	Vehicle	Driver	Head	Resultant Acceleration	1000					
167	21HEADCG00THACXA	Target	Vehicle	Driver	Head	Left X-Axis Acceleration	1000 +	yes	2000	167		
168	21HEADCG00THACYA	Target	Vehicle	Driver	Head	Left Z-Axis Acceleration	1000 +	yes	2000	168		
169	21HEADUP00THACZA	Target	Vehicle	Driver	Head	Top X-Axis Acceleration	1000 +	yes	2000	169		
170	21HEADUP00THACYA	Target	Vehicle	Driver	Head	Top Y-Axis Acceleration	1000 +	yes	2000	170		
171	21HEADRE00THACYA	Target	Vehicle	Driver	Head	Rear Y-Axis Acceleration	1000 +	yes	2000	171		
172	21HEADRE00THACZA	Target	Vehicle	Driver	Head	Rear Z-Axis Acceleration	1000 +	yes	2000	172		
173	21NECKKUP00THFOXA	Target	Vehicle	Driver	Upper Neck	X-Axis Force	1000 +	yes	8896	173		
174	21NECKKUP00THFOYA	Target	Vehicle	Driver	Upper Neck	Y-Axis Force	1000 +	yes	8896	174		
175	21NECKKUP00THFOZA	Target	Vehicle	Driver	Upper Neck	Z-Axis Force	1000 +	yes	13340	175		
176	21NECKKUP00THMOXA	Target	Vehicle	Driver	Upper Neck	About X Axis Moment	600 +	yes	282	176		
177	21NECKKUP00THMOYA	Target	Vehicle	Driver	Upper Neck	About Y Axis Moment	600 +	yes	282	177		
178	21NECKKUP00THMOZA	Target	Vehicle	Driver	Upper Neck	About Z Axis Moment	600 +	yes	282	178		
179	21NECKKLO00THFOXA	Target	Vehicle	Driver	Lower Neck	X-Axis Force	1000 +	yes	13340	179		
180	21NECKKLO00THFOYA	Target	Vehicle	Driver	Lower Neck	Y-Axis Force	1000 +	yes	13340	180		
181	21NECKKLO00THFOZA	Target	Vehicle	Driver	Lower Neck	Z-Axis Force	1000 +	yes	13340	181		
182	21NECKKLO00THMOXA	Target	Vehicle	Driver	Lower Neck	About X Axis Moment	600 +	yes	452	182		
183	21NECKKLO00THMOYA	Target	Vehicle	Driver	Lower Neck	About Y Axis Moment	600 +	yes	452	183		

184	21NECKL00OTHMOZA	Target Vehicle	Driver Lower Neck Moment About Z Axis	600 +	184	226
185	21NECKRE0OTHFOOA	Target Vehicle	Driver Rear Skull Spring Z-Axis Force	600 +	185	4448
186	21NECKFR0OTHFOOA	Target Vehicle	Driver Front Skull spring Z-Axis Force	600 +	186	4448
187	21NECKUPOOTHANZA	Target Vehicle	Driver Occipital Condyle Rotary Pot	180 +	187	180
188	21ABDORL0OTHDSOA	Target Vehicle	Driver Lower Abdomen DGSP Right Displacement	180 +	188	100
189	21ABDORL0OTHANZA	Target Vehicle	Driver Lower Abdomen DGSP Right Pitch	180 +	189	180
190	21ABDORL0OTHANZA	Target Vehicle	Driver Lower Abdomen DGSP Right Yaw	180 +	190	180
191	21ABDOLL0OTHDSOA	Target Vehicle	Driver Lower Abdomen DGSP Left Displacement	180 +	191	100
192	21ABDOLL0OTHANZA	Target Vehicle	Driver Lower Abdomen DGSP Left Pitch	180 +	192	180
193	21ABDOLL0OTHANZA	Target Vehicle	Driver Lower Abdomen DGSP Left Yaw	180 +	193	180
194	21SPINM10OTHACXA	Target Vehicle	Driver T6 Mid Spine X-Axis Acceleration	1000 +	194	2000
195	21SPINM10OTHACYA	Target Vehicle	Driver T6 Mid Spine Y-Axis Acceleration	1000 +	195	2000
196	21SPINM10OTHACZA	Target Vehicle	Driver T6 Mid Spine Z-Axis Acceleration	1000 +	196	2000
196A	21SPINM10OTHACRA	Target Vehicle	Driver T6 Mid Spine Resultant Acceleration	1000	197	180
197	21CHRILU01THANOA	Target Vehicle	Driver CRUX T016 Base Upper Left Thorax Pot	180 +	197	180
198	21CHRILU02THANOA	Target Vehicle	Driver CRUX T016 Mid Upper Left Thorax Pot	180 +	198	180
199	21CHRILU03THANOA	Target Vehicle	Driver CRUX T016 Elbow Upper Left Thorax Pot	180 +	199	180
200	21CHRILU01THANOA	Target Vehicle	Driver CRUX T016 Base Upper Right Thorax Pot	180 +	200	180
201	21CHRILU02THANOA	Target Vehicle	Driver CRUX T016 Mid Upper Right Thorax Pot	180 +	201	180
202	21CHRILU03THANOA	Target Vehicle	Driver CRUX T016 Elbow Upper Right Thorax Pot	180 +	202	180
203	21CHRILU01THANOA	Target Vehicle	Driver CRUX T016 Base Lower Left Thorax Pot	180 +	203	180
204	21CHRILU02THANOA	Target Vehicle	Driver CRUX T016 Mid Lower Left Thorax Pot	180 +	204	180
205	21CHRILU03THANOA	Target Vehicle	Driver CRUX T016 Elbow Lower Left Thorax Pot	180 +	205	180
206	21CHRILR01THANOA	Target Vehicle	Driver CRUX T016 Base Lower Right Thorax Pot	180 +	206	180
207	21CHRILR02THANOA	Target Vehicle	Driver CRUX T016 Mid Lower Right Thorax Pot	180 +	207	180
208	21CHRILR03THANOA	Target Vehicle	Driver CRUX T016 Elbow Lower Right Thorax Pot	180 +	208	180
209	21ABDOUPOOTHDSOA	Target Vehicle	Driver Upper Abdomen String Pot	180 +	209	100
210	21THHSP1200THFOXA	Target Vehicle	Driver T12 Thoracic spine X-Axis Force	1000 +	210	13344
211	21THHSP1200THFOYA	Target Vehicle	Driver T12 Thoracic spine Y-Axis Force	1000 +	211	13344
212	21THHSP1200THFOZA	Target Vehicle	Driver T12 Thoracic spine Z-Axis Force	1000 +	212	17793
213	21THHSP1200OHMOXA	Target Vehicle	Driver T12 Thoracic Moment About X Axis	1000 +	213	565
214	21THHSP1200OHMOYA	Target Vehicle	Driver T12 Thoracic Moment About Y Axis	1000 +	214	903.9
215	21SPINUPOOTHACXA	Target Vehicle	Driver T11 Upper Spine X-Axis Acceleration	180 +	215	2000
216	21SPINUPOOTHACYA	Target Vehicle	Driver T11 Upper Spine Y-Axis Acceleration	180 +	216	2000
217	21SPINUPOOTHACZA	Target Vehicle	Driver T11 Upper Spine Z-Axis Acceleration	180 +	217	2000
217A	21SPINUPOOTHACRA	Target Vehicle	Driver T11 Upper Spine Resultant Acceleration	180	218	2000
218	21PELV000OTHACXA	Target Vehicle	Driver Pelvis X-Axis Acceleration	1000 +	219	2000
219	21PELV000OTHACYA	Target Vehicle	Driver Pelvis Y-Axis Acceleration	1000 +	220	2000
220	21PELV000OTHACZA	Target Vehicle	Driver Pelvis Z-Axis Acceleration	1000 +	220	22240
220A	21PELV000OTHACRA	Target Vehicle	Driver Pelvis Resultant Acceleration	1000	221	13340
221	21ACTBLE0OTHFOXA	Target Vehicle	Driver Pelvis/Aacetabulum Left X-Axis Force	1000 +	222	22240
222	21ACTBLE0OTHFOYA	Target Vehicle	Driver Pelvis/Aacetabulum Left Y-Axis Force	1000 +	223	13340
223	21ACTBLE0OTHFOZA	Target Vehicle	Driver Pelvis/Aacetabulum Left Z-Axis Force	1000 +	224	22240
224	21ACTBRI0OTHFOXA	Target Vehicle	Driver Pelvis/Aacetabulum Right X-Axis Force	1000 +	225	13340
225	21ACTBRI0OTHFOYA	Target Vehicle	Driver Pelvis/Aacetabulum Right Y-Axis Force	1000 +	226	13340
226	21ACTBRI0OTHFOZA	Target Vehicle	Driver Pelvis/Aacetabulum Right Z-Axis Force	1000 +	227	13344
227	21FEMRLJ0OTHFOXA	Target Vehicle	Driver Left Femur X-Axis Force	600 +	228	13344
228	21FEMRLJ0OTHFOYA	Target Vehicle	Driver Left Femur Y-Axis Force	600 +	229	22240
229	21FEMRLJ0OTHFOZA	Target Vehicle	Driver Left Femur Z-Axis Force	600 +	230	339
230	21FEMRLJ0OTHMOXA	Target Vehicle	Driver Left Femur Moment About X-Axis	600 +	231	339
231	21FEMRLJ0OTHMOYA	Target Vehicle	Driver Left Femur Moment About Y-Axis	600 +	232	339
232	21FEMRLJ0OTHMOZA	Target Vehicle	Driver Left Femur Moment About Z-Axis	600 +		yes

233	21FEMRRL00THFOXA	Target Vehicle	Driver Right Femur X-Axis Force	600 +	yes	13344
234	21FEMRRL00THFOYA	Target Vehicle	Driver Right Femur Y-Axis Force	600 +	yes	13344
235	21FEMRRL00THFOZA	Target Vehicle	Driver Right Femur Z-Axis Force	600 +	yes	22240
236	21FEMRRL00THMOXA	Target Vehicle	Driver Right Femur Moment About X-Axis	600 +	yes	236
237	21FEMRRL00THMOYA	Target Vehicle	Driver Right Femur Moment About Y-Axis	600 +	yes	237
238	21FEMRRL00THMOZA	Target Vehicle	Driver Right Femur Moment About Z-Axis	600 +	yes	238
239	21KNSLLE00H3DSXA	Target Vehicle	Driver Left Knee X-Axis Displacement	180 +	yes	30
240	21TIBILLXH3FOXA	Target Vehicle	Driver Left Upper Tibia X-Axis Force	600 +	yes	11120
241	21TIBILLXH3FOZA	Target Vehicle	Driver Left Upper Tibia Z-Axis Force	600 +	yes	11120
242	21TIBILLXH3FOYA	Target Vehicle	Driver Left Upper Tibia Moment About X-Axis	600 +	yes	395
243	21TIBILLXH3MOYA	Target Vehicle	Driver Left Upper Tibia Moment About Y-Axis	600 +	yes	395
244	21TIBILLXH3FOXA	Target Vehicle	Driver Left Lower Tibia X-Axis Force	600 +	yes	11120
245	21TIBILLXH3FOYA	Target Vehicle	Driver Left Lower Tibia Y-Axis Force	600 +	yes	11120
246	21TIBILLXH3FOZA	Target Vehicle	Driver Left Lower Tibia Z-Axis Force	600 +	yes	11120
247	21TIBILLXH3MOXA	Target Vehicle	Driver Left Lower Tibia Moment About X-Axis	600 +	yes	395
248	21TIBILLXH3MOYA	Target Vehicle	Driver Left Lower Tibia Moment About Y-Axis	600 +	yes	395
249	21FOOTLXLXH3ANXA	Target Vehicle	Driver Left Foot Angular X-Axis Displacement	180 +	no	318
250	21FOOTLXLXH3ANYA	Target Vehicle	Driver Left Foot Angular Y-Axis Displacement	180 +	no	318
251	21FOOTLXLXH3ANZA	Target Vehicle	Driver Left Foot Angular Z-Axis Displacement	180 +	no	318
252	21FOOTLXLXH3ACXA	Target Vehicle	Driver Left Foot X-Axis Acceleration	1000 +	yes	2000
253	21FOOTLXLXH3ACYA	Target Vehicle	Driver Left Foot Y-Axis Acceleration	1000 +	yes	2000
254	21FOOTLXLXH3ACZA	Target Vehicle	Driver Left Foot Z-Axis Acceleration	1000 +	yes	2000
254A	21FOOTLXLXH3ACRA	Target Vehicle	Driver Left Foot Resultant Acceleration	1000 +	yes	30
255	21KNSLR10H3DSXA	Target Vehicle	Driver Right Knee X-Axis Displacement	180 +	yes	11120
256	21TIBIRULXH3FOXA	Target Vehicle	Driver Right Upper Tibia X-Axis Force	600 +	yes	256
257	21TIBIRULXH3FOZA	Target Vehicle	Driver Right Upper Tibia Z-Axis Force	600 +	yes	257
258	21TIBIRULXH3MOXA	Target Vehicle	Driver Right Upper Tibia Moment About X-Axis	600 +	yes	258
259	21TIBIRULXH3MOYA	Target Vehicle	Driver Right Upper Tibia Moment About Y-Axis	600 +	yes	259
260	21TIBIRULXH3FOXA	Target Vehicle	Driver Right Lower Tibia X-Axis Force	600 +	yes	11120
261	21TIBIRULXH3FOYA	Target Vehicle	Driver Right Lower Tibia Y-Axis Force	600 +	yes	261
262	21TIBIRULXH3FOZA	Target Vehicle	Driver Right Lower Tibia Z-Axis Force	600 +	yes	11120
263	21TIBIRULXH3MOXA	Target Vehicle	Driver Right Lower Tibia Moment About X-Axis	600 +	yes	263
264	21TIBIRULXH3MOYA	Target Vehicle	Driver Right Lower Tibia Moment About Y-Axis	600 +	yes	264
265	21FOOTTRILXH3ANXA	Target Vehicle	Driver Right Foot Angular X-Axis Displacement	180 +	no	318
266	21FOOTTRILXH3ANYA	Target Vehicle	Driver Right Foot Angular Y-Axis Displacement	180 +	no	318
267	21FOOTTRILXH3ANZA	Target Vehicle	Driver Right Foot Angular Z-Axis Displacement	180 +	no	318
268	21FOOTTRILXH3ACXA	Target Vehicle	Driver Right Foot X-Axis Acceleration	1000 +	yes	2000
269	21FOOTTRILXH3ACYA	Target Vehicle	Driver Right Foot Y-Axis Acceleration	1000 +	yes	2000
270	21FOOTTRILXH3ACZA	Target Vehicle	Driver Right Foot Z-Axis Acceleration	1000 +	yes	2000
270A	21FOOTTRILXH3ACRA	Target Vehicle	Driver Right Foot Resultant Acceleration	1000 +	yes	270
271	20SILLLE0000ACRA	Target Vehicle	Left Sill X-Axis Acceleration	60 +	yes	2000
272	20SILLLE0000ACXA	Target Vehicle	Left Sill Y-Axis Acceleration	60 +	yes	2000
273	20SILLR10000ACYA	Target Vehicle	Right Sill X-Axis Acceleration	60 +	yes	273
274	20SILLR10000ACZA	Target Vehicle	Vehicle Center of Gravity X-Axis Acceleration	60 +	yes	2000
275	20VEHCCG0000ACYA	Target Vehicle	Vehicle Center of Gravity Y-Axis Acceleration	60 +	yes	275
276	20VEHCCG0000ACZA	Target Vehicle	Vehicle Center of Gravity Z-Axis Acceleration	60 +	yes	2000
277	20VEHCCG0000ACZA	Target Vehicle	Vehicle Center of Gravity Resultant Acceleration	60	yes	277
277A	20VEHCCG0000ACRA	Target Vehicle	Driver Footrest X-Axis Acceleration	60 +	yes	2000
278	20FOOTLLE0000ACXA	Target Vehicle	Driver Footrest Z-Axis Acceleration	60 +	yes	278
279	20FOOTLLE0000ACZA	Target Vehicle	Toepan Behind Center of Accelerator X-Axis Acceleration	60 +	yes	279
280	20TPANLE0000ACXA	Target Vehicle	Toepan Behind Center of Accelerator Z-Axis Acceleration	60 +	yes	280
281	20TPANLE0000ACZA	Target Vehicle	Toepan Behind Center of Accelerator Z-Axis Acceleration	60 +	yes	281

282	21SEBE000OB5FOOA	Target	Vehicle	Driver	Lap	Belt Force	282
283	21SEBE000OB3FOOA	Target	Vehicle	Driver	Shoulder	Belt Force	283
284	20AIRBLEFF25VOOA	Target	Vehicle	Driver	Airbag	1st Stage	Time
284A	21HEAD000THAAXA	Calculated	Head	Angular	X-Axis	60 +	yes
284B	21HEAD000THAAYA	Calculated	Head	Angular	Y-Axis	60 +	yes
284C	21HEAD000THAAZA	Calculated	Head	Angular	Z-Axis	1000 +	no
284D	21NECKKUPSTHFOXOA	Calculated	Neck	Force	Component	X-Axis	284
284E	21NECKKUPSTHFOYA	Calculated	Neck	Force	Component	Y-Axis	285
284F	21NECKKUPSTHFOZA	Calculated	Neck	Force	Component	Z-Axis	286
284G	21NECKKUPSTHMOXA	Calculated	Neck	Moment	Component	About X	287
284H	21NECKKUPSTHMOYA	Calculated	Neck	Moment	Component	About Y	288
284I	21NECKKUPSTHMOZA	Calculated	Neck	Moment	Component	About Z	289
284J	21TMONUP0OTHFOXOA	Calculated	Neck	KOM	X	Force	290
284K	21TMONUP0OTHFOYA	Calculated	Neck	KOM	Y	Force	291
284L	21TMONUP0OTHFOZA	Calculated	Neck	KOM	Z	Force	292
284M	21TMONUP0OTHMOYA	Calculated	Neck	KOM	Moment	About Y	293
284N	21ABDOLL00THDSXC	Calculated	Left	Lower	Abdominal	X-Axis	294
284O	21ABDOLL00THDSYC	Calculated	Left	Lower	Abdominal	Y-Axis	295
284P	21ABDOLL00THDSZC	Calculated	Left	Lower	Abdominal	Z-Axis	296
285	20AIRBLEFF26VOOA	Target	Vehicle	Driver	Airbag	2nd Stage	Time
285A	21ABDORL00THDSXC	Calculated	Right	Lower	Abdominal	X-Axis	297
285B	21ABDORL00THDSYC	Calculated	Right	Lower	Abdominal	Y-Axis	298
285C	21ABDORL00THDSZC	Calculated	Right	Lower	Abdominal	Z-Axis	299
285D	21CHRILU00THDSXC	Calculated	Left	Upper	Chest	X-Axis	300
285E	21CHRILU00THDSYC	Calculated	Left	Upper	Chest	Y-Axis	301
285F	21CHRILU00THDSZC	Calculated	Left	Upper	Chest	Z-Axis	302
285G	21CHRILL00THDSXC	Calculated	Left	Lower	Chest	X-Axis	303
285H	21CHRILL00THDSYC	Calculated	Left	Lower	Chest	Y-Axis	304
285I	21CHRILL00THDSZC	Calculated	Left	Lower	Chest	Z-Axis	305
285J	21CHRIRLU00THDSXC	Calculated	Right	Upper	Chest	X-Axis	306
285K	21CHRIRLU00THDSYC	Calculated	Right	Upper	Chest	Y-Axis	307
285L	21CHRIRLU00THDSZC	Calculated	Right	Upper	Chest	Z-Axis	308
285M	21CHRIRL00THDSXC	Calculated	Right	Lower	Chest	X-Axis	309
285N	21CHRIRL00THDSYC	Calculated	Right	Lower	Chest	Y-Axis	310
285O	21CHRIRL00THDSZC	Calculated	Right	Lower	Chest	Z-Axis	311

**Command File Test Number 101116 - THOR Setup**

V5 Index	THOR LOC X	THOR LOC Y	THOR LOC Z	THOR LOC2 X	THOR LOC2 Y	THOR LOC2 Z	THOR SETUP	THOR CAL
164								
165								
166								
167	-0.0483	-0.0483	-0.0716					
168	-0.0483	-0.0716	-0.0716					
169								
170								
171	-0.0508							
172	-0.0508							
173	0	0	0.0254					
174	0	0	0.0254					
175	0	0	0.0254					
176	0	0	0.0254					
177	0	0	0.0254					
178	0	0	0.0254					
179								
180								
181								
182								
183								
184	-0.06	0	0.0043	-0.0315	0	0.0472	0	1
185	0.0381	0	-0.0086	0.0381	0	0.0206	0	1
186								
187								
188								
189								
190								
191								
192								
193								
194								
195								
196								
197	79.25	67.75	67.75	67.75	67.75	67.75	9.91	-6.73015873
198	79.25	18.16	18.16	18.16	18.16	18.16	9.91	81.9672956
199	79.25	67.75	67.75	67.75	67.75	67.75	9.91	-88.8327044
200	79.25	18.16	18.16	18.16	18.16	18.16	9.91	2.462337662
201	79.25	67.75	67.75	67.75	67.75	67.75	9.91	-88.6278481
202	79.25	18.16	18.16	18.16	18.16	18.16	9.91	91.86018809
203	85.6	73.1	73.1	73.1	73.1	73.1	9.91	-3.43566879
204	85.6	18.16	18.16	18.16	18.16	18.16	9.91	-86.55641026
205	85.6	73.1	73.1	73.1	73.1	73.1	9.91	87.3721519
206	85.6	18.16	18.16	18.16	18.16	18.16	9.91	-1.227848101
207	85.6	73.1	73.1	73.1	73.1	73.1	9.91	83.43355049
208	85.6	18.16	18.16	18.16	18.16	18.16	9.91	-91.61229773
209								
210								

## Appendix E

### Dummy FARO Measurements

**Bullet Vehicle Dummy FARO Measurements**

Driver	Xmm	Ymm	Zmm
M_HEAD_CENTER_OF_GRAVITY1	2501.8	-438.0	-641.3
M_NOSE_BRIDGE1	2593.7	-366.0	-654.2
M_NOSE_TIP1	2615.3	-363.8	-609.0
M_HEAD_CHIN1	2592.8	-363.7	-537.7
M_ARM1	2497.9	-598.6	-349.7
M_HIP_POINT1	2632.6	-606.1	13.5
M_PELV_FORE1	2592.2	-616.0	-51.0
M_PELV_AFT1	2530.9	-614.1	-23.7
M_KNEE_OUTBOARD1	3002.7	-581.2	-109.1
M_KNEE_INBOARD1	3019.8	-165.4	-88.7
M_ANKLE_OUTBOARD1	3334.2	-597.2	151.3
M_HEADRESTTOP1	2220.3	-462.1	-538.6
M_HEADRESTBOTTOM1	2253.0	-463.1	-453.6
M_ROOF1	2593.7	-366.0	-862.5
M_HEADER_FRONT1	2928.4	-355.9	-799.5
M_WINDOW_FRONT1	3297.7	-366.0	-654.2
M_STEERING_WHEEL_RIM_TOP1	3031.9	-367.3	-541.2
M_DASH_TOP1	3186.7	-357.2	-496.3
M_STEERING_WHEEL_CENTER1	2976.4	-367.9	-355.5
M_CHEST_CENTER1	2636.5	-367.9	-355.5
M_STEERING_WHEEL_RIM_BOTTOM1	2905.6	-361.9	-206.4
M_ABDOMEN1	2672.7	-361.9	-206.4
M_DASH_BOTTOM1	3229.0	-529.1	-169.1
M_HEADER_SIDE1	2596.5	-525.4	-775.1
M_WINDOW_SIDE1	2593.7	-691.3	-654.2
M_DOOR_TOP1	2497.9	-741.2	-349.7
M_DOOR_BOTTOM1	2632.6	-707.0	13.5
M_STRIKER1	2472.3	-802.9	-115.9

**Front Passenger**

M_HEAD_CENTER_OF_GRAVITY3	2700.6	427.3	-569.4
M_NOSE_BRIDGE3	2780.7	360.9	-580.0
M_NOSE_TIP3	2802.9	356.4	-545.5
M_HEAD_CHIN3	2787.9	355.8	-473.8
M_ARM3	2688.9	560.4	-286.4
M_HIP_POINT3	2843.1	635.5	-4.3
M_PELV_FORE3	2787.8	645.8	-57.1
M_PELV_AFT3	2719.3	643.8	-30.8
M_KNEE_OUTBOARD3	3178.5	482.4	-86.8
M_KNEE_INBOARD3	3178.7	229.3	-98.4
M_ANKLE_OUTBOARD3	3381.8	473.0	187.9
M_HEADRESTTOP3	2451.7	461.6	-553.7
M_HEADRESTBOTTOM3	2469.3	460.6	-493.4
M_ROOF3	2780.7	360.9	-758.5
M_HEADER_FRONT3	2930.4	358.1	-789.6
M_WINDOW_FRONT3	3425.9	360.9	-580.0
M_DASH_TOP3	3128.7	356.9	-303.1
M_DASH_BOTTOM3	3254.4	429.1	-129.4
M_HEADER_SIDE3	2781.6	545.4	-732.3
M_WINDOW_SIDE3	2790.9	711.5	-574.9
M_DOOR_TOP3	2688.2	722.2	-286.2
M_DOOR_BOTTOM3	2844.8	707.4	-2.8
M_STRIKER3	2472.9	793.0	-100.3

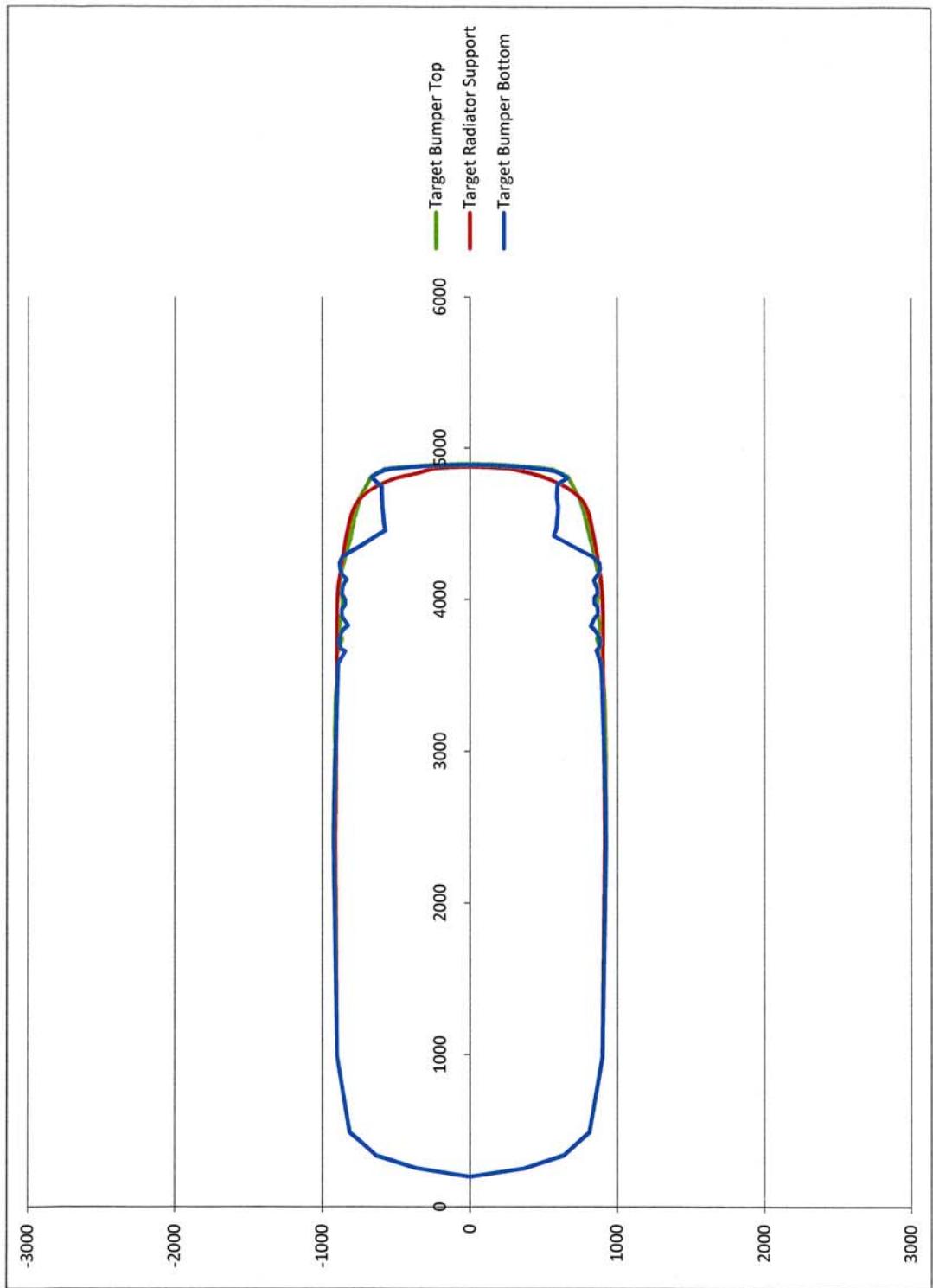
**Left Rear Passenger**

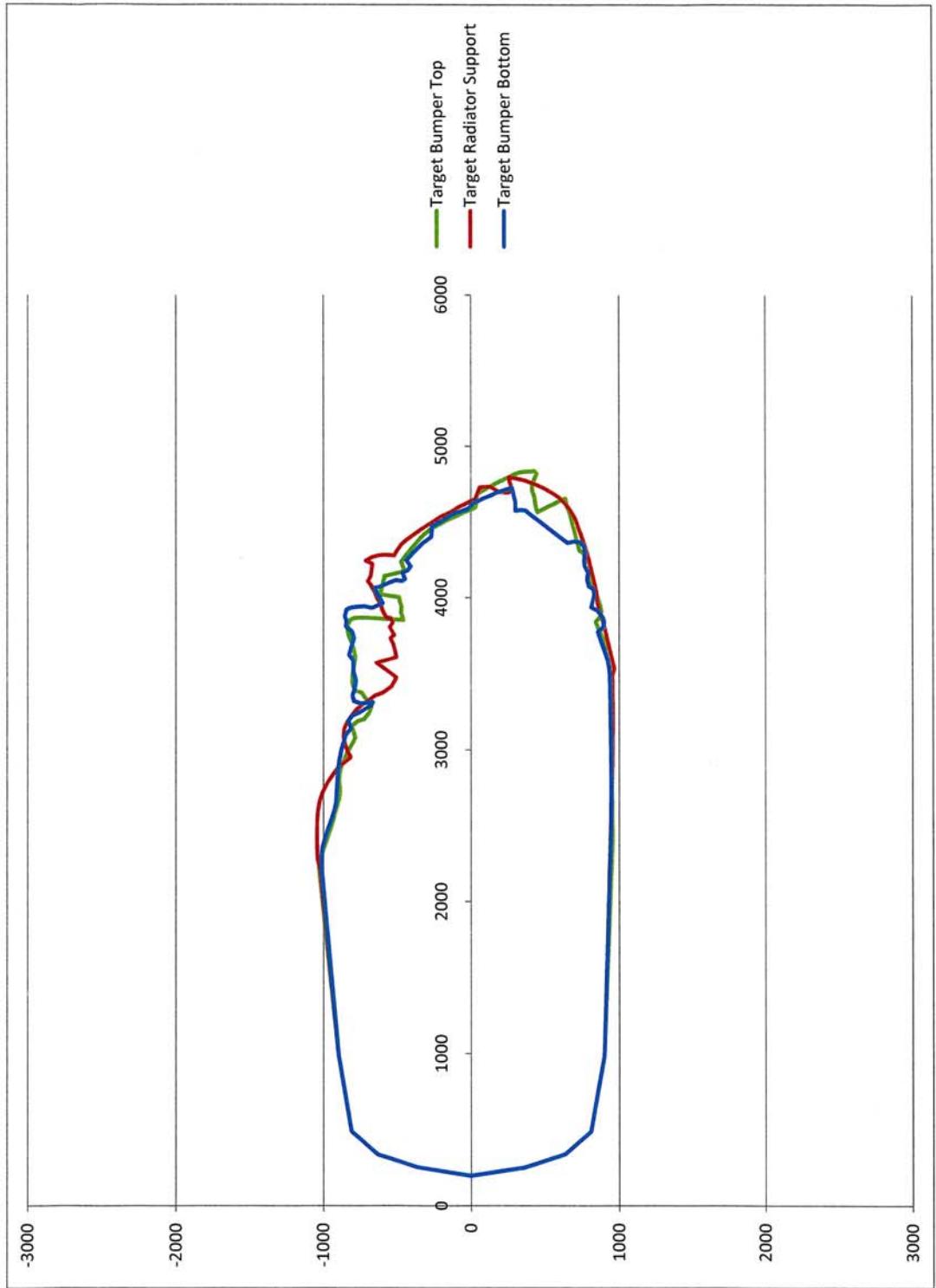
M_HEAD_CENTER_OF_GRAVITY4	1574.2	-423.6	-538.5
M_NOSE_BRIDGE4	1651.3	-349.7	-546.2
M_NOSE_TIP4	1676.5	-347.4	-512.5
M_HEAD_CHIN4	1662.4	-351.9	-437.9
M_ARM4	1564.2	-548.9	-238.4
M_HIP_POINT4	1759.3	-613.1	27.3
M_PELV_FORE4	1704.4	-627.9	-25.4
M_PELV_AFT4	1637.7	-628.5	-0.2
M_KNEE_OUTBOARD4	2072.2	-461.7	-89.0
M_KNEE_INBOARD4	2068.9	-234.9	-82.6
M_ANKLE_OUTBOARD4	2220.5	-448.2	198.3
M_HEADRESTTOP4	1420.7	-535.3	-394.0
M_HEADRESTBOTTOM4	1482.0	-529.7	-247.3
M_ROOF4	1651.3	-349.7	-867.6
M_HEADER_FRONT4	2218.3	-348.5	-703.9
M_WINDOW_FRONT4	2195.2	-349.7	-546.2
M_DASH_TOP4	2222.7	-357.5	-408.8
M_DASH_BOTTOM4	2327.5	-430.8	-124.9
M_HEADER_SIDE4	1653.0	-582.0	-695.1
M_WINDOW_SIDE4	1651.3	-735.7	-546.2
M_DOOR_TOP4	1564.2	-727.6	-238.4
M_DOOR_BOTTOM4	1759.3	-726.8	27.3
M_STRIKER4	1448.3	-792.5	-295.9

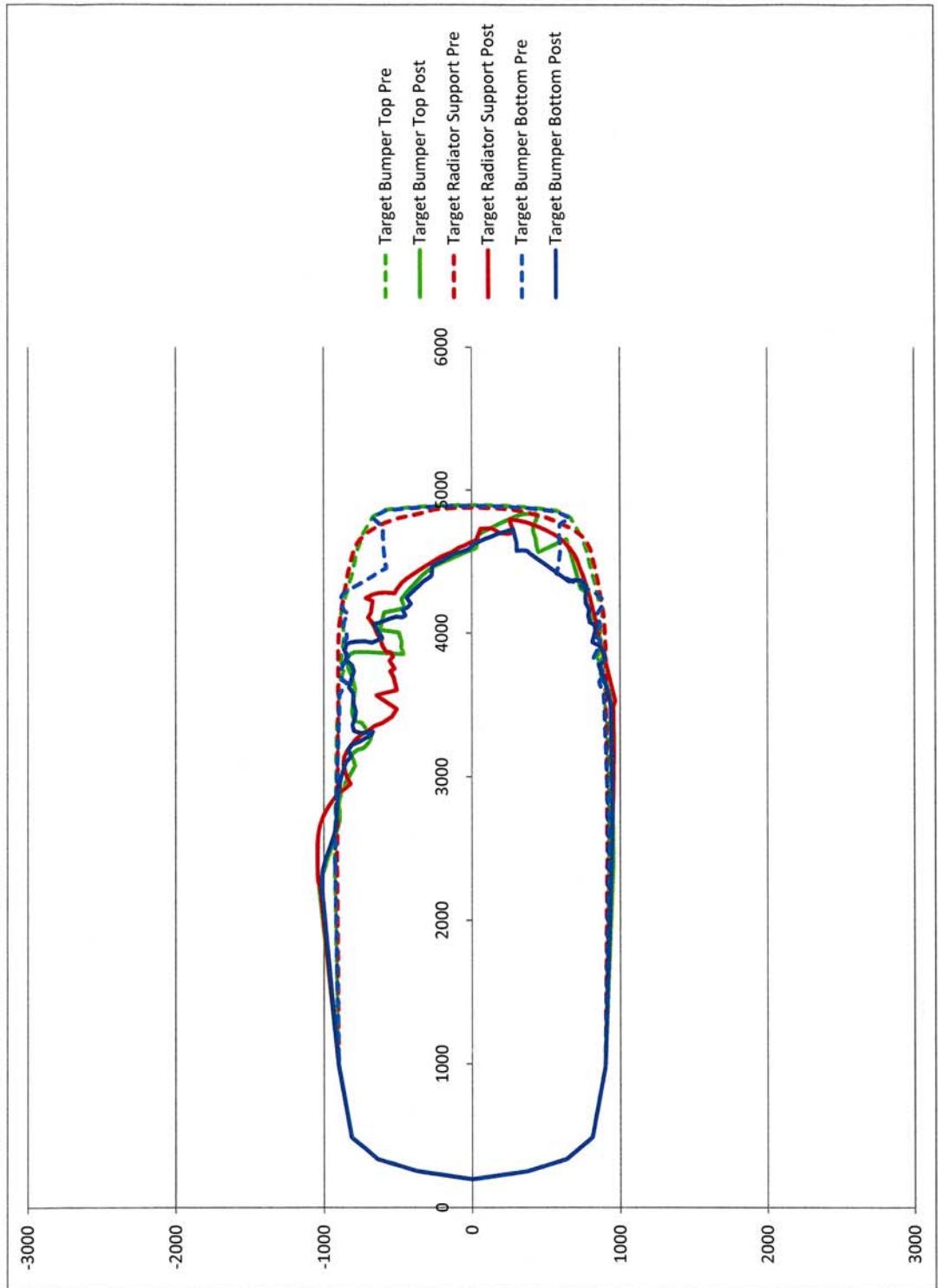
<b>Target Driver</b>	<b>Xmm</b>	<b>Ymm</b>	<b>Zmm</b>
M_HEAD_CENTER_OF_GRAVITY1	2265.6	-439.3	-532.9
M_NOSE_BRIDGE1	2380.6	-370.7	-525.9
M_NOSE_TIP1	2381.2	-371.7	-525.9
M_HEAD_CHIN1	2380.0	-367.0	-413.2
M_ARM1	2339.5	-591.4	-236.9
M_HIP_POINT1	2446.6	-613.8	163.5
M_KNEE_OUTBOARD1	2833.8	-527.8	-7.7
M_KNEE_INBOARD1	2851.9	-153.3	4.2
M_ANKLE_OUTBOARD1	3097.7	-552.2	315.6
M_HEADRESTTOP1	2061.0	-450.2	-404.9
M_HEADRESTBOTTOM1	2088.2	-452.1	-322.0
M_ROOF1	2359.9	-379.4	-705.2
M_HEADER_FRONT1	2695.0	-378.6	-640.2
M_WINDOW_FRONT1	2978.5	-378.0	-528.0
M_STEERING_WHEEL_RIM_TOP1	2800.0	-370.4	-381.3
M_DASH_TOP1	2955.7	-339.9	-336.0
M_STEERING_WHEEL_CENTER1	2734.2	-361.0	-189.9
M_CHEST_CENTER1	2398.6	-365.9	-271.6
M_STEERING_WHEEL_RIM_BOTTOM1	2665.9	-371.0	-49.6
M_ABDOMEN1	2496.1	-353.2	-48.8
M_DASH_BOTTOM1	2953.1	-511.3	-51.0
M_HEADER_SIDE1	2372.8	-541.9	-607.7
M_WINDOW_SIDE1	2373.6	-672.6	-528.8
M_DOOR_TOP1	2333.2	-752.1	-233.8
M_DOOR_BOTTOM1	2447.1	-714.7	151.5
M_STRIKER1	2230.9	-799.0	41.4
M_HEAD PIVOT	2261.2	-402.0	-478.2
M_LEFT KNEE TOP	2830.8	-497.6	-79.3
M_RIGHT KNEE TOP	2844.9	-217.5	-57.5
M_UPPER TIBIA TARGET	2896.5	-555.4	67.4
M_DRIVER LEFT SHOE LACE	3125.0	-524.4	275.3

Appendix F

Exterior Crush Profiles







	TARGET PRE-TEST		
M_RADIATOR_SUPPORT_1	2415	-910	-158
M_RADIATOR_SUPPORT_2	2450	-909	-159
M_RADIATOR_SUPPORT_3	2502	-909	-160
M_RADIATOR_SUPPORT_4	2553	-908	-160
M_RADIATOR_SUPPORT_5	2604	-907	-161
M_RADIATOR_SUPPORT_6	2655	-906	-161
M_RADIATOR_SUPPORT_7	2706	-906	-161
M_RADIATOR_SUPPORT_8	2756	-906	-160
M_RADIATOR_SUPPORT_9	2808	-906	-160
M_RADIATOR_SUPPORT_10	2859	-906	-159
M_RADIATOR_SUPPORT_11	2910	-905	-159
M_RADIATOR_SUPPORT_12	2963	-905	-158
M_RADIATOR_SUPPORT_13	3012	-905	-157
M_RADIATOR_SUPPORT_14	3063	-904	-157
M_RADIATOR_SUPPORT_15	3115	-904	-156
M_RADIATOR_SUPPORT_16	3165	-904	-156
M_RADIATOR_SUPPORT_17	3216	-903	-155
M_RADIATOR_SUPPORT_18	3269	-902	-155
M_RADIATOR_SUPPORT_19	3319	-902	-154
M_RADIATOR_SUPPORT_20	3370	-901	-153
M_RADIATOR_SUPPORT_21	3422	-900	-153
M_RADIATOR_SUPPORT_22	3472	-899	-152
M_RADIATOR_SUPPORT_23	3523	-899	-151
M_RADIATOR_SUPPORT_24	3575	-899	-151
M_RADIATOR_SUPPORT_25	3625	-899	-150
M_RADIATOR_SUPPORT_26	3677	-899	-150
M_RADIATOR_SUPPORT_27	3728	-899	-150
M_RADIATOR_SUPPORT_28	3779	-899	-149
M_RADIATOR_SUPPORT_29	3830	-899	-149
M_RADIATOR_SUPPORT_30	3881	-899	-148
M_RADIATOR_SUPPORT_31	3931	-898	-147
M_RADIATOR_SUPPORT_32	3983	-896	-147
M_RADIATOR_SUPPORT_33	4034	-893	-145
M_RADIATOR_SUPPORT_34	4085	-888	-144
M_RADIATOR_SUPPORT_35	4135	-881	-141
M_RADIATOR_SUPPORT_36	4186	-873	-139
M_RADIATOR_SUPPORT_37	4237	-864	-137
M_RADIATOR_SUPPORT_38	4287	-856	-134
M_RADIATOR_SUPPORT_39	4338	-847	-132
M_RADIATOR_SUPPORT_40	4387	-839	-130
M_RADIATOR_SUPPORT_41	4437	-829	-128
M_RADIATOR_SUPPORT_42	4488	-817	-124
M_RADIATOR_SUPPORT_43	4521	-809	-126
M_RADIATOR_SUPPORT_44	4569	-795	-124
M_RADIATOR_SUPPORT_45	4616	-776	-122
M_RADIATOR_SUPPORT_46	4657	-750	-121
M_RADIATOR_SUPPORT_47	4692	-716	-121

M_RADIATOR_SUPPORT_48	4721	-675	-122
M_RADIATOR_SUPPORT_49	4745	-631	-123
M_RADIATOR_SUPPORT_50	4767	-585	-124
M_RADIATOR_SUPPORT_51	4787	-539	-125
M_RADIATOR_SUPPORT_52	4804	-490	-121
M_RADIATOR_SUPPORT_53	4815	-440	-124
M_RADIATOR_SUPPORT_54	4826	-390	-122
M_RADIATOR_SUPPORT_55	4838	-340	-125
M_RADIATOR_SUPPORT_56	4852	-292	-124
M_RADIATOR_SUPPORT_57	4866	-243	-122
M_RADIATOR_SUPPORT_58	4870	-190	-121
M_RADIATOR_SUPPORT_59	4872	-140	-122
M_RADIATOR_SUPPORT_60	4875	-88	-123
M_RADIATOR_SUPPORT_61	4876	-37	-125
M_RADIATOR_SUPPORT_62	4877	13	-126
M_RADIATOR_SUPPORT_63	4876	64	-125
M_RADIATOR_SUPPORT_64	4874	115	-123
M_RADIATOR_SUPPORT_65	4871	166	-121
M_RADIATOR_SUPPORT_66	4868	216	-119
M_RADIATOR_SUPPORT_67	4865	269	-119
M_RADIATOR_SUPPORT_68	4855	318	-121
M_RADIATOR_SUPPORT_69	4843	368	-120
M_RADIATOR_SUPPORT_70	4831	418	-120
M_RADIATOR_SUPPORT_71	4820	467	-121
M_RADIATOR_SUPPORT_72	4803	516	-120
M_RADIATOR_SUPPORT_73	4783	565	-119
M_RADIATOR_SUPPORT_74	4762	611	-119
M_RADIATOR_SUPPORT_75	4739	656	-117
M_RADIATOR_SUPPORT_76	4712	701	-118
M_RADIATOR_SUPPORT_77	4681	740	-116
M_RADIATOR_SUPPORT_78	4639	774	-116
M_RADIATOR_SUPPORT_79	4592	797	-117
M_RADIATOR_SUPPORT_80	4544	812	-117
M_RADIATOR_SUPPORT_81	4508	819	-116
M_RADIATOR_SUPPORT_82	4471	829	-118
M_RADIATOR_SUPPORT_83	4422	839	-120
M_RADIATOR_SUPPORT_84	4372	849	-123
M_RADIATOR_SUPPORT_85	4322	858	-124
M_RADIATOR_SUPPORT_86	4272	866	-126
M_RADIATOR_SUPPORT_87	4223	875	-128
M_RADIATOR_SUPPORT_88	4172	884	-131
M_RADIATOR_SUPPORT_89	4121	891	-133
M_RADIATOR_SUPPORT_90	4071	896	-133
M_RADIATOR_SUPPORT_91	4020	898	-133
M_RADIATOR_SUPPORT_92	3969	901	-134
M_RADIATOR_SUPPORT_93	3918	902	-135
M_RADIATOR_SUPPORT_94	3867	904	-135
M_RADIATOR_SUPPORT_95	3817	905	-136
M_RADIATOR_SUPPORT_96	3766	904	-136

M_RADIATOR_SUPPORT_97	3715	903	-136
M_RADIATOR_SUPPORT_98	3664	903	-136
M_RADIATOR_SUPPORT_99	3614	903	-137
M_RADIATOR_SUPPORT_100	3562	904	-138
M_RADIATOR_SUPPORT_101	3511	905	-137
M_RADIATOR_SUPPORT_102	3461	906	-137
M_RADIATOR_SUPPORT_103	3410	908	-138
M_RADIATOR_SUPPORT_104	3359	908	-138
M_RADIATOR_SUPPORT_105	3308	909	-139
M_RADIATOR_SUPPORT_106	3257	910	-139
M_RADIATOR_SUPPORT_107	3207	911	-139
M_RADIATOR_SUPPORT_108	3155	911	-139
M_RADIATOR_SUPPORT_109	3104	912	-139
M_RADIATOR_SUPPORT_110	3054	912	-140
M_RADIATOR_SUPPORT_111	3003	913	-140
M_RADIATOR_SUPPORT_112	2952	913	-140
M_RADIATOR_SUPPORT_113	2901	913	-141
M_RADIATOR_SUPPORT_114	2850	914	-141
M_RADIATOR_SUPPORT_115	2799	914	-142
M_RADIATOR_SUPPORT_116	2748	914	-142
M_RADIATOR_SUPPORT_117	2698	914	-143
M_RADIATOR_SUPPORT_118	2646	914	-143
M_RADIATOR_SUPPORT_119	2596	914	-143
M_RADIATOR_SUPPORT_120	2545	915	-144
M_RADIATOR_SUPPORT_121	2494	915	-145
M_RADIATOR_SUPPORT_122	2444	915	-145
M_RADIATOR_SUPPORT_123	2411	915	-146

#### POST-TEST

M_RADIATOR_SUPPORT_1	2221	-1024	-144
M_RADIATOR_SUPPORT_2	2269	-1038	-153
M_RADIATOR_SUPPORT_3	2319	-1041	-154
M_RADIATOR_SUPPORT_4	2370	-1043	-155
M_RADIATOR_SUPPORT_5	2420	-1043	-157
M_RADIATOR_SUPPORT_6	2472	-1043	-159
M_RADIATOR_SUPPORT_7	2522	-1042	-161
M_RADIATOR_SUPPORT_8	2571	-1040	-162
M_RADIATOR_SUPPORT_9	2622	-1034	-163
M_RADIATOR_SUPPORT_10	2672	-1023	-165
M_RADIATOR_SUPPORT_11	2719	-1005	-165
M_RADIATOR_SUPPORT_12	2765	-983	-167
M_RADIATOR_SUPPORT_13	2807	-956	-168
M_RADIATOR_SUPPORT_14	2849	-927	-169
M_RADIATOR_SUPPORT_15	2888	-895	-171
M_RADIATOR_SUPPORT_16	2918	-854	-171
M_RADIATOR_SUPPORT_17	2950	-816	-172
M_RADIATOR_SUPPORT_18	2992	-838	-173
M_RADIATOR_SUPPORT_19	3039	-855	-175
M_RADIATOR_SUPPORT_20	3088	-864	-176

M_RADIATOR_SUPPORT_21	3139	-860	-178
M_RADIATOR_SUPPORT_22	3183	-838	-178
M_RADIATOR_SUPPORT_23	3224	-810	-179
M_RADIATOR_SUPPORT_24	3263	-778	-181
M_RADIATOR_SUPPORT_25	3296	-742	-183
M_RADIATOR_SUPPORT_26	3325	-697	-182
M_RADIATOR_SUPPORT_27	3354	-655	-184
M_RADIATOR_SUPPORT_28	3378	-597	-183
M_RADIATOR_SUPPORT_29	3418	-539	-185
M_RADIATOR_SUPPORT_30	3475	-506	-187
M_RADIATOR_SUPPORT_31	3570	-640	-193
M_RADIATOR_SUPPORT_32	3606	-506	-189
M_RADIATOR_SUPPORT_33	3648	-515	-195
M_RADIATOR_SUPPORT_34	3690	-525	-194
M_RADIATOR_SUPPORT_35	3733	-548	-196
M_RADIATOR_SUPPORT_36	3752	-520	-198
M_RADIATOR_SUPPORT_37	3778	-536	-197
M_RADIATOR_SUPPORT_38	3806	-551	-197
M_RADIATOR_SUPPORT_39	3836	-530	-197
M_RADIATOR_SUPPORT_40	3867	-546	-197
M_RADIATOR_SUPPORT_41	3870	-576	-198
M_RADIATOR_SUPPORT_42	3914	-600	-201
M_RADIATOR_SUPPORT_43	3958	-613	-203
M_RADIATOR_SUPPORT_44	3995	-636	-204
M_RADIATOR_SUPPORT_45	4021	-647	-204
M_RADIATOR_SUPPORT_46	4055	-657	-205
M_RADIATOR_SUPPORT_47	4080	-675	-205
M_RADIATOR_SUPPORT_48	4109	-700	-207
M_RADIATOR_SUPPORT_49	4140	-680	-206
M_RADIATOR_SUPPORT_50	4180	-673	-208
M_RADIATOR_SUPPORT_51	4225	-668	-211
M_RADIATOR_SUPPORT_52	4245	-716	-209
M_RADIATOR_SUPPORT_53	4268	-670	-211
M_RADIATOR_SUPPORT_54	4280	-624	-210
M_RADIATOR_SUPPORT_55	4283	-588	-210
M_RADIATOR_SUPPORT_56	4281	-545	-211
M_RADIATOR_SUPPORT_57	4278	-520	-211
M_RADIATOR_SUPPORT_58	4304	-506	-212
M_RADIATOR_SUPPORT_59	4354	-470	-213
M_RADIATOR_SUPPORT_60	4380	-438	-213
M_RADIATOR_SUPPORT_61	4407	-401	-214
M_RADIATOR_SUPPORT_62	4427	-371	-215
M_RADIATOR_SUPPORT_63	4449	-339	-216
M_RADIATOR_SUPPORT_64	4474	-301	-216
M_RADIATOR_SUPPORT_65	4494	-269	-216
M_RADIATOR_SUPPORT_66	4510	-244	-217
M_RADIATOR_SUPPORT_67	4523	-223	-217
M_RADIATOR_SUPPORT_68	4536	-202	-217
M_RADIATOR_SUPPORT_69	4548	-171	-219

M_RADIATOR_SUPPORT_70	4570	-124	-218
M_RADIATOR_SUPPORT_71	4595	-89	-218
M_RADIATOR_SUPPORT_72	4611	-49	-219
M_RADIATOR_SUPPORT_73	4632	-11	-219
M_RADIATOR_SUPPORT_74	4649	31	-217
M_RADIATOR_SUPPORT_75	4729	61	-223
M_RADIATOR_SUPPORT_76	4733	135	-222
M_RADIATOR_SUPPORT_77	4697	194	-218
M_RADIATOR_SUPPORT_78	4694	248	-221
M_RADIATOR_SUPPORT_79	4704	285	-221
M_RADIATOR_SUPPORT_80	4764	264	-223
M_RADIATOR_SUPPORT_81	4795	257	-224
M_RADIATOR_SUPPORT_82	4796	260	-218
M_RADIATOR_SUPPORT_83	4788	310	-217
M_RADIATOR_SUPPORT_84	4777	360	-219
M_RADIATOR_SUPPORT_85	4760	408	-219
M_RADIATOR_SUPPORT_86	4742	453	-218
M_RADIATOR_SUPPORT_87	4720	501	-216
M_RADIATOR_SUPPORT_88	4695	546	-217
M_RADIATOR_SUPPORT_89	4669	589	-215
M_RADIATOR_SUPPORT_90	4634	628	-214
M_RADIATOR_SUPPORT_91	4596	660	-213
M_RADIATOR_SUPPORT_92	4554	688	-211
M_RADIATOR_SUPPORT_93	4509	712	-209
M_RADIATOR_SUPPORT_94	4462	727	-208
M_RADIATOR_SUPPORT_95	4415	744	-208
M_RADIATOR_SUPPORT_96	4367	762	-206
M_RADIATOR_SUPPORT_97	4318	777	-204
M_RADIATOR_SUPPORT_98	4270	791	-203
M_RADIATOR_SUPPORT_99	4219	805	-202
M_RADIATOR_SUPPORT_100	4171	817	-200
M_RADIATOR_SUPPORT_101	4122	829	-199
M_RADIATOR_SUPPORT_102	4072	840	-197
M_RADIATOR_SUPPORT_103	4024	851	-195
M_RADIATOR_SUPPORT_104	3973	856	-194
M_RADIATOR_SUPPORT_105	3922	867	-193
M_RADIATOR_SUPPORT_106	3874	883	-192
M_RADIATOR_SUPPORT_107	3825	897	-189
M_RADIATOR_SUPPORT_108	3775	909	-185
M_RADIATOR_SUPPORT_109	3726	921	-185
M_RADIATOR_SUPPORT_110	3676	934	-183
M_RADIATOR_SUPPORT_111	3629	945	-183
M_RADIATOR_SUPPORT_112	3579	957	-181
M_RADIATOR_SUPPORT_113	3530	969	-180
M_RADIATOR_SUPPORT_114	3487	954	-176
M_RADIATOR_SUPPORT_115	3435	956	-177
M_RADIATOR_SUPPORT_116	3386	957	-175
M_RADIATOR_SUPPORT_117	3334	957	-173
M_RADIATOR_SUPPORT_118	3284	958	-172

M_RADIATOR_SUPPORT_119	3233	958	-171
M_RADIATOR_SUPPORT_120	3183	958	-170
M_RADIATOR_SUPPORT_121	3131	957	-167
M_RADIATOR_SUPPORT_122	3081	957	-166
M_RADIATOR_SUPPORT_123	3030	956	-164
M_RADIATOR_SUPPORT_124	2980	956	-164
M_RADIATOR_SUPPORT_125	2929	955	-162
M_RADIATOR_SUPPORT_126	2878	954	-161
M_RADIATOR_SUPPORT_127	2827	953	-160
M_RADIATOR_SUPPORT_128	2776	952	-158
M_RADIATOR_SUPPORT_129	2727	951	-156
M_RADIATOR_SUPPORT_130	2675	949	-155
M_RADIATOR_SUPPORT_131	2625	947	-154
M_RADIATOR_SUPPORT_132	2574	946	-152
M_RADIATOR_SUPPORT_133	2531	945	-151
M_RADIATOR_SUPPORT_134	2491	944	-150
M_RADIATOR_SUPPORT_135	2460	943	-149
M_RADIATOR_SUPPORT_136	2424	942	-148
M_RADIATOR_SUPPORT_137	2405	941	-147

	TARGET	
	PRE-TEST	
M_BUMPER_TOP_1	2398	-924
M_BUMPER_TOP_2	2430	-923
M_BUMPER_TOP_3	2481	-923
M_BUMPER_TOP_4	2532	-922
M_BUMPER_TOP_5	2582	-922
M_BUMPER_TOP_6	2633	-921
M_BUMPER_TOP_7	2684	-920
M_BUMPER_TOP_8	2735	-919
M_BUMPER_TOP_9	2785	-918
M_BUMPER_TOP_10	2837	-917
M_BUMPER_TOP_11	2888	-915
M_BUMPER_TOP_12	2938	-914
M_BUMPER_TOP_13	2990	-913
M_BUMPER_TOP_14	3040	-912
M_BUMPER_TOP_15	3090	-912
M_BUMPER_TOP_16	3141	-912
M_BUMPER_TOP_17	3192	-911
M_BUMPER_TOP_18	3243	-910
M_BUMPER_TOP_19	3295	-909
M_BUMPER_TOP_20	3346	-908
M_BUMPER_TOP_21	3396	-906
M_BUMPER_TOP_22	3447	-899
M_BUMPER_TOP_23	3499	-897
M_BUMPER_TOP_24	3550	-897
M_BUMPER_TOP_25	3600	-903
M_BUMPER_TOP_26	3623	-903
M_BUMPER_TOP_27	3735	-861
M_BUMPER_TOP_28	3769	-875
M_BUMPER_TOP_29	3812	-881
M_BUMPER_TOP_30	3855	-877
M_BUMPER_TOP_31	3899	-868
M_BUMPER_TOP_32	3941	-862
M_BUMPER_TOP_33	3972	-860
M_BUMPER_TOP_34	4011	-862
M_BUMPER_TOP_35	4046	-868
M_BUMPER_TOP_36	4086	-876
M_BUMPER_TOP_37	4120	-880
M_BUMPER_TOP_38	4161	-876
M_BUMPER_TOP_39	4196	-863
M_BUMPER_TOP_40	4358	-820
M_BUMPER_TOP_41	4400	-807
M_BUMPER_TOP_42	4446	-798
M_BUMPER_TOP_43	4494	-788
M_BUMPER_TOP_44	4534	-782
M_BUMPER_TOP_45	4577	-771
M_BUMPER_TOP_46	4616	-759
M_BUMPER_TOP_47	4642	-751
M_BUMPER_TOP_48	4665	-750
M_BUMPER_TOP_49	4811	-666
M_BUMPER_TOP_50	4833	-628

M_BUMPER_TOP_51	4858	-580	61
M_BUMPER_TOP_52	4868	-520	63
M_BUMPER_TOP_53	4873	-470	61
M_BUMPER_TOP_54	4877	-418	63
M_BUMPER_TOP_55	4881	-371	64
M_BUMPER_TOP_56	4884	-318	63
M_BUMPER_TOP_57	4887	-268	62
M_BUMPER_TOP_58	4890	-219	62
M_BUMPER_TOP_59	4891	-170	62
M_BUMPER_TOP_60	4893	-119	63
M_BUMPER_TOP_61	4894	-71	63
M_BUMPER_TOP_62	4894	-21	63
M_BUMPER_TOP_63	4894	32	65
M_BUMPER_TOP_64	4893	81	65
M_BUMPER_TOP_65	4892	131	64
M_BUMPER_TOP_66	4890	180	64
M_BUMPER_TOP_67	4888	230	64
M_BUMPER_TOP_68	4885	280	64
M_BUMPER_TOP_69	4882	330	64
M_BUMPER_TOP_70	4878	379	64
M_BUMPER_TOP_71	4874	429	61
M_BUMPER_TOP_72	4869	477	63
M_BUMPER_TOP_73	4862	528	61
M_BUMPER_TOP_74	4854	578	60
M_BUMPER_TOP_75	4832	624	61
M_BUMPER_TOP_76	4810	666	59
M_BUMPER_TOP_77	4651	751	52
M_BUMPER_TOP_78	4602	768	52
M_BUMPER_TOP_79	4555	781	52
M_BUMPER_TOP_80	4516	788	52
M_BUMPER_TOP_81	4471	799	53
M_BUMPER_TOP_82	4429	810	53
M_BUMPER_TOP_83	4391	820	53
M_BUMPER_TOP_84	4364	828	53
M_BUMPER_TOP_85	4184	868	54
M_BUMPER_TOP_86	4134	882	56
M_BUMPER_TOP_87	4083	881	56
M_BUMPER_TOP_88	4056	877	55
M_BUMPER_TOP_89	4006	868	54
M_BUMPER_TOP_90	3951	865	55
M_BUMPER_TOP_91	3902	870	57
M_BUMPER_TOP_92	3851	880	57
M_BUMPER_TOP_93	3815	884	56
M_BUMPER_TOP_94	3774	878	57
M_BUMPER_TOP_95	3740	863	56
M_BUMPER_TOP_96	3621	903	59
M_BUMPER_TOP_97	3574	901	58
M_BUMPER_TOP_98	3524	900	56
M_BUMPER_TOP_99	3473	903	56
M_BUMPER_TOP_100	3421	911	56
M_BUMPER_TOP_101	3371	914	57
M_BUMPER_TOP_102	3319	915	57

M_BUMPER_TOP_103	3268	917	58
M_BUMPER_TOP_104	3218	919	59
M_BUMPER_TOP_105	3166	920	60
M_BUMPER_TOP_106	3115	921	60
M_BUMPER_TOP_107	3066	923	60
M_BUMPER_TOP_108	3013	923	61
M_BUMPER_TOP_109	2963	924	62
M_BUMPER_TOP_110	2912	925	62
M_BUMPER_TOP_111	2861	926	62
M_BUMPER_TOP_112	2809	926	62
M_BUMPER_TOP_113	2759	926	62
M_BUMPER_TOP_114	2708	925	63
M_BUMPER_TOP_115	2657	926	62
M_BUMPER_TOP_116	2606	926	62
M_BUMPER_TOP_117	2555	927	61
M_BUMPER_TOP_118	2503	926	61
M_BUMPER_TOP_119	2453	926	61
M_BUMPER_TOP_120	2401	927	61

#### POST-TEST

M_BUMPER_TOP_1	2217	-1030	49
M_BUMPER_TOP_2	2267	-1032	46
M_BUMPER_TOP_3	2308	-1010	45
M_BUMPER_TOP_4	2358	-994	44
M_BUMPER_TOP_5	2405	-978	42
M_BUMPER_TOP_6	2453	-960	42
M_BUMPER_TOP_7	2501	-945	40
M_BUMPER_TOP_8	2549	-931	39
M_BUMPER_TOP_9	2598	-916	38
M_BUMPER_TOP_10	2647	-902	35
M_BUMPER_TOP_11	2696	-890	35
M_BUMPER_TOP_12	2746	-890	33
M_BUMPER_TOP_13	2798	-895	31
M_BUMPER_TOP_14	2847	-890	28
M_BUMPER_TOP_15	2897	-877	28
M_BUMPER_TOP_16	2942	-856	27
M_BUMPER_TOP_17	2988	-836	25
M_BUMPER_TOP_18	3031	-809	24
M_BUMPER_TOP_19	3076	-785	23
M_BUMPER_TOP_20	3113	-796	23
M_BUMPER_TOP_21	3154	-811	20
M_BUMPER_TOP_22	3185	-772	18
M_BUMPER_TOP_23	3202	-727	19
M_BUMPER_TOP_24	3238	-695	18
M_BUMPER_TOP_25	3281	-676	17
M_BUMPER_TOP_26	3376	-743	13
M_BUMPER_TOP_27	3386	-783	13
M_BUMPER_TOP_28	3412	-796	12
M_BUMPER_TOP_29	3450	-806	12
M_BUMPER_TOP_30	3508	-801	9
M_BUMPER_TOP_31	3557	-792	8
M_BUMPER_TOP_32	3610	-787	4

M_BUMPER_TOP_33	3664	-798	2
M_BUMPER_TOP_34	3706	-812	4
M_BUMPER_TOP_35	3743	-828	2
M_BUMPER_TOP_36	3787	-837	1
M_BUMPER_TOP_37	3819	-834	0
M_BUMPER_TOP_38	3849	-822	-3
M_BUMPER_TOP_39	3865	-789	-2
M_BUMPER_TOP_40	3866	-754	-3
M_BUMPER_TOP_41	3866	-702	-3
M_BUMPER_TOP_42	3852	-458	-1
M_BUMPER_TOP_43	3899	-475	-2
M_BUMPER_TOP_44	3940	-472	-4
M_BUMPER_TOP_45	3974	-483	-5
M_BUMPER_TOP_46	4003	-488	-7
M_BUMPER_TOP_47	4025	-641	-6
M_BUMPER_TOP_48	4053	-664	-8
M_BUMPER_TOP_49	4087	-683	-8
M_BUMPER_TOP_50	4075	-671	-12
M_BUMPER_TOP_51	4037	-649	-10
M_BUMPER_TOP_52	4038	-611	-12
M_BUMPER_TOP_53	4142	-587	-14
M_BUMPER_TOP_54	4165	-484	-14
M_BUMPER_TOP_55	4178	-452	-10
M_BUMPER_TOP_56	4237	-473	-15
M_BUMPER_TOP_57	4274	-446	-17
M_BUMPER_TOP_58	4306	-418	-17
M_BUMPER_TOP_59	4339	-389	-20
M_BUMPER_TOP_60	4362	-368	-19
M_BUMPER_TOP_61	4399	-336	-20
M_BUMPER_TOP_62	4429	-301	-20
M_BUMPER_TOP_63	4448	-276	-22
M_BUMPER_TOP_64	4473	-234	-22
M_BUMPER_TOP_65	4494	-191	-25
M_BUMPER_TOP_66	4516	-147	-24
M_BUMPER_TOP_67	4535	-104	-23
M_BUMPER_TOP_68	4561	-47	-24
M_BUMPER_TOP_69	4578	-5	-22
M_BUMPER_TOP_70	4595	33	-25
M_BUMPER_TOP_71	4682	43	-27
M_BUMPER_TOP_72	4705	76	-29
M_BUMPER_TOP_73	4721	107	-29
M_BUMPER_TOP_74	4741	143	-29
M_BUMPER_TOP_75	4761	183	-29
M_BUMPER_TOP_76	4769	199	-29
M_BUMPER_TOP_77	4793	249	-30
M_BUMPER_TOP_78	4810	287	-29
M_BUMPER_TOP_79	4822	315	-30
M_BUMPER_TOP_80	4830	346	-30
M_BUMPER_TOP_81	4833	380	-31
M_BUMPER_TOP_82	4833	411	-31
M_BUMPER_TOP_83	4836	432	-30
M_BUMPER_TOP_84	4817	447	-26

M_BUMPER_TOP_85	4750	416	-23
M_BUMPER_TOP_86	4706	417	-23
M_BUMPER_TOP_87	4657	433	-20
M_BUMPER_TOP_88	4608	439	-19
M_BUMPER_TOP_89	4565	451	-18
M_BUMPER_TOP_90	4655	640	-23
M_BUMPER_TOP_91	4607	649	-19
M_BUMPER_TOP_92	4559	668	-18
M_BUMPER_TOP_93	4518	680	-17
M_BUMPER_TOP_94	4475	692	-15
M_BUMPER_TOP_95	4434	702	-14
M_BUMPER_TOP_96	4394	711	-11
M_BUMPER_TOP_97	4356	722	-10
M_BUMPER_TOP_98	4309	736	-10
M_BUMPER_TOP_99	4294	760	-2
M_BUMPER_TOP_100	4259	784	-8
M_BUMPER_TOP_101	4218	801	-7
M_BUMPER_TOP_102	4177	809	-5
M_BUMPER_TOP_103	4131	814	-3
M_BUMPER_TOP_104	4086	822	-2
M_BUMPER_TOP_105	4032	840	0
M_BUMPER_TOP_106	3990	859	1
M_BUMPER_TOP_107	3952	872	2
M_BUMPER_TOP_108	3911	880	4
M_BUMPER_TOP_109	3876	877	5
M_BUMPER_TOP_110	3839	844	10
M_BUMPER_TOP_111	3657	926	11
M_BUMPER_TOP_112	3608	933	11
M_BUMPER_TOP_113	3558	938	14
M_BUMPER_TOP_114	3507	947	15
M_BUMPER_TOP_115	3458	945	16
M_BUMPER_TOP_116	3406	946	19
M_BUMPER_TOP_117	3356	946	19
M_BUMPER_TOP_118	3305	947	22
M_BUMPER_TOP_119	3254	947	23
M_BUMPER_TOP_120	3203	948	25
M_BUMPER_TOP_121	3152	949	26
M_BUMPER_TOP_122	3102	949	28
M_BUMPER_TOP_123	3051	949	27
M_BUMPER_TOP_124	3000	948	30
M_BUMPER_TOP_125	2950	948	32
M_BUMPER_TOP_126	2898	951	33
M_BUMPER_TOP_127	2848	952	34
M_BUMPER_TOP_128	2798	954	35
M_BUMPER_TOP_129	2746	955	38
M_BUMPER_TOP_130	2695	955	38
M_BUMPER_TOP_131	2645	956	40
M_BUMPER_TOP_132	2593	957	43
M_BUMPER_TOP_133	2543	957	43
M_BUMPER_TOP_134	2493	957	44
M_BUMPER_TOP_135	2441	957	46
M_BUMPER_TOP_136	2391	957	47

	TARGET PRE-TEST		
M_BUMPER_BOTTOM_1	2381	-920	180
M_BUMPER_BOTTOM_2	2421	-920	180
M_BUMPER_BOTTOM_3	2472	-920	179
M_BUMPER_BOTTOM_4	2524	-919	180
M_BUMPER_BOTTOM_5	2575	-918	179
M_BUMPER_BOTTOM_6	2627	-917	181
M_BUMPER_BOTTOM_7	2678	-916	180
M_BUMPER_BOTTOM_8	2728	-915	179
M_BUMPER_BOTTOM_9	2780	-914	179
M_BUMPER_BOTTOM_10	2830	-913	179
M_BUMPER_BOTTOM_11	2880	-912	178
M_BUMPER_BOTTOM_12	2932	-910	179
M_BUMPER_BOTTOM_13	2982	-909	178
M_BUMPER_BOTTOM_14	3033	-907	179
M_BUMPER_BOTTOM_15	3085	-905	179
M_BUMPER_BOTTOM_16	3134	-904	177
M_BUMPER_BOTTOM_17	3185	-902	178
M_BUMPER_BOTTOM_18	3237	-900	177
M_BUMPER_BOTTOM_19	3288	-899	176
M_BUMPER_BOTTOM_20	3339	-897	176
M_BUMPER_BOTTOM_21	3392	-895	176
M_BUMPER_BOTTOM_22	3443	-892	176
M_BUMPER_BOTTOM_23	3493	-892	176
M_BUMPER_BOTTOM_24	3546	-892	177
M_BUMPER_BOTTOM_25	3573	-891	176
M_BUMPER_BOTTOM_26	3656	-842	173
M_BUMPER_BOTTOM_27	3671	-870	175
M_BUMPER_BOTTOM_28	3707	-884	174
M_BUMPER_BOTTOM_29	3745	-879	175
M_BUMPER_BOTTOM_30	3778	-867	176
M_BUMPER_BOTTOM_31	3802	-852	175
M_BUMPER_BOTTOM_32	3827	-820	175
M_BUMPER_BOTTOM_33	3854	-841	175
M_BUMPER_BOTTOM_34	3888	-864	174
M_BUMPER_BOTTOM_35	3931	-865	175
M_BUMPER_BOTTOM_36	3961	-841	174
M_BUMPER_BOTTOM_37	3996	-842	173
M_BUMPER_BOTTOM_38	4036	-864	174
M_BUMPER_BOTTOM_39	4077	-860	173
M_BUMPER_BOTTOM_40	4112	-844	173
M_BUMPER_BOTTOM_41	4130	-828	173
M_BUMPER_BOTTOM_42	4155	-858	174
M_BUMPER_BOTTOM_43	4197	-877	174
M_BUMPER_BOTTOM_44	4242	-880	172
M_BUMPER_BOTTOM_45	4264	-871	172
M_BUMPER_BOTTOM_46	4281	-856	172
M_BUMPER_BOTTOM_47	4455	-572	186
M_BUMPER_BOTTOM_48	4502	-581	185
M_BUMPER_BOTTOM_49	4549	-586	183
M_BUMPER_BOTTOM_50	4593	-591	184

M_BUMPER_BOTTOM_51	4636	-592	184
M_BUMPER_BOTTOM_52	4676	-594	183
M_BUMPER_BOTTOM_53	4708	-594	183
M_BUMPER_BOTTOM_54	4742	-595	183
M_BUMPER_BOTTOM_55	4807	-667	183
M_BUMPER_BOTTOM_56	4831	-624	185
M_BUMPER_BOTTOM_57	4854	-579	186
M_BUMPER_BOTTOM_58	4862	-530	184
M_BUMPER_BOTTOM_59	4867	-481	186
M_BUMPER_BOTTOM_60	4872	-432	186
M_BUMPER_BOTTOM_61	4875	-382	185
M_BUMPER_BOTTOM_62	4878	-332	187
M_BUMPER_BOTTOM_63	4881	-282	185
M_BUMPER_BOTTOM_64	4884	-233	182
M_BUMPER_BOTTOM_65	4886	-181	184
M_BUMPER_BOTTOM_66	4888	-133	182
M_BUMPER_BOTTOM_67	4888	-82	182
M_BUMPER_BOTTOM_68	4889	-34	184
M_BUMPER_BOTTOM_69	4888	29	185
M_BUMPER_BOTTOM_70	4887	79	185
M_BUMPER_BOTTOM_71	4886	130	186
M_BUMPER_BOTTOM_72	4884	179	185
M_BUMPER_BOTTOM_73	4882	229	185
M_BUMPER_BOTTOM_74	4879	278	185
M_BUMPER_BOTTOM_75	4875	329	184
M_BUMPER_BOTTOM_76	4872	379	183
M_BUMPER_BOTTOM_77	4868	428	183
M_BUMPER_BOTTOM_78	4863	478	183
M_BUMPER_BOTTOM_79	4856	528	182
M_BUMPER_BOTTOM_80	4847	576	181
M_BUMPER_BOTTOM_81	4824	624	180
M_BUMPER_BOTTOM_82	4803	664	178
M_BUMPER_BOTTOM_83	4760	595	174
M_BUMPER_BOTTOM_84	4707	591	174
M_BUMPER_BOTTOM_85	4670	589	174
M_BUMPER_BOTTOM_86	4615	599	174
M_BUMPER_BOTTOM_87	4569	597	174
M_BUMPER_BOTTOM_88	4524	592	176
M_BUMPER_BOTTOM_89	4469	588	176
M_BUMPER_BOTTOM_90	4417	570	176
M_BUMPER_BOTTOM_91	4276	842	181
M_BUMPER_BOTTOM_92	4241	881	177
M_BUMPER_BOTTOM_93	4198	884	177
M_BUMPER_BOTTOM_94	4162	869	177
M_BUMPER_BOTTOM_95	4155	862	180
M_BUMPER_BOTTOM_96	4126	841	178
M_BUMPER_BOTTOM_97	4071	865	178
M_BUMPER_BOTTOM_98	4035	866	176
M_BUMPER_BOTTOM_99	4012	845	176
M_BUMPER_BOTTOM_100	3972	845	177
M_BUMPER_BOTTOM_101	3949	869	177
M_BUMPER_BOTTOM_102	3922	869	177

M_BUMPER_BOTTOM_103	3896	868	177
M_BUMPER_BOTTOM_104	3877	847	178
M_BUMPER_BOTTOM_105	3823	820	180
M_BUMPER_BOTTOM_106	3798	845	179
M_BUMPER_BOTTOM_107	3777	862	178
M_BUMPER_BOTTOM_108	3744	881	179
M_BUMPER_BOTTOM_109	3713	886	180
M_BUMPER_BOTTOM_110	3681	877	180
M_BUMPER_BOTTOM_111	3662	860	178
M_BUMPER_BOTTOM_112	3573	891	180
M_BUMPER_BOTTOM_113	3521	895	178
M_BUMPER_BOTTOM_114	3471	897	179
M_BUMPER_BOTTOM_115	3420	898	180
M_BUMPER_BOTTOM_116	3368	900	180
M_BUMPER_BOTTOM_117	3318	902	182
M_BUMPER_BOTTOM_118	3267	903	182
M_BUMPER_BOTTOM_119	3216	905	183
M_BUMPER_BOTTOM_120	3164	907	181
M_BUMPER_BOTTOM_121	3113	909	182
M_BUMPER_BOTTOM_122	3062	911	181
M_BUMPER_BOTTOM_123	3012	912	182
M_BUMPER_BOTTOM_124	2960	914	182
M_BUMPER_BOTTOM_125	2909	915	182
M_BUMPER_BOTTOM_126	2858	917	181
M_BUMPER_BOTTOM_127	2807	918	182
M_BUMPER_BOTTOM_128	2756	919	182
M_BUMPER_BOTTOM_129	2706	920	183
M_BUMPER_BOTTOM_130	2654	921	183
M_BUMPER_BOTTOM_131	2604	922	183
M_BUMPER_BOTTOM_132	2552	923	183
M_BUMPER_BOTTOM_133	2501	923	182
M_BUMPER_BOTTOM_134	2450	924	183
M_BUMPER_BOTTOM_135	2400	924	184
M_BUMPER_BOTTOM_136	2380	924	183

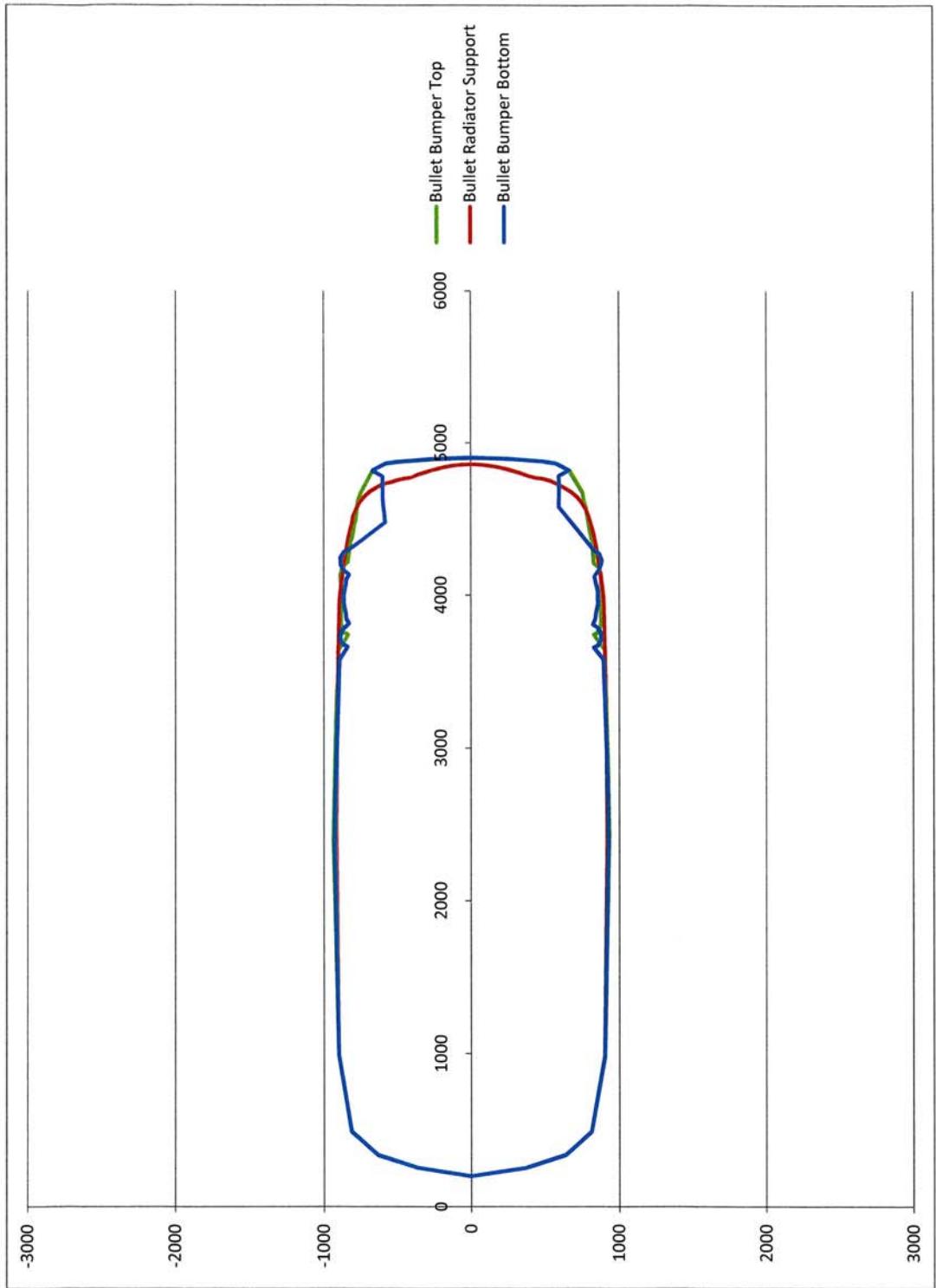
#### POST-TEST

M_BUMPER_BOTTOM_1	2208	-1011	170
M_BUMPER_BOTTOM_2	2259	-1011	167
M_BUMPER_BOTTOM_3	2310	-1011	166
M_BUMPER_BOTTOM_4	2361	-1005	163
M_BUMPER_BOTTOM_5	2410	-991	163
M_BUMPER_BOTTOM_6	2457	-975	161
M_BUMPER_BOTTOM_7	2504	-959	160
M_BUMPER_BOTTOM_8	2552	-942	158
M_BUMPER_BOTTOM_9	2601	-926	157
M_BUMPER_BOTTOM_10	2651	-915	155
M_BUMPER_BOTTOM_11	2701	-911	153
M_BUMPER_BOTTOM_12	2751	-908	153
M_BUMPER_BOTTOM_13	2802	-906	151
M_BUMPER_BOTTOM_14	2852	-902	149
M_BUMPER_BOTTOM_15	2904	-896	150
M_BUMPER_BOTTOM_16	2953	-889	147

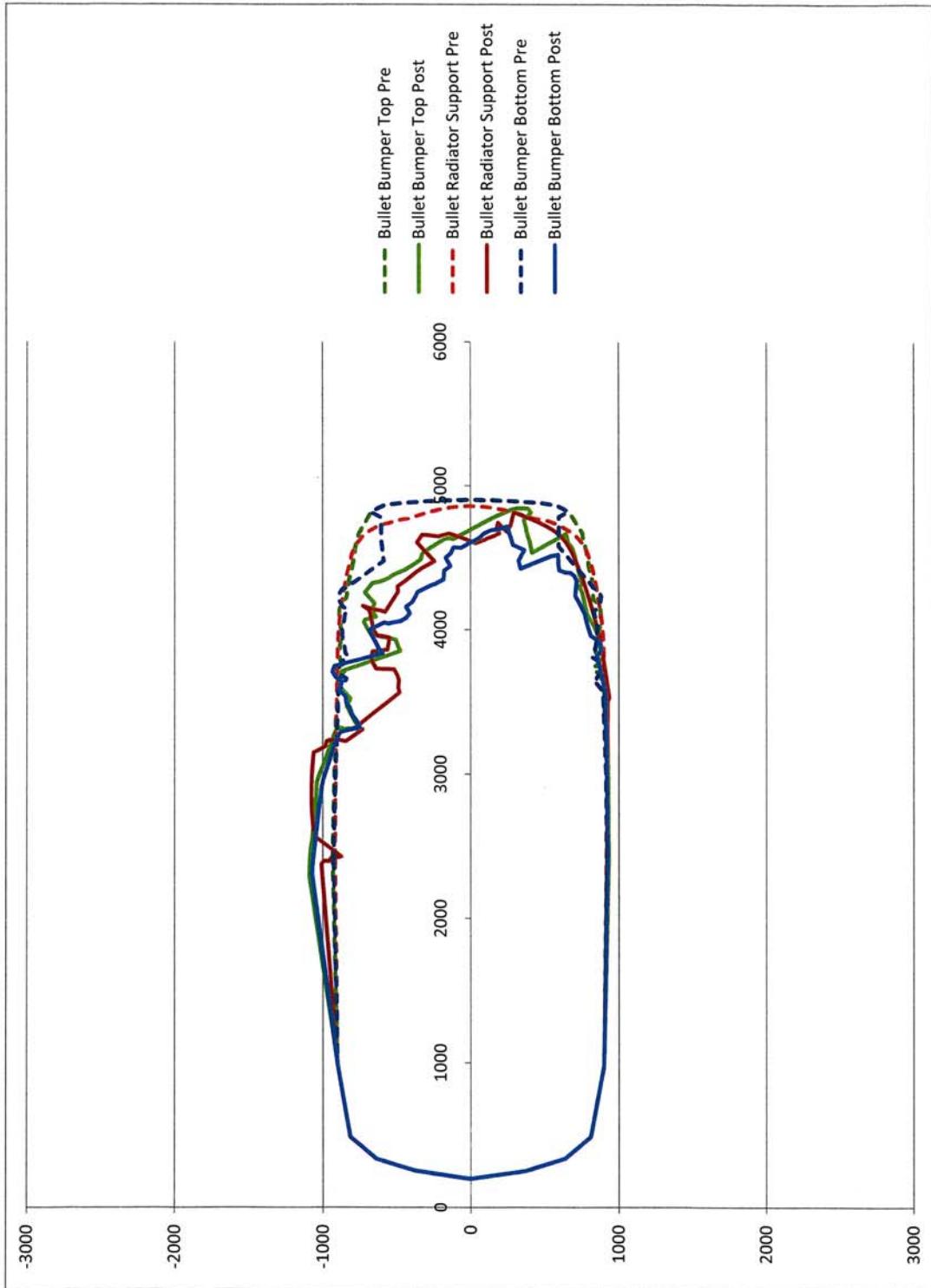
M_BUMPER_BOTTOM_17	3002	-878	146
M_BUMPER_BOTTOM_18	3051	-864	145
M_BUMPER_BOTTOM_19	3099	-848	143
M_BUMPER_BOTTOM_20	3140	-812	142
M_BUMPER_BOTTOM_21	3187	-832	139
M_BUMPER_BOTTOM_22	3223	-805	139
M_BUMPER_BOTTOM_23	3244	-761	138
M_BUMPER_BOTTOM_24	3270	-716	137
M_BUMPER_BOTTOM_25	3290	-678	138
M_BUMPER_BOTTOM_26	3314	-665	140
M_BUMPER_BOTTOM_27	3308	-718	137
M_BUMPER_BOTTOM_28	3305	-751	136
M_BUMPER_BOTTOM_29	3320	-794	136
M_BUMPER_BOTTOM_30	3360	-804	135
M_BUMPER_BOTTOM_31	3401	-789	133
M_BUMPER_BOTTOM_32	3457	-782	131
M_BUMPER_BOTTOM_33	3510	-797	130
M_BUMPER_BOTTOM_34	3584	-798	127
M_BUMPER_BOTTOM_35	3622	-827	127
M_BUMPER_BOTTOM_36	3669	-813	126
M_BUMPER_BOTTOM_37	3731	-793	122
M_BUMPER_BOTTOM_38	3776	-806	123
M_BUMPER_BOTTOM_39	3809	-848	121
M_BUMPER_BOTTOM_40	3843	-844	121
M_BUMPER_BOTTOM_41	3877	-856	119
M_BUMPER_BOTTOM_42	3919	-844	118
M_BUMPER_BOTTOM_43	3932	-820	113
M_BUMPER_BOTTOM_44	3939	-776	113
M_BUMPER_BOTTOM_45	3942	-722	113
M_BUMPER_BOTTOM_46	3932	-672	113
M_BUMPER_BOTTOM_47	3963	-600	116
M_BUMPER_BOTTOM_48	4006	-624	113
M_BUMPER_BOTTOM_49	4051	-649	112
M_BUMPER_BOTTOM_50	4066	-649	113
M_BUMPER_BOTTOM_51	4070	-623	112
M_BUMPER_BOTTOM_52	4084	-592	112
M_BUMPER_BOTTOM_53	4102	-547	111
M_BUMPER_BOTTOM_54	4115	-510	111
M_BUMPER_BOTTOM_55	4109	-470	112
M_BUMPER_BOTTOM_56	4122	-446	111
M_BUMPER_BOTTOM_57	4163	-465	111
M_BUMPER_BOTTOM_58	4179	-430	110
M_BUMPER_BOTTOM_59	4205	-407	109
M_BUMPER_BOTTOM_60	4248	-439	107
M_BUMPER_BOTTOM_61	4288	-397	107
M_BUMPER_BOTTOM_62	4324	-361	105
M_BUMPER_BOTTOM_63	4360	-325	105
M_BUMPER_BOTTOM_64	4400	-269	103
M_BUMPER_BOTTOM_65	4471	-264	103
M_BUMPER_BOTTOM_66	4504	-197	102
M_BUMPER_BOTTOM_67	4523	-168	99
M_BUMPER_BOTTOM_68	4554	-113	97

M_BUMPER_BOTTOM_69	4570	-62	98
M_BUMPER_BOTTOM_70	4586	-18	99
M_BUMPER_BOTTOM_71	4624	19	98
M_BUMPER_BOTTOM_72	4639	51	97
M_BUMPER_BOTTOM_73	4656	89	96
M_BUMPER_BOTTOM_74	4675	138	97
M_BUMPER_BOTTOM_75	4694	176	96
M_BUMPER_BOTTOM_76	4705	218	101
M_BUMPER_BOTTOM_77	4726	280	98
M_BUMPER_BOTTOM_78	4667	294	98
M_BUMPER_BOTTOM_79	4629	303	97
M_BUMPER_BOTTOM_80	4574	304	101
M_BUMPER_BOTTOM_81	4579	340	100
M_BUMPER_BOTTOM_82	4575	376	102
M_BUMPER_BOTTOM_83	4555	396	102
M_BUMPER_BOTTOM_84	4362	655	108
M_BUMPER_BOTTOM_85	4370	698	105
M_BUMPER_BOTTOM_86	4366	741	107
M_BUMPER_BOTTOM_87	4337	766	109
M_BUMPER_BOTTOM_88	4293	774	110
M_BUMPER_BOTTOM_89	4251	767	109
M_BUMPER_BOTTOM_90	4210	769	113
M_BUMPER_BOTTOM_91	4165	794	115
M_BUMPER_BOTTOM_92	4121	787	124
M_BUMPER_BOTTOM_93	4073	798	116
M_BUMPER_BOTTOM_94	4060	825	121
M_BUMPER_BOTTOM_95	4023	835	123
M_BUMPER_BOTTOM_96	3990	827	128
M_BUMPER_BOTTOM_97	3935	815	126
M_BUMPER_BOTTOM_98	3914	858	125
M_BUMPER_BOTTOM_99	3890	875	127
M_BUMPER_BOTTOM_100	3866	893	127
M_BUMPER_BOTTOM_101	3841	901	129
M_BUMPER_BOTTOM_102	3805	895	128
M_BUMPER_BOTTOM_103	3773	859	133
M_BUMPER_BOTTOM_104	3589	924	147
M_BUMPER_BOTTOM_105	3543	933	147
M_BUMPER_BOTTOM_106	3493	939	149
M_BUMPER_BOTTOM_107	3442	940	150
M_BUMPER_BOTTOM_108	3392	941	151
M_BUMPER_BOTTOM_109	3342	942	153
M_BUMPER_BOTTOM_110	3290	943	153
M_BUMPER_BOTTOM_111	3239	944	156
M_BUMPER_BOTTOM_112	3189	945	156
M_BUMPER_BOTTOM_113	3138	945	158
M_BUMPER_BOTTOM_114	3088	946	160
M_BUMPER_BOTTOM_115	3037	947	161
M_BUMPER_BOTTOM_116	2986	947	163
M_BUMPER_BOTTOM_117	2936	947	166
M_BUMPER_BOTTOM_118	2886	948	165
M_BUMPER_BOTTOM_119	2834	948	168
M_BUMPER_BOTTOM_120	2783	948	169

M_BUMPER_BOTTOM_121	2733	948	170
M_BUMPER_BOTTOM_122	2681	948	171
M_BUMPER_BOTTOM_123	2631	948	173
M_BUMPER_BOTTOM_124	2580	948	174
M_BUMPER_BOTTOM_125	2529	947	177
M_BUMPER_BOTTOM_126	2479	947	176
M_BUMPER_BOTTOM_127	2429	946	177
M_BUMPER_BOTTOM_128	2379	944	180







	BULLET PRE-TEST		
M_RADIATOR_SUPPORT_1	2415	-914	-197
M_RADIATOR_SUPPORT_2	2443	-914	-197
M_RADIATOR_SUPPORT_3	2494	-914	-199
M_RADIATOR_SUPPORT_4	2545	-914	-199
M_RADIATOR_SUPPORT_5	2596	-913	-199
M_RADIATOR_SUPPORT_6	2647	-913	-200
M_RADIATOR_SUPPORT_7	2698	-913	-200
M_RADIATOR_SUPPORT_8	2748	-913	-199
M_RADIATOR_SUPPORT_9	2800	-912	-199
M_RADIATOR_SUPPORT_10	2851	-912	-199
M_RADIATOR_SUPPORT_11	2901	-911	-199
M_RADIATOR_SUPPORT_12	2952	-910	-200
M_RADIATOR_SUPPORT_13	3002	-910	-201
M_RADIATOR_SUPPORT_14	3053	-909	-201
M_RADIATOR_SUPPORT_15	3105	-909	-201
M_RADIATOR_SUPPORT_16	3156	-909	-202
M_RADIATOR_SUPPORT_17	3206	-908	-202
M_RADIATOR_SUPPORT_18	3257	-907	-203
M_RADIATOR_SUPPORT_19	3308	-906	-203
M_RADIATOR_SUPPORT_20	3359	-906	-203
M_RADIATOR_SUPPORT_21	3409	-905	-203
M_RADIATOR_SUPPORT_22	3461	-904	-203
M_RADIATOR_SUPPORT_23	3511	-902	-203
M_RADIATOR_SUPPORT_24	3562	-902	-203
M_RADIATOR_SUPPORT_25	3613	-901	-203
M_RADIATOR_SUPPORT_26	3664	-900	-204
M_RADIATOR_SUPPORT_27	3715	-898	-204
M_RADIATOR_SUPPORT_28	3767	-897	-204
M_RADIATOR_SUPPORT_29	3816	-896	-205
M_RADIATOR_SUPPORT_30	3867	-895	-205
M_RADIATOR_SUPPORT_31	3918	-893	-207
M_RADIATOR_SUPPORT_32	3967	-891	-206
M_RADIATOR_SUPPORT_33	4019	-887	-206
M_RADIATOR_SUPPORT_34	4069	-882	-206
M_RADIATOR_SUPPORT_35	4120	-875	-206
M_RADIATOR_SUPPORT_36	4167	-869	-204
M_RADIATOR_SUPPORT_37	4221	-861	-202
M_RADIATOR_SUPPORT_38	4272	-852	-205
M_RADIATOR_SUPPORT_39	4322	-843	-206
M_RADIATOR_SUPPORT_40	4372	-834	-206
M_RADIATOR_SUPPORT_41	4421	-822	-207
M_RADIATOR_SUPPORT_42	4472	-808	-207
M_RADIATOR_SUPPORT_43	4519	-800	-199
M_RADIATOR_SUPPORT_44	4565	-781	-200
M_RADIATOR_SUPPORT_45	4609	-756	-200
M_RADIATOR_SUPPORT_46	4647	-726	-201
M_RADIATOR_SUPPORT_47	4679	-688	-201
M_RADIATOR_SUPPORT_48	4705	-645	-202
M_RADIATOR_SUPPORT_49	4729	-602	-201
M_RADIATOR_SUPPORT_50	4740	-548	-202

M_RADIATOR_SUPPORT_51	4755	-503	-203
M_RADIATOR_SUPPORT_52	4766	-457	-202
M_RADIATOR_SUPPORT_53	4771	-411	-203
M_RADIATOR_SUPPORT_54	4792	-357	-202
M_RADIATOR_SUPPORT_55	4807	-308	-203
M_RADIATOR_SUPPORT_56	4821	-260	-203
M_RADIATOR_SUPPORT_57	4834	-211	-202
M_RADIATOR_SUPPORT_58	4844	-159	-202
M_RADIATOR_SUPPORT_59	4852	-108	-202
M_RADIATOR_SUPPORT_60	4857	-60	-203
M_RADIATOR_SUPPORT_61	4859	-9	-203
M_RADIATOR_SUPPORT_62	4858	40	-202
M_RADIATOR_SUPPORT_63	4854	90	-203
M_RADIATOR_SUPPORT_64	4848	141	-203
M_RADIATOR_SUPPORT_65	4840	189	-203
M_RADIATOR_SUPPORT_66	4830	239	-203
M_RADIATOR_SUPPORT_67	4817	289	-203
M_RADIATOR_SUPPORT_68	4802	336	-203
M_RADIATOR_SUPPORT_69	4785	385	-202
M_RADIATOR_SUPPORT_70	4771	434	-202
M_RADIATOR_SUPPORT_71	4766	486	-202
M_RADIATOR_SUPPORT_72	4752	536	-201
M_RADIATOR_SUPPORT_73	4728	588	-205
M_RADIATOR_SUPPORT_74	4704	634	-206
M_RADIATOR_SUPPORT_75	4678	677	-207
M_RADIATOR_SUPPORT_76	4646	716	-207
M_RADIATOR_SUPPORT_77	4611	747	-207
M_RADIATOR_SUPPORT_78	4569	774	-205
M_RADIATOR_SUPPORT_79	4522	793	-205
M_RADIATOR_SUPPORT_80	4474	807	-205
M_RADIATOR_SUPPORT_81	4422	823	-204
M_RADIATOR_SUPPORT_82	4374	834	-204
M_RADIATOR_SUPPORT_83	4325	844	-203
M_RADIATOR_SUPPORT_84	4275	852	-203
M_RADIATOR_SUPPORT_85	4223	861	-203
M_RADIATOR_SUPPORT_86	4174	868	-203
M_RADIATOR_SUPPORT_87	4123	876	-204
M_RADIATOR_SUPPORT_88	4073	883	-203
M_RADIATOR_SUPPORT_89	4022	890	-203
M_RADIATOR_SUPPORT_90	3972	894	-202
M_RADIATOR_SUPPORT_91	3920	897	-201
M_RADIATOR_SUPPORT_92	3870	898	-202
M_RADIATOR_SUPPORT_93	3819	899	-202
M_RADIATOR_SUPPORT_94	3767	900	-201
M_RADIATOR_SUPPORT_95	3716	901	-200
M_RADIATOR_SUPPORT_96	3665	902	-200
M_RADIATOR_SUPPORT_97	3614	903	-200
M_RADIATOR_SUPPORT_98	3562	905	-200
M_RADIATOR_SUPPORT_99	3511	906	-200
M_RADIATOR_SUPPORT_100	3460	907	-200
M_RADIATOR_SUPPORT_101	3409	908	-200
M_RADIATOR_SUPPORT_102	3359	909	-199

M_RADIATOR_SUPPORT_103	3307	910	-199
M_RADIATOR_SUPPORT_104	3257	910	-199
M_RADIATOR_SUPPORT_105	3207	911	-199
M_RADIATOR_SUPPORT_106	3155	912	-199
M_RADIATOR_SUPPORT_107	3105	912	-198
M_RADIATOR_SUPPORT_108	3054	913	-198
M_RADIATOR_SUPPORT_109	3002	913	-198
M_RADIATOR_SUPPORT_110	2952	914	-198
M_RADIATOR_SUPPORT_111	2901	914	-197
M_RADIATOR_SUPPORT_112	2850	915	-197
M_RADIATOR_SUPPORT_113	2799	915	-197
M_RADIATOR_SUPPORT_114	2748	915	-197
M_RADIATOR_SUPPORT_115	2697	916	-197
M_RADIATOR_SUPPORT_116	2647	916	-196
M_RADIATOR_SUPPORT_117	2595	915	-196
M_RADIATOR_SUPPORT_118	2545	916	-196
M_RADIATOR_SUPPORT_119	2494	916	-196
M_RADIATOR_SUPPORT_120	2444	916	-195
M_RADIATOR_SUPPORT_121	2414	916	-195

POST-TEST

M_RADIATOR_SUPPORT_1	2376	-1007	-139
M_RADIATOR_SUPPORT_2	2399	-991	-139
M_RADIATOR_SUPPORT_3	2397	-958	-139
M_RADIATOR_SUPPORT_4	2422	-940	-139
M_RADIATOR_SUPPORT_5	2423	-898	-140
M_RADIATOR_SUPPORT_6	2429	-870	-140
M_RADIATOR_SUPPORT_7	2565	-1051	-143
M_RADIATOR_SUPPORT_8	2610	-1058	-146
M_RADIATOR_SUPPORT_9	2659	-1066	-147
M_RADIATOR_SUPPORT_10	2707	-1070	-148
M_RADIATOR_SUPPORT_11	2760	-1073	-149
M_RADIATOR_SUPPORT_12	2809	-1075	-151
M_RADIATOR_SUPPORT_13	2864	-1075	-152
M_RADIATOR_SUPPORT_14	2916	-1075	-153
M_RADIATOR_SUPPORT_15	2962	-1073	-155
M_RADIATOR_SUPPORT_16	3011	-1071	-156
M_RADIATOR_SUPPORT_17	3066	-1067	-158
M_RADIATOR_SUPPORT_18	3112	-1064	-159
M_RADIATOR_SUPPORT_19	3149	-1060	-160
M_RADIATOR_SUPPORT_20	3168	-1024	-160
M_RADIATOR_SUPPORT_21	3193	-979	-162
M_RADIATOR_SUPPORT_22	3227	-974	-162
M_RADIATOR_SUPPORT_23	3235	-956	-161
M_RADIATOR_SUPPORT_24	3237	-921	-161
M_RADIATOR_SUPPORT_25	3239	-889	-164
M_RADIATOR_SUPPORT_26	3228	-839	-161
M_RADIATOR_SUPPORT_27	3261	-792	-163
M_RADIATOR_SUPPORT_28	3291	-755	-167
M_RADIATOR_SUPPORT_29	3311	-727	-164
M_RADIATOR_SUPPORT_30	3319	-783	-165
M_RADIATOR_SUPPORT_31	3568	-475	-173

M_RADIATOR_SUPPORT_32	3604	-484	-177
M_RADIATOR_SUPPORT_33	3646	-479	-176
M_RADIATOR_SUPPORT_34	3683	-490	-178
M_RADIATOR_SUPPORT_35	3725	-513	-178
M_RADIATOR_SUPPORT_36	3728	-633	-179
M_RADIATOR_SUPPORT_37	3771	-656	-180
M_RADIATOR_SUPPORT_38	3804	-667	-178
M_RADIATOR_SUPPORT_39	3848	-658	-183
M_RADIATOR_SUPPORT_40	3860	-559	-183
M_RADIATOR_SUPPORT_41	3908	-550	-184
M_RADIATOR_SUPPORT_42	3944	-542	-185
M_RADIATOR_SUPPORT_43	3953	-581	-186
M_RADIATOR_SUPPORT_44	3960	-628	-185
M_RADIATOR_SUPPORT_45	4007	-654	-187
M_RADIATOR_SUPPORT_46	4061	-664	-188
M_RADIATOR_SUPPORT_47	4106	-673	-191
M_RADIATOR_SUPPORT_48	4138	-680	-189
M_RADIATOR_SUPPORT_49	4166	-726	-192
M_RADIATOR_SUPPORT_50	4153	-690	-196
M_RADIATOR_SUPPORT_51	4139	-644	-196
M_RADIATOR_SUPPORT_52	4133	-607	-194
M_RADIATOR_SUPPORT_53	4122	-573	-196
M_RADIATOR_SUPPORT_54	4260	-486	-196
M_RADIATOR_SUPPORT_55	4301	-486	-199
M_RADIATOR_SUPPORT_56	4330	-449	-201
M_RADIATOR_SUPPORT_57	4357	-415	-200
M_RADIATOR_SUPPORT_58	4397	-367	-202
M_RADIATOR_SUPPORT_59	4424	-329	-206
M_RADIATOR_SUPPORT_60	4453	-279	-207
M_RADIATOR_SUPPORT_61	4475	-241	-208
M_RADIATOR_SUPPORT_62	4606	-359	-210
M_RADIATOR_SUPPORT_63	4659	-323	-211
M_RADIATOR_SUPPORT_64	4656	-272	-212
M_RADIATOR_SUPPORT_65	4648	-212	-212
M_RADIATOR_SUPPORT_66	4668	-142	-212
M_RADIATOR_SUPPORT_67	4646	-74	-213
M_RADIATOR_SUPPORT_68	4601	38	-210
M_RADIATOR_SUPPORT_69	4622	88	-213
M_RADIATOR_SUPPORT_70	4635	118	-212
M_RADIATOR_SUPPORT_71	4650	156	-213
M_RADIATOR_SUPPORT_72	4669	195	-213
M_RADIATOR_SUPPORT_73	4711	179	-213
M_RADIATOR_SUPPORT_74	4743	187	-215
M_RADIATOR_SUPPORT_75	4680	246	-210
M_RADIATOR_SUPPORT_76	4731	272	-216
M_RADIATOR_SUPPORT_77	4815	293	-214
M_RADIATOR_SUPPORT_78	4798	340	-216
M_RADIATOR_SUPPORT_79	4779	389	-216
M_RADIATOR_SUPPORT_80	4760	433	-215
M_RADIATOR_SUPPORT_81	4738	479	-214
M_RADIATOR_SUPPORT_82	4712	524	-214
M_RADIATOR_SUPPORT_83	4685	567	-214

M_RADIATOR_SUPPORT_84	4652	605	-213
M_RADIATOR_SUPPORT_85	4615	639	-211
M_RADIATOR_SUPPORT_86	4573	665	-211
M_RADIATOR_SUPPORT_87	4528	689	-209
M_RADIATOR_SUPPORT_88	4480	708	-207
M_RADIATOR_SUPPORT_89	4432	728	-207
M_RADIATOR_SUPPORT_90	4387	745	-206
M_RADIATOR_SUPPORT_91	4338	762	-205
M_RADIATOR_SUPPORT_92	4291	777	-203
M_RADIATOR_SUPPORT_93	4241	792	-203
M_RADIATOR_SUPPORT_94	4191	807	-200
M_RADIATOR_SUPPORT_95	4144	820	-199
M_RADIATOR_SUPPORT_96	4094	834	-198
M_RADIATOR_SUPPORT_97	4045	847	-197
M_RADIATOR_SUPPORT_98	3996	860	-196
M_RADIATOR_SUPPORT_99	3947	870	-195
M_RADIATOR_SUPPORT_100	3897	880	-194
M_RADIATOR_SUPPORT_101	3847	888	-192
M_RADIATOR_SUPPORT_102	3797	897	-191
M_RADIATOR_SUPPORT_103	3747	904	-177
M_RADIATOR_SUPPORT_104	3696	911	-177
M_RADIATOR_SUPPORT_105	3647	918	-177
M_RADIATOR_SUPPORT_106	3597	926	-176
M_RADIATOR_SUPPORT_107	3547	934	-174
M_RADIATOR_SUPPORT_108	3529	936	-174
M_RADIATOR_SUPPORT_109	3507	924	-170
M_RADIATOR_SUPPORT_110	3498	924	-173
M_RADIATOR_SUPPORT_111	3448	925	-172
M_RADIATOR_SUPPORT_112	3397	924	-171
M_RADIATOR_SUPPORT_113	3346	924	-169
M_RADIATOR_SUPPORT_114	3295	924	-168
M_RADIATOR_SUPPORT_115	3243	924	-166
M_RADIATOR_SUPPORT_116	3194	924	-165
M_RADIATOR_SUPPORT_117	3143	924	-164
M_RADIATOR_SUPPORT_118	3092	923	-162
M_RADIATOR_SUPPORT_119	3042	923	-161
M_RADIATOR_SUPPORT_120	2991	923	-158
M_RADIATOR_SUPPORT_121	2940	923	-159
M_RADIATOR_SUPPORT_122	2890	922	-156
M_RADIATOR_SUPPORT_123	2839	922	-155
M_RADIATOR_SUPPORT_124	2788	922	-155
M_RADIATOR_SUPPORT_125	2737	922	-153
M_RADIATOR_SUPPORT_126	2686	921	-151
M_RADIATOR_SUPPORT_127	2636	921	-151
M_RADIATOR_SUPPORT_128	2584	921	-149
M_RADIATOR_SUPPORT_129	2536	921	-148
M_RADIATOR_SUPPORT_130	2482	920	-147
M_RADIATOR_SUPPORT_131	2444	920	-145
M_RADIATOR_SUPPORT_132	2407	919	-145

	BULLET PRE-TEST		
M_BUMPER_TOP_1	2404	-932	11
M_BUMPER_TOP_2	2450	-931	11
M_BUMPER_TOP_3	2500	-931	11
M_BUMPER_TOP_4	2551	-930	9
M_BUMPER_TOP_5	2601	-929	11
M_BUMPER_TOP_6	2654	-928	11
M_BUMPER_TOP_7	2705	-927	9
M_BUMPER_TOP_8	2757	-925	10
M_BUMPER_TOP_9	2807	-925	10
M_BUMPER_TOP_10	2857	-923	10
M_BUMPER_TOP_11	2908	-922	9
M_BUMPER_TOP_12	2959	-921	9
M_BUMPER_TOP_13	3010	-920	8
M_BUMPER_TOP_14	3061	-918	8
M_BUMPER_TOP_15	3113	-917	7
M_BUMPER_TOP_16	3162	-915	6
M_BUMPER_TOP_17	3214	-914	6
M_BUMPER_TOP_18	3266	-912	6
M_BUMPER_TOP_19	3316	-911	6
M_BUMPER_TOP_20	3368	-909	7
M_BUMPER_TOP_21	3418	-907	6
M_BUMPER_TOP_22	3468	-900	6
M_BUMPER_TOP_23	3520	-897	5
M_BUMPER_TOP_24	3571	-897	5
M_BUMPER_TOP_25	3619	-902	4
M_BUMPER_TOP_26	3634	-902	5
M_BUMPER_TOP_27	3736	-832	4
M_BUMPER_TOP_28	3756	-864	4
M_BUMPER_TOP_29	3791	-880	4
M_BUMPER_TOP_30	3831	-884	3
M_BUMPER_TOP_31	3874	-881	5
M_BUMPER_TOP_32	3914	-877	4
M_BUMPER_TOP_33	3953	-873	3
M_BUMPER_TOP_34	3998	-873	3
M_BUMPER_TOP_35	4043	-878	3
M_BUMPER_TOP_36	4087	-884	2
M_BUMPER_TOP_37	4128	-885	3
M_BUMPER_TOP_38	4171	-874	0
M_BUMPER_TOP_39	4202	-856	2
M_BUMPER_TOP_40	4218	-835	8
M_BUMPER_TOP_41	4357	-815	1
M_BUMPER_TOP_42	4405	-801	0
M_BUMPER_TOP_43	4457	-793	1
M_BUMPER_TOP_44	4507	-783	0
M_BUMPER_TOP_45	4558	-778	0
M_BUMPER_TOP_46	4606	-768	0
M_BUMPER_TOP_47	4667	-753	-1
M_BUMPER_TOP_48	4815	-669	12
M_BUMPER_TOP_49	4838	-628	10
M_BUMPER_TOP_50	4862	-582	8

M_BUMPER_TOP_51	4869	-534	9
M_BUMPER_TOP_52	4875	-483	9
M_BUMPER_TOP_53	4880	-433	8
M_BUMPER_TOP_54	4883	-383	7
M_BUMPER_TOP_55	4887	-334	8
M_BUMPER_TOP_56	4891	-283	8
M_BUMPER_TOP_57	4893	-235	7
M_BUMPER_TOP_58	4896	-184	8
M_BUMPER_TOP_59	4898	-122	10
M_BUMPER_TOP_60	4899	-69	10
M_BUMPER_TOP_61	4900	-19	10
M_BUMPER_TOP_62	4900	29	9
M_BUMPER_TOP_63	4899	82	9
M_BUMPER_TOP_64	4898	129	10
M_BUMPER_TOP_65	4897	178	10
M_BUMPER_TOP_66	4895	229	9
M_BUMPER_TOP_67	4893	279	10
M_BUMPER_TOP_68	4890	329	11
M_BUMPER_TOP_69	4887	379	12
M_BUMPER_TOP_70	4883	427	12
M_BUMPER_TOP_71	4879	478	12
M_BUMPER_TOP_72	4872	530	13
M_BUMPER_TOP_73	4864	579	11
M_BUMPER_TOP_74	4840	624	12
M_BUMPER_TOP_75	4818	665	15
M_BUMPER_TOP_76	4673	755	-5
M_BUMPER_TOP_77	4623	761	-4
M_BUMPER_TOP_78	4574	775	-4
M_BUMPER_TOP_79	4525	784	-4
M_BUMPER_TOP_80	4474	793	-4
M_BUMPER_TOP_81	4426	802	-4
M_BUMPER_TOP_82	4377	813	-4
M_BUMPER_TOP_83	4348	820	-4
M_BUMPER_TOP_84	4211	828	0
M_BUMPER_TOP_85	4186	861	-4
M_BUMPER_TOP_86	4156	872	-4
M_BUMPER_TOP_87	4121	879	-3
M_BUMPER_TOP_88	4078	878	-1
M_BUMPER_TOP_89	4033	873	-1
M_BUMPER_TOP_90	3994	870	-3
M_BUMPER_TOP_91	3952	871	-4
M_BUMPER_TOP_92	3919	874	-5
M_BUMPER_TOP_93	3879	876	0
M_BUMPER_TOP_94	3820	878	0
M_BUMPER_TOP_95	3784	869	-1
M_BUMPER_TOP_96	3751	851	-1
M_BUMPER_TOP_97	3741	828	-1
M_BUMPER_TOP_98	3635	905	1
M_BUMPER_TOP_99	3584	903	0
M_BUMPER_TOP_100	3533	901	1
M_BUMPER_TOP_101	3481	903	0
M_BUMPER_TOP_102	3431	904	1

M_BUMPER_TOP_103	3380	910	1
M_BUMPER_TOP_104	3329	911	1
M_BUMPER_TOP_105	3278	913	1
M_BUMPER_TOP_106	3227	914	0
M_BUMPER_TOP_107	3175	915	0
M_BUMPER_TOP_108	3122	917	1
M_BUMPER_TOP_109	3074	919	0
M_BUMPER_TOP_110	3023	920	0
M_BUMPER_TOP_111	2972	921	1
M_BUMPER_TOP_112	2920	923	2
M_BUMPER_TOP_113	2868	924	2
M_BUMPER_TOP_114	2819	924	2
M_BUMPER_TOP_115	2768	925	2
M_BUMPER_TOP_116	2715	926	2
M_BUMPER_TOP_117	2663	927	3
M_BUMPER_TOP_118	2614	928	2
M_BUMPER_TOP_119	2563	929	1
M_BUMPER_TOP_120	2511	930	3
M_BUMPER_TOP_121	2461	931	3
M_BUMPER_TOP_122	2409	932	3
M_BUMPER_TOP_123	2398	930	4

POST-TEST

M_BUMPER_TOP_1	2293	-1091	62
M_BUMPER_TOP_2	2344	-1088	60
M_BUMPER_TOP_3	2394	-1087	60
M_BUMPER_TOP_4	2446	-1084	59
M_BUMPER_TOP_5	2494	-1080	57
M_BUMPER_TOP_6	2544	-1071	54
M_BUMPER_TOP_7	2595	-1066	55
M_BUMPER_TOP_8	2645	-1062	52
M_BUMPER_TOP_9	2696	-1056	52
M_BUMPER_TOP_10	2747	-1052	50
M_BUMPER_TOP_11	2796	-1048	49
M_BUMPER_TOP_12	2849	-1044	47
M_BUMPER_TOP_13	2899	-1041	45
M_BUMPER_TOP_14	2947	-1039	42
M_BUMPER_TOP_15	2997	-1022	42
M_BUMPER_TOP_16	3044	-1003	41
M_BUMPER_TOP_17	3092	-984	41
M_BUMPER_TOP_18	3140	-967	39
M_BUMPER_TOP_19	3188	-950	37
M_BUMPER_TOP_20	3234	-936	36
M_BUMPER_TOP_21	3283	-918	35
M_BUMPER_TOP_22	3316	-900	33
M_BUMPER_TOP_23	3320	-874	37
M_BUMPER_TOP_24	3314	-855	46
M_BUMPER_TOP_25	3318	-748	34
M_BUMPER_TOP_26	3366	-780	33
M_BUMPER_TOP_27	3473	-834	27
M_BUMPER_TOP_28	3525	-809	28
M_BUMPER_TOP_29	3577	-856	24

M_BUMPER_TOP_30	3617	-887	26
M_BUMPER_TOP_31	3679	-897	24
M_BUMPER_TOP_32	3709	-870	20
M_BUMPER_TOP_33	3850	-470	20
M_BUMPER_TOP_34	3884	-486	12
M_BUMPER_TOP_35	3931	-502	13
M_BUMPER_TOP_36	3965	-669	13
M_BUMPER_TOP_37	4010	-695	12
M_BUMPER_TOP_38	4053	-718	8
M_BUMPER_TOP_39	4067	-709	9
M_BUMPER_TOP_40	4088	-635	8
M_BUMPER_TOP_41	4136	-663	7
M_BUMPER_TOP_42	4183	-644	7
M_BUMPER_TOP_43	4259	-713	0
M_BUMPER_TOP_44	4275	-696	0
M_BUMPER_TOP_45	4322	-658	-1
M_BUMPER_TOP_46	4332	-611	0
M_BUMPER_TOP_47	4350	-564	-3
M_BUMPER_TOP_48	4378	-521	-2
M_BUMPER_TOP_49	4395	-485	-5
M_BUMPER_TOP_50	4412	-443	-6
M_BUMPER_TOP_51	4440	-399	-8
M_BUMPER_TOP_52	4468	-360	-8
M_BUMPER_TOP_53	4487	-332	-8
M_BUMPER_TOP_54	4514	-326	-10
M_BUMPER_TOP_55	4536	-315	-11
M_BUMPER_TOP_56	4550	-294	-10
M_BUMPER_TOP_57	4577	-253	-12
M_BUMPER_TOP_58	4605	-209	-12
M_BUMPER_TOP_59	4624	-178	-12
M_BUMPER_TOP_60	4632	-165	-13
M_BUMPER_TOP_61	4633	-138	-14
M_BUMPER_TOP_62	4628	-111	-13
M_BUMPER_TOP_63	4651	-74	-14
M_BUMPER_TOP_64	4680	-24	-15
M_BUMPER_TOP_65	4704	19	-16
M_BUMPER_TOP_66	4727	60	-16
M_BUMPER_TOP_67	4752	106	-18
M_BUMPER_TOP_68	4778	155	-18
M_BUMPER_TOP_69	4806	211	-20
M_BUMPER_TOP_70	4823	250	-21
M_BUMPER_TOP_71	4835	281	-21
M_BUMPER_TOP_72	4842	315	-20
M_BUMPER_TOP_73	4843	372	-20
M_BUMPER_TOP_74	4844	387	-21
M_BUMPER_TOP_75	4813	409	-14
M_BUMPER_TOP_76	4762	361	-12
M_BUMPER_TOP_77	4714	373	-12
M_BUMPER_TOP_78	4668	381	-11
M_BUMPER_TOP_79	4617	398	-9
M_BUMPER_TOP_80	4574	407	-8
M_BUMPER_TOP_81	4535	414	-5

M_BUMPER_TOP_82	4666	644	-11
M_BUMPER_TOP_83	4605	657	-10
M_BUMPER_TOP_84	4566	688	-8
M_BUMPER_TOP_85	4516	703	-7
M_BUMPER_TOP_86	4468	714	-6
M_BUMPER_TOP_87	4427	724	-5
M_BUMPER_TOP_88	4388	734	-4
M_BUMPER_TOP_89	4346	744	-2
M_BUMPER_TOP_90	4317	751	-1
M_BUMPER_TOP_91	4296	735	-2
M_BUMPER_TOP_92	4258	753	0
M_BUMPER_TOP_93	4215	763	2
M_BUMPER_TOP_94	4166	773	2
M_BUMPER_TOP_95	4114	784	5
M_BUMPER_TOP_96	4080	801	5
M_BUMPER_TOP_97	4040	825	7
M_BUMPER_TOP_98	3999	845	14
M_BUMPER_TOP_99	3958	860	14
M_BUMPER_TOP_100	3923	864	15
M_BUMPER_TOP_101	3893	856	13
M_BUMPER_TOP_102	3868	839	16
M_BUMPER_TOP_103	3628	914	23
M_BUMPER_TOP_104	3577	917	24
M_BUMPER_TOP_105	3526	920	26
M_BUMPER_TOP_106	3477	921	27
M_BUMPER_TOP_107	3426	923	30
M_BUMPER_TOP_108	3374	923	31
M_BUMPER_TOP_109	3324	923	31
M_BUMPER_TOP_110	3273	925	33
M_BUMPER_TOP_111	3221	925	34
M_BUMPER_TOP_112	3178	925	31
M_BUMPER_TOP_113	3121	927	38
M_BUMPER_TOP_114	3069	928	39
M_BUMPER_TOP_115	3019	928	40
M_BUMPER_TOP_116	2968	929	41
M_BUMPER_TOP_117	2918	929	43
M_BUMPER_TOP_118	2866	930	44
M_BUMPER_TOP_119	2816	930	45
M_BUMPER_TOP_120	2765	931	47
M_BUMPER_TOP_121	2714	931	49
M_BUMPER_TOP_122	2663	931	49
M_BUMPER_TOP_123	2613	931	52
M_BUMPER_TOP_124	2562	932	53
M_BUMPER_TOP_125	2511	932	54
M_BUMPER_TOP_126	2461	932	55
M_BUMPER_TOP_127	2410	932	56
M_BUMPER_TOP_128	2395	932	56

BULLET  
PRE-TEST

M_BUMPER_BOTTOM_1	2389	-925	138
M_BUMPER_BOTTOM_2	2420	-924	139
M_BUMPER_BOTTOM_3	2471	-923	139
M_BUMPER_BOTTOM_4	2521	-923	138
M_BUMPER_BOTTOM_5	2572	-922	137
M_BUMPER_BOTTOM_6	2623	-921	137
M_BUMPER_BOTTOM_7	2676	-920	138
M_BUMPER_BOTTOM_8	2724	-919	137
M_BUMPER_BOTTOM_9	2776	-918	137
M_BUMPER_BOTTOM_10	2826	-916	137
M_BUMPER_BOTTOM_11	2878	-915	138
M_BUMPER_BOTTOM_12	2930	-913	136
M_BUMPER_BOTTOM_13	2981	-912	136
M_BUMPER_BOTTOM_14	3034	-910	137
M_BUMPER_BOTTOM_15	3083	-908	137
M_BUMPER_BOTTOM_16	3134	-906	136
M_BUMPER_BOTTOM_17	3186	-904	136
M_BUMPER_BOTTOM_18	3237	-902	136
M_BUMPER_BOTTOM_19	3287	-900	135
M_BUMPER_BOTTOM_20	3340	-898	136
M_BUMPER_BOTTOM_21	3389	-896	135
M_BUMPER_BOTTOM_22	3440	-894	135
M_BUMPER_BOTTOM_23	3493	-893	135
M_BUMPER_BOTTOM_24	3542	-893	135
M_BUMPER_BOTTOM_25	3576	-891	134
M_BUMPER_BOTTOM_26	3659	-835	129
M_BUMPER_BOTTOM_27	3679	-871	132
M_BUMPER_BOTTOM_28	3711	-886	133
M_BUMPER_BOTTOM_29	3749	-882	133
M_BUMPER_BOTTOM_30	3777	-867	132
M_BUMPER_BOTTOM_31	3813	-826	133
M_BUMPER_BOTTOM_32	3842	-844	133
M_BUMPER_BOTTOM_33	3891	-850	131
M_BUMPER_BOTTOM_34	3933	-862	132
M_BUMPER_BOTTOM_35	3967	-863	132
M_BUMPER_BOTTOM_36	3998	-863	133
M_BUMPER_BOTTOM_37	4030	-858	132
M_BUMPER_BOTTOM_38	4071	-849	131
M_BUMPER_BOTTOM_39	4104	-846	133
M_BUMPER_BOTTOM_40	4134	-826	132
M_BUMPER_BOTTOM_41	4163	-864	130
M_BUMPER_BOTTOM_42	4196	-883	134
M_BUMPER_BOTTOM_43	4245	-886	131
M_BUMPER_BOTTOM_44	4282	-862	129
M_BUMPER_BOTTOM_45	4290	-837	127
M_BUMPER_BOTTOM_46	4477	-582	136
M_BUMPER_BOTTOM_47	4525	-588	135
M_BUMPER_BOTTOM_48	4576	-594	136
M_BUMPER_BOTTOM_49	4625	-599	135
M_BUMPER_BOTTOM_50	4660	-600	136

M_BUMPER_BOTTOM_51	4704	-600	136
M_BUMPER_BOTTOM_52	4747	-600	136
M_BUMPER_BOTTOM_53	4778	-599	134
M_BUMPER_BOTTOM_54	4817	-670	134
M_BUMPER_BOTTOM_55	4839	-627	133
M_BUMPER_BOTTOM_56	4863	-580	133
M_BUMPER_BOTTOM_57	4872	-522	133
M_BUMPER_BOTTOM_58	4877	-471	134
M_BUMPER_BOTTOM_59	4882	-421	134
M_BUMPER_BOTTOM_60	4886	-372	133
M_BUMPER_BOTTOM_61	4890	-321	134
M_BUMPER_BOTTOM_62	4893	-271	131
M_BUMPER_BOTTOM_63	4896	-222	133
M_BUMPER_BOTTOM_64	4898	-173	133
M_BUMPER_BOTTOM_65	4899	-123	133
M_BUMPER_BOTTOM_66	4900	-73	134
M_BUMPER_BOTTOM_67	4901	-22	134
M_BUMPER_BOTTOM_68	4901	28	135
M_BUMPER_BOTTOM_69	4901	77	134
M_BUMPER_BOTTOM_70	4900	127	135
M_BUMPER_BOTTOM_71	4898	177	134
M_BUMPER_BOTTOM_72	4896	227	136
M_BUMPER_BOTTOM_73	4894	276	136
M_BUMPER_BOTTOM_74	4891	328	135
M_BUMPER_BOTTOM_75	4887	378	135
M_BUMPER_BOTTOM_76	4884	426	136
M_BUMPER_BOTTOM_77	4879	477	136
M_BUMPER_BOTTOM_78	4872	527	135
M_BUMPER_BOTTOM_79	4865	576	136
M_BUMPER_BOTTOM_80	4842	621	135
M_BUMPER_BOTTOM_81	4820	663	134
M_BUMPER_BOTTOM_82	4783	595	130
M_BUMPER_BOTTOM_83	4736	595	135
M_BUMPER_BOTTOM_84	4700	596	134
M_BUMPER_BOTTOM_85	4657	595	135
M_BUMPER_BOTTOM_86	4611	594	135
M_BUMPER_BOTTOM_87	4580	594	135
M_BUMPER_BOTTOM_88	4293	831	134
M_BUMPER_BOTTOM_89	4271	867	136
M_BUMPER_BOTTOM_90	4229	883	135
M_BUMPER_BOTTOM_91	4200	878	137
M_BUMPER_BOTTOM_92	4171	867	135
M_BUMPER_BOTTOM_93	4124	834	134
M_BUMPER_BOTTOM_94	4074	844	135
M_BUMPER_BOTTOM_95	4028	857	135
M_BUMPER_BOTTOM_96	3990	856	136
M_BUMPER_BOTTOM_97	3941	857	138
M_BUMPER_BOTTOM_98	3894	845	137
M_BUMPER_BOTTOM_99	3845	840	133
M_BUMPER_BOTTOM_100	3808	822	130
M_BUMPER_BOTTOM_101	3786	855	134
M_BUMPER_BOTTOM_102	3756	875	134

M_BUMPER_BOTTOM_103	3705	879	135
M_BUMPER_BOTTOM_104	3665	852	134
M_BUMPER_BOTTOM_105	3657	829	136
M_BUMPER_BOTTOM_106	3578	894	135
M_BUMPER_BOTTOM_107	3527	896	135
M_BUMPER_BOTTOM_108	3475	897	135
M_BUMPER_BOTTOM_109	3425	899	135
M_BUMPER_BOTTOM_110	3373	901	135
M_BUMPER_BOTTOM_111	3321	903	134
M_BUMPER_BOTTOM_112	3269	905	134
M_BUMPER_BOTTOM_113	3219	906	136
M_BUMPER_BOTTOM_114	3168	908	136
M_BUMPER_BOTTOM_115	3116	910	136
M_BUMPER_BOTTOM_116	3065	912	136
M_BUMPER_BOTTOM_117	3014	913	136
M_BUMPER_BOTTOM_118	2963	915	136
M_BUMPER_BOTTOM_119	2913	916	136
M_BUMPER_BOTTOM_120	2860	918	137
M_BUMPER_BOTTOM_121	2809	919	137
M_BUMPER_BOTTOM_122	2759	920	138
M_BUMPER_BOTTOM_123	2708	922	137
M_BUMPER_BOTTOM_124	2656	923	137
M_BUMPER_BOTTOM_125	2606	924	137
M_BUMPER_BOTTOM_126	2554	924	138
M_BUMPER_BOTTOM_127	2503	925	137
M_BUMPER_BOTTOM_128	2452	926	138
M_BUMPER_BOTTOM_129	2402	926	139
M_BUMPER_BOTTOM_130	2387	926	138

POST-TEST

M_BUMPER_BOTTOM 1	2304	-1071	171
M_BUMPER_BOTTOM 2	2354	-1069	169
M_BUMPER_BOTTOM 3	2405	-1064	166
M_BUMPER_BOTTOM 4	2455	-1059	165
M_BUMPER_BOTTOM 5	2505	-1054	164
M_BUMPER_BOTTOM 6	2556	-1048	163
M_BUMPER_BOTTOM 7	2606	-1043	161
M_BUMPER_BOTTOM 8	2656	-1037	160
M_BUMPER_BOTTOM 9	2707	-1031	159
M_BUMPER_BOTTOM 10	2757	-1026	156
M_BUMPER_BOTTOM 11	2806	-1018	155
M_BUMPER_BOTTOM 12	2857	-1011	153
M_BUMPER_BOTTOM 13	2908	-1006	154
M_BUMPER_BOTTOM 14	2958	-996	152
M_BUMPER_BOTTOM 15	3008	-981	151
M_BUMPER_BOTTOM 16	3055	-966	148
M_BUMPER_BOTTOM 17	3103	-949	146
M_BUMPER_BOTTOM 18	3153	-937	146
M_BUMPER_BOTTOM 19	3200	-921	144
M_BUMPER_BOTTOM 20	3246	-901	142
M_BUMPER_BOTTOM 21	3292	-878	140
M_BUMPER_BOTTOM 22	3303	-833	142

M_BUMPER_BOTTOM 23	3323	-744	140
M_BUMPER_BOTTOM 24	3368	-768	139
M_BUMPER_BOTTOM 25	3413	-798	138
M_BUMPER_BOTTOM 26	3458	-811	138
M_BUMPER_BOTTOM 27	3497	-837	136
M_BUMPER_BOTTOM 28	3538	-840	133
M_BUMPER_BOTTOM 29	3583	-885	144
M_BUMPER_BOTTOM 30	3641	-866	132
M_BUMPER_BOTTOM 31	3667	-910	131
M_BUMPER_BOTTOM 32	3707	-933	130
M_BUMPER_BOTTOM 33	3746	-917	126
M_BUMPER_BOTTOM 34	3835	-588	120
M_BUMPER_BOTTOM 35	3871	-617	119
M_BUMPER_BOTTOM 36	3910	-635	117
M_BUMPER_BOTTOM 37	3952	-658	116
M_BUMPER_BOTTOM 38	3992	-677	117
M_BUMPER_BOTTOM 39	4002	-674	118
M_BUMPER_BOTTOM 40	4018	-641	116
M_BUMPER_BOTTOM 41	4033	-609	117
M_BUMPER_BOTTOM 42	4049	-580	116
M_BUMPER_BOTTOM 43	4042	-549	115
M_BUMPER_BOTTOM 44	4051	-512	114
M_BUMPER_BOTTOM 45	4059	-468	114
M_BUMPER_BOTTOM 46	4080	-432	114
M_BUMPER_BOTTOM 47	4113	-407	117
M_BUMPER_BOTTOM 48	4158	-431	111
M_BUMPER_BOTTOM 49	4187	-393	109
M_BUMPER_BOTTOM 50	4226	-371	110
M_BUMPER_BOTTOM 51	4260	-355	109
M_BUMPER_BOTTOM 52	4280	-316	107
M_BUMPER_BOTTOM 53	4306	-265	106
M_BUMPER_BOTTOM 54	4318	-232	106
M_BUMPER_BOTTOM 55	4349	-179	105
M_BUMPER_BOTTOM 56	4408	-175	103
M_BUMPER_BOTTOM 57	4431	-147	101
M_BUMPER_BOTTOM 58	4440	-133	105
M_BUMPER_BOTTOM 59	4500	-165	100
M_BUMPER_BOTTOM 60	4526	-133	100
M_BUMPER_BOTTOM 61	4571	-112	97
M_BUMPER_BOTTOM 62	4568	-61	99
M_BUMPER_BOTTOM 63	4596	-14	96
M_BUMPER_BOTTOM 64	4621	33	95
M_BUMPER_BOTTOM 65	4639	64	95
M_BUMPER_BOTTOM 66	4668	92	96
M_BUMPER_BOTTOM 67	4690	139	94
M_BUMPER_BOTTOM 68	4701	198	92
M_BUMPER_BOTTOM 69	4716	250	98
M_BUMPER_BOTTOM 70	4653	269	98
M_BUMPER_BOTTOM 71	4589	288	102
M_BUMPER_BOTTOM 72	4555	363	103
M_BUMPER_BOTTOM 73	4479	324	106
M_BUMPER_BOTTOM 74	4425	339	108

M_BUMPER_BOTTOM 75	4511	542	102
M_BUMPER_BOTTOM 76	4520	592	102
M_BUMPER_BOTTOM 77	4459	593	104
M_BUMPER_BOTTOM 78	4413	598	106
M_BUMPER_BOTTOM 79	4397	642	105
M_BUMPER_BOTTOM 80	4396	675	105
M_BUMPER_BOTTOM 81	4373	702	105
M_BUMPER_BOTTOM 82	4338	717	107
M_BUMPER_BOTTOM 83	4297	713	109
M_BUMPER_BOTTOM 84	4235	707	109
M_BUMPER_BOTTOM 85	4191	732	111
M_BUMPER_BOTTOM 86	4148	753	111
M_BUMPER_BOTTOM 87	4107	773	112
M_BUMPER_BOTTOM 88	4056	782	116
M_BUMPER_BOTTOM 89	4010	795	118
M_BUMPER_BOTTOM 90	3958	812	116
M_BUMPER_BOTTOM 91	3937	844	119
M_BUMPER_BOTTOM 92	3921	864	118
M_BUMPER_BOTTOM 93	3890	880	119
M_BUMPER_BOTTOM 94	3856	881	121
M_BUMPER_BOTTOM 95	3818	854	110
M_BUMPER_BOTTOM 96	3579	909	135
M_BUMPER_BOTTOM 97	3530	911	139
M_BUMPER_BOTTOM 98	3480	913	140
M_BUMPER_BOTTOM 99	3429	911	141
M_BUMPER_BOTTOM 100	3377	913	142
M_BUMPER_BOTTOM 101	3326	914	143
M_BUMPER_BOTTOM 102	3276	915	145
M_BUMPER_BOTTOM 103	3225	916	147
M_BUMPER_BOTTOM 104	3173	917	149
M_BUMPER_BOTTOM 105	3124	918	149
M_BUMPER_BOTTOM 106	3073	919	152
M_BUMPER_BOTTOM 107	3021	920	153
M_BUMPER_BOTTOM 108	2971	920	155
M_BUMPER_BOTTOM 109	2920	922	154
M_BUMPER_BOTTOM 110	2869	922	157
M_BUMPER_BOTTOM 111	2819	922	159
M_BUMPER_BOTTOM 112	2769	923	159
M_BUMPER_BOTTOM 113	2717	923	161
M_BUMPER_BOTTOM 114	2666	924	162
M_BUMPER_BOTTOM 115	2615	924	162
M_BUMPER_BOTTOM 116	2565	924	165
M_BUMPER_BOTTOM 117	2514	924	166
M_BUMPER_BOTTOM 118	2464	924	167
M_BUMPER_BOTTOM 119	2411	924	168
M_BUMPER_BOTTOM 120	2381	924	170