REPORT NUMBER: SINCAP-MCW-12-02

NEW CAR ASSESSMENT PROGRAM (NCAP)
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST

FORD MOTOR COMPANY
2012 FORD EXPLORER 5-DOOR SUV
NHTSA NUMBER: MC 0205

PREPARED BY:
MEDICAL COLLEGE OF WISCONSIN
5000 WEST NATIONAL AVENUE
RESEARCH 151
MILWAUKEE, WISCONSIN 53295

TEST DATE: 27 OCTOBER 2011

REPORT DATE: 10 NOVEMBER 2011

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
1200 NEW JERSEY AVE, SE, ROOM W43-410
WASHINGTON, D.C. 20590

Test Vehicle: 2012 Ford Explorer 5-Door SUV
Test Program: SINCAP

NHTSA Number: MC 0205
Test Date: October 27, 2012

Prepared by: _____

Approved by: _____

Approval Date: 1 DEC 2011

FINAL REPORT ACCEPTANCE BY OCWS:

_____
Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

_____
COTR, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

Technical Report Documentation Page

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4. Title and Subtitle Final report of New Car Assessment Program Side Impact MDB Test of a 2012 Ford Explorer 5-Door SUV NHTSA No. MC 0205		*5. Report Date* November 10, 2011 *6. Performing Organization Code* MCW
7. Author(s) Frank A. Pintar, Ph. D, Project Manager Mark Meyer, Project Engineer		*8. Performing Organization Report No.* MCW-DOT-12-02
9. Performing Organization Name and Address Medical College of Wisconsin 5000 W. National Ave. Research 151 Milwaukee, WI 53295		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-09-D-00123
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave, SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered:* Final Test Report Oct. 27 to Nov. 10, 2011 *14. Sponsoring Agency Code* NVS-111
15. Supplementary Notes		

16. Abstract

A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2012 Ford Explorer 5-Door SUV in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the Medical College of Wisconsin (MCW) facility in Milwaukee, Wisconsin on 27 October 2011.

The impact velocity of the Moving Deformable Barrier (MDB) was 62.3 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 22 °C. The target vehicle's post test maximum static crush was 231 mm at level 2. The test vehicle's performance is as follows:

	Units	IARV	DRIVER ATD (ES-2re)
Head Injury Criteria (HIC_{36})	N/a	1000	43.9
Maximum Thoracic Rib Deflection	mm	44	21.3
Total Abdominal Force	N	2500	598.9
Public Symphysis Force	N	6000	1313.8

	Units	IARV	Pass. ATD (SID-IIs)
Head Injury Criteria (HIC_{36})	N/a	1000	136
Resultant Lower Spine Acceleration	G's	82	32.2
Total Pelvic Force (sum of Acetabular and Iliac forces)	N	5525	2331.5
Maximum Thoracic Rib Deflection	N	38	8.0
Maximum Abdominal Rib Deflection	N	45	15.0

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

Technical Report Documentation Page (CONTINUED)

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Form DOT F1700.7 (8-72)

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SECTION 1
TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2012 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-09-D-00123. The purpose of this test is to generate comparative side impact performance in a 2012 Ford Explorer 5-Door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated August 2011.

SECTION 2
SUMMARY OF TEST RESULTS

A 2012 Ford Explorer 5-Door SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.3 km/h (38.7 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by The Medical College of Wisconsin in Milwaukee, Wisconsin, on October 27, 2011. Pre test and post test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated August 2011. The side impact event was documented by 11 cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

- Primary and Redundant Head CG Tri-Axial Accelerometers
- Chest, Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
- Abdomen Forward, Middle, and Rear Y-Axis Load Cells
- Lower Spine (T_{12}) Tri-Axial Accelerometers
- Pubic Symphysis Y-Axis Load Cell

PASSENGER ATD (SID-IIs)

- Primary and Redundant Head CG Tri-Axial Accelerometers
- Chest, Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
- Abdomen Upper Rib and Lower Rib Y-Axis Displacement Potentiometers
- Lower Spine (T_{12}) Tri-Axial Accelerometers
- Acetabulum and Iliac Wing Y-Axis Load Cells

Supplemental restraint information is given below:

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint type	Left Front (Driver)		Left Rear (Passenger)	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	Did Not Deploy	No	N/a
Knee Airbag	No	N/a	No	N/a
Side Torso/Abdomen/Pelvis Airbag	Yes	Deployed	No	N/a
Side Curtain/Tube Head Airbag	Yes	Deployed	Yes	Deployed
Seat Belt Pretensioner	Yes	Deployed	Yes	Deployed
Seat Belt Load Limiter	Yes	N/a	No	N/a

SECTION 2
SUMMARY OF TEST RESULTS (CONTINUED)

Dummy injury values were recorded as follows:

DRIVER DUMMY INJURY VALUES			
Measurement Description	**Driver ATD (ES-2re)**		
	Units	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/a	1000	43.9
Maximum Thorax Rib Deflection	mm	44	21.3
Combined Abdominal Force	N	2500	598.9
Pubic Symphysis Force	N	6000	1313.8

PASSENGER DUMMY INJURY VALUES			
Measurement Description	**Passenger ATD (SID-IIs)**		
	Units	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/a	1000	136
Lower Spine (T_{12}) Resultant Acceleration	G's	82	32.2
Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2331.5
Maximum Thoracic Rib Deflection	mm	38*	8.0
Maximum Abdominal Rib Deflection	mm	45*	15.0

**Proposed IARV*

GENERAL COMMENTS
The documentation video was lost due to operator error.

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

PRE TEST

Data Sheet No. 1 – General Test and Vehicle Parameter Data

Data Sheet No. 2 – Seat, Seat Belt, Steering Wheel Adjustment and Fuel System Data

Data Sheet No. 3 – Dummy Longitudinal Clearance Dimensions

Data Sheet No. 4 – Dummy Lateral Clearance Dimensions

Data Sheet No. 5 – Camera and Instrumentation Data

Data Sheet No. 6 – Test Vehicle Accelerometer Locations

Data Sheet No. 7 – MDB Accelerometer Locations

POST TEST

Data Sheet No. 8 – Post-Test Observations

Data Sheet No. 9 – MDB Summary of Results

Data Sheet No. 10 – Test Vehicle Profile Measurements

Data Sheet No. 11 – Test Vehicle Exterior Crush Measurements

Data Sheet No. 12 – MDB Exterior Static Crush Measurements

Data Sheet No. 13 – FMVSS No. 301 Static Rollover Results

Data Sheet No. 14 – Dummy/Vehicle Temperature and Humidity Stabilization Data

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

VEHICLE INFORMATION	
NHTSA No.	MC 0205
Model Year	2012
Make	Ford
Model	Explorer
Body Style	SUV
VIN	1FMHK7B88CGA24076
Body Color	Silver Metallic
Odometer Reading (km/mi)	90.6 mi
Engine Displacement (L)	3.5
Type/No. of Cylinders	6
Engine Placement	Lateral
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	FWD
Roof Rack	Yes
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes
All-Wheel Drive (AWD)	No

VEHICLE OPTIONS	
Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks (ADL)	Yes
Power Window Auto-Reverse	No
Other Optional Features	None Noted
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Safety Restraint	None Noted

Does owner's manual provide instructions to turn off automatic door locks? No

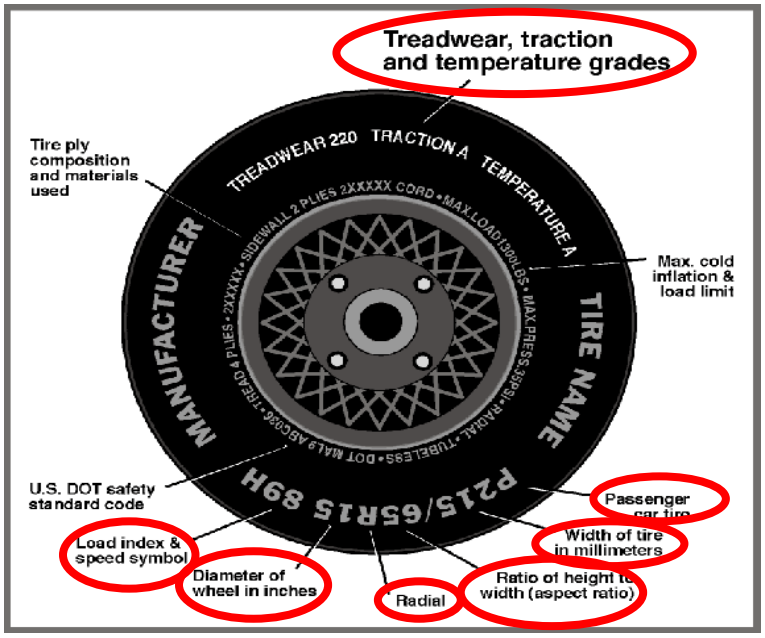
DATA FROM CERTIFICATION LABEL			
Manufactured By	Ford Motor Company	GVWR (kg)	2794
Date of Manufacture	August 2011	GAWR Front(kg)	1397
Vehicle Type	SUV	GAWR Rear (kg)	1497

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION					
	Front	**Rear**	**Third**	**Total**	
Designated Seating Capacity (DSC)	2	3	2	7	
Capacity Weight (VCW) (kg)				723.5	(A)
DSC X 68.04 (kg)				476.3	(B)
Cargo Weight (RCLW) (kg)				136.1	(A-B)

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

VEHICLE SEAT TYPE							
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	X					X	
Rear or Second Row Seat			X	X	X	N/a	
Third Row Seat			X	X	X	N/a	

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



TIRE PLACARD INFORMATION		
Measured Parameter	**Front**	**Rear**
Recommended Cold Tire Pressure (kPa)	240	240
Recommended Tire Size	P245/54R17	P245/54R17

TIRE SIDEWALL INFORMATION		
Measured Parameter	**Front**	**Rear**
Max. Tire Pressure (kPa)	350	350
Tire Size on Vehicle	P245/54R17	P245/54R17
Tire Manufacturer	Goodyear	Goodyear
Tire Name	Fortera HL	Fortera HL
Tire Type	Passenger	Passenger
Tire Width	245	245
Aspect Ratio	65	65
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index/Speed Symbol	105T	105T
Treadware	540	540
Traction Grade	A	A
Temperature Grade	B	B
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon

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

TIRE PRESSURES					
	Units	**LF**	**RF**	**LR**	**RR**
As Delivered	kpa	239	240	240	240
Tire Placard	kpa	240	240	240	240
Owner's Manual	kpa	240	240	240	240
As Tested	kpa	240	240	240	240

MDB TIRE SPECIFICATIONS						
	Units	**Requirement**	**LF**	**RF**	**LR**	**RR**
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 +/- 21	200	200	200	200

TEST VEHICLE AXLE WEIGHTS										
	Units	**As Delivered (UVW)**			**As Tested (ATW)**			**Fully Loaded**		
		Front	**Rear**	**Total**	**Front**	**Rear**	**Total**	**Front**	**Rear**	**Total**
Left	kg	558.8	467.2		602.8	550.2		588.8	593.8	
Right	kg	564.3	437.7		598.3	530.7		560.2	546.8	
Ratio	%	55.4	44.6		52.6	47.4		50.2	49.8	
Totals	kg	1123.1	904.9	2028.0	1201.1	1080.9	2282.0	1149.0	1140.6	2289.6

TARGET TEST WEIGHT CALCULATION			
	Units		
Total Delivered Weight (UVW)	kg	2028.0	(A)
Sum of Actual Weight of 2 P572 ATDs used	kg	125.5	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	136.1	(C)
Calculated Target Vehicle Test Weight (TVTW)	kg	2289.6	(A + B + C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)?

Yes

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

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW	
Ballast	**Weight (kg)**
Weights added to floorpan	63.5

TEST VEHICLE ATTITUDE AND CG				
Measurement description	**Units**	**Fully Loaded**	**As Tested**	**Meets Requirement*** **
LF	mm	889	895	Yes
RF	mm	889	890	Yes
RR	mm	894	899	Yes
LR	mm	902	909	Yes
Vehicle CG (Aft of Front Axle)	mm	1427	1419	
Vehicle CG (Left(+))/Right(-) from Longitudinal Centerline)	mm	-32.6	-38.4	

***The "As Tested" vehicle attitude measurements must be equal to or within +/- 10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. "Yes" or "No" is indicated.

DATA SHEET NO. 2
SEAT ADJUSTMENT, FUEL SYSTEMS, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

SCRL ANGLE RANGE			
Seat	**SCRL (°)**		
	Max	**Min**	**Mid**
Driver Seat	6.4	-3.7	1.4
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat*			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat*			

*If applicable

SCRL ANGLE RANGE						
Seat	**As Tested SCRL Angle (Mid) (°)**	**As Tested SCRP Height (mm)**	**SCRP Height Position**	**SCRP Height (mm)**		
				Rearmost	**Mid-Fore/Aft**	**Forward-Most**
Driver's Seat	1.4	-12.1	Max	-9.09	-12.1	-17.7
	1.4	17.8	Mid	22.1	17.8	13.1
	1.4	47.5	Min	52.9	47.5	43.8
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Front Center Seat*			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Rear Center Seat*			Max			
			Mid			
			Min			

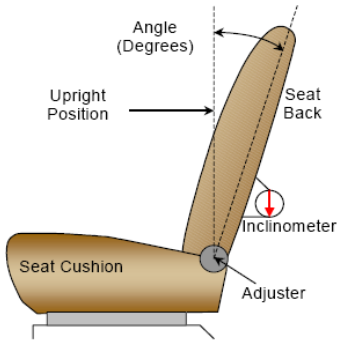
*If applicable

DATA SHEET NO. 2
SEAT ADJUSTMENT, FUEL SYSTEMS, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA (CONTINUED)

SEAT FORE/AFT TRAVEL				
Seat	**Total Fore/Aft Travel**		**Test Position from Forward-most Position**	
	mm	**Detents***	**mm**	**Detents***
Driver Seat	272	N/a	136	N/a
Front Passenger Seat	252	57 (w/ first detent = 0)	126	28
Front Center Seat*				
Struck Side Rear Seat	Fixed	N/a	N/a	N/a
Non-Struck Side Rear Seat	Fixed	N/a	N/a	N/a
Rear Center Seat*				

*If applicable

Seat Back Angle Adjustment
The driver's seat back is positioned to the manufacturer's designated design angle. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck-side rear seat back.



FRONT SEAT ASSEMBLY

SEAT BACK ANGLE ADJUSTMENT				
Seat	**Total Seat Back Angle Range**		**Test Position from Most Upright**	
	Degrees	**Detents***	**Degrees**	**Detents***
Driver Seat w/ Seated Dummy	Not Measured	Not Measured	17.4	Not Measured
Front Passenger Seat	Not Measured	Not Measured	17.0	Not Measured
Front Center Seat*				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat*				

*If applicable

DATA SHEET NO. 2
SEAT ADJUSTMENT, FUEL SYSTEMS, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA (CONTINUED)

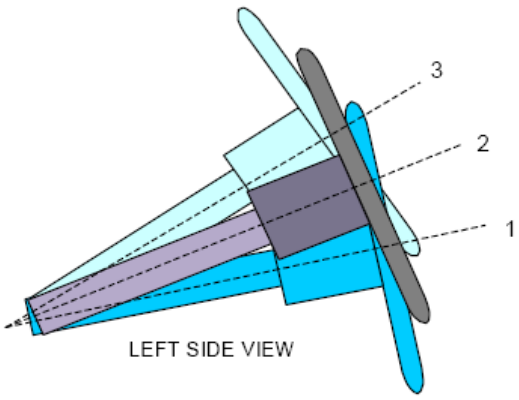
Seat Belt Anchorage Adjustment
Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

SEAT BELT ANCHORAGE ADJUSTMENT		
	Total No. of Positions	**Placed in Position No.**
Driver Seat	4	M1
Rear Seat	Fixed	As Positioned

Head Restraint Adjustment
The driver's head restraint is adjusted to the highest and most forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

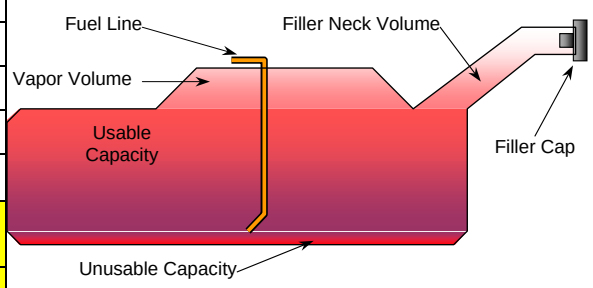
HEAD RESTRAINT ADJUSTMENT		
	Total No. of Positions	**Placement**
Driver Seat	3	Highest Position
Rear Seat	Fixed	Lowest Position

Steering Column Adjustment
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of its geometric locus it describes when it moves through its full range of motion.

STEERING COLUMN ADJUSTMENT			
	Degrees	**Fore/Aft Position (mm)**	
Lowermost, Pos. No. 1	28.0	25 mm	
Geometric Center, Pos. No. 2	31.4	25 mm	
Uppermost, Pos. No. 3	34.7	25 mm	
Telescoping Steering Wheel Travel	N/a	50 mm	
Test Position	31.4	25 mm	

STEERING COLUMN ASSEMBLY

DATA SHEET NO. 2
SEAT ADJUSTMENT, FUEL SYSTEMS, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA (CONTINUED)

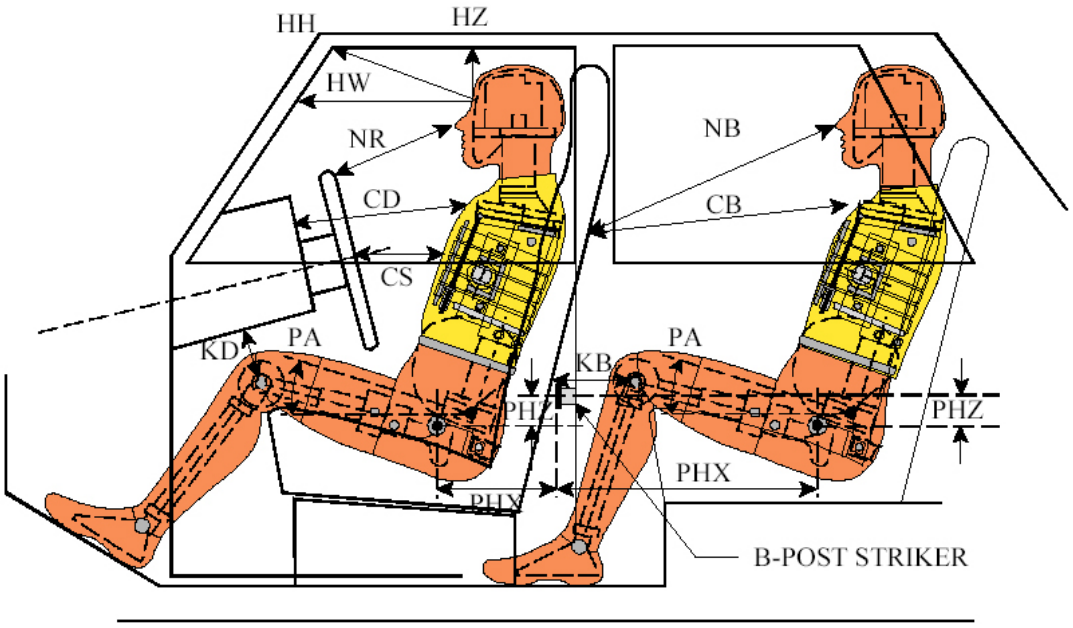
FUEL TANK CAPACITY DATA			
Description	**Units**	**Value**	
Usable Capacity of "Standard Tank"	L	70.4	
Usable Capacity of "Optional Tank"	L	0.0	
Usable Capacity of Standard Tank	L	70.4	
Usable Capacity of Optional Tank	L	0.0	
93% of Usable Capacity	%	65.5	
Actual Amount of Solvent Used in Test	L	65.6	
1/3 of Usable Capacity	23.5		

VEHICLE FUEL TANK ASSEMBLY

Fuel Pump
The vehicle is equipped with an electronic fuel pump. Key is "ON" position. The fuel pump is on the left side.

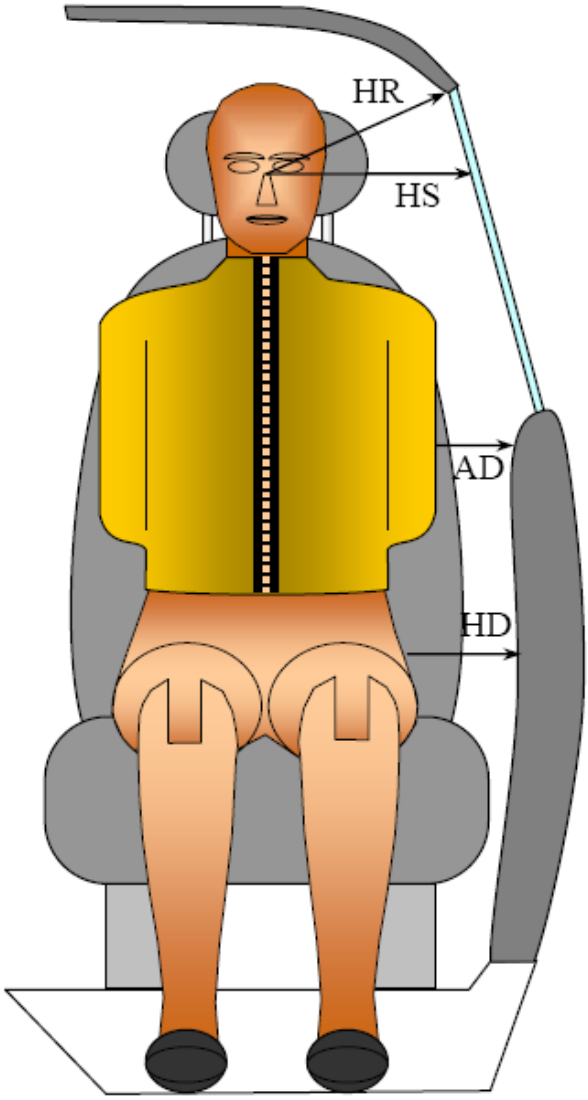
Is the Actual Amount of Solvent Used in the test equal to 93% +/- 1% of the Usable Capacity stated in on Form No. 1? Yes

DATA SHEET NUMBER 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS



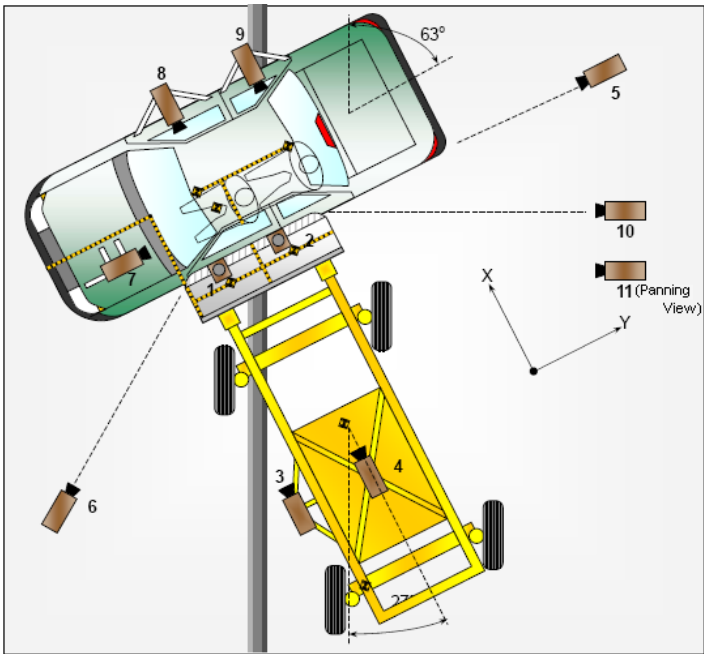
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION						
Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle	Length (mm)	Angle
HH		Header to Header	453			
HW		Header to Windshield	773			
HZ	HZ	Head to Roof	267		295	
NR	NB	Nose to Rim/Seat Back	444		528	
CD	CB	Chest to Dash/Seat Back	587		496	
CS		Chest to Steering Wheel	352			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	173	14.8	257	13.0
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	172	15.8	268	10.5
PAX°	PAX°	Pelvic Tilt Angle X		0.0		0.0
	PAY°	Pelvic Tilt Angle Y		19.0		21.6
PHX	PHX	Hip Point to Striker (X-Axis)	47.3		315.1	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	-600.4		-348.6	

DATA SHEET NUMBER 4
DUMMY LATERAL CLEARANCE DIMENSIONS



DUMMY LATERAL CLEARANCE MEASUREMENTS INFORMATION				
Code	**Description**	**Units**	**Driver**	**Passenger**
HR	Head to Side Header	mm	261	296
HS	Head to Side Window	mm	411	322
AD	Arm to Door	mm	198	168
HD	Hip Point to Door	mm	183	169

DATA SHEET 5
CAMERA AND INSTRUMENTATION DATA



	View	Coordinates †			Lens Length	Operating Frame Rate
		X	Y	Z		
		mm	mm	mm	mm	fps
1	Overhead Overall	1743	2108	-6062	12.5	1000
2	Overhead Close-up	984	774	-5910	25	1000
3	Left Impact Point (MDB)	-2287	-165	-776	35	1000
4	Side Overall (MDB)	-2137	914	-1306	12.5	1000
5	Rear	4649	11003	-1317	50	1000
6	Left Front	-4201	-2597	-1408	25	1000
7	Driver Front (OB)				25	1000
8	Driver Side (OB)				12.5	1000
9	Passenger Side (OB)				12.5	1000
10	Real-time Left Rear				N/a	24
11	Real – Time Inrun				N/a	24

Origin		Orientation	
X	Impact Point	X	+(X) To Front of MDB
Y	Impact Point	Y	+(Y) To Right of MDB
Z	Ground	Z	+(Z) Down

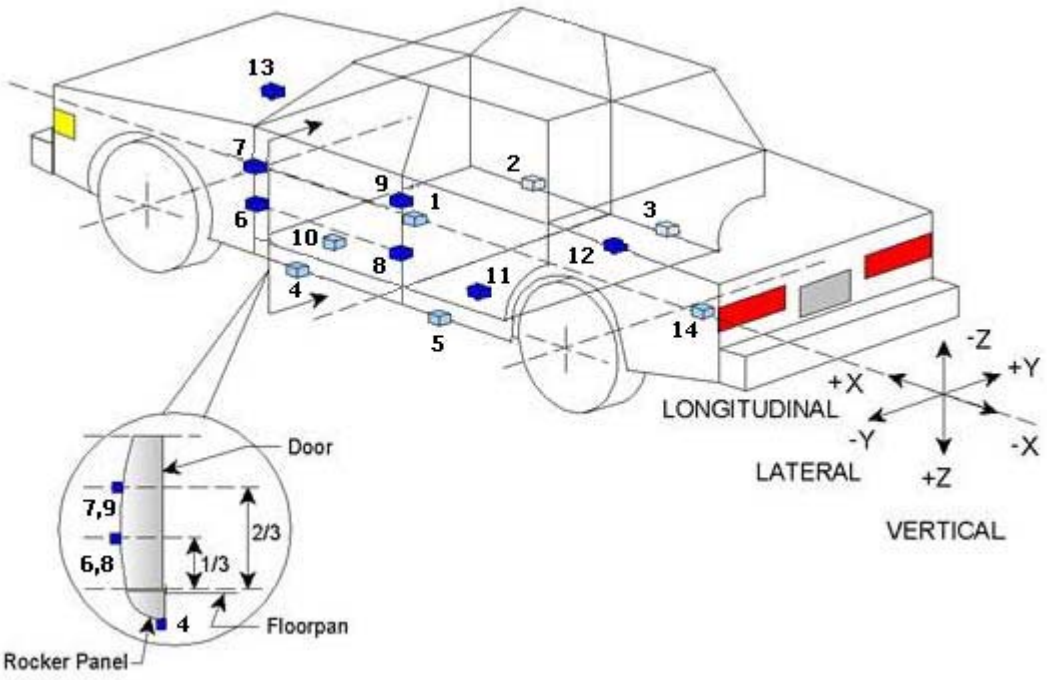
**All measurements accurate to +/- 6 mm*

DATA SHEET 5
CAMERA AND INSTRUMENTATION DATA (CONTINUED)

Why did the cameras not operate?
The real-time documentation of the test, and real-time left rear pan view of the impact was lost due to operator error of the camera. _____

INSTRUMENTATION	
Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	5
Total	60

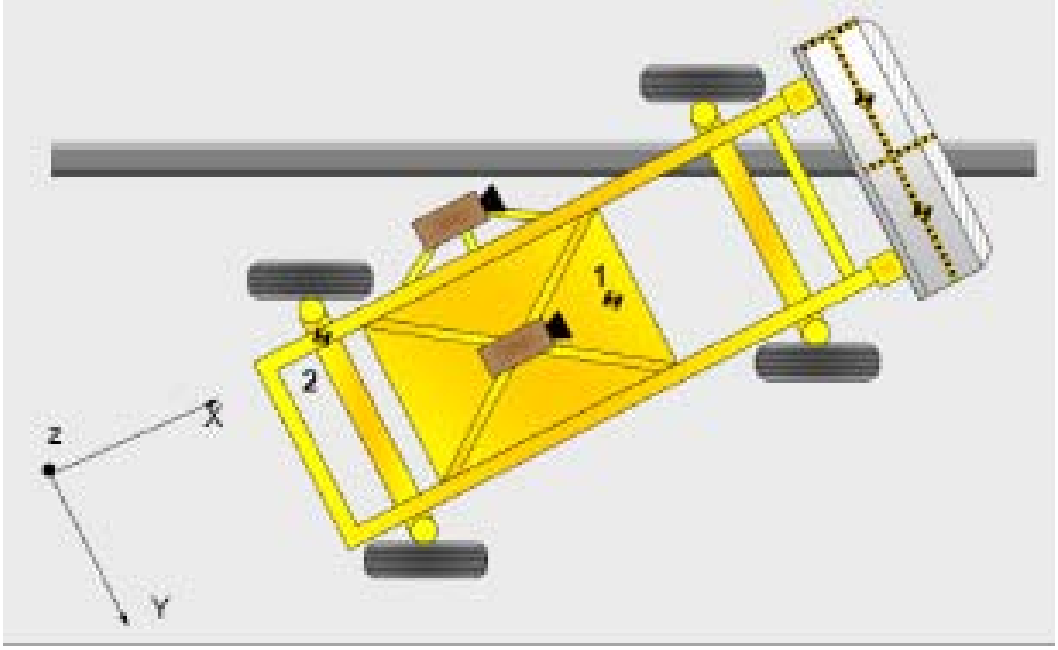
DATA SHEET 6
TEST VEHICLE ACCELEROMETER LOCATIONS



TEST VEHICLE ACCELEROMETER LOCATIONS				
Loc. no.	Accelerometer location	Measurements (mm)		
		X	Y	Z
1	Vehicle CG	3015.1	64.7	166.2
2	Right Sill at Front Seat	2881.4	780.9	436.7
3	Right Sill at Rear Seat	2086.7	781.7	428.0
4	Left Sill at Front Door	2886.0	-793.7	442.2
5	Left Sill at Rear Door	2090.1	-795.3	426.4
6	A-Post Lower	3419.9	-898.8	106.6
7	A-Post Middle	3440.5	-916.2	-57.3
8	B-Post Lower	2416.7	-906.0	48.4
9	B-Post Middle	2416.5	-901.5	-146.5
10	Front Seat Track	2812.4	-653.0	194.7
11	Rear Seat Structure	1752.5	-628.3	124.3
12	Rt. Rear Occ. Compartment	2080.0	482.5	245.7
13	Engine Block	4313.0	97.8	-179.6
14	Rear Above Axle	1260.2	-32.9	21.9

Reference:
X - Rear surface of vehicle (+ forward)
Y - Vehicle centerline (+ right)
Z - Ground plane (+ up)

DATA SHEET 7
MDB ACCELEROMETER LOCATIONS



MDB ACCELEROMETER LOCATIONS				
Loc No.	Accelerometer Locations	Coordinates (mm)		
		X	Y	Z
1	MDB CG	1113	-1	311
2	MDB Rear	2812	-614	585

Reference
X - Face of MDB (+ forward)
Y - MDB centerline (+ to right)
Z - Ground plane (+ down)

DATA SHEET NUMBER 8
POST-TEST OBSERVATIONS

TEST DUMMY INFORMATION AND CONTACT POINTS		
Dummy Body Part	**Front Seat Dummy (ES-2re)**	**Rear Seat Dummy (SID-IIs)**
Face	To Side Curtain Airbag	To Side Curtain Airbag
Top of Head	To Roof Rail	To Side Curtain Airbag
Left Side of Head	To Side Curtain Airbag	To Side Curtain Airbag
Back of Head	Along HR to Side Curtain Airbag	To Side Curtain Airbag
Left Shoulder	To Side Airbag	To Interior Door Panel
Upper Torso	To Side Airbag	To Interior Door Panel
Lower Torso	To Side Airbag	To Interior Door Panel
Left Hip	To Side Airbag	To Interior Door Panel
Left Knee	To Interior Door Panel	To Interior Door Panel

POST TEST DOOR PERFORMANCE					
Description	**Struck Side**		**Non-Struck Side**		**Rear Hatch/ Other Door**
	Front	**Rear**	**Front**	**Rear**	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges of Larches	No	No	No	No	No
Latch of Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/a	N/a	N/a	N/a	N/a

POST TEST SEAT PERFORMANCE				
Description	**Struck Side**		**Non-Struck Side**	
	Front	**Rear**	**Front**	**Rear**
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

DATA SHEET NUMBER 8
POST-TEST OBSERVATIONS (CONTINUED)

POST TEST STRUCTURAL OBSERVATIONS	
Critical Areas of Performance	**Observations/Conclusions**
Pillar Performance	No Damage
Sill Separation	Max Sill Separation of 67 mm at C-Pillar Along Upper Window Sill
Windshield Damage	No Damage
Window Damage	No Damage
Other Notable Effects	None Noted

SUPPLEMENTAL RESTRAINT INFORMATION				
Restraint Type	**Struck Side Driver**		**Struck Side Rear Passenger**	
	Mounted	**Deployed**	**Mounted**	**Deployed**
Frontal Airbag	Yes – Steering Wheel	Did Not Deploy		
Knee Airbag	No	N/a		
Side Curtain Airbag	Yes – Side Header	Deployed Properly	Yes – Side header	Deployed properly
Side Torso/Abdomen/Pelvis Airbag	Yes – Seat Back	Deployed Properly	No	N/a
Seat Belt Pretensioner	Yes	Deployed Properly	Yes	Deployed Properly
Seat Belt Load Limiter	Yes	N/a	No	N/a
Other	No	N/a	No	N/a

IMPACT POINT LOCATION DATA			
Measured Parameter	**Units**	**Tolerance**	**Value**
Vehicle Wheel Base	mm		2865
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		493
Actual Impact Point (Aft of Front Axle)	mm		472
Horizontal Offset (+ forward / - rear)	mm	+/- 50 of Intended Impact Point	21
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact Point	7

DATA SHEET NUMBER 9
MDB SUMMARY OF RESULTS

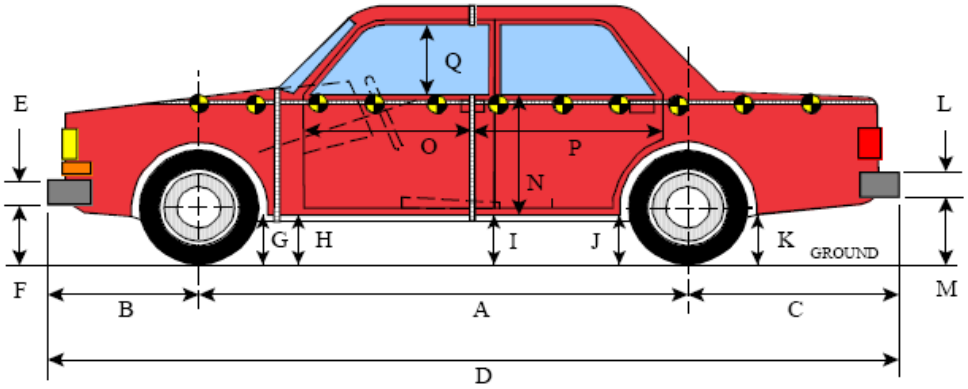
MDB SPECIFICATIONS	
Measurement Description	**Length (mm)**
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Frame	4116
Wheel Base of Framework Carriage	2578
CG Location of Front Axle	1112

MDB WEIGHTS				
	Units	**Front Axle**	**Rear Axle**	**Total**
Left	kg	431.4	249.5	680.9
Right	kg	329.8	352.0	681.8
Ratio	%	55.9	44.1	100.0
Totals	kg	761.2	601.5	1362.7

SPEED AND ANGLE AT IMPACT DATA			
Measured parameter	**Units**	**Requirement**	**Value**
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.3
Trap No. 2 Velocity (Secondary)	km/h	61.1 to 62.7	62.2
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.0
MDB Forward Line of Motion to Target Vehicle	degrees	62.5 to 63.5	63.0
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	27.0

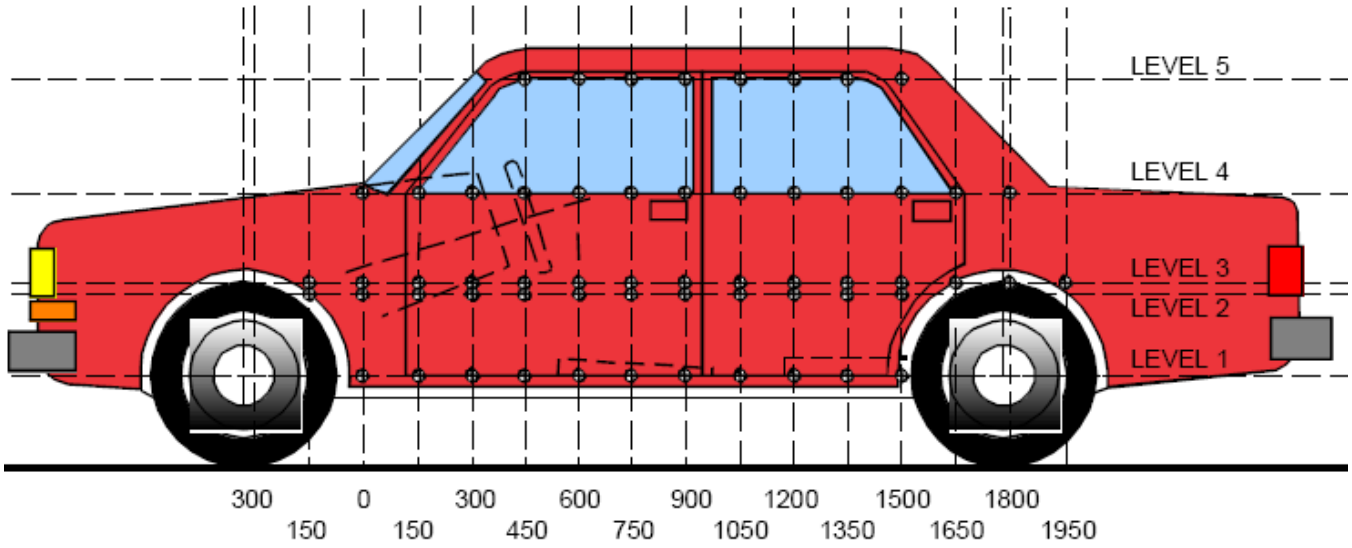
MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE					
Vertical Location			**From Centerline**		**Maximum Crush**
Row	**Description**	**Height**	**Distance**	**Direction**	
A	Bottom of Barrier	276	800	Left/Right	222
B	Bottom of Bumper	330	800	Right	173
C	Top of Bumper	530	800	Right	165
D	Top of Barrier	836	800	Left	168

DATA SHEET NUMBER 10
TEST VEHICLE PROFILE MEASUREMENTS



VEHICLE PRE – AND POST – TEST MEASUREMENT INFORMATION				
Code	**Description**	**Pre test**	**Post test**	**Difference**
		mm	**mm**	**mm**
A	Wheelbase	2865	2849	-16
B	Front Axle to FSOV	777	779	2
C	Rear Axle to RSOV	993	998	5
D	Total Length at Centerline	5014	5008	-6
E	Front Bumper Thickness	306	306	0
F	Front Bumper Bottom to Ground	349	353	4
G	Sill Height at Front Wheel Well	302	285	-17
H	Sill Height at Front Door Leading Edge	305	290	-15
I	Sill Height at B-Pillar	317	276	-41
J1	Sill Height at Rear Wheel Well	268	239	-29
J2	Pinch Weld Height at Rear Wheel Well	323	298	-25
K	Sill Height Aft of Rear Wheel Well	383	353	-30
L	Rear Bumper Thickness	258	258	0
M	Rear Bumper Bottom to Ground	463	431	-32
N	Sill Height to Bottom of Front Window Sill	933	940	7
O	Front Door Leading Edge to Impact C/L	1082	1053	-29
P	Rear Door Trailing Edge to Impact C/L	1155	1105	-50
Q	Front Window Opening	430	432	2
R	Right Side Length	4635	4640	5
S	Left Side Length	4635	4626	-9
T	Vehicle Width at B-Pillar	1975	1816	41

DATA SHEET NUMBER 11
VEHICLE EXTERIOR CRUSH MEASUREMENTS



LEFT SIDE VIEW

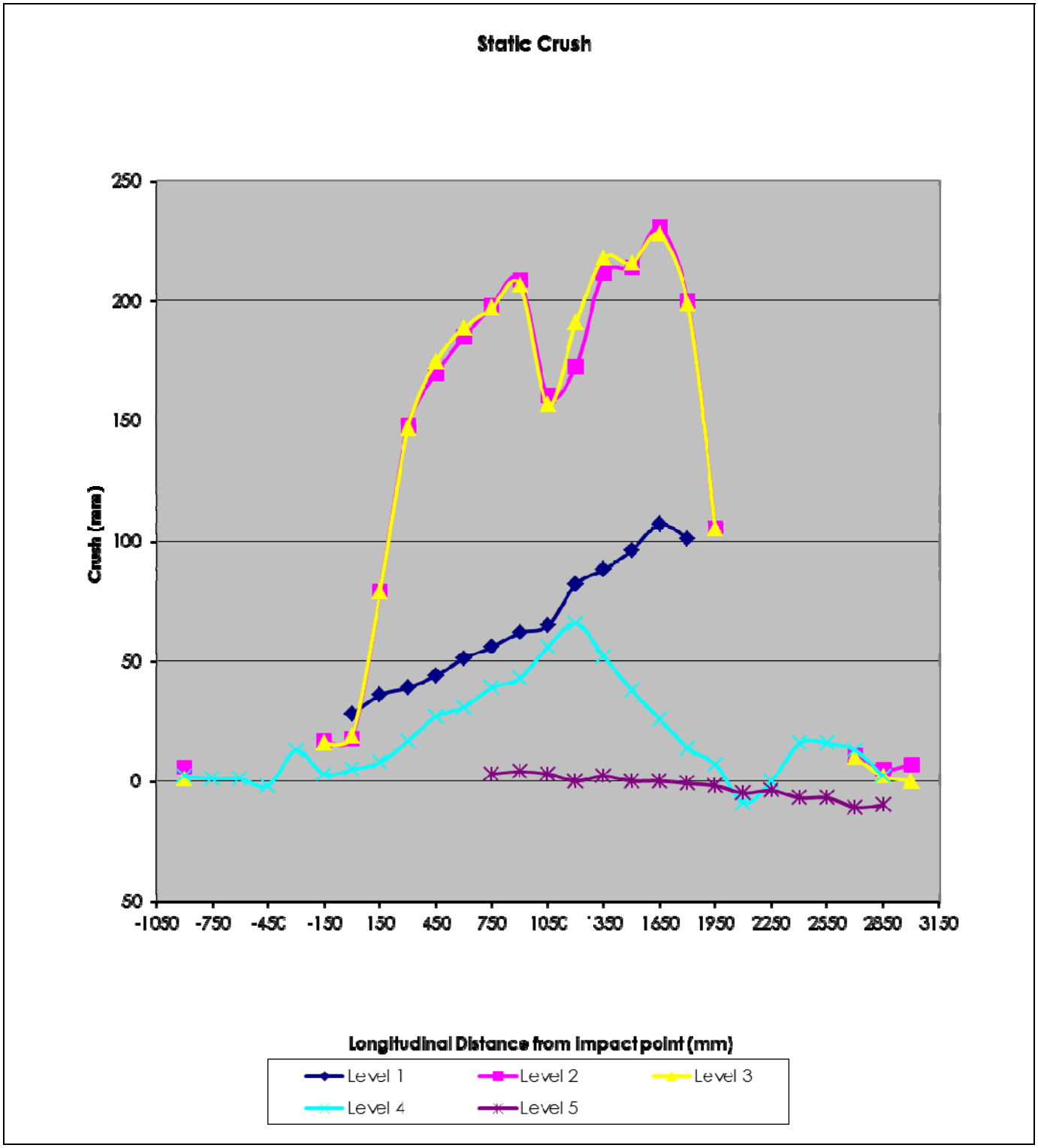
MAXIMUM EXTERIOR CRUSH MEASUREMENTS				
Level	**Measurement Description**	**Height Above Ground**	**Maximum Exterior Static Crush**	**Distance from Impact**
1	Sill Top	295	107	1650
2	Occupant Hip Point	704	231	1650
3	Mid-Door	726	228	1650
4	Window Sill	1150	62	1350
5	Window Top	1653	11	2700

DATA SHEET NUMBER 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS (CONTINUED)

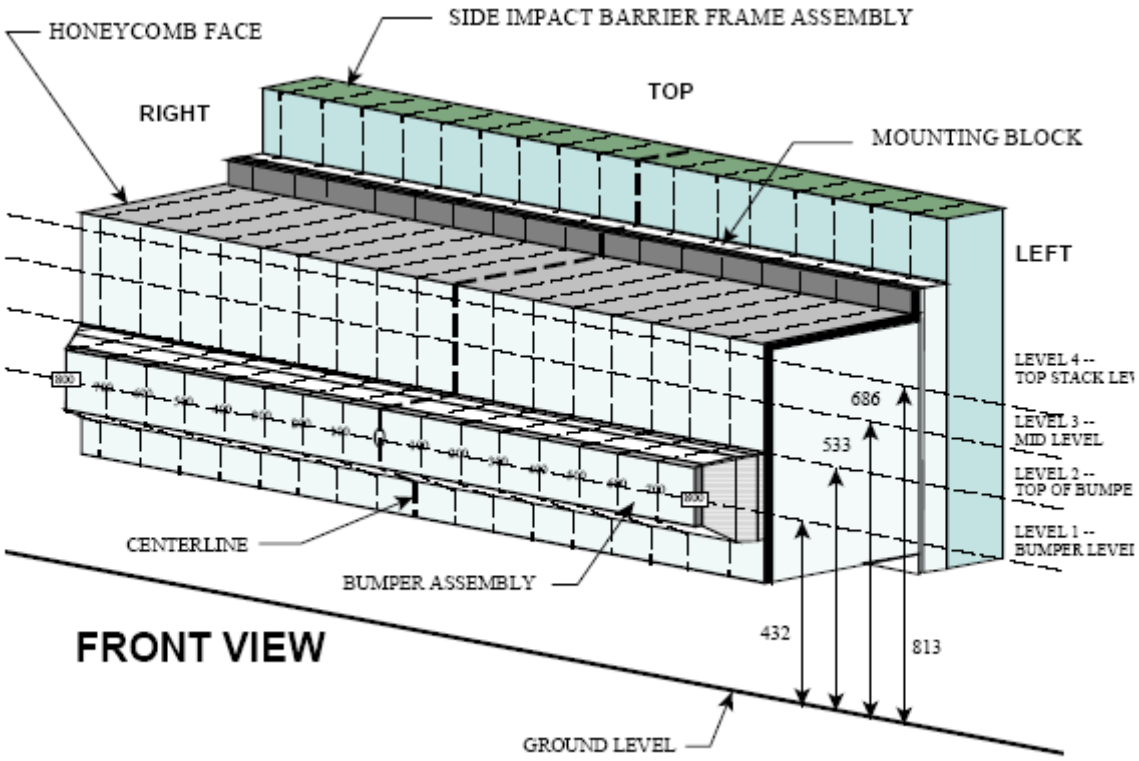
EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

Level		1			2			3			4			5		
		Pre	Post	Crush	Pre	Post	Crush	Pre	Post	Crush	Pre	Post	Crush	Pre	Post	Crush
DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT	-1050															
	-900				195	201	6	200	201	1	367	369	2			
	-750										338	339	1			
	-600										317	318	1			
	-450										305	303	-2			
	-300										290	303	13			
	-150				158	175	17	161	177	16	280	283	3			
	0	242	270	28	172	190	18	174	193	19	270	275	5			
	150	249	285	36	188	267	79	187	266	79	257	265	8			
	300	249	288	39	189	337	148	188	335	147	255	272	17			
	450	252	296	44	186	356	170	185	360	175	245	272	27			
	600	252	303	51	186	371	185	185	374	189	241	272	31			
	750	252	308	56	186	384	198	185	382	197	233	272	39	483	486	3
	900	250	312	62	186	395	209	185	392	207	229	272	43	474	478	4
	1050	250	315	65	186	347	161	185	342	157	226	282	56	472	475	3
	1200	249	331	82	187	360	173	186	377	191	224	290	66	470	470	0
	1350	250	338	88	187	399	212	187	405	218	224	276	52	468	470	2
	1500	251	347	96	188	402	214	189	405	216	225	263	38	468	468	0
	1650	249	356	107	189	420	231	190	418	228	226	252	26	468	468	0
	1800	247	348	101	175	375	200	176	375	199	231	245	14	470	469	-1
	1950				160	265	105	161	266	105	233	240	7	472	470	-2
	2100										238	229	-9	473	468	-5
	2250										242	242	0	477	473	-4
	2400										249	265	16	482	475	-7
	2550										256	272	16	489	482	-7
	2700				166	177	11	170	180	10	266	279	13	495	484	-11
	2850				199	204	5	205	207	2	277	279	2	512	502	-10
	3000				232	239	7	245	245	0						
	3150															
	3330															

DATA SHEET NUMBER 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS (CONTINUED)



DATA SHEET NUMBER 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS



NOTE: Dimensions are shown in millimeters, mm

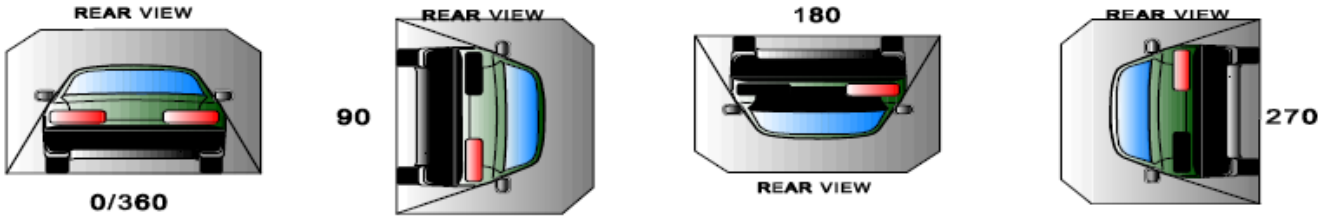
DEFORMABLE BARRIER STATIC CRUSH																	
	Distance Right of Center								C_L	Distance Left of Center							
	800	**700**	**600**	**500**	**400**	**300**	**200**	**100**	**0**	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**
1	222	204	194	193	194	196	196	195	199	201	202	202	205	204	202	209	222
2	165	169	164	160	157	148	138	132	126	128	143	149	156	163	170	173	176
3	108	70	72	81	98	107	135	129	90	72	70	74	80	87	95	110	165
4	168	120	92	83	75	69	65	129	92	106	85	64	57	64	65	73	109

FMVSS 301 STATIC ROLLOVER RESULTS

Temperature at Time of Impact: 22° C Test Time: 2:30 pm

STODDARD SOLVENT SPILLAGE MEASUREMENTS				
Period	**Description**	**Maximum Allowable Spillage**	**Spillage**	
			Amount	**Location**
A	From Impact Until Vehicle Motion Ceases	1 oz	0	N/a
B	5 Minutes After Vehicle Motion Ceases	5 oz	0	N/a
C	Next 25 Minutes	1 oz/minute	0	N/a
D	Spillage Details:			

FMVSS 301 STATIC ROLLOVER



ROLLOVER SOLVENT COLLECTION TIME TABLE			
Test Phase	**Rotation Time**	**Hold Time**	**Total Time**
0° to 90°	66	300	366
90° to 180°	64	306	370
180° to 270°	67	300	367
270° to 360°	64	300	364

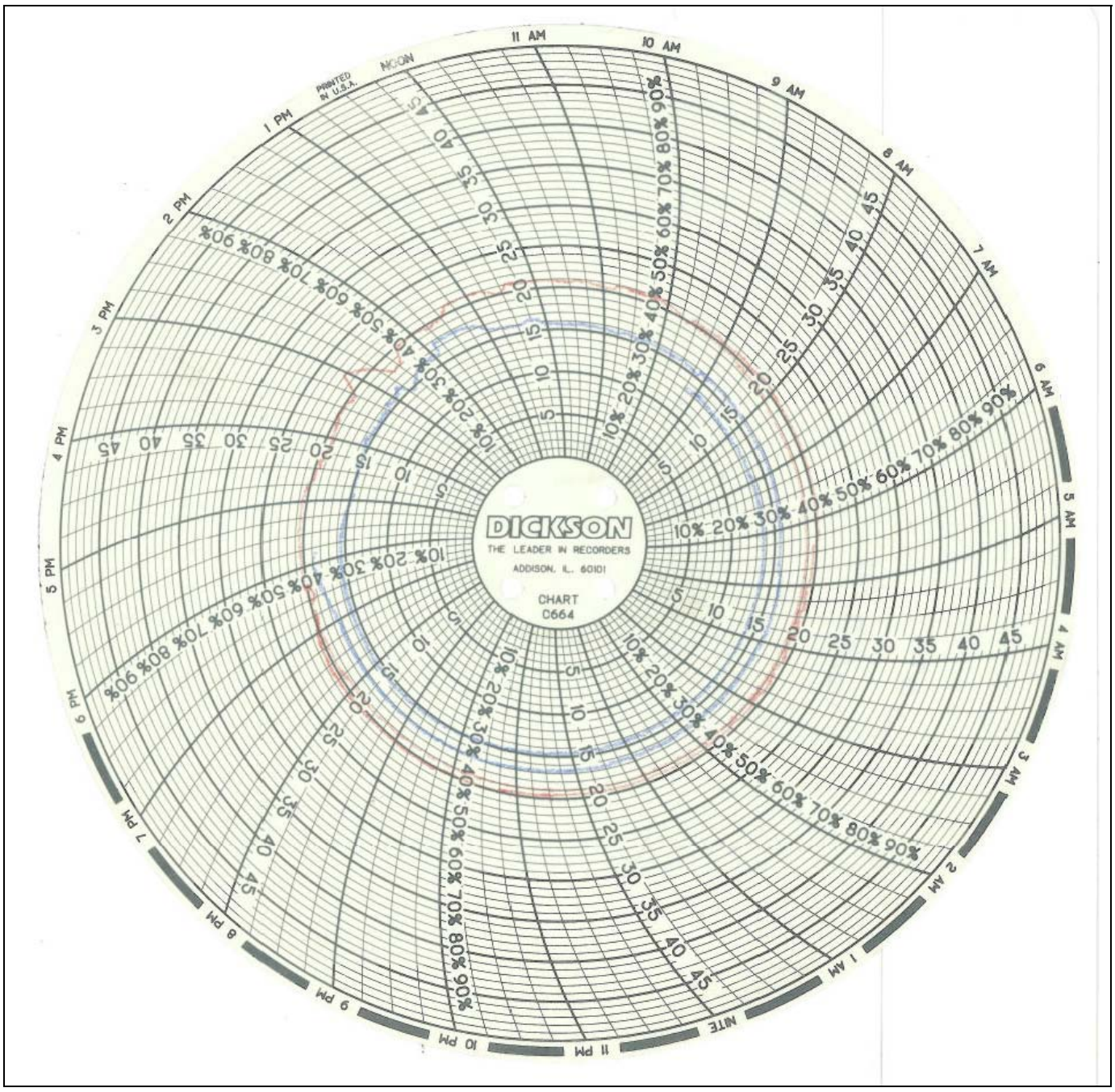
FMVSS 301 STATIC ROLLOVER RESULTS (CONTINUED)

FMVSS No. 301 Rollover Spillage Table				
	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	N/a
90° to 180°	0	0	0	N/a
180° to 270°	0	0	0	N/a
270° to 360°	0	0	0	N/a

FMVSS No. 301 Static Rollover - Spillage				
	First five minutes (oz)	Sixth minute (oz)	Seventh minute (oz)	Eighth minute (oz)
Max allowable leakage	**5.0**	**1.0**	**1.0**	**1.0**
0° to 90°	0	0	0	N/a
90° to 180°	0	0	0	N/a
180° to 270°	0	0	0	N/a
270° to 360°	0	0	0	N/a

Rollover Solvent Spillage Location Table	
Test Phase	Spillage Location
0° to 90°	N/a
90° to 180°	N/a
180° to 270°	N/a
270° to 360°	N/a

DATA SHEET 14
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA



APPENDIX A

PHOTOGRAPHS

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No. 100	Monroney Label	A-54
No. 101	Driver Head Restraint Use and Adjustment Information From Vehicle's Owner Manual	A-55
No. 102	Left Rear Passenger Head Restraint Use and Adjustment Information From Vehicle's Owner Manual Impact event	A-55

Figure A-1: As-Delivered Right Front 3-4 View of Test Vehicle

Figure A-2: As-Delivered Left Rear 3-4 View of Test Vehicle

Figure A-3: Pre-Test Frontal View of the Test Vehicle

Figure A-4: Post-Test Frontal View of Test Vehicle

Figure A-5: Pre-Test Left Front 3-4 View of Test Vehicle

Figure A-6: Post-Test Left Front 3-4 View of Test Vehicle

Figure A-7: Pre-Test Left Side View of Test Vehicle

Figure A-8: Post-Test Left Side View of Test Vehicle

Figure A-9: Pre-Test Left Rear 3-4 View of Test Vehicle

Figure A-10: Post-Test Left Rear 3-4 View of Test Vehicle

Figure A-11: Pre-Test Rear View of Test Vehicle

Figure A-12: Post-Test Rear View of Test Vehicle

Figure A-13: Pre-Test Right Side View of Test Vehicle

Figure A-14: Post-Test Right Side View of Test Vehicle

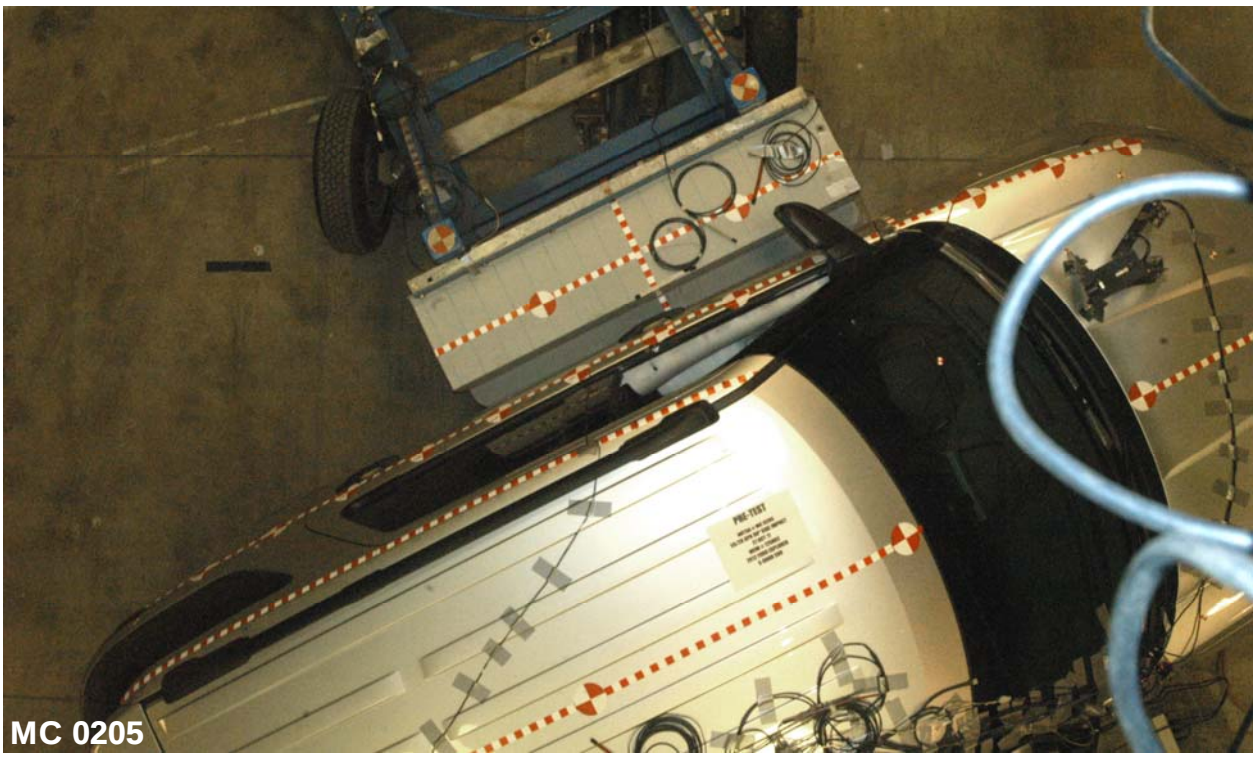


Figure A-15: Pre-Test Overhead View of Test Area

Figure A-16: Post-Test Overhead View of Test Area

Figure A-17: Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle

Figure A-18: Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle

Figure A-19: Pre-Test Close-Up View of Impact Point Target

Figure A-20: Post-Test Close-Up View of Impact Point Target

Figure A-21: Pre-Test Left Front Door Latch Close-Up

Figure A-22: Post-Test Left Front Door Latch Close-Up

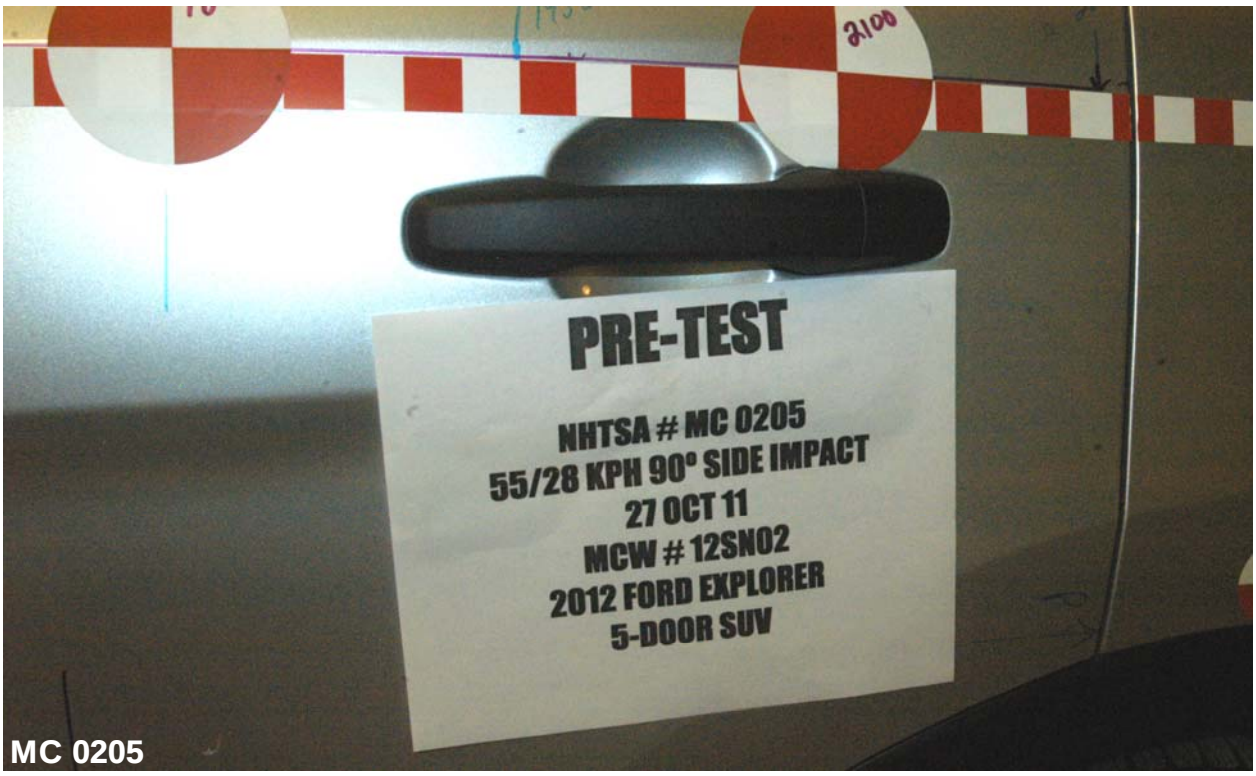


Figure A-23: Pre-Test Left Rear Door Latch Close-Up

Figure A-24: Post-Test Left Rear Door Latch Close-Up

Figure A-25: Pre-Test Front Close-Up View of Driver Dummy

Figure A-26: Post-Test Front Close-Up View of Driver Dummy

Figure A-27: Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking

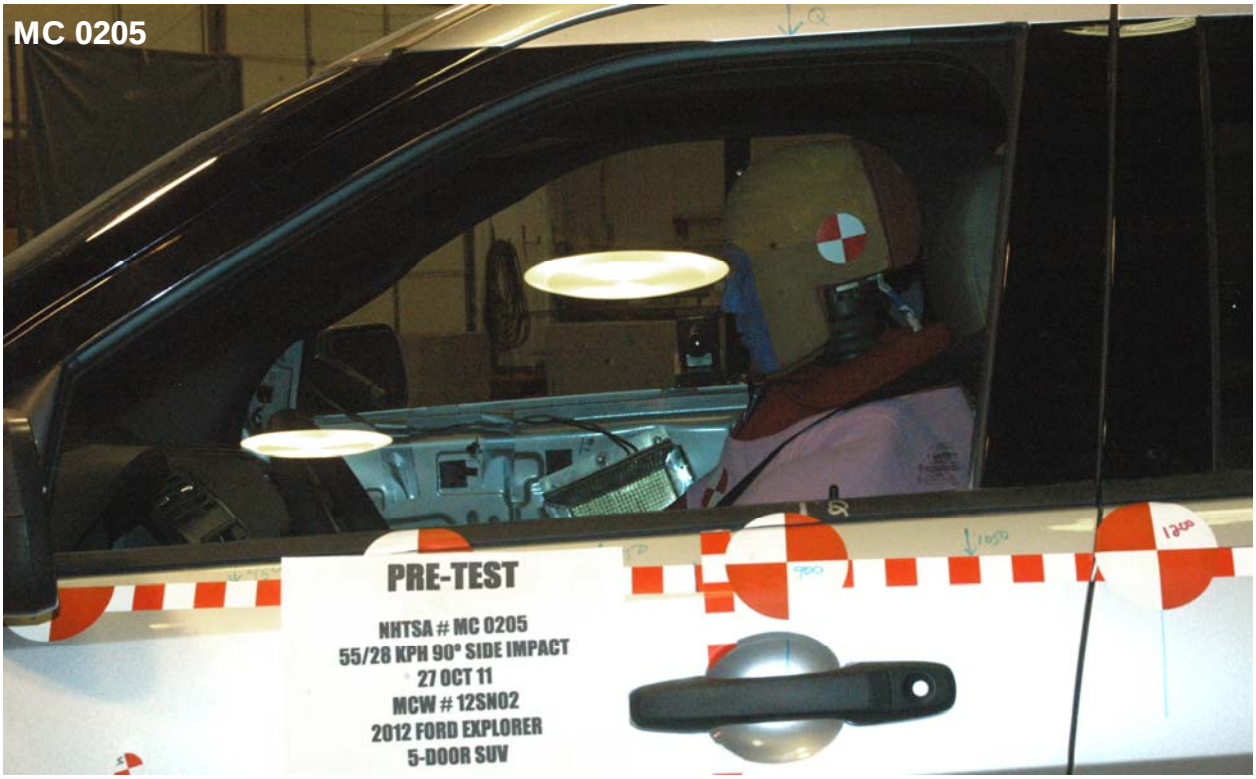


Figure A-28: Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View

Figure A-29: Post-Test Left Side View of Driver Dummy Shoulder and Door Top View

Figure A-30: Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning

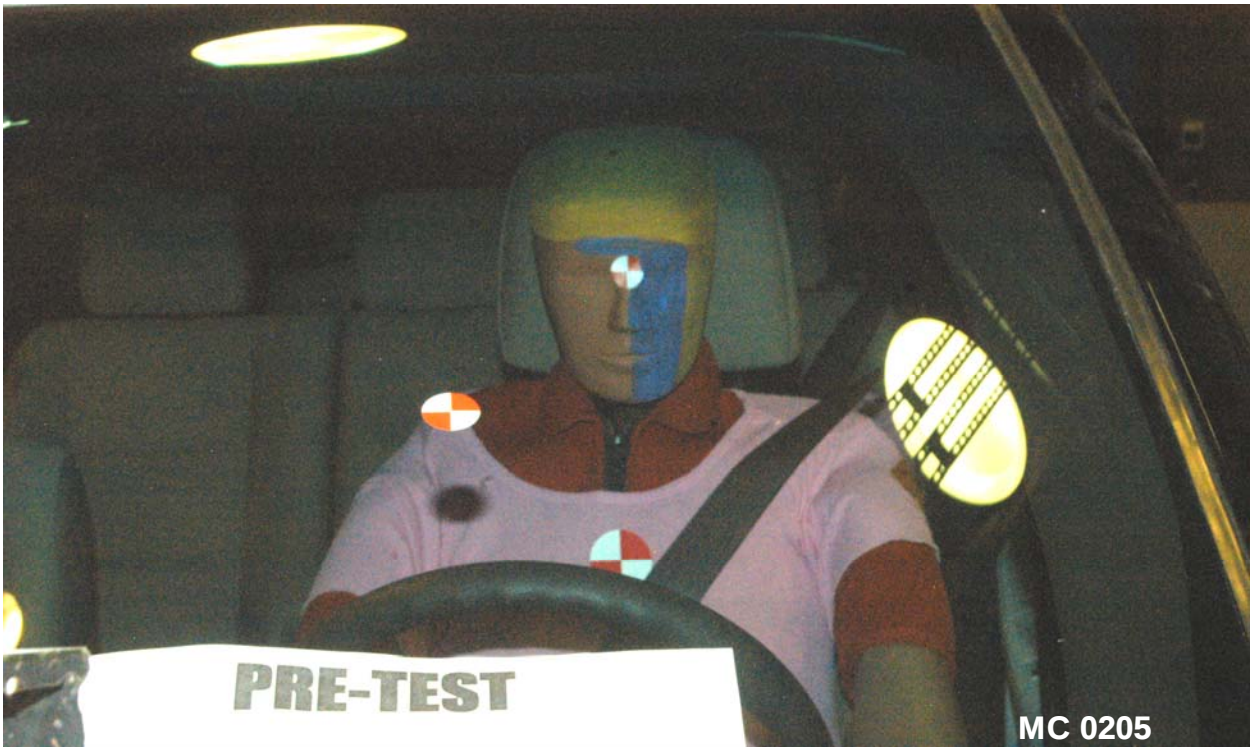


Figure A-31: Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint

Figure A-32: Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning

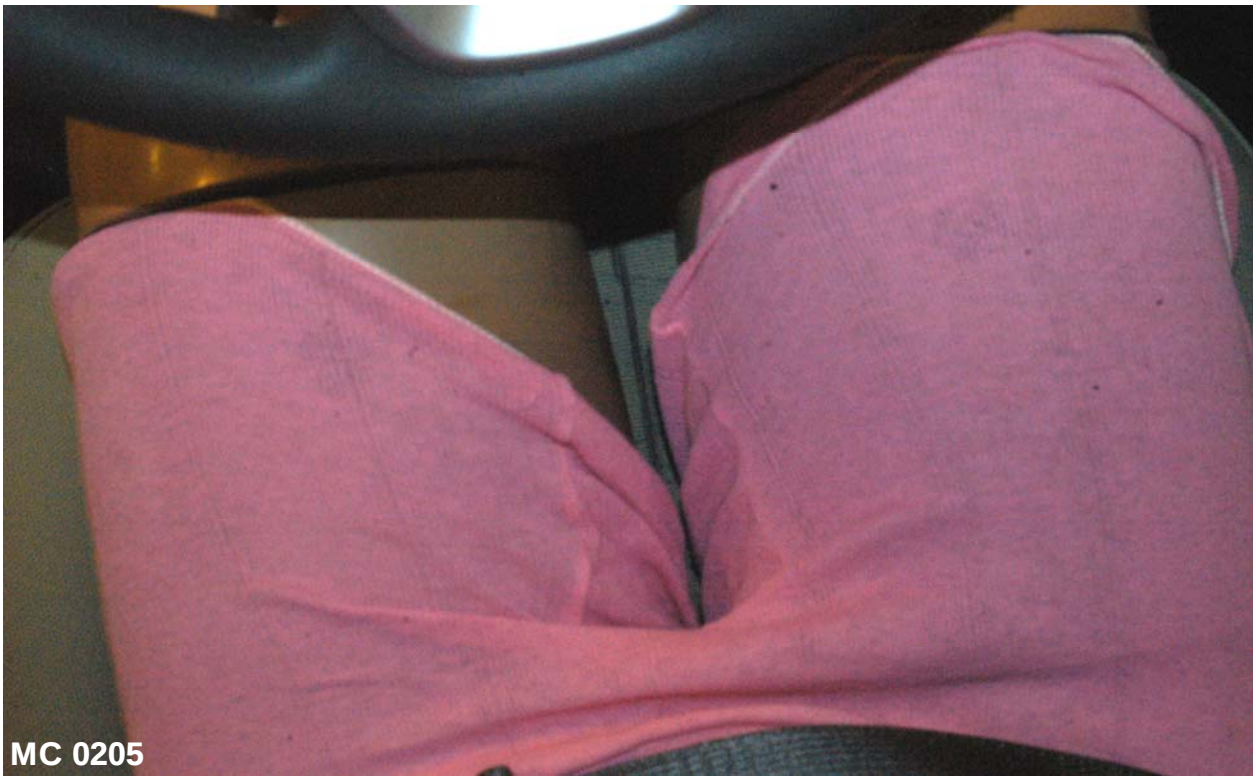


Figure A-33: Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan

Figure A-34: Pre-Test Placement of Driver Dummy's Feet

Figure A-35: Pre-Test View of Belt Anchorage for Driver Dummy

Figure A-36: Pre-Test Left Side View of Steering Wheel

Figure A-37: View of Disengaged Parking Brake

Figure A-38: Pre-Test View of Parking Brake

Figure A-39: Pre-Test Close-Up Left Side View of Driver Seat Track

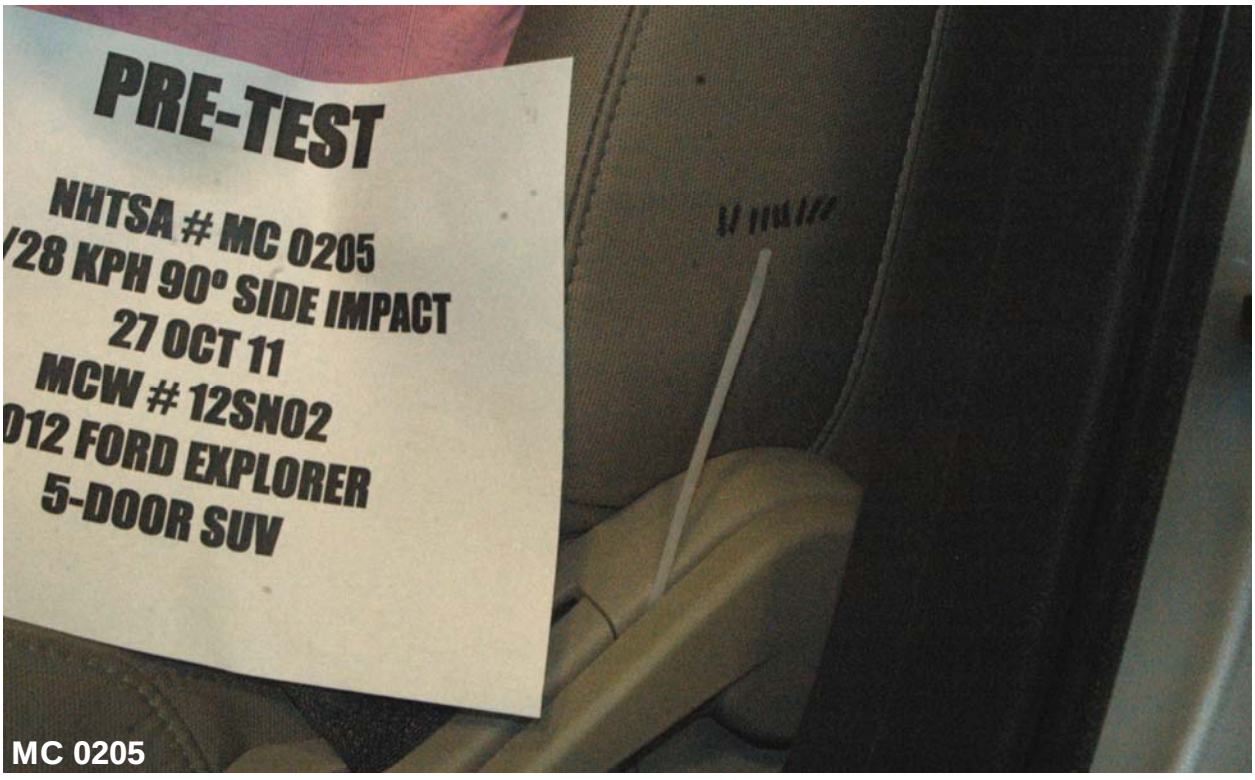


Figure A-40: Pre-Test Close-Up Left Side View of Driver Seat Back

Figure A-41: Pre-Test Close-Up View of Driver Seat Back or Head Restraint

Figure A-42: Pre-Test Driver Dummy and Door Clearance View

Figure A-43: Post-Test Driver Dummy and Door Clearance View

Figure A-44: Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment

Figure A-45: Post-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment

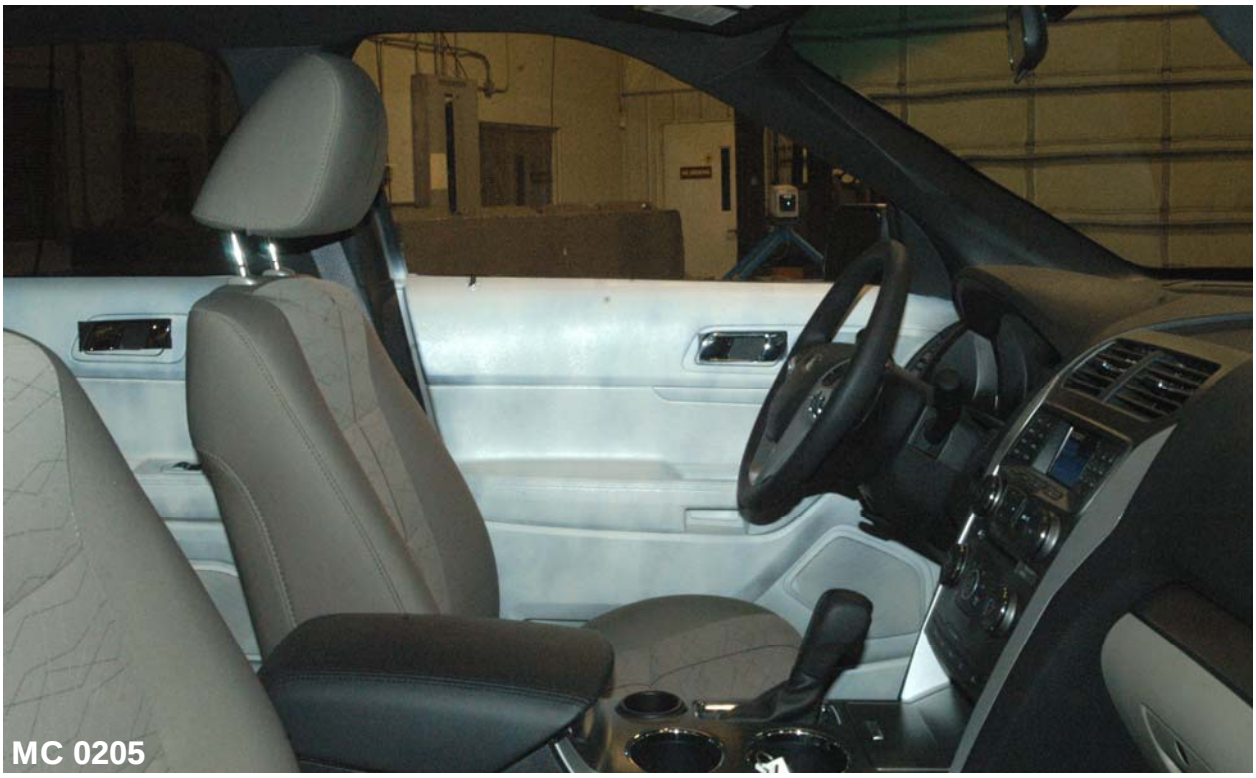


Figure A-46: Pre-Test Driver Inner Door Panel View

Figure A-47: Post-Test Driver Inner Door Panel View Showing Driver Dummy Contact Locations

Figure A-48: Post-Test Driver Dummy Close-Up Head Contact With Vehicle Interior View

Figure A-49: Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View

Not Applicable

MC 0205

Figure A-50: Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View - N/a

Figure A-51: Post-Test Driver Dummy Close-Up Torso Contact with Side Air Bag View

Not Applicable

MC 0205

Figure A-52: Post-Test Driver Dummy Close-Up Pelvis Contact With Vehicle Interior View - N/a

Figure A-53: Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View

Figure A-54: Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking

Figure A-55: Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View

Figure A-56: Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View

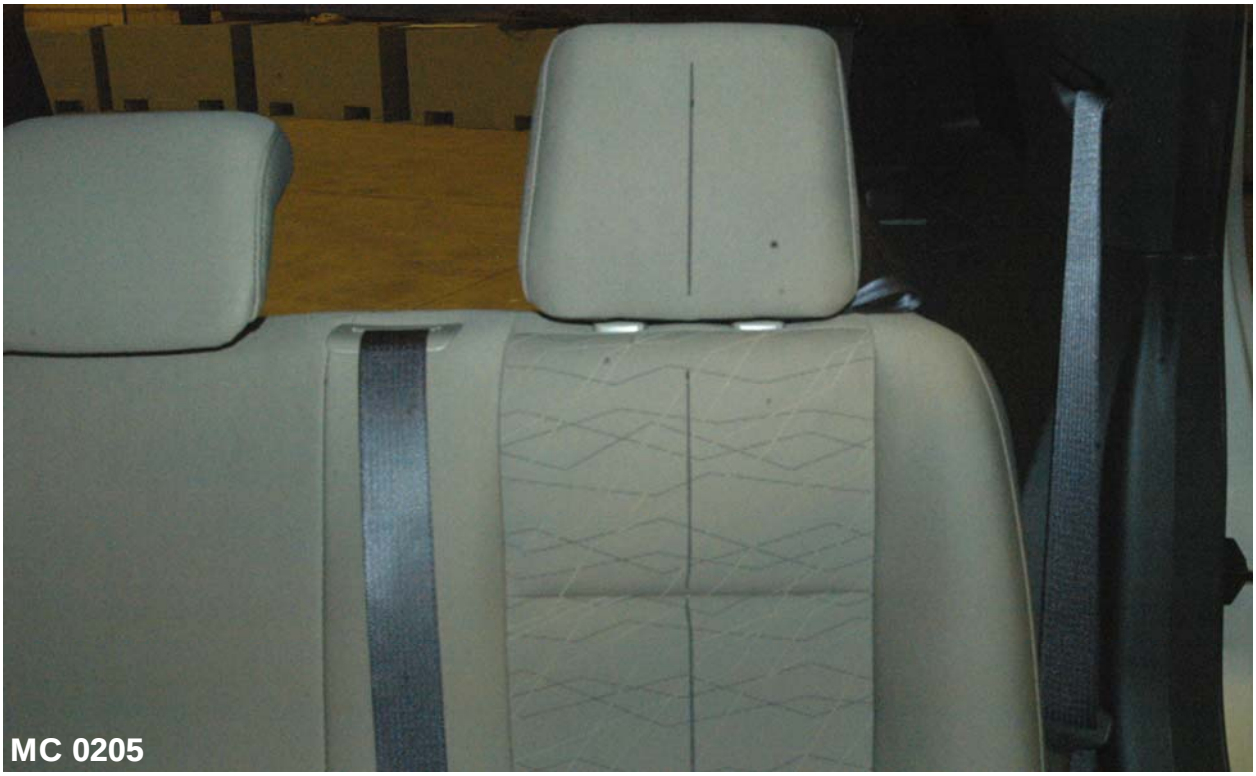


Figure A-57: Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning

Figure A-58: Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint

Figure A-59: Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning

Figure A-60: Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan

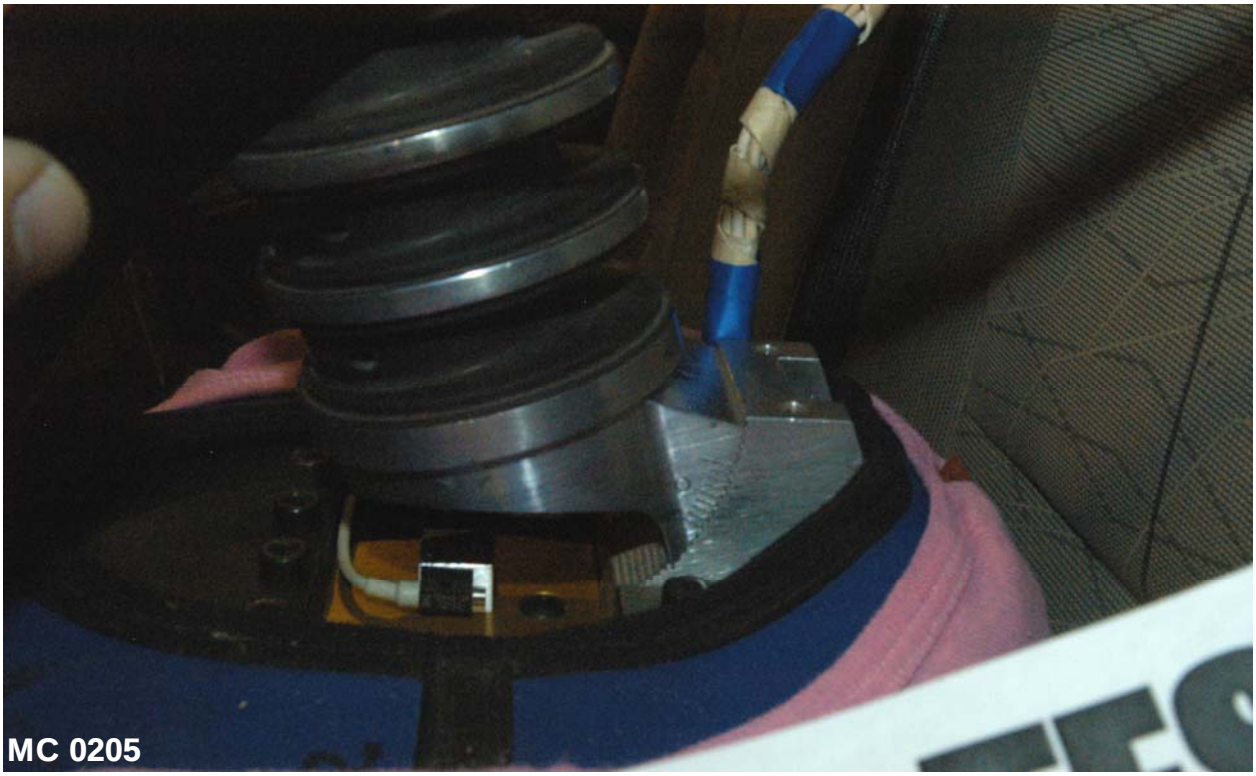


Figure A-61: Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket

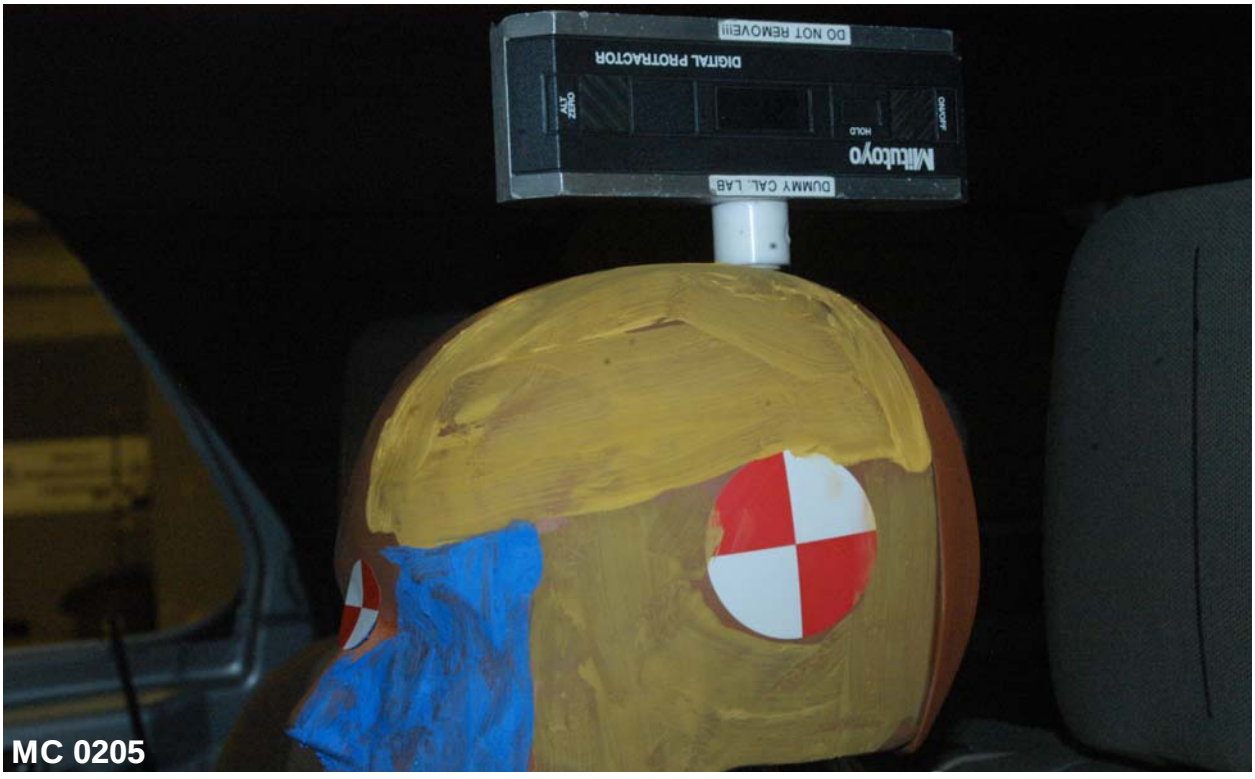


Figure A-62: Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level

Figure A-63: Pre-Test Placement of Rear Passenger Dummy's Feet

Figure A-64: No. 064 - Pre-Test View of Belt Anchorage for Rear Passenger Dummy

Not Taken

MC 0205

Figure A-65: Pre-Test Close-Up Left Side View of Rear Passenger Seat Track

Not Taken

MC 0205

Figure A-66: Pre-Test Close-Up Left Side View of Rear Passenger Seat Back

Figure A-67: Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint

Figure A-68: Pre-Test Rear Passenger Dummy and Door Clearance View

Figure A-69: Post-Test Rear Passenger Dummy and Door Clearance View

Figure A-70: Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment

Figure A-71: Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment

Figure A-72: Pre-Test Rear Passenger Inner Door Panel View

Figure A-73: Post-Test Rear Passenger Inner Door Panel View Showing Dummy Contact Locations

Not Applicable

Figure A-74: Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle Interior View

Figure A-75: Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View

Figure A-76: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View

Not Applicable

Figure A-77: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Airbag View

Figure A-78: Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Vehicle Interior View

Not Applicable

Figure A-79: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Airbag View

Figure A-80: Pre-Test View of Fuel Filler Cap or Fuel Filler Neck

Figure A-81: Post-Test View of Fuel Filler Cap or Fuel Filler Neck

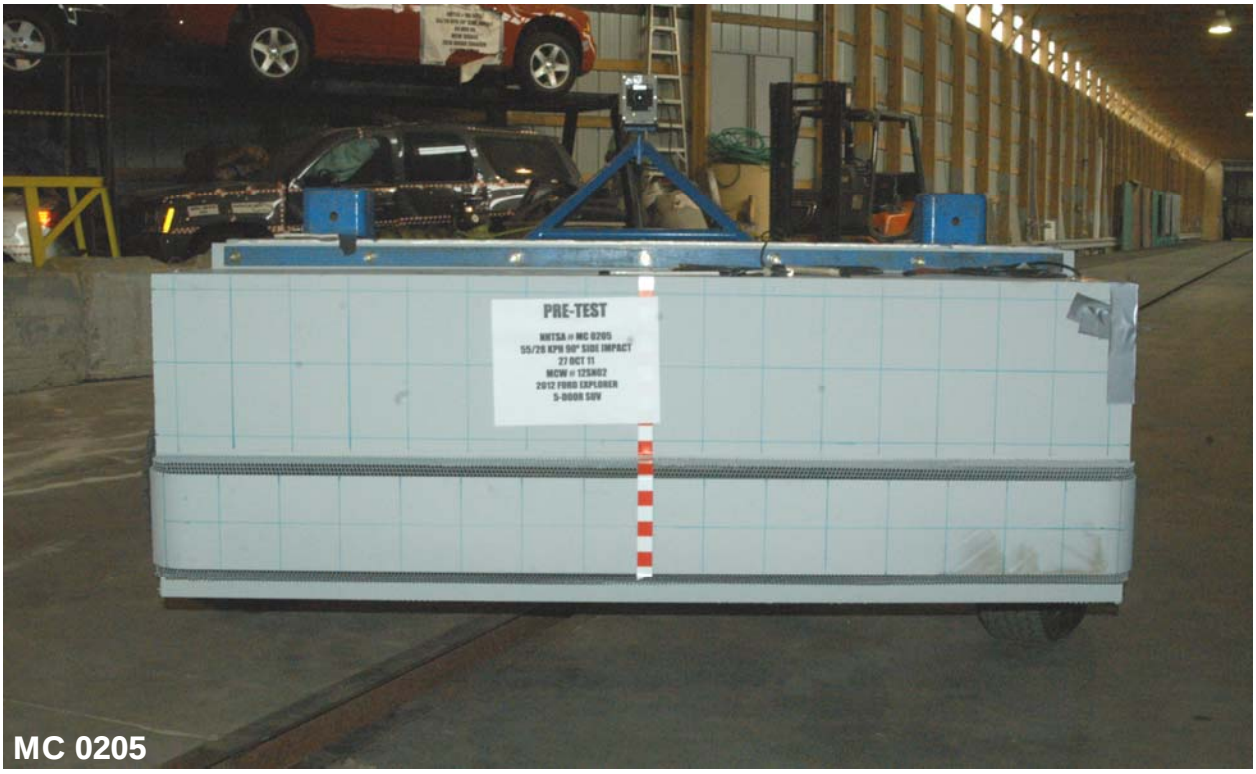


Figure A-82: Pre-Test Front View of MDB Impactor Face

Figure A-83: Post-Test Front View of MDB Impactor Face

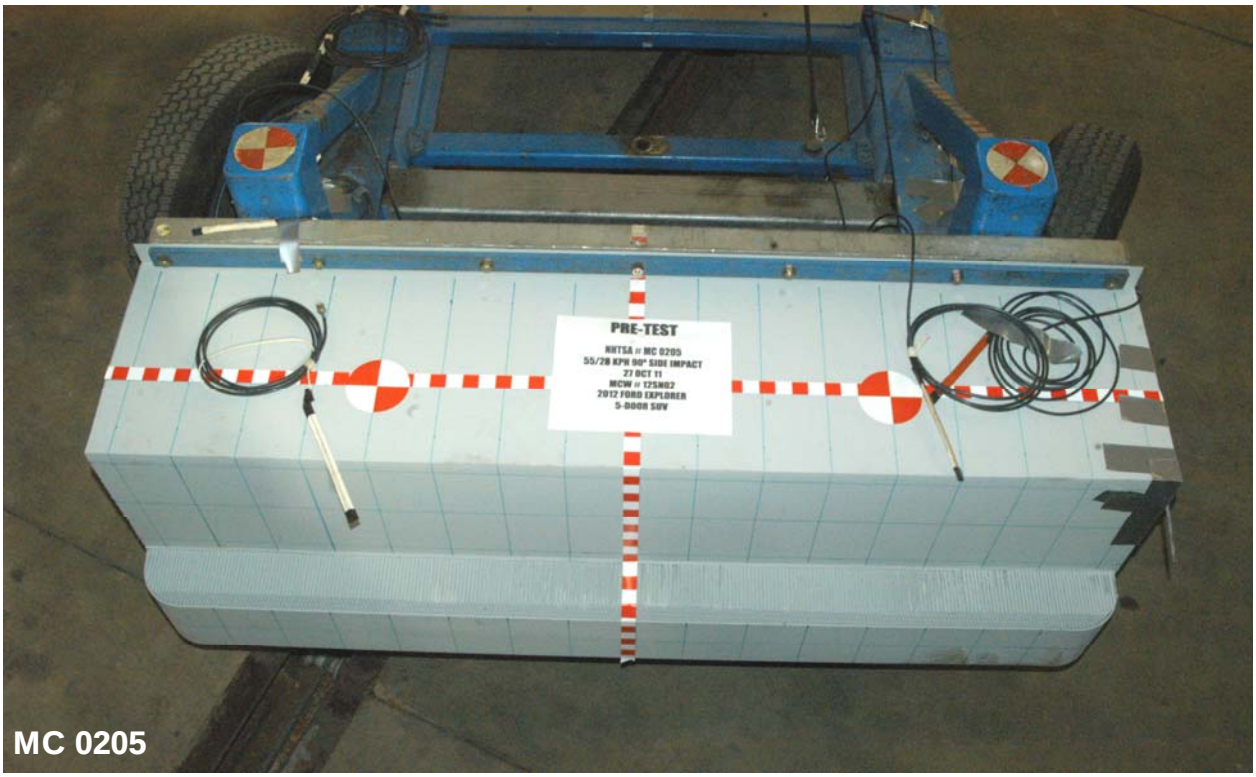


Figure A-84: Pre-Test Top View of MDB Impactor Face

Figure A-85: No. 085 - Post-Test Top View of MDB Impactor Face

Figure A-86: Pre-Test Left Side View of MDB Impactor Face

Figure A-87: Post-Test Left Side View of MDB Impactor Face

Figure A-88: Pre-Test Right Side View of MDB Impactor Face

Figure A-89: Post-Test Right Side View of MDB Impactor Face

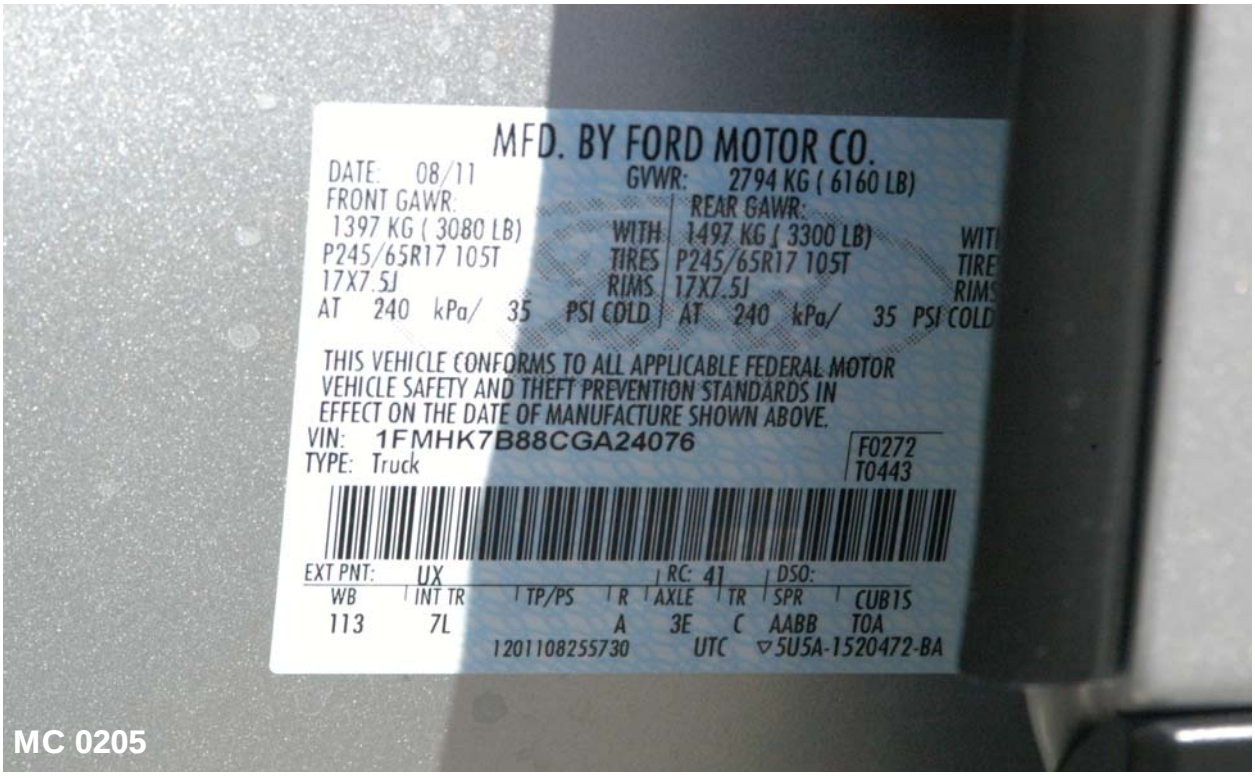


Figure A-90: Close-Up View of Vehicle's Certification Label

Figure A-91: Close-Up View of Vehicle's Tire Information Placard or Label

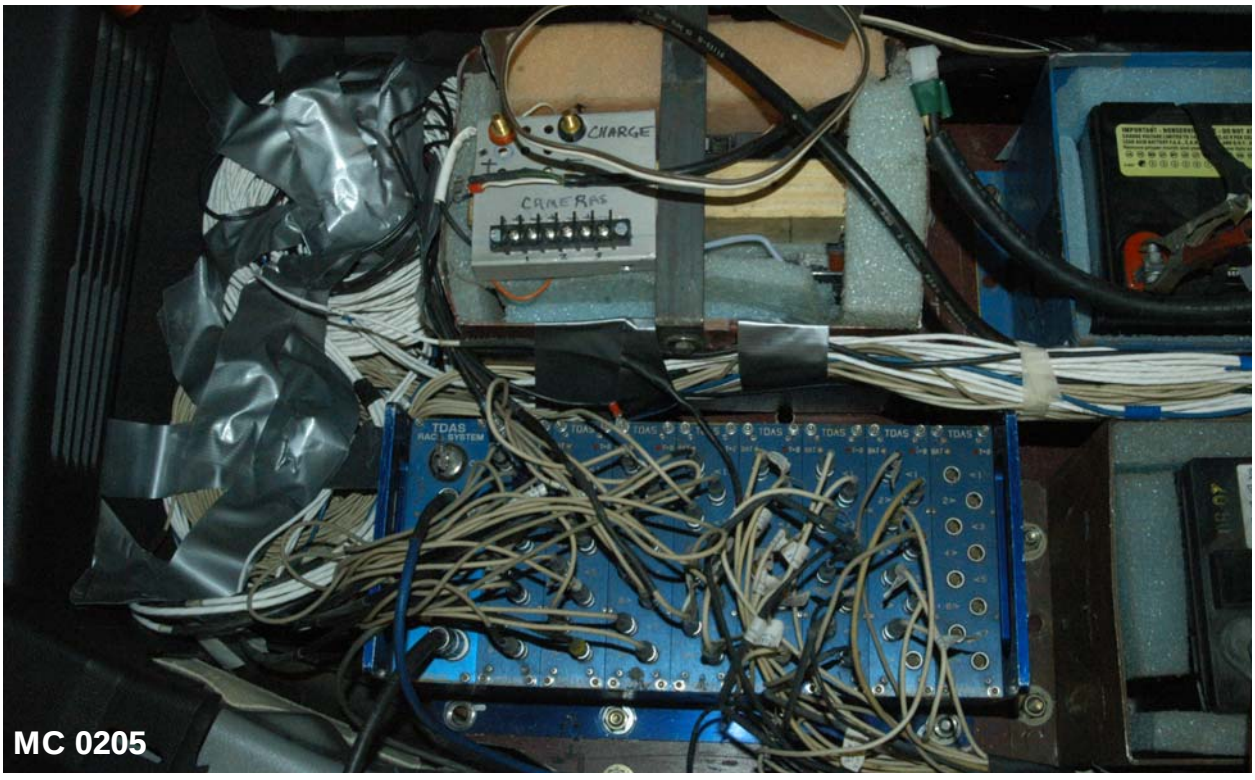


Figure A-92: Pre-Test Ballast View

Figure A-93: Post-Test Primary and Redundant Speed Trap Read-Out

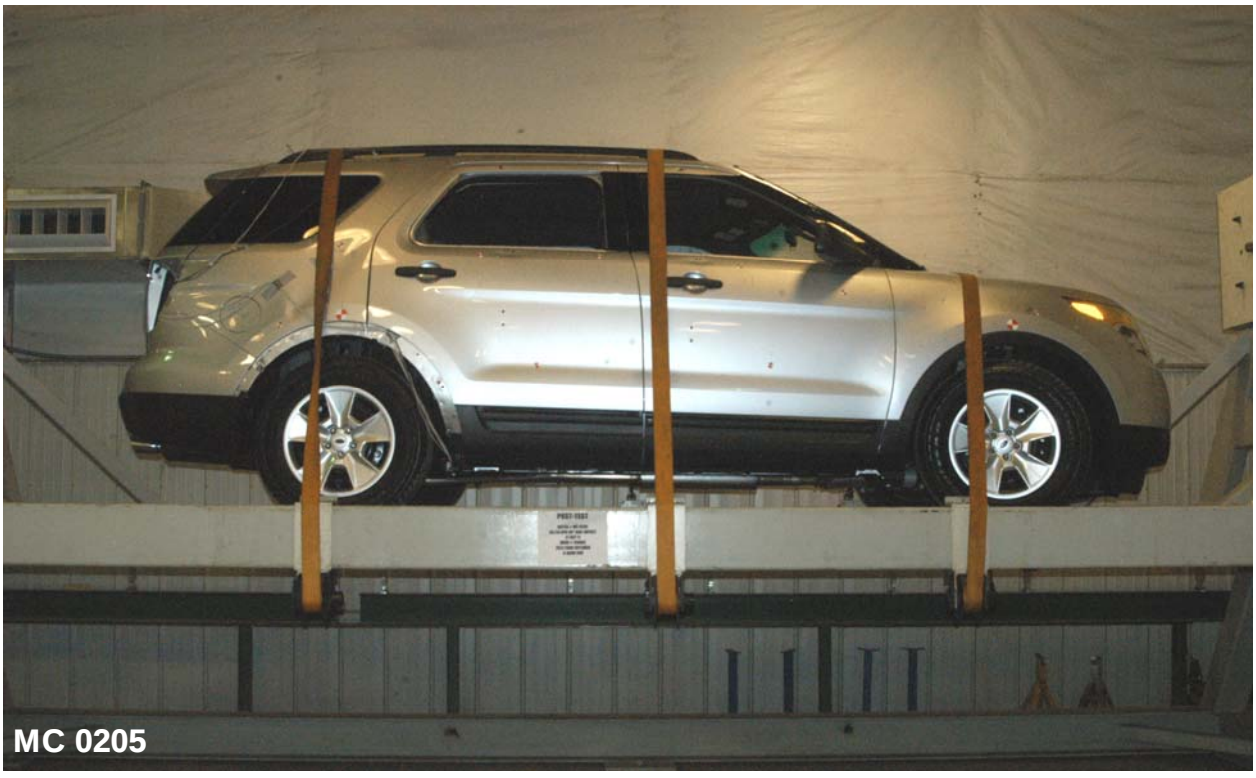


Figure A-94: FMVSS No. 301 Static Rollover 0 Degrees

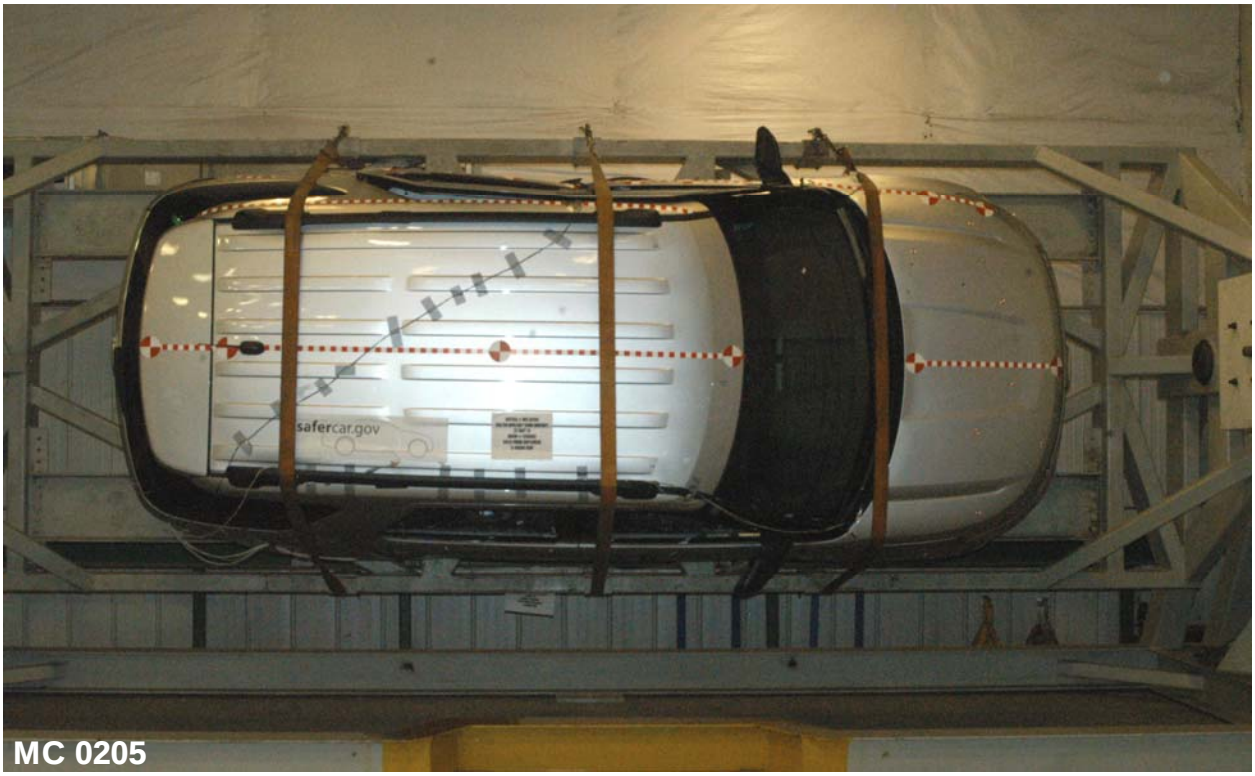


Figure A-95: FMVSS No. 301 Static Rollover 90 Degrees

Figure A-96: FMVSS No. 301 Static Rollover 180 Degrees

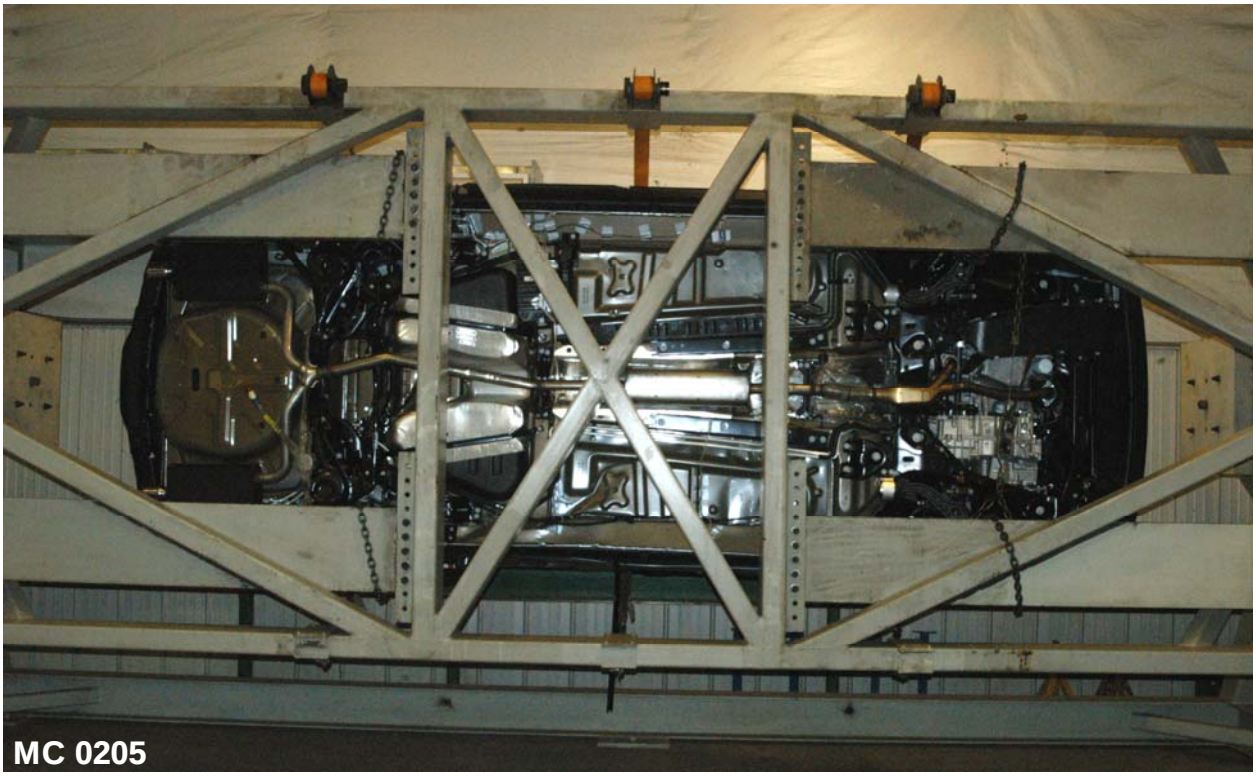


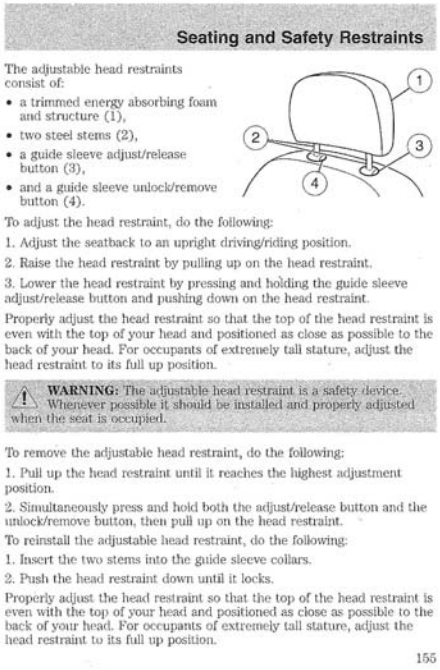
Figure A-97: FMVSS No. 301 Static Rollover 270 Degrees

Figure A-98: FMVSS No. 301 Static Rollover 360 Degrees

Figure A-99: Impact Event

MC 0205

Figure A-100: Monroney Label



Seating and Safety Restraints

The adjustable head restraints consist of:

- a trimmed energy absorbing foam and structure (1),
- two steel stems (2),
- a guide sleeve adjust/release button (3),
- and a guide sleeve unlock/remove button (4).

To adjust the head restraint, do the following:

1. Adjust the seatback to an upright driving/riding position.
2. Raise the head restraint by pulling up on the head restraint.
3. Lower the head restraint by pressing and holding the guide sleeve adjust/release button and pushing down on the head restraint.

Properly adjust the head restraint so that the top of the head restraint is even with the top of your head and positioned as close as possible to the back of your head. For occupants of extremely tall stature, adjust the head restraint to its full up position.

WARNING: The adjustable head restraint is a safety device. Whenever possible it should be installed and properly adjusted when the seat is occupied.

To remove the adjustable head restraint, do the following:

1. Pull up the head restraint until it reaches the highest adjustment position.
2. Simultaneously press and hold both the adjust/release button and the unlock/remove button, then pull up on the head restraint.

To reinstall the adjustable head restraint, do the following:

1. Insert the two stems into the guide sleeve collars.
2. Push the head restraint down until it locks.

Properly adjust the head restraint so that the top of the head restraint is even with the top of your head and positioned as close as possible to the back of your head. For occupants of extremely tall stature, adjust the head restraint to its full up position.

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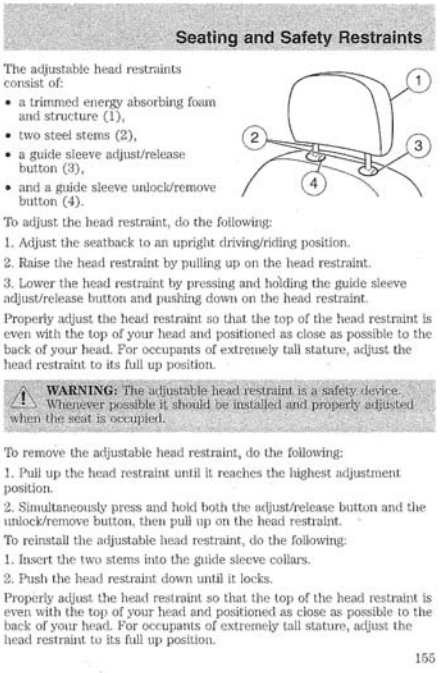
MC 0205

Figure A-101: Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Seating and Safety Restraints

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- two steel stems (2),
- a guide sleeve adjust/release button (3),
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WARNING: The adjustable head restraint is a safety device. Whenever possible it should be installed and properly adjusted when the seat is occupied.

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2. Simultaneously press and hold both the adjust/release button and the unlock/remove button, then pull up on the head restraint.

To reinstall the adjustable head restraint, do the following:

1. Insert the two stems into the guide sleeve collars.
2. Push the head restraint down until it locks.

Properly adjust the head restraint so that the top of the head restraint is even with the top of your head and positioned as close as possible to the back of your head. For occupants of extremely tall stature, adjust the head restraint to its full up position.

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MC 0205

Figure A-102: Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS

The following plots are provided in the test report

Data Plot	Description	Page
1	Driver Head Acceleration (X) Primary vs. Time	B-4
2	Driver Head Acceleration (Y) Primary vs. Time	B-5
3	Driver Head Acceleration (Z) Primary vs. Time	B-6
4	Driver Head Resultant Acceleration Primary vs. Time	B-7
5	Driver Upper Thorax Rib Deflection (Y) vs. Time	B-8
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-9
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-10
8	Driver Thorax Rib Deflection Maximum vs. Time	B-11
9	Driver Anterior Abdominal Force (Y) vs. Time	B-12
10	Driver Middle Abdominal Force (Y) vs. Time	B-13
11	Driver Posterior Abdominal Force (Y) vs. Time	B-14
12	Driver Total Abdominal Force (Y) vs. Time	B-15
13	Driver Pubic Symphysis Force (Y) vs. Time	B-16
14	Passenger Head Acceleration (X) Primary vs. Time	B-17
15	Passenger Head Acceleration (Y) Primary vs. Time	B-18
16	Passenger Head Acceleration (Z) Primary vs. Time	B-19
17	Passenger Head Resultant Acceleration Primary vs. Time	B-20
18	Passenger Lower Spine T_{12} Acceleration (X) vs. Time	B-21
19	Passenger Lower Spine T_{12} Acceleration (Y) vs. Time	B-22
20	Passenger Lower Spine T_{12} Acceleration (Z) vs. Time	B-23
21	Passenger Lower Spine T_{12} Resultant Acceleration vs. Time	B-24
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-25
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-26
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-27

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

Additional Driver & Passenger Dummy Instrumentation Data
Driver Lower Spine T_{12} Acceleration (X)
Driver Lower Spine T_{12} Acceleration (Y)
Driver Lower Spine T_{12} Acceleration (Z)
Passenger Upper Thorax Rib Deflection (Y)
Passenger Middle Thorax Rib Deflection (Y)
Passenger Lower Thorax Rib Deflection (Y)
Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Right Side Sill at Front Seat Acceleration (X)
Right Side Sill at Front Seat Acceleration (Y)
Right Side Sill at Front Seat Acceleration (Z)
Right Side Sill at Rear Seat Acceleration (X)
Right Side Sill at Rear Seat Acceleration (Y)
Right Side Sill at Rear Seat Acceleration (Z)
Left Side Sill at Front Seat Acceleration (Y)
Left Side Sill at Rear Seat Acceleration (Y)
Lower A-Post Acceleration (Y)
Middle A-Post Acceleration (Y)
Lower B-Post Acceleration (Y)
Middle B-Post Acceleration (Y)
Front Seat Track Acceleration (Y)
Rear Seat Structure Acceleration (Y)
Right Rear Occupant Compartment Acceleration (Y)
Engine Block (X)
Engine Block (Y)
Rear Floorpan Above Axle Acceleration (X)
Rear Floorpan Above Axle Acceleration (Y)
Rear Floorpan Above Axle Acceleration (Z)

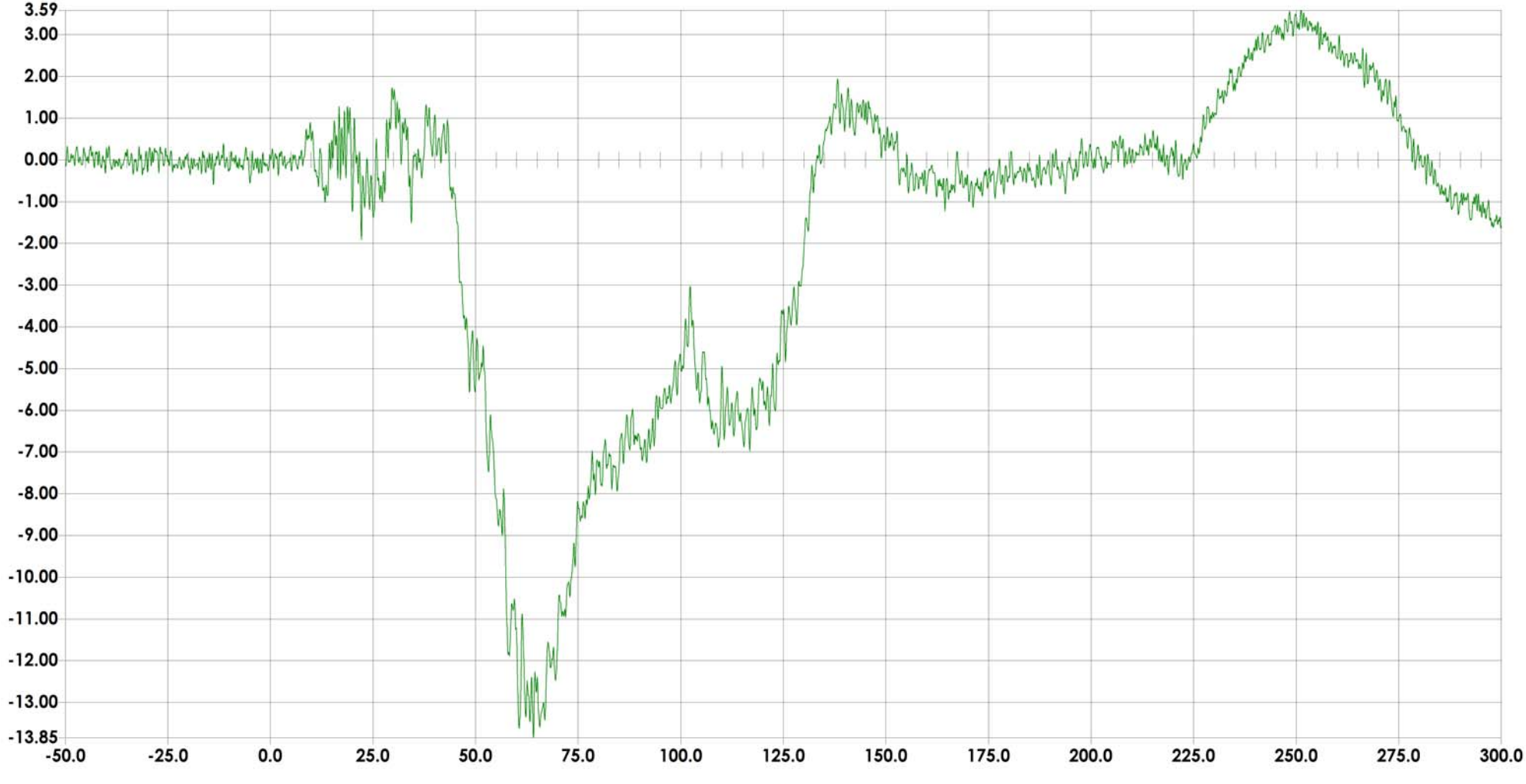
MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)
MDB Center of Gravity Acceleration (Y)
MDB Center of Gravity Acceleration (Z)
MDB Rear Acceleration (X)
MDB Rear Acceleration (Y)
Left MDB Contact Switch
Right MDB Contact Switch

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	HDCG
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264-2000TZ
		Pretrigger Points	625	Serial Number	J43494

MEDICAL COLLEGE OF WISCONSIN

G'S Driver Head Acceleration (X) Primary vs. Time



Max	3.59	G'S	at	251.20	msec
Min	-13.85	G'S	at	64.08	msec

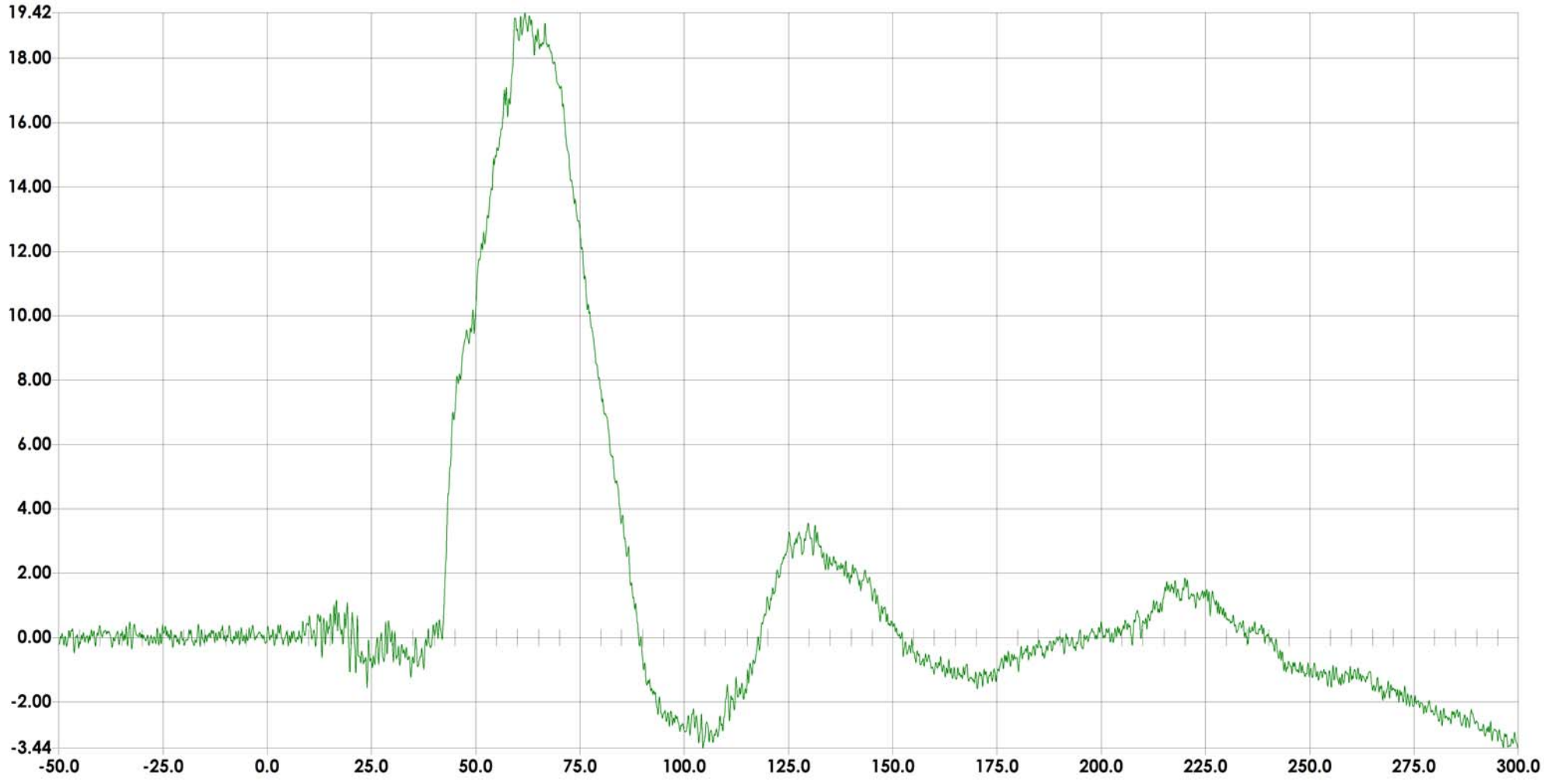
Neuroscience Research Labs
5000 West National Ave
Research 151
Milwaukee, WI 53295

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 001

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	HDCG
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264-2000TZ
		Pretrigger Points	625	Serial Number	J43475

MEDICAL COLLEGE OF WISCONSIN

Driver Head Acceleration (Y) Primary vs. Time



Max	19.42	G'S	at	61.76	msec
Min	-3.44	G'S	at	104.48	msec

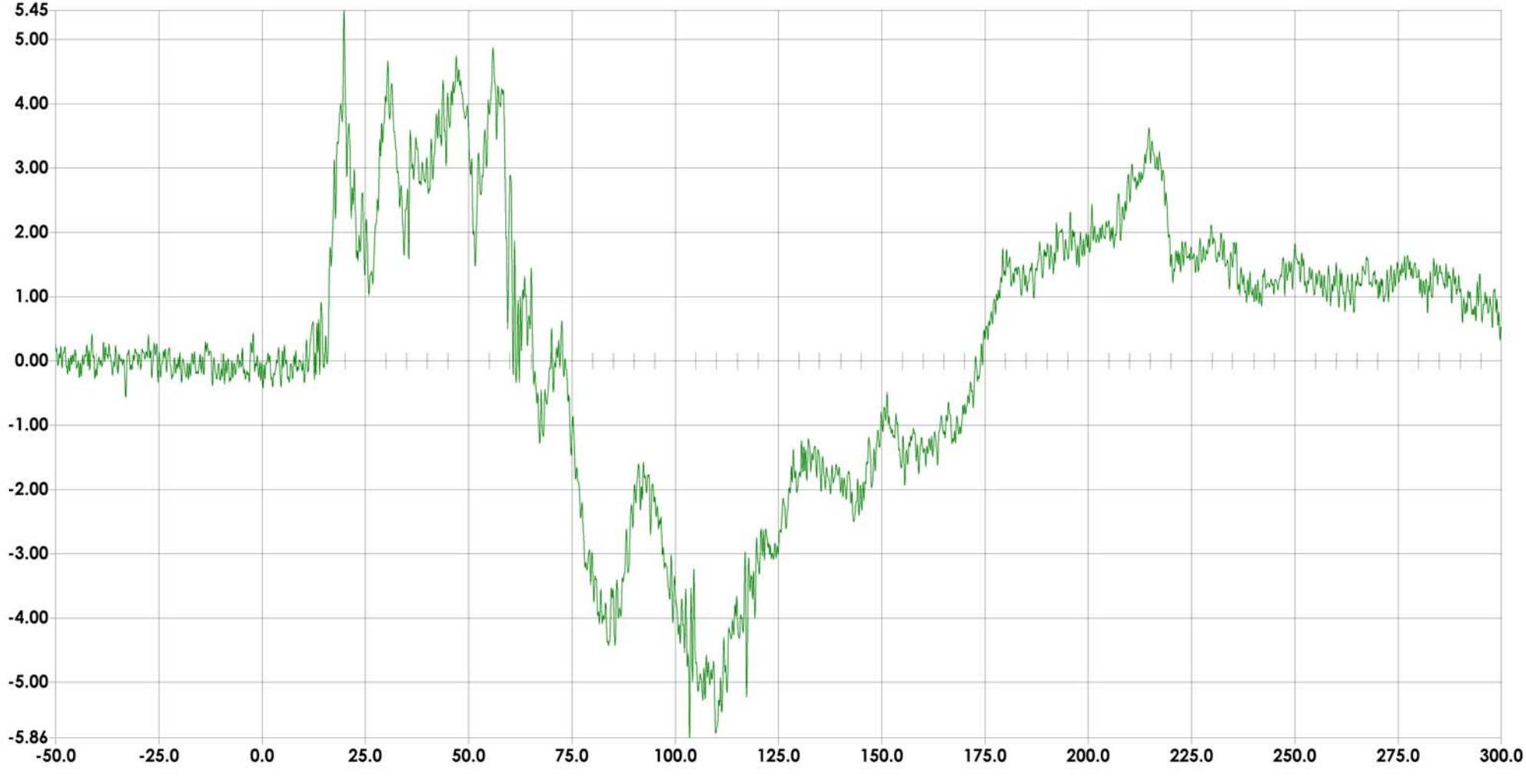
MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 002

Neuroscience Research Labs
5000 West National Ave
Research 151
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	HDCG
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264-2000
		Pretrigger Points	625	Serial Number	J43779

MEDICAL COLLEGE OF WISCONSIN

Driver Head Acceleration (Z) Primary vs. Time



Max	5.45	G'S	at	19.84	msec
Min	-5.86	G'S	at	103.44	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 003

Neuroscience Research Labs
5000 West National Ave
Research 151
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	MCW Multiviewer
		Pretrigger Points	625	Serial Number	3.5.2h

MEDICAL COLLEGE OF WISCONSIN

Driver Head Resultant Acceleration Primary vs. Time

Max	23.07	G'S	at	62.88	msec
Min	0.02	G'S	at	-5.76	msec

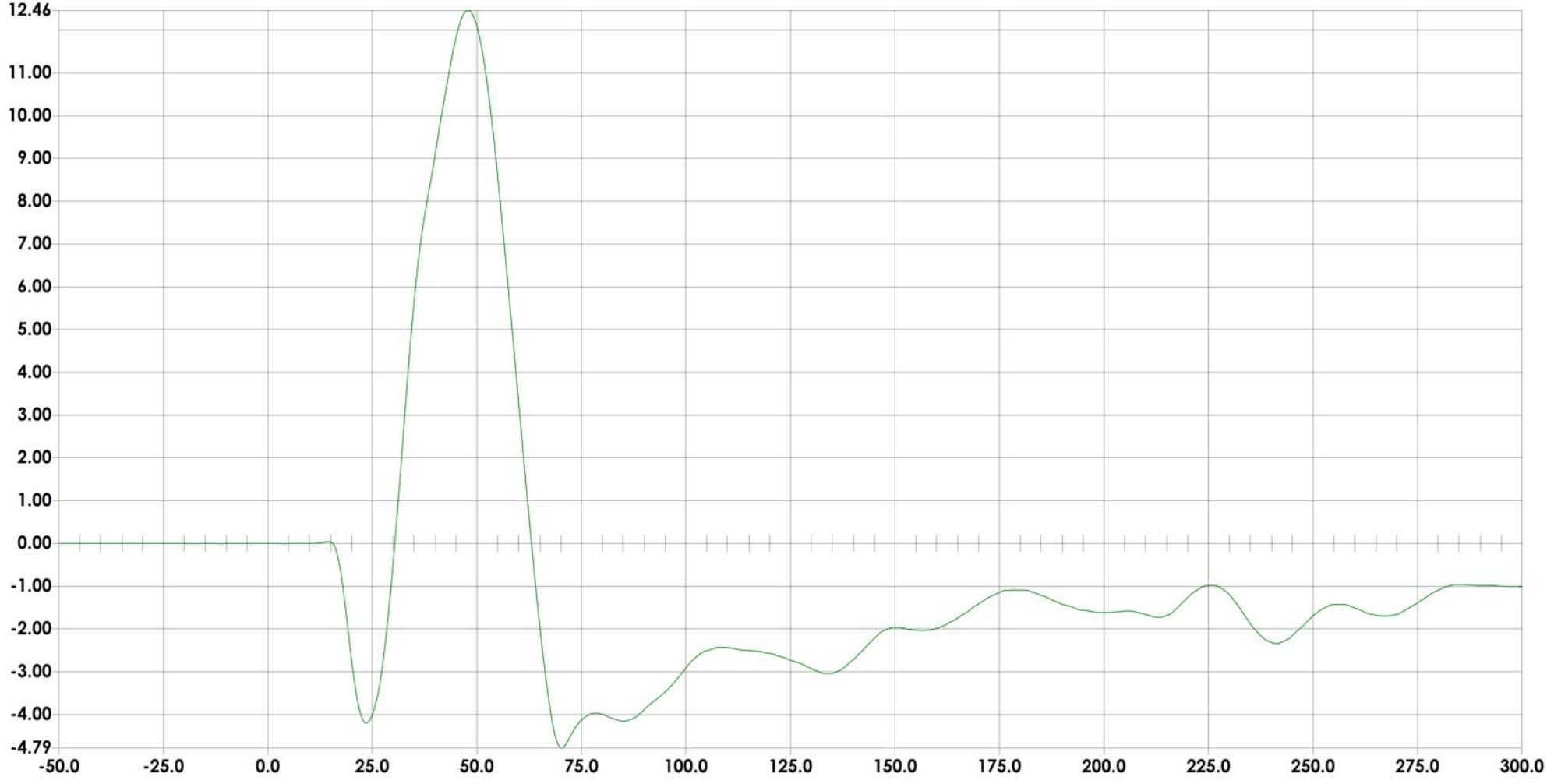
MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 063

Neuroscience Research Labs
5000 West National Ave
Research 151
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	RBLU
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton
		Pretrigger Points	625	Serial Number	433

MEDICAL COLLEGE OF WISCONSIN

Driver Upper Thorax Rib Deflection (Y) vs. Time



Max	12.46	MM	at	47.92	msec
Min	-4.79	MM	at	70.24	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 007

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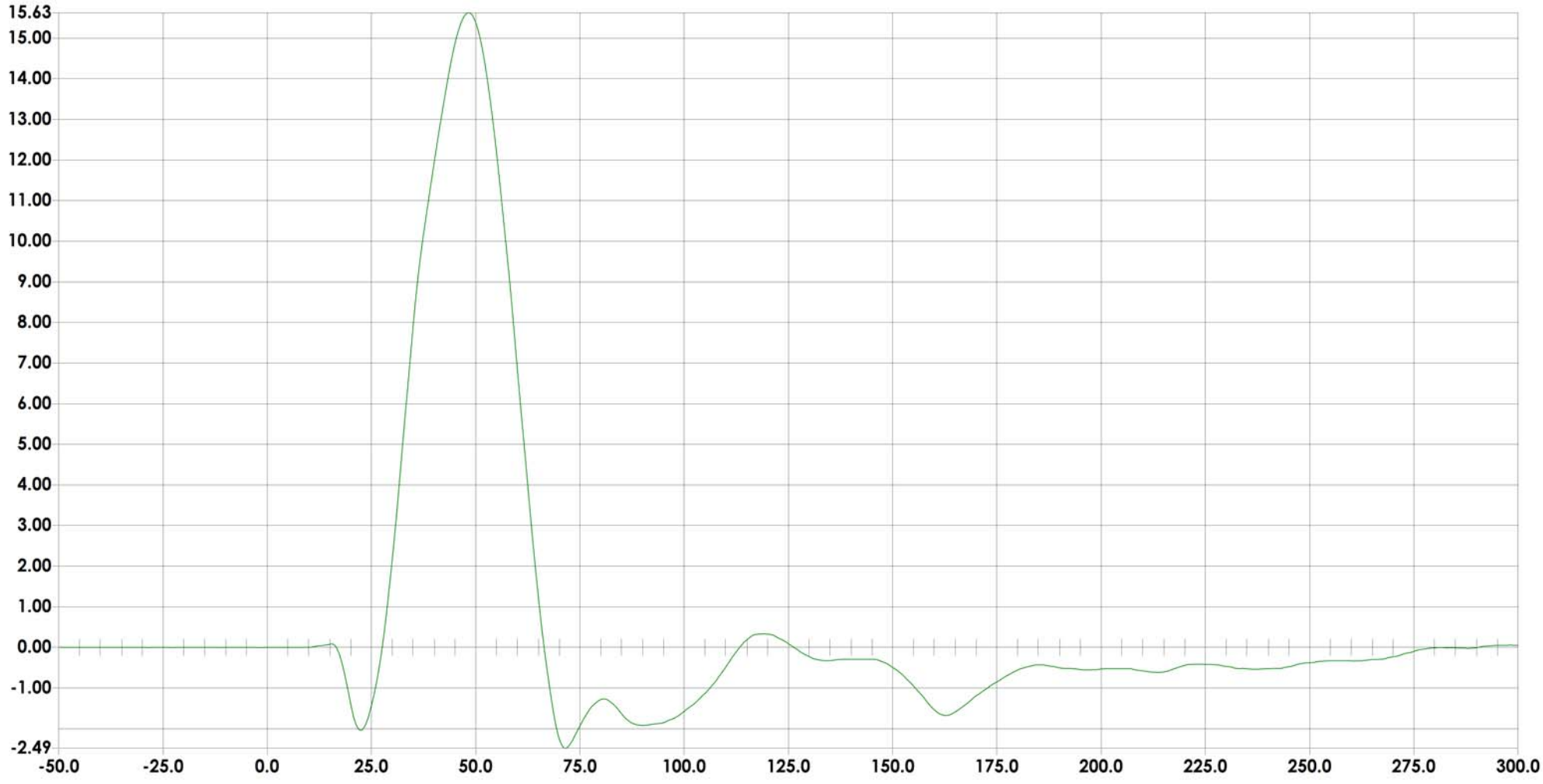
Research 151
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	RBLM
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton
		Pretrigger Points	625	Serial Number	193

MEDICAL COLLEGE OF WISCONSIN

Driver Middle Thorax Rib Deflection (Y) vs. Time



Max	15.63	MM	at	48.32	msec
Min	-2.49	MM	at	71.52	msec

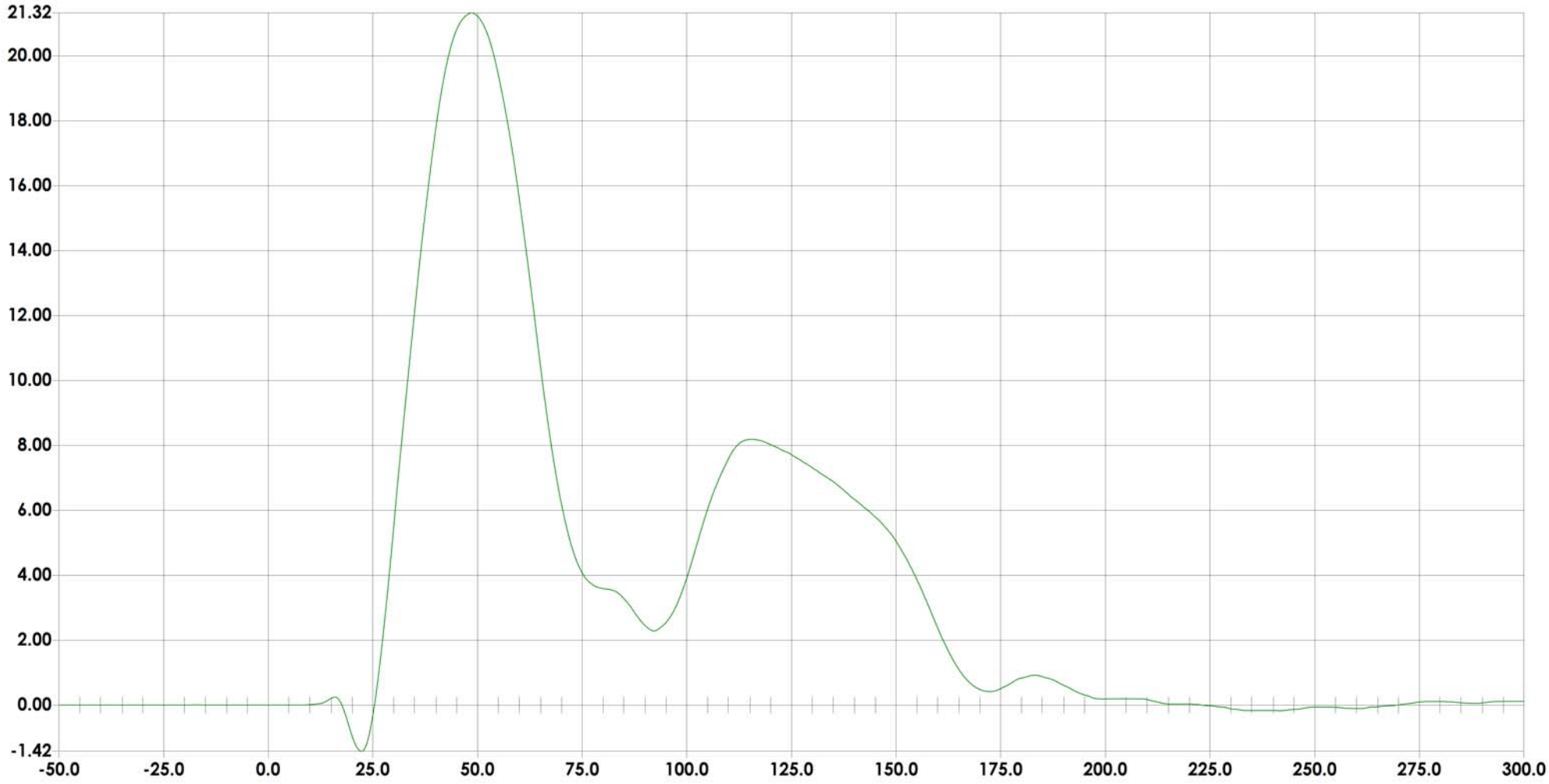
MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 008

Neuroscience Research Labs
5000 West National Ave
Research 151
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	RBLL
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton
		Pretrigger Points	625	Serial Number	191

MEDICAL COLLEGE OF WISCONSIN

Driver Lower Thorax Rib Deflection (Y) vs. Time



Max	21.32	MM	at	48.56	msec
Min	-1.42	MM	at	22.24	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 009

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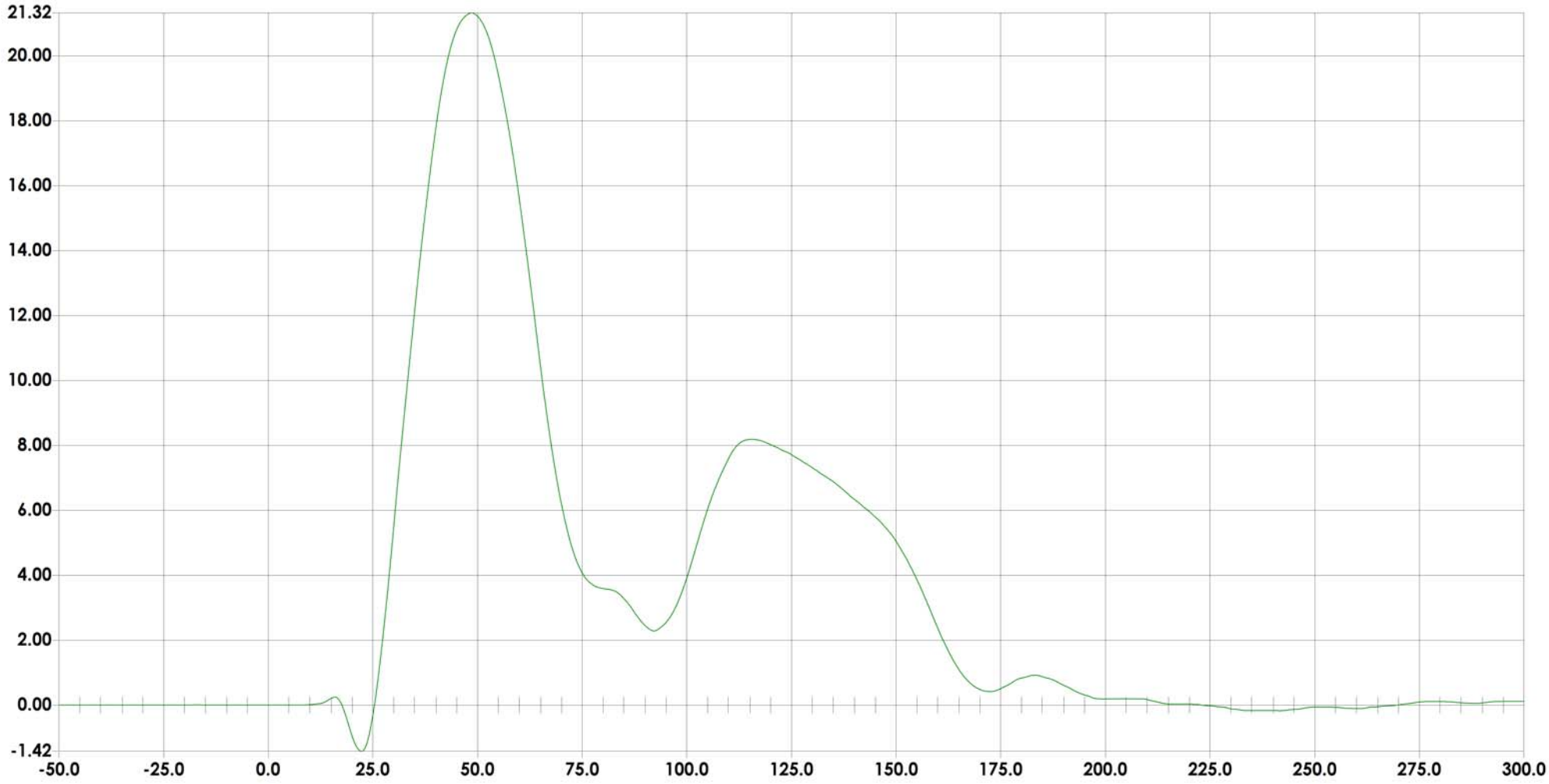
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	RBLL
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton
		Pretrigger Points	625	Serial Number	191

MEDICAL COLLEGE OF WISCONSIN

Driver Thorax Rib Deflection Maximum vs. Time



Max	21.32	MM	at	48.56	msec
Min	-1.42	MM	at	22.24	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 009

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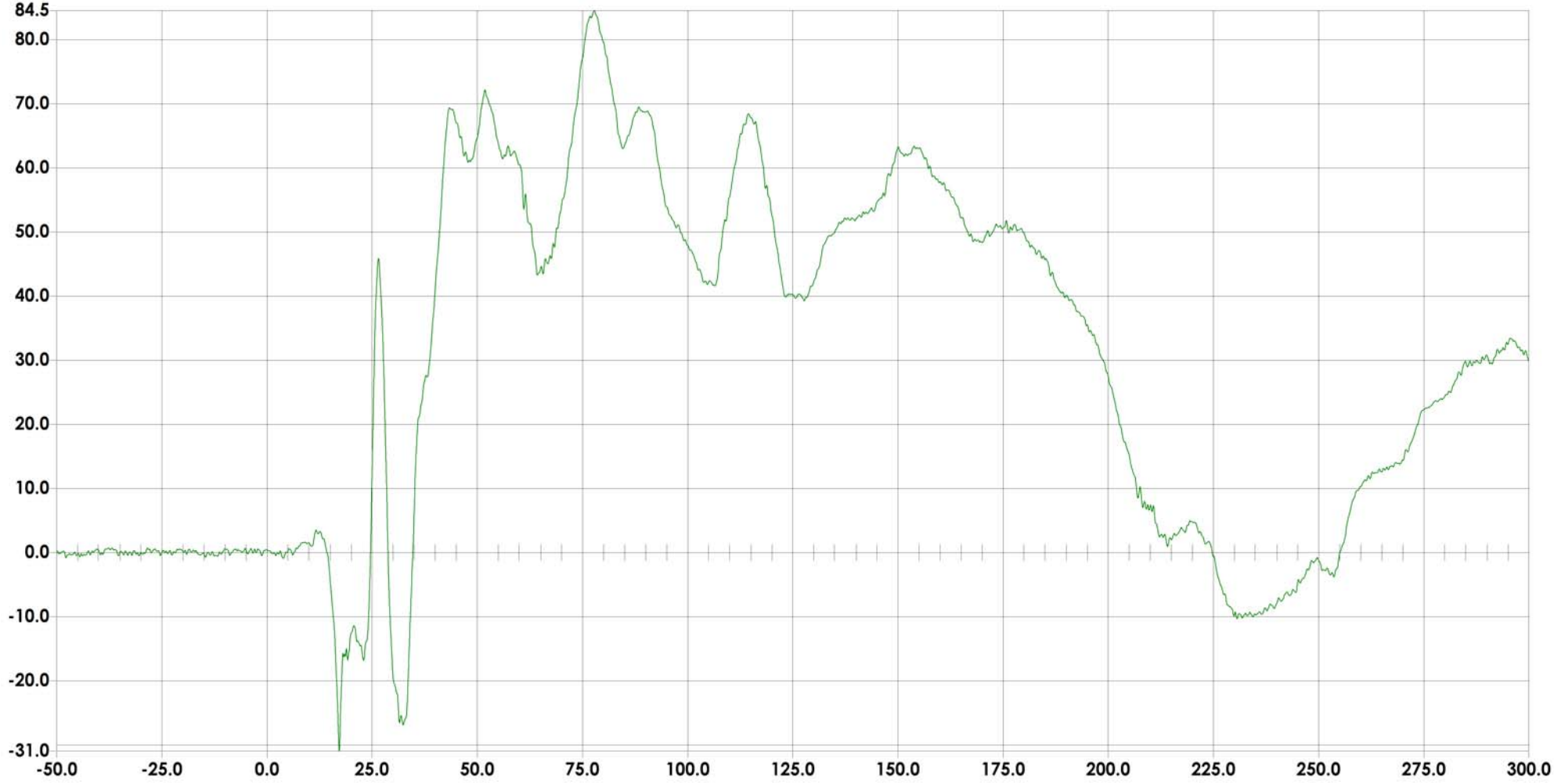
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**
Date	10-27-2011
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11

Filter	**CFC600**		
Sampling Rate (Hz)	12500	Sensor Location	ESAF
Number of Points	4376	Sensor Info	Denton 2631
Pretrigger Points	625	Serial Number	2631_1502

MEDICAL COLLEGE OF WISCONSIN

Driver Anterior Abdominal Force (Y) vs. Time



Max	84.52	NWT	at	77.84	msec
Min	-30.98	NWT	at	17.20	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 010

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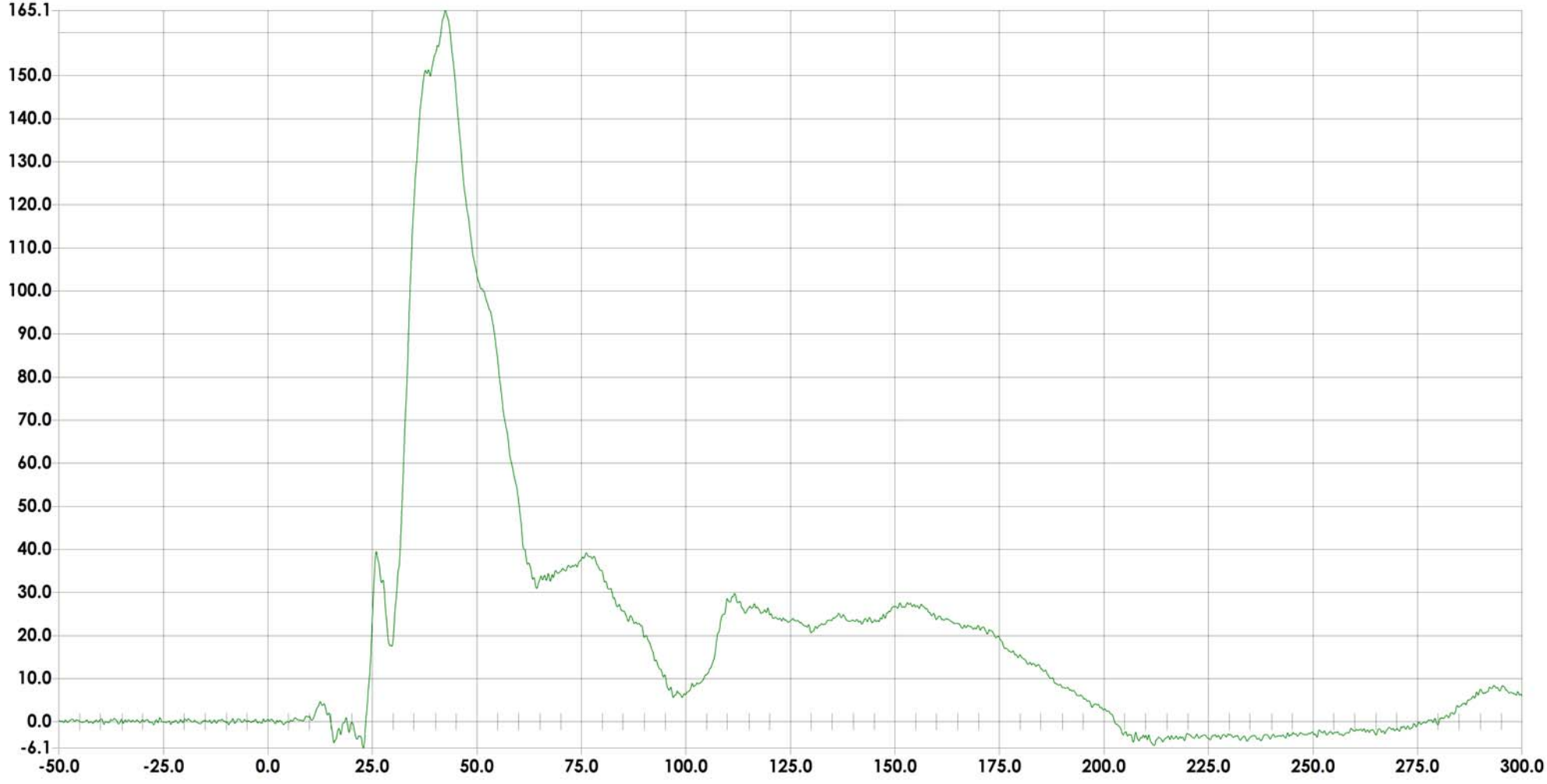
Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	ESAM
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton 2631
		Pretrigger Points	625	Serial Number	2631_1511

MEDICAL COLLEGE OF WISCONSIN

Driver Middle Abdominal Force (Y) vs. Time



Max	165.11	NWT	at	42.48	msec
Min	-6.13	NWT	at	22.80	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 011

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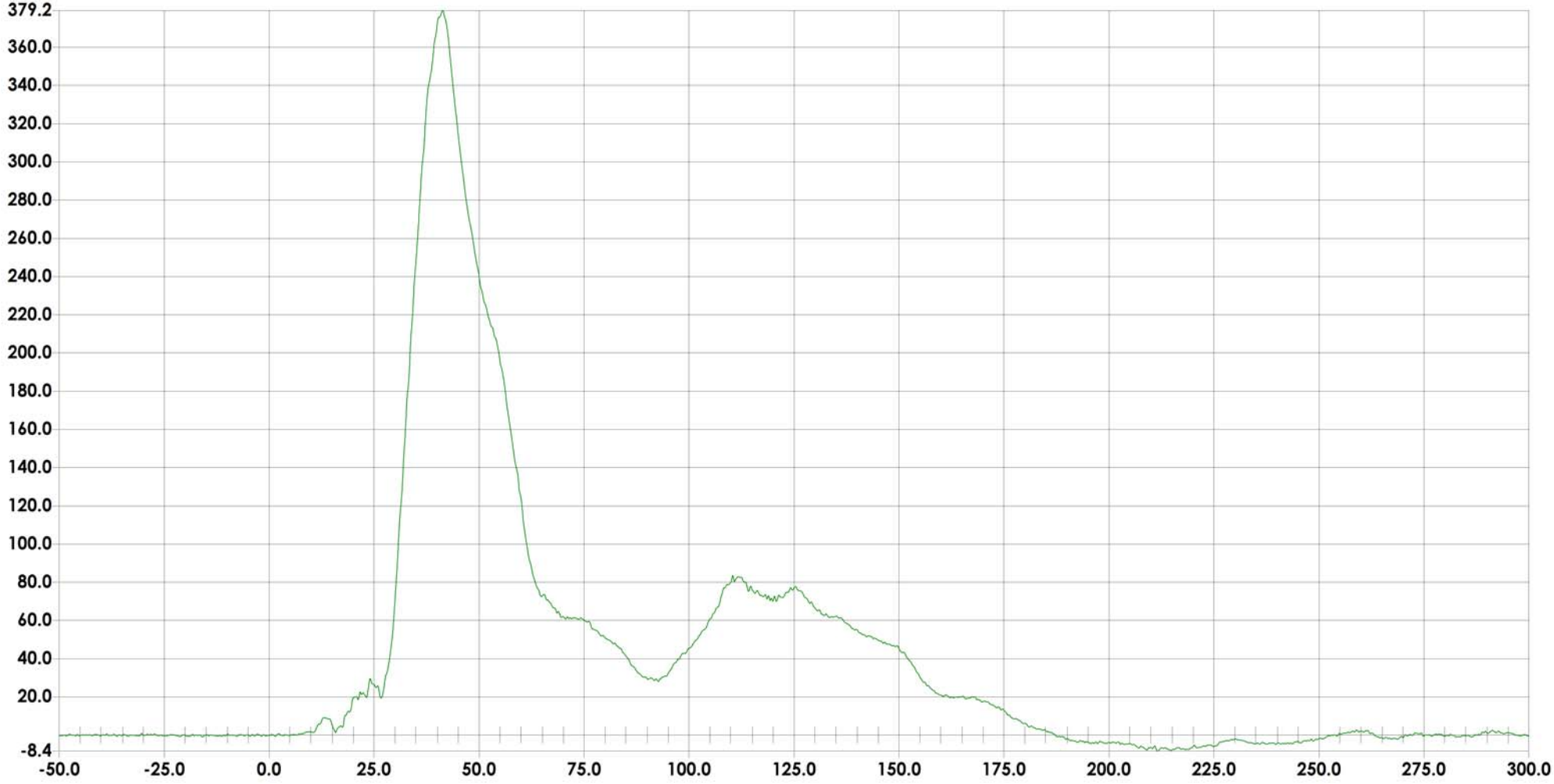
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	ESAR
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton 2631
		Pretrigger Points	625	Serial Number	2631_1537

MEDICAL COLLEGE OF WISCONSIN

NWT Driver Rear Abdominal Force (Y) vs. Time



Max	379.22	NWT	at	41.36	msec
Min	-8.39	NWT	at	211.60	msec

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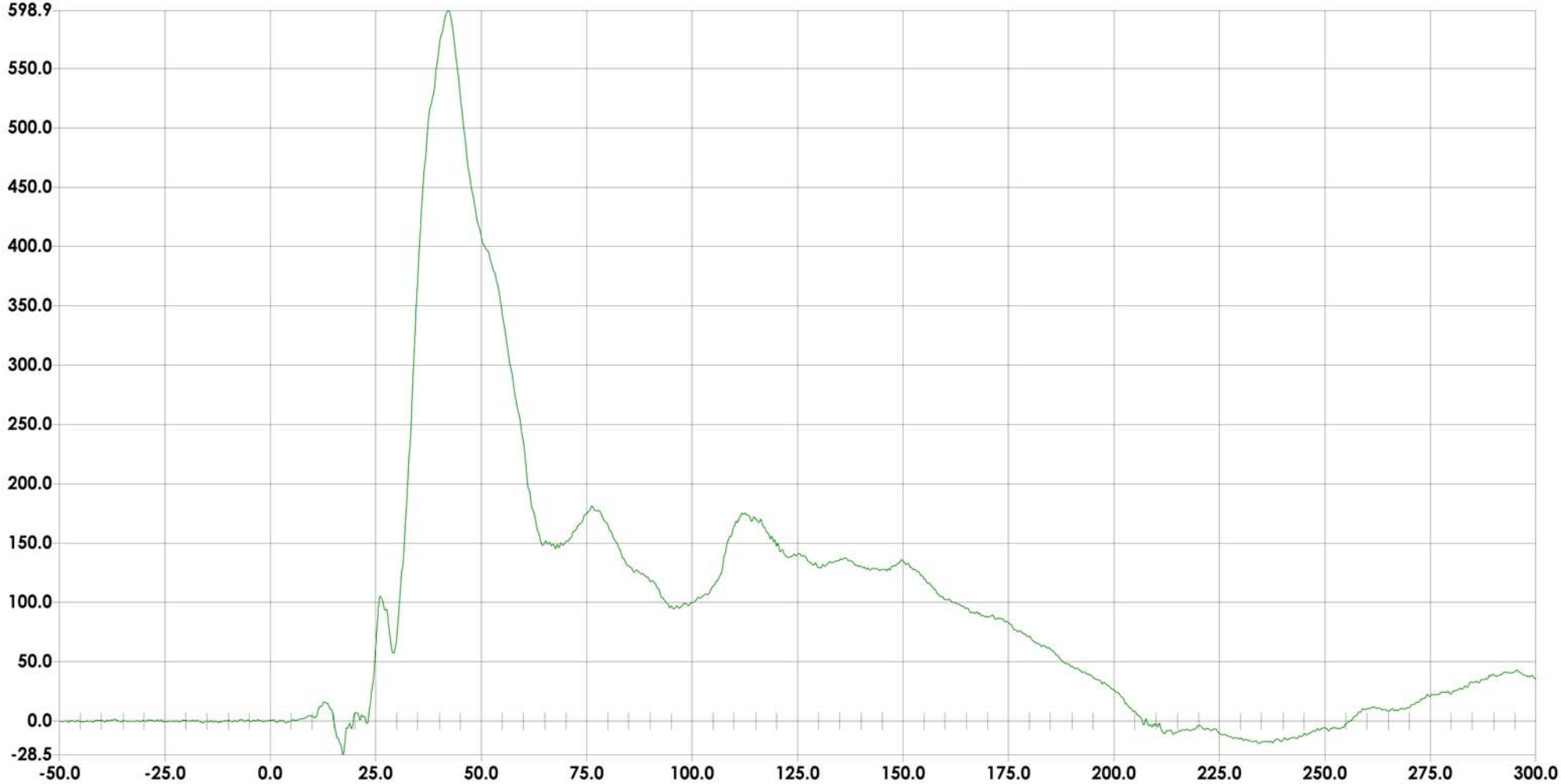
MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 012

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	MCW Multiviewer
		Pretrigger Points	625	Serial Number	3.5.2h

MEDICAL COLLEGE OF WISCONSIN

Driver Total Abdominal Force (Y) vs. Time



Max	598.92	NWT	at	42.32	msec
Min	-28.51	NWT	at	17.20	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 064

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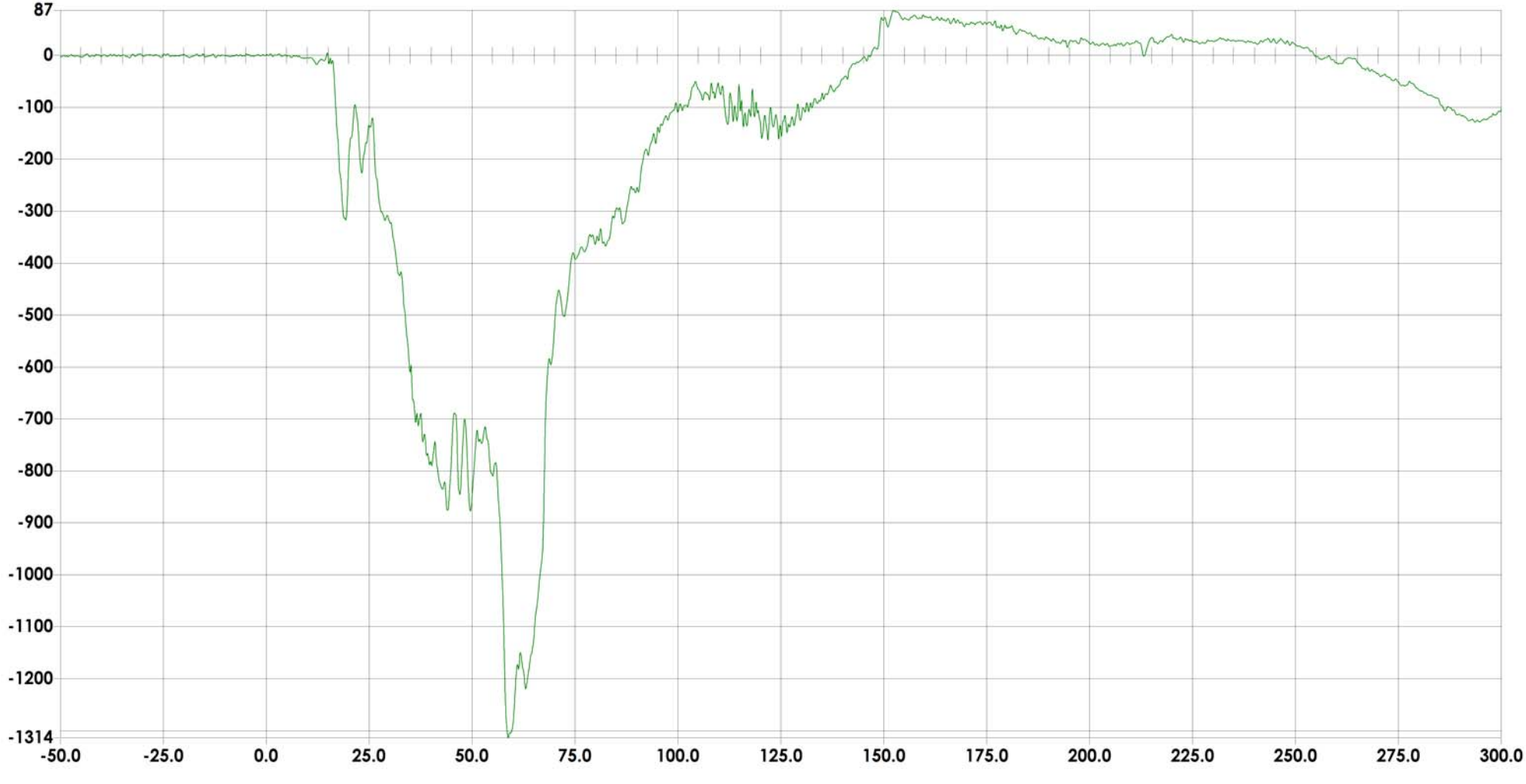
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	PVPS
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton 3096JFL
		Pretrigger Points	625	Serial Number	3096_460

MEDICAL COLLEGE OF WISCONSIN

NWT Driver Pubic Symphysis Force (Y) vs. Time



Max	86.65	NWT	at	152.40	msec
Min	-1313.85	NWT	at	58.80	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 016

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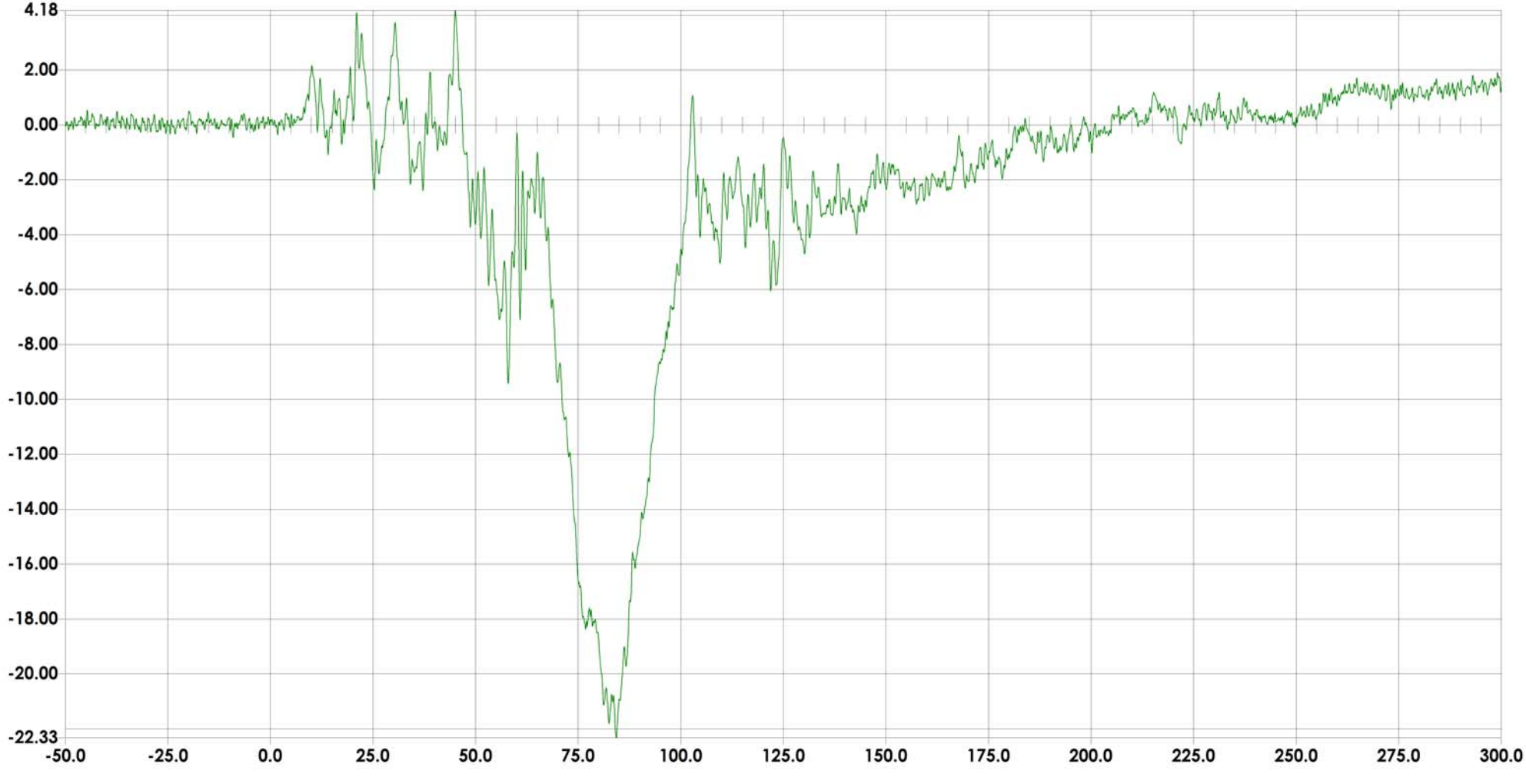
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	HDCG
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264C-2KTZ-2-240
		Pretrigger Points	625	Serial Number	P22041

MEDICAL COLLEGE OF WISCONSIN

Passenger Head Acceleration (X) Primary vs. Time



Max	4.18	G'S	at	45.04	msec
Min	-22.33	G'S	at	84.32	msec

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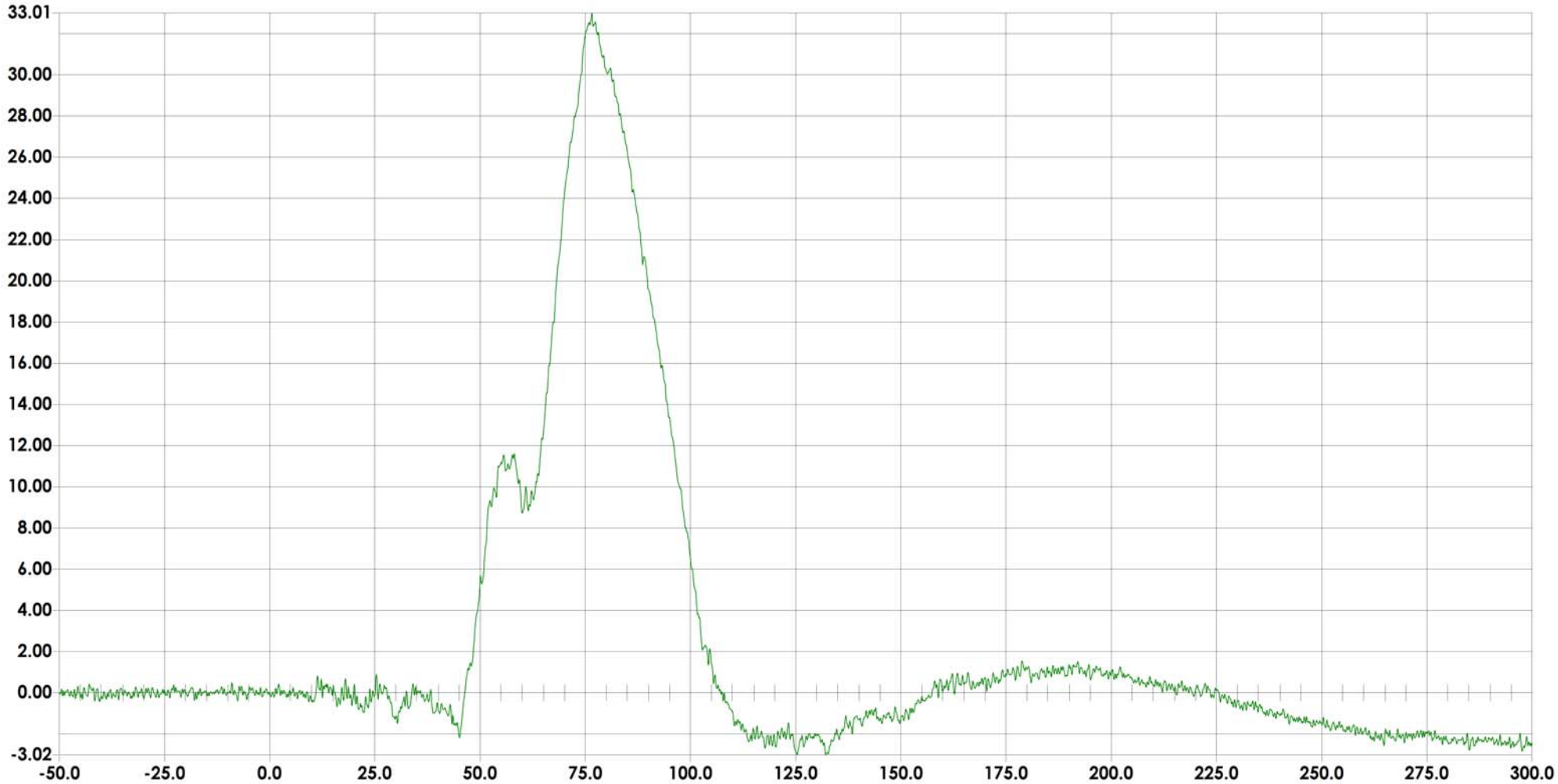
Milwaukee, WI 53295

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 017

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	HDCG
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264C-2KTZ-2-240
		Pretrigger Points	625	Serial Number	P24562

MEDICAL COLLEGE OF WISCONSIN

Passenger Head Acceleration (Y) Primary vs. Time



Max	33.01	G'S	at	76.56 msec
Min	-3.02	G'S	at	125.36 msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 018

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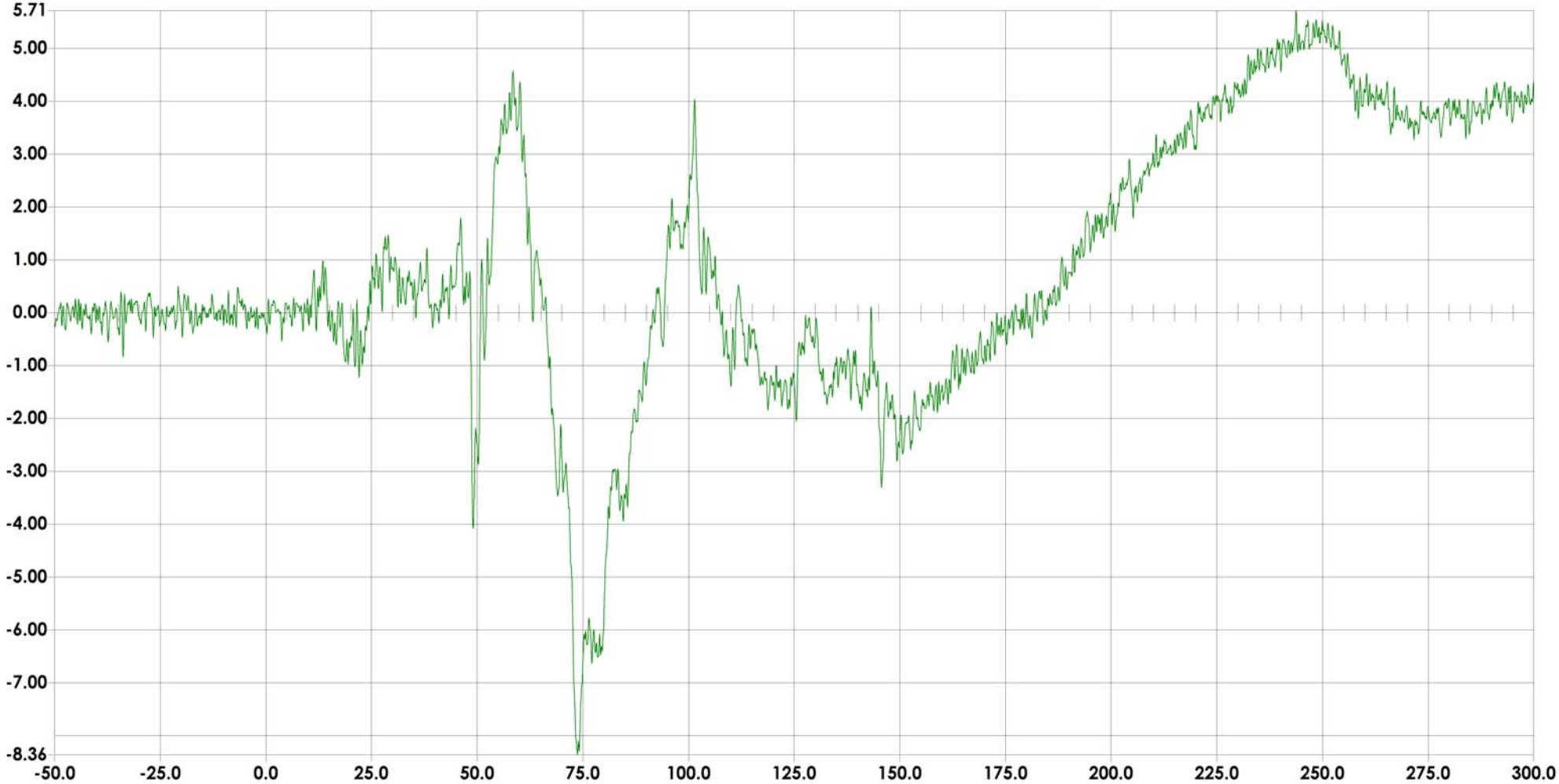
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	HDCG
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264C-2KTZ-2-300
		Pretrigger Points	625	Serial Number	P22322

MEDICAL COLLEGE OF WISCONSIN

Passenger Head Acceleration (Z) Primary vs. Time



Max	5.71	G'S	at	243.76	msec
Min	-8.36	G'S	at	73.68	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 019

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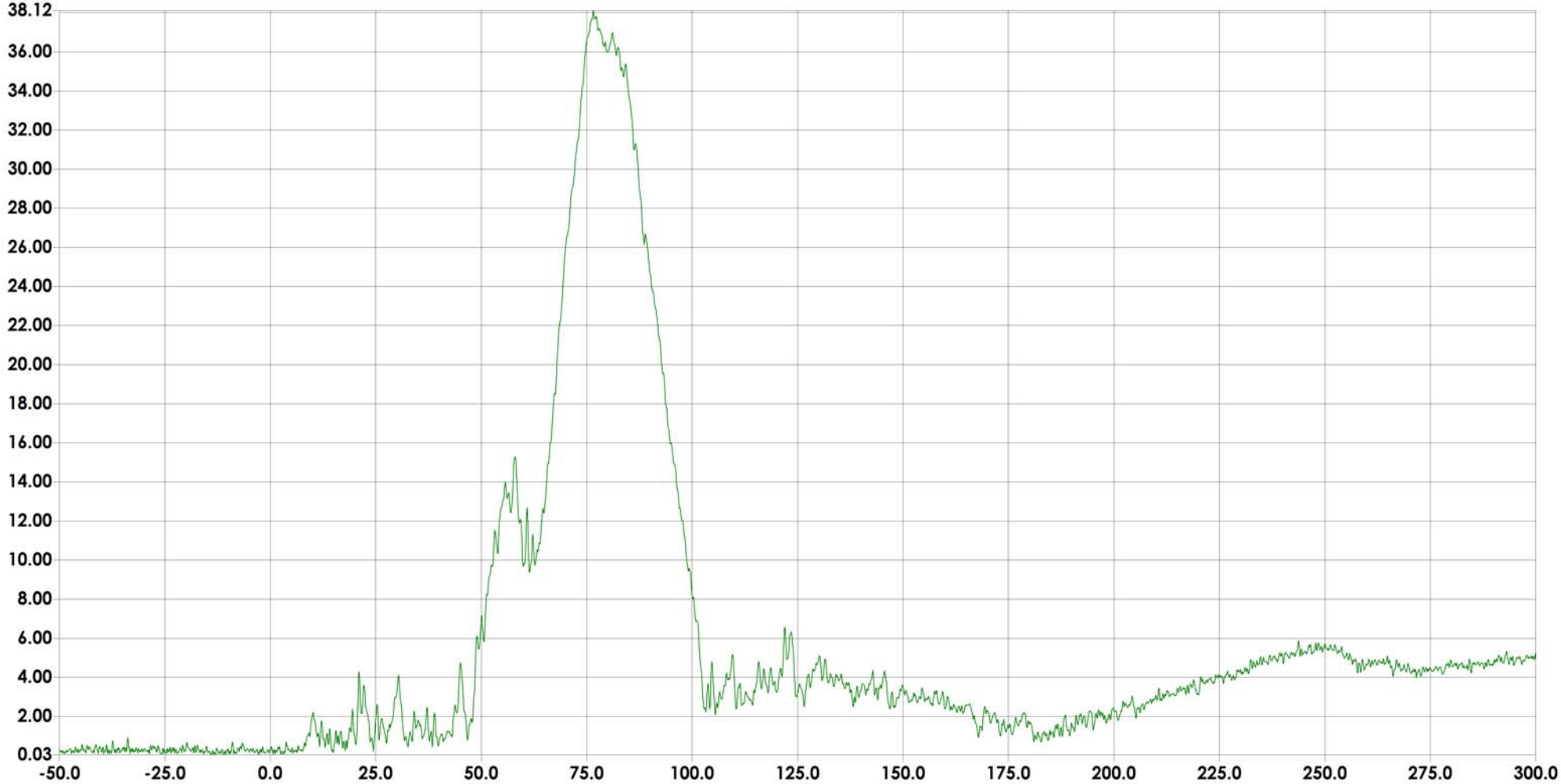
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC1000**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	MCW Multiviewer
		Pretrigger Points	625	Serial Number	3.5.2h

MEDICAL COLLEGE OF WISCONSIN

Passenger Head Resultant Acceleration Primary vs. Time



Max	38.12	G'S	at	76.56	msec
Min	0.03	G'S	at	-12.96	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 067

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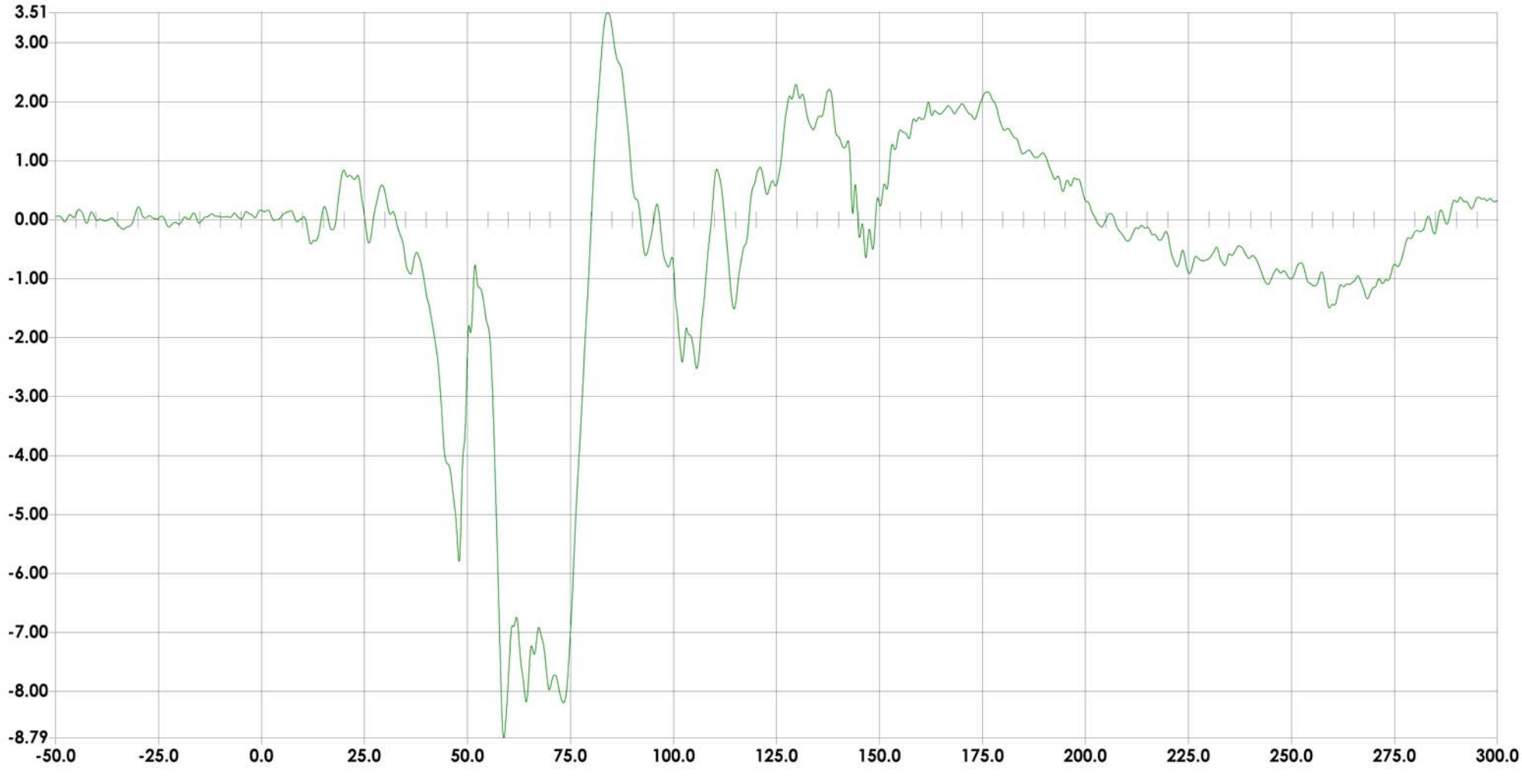
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	SPNL
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264C-2KTZ-2-240
		Pretrigger Points	625	Serial Number	P21661

MEDICAL COLLEGE OF WISCONSIN

Passenger Lower Spine T12 Acceleration (X) vs. Time



Max	3.51	G'S	at	84.08	msec
Min	-8.79	G'S	at	58.80	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 028

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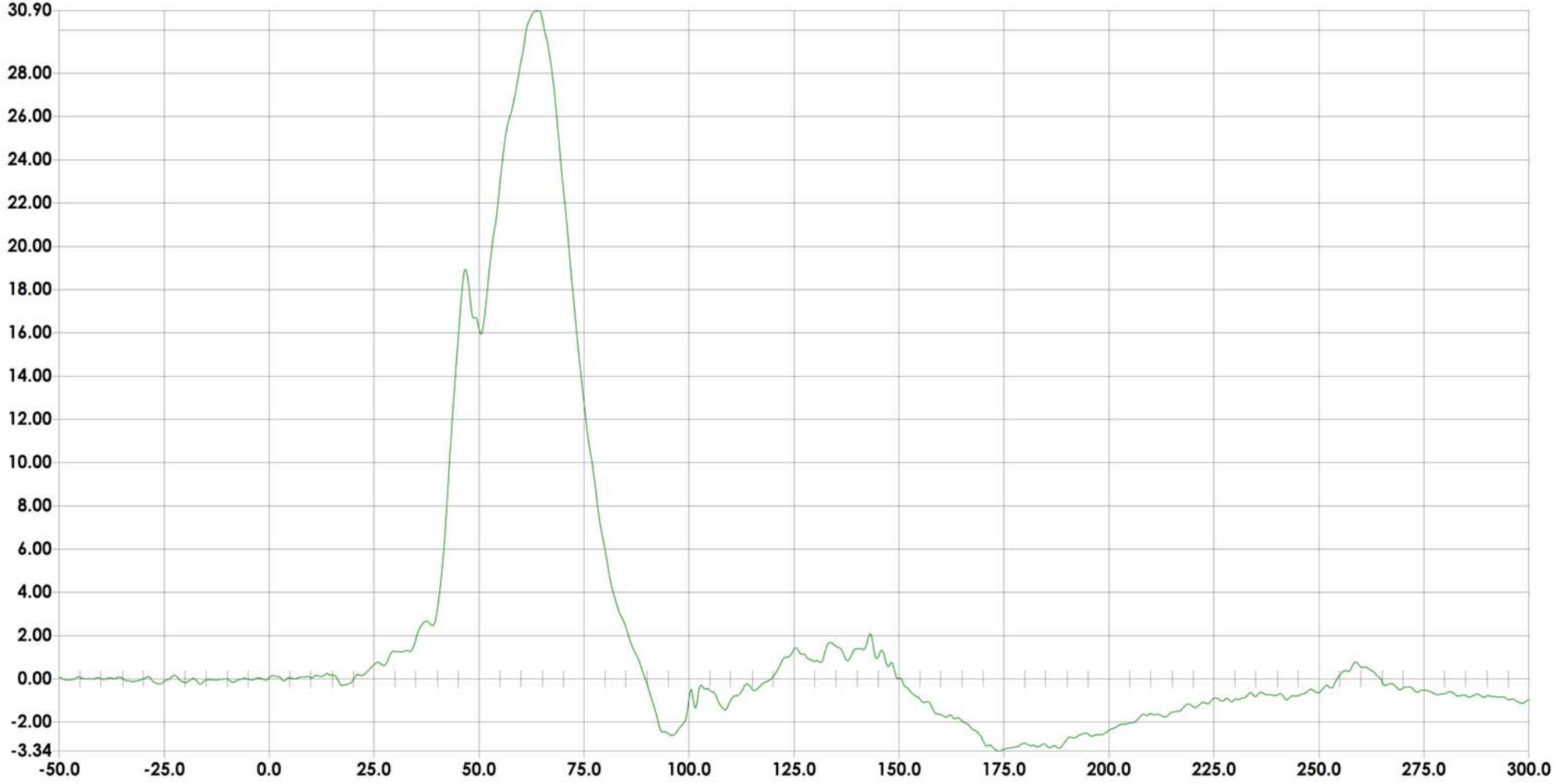
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	SPNL
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264C-2KTZ-2-240
		Pretrigger Points	625	Serial Number	P24682

MEDICAL COLLEGE OF WISCONSIN

Passenger Lower Spine T12 Acceleration (Y) vs. Time



Max	30.90	G'S	at	64.32	msec
Min	-3.34	G'S	at	173.92	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 029

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Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	SPNL
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	ENDEVCO 7264C-2KTZ-2-240
		Pretrigger Points	625	Serial Number	P21788

MEDICAL COLLEGE OF WISCONSIN

Passenger Lower Spine T12 Acceleration (Z) vs. Time

Max	12.77	G'S	at	73.36	msec
Min	-10.01	G'S	at	47.60	msec

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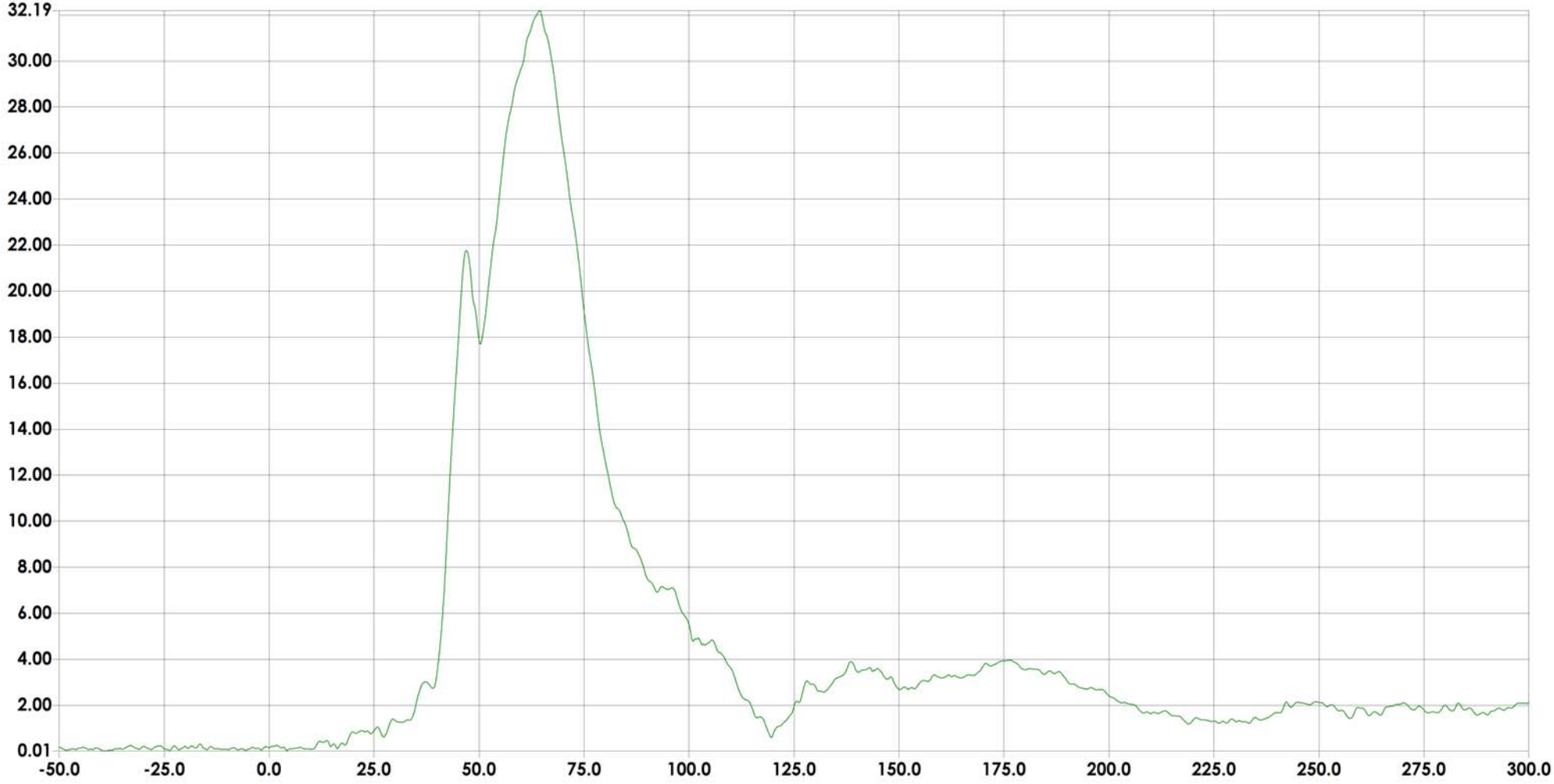
MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 030

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC180**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	MCW Multiviewer
		Pretrigger Points	625	Serial Number	3.5.2h

MEDICAL COLLEGE OF WISCONSIN

Passenger Lower Spine T12 Resultant Acceleration vs. Time



Max	32.19	G'S	at	64.40	msec
Min	0.01	G'S	at	4.24	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 065

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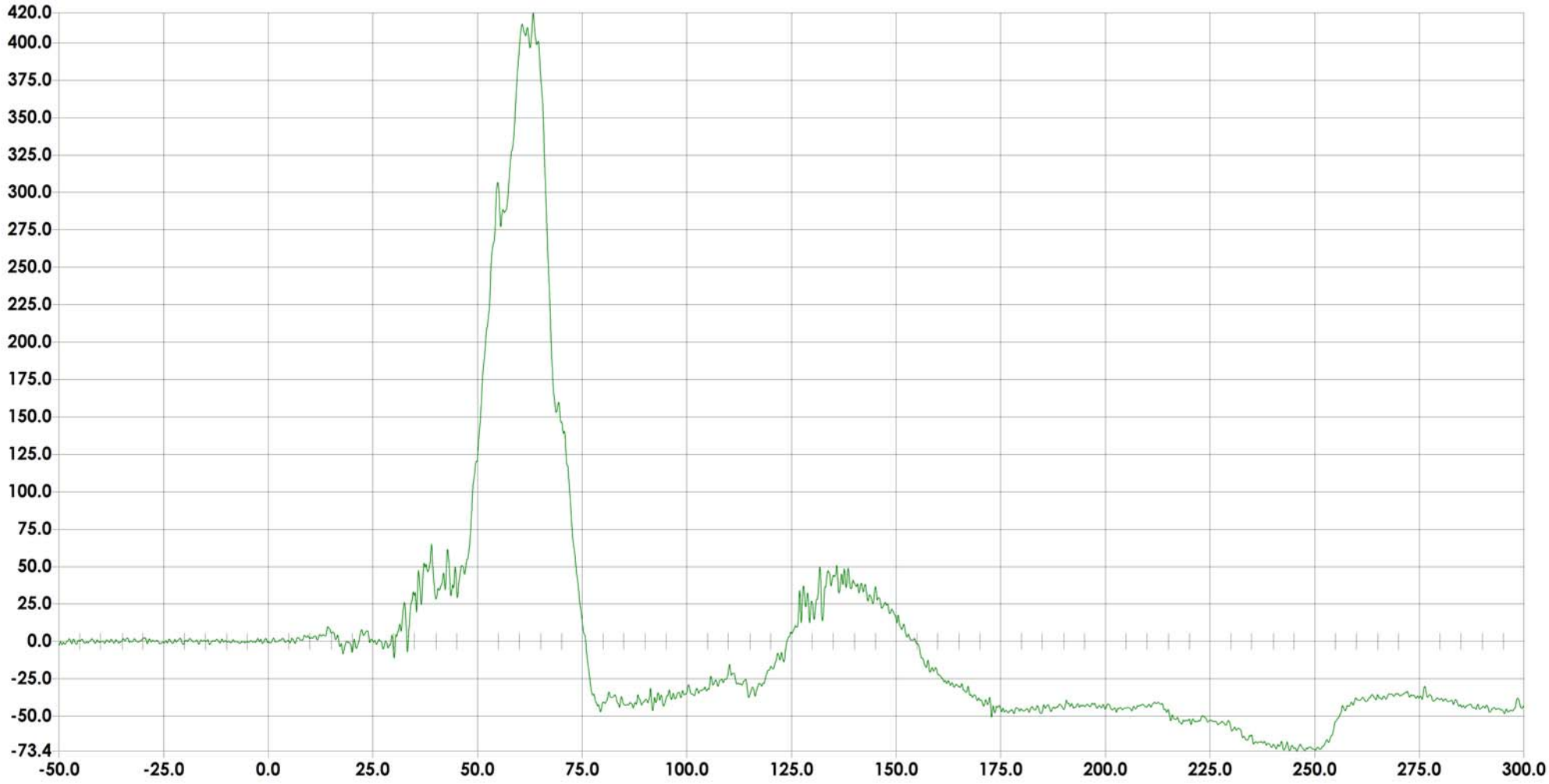
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	PVIL
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	Denton 3228J
		Pretrigger Points	625	Serial Number	3228J_283

MEDICAL COLLEGE OF WISCONSIN

Passenger Iliac Wing Force on Impact Side (Y) vs. Time



Max	420.04	NWT	at	63.28	msec
Min	-73.39	NWT	at	245.76	msec

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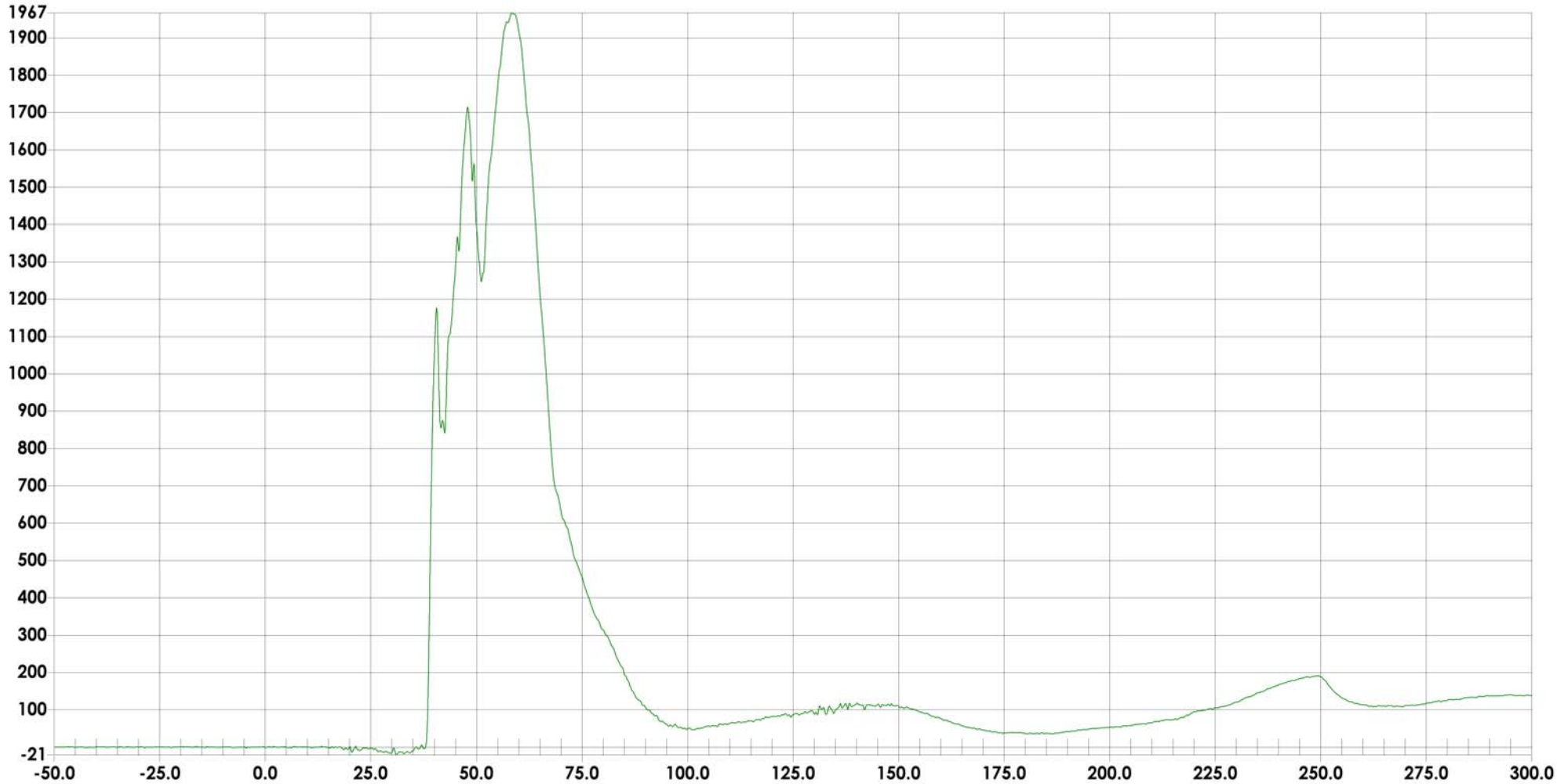
MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 031

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**				
Date	10-27-2011	Sampling Rate (Hz)	12500		Sensor Location	PVHP	
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376		Sensor Info	Denton 3249J	
		Pretrigger Points	625		Serial Number	3249J_270	

MEDICAL COLLEGE OF WISCONSIN

Passenger Acetabulum Force on Impact Side (Y) vs. Time



Max	1967.09	NWT	at	58.40	msec
Min	-21.02	NWT	at	31.04	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 032

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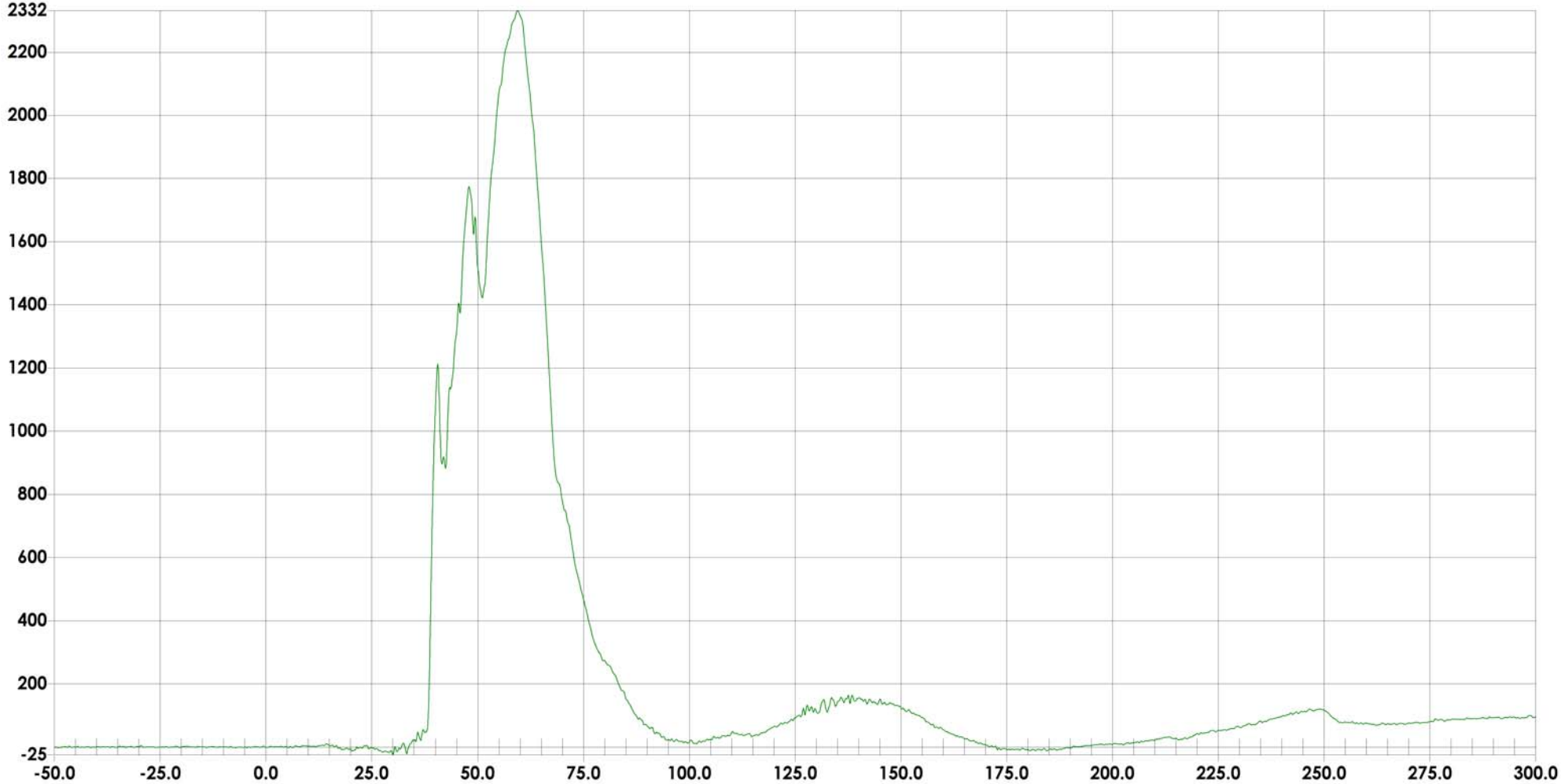
Milwaukee, WI 53295

Test ID	**MC 0205_2012 FORD EXPLORER 5-DOOR SU**	**Filter**	**CFC600**		
Date	10-27-2011	Sampling Rate (Hz)	12500	Sensor Location	
Description	2012 Ford Explorer 5-Door SUV Side NCAP Test, 10-27-11	Number of Points	4376	Sensor Info	MCW Multiviewer
		Pretrigger Points	625	Serial Number	3.5.2h

MEDICAL COLLEGE OF WISCONSIN

Passenger Total Pelvic Force on Impact Side (Y) vs. Time



Max	2331.93	NWT	at	59.44	msec
Min	-24.97	NWT	at	30.00	msec

MC 0205_2012 FORD EXPLORER 5-DOOR SUV Plot 066

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APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE DATA

TABLE 1
EXTERNAL MEASUREMENTS (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER	SPEC.	PRE		POST	
Date	-	8/16/11		11/1/11	
Sequential Test Number	-	1		2	
		Result	**Pass/Fail**	**Result**	**Pass/Fail**
Temperature (°C)	**20.6-22.2**	21.9	Pass	21.7	Pass
Relative Humidity (%)	**10-70**	38.4	Pass	30.1	Pass
Sitting Height	**900 - 918**	908	Pass	909	Pass
Seat to Shoulder Joint	**558 -572**	560	Pass	564	Pass
Seat to Lower Face of Thoracic Spine Box	**346 -356**	355	Pass	355	Pass
Seat to Hip Joint (Center of Bolt)	**97 - 103**	100	Pass	100	Pass
Sole to Seat, Sitting	**433 - 451**	441	Pass	441	Pass
Head Width	**152 -158**	153	Pass	154	Pass
Shoulder/Arm Width	**461 - 479**	464	Pass	464	Pass
Thorax Width	**322 - 332**	325	Pass	324	Pass
Abdomen Width	**273 - 287**	283	Pass	281	Pass
Pelvis/Lap Width	**359 - 373**	366	Pass	366	Pass
Head Depth	**196 - 206**	198	Pass	200	Pass
Thorax Depth	**262 - 272**	270	Pass	271	Pass
Abdomen Depth	**194 - 204**	198	Pass	198	Pass
Pelvis Depth	**235 - 245**	239	Pass	237	Pass
Back of Buttocks to Hip Joint (Center of Bolt)	**150 - 160**	153	Pass	155	Pass
Back of Buttocks to Front Knee	**597 - 615**	610	Pass	608	Pass

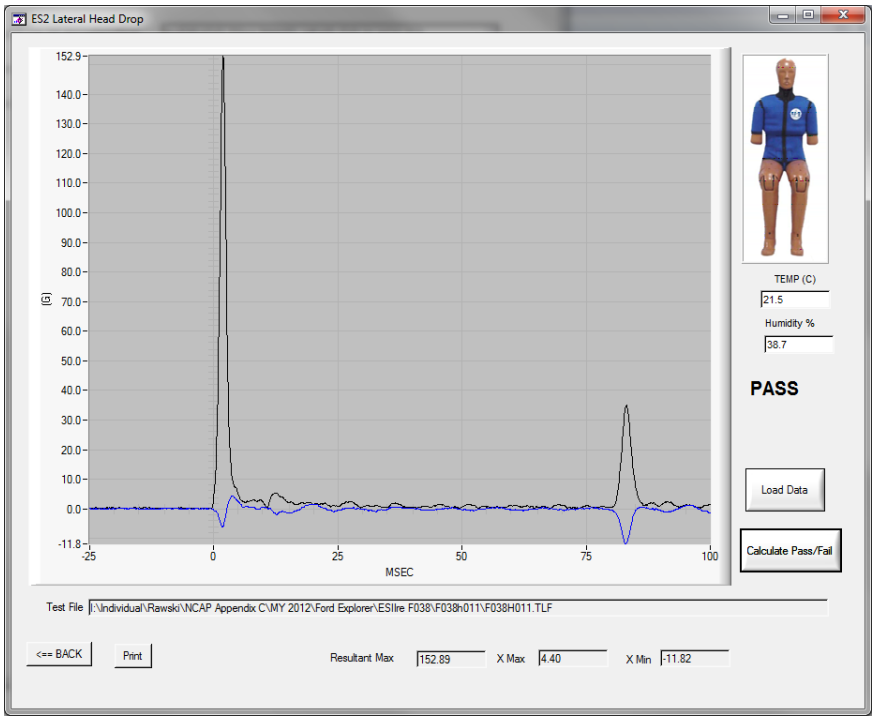
TABLE 2
HEAD DROP TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/11/11		10/28/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Head Assembly Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.0	Pass
	Min		21.8	Pass	21.5	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	41.0	Pass	45.2	Pass
	Min		39.3	Pass	34.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.5	Pass	21.6	Pass
Humidity – During Test (%)		**10-70**	38.7	Pass	27.2	Pass
Peak Head Resultant Acceleration (G)		**125-155**	152.9	Pass	153.5	Pass
Peak Head X Acceleration (G)		**<15**	4.40	Pass	3.34	Pass
Unimodal (Oscillation) (Yes/No)		**<15%**	-	Yes	-	Yes

TABLE 2
HEAD DROP TEST (ES-IIre) (CONTINUED)

PRE-TEST



POST-TEST

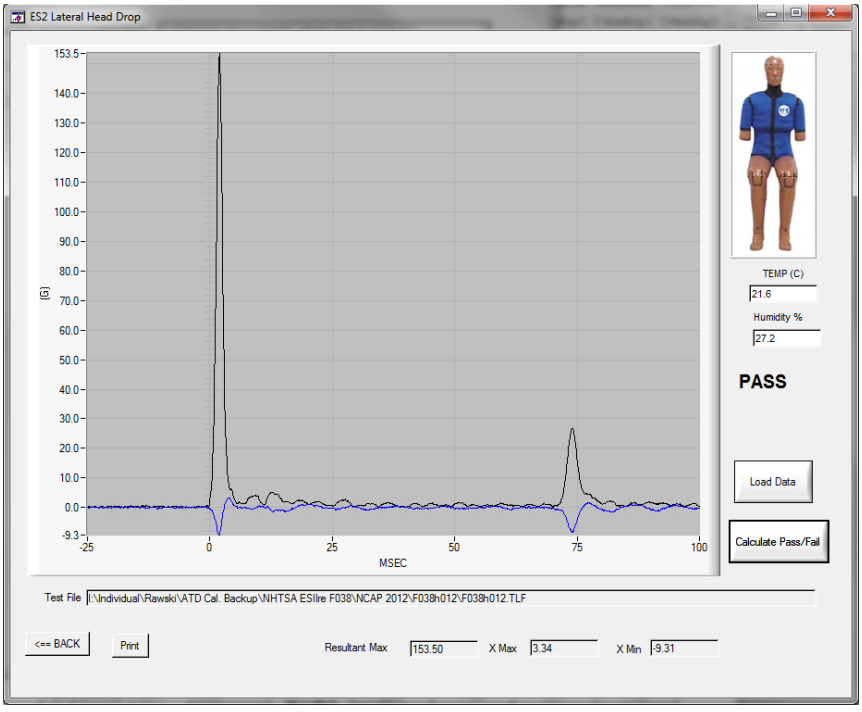


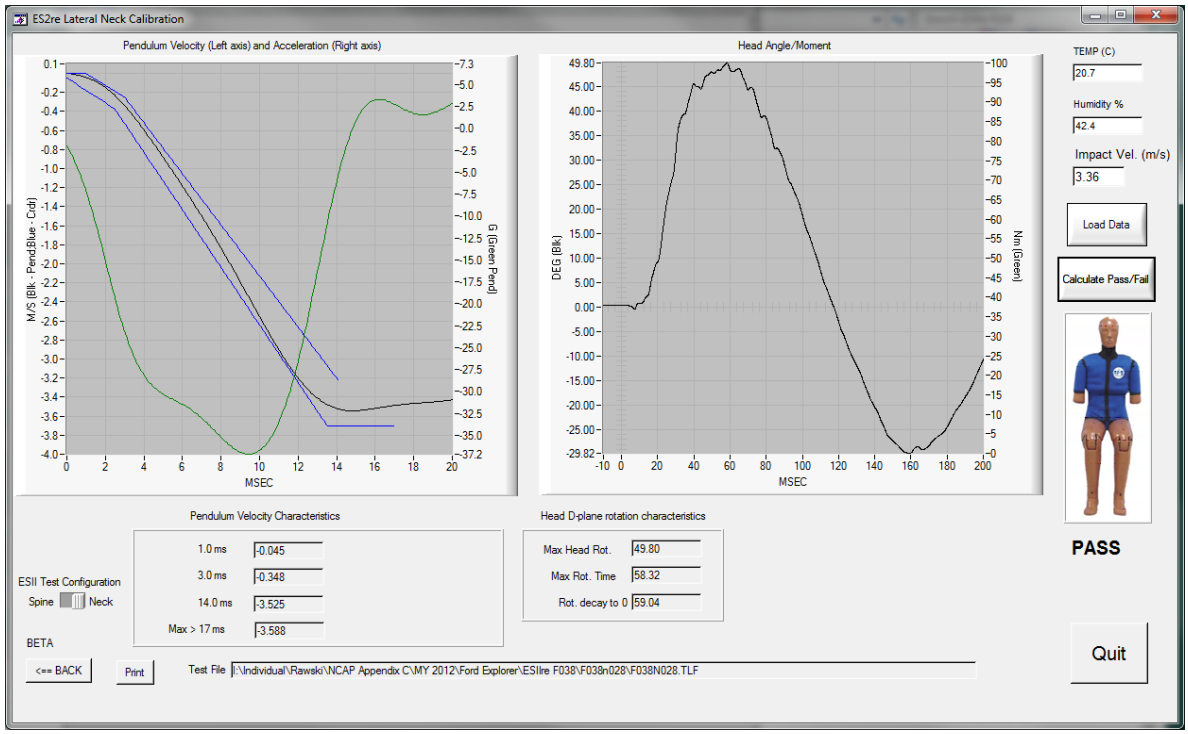
TABLE 3
NECK PENDULUM TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	7/20/11		10/31/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Neck Assembly Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	21.9	Pass	22.0	Pass
	Min		21.0	Pass	20.8	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	57.9	Pass	41.3	Pass
	Min		45.1	Pass	35.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	20.7	Pass	22.0	Pass
Humidity – During Test (%)		**10-70**	42.4	Pass	28.0	Pass
Pendulum Velocity (m/s)		**3.3-3.5**	3.36	Pass	3.35	Pass
Pendulum Velocity Corridors (m/s)	0-1.0 ms	**(-0.05)-0.00**	-0.045	Pass	-0.047	Pass
	2.5-3.0 ms	**(-0.375) - (-0.25)**	-0.35	Pass	-0.34	Pass
	13.5-14.0 ms	**(-3.7) - (-3.20)**	-3.53	Pass	-3.41	Pass
	Max > 17 ms	**-3.7**	-3.59	Pass	-3.58	Pass
Max D-Plane rotation (deg)		**49-59**	49.8	Pass	49.6	Pass
Time of Max D-Plane Rotation (ms)		**54-66**	58.3	Pass	58.6	Pass
Time of Moment Decay from Peak to 0 Nm (ms)		**53-88**	59.0	Pass	59.6	Pass

TABLE 3
NECK PENDULUM TEST (ES-IIre) (CONTINUED)

PRE-TEST



POST-TEST

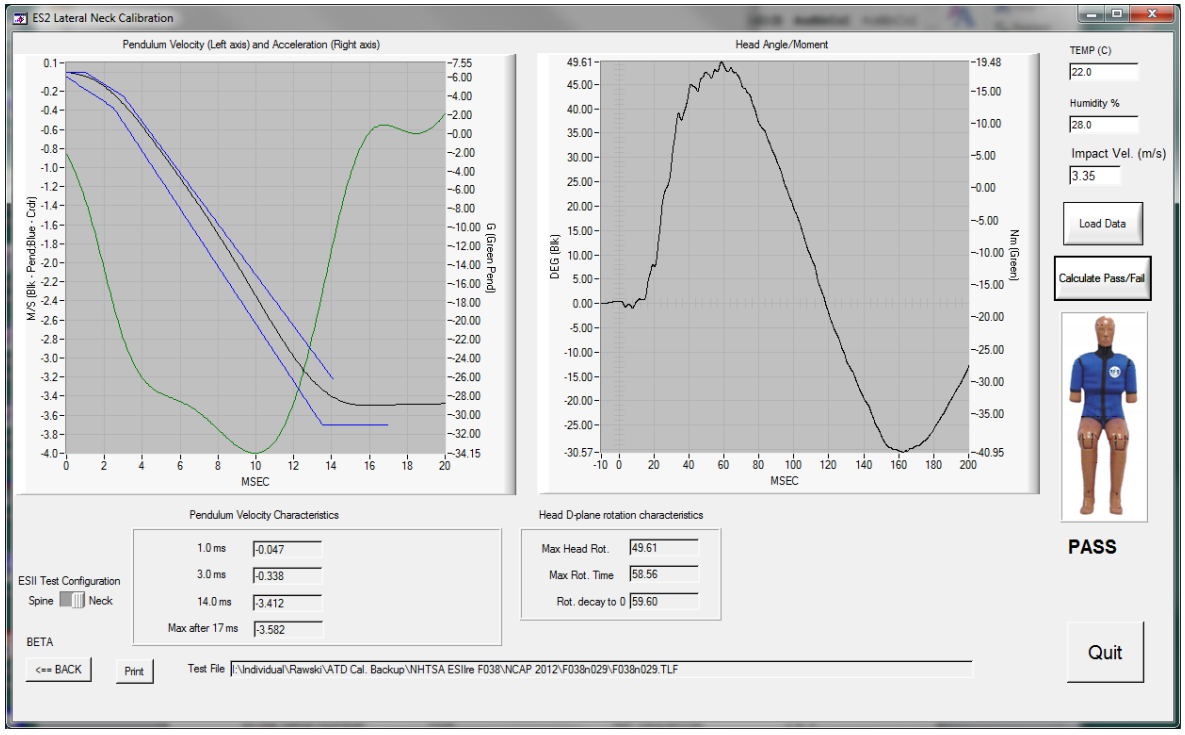


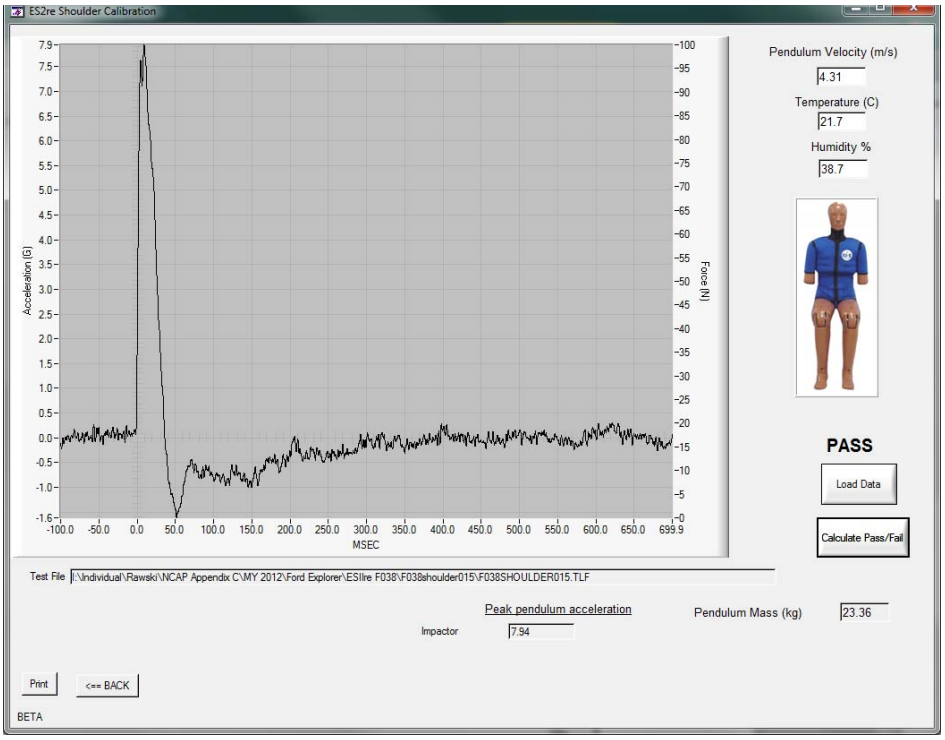
TABLE 4
SHOULDER IMPACT TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	8/3/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	21.8	Pass	21.8	Pass
	Min		20.7	Pass	20.7	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	51.0	Pass	51.0	Pass
	Min		40.6	Pass	40.6	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.7	Pass	21.7	Pass
Humidity – During Test (%)		**10-70**	38.7	Pass	29.2	Pass
Pendulum Velocity (m/s)		**4.2-4.4**	4.31	Pass	4.31	Pass
Peak Impactor Acceleration (G)		**7.5-10.5**	7.94	Pass	7.75	Pass

TABLE 4
SHOULDER IMPACT TEST (ES-IIre) (CONTINUED)

PRE-TEST



POST-TEST

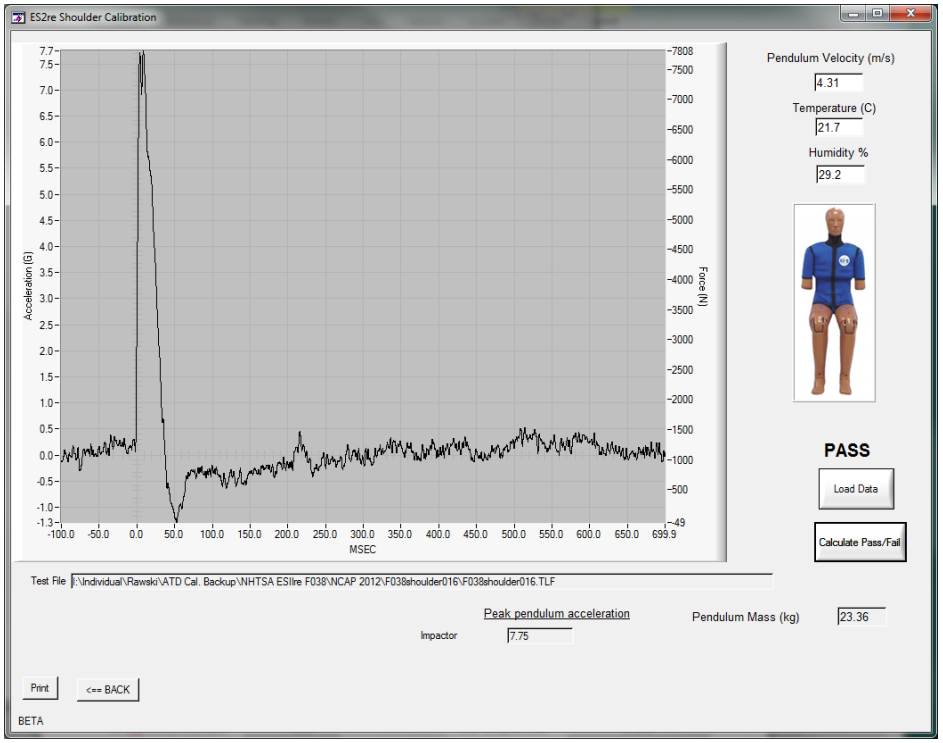


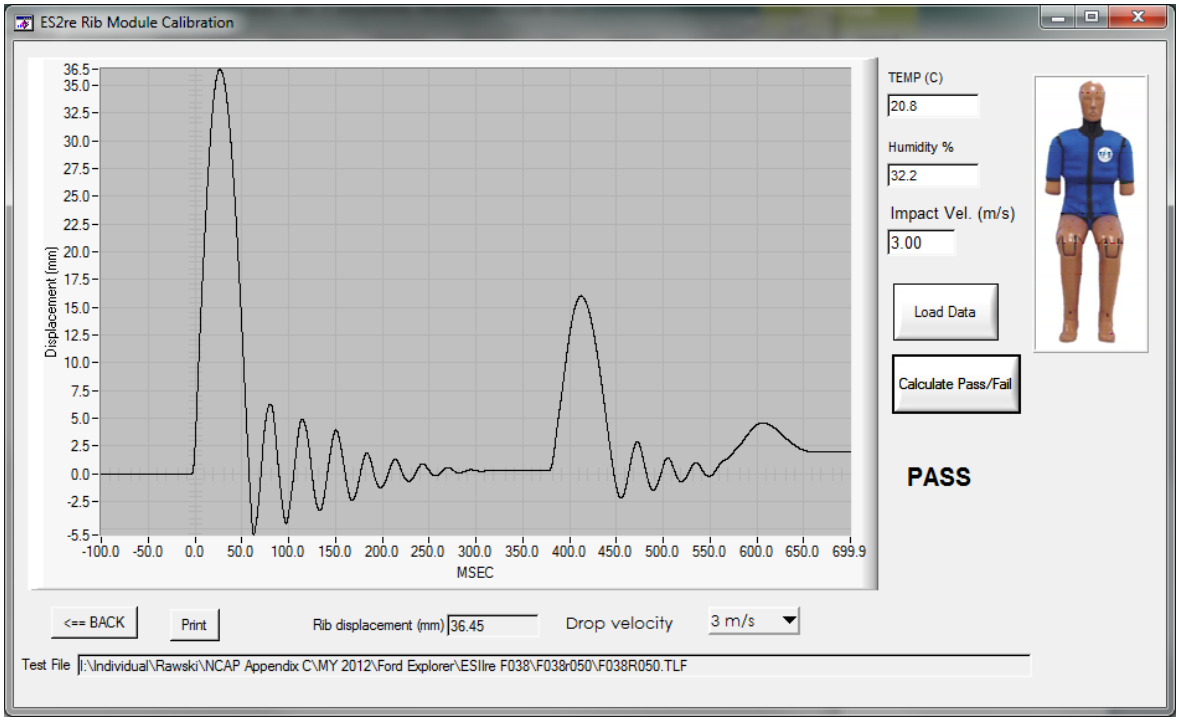
TABLE 5
THORAX – UPPER RIB DROP TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/16/11		10/28/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Upper Rib Drop Module Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.0	Pass
	Min		21.5	Pass	21.5	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	53.2	Pass	45.2	Pass
	Min		39.4	Pass	34.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	20.8	Pass	21.9	Pass
Humidity – During Test (%)		**10-70**	32.2	Pass	27.6	Pass
1st Test - Drop Height 459 ± 5 mm		**36-40**	36.5	Pass	37.6	Pass
2nd Test - Drop Height 815 ± 5 mm		**46-51**	49.4	Pass	49.8	Pass

TABLE 5
THORAX – UPPER RIB DROP TEST (ES-IIre) (CONTINUED)
3.00 m/s

PRE-TEST



POST-TEST

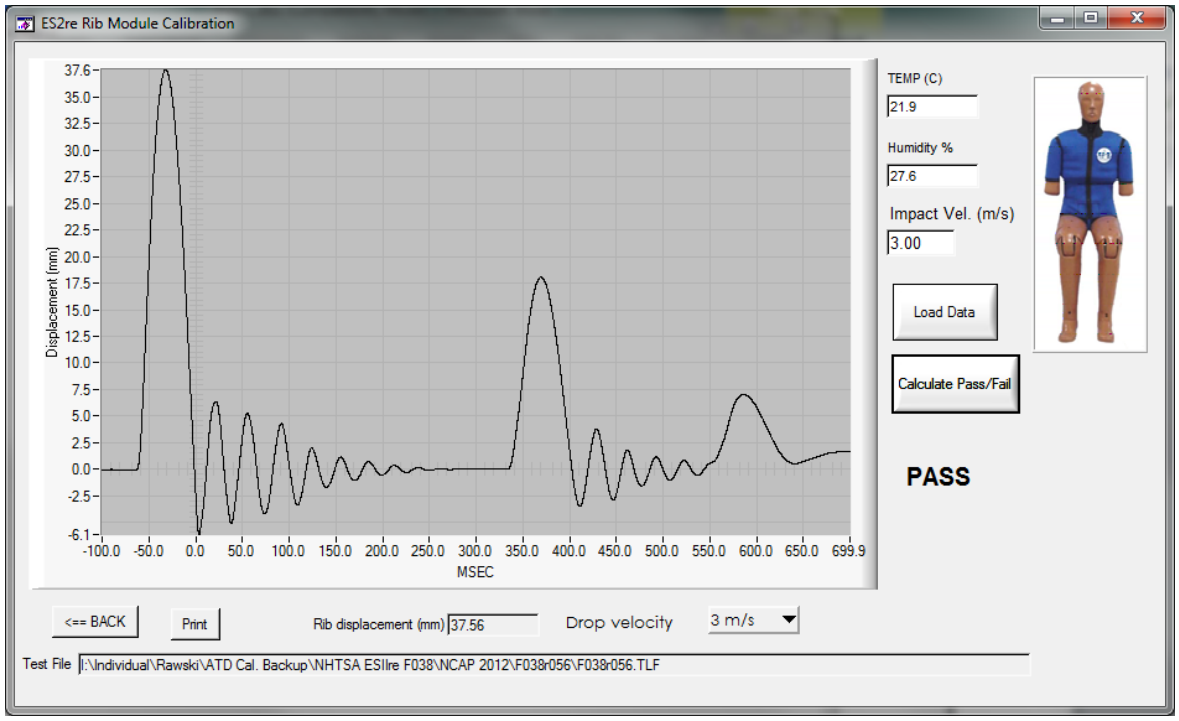
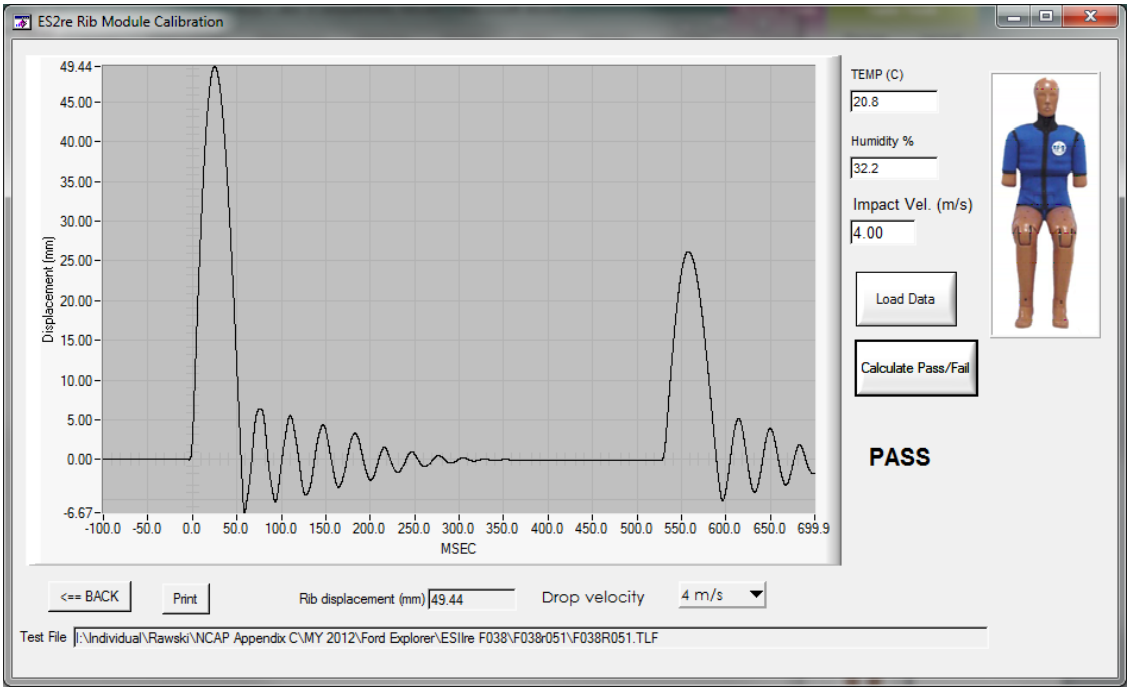


TABLE 5
THORAX – UPPER RIB DROP TEST (ES-IIre) (CONTINUED)
4.00 m/s

PRE-TEST



POST-TEST

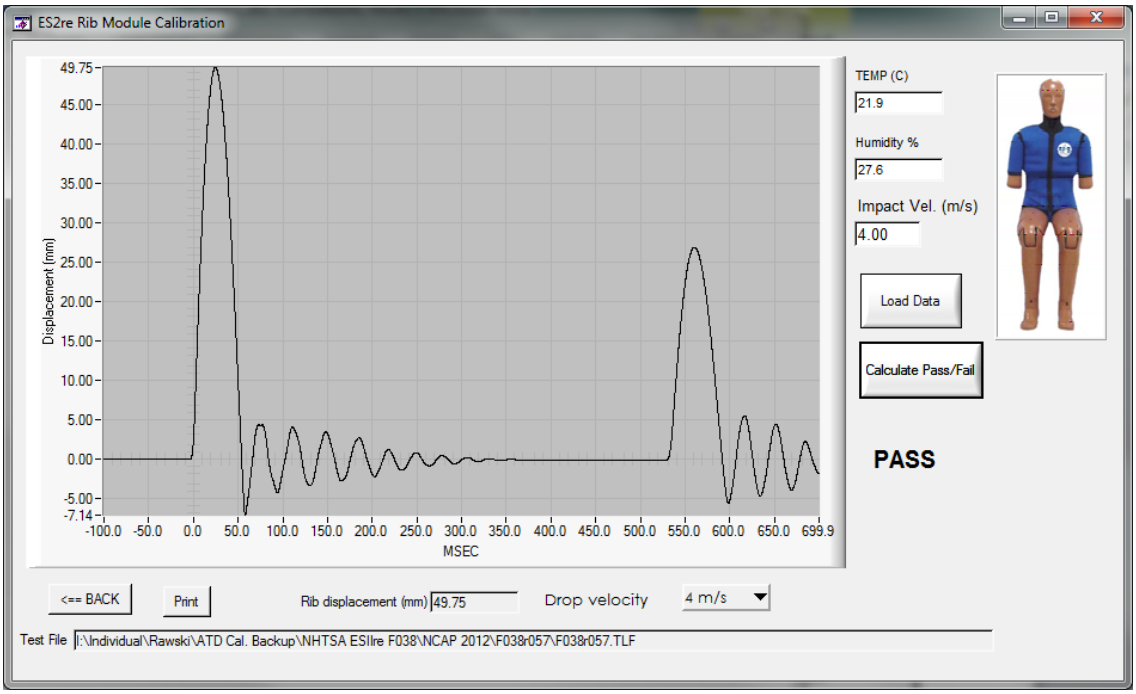


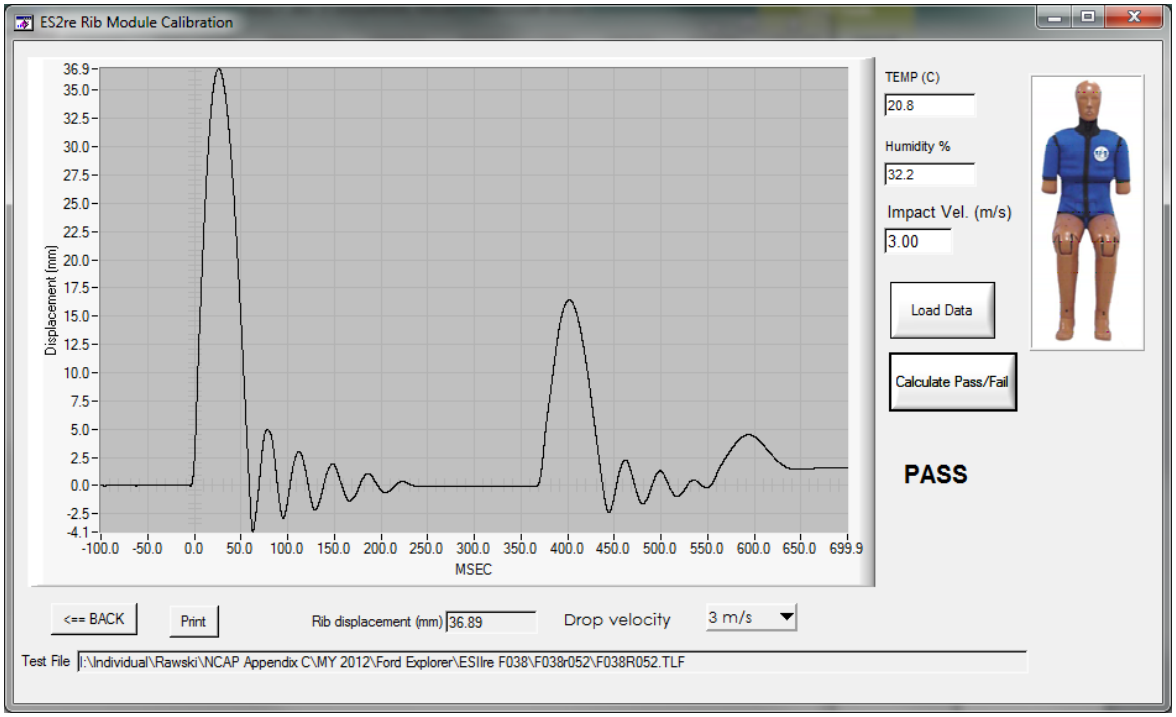
TABLE 6
THORAX – MIDDLE RIB DROP TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/16/11		10/28/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Middle Rib Drop Module Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.0	Pass
	Min		21.5	Pass	21.5	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	53.2	Pass	45.2	Pass
	Min		39.4	Pass	34.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	20.8	Pass	21.9	Pass
Humidity – During Test (%)		**10-70**	32.2	Pass	27.6	Pass
1st Test - Drop Height 459 ± 5 mm		**36-40**	36.9	Pass	37.6	Pass
2nd Test - Drop Height 815 ± 5 mm		**46-51**	49.3	Pass	49.5	Pass

TABLE 6
THORAX – MIDDLE RIB DROP TEST (ES-IIre) (CONTINUED)
3.00 m/s

PRE-TEST



POST-TEST

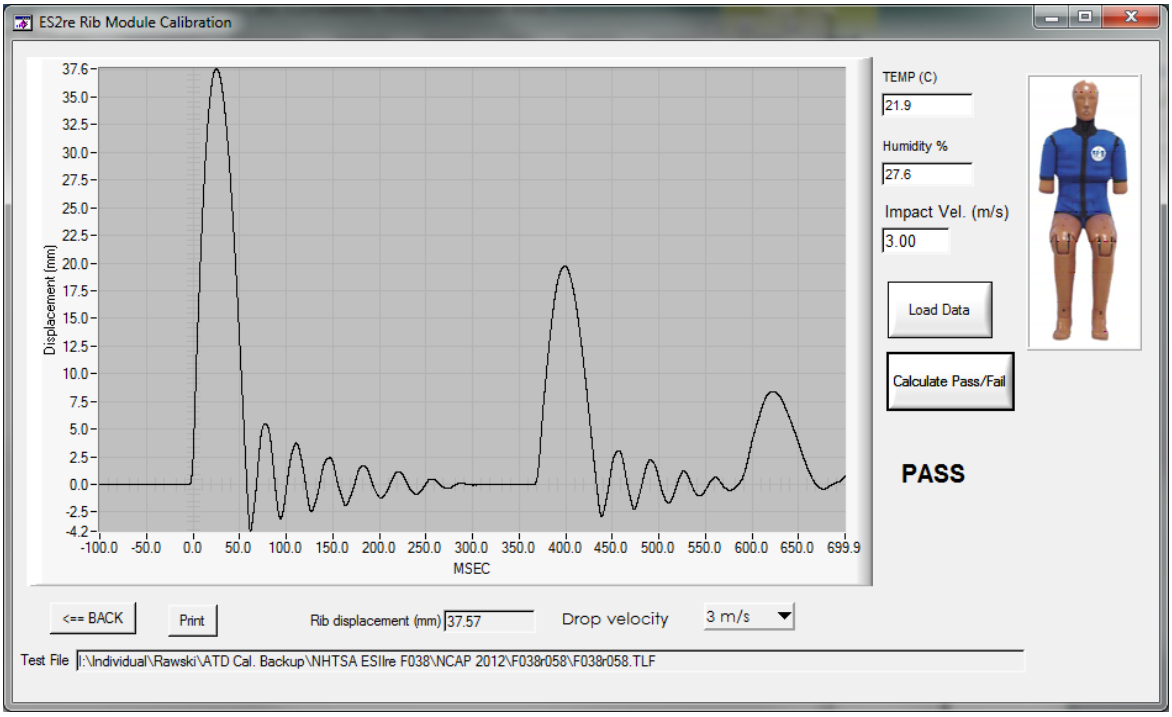
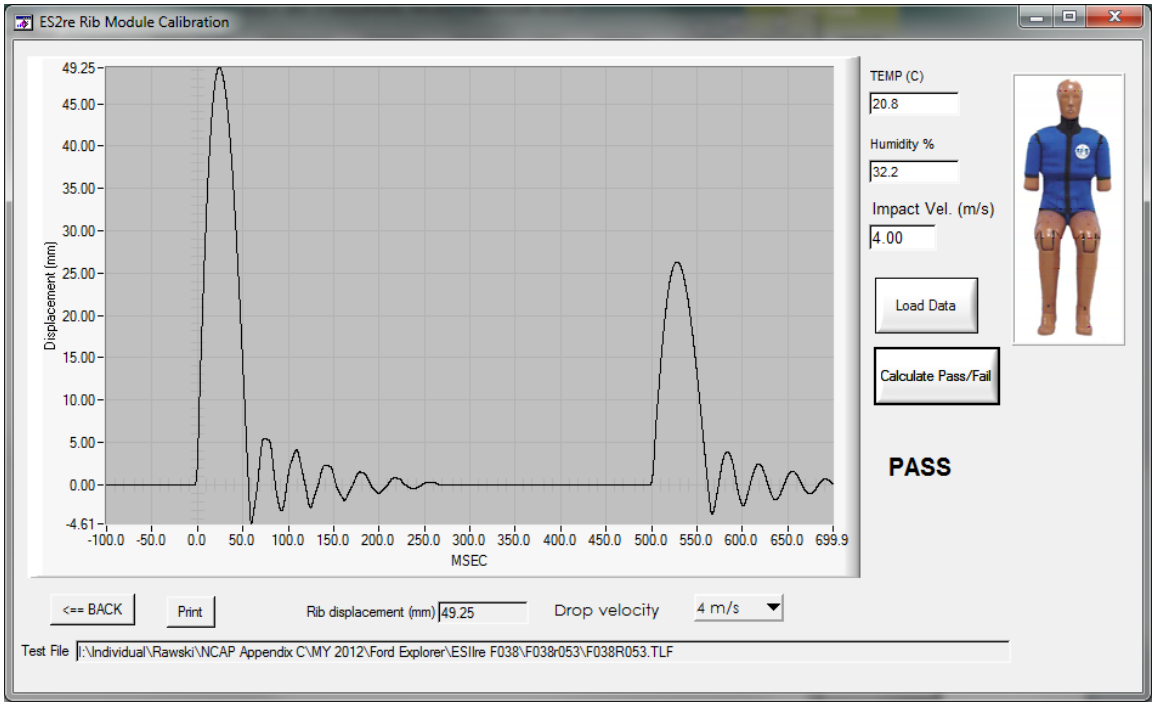


TABLE 6
THORAX – MIDDLE RIB DROP TEST (ES-IIre) (CONTINUED)
4.00 m/s

PRE-TEST



POST-TEST

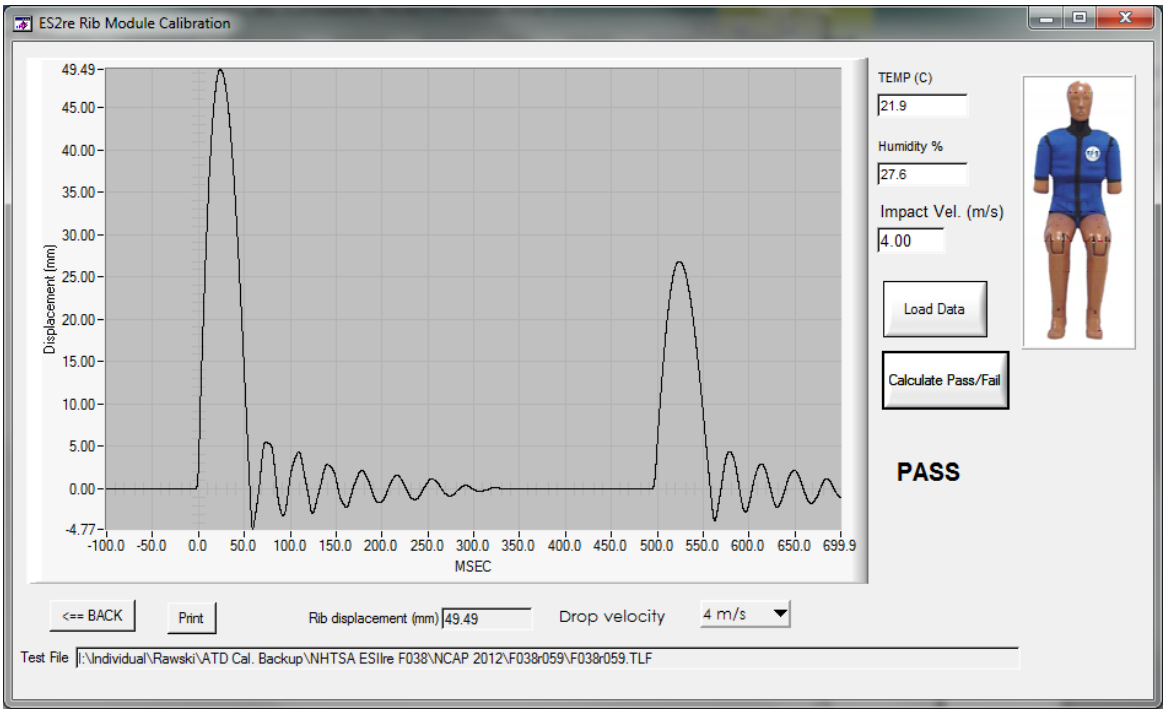


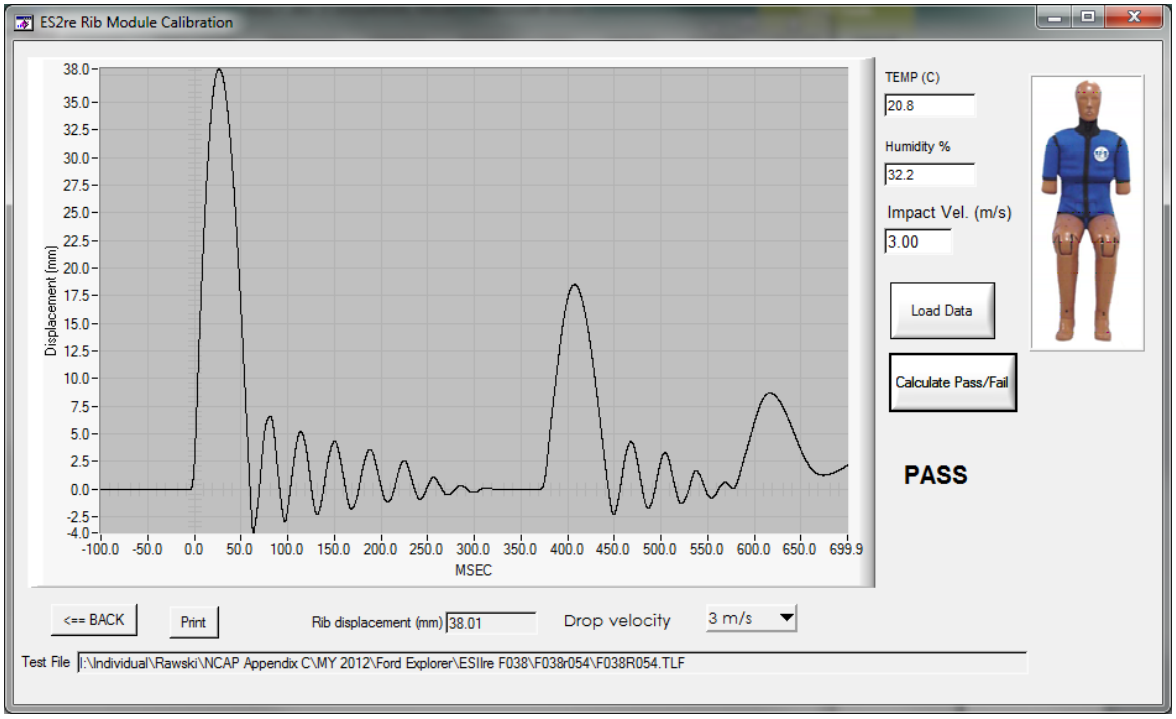
TABLE 7
THORAX – LOWER RIB DROP TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/16/11		10/28/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Lower Rib Drop Module Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.0	Pass
	Min		21.5	Pass	21.5	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	53.2	Pass	45.2	Pass
	Min		39.4	Pass	34.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	20.8	Pass	21.9	Pass
Humidity – During Test (%)		**10-70**	32.2	Pass	27.6	Pass
1st Test - Drop Height 459 ± 5 mm		**36-40**	38.0	Pass	38.9	Pass
2nd Test - Drop Height 815 ± 5 mm		**46-51**	49.5	Pass	49.8	Pass

TABLE 7
THORAX – LOWER RIB DROP TEST (ES-IIre) (CONTINUED)
3.00 m/s

PRE-TEST



POST-TEST

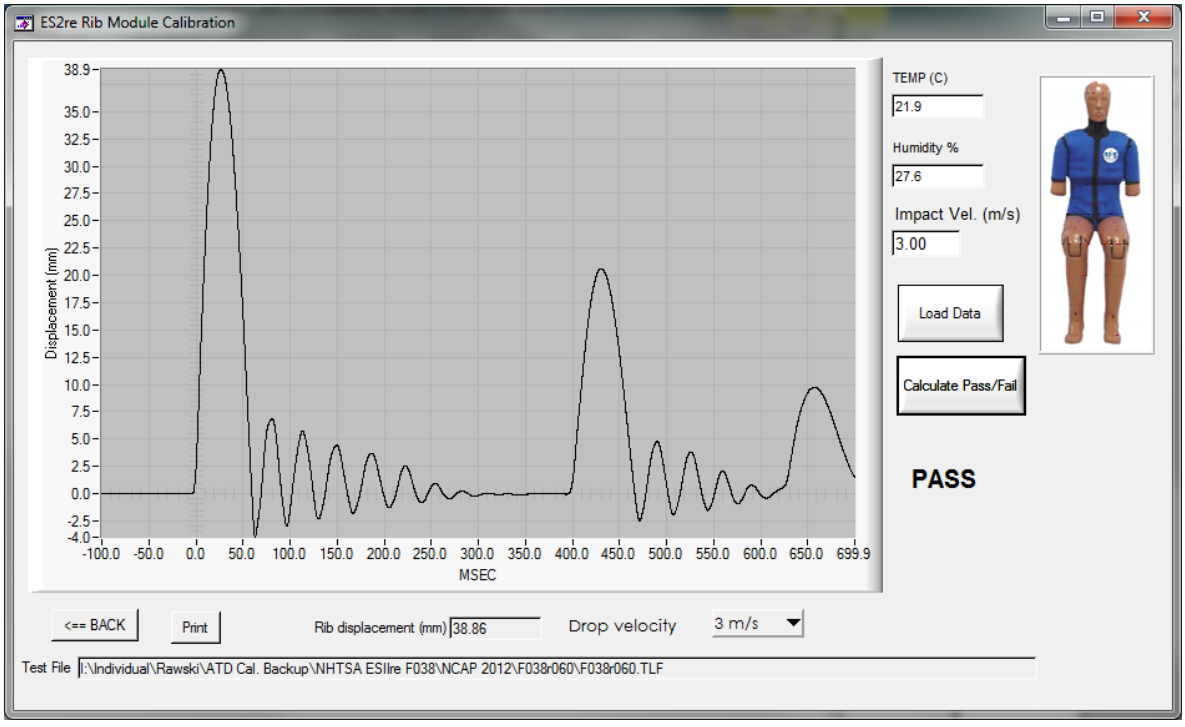
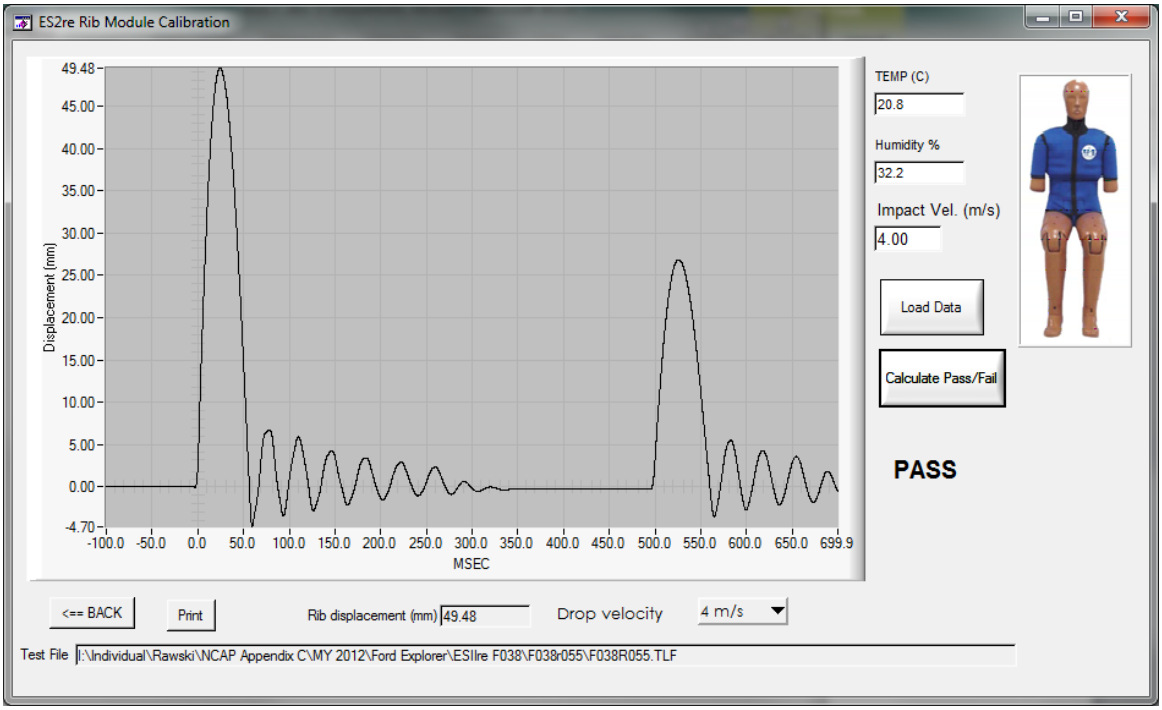


TABLE 7
THORAX – LOWER RIB DROP TEST (ES-IIre) (CONTINUED)
4.00 m/s

PRE-TEST



POST-TEST

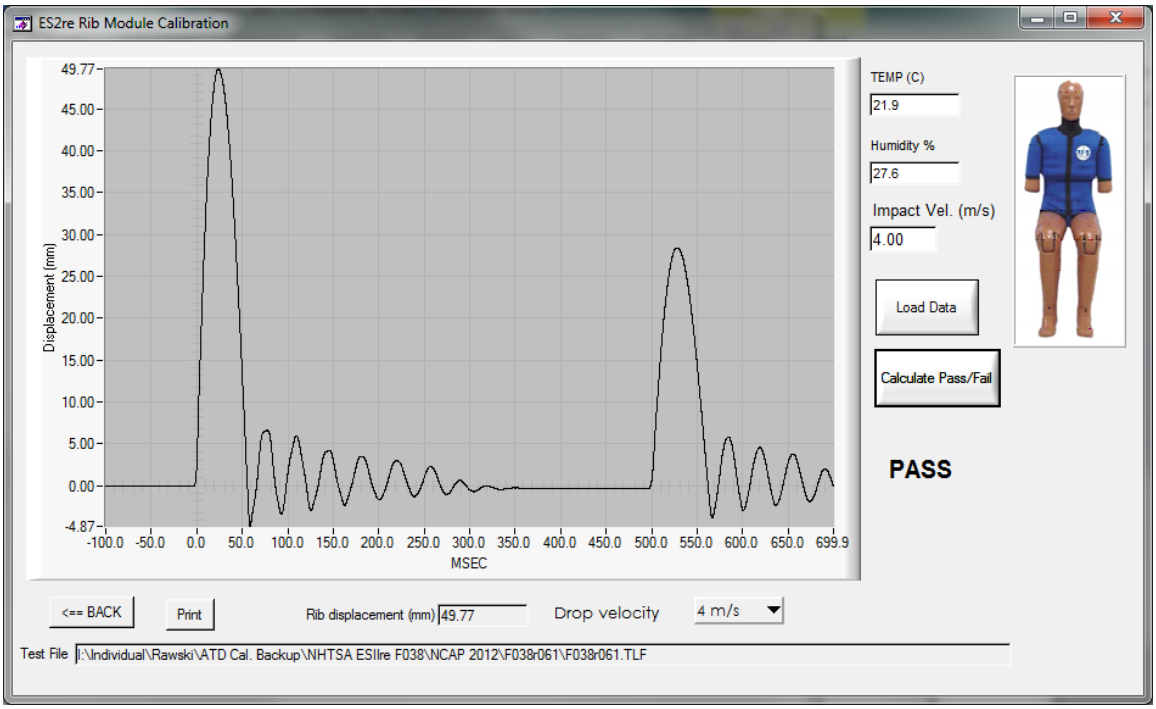


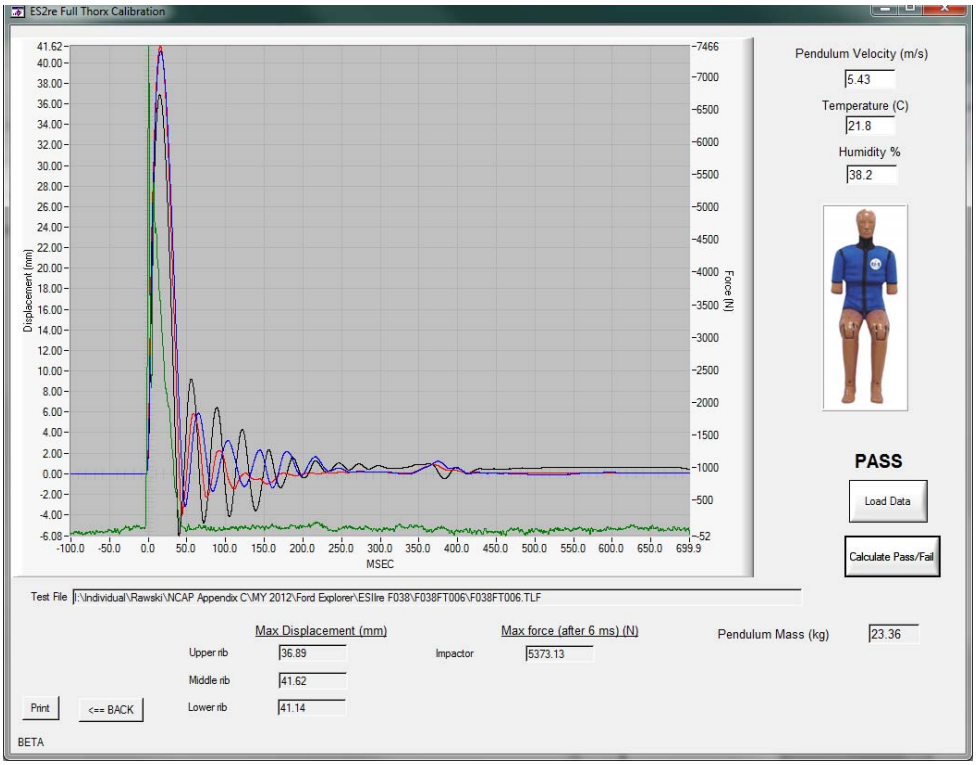
TABLE 8
THORAX – FULL BODY IMPACT TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	8/3/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	21.9	Pass	22.1	Pass
	Min		21.3	Pass	20.9	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	49.1	Pass	29.1	Pass
	Min		41.0	Pass	25.3	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.8	Pass	21.7	Pass
Humidity – During Test (%)		**10-70**	38.2	Pass	29.7	Pass
Peak Impactor Velocity (m/s)		**5.4-5.6**	5.43	Pass	5.43	Pass
Peak Upper Rib Deflection (mm)		**34-41**	36.9	Pass	36.6	Pass
Peak Middle Rib Deflection (mm)		**37-45**	41.6	Pass	42.1	Pass
Peak Lower Rib Deflection (mm)		**37-44**	41.1	Pass	41.9	Pass
Peak Impactor Force (>6ms) (kN)		**5.1-6.2**	5.37	Pass	5.30	Pass

TABLE 8
THORAX – FULL BODY IMPACT TEST (ES-IIre)

PRE-TEST



POST-TEST

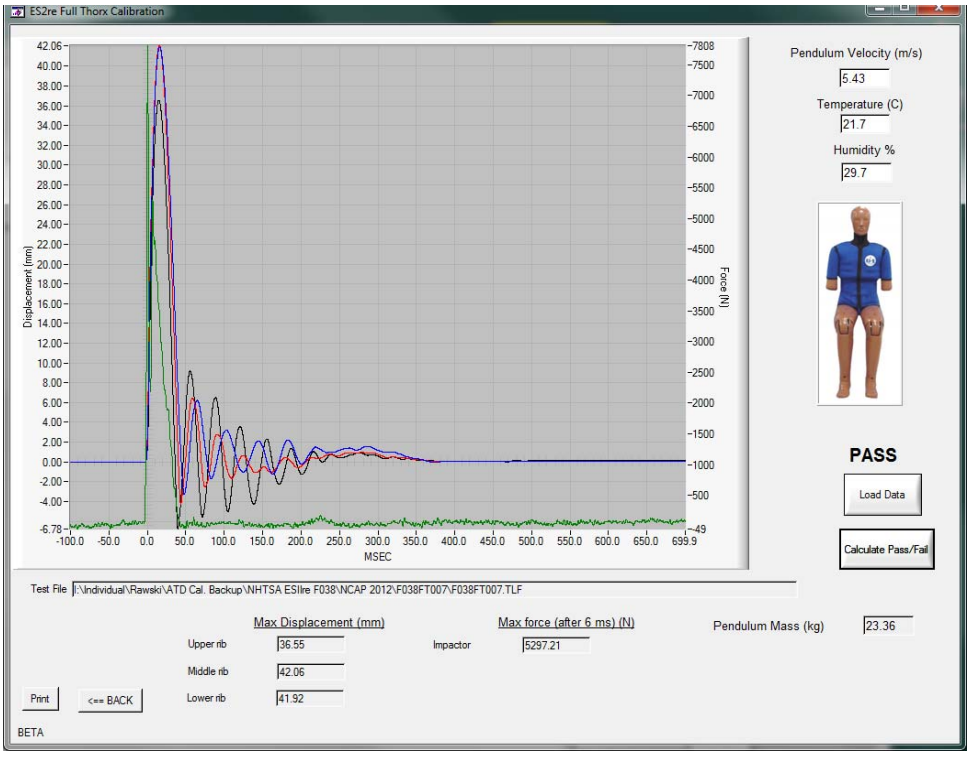


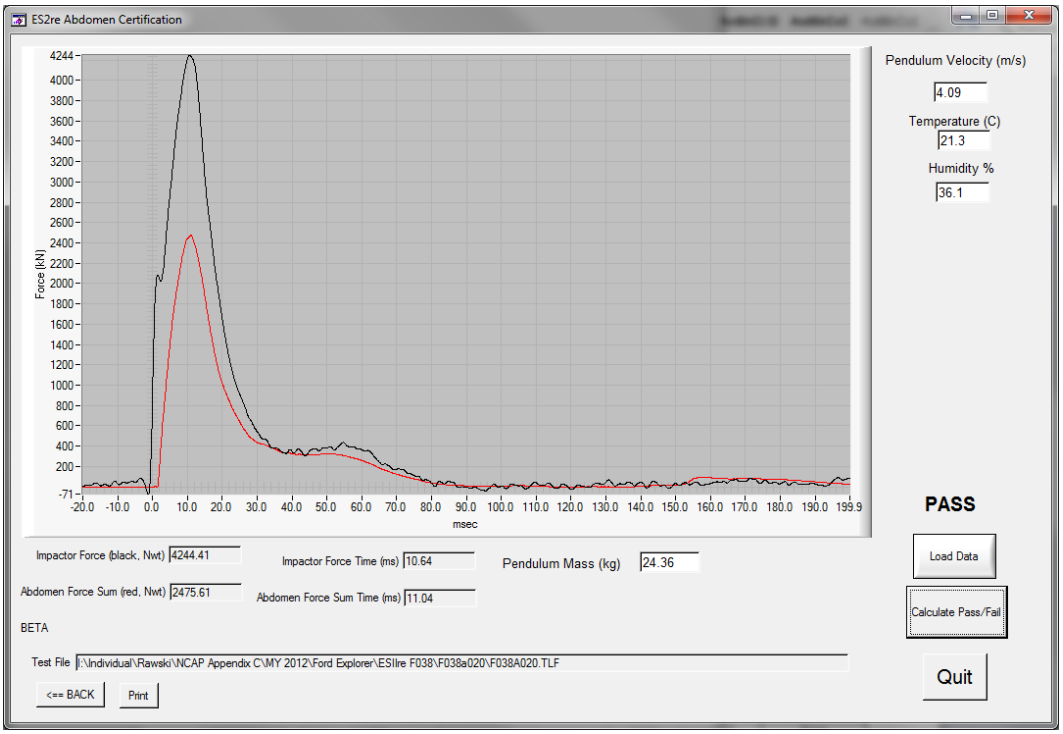
TABLE 9
ABDOMEN IMPACT TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	8/11/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.1	Pass
	Min		21.7	Pass	20.9	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	41.3	Pass	29.1	Pass
	Min		37.2	Pass	25.3	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.3	Pass	21.7	Pass
Humidity – During Test (%)		**10-70**	36.1	Pass	29.9	Pass
Peak Impactor Velocity (m/s)		**3.9-4.1**	4.09	Pass	4.09	Pass
Sum of Abdominal Forces (kN)		**2.2-2.7**	2.48	Pass	2.30	Pass
Time of Abdominal Forces (ms)		**10-12.3**	11.0	Pass	12.2	Pass
Peak Impactor Force (kN)		**4.0-4.8**	4.24	Pass	4.16	Pass
Time of Peak Impactor Force (ms)		**10.6-13.0**	10.6	Pass	11.1	Pass

TABLE 9
ABDOMEN IMPACT TEST (ES-IIre) (CONTINUED)

PRE-TEST



POST-TEST

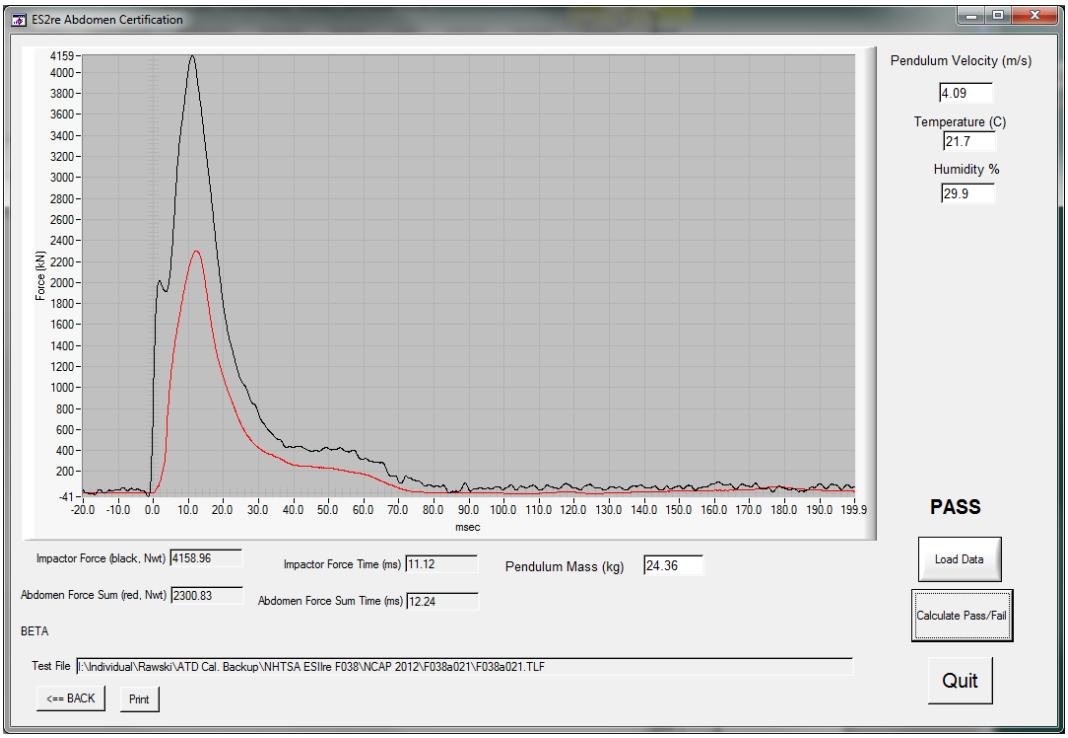


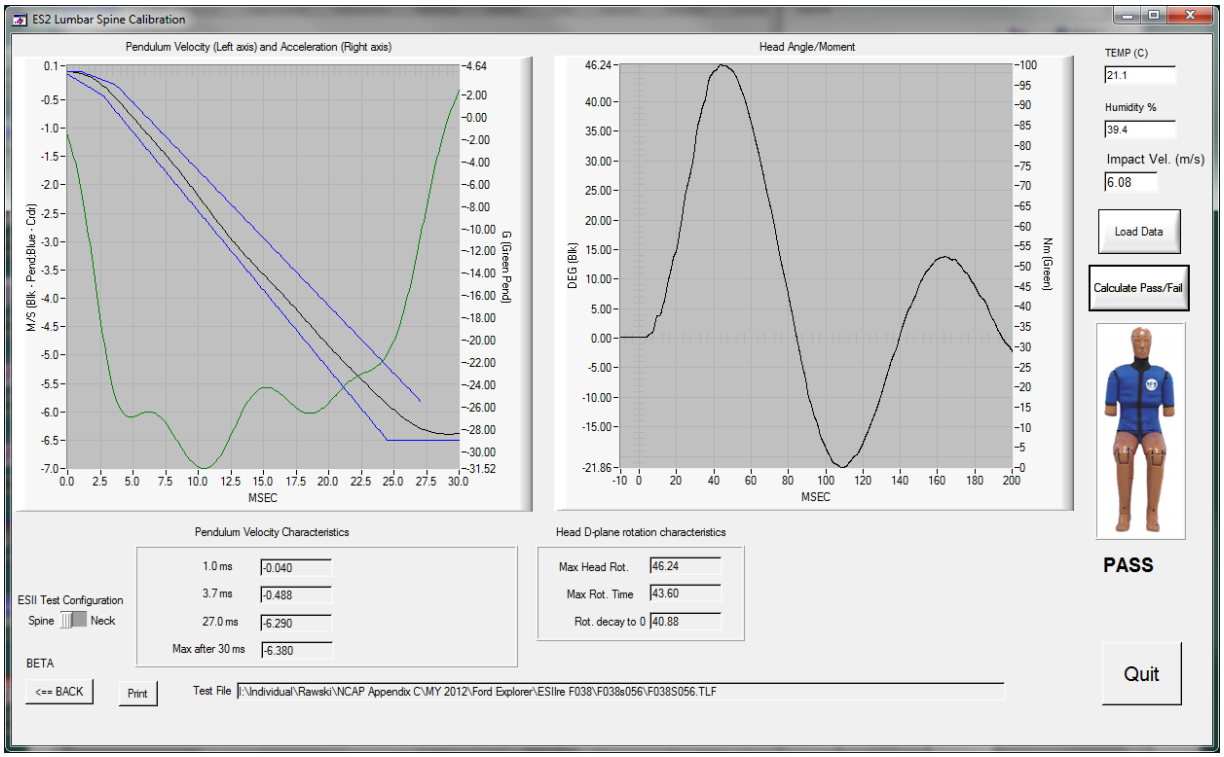
TABLE 10
LUMBAR SPINE FLEXION TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	8/1/11		10/31/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Lumbar Spine Assembly Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.0	Pass
	Min		20.8	Pass	20.8	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	45.1	Pass	41.3	Pass
	Min		35.9	Pass	35.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.1	Pass	21.6	Pass
Humidity – During Test (%)		**10-70**	39.4	Pass	30.2	Pass
Pendulum Velocity (m/s)		**5.95-6.15**	6.08	Pass	6.10	Pass
Pendulum Velocity Corridors (m/s)	0-1.0 ms	**(-0.05)-0.00**	-0.04	Pass	-0.04	Pass
	2.7-3.7 ms	**(-0.425) - (-0.24)**	-0.49	Pass	-0.48	Pass
	24.5-27.0 ms	**(-6.50) - (-5.80)**	-6.29	Pass	-6.39	Pass
	Max after 30 ms	**-6.50**	-6.38	Pass	-6.41	Pass
Maximum Headform Flexion Angle (deg)		**50 ± 5**	46.2	Pass	46.3	Pass
Time at Maximum Flexion Angel (ms)		**39-53**	43.6	Pass	44.6	Pass
Time of Decay to Zero Angle from Peak (ms)		**37-57**	40.9	Pass	38.5	Pass

TABLE 10
LUMBAR SPINE FLEXION TEST (ES-IIre) (CONTINUED)

PRE-TEST



POST-TEST

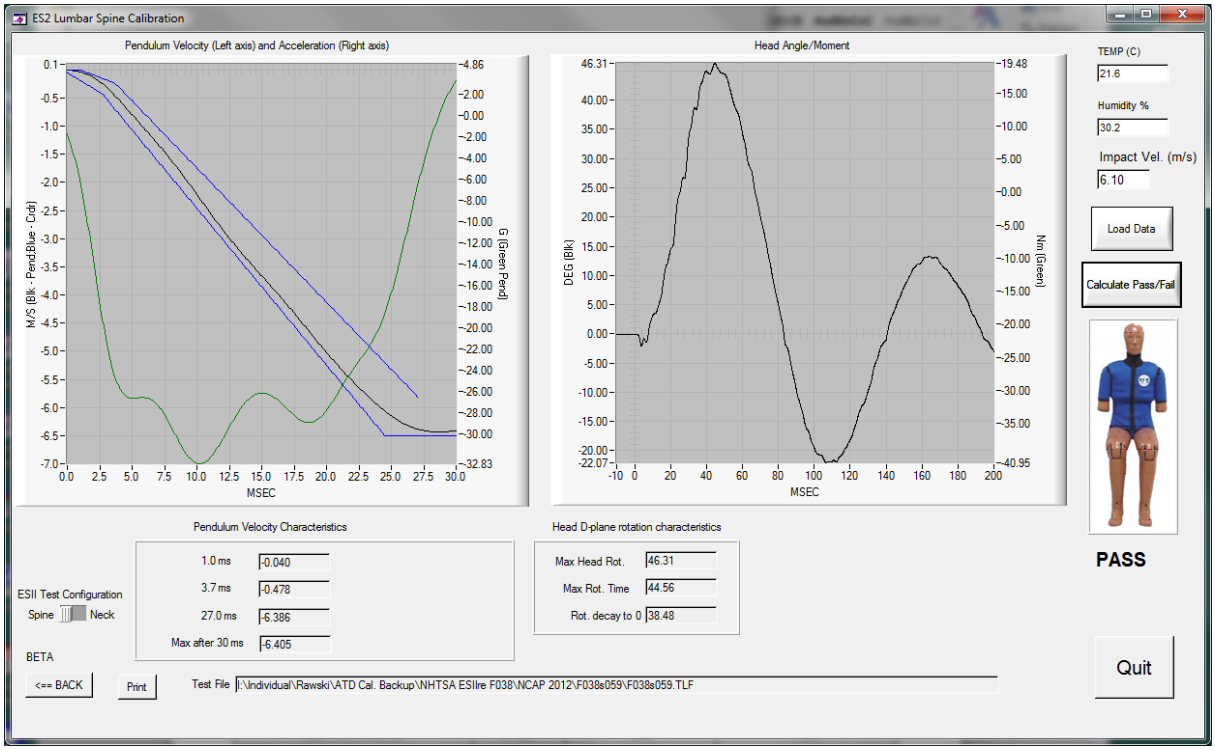


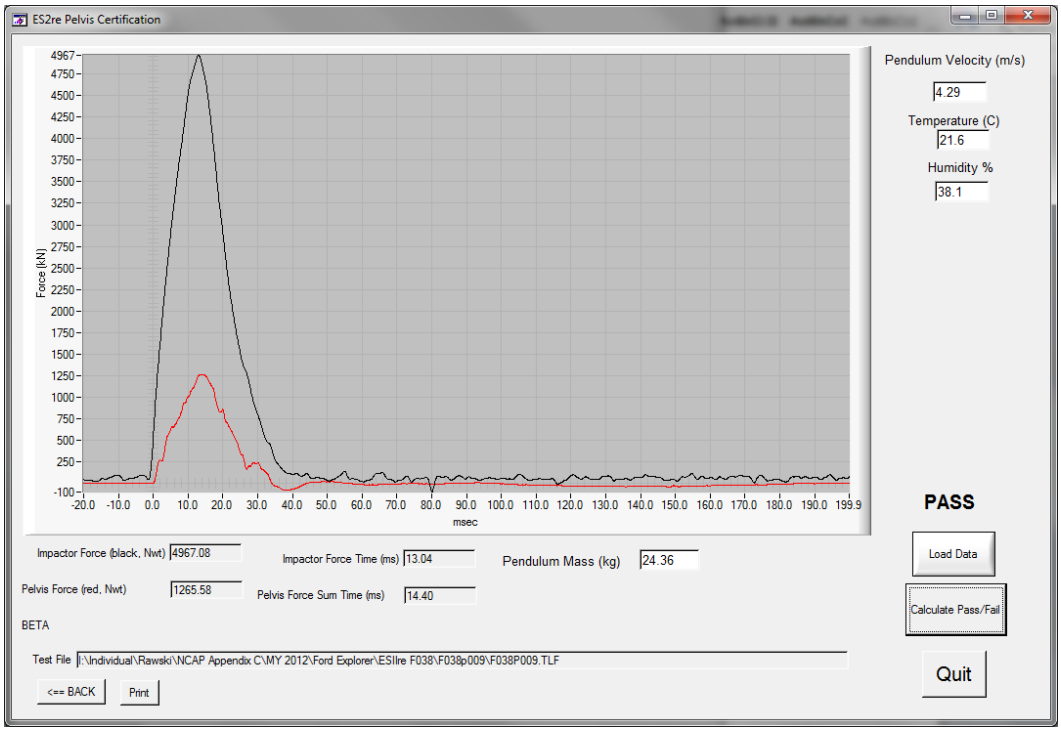
TABLE 11
PELVIS IMPACT TEST (ES-IIre)

ES-IIre Serial Number F038 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	8/12/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature (°C) – During Soak	Max	**20.6-22.2**	21.9	Pass	22.1	Pass
	Min		21.6	Pass	20.9	Pass
Humidity (%) – During Soak	Max	**10.0-70.0**	42.6	Pass	29.1	Pass
	Min		39.1	Pass	25.3	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.6	Pass	21.7	Pass
Humidity – During Test (%)		**10-70**	38.1	Pass	30.2	Pass
Pendulum Velocity (m/s)		**4.2-4.4**	4.29	Pass	4.31	Pass
Peak Impactor Force (kN)		**4.7 – 5.4**	4.76	Pass	5.10	Pass
Time at Peak Force (ms)		**11.8-16.1**	13.0	Pass	12.2	Pass
Peak Pubic Symphysis Force (kN)		**1.23-1.59**	1.27	Pass	1.37	Pass
Time at Peak Force (ms)		**12.2-17.0**	14.4	Pass	13.4	Pass

TABLE 11
PELVIS IMPACT TEST (ES-IIre) (CONTINUED)

PRE-TEST



POST-TEST

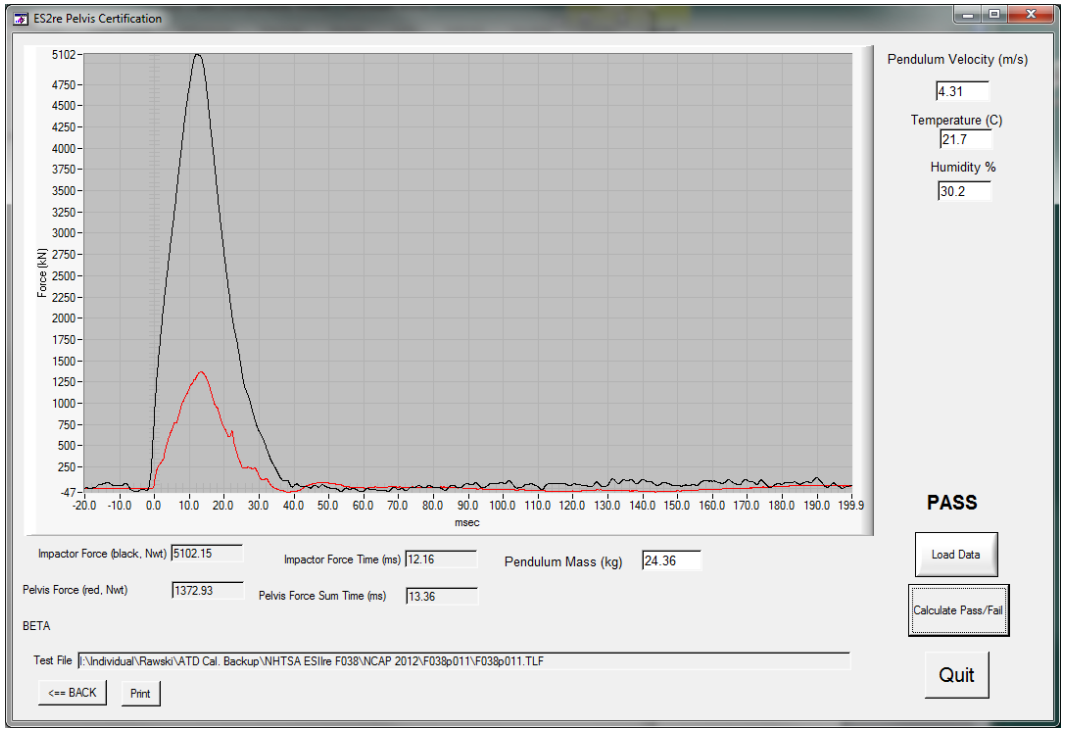


TABLE 1
EXTERNAL MEASUREMENTS (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER	SPEC.	PRE		POST	
Date	-	8/16/11		11/1/11	
Sequential Test Number	-	1		2	
		Result	**Pass/Fail**	**Result**	**Pass/Fail**
Temperature (°C)	**20.6-22.2**	21.4	Pass	21.7	Pass
Relative Humidity (%)	**10-70**	39.4	Pass	28.7	Pass
Sitting Height	**772 – 788**	773	Pass	776	Pass
Shoulder Pivot Height	**437 – 453**	450	Pass	442	Pass
H-Point Height	**79 – 89**	84	Pass	85	Pass
H-Point from Seat Back	**141 – 151**	149	Pass	147	Pass
Shoulder Pivot from Backline	**97 – 107**	100	Pass	100	Pass
Thigh Clearance	**119 – 135**	121	Pass	120	Pass
Head Breadth	**140 – 148**	142	Pass	143	Pass
Head Back from Backline	**40 – 46**	45	Pass	43	Pass
Head Depth	**178 – 188**	182	Pass	181	Pass
Head Circumference	**541 – 551**	546	Pass	545	Pass
Buttock to Knee Length	**514 – 540**	525	Pass	525	Pass
Popliteal Height	**343 – 369**	355	Pass	355	Pass
Knee Pivot to Floor Height	**392 – 409**	395	Pass	396	Pass
Buttock Popliteal Length	**416 – 442**	425	Pass	423	Pass
Chest Depth w/o Jacket	**195 – 211**	205	Pass	202	Pass
Foot Length	**216 – 232**	221	Pass	221	Pass
Hip Breadth	**313 – 323**	320	Pass	321	Pass
Arm Length	**249 – 259**	255	Pass	253	Pass
Knee Joint to Seat Back	**477 – 493**	481	Pass	483	Pass
Shoulder Width	**341 – 357**	347	Pass	347	Pass
Foot Width	**78 – 94**	82	Pass	82	Pass
Chest Circumference w/Jacket	**851 – 881**	860	Pass	856	Pass
Waist Circumference	**761 – 791**	780	Pass	777	Pass

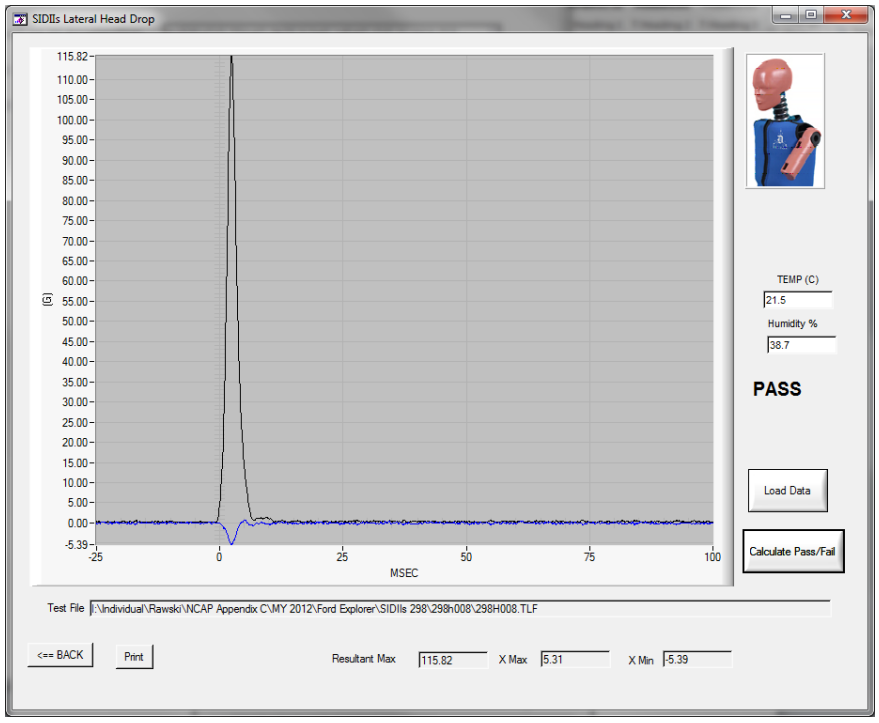
TABLE 2
HEAD DROP TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/11/11		10/28/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Head Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.0	Pass
	Min		21.4	Pass	20.9	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	48.5	Pass	38.9	Pass
	Min		30.3	Pass	29.1	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.0	Pass	21.7	Pass
Humidity – During Test (%)		**10-70**	26.7	Pass	27.3	Pass
Peak Head Resultant Acceleration (G)		**115-137**	115.0	Pass	120.3	Pass
Peak Head X Acceleration (G)		**<15**	5.25	Pass	6.34	Pass
Unimodal (Oscillation) (Yes/No)		**<15%**	-	Yes	-	Yes

TABLE 2
HEAD DROP TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

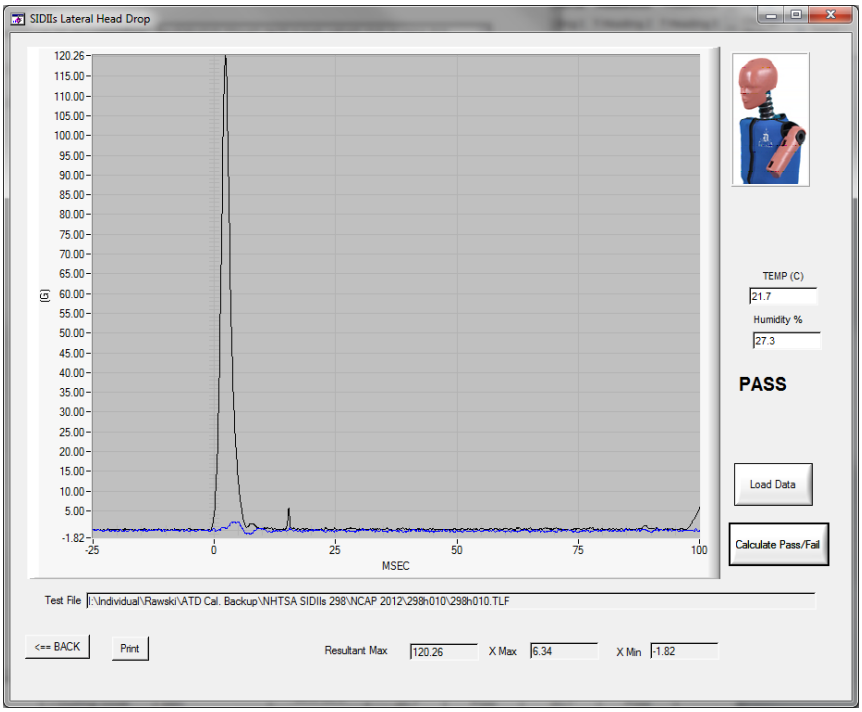


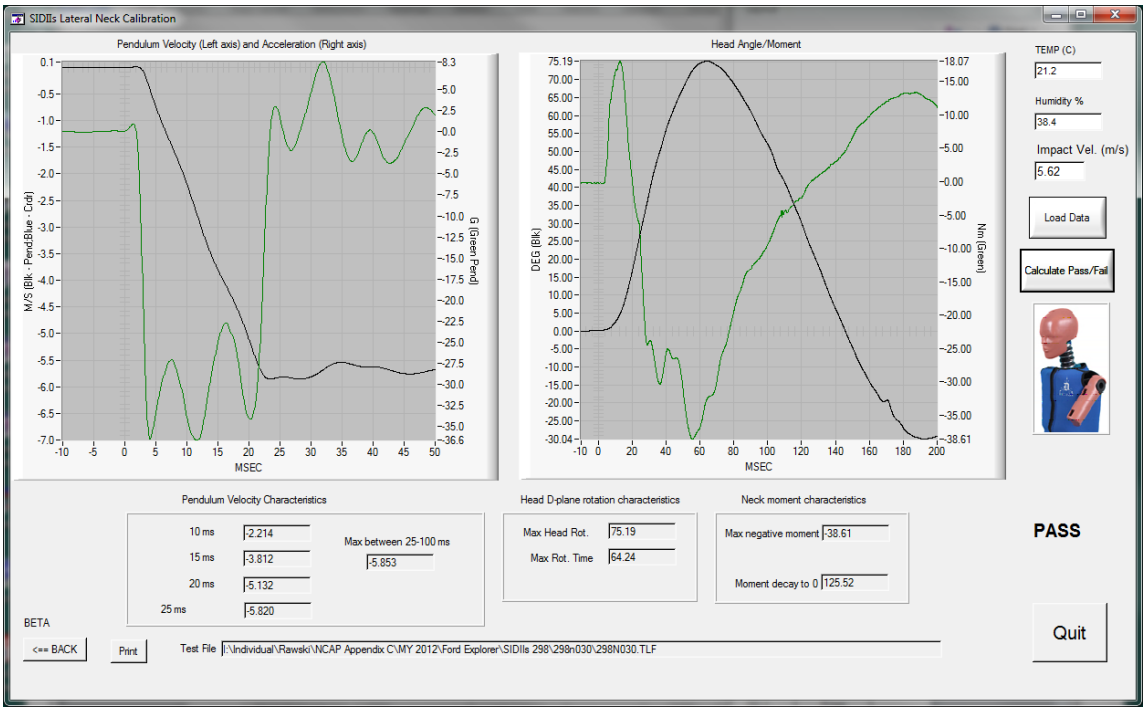
TABLE 3
LATERAL NECK PENDULUM TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	7/20/11		10/30/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Neck Assembly Soak Time (min)		**≥ 240**	240	Pass	240	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	21.9	Pass
	Min		21.3	Pass	20.7	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	62.1	Pass	36.2	Pass
	Min		39.8	Pass	21.6	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.2	Pass	20.8	Pass
Humidity – During Test (%)		**10-70**	38.4	Pass	26.9	Pass
Pendulum Velocity (m/s)		**5.51 – 5.63**	5.62	Pass	5.61	Pass
Pendulum Deceleration (G)	10 ms	**2.20-2.80**	2.21	Pass	-2.25	Pass
	15 ms	**3.30-4.10**	3.81	Pass	-3.81	Pass
	20 ms	**4.40-5.40**	5.13	Pass	-5.21	Pass
	25 ms	**5.40-6.10**	5.82	Pass	-5.55	Pass
	25-100 ms	**5.50-6.20**	5.85	Pass	-5.56	Pass
Maximum D-Plane rotation (deg)		**71-81**	75.2	Pass	-73.3	Pass
Time of Maximum D-Plane Rotation (ms)		**50-70**	64.2	Pass	63.3	Pass
Peak Occ. Condyle Moment (Nm)		**36-44**	38.6	Pass	-41.0	Pass
Time of Moment Decay (ms)		**102-126**	125.5	Pass	120.8	Pass

TABLE 3
LATERAL NECK PENDULUM TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

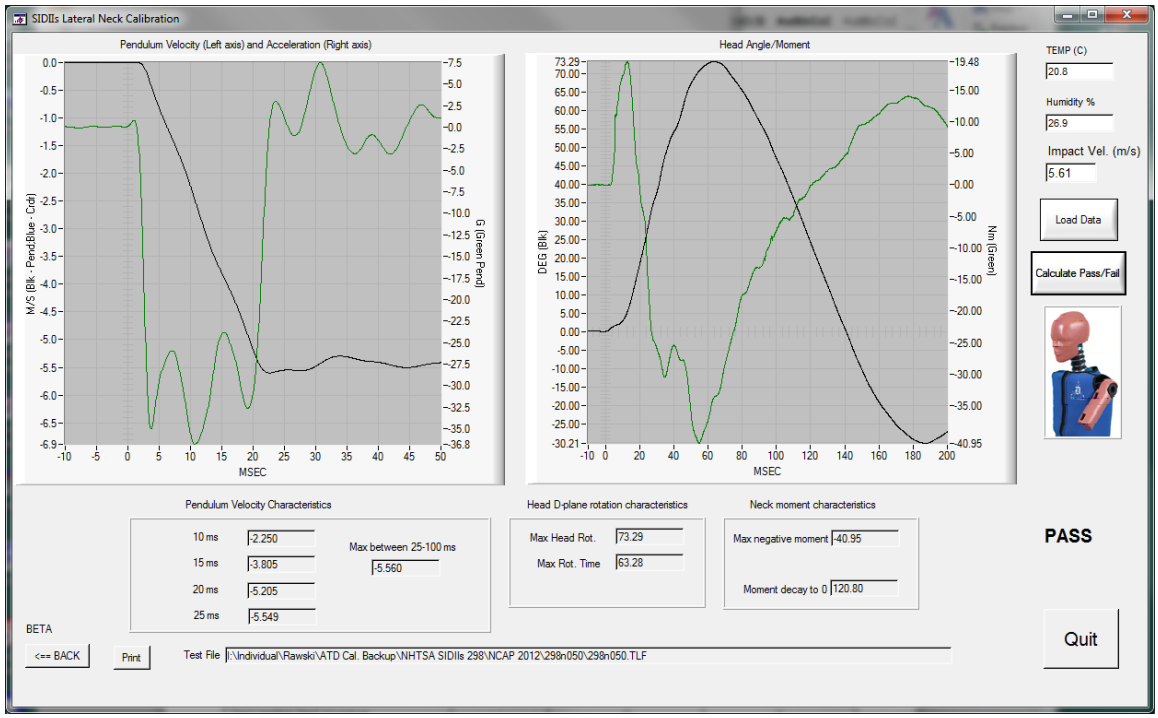


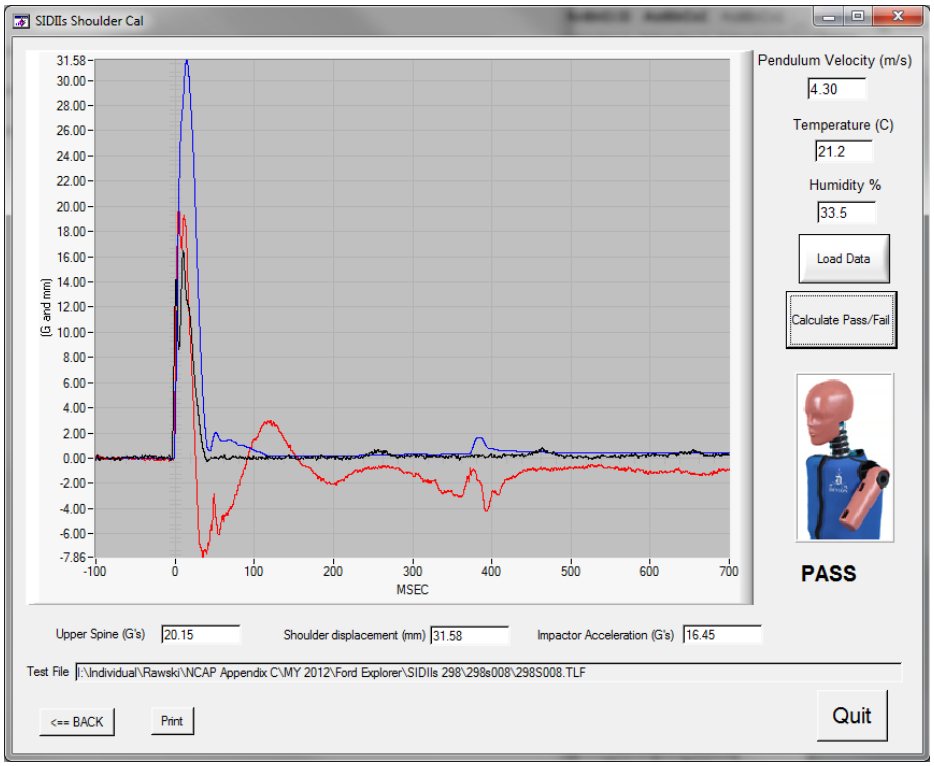
TABLE 4
SHOULDER IMPACT TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/19/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 180**	180	Pass	180	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	21.9	Pass	22.1	Pass
	Min		20.8	Pass	20.8	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	61.3	Pass	30.1	Pass
	Min		31.5	Pass	27.9	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.2	Pass	22.0	Pass
Relative Humidity – During Test (%)		**10-70**	33.5	Pass	26.5	Pass
Impactor Velocity (m/s)		**4.2-4.4**	4.30	Pass	4.30	Pass
Peak Shoulder Deflection (mm)		**28-37**	31.6	Pass	32.4	Pass
Peak Lateral Spine (T1) Acceleration Y (G)		**17-22**	20.2	Pass	19.2	Pass
Peak Impactor Acceleration (G)		**13-18**	16.5	Pass	15.8	Pass

TABLE 4
SHOULDER IMPACT TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

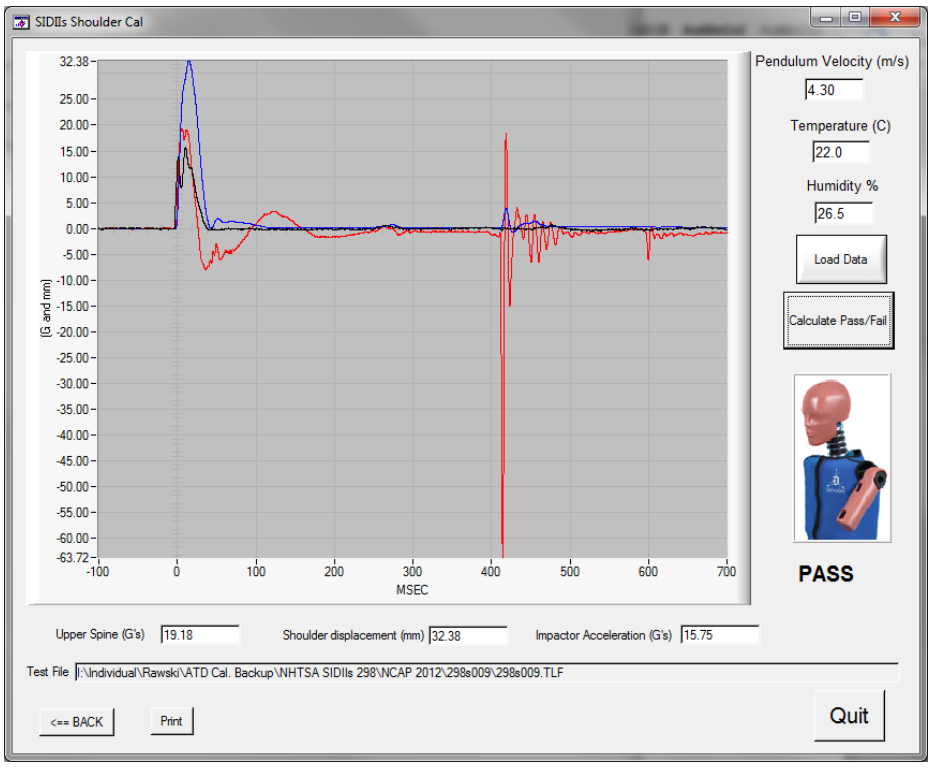


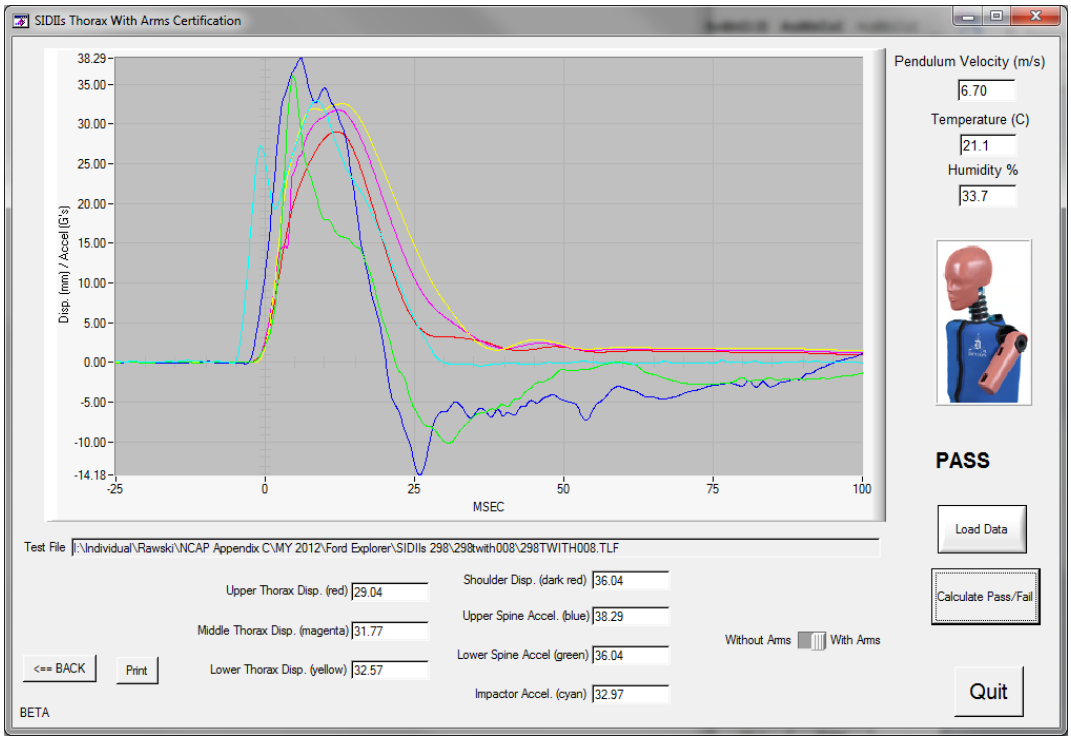
TABLE 5
THORAX (WITH ARM) IMPACT TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/19/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 180**	180	Pass	180	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	21.4	Pass	22.1	Pass
	Min		20.8	Pass	20.8	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	47.9	Pass	30.1	Pass
	Min		32.1	Pass	27.9	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.1	Pass	22.0	Pass
Relative Humidity – During Test (%)		**10-70**	33.7	Pass	26.4	Pass
Impactor Velocity (m/s)		**6.6-6.8**	6.70	Pass	6.70	Pass
Peak Shoulder Deflection (mm)		**31-40**	36.0	Pass	31.6	Pass
Peak Upper Rib Deflection (mm)		**25-32**	29.0	Pass	28.6	Pass
Peak Middle Rib Deflection (mm)		**30-36**	31.8	Pass	32.8	Pass
Peak Lower Rib Deflection (mm)		**32-38**	32.6	Pass	34.5	Pass
Peak Upper Spine (T1) Acceleration Y (G)		**34-43**	38.3	Pass	38.3	Pass
Peak Lower Spine (T12) Acceleration Y (G)		**29-37**	36.0	Pass	31.6	Pass
Peak Impactor Acceleration (G)		**30-36**	33.0	Pass	31.7	Pass

TABLE 5
THORAX (WITH ARM) IMPACT TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

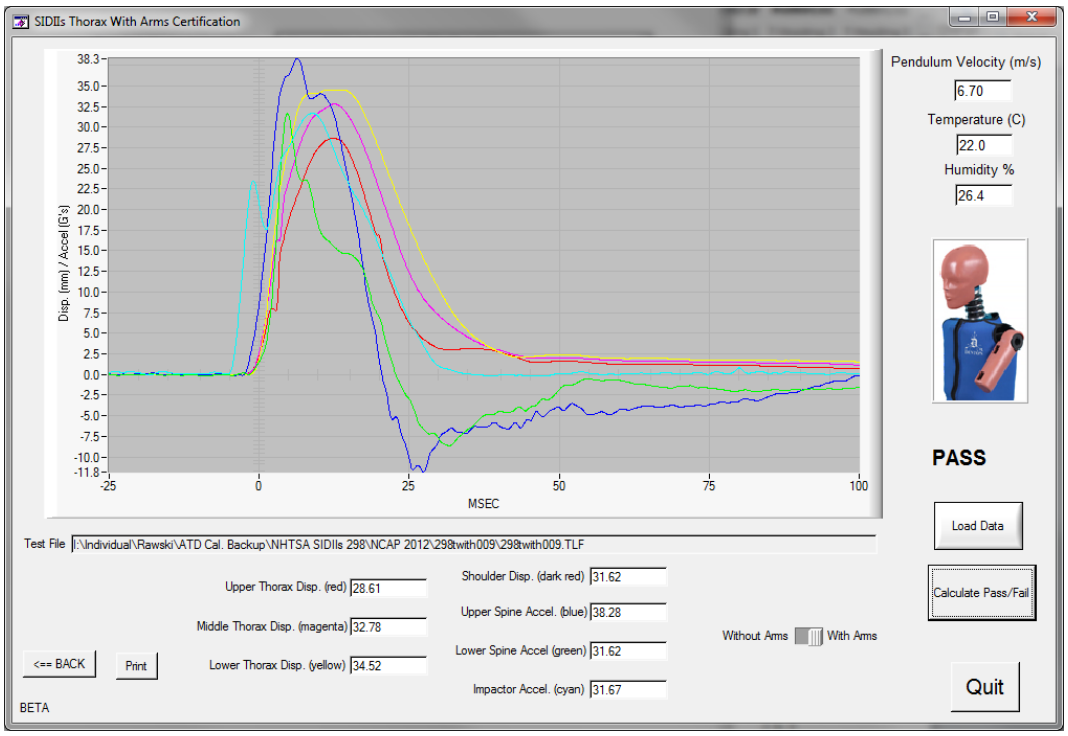


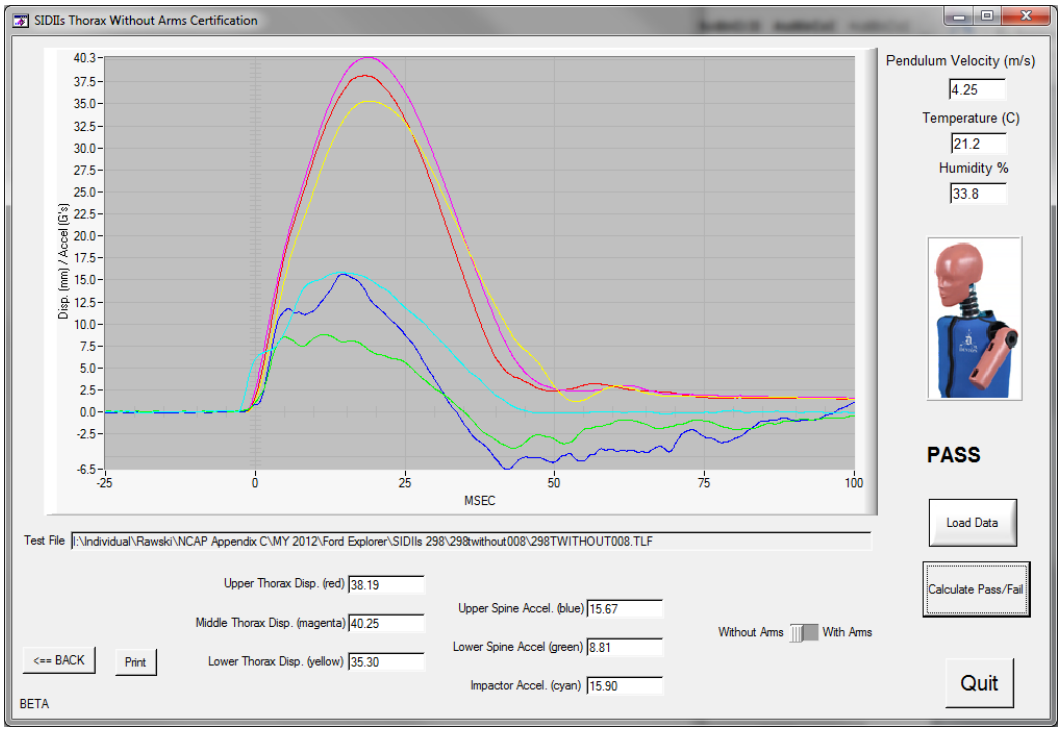
TABLE 6
THORAX (WITHOUT ARM) IMPACT TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/19/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 180**	180	Pass	180	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	22.0	Pass	22.1	Pass
	Min		20.9	Pass	20.8	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	47.2	Pass	30.1	Pass
	Min		32.6	Pass	27.9	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.2	Pass	22.0	Pass
Relative Humidity – During Test (%)		**10-70**	33.8	Pass	26.9	Pass
Impactor Velocity (m/s)		**4.2-4.4**	4.25	Pass	4.25	Pass
Peak Upper Rib Deflection (mm)		**32-40**	38.2	Pass	34.9	Pass
Peak Middle Rib Deflection (mm)		**39-45**	40.3	Pass	40.8	Pass
Peak Lower Rib Deflection (mm)		**35-43**	35.3	Pass	40.1	Pass
Peak Upper Spine (T1) Acceleration Y (G)		**13-17**	15.7	Pass	14.8	Pass
Peak Lower Spine (T12) Acceleration Y (G)		**7-11**	8.81	Pass	9.16	Pass
Peak Impactor Acceleration (G)		**14-18**	15.9	Pass	15.6	Pass

TABLE 6
THORAX (WITHOUT ARM) IMPACT TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

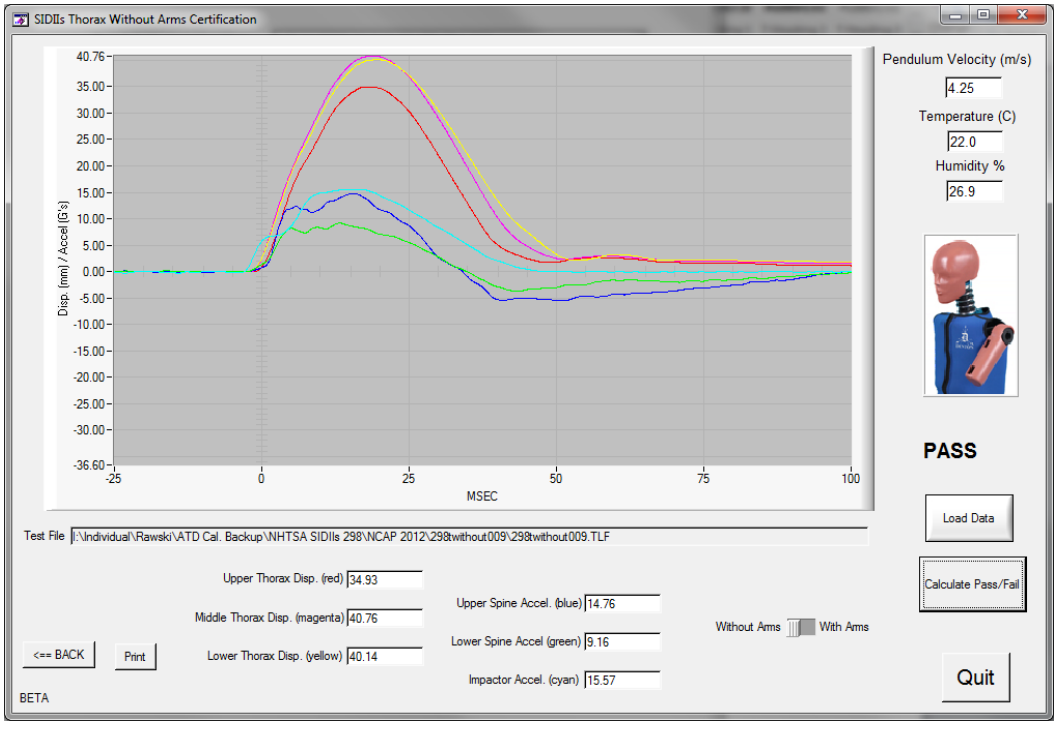


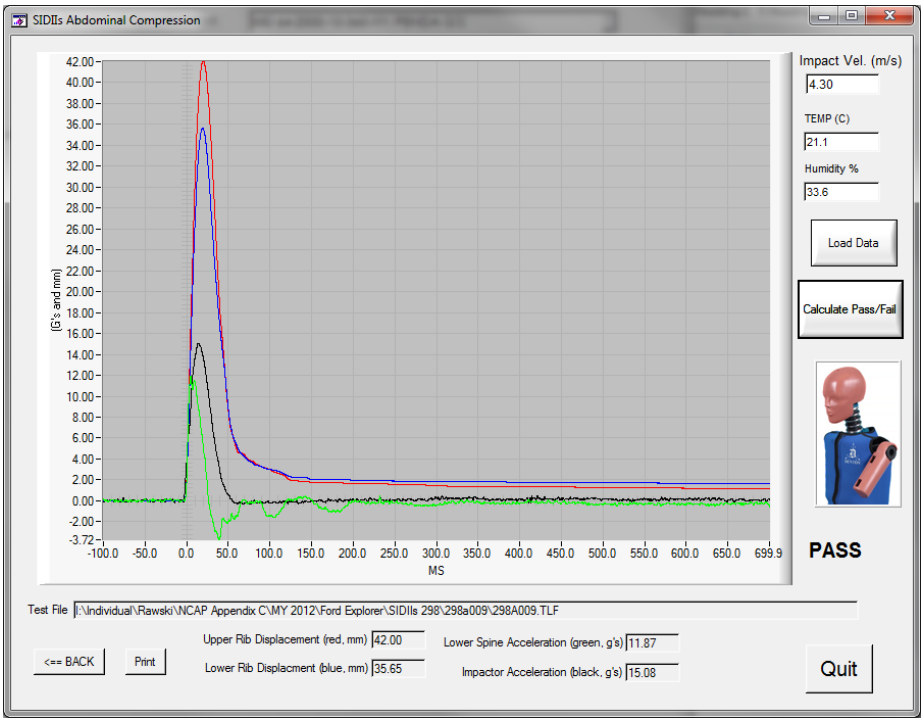
TABLE 7
ABDOMEN IMPACT TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/19/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 180**	180	Pass	180	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	21.9	Pass	22.1	Pass
	Min		21.1	Pass	20.8	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	40.3	Pass	30.1	Pass
	Min		34.1	Pass	27.9	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.1	Pass	22.2	Pass
Relative Humidity – During Test (%)		**10-70**	33.6	Pass	27.4	Pass
Impactor Velocity (m/s)		**4.2-4.4**	4.30	Pass	4.30	Pass
Peak Upper Abdominal Rib Deflection (mm)		**36-47**	42.0	Pass	42.7	Pass
Peak Lower Abdominal Rib Deflection (mm)		**33-44**	35.7	Pass	38.3	Pass
Peak Lower Spine (T12) Acceleration Y (G)		**9-14**	11.9	Pass	11.7	Pass
Peak Impactor Acceleration (G)		**12-16**	15.1	Pass	14.8	Pass

TABLE 7
ABDOMEN IMPACT TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

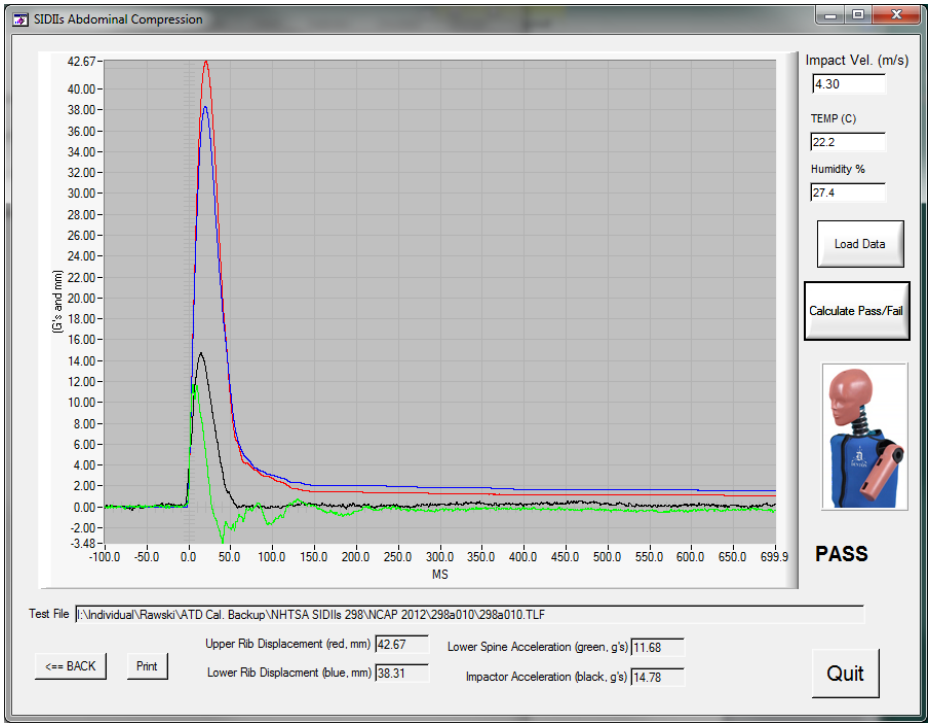
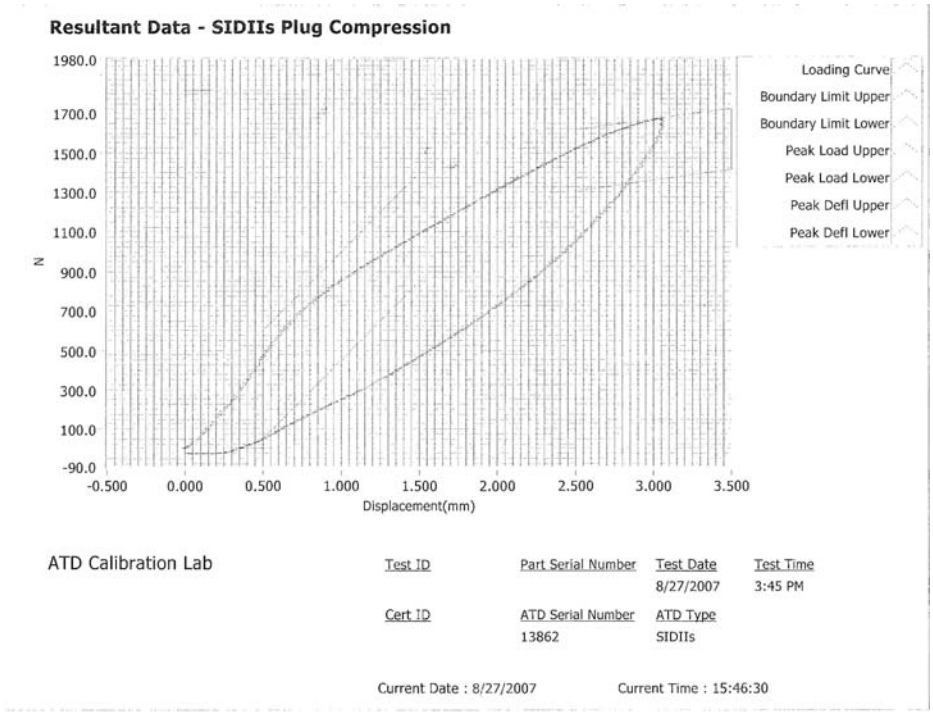


TABLE 8
PELVIS PLUG QUASI-STATIC TEST (SID-IIs)

PRE-Test



POST-TEST

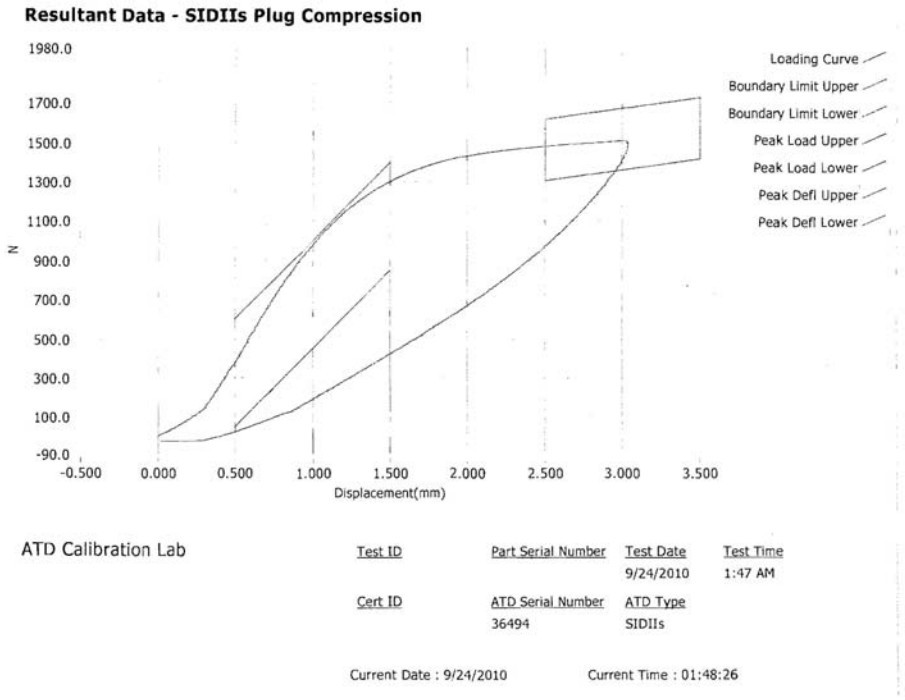


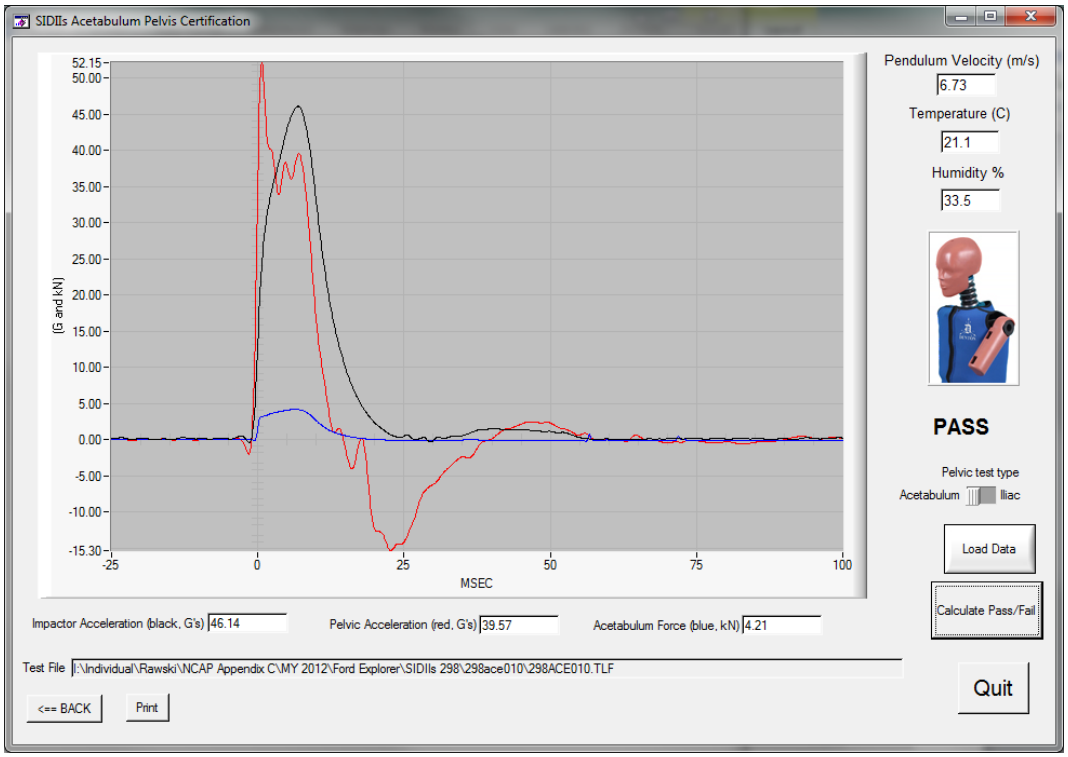
TABLE 9
PELVIS ACETABULUM IMPACT TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/20/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Results**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 180**	180	Pass	180	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	21.5	Pass	22.1	Pass
	Min		21.2	Pass	20.8	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	41.0	Pass	30.1	Pass
	Min		32.6	Pass	27.9	Pass
Temperature – During Test (°C)		**20.6-22.2**	21.1	Pass	22.0	Pass
Humidity – During Test (%)		**10-70**	33.5	Pass	27.9	Pass
Impactor Velocity (m/s)		**6.6-6.8**	6.73	Pass	6.73	Pass
Peak Impactor Acceleration (G)		**38-47**	46.1	Pass	44.4	Pass
Pelvis Acceleration Y after 6ms (G)		**34-42**	39.6	Pass	41.1	Pass
Peak Acetabulum Force (kN)		**3.60-4.30**	4.21	Pass	3.84	Pass
Pelvis Plug Serial No. 13862 (Pre) No. 36494 (Post)						

TABLE 9
PELVIS ACETABULUM IMPACT TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST

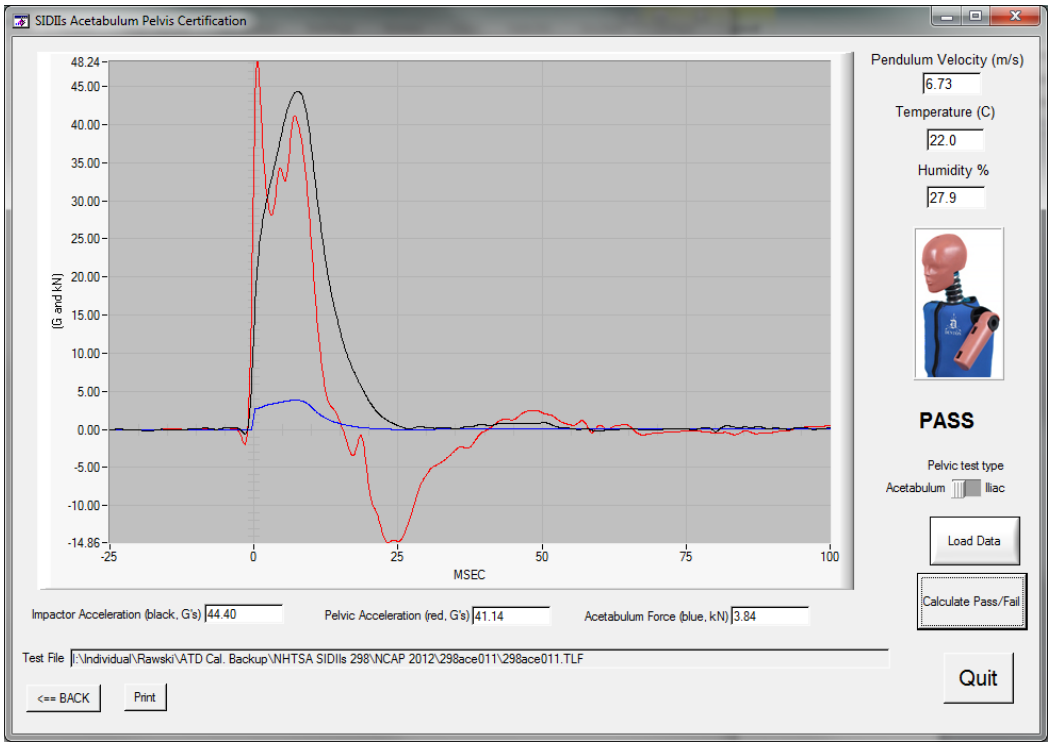


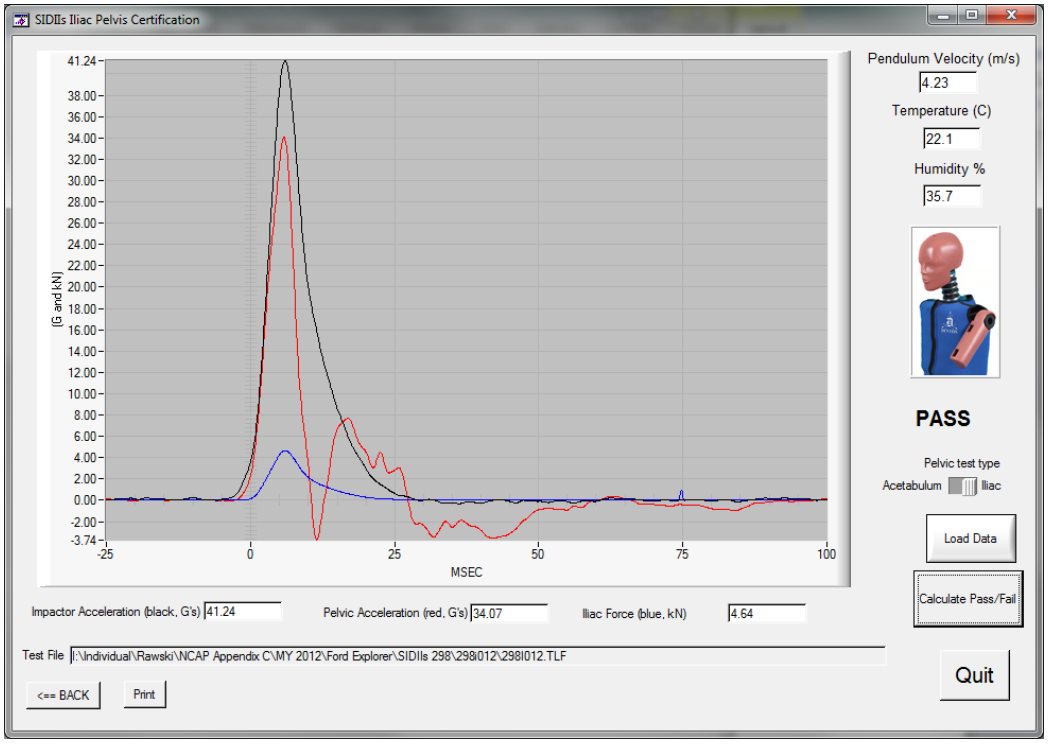
TABLE 10
PELVIS ILIAC IMPACT TEST (SID-IIs)

SIDIIs Serial Number 298 Test Sequences 1 & 2

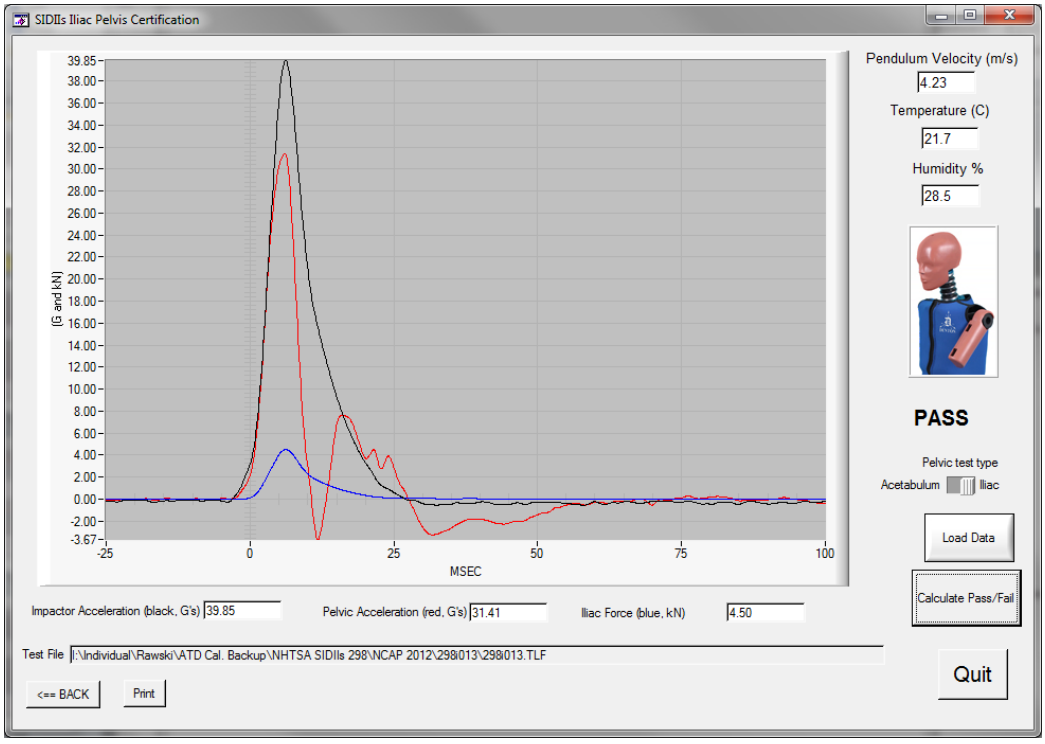
TEST PARAMETER		SPEC.	PRE		POST	
Date		-	5/20/11		11/1/11	
Sequential Test Number		-	1		2	
			Result	**Pass/Fail**	**Result**	**Pass/Fail**
Dummy Soak Time (min)		**≥ 180**	180	Pass	180	Pass
Temperature(°C) – During Soak	Max	**20.6-22.2**	21.9	Pass	22.1	Pass
	Min		20.8	Pass	20.8	Pass
Humidity(%) – During Soak	Max	**10.0-70.0**	40.3	Pass	30.1	Pass
	Min		36.1	Pass	27.9	Pass
Temperature – During Test (°C)		**20.6-22.2**	22.1	Pass	21.7	Pass
Humidity – During Test (%)		**10-70**	35.7	Pass	28.5	Pass
Pendulum Velocity (m/s)		**4.2-4.4**	4.23	Pass	4.23	Pass
Peak Impactor Acceleration (G)		**36-45**	41.2	Pass	39.9	Pass
Pelvis Acceleration Y (G)		**28-39**	34.1	Pass	31.4	Pass
Peak Iliac Force Y (N)		**4.10-5.10**	4.64	Pass	4.50	Pass
Pelvis Plug Serial No. 13862 (Pre) No. 36494 (Post)						

TABLE 10
PELVIS ILIAC IMPACT TEST (SID-IIs) (CONTINUED)

PRE-TEST



POST-TEST



APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 - DUMMY INSTRUMENTATION – ES-IIRE

			ES-IIre S/N: F038		
			Serial Number	**Manufacturer**	**Calibration Date**
Head Accelerometers		X	J43494	Endevco	25/APR/2011
		Y	J43475	Endevco	25/APR/2011
		Z	J43779	Endevco	25/APR/2011
		X_R	J21551	Endevco	25/APR/2011
		Y_R	J43432	Endevco	25/APR/2011
		Z_R	12104	Endevco	25/APR/2011
Thoracic Rib Displacement Potentiometers	Upper	Y	433	Denton	08/APR/2011
	Middle	Y	193	Denton	08/APR/2011
	Lower	Y	191	Denton	08/APR/2011
Abdomen Load Cells	Forward	Y	1502	Denton	07/APR/2011
	Middle	Y	1511	Denton	07/APR/2011
	Rear	Y	1537	Denton	07/APR/2011
Lower Spine Accelerometers (T_{12})		X	12112	Endevco	25/APR/2011
		Y	P21586	Endevco	25/APR/2011
		Z	P21580	Endevco	25/APR/2011
Pubic Symphosis Load Cell		Y	460	Denton	08/DEC/2010

TABLE 2 - DUMMY INSTRUMENTATION – SID-IIS

				SID-IIs S/N: 298		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers			X	P22041	Endevco	25/APR/2011
			Y	P24562	Endevco	25/APR/2011
			Z	P22322	Endevco	25/APR/2011
			X_R	P24124	Endevco	25/APR/2011
			Y_R	P21575	Endevco	25/APR/2011
			Z_R	12132	Endevco	25/APR/2011
Displacement Potentiometers	Shoulder		Y	1095	FTSS	07/APR/2011
	Thoracic Rib	Upper	Y	1181	Denton	07/APR/2011
		Middle	Y	1203	Denton	07/APR/2011
		Lower	Y	486	Denton	07/APR/2011
	Abdominal Rib	Upper	Y	717	Denton	07/APR/2011
		Lower	Y	1215	Denton	07/APR/2011
Lower Spine Accelerometers (T_{12})			X	P21661	Endevco	25/APR/2011
			Y	P24682	Endevco	25/APR/2011
			Z	P21788	Endevco	25/APR/2011
Acetabulum Load Cell			Y	270	Denton	07/APR/2011
Iliac Wing Load Cell			Y	283	Denton	07/APR/2011
Pelvis Plug (Struck-Side)				36263	FTSS	22/SEP/11
Pelvis Plug (Non-Struck-Side)				36349	FTSS	23/SEP/11

TABLE 3 - VEHICLE INSTRUMENTATION

			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	A011312	MSI	22/SEP/2011
	Vehicle Center of Gravity	Y	A011321	MSI	22/SEP/2011
	Vehicle Center of Gravity	Z	A011331	MSI	22/SEP/2011
2	Right Sill at Front Seat	X	P22965	Endevco	22/SEP/2011
	Right Sill at Front Seat	Y	P23020	Endevco	22/SEP/2011
	Right Sill at Front Seat	Z	P22993	Endevco	22/SEP/2011
3	Right Sill at Rear Seat	X	P25041	Endevco	22/SEP/2011
	Right Sill at Rear Seat	Y	P24138	Endevco	22/SEP/2011
	Right Sill at Rear Seat	Z	P21689	Endevco	22/SEP/2011
4	Left Sill at Front Door	Y	P59065	Endevco	22/SEP/2011
5	Left Sill at Rear Door	Y	P59120	Endevco	22/SEP/2011
6	Left A-Post Lower	Y	A086985	MSI	22/SEP/2011
7	Left A-Post Middle	Y	A086967	MSI	22/SEP/2011
8	Left B-Post Lower	Y	A086987	MSI	22/SEP/2011
9	Left B-Post Middle	Y	A086976	MSI	22/SEP/2011
10	Front Seat Track	Y	A086983	MSI	22/SEP/2011
11	Rear Seat Track or Structure	Y	J43513	Endevco	22/SEP/2011
12	Right Rear Occ. Compartment	Y	A007227	MSI	22/SEP/2011
13	Engine Block	X	P21820	Endevco	22/SEP/2011
	Engine Block	Y	J43474	Endevco	22/SEP/2011
14	Rear Floorpan Above Axle	X	12096	Endevco	22/SEP/2011
	Rear Floorpan Above Axle	Y	12111	Endevco	22/SEP/2011
	Rear Floorpan Above Axle	Z	12118	Endevco	22/SEP/2011

TABLE 4 - MDB INSTRUMENTATION

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	12115	Endevco	13/OCT/2011
MDB Center of Gravity	Y	12149	Endevco	13/OCT/2011
MDB Center of Gravity	Z	P21898	Endevco	13/OCT/2011
Left Frame at Rear Axle Centerline	X	P22339	Endevco	13/OCT/2011
Left Frame at Rear Axle Centerline	Y	P22539	Endevco	13/OCT/2011