

REPORT NUMBER: 214P-CAL-24-011

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
DYNAMIC SIDE IMPACT PROTECTION
RIGID POLE TEST**

**FCA US LLC
2024 Jeep Compass Sport
5 Door SUV**

NHTSA No: C20240304

**PREPARED BY:
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April 17, 2024

FINAL REPORT

**PREPARED FOR:
U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
1200 NEW JERSEY AVE. S.E.
WASHINGTON, D.C. 20590**

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Date: April 17, 2024

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Date: _____

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16. Abstract A 31.00 km/h (19.3 mph), 75° oblique compliance test was conducted on the subject 2024 Jeep Compass Sport 5 Door SUV in accordance with the specifications of the Office of Vehicle Safety Compliance TP-214P-01 for the determination of FMVSS No.214 Side Impact Protection compliance. This test was conducted at Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on March 22, 2024. The impact velocity of the vehicle was 30.99 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle was 21°C. The target vehicle's maximum post-test static crush was 345 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (ES-2re)</th> </tr> <tr> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC36)</td> <td></td> <td>1000</td> <td>525.496</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>44</td> <td>25.620</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>1154.265</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>2755.518</td> </tr> </tbody> </table> 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.						Measurement Description	Driver ATD (ES-2re)			Units	IARV	Result	Head Injury Criteria (HIC36)		1000	525.496	Maximum Thoracic Rib Deflection	mm	44	25.620	Total Abdominal Force	N	2500	1154.265	Pubic Symphysis Force	N	6000	2755.518
Measurement Description	Driver ATD (ES-2re)																											
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17. Key Words Compliance Testing Side Impact Protection Pole Test ES-2re SID-IIs				18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services (TIS) Room E12-100 East Bldg. 1200 New Jersey Ave. Washington, D.C. 20590 Telephone No. (202) 366-2588																								
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Form DOT F1700.7 (8-72)

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SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

This side impact test was conducted as part of the FY 2024 FMVSS 214 Side Impact Protection Compliance Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. 693JJ923D000043. The purpose of this test was to evaluate side impact protection in a 2024 Jeep Compass Sport 5 Door SUV. The side impact test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure, TP-214P-01 dated September 2012.

SUMMARY

A rigid pole side impact test was conducted on a 2024 Jeep Compass Sport 5 Door SUV. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 30.99 km/h. The test was conducted by Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on March 22, 2024. Pre-test and post-test photographs of the test vehicle and side impact dummy (ES2re) are included in Appendix I of this report.

One Part 572U (ES-2re) dummy was placed in the driver designated seating position according to instructions specified in the TP-214P-01 Test Procedure, dated September 2012. The side impact event was documented by nine High Speed Cameras and one real time camera.

The ES2re male dummy was instrumented accordingly:

- 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 (T12) tri-axial accelerometers
- Public symphysis y-axis load cell

Appendix II contains the dummy response data. Dummy configuration and performance verification data can be found in Appendix IV of this report. Appendix V identifies all serial numbers, manufacturers, and calibration dates for test equipment, dummy sensors, potentiometers, and load cells used to collect data during the test.

Injury readings for the ES2re dummy were recorded as follows:

INJURY READINGS

Measurement Description	Driver ATD (ES2re)		
	Units	IARV	Result
Head Injury Criteria (HIC36)		1000	525.496
Upper Rib Deflection	mm	44	22.802
Mid Rib Deflection	mm	44	21.897
Lower Rib Deflection	mm	44	25.620
Abdominal Load (front)	N		350.701
Abdominal Load (mid)	N		395.020
Abdominal Load (rear)	N		412.879
Total Abdominal Force	N	2500	1154.265
Pubic Symphysis Force	N	6000	2755.518

SECTION 2
OCCUPANT AND VEHICLE INFORMATION

This section contains information reporting for the following Data Sheets:

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DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV

NHTSA No.: C20240304

Test Facility: Calspan

Test Date: 03/22/2024

TEST VEHICLE INFORMATION AND OPTIONS

Make	Jeep	Anti-Lock Brakes (ABS)	Yes
Model	Compass Sport	All-Wheel Drive (AWD)	Yes
Body Style	SUV	Traction Control System (TCS)	Yes
VIN	3C4NJDAN0RT576272	Electric Stability Control (ECS)	Yes
Body Color	White	Curtain Airbags	Yes
Engine Displacement (L)	2.0	Torso Airbags – Front Seats	Yes
Type / No. Cylinders	I4	Torso Airbags – Rear Seats	No
Engine Placement	Transverse	Combination/Head Torso Bag	No
Transmission Type	Automatic	Pelvic Airbag – Front Seats	No
Transmission Speeds	8-Speed	Pelvis Airbag – Rear Seats	No
Overdrive	Yes	Knee Airbag – Driver	Yes
Final Drive	4x4	Knee Airbag – Front Passenger	No
Odometer Reading (mi)	700 miles	Seat Belt Pretensioners – Front Seats	Yes
		Seat Belt Pretensioners – Rear Seats	No
		Seat Belt Load Limiter – Front Seats	Yes
		Seat Belt Load Limiter – Rear Seats	No
		Tire Pressure Monitoring System (TPMS)	Yes
		Tilt Steering Wheel	Yes
		Automatic Door Locks (ADL)	Yes
		Power Window Auto-reverse	Yes
		Power Seats	No
		Other Safety Restraint	No

DATA FROM CERTIFICATION LABEL

Manufactured By	FCA US LLC	GVWR (kg)	2178
Date of Manufacture	9/23	GVWR Front (kg)	1180
Vehicle Type	MPV	GVWR Rear (kg)	1080

VEHICLE SEATING AND WEIGHT CAPACITY DATA

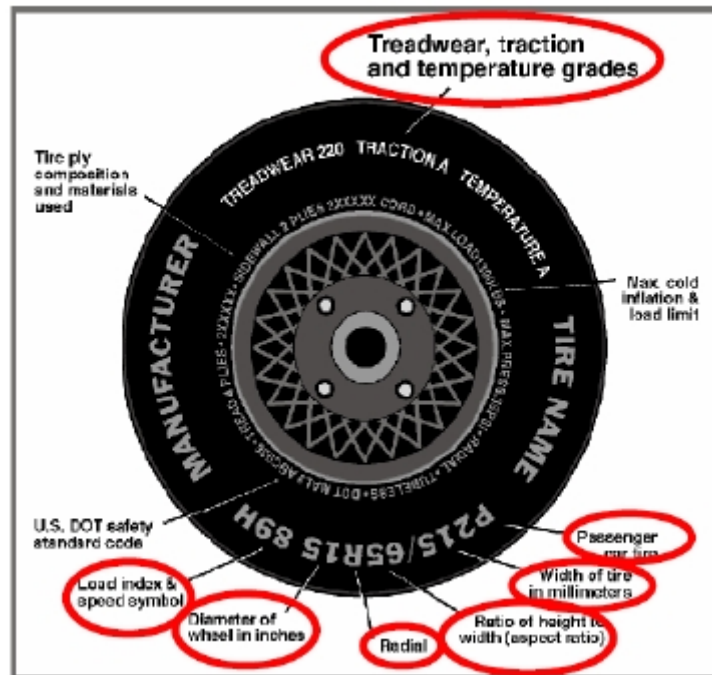
Measured Parameter	Front	Rear	Third	Total
Type of Seats (Bench or Bucket)	Bucket	Split Bench	N/A	
Designated Seating Capacity (DSC)	2	3	N/A	
Capacity Weight (VCW) (kg)				390
Cargo Weight (RCLW) (kg)				49.8

DATA SHEET NO. 2 VEHICLE TIRE INFORMATION

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024

Collected for year, make, model, & VIN, all items circled in red, tire manufacturer and tire name



VEHICLE TIRE INFORMATION

Tire Placard	Front	Rear
Recommended Cold Pressure (kPa)	270	250
Recommended Tire Size	225/60R17	225/60R17
Tire Sidewall	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Tire Size on Vehicle	225/60R17	225/60R17
Tire Manufacturer Model	Firestone	Firestone
Tire Name	Destination LE2	Destination LE2
Tire Type	All Season	All Season
Tire Width	225	225
Aspect Ratio	60	60
Radial	Yes	Yes
Wheel Diameter	17"	17"
Load Index / Speed Symbol	99T	99T
Treadwear	520	520
Traction Grade	A	A
Temperature Grades	B	B

DATA SHEET NO. 3
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	280	258	260	245
Tire Placard	kPa	270	270	250	250

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			Fully Loaded			As Tested		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	511	320		545	373		538	365	
Right	kg	495	302		504	339		510	340	
Ratio	%	61.8	38.2		59.6	40.4		59.8	40.2	
Totals	kg	1006	622	1628	1049	712	1761	1048	705	1753

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	1628	(A)
Weight of Test Dummy	kg	81	(B)
Rated Cargo / Luggage Weight (RCLW)	kg	49.8	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1758.8	(A+B+C)

TEST VEHICLE ATTITUDES AND CG

Measurement Description	Units	As Delivered	Fully Loaded	As Tested
Driver Door Sill Angle	Deg	+0.15	+0.10	+0.10
Front Passenger Sill Angle	Deg	+0.40	+0.15	+0.35
Front Bumper-Line Angle	Deg	+1.25	+0.95	+1.20
Rear Bumper-Line Angle	Deg	+0.35	+0.05	+0.15

ND = Nose Down (-), NU = Nose Up (+), LD = Left Down (-), LU = Left Up (+)

CALCULATION OF VERTICAL IMPACT REFERENCE LINE

Measured Parameter	Units	Value
Test Vehicle Wheelbase	mm	2626
Vertical Impact Reference Line Aft of Front Axle	mm	1217

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Trunk Carpeting	7
Spare Tire	2
Front Head Light Assembly	6
Rear Head Light Assembly	3
Front Bumper Fascia	11
Ballast (if any)	0

DATA SHEET NO. 4
SEAT AND SEAT BELT ANCHORAGE ADJUSTMENT DATA

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

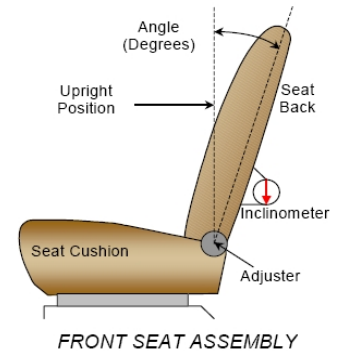
NHTSA No.: C20240304
Test Date: 03/22/2024

SEAT BACK ANGLE ADJUSTMENT

The driver and passenger seat backs are positioned to the manufacturer's designated angle provided in the Form1.

	Units	Seat Back Angle
Driver Seat	deg	-1.7
Front Passenger Seat	deg	-1.6

*Measurement taken on seatback



SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	SCR Height Position	SCR Height (mm)		
			Rearmost	Mid-Fore / Aft	Forward-Most
Driver Seat	14.9	Max	-	-	-
		Mid	-	-	-
		Min	21	26	33
Front Passenger Seat	15.8	Max	-	-	-
		Mid	-	-	-
		Min	21	24	31

SEAT FORE / AFT POSITION

Seat	Total Fore / Aft Travel		Placed in Position #	
	mm	Detents*	mm	Detents*
Driver Seat	220	22 (0-21)	110	10
Front Passenger Seat	220	22 (0-21)	110	10

SEAT BELT ANCHORAGE ADJUSTMENT

Seat	Total # of Positions	Placed in Position #
Driver Seat	4 (0-3)	Uppermost

HEAD RESTRAINT ADJUSTMENT

Seat	Total # of Positions	Placed in Position #
Driver Seat	4 (0-3)	Uppermost

DATA SHEET NO. 5
FUEL SYSTEMS AND STEERING WHEEL POSITION DATA

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
 Test Facility: Calspan

NHTSA No.: C20240304
 Test Date: 03/22/2024

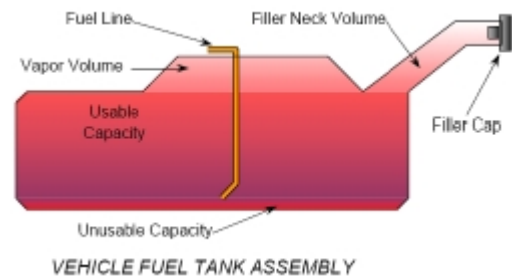
FUEL TANK CAPACITY DATA

Description	Liters
Usable Capacity of (Form No.1)	51.1
Usable Capacity of (Owner's Manual)	51.1
92 - 94% of Usable Capacity	47.0 - 48.0
Actual Amount of Solvent Used in Test	47.4

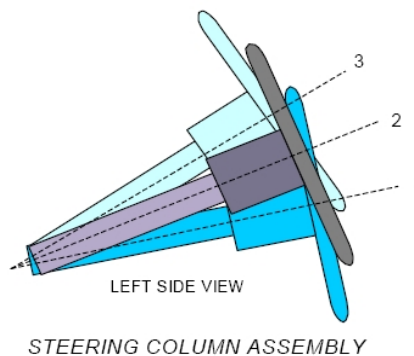
FUEL PUMP

Describe the operation of the fuel pump.

The vehicle is equipped with an electric fuel pump. The fuel filler neck is on the left side of the vehicle. The pump creates positive pressure in the fuel lines, pushing the gasoline to the engine. See form 1 for more information.



STEERING COLUMN POSITIONS

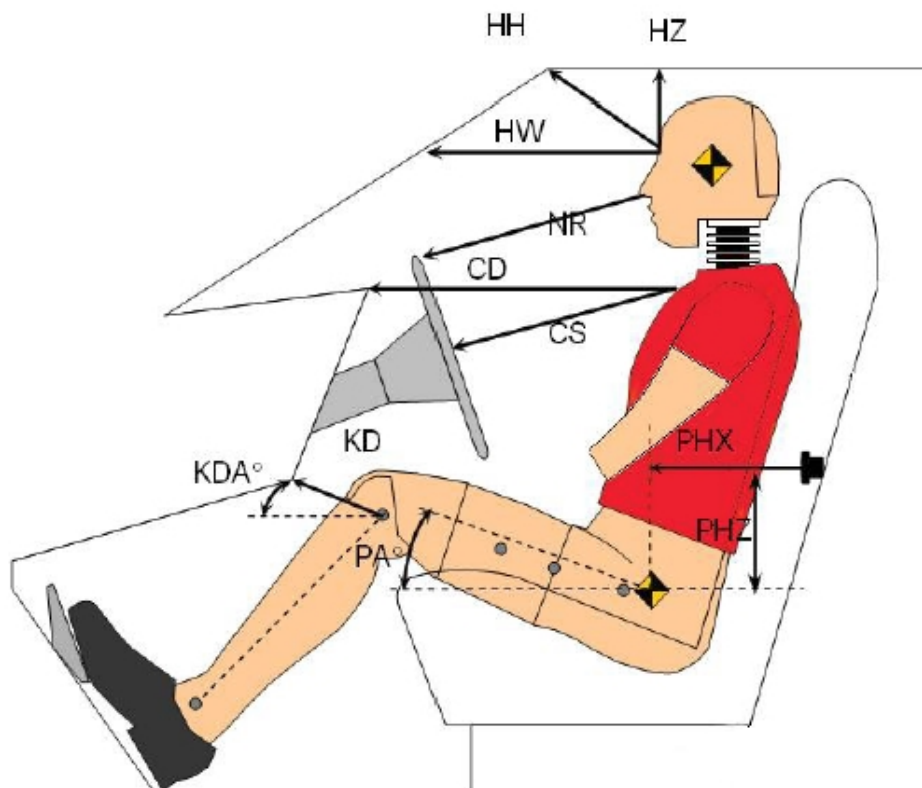


	Degrees	Fore / Aft Position (mm)
Lowermost - Position No. 1	23.3	
Geometric center - Position No. 2	26.0	
Uppermost - Position No. 3	28.6	
Telescoping Steering Wheel Travel		54
Test Position	26.0	27

DATA SHEET NO. 6 **DUMMY LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
 Test Facility: Calspan

NHTSA No.: C20240304
 Test Date: 03/22/2024



Left Side View

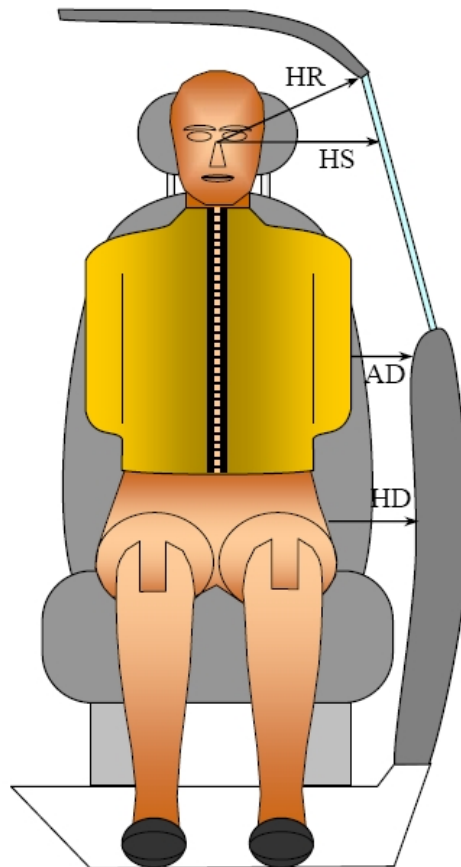
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	355	
HW	Head to Windshield	590	
HZ	Head to Roof Liner	154	
NR	Nose to Rim	429	
CD	Chest to Dash	559	
CS	Chest to Steering Wheel	334	
KD(L) / KDA(L)°	Left Knee to Dash	175	22.5
KD(R) / KDA(R)°	Right Knee to Dash	162	23.5
PAX°	Pelvic Tilt Angle (X-Axis)		21.4
PAY°	Pelvic Tilt Angle (Y-Axis)		-0.1
PHX	Hip Point to Striker (X-Axis)	168	
PHZ	Hip Point to Striker (Z-Axis)	107	

DATA SHEET NO. 7
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024



FRONT VIEW OF DUMMY

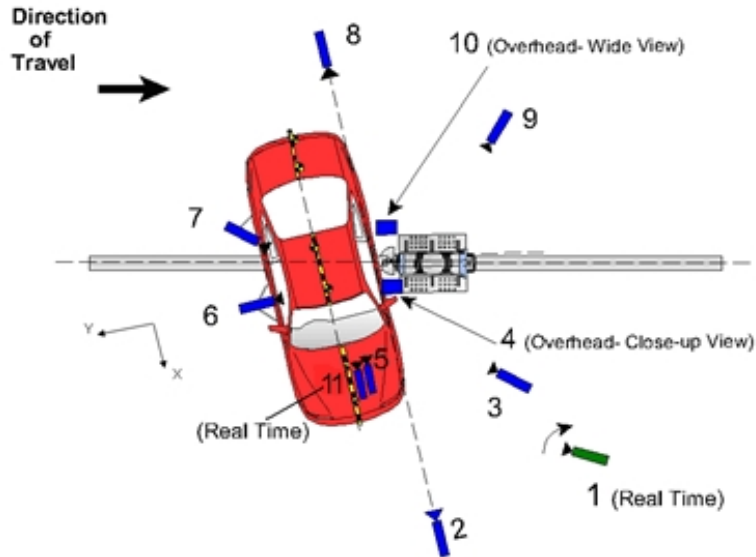
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	213
HS	Head to Side Window	mm	345
AD	Arm to Door	mm	98
HD	H-Point to Door	mm	155

DATA SHEET NO. 8 LOCATION OF CAMERA

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024



CAMERA LOCATIONS AND DATA

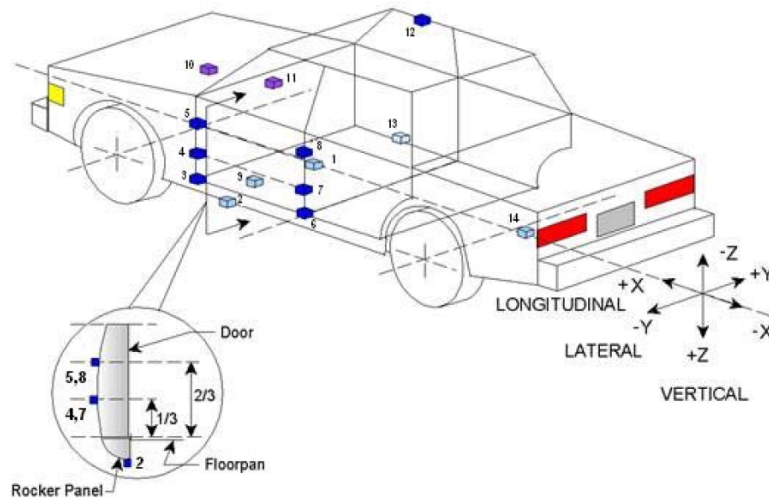
No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Real-time (24 - 30 fps) pan view of impact				Zoom	60
2	Front ground level - impact view	7549	0	-1376	28	1000
3	Impact side 45° - forward pole view	4770	-629	-1556	24	1000
4	Overhead Close-up view of impact	0	0	-9375	28	1000
5	Onboard - dummy front view				25	1000
6	Onboard - dummy side view				12.5	1000
7	Onboard - dummy rear oblique view				12.5	1000
8	Rear ground level - impact view	-8111	0	-1536	28	1000
9	Impact side 45° - rearward pole view	-3677	-3825	-1525	24	1000
10	Overhead wide - view of impact	0	0	-9375	12.5	1000

Notes: Reference - From Point of Impact for X and Y; from Ground for Z
+X = Forward of vehicle, +Y = Right of vehicle, +Z = Down
* All measurements accurate to ± 6 mm. Vehicle is at a 75° angle to the rigid pole.

DATA SHEET NO. 9 **TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024



TEST VEHICLE ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2610	9	824
2	Left Floor Sill	2571	-618	423
3	A-Pillar Sill	2941	-609	446
4	A-Pillar Low	2986	-606	680
5	A-Pillar Mid	2913	-637	1182
6	B-Pillar Sill	2010	-644	486
7	B-Pillar Low	1962	-658	808
8	B-Pillar Mid	1907	-640	1131
9	Seat	2174	-529	449
10	Engine	3770	150	865
11	Firewall	3385	-118	922
12	Roof	1865	578	1637
13	Right Floor Sill	2570	619	430
14	Rear Deck	787	6	489

Reference: X – Rear surface of vehicle (+ forward)
Y – Vehicle centerline (+ to right)
Z – Ground plane (+ down)

DATA SHEET NO. 10
TEST VEHICLE ACCELEROMETER DATA SUMMARY

Test Vehicle: 2024 Jeep Compass Sport 5Dr SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024

Loc. No	Description	Axes	Units	Positive Direction		Negative Direction	
				Max	Time (ms)	Max	Time (ms)
1	Vehicle CG	X	g	18.34	60.15	-22.49	77.70
	Vehicle CG	Y	g	51.03	59.75	-75.81	63.65
	Vehicle CG	Z	g	32.45	84.00	-30.76	79.15
	Vehicle CG Resultant	N/A	g	76.66	63.60	0.04	1.00
2	Floor Sill (Left)	Y	g	61.31	23.15	-19.46	34.30
3	A Pillar Sill	Y	g	25.32	31.85	-19.70	58.85
4	A Pillar Low	Y	g	32.12	33.25	-23.03	38.70
5	A Pillar Mid	Y	g	100.85	17.40	-45.22	24.00
6	B Pillar Sill	Y	g	62.79	19.85	-14.88	56.10
7	B Pillar Low	Y	g	142.21	17.00	-63.69	29.20
8	B Pillar Mid	Y	g	122.14	14.45	-148.83	17.75
9	Seat	Y	g	72.94	35.60	-15.57	19.25
10	Engine Top	X	g	3.37	146.20	-7.97	41.60
	Engine Top	Y	g	16.18	43.60	-3.95	204.30
11	Firewall	Y	g	12.54	72.25	-1.08	249.65
12	Roof	Y	g	39.26	36.50	-4.15	17.30
13	Floor Sill (Right)	Y	g	17.80	58.50	-1.28	171.25
14	Rear Deck	X	g	4.92	28.95	-9.67	54.90
	Rear Deck	Y	g	17.04	44.90	-2.11	175.90

DATA SHEET NO. 11
DUMMY INJURY RESPONSE DATA
(Subpart U, ES-2re)

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV NHTSA No.: C20240304
Test Facility: Calspan Test Date: 03/22/2024

Dummy Serial No. DG5348

Description	Axes	Positive Direction		Negative Direction	
		Max	Time (ms)	Max	Time (ms)
HEAD ACCELERATION (g)					
Longitudinal	X	4.39	181.45	-17.53	53.50
Lateral	Y	68.84	51.80	-19.86	93.90
Vertical	Z	16.31	18.20	-5.38	21.05
Resultant	N/A	70.78	51.80		
HIC36 (t1, t2)	N/A	525.50		t1 = 40.35	t2 = 63.20
THORAX DEFLECTION (mm)					
Upper Rib	Y	22.80	51.75	-2.39	68.25
Middle Rib	Y	21.90	50.75	-2.80	69.35
Lower Rib	Y	25.62	50.75	-3.05	72.60
ABDOMINAL FORCES (N)					
Front	Y	350.70	48.10	-15.42	215.95
Middle	Y	395.02	50.40	-7.77	215.95
Rear	Y	412.88	49.50	-11.88	139.85
SUM	N/A	1154.26	49.85		
PELVIS FORCES (N)					
Pubic Symphysis	Y	61.39	13.70	-2755.52	51.95

Reference: Positive Direction - Longitudinal (X) = forward
 - Lateral (Y) = to right
 - Vertical (Z) = down

DATA SHEET NO. 12
POST-TEST OBSERVATIONS

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024

IMPACT POINT DATA

Measured Parameter	Units	Value
Vertical Impact Ref Line - Aft of Front Axle, Intended Impact Pt	mm	1217
Actual Impact Point - Aft of Front Axle	mm	1220
Difference	mm	3

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver Seat Dummy (ES2-re)
Head Contact	Curtain Airbag, Side Header & Headrest
Upper Torso Contact	Seatback & Torso/Pelvis Airbag
Lower Torso Contact	Seatback & Torso/Pelvis Airbag
Left Knee Contact	Driver Door
Right Knee Contact	Left Knee

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/Other
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or 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, Width of Opening at Striker (mm)	0	0	0	0	0

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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	B-Pillar & C-Pillar Buckled
Sill Separation	185 mm on impact side rear door
Windshield Damage	Cracks throughout
Side Window Damage	Driver window shattered during impact
Other Notable Effects	None

DATA SHEET NO. 12 ... (CONTINUED)
POST-TEST OBSERVATIONS

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
 Test Facility: Calspan

NHTSA No.: C20240304
 Test Date: 03/22/2024

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

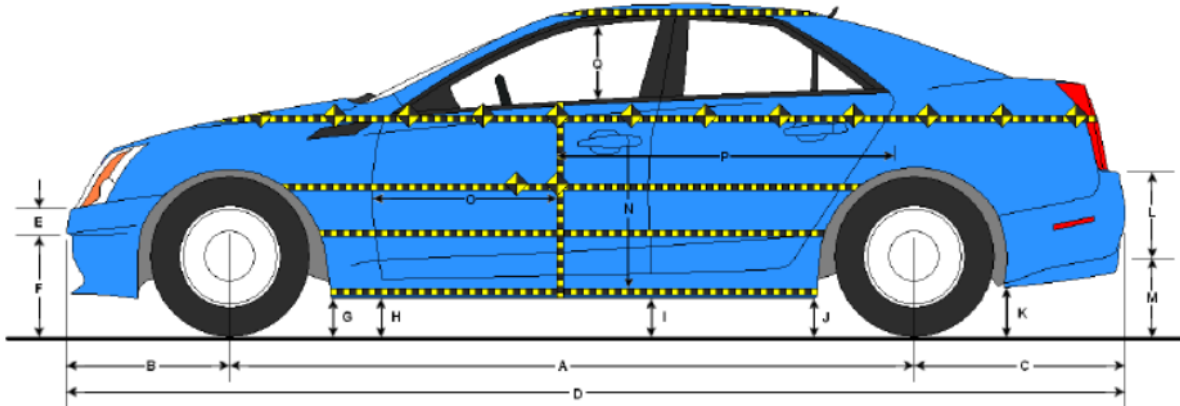
Restraint Type	Struck Side Front Occupant	
	Mounted	Deployed
Front Airbag	Yes	No
Knee Airbag	Yes	No
Head Airbag*	Yes	Yes
Side Airbag 2 - Torso/Pelvis Airbag	Yes	Yes
Seat Belt Pretensioner	Yes	Yes
Seat Belt Load Limiter	Yes	Yes
Other		

*Head Airbag was a curtain airbag

DATA SHEET NO. 13
VEHICLE PRE TEST AND POST TEST MEASUREMENTS

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
 Test Facility: Calspan

NHTSA No.: C20240304
 Test Date: 03/22/2024



LEFT SIDE VIEW

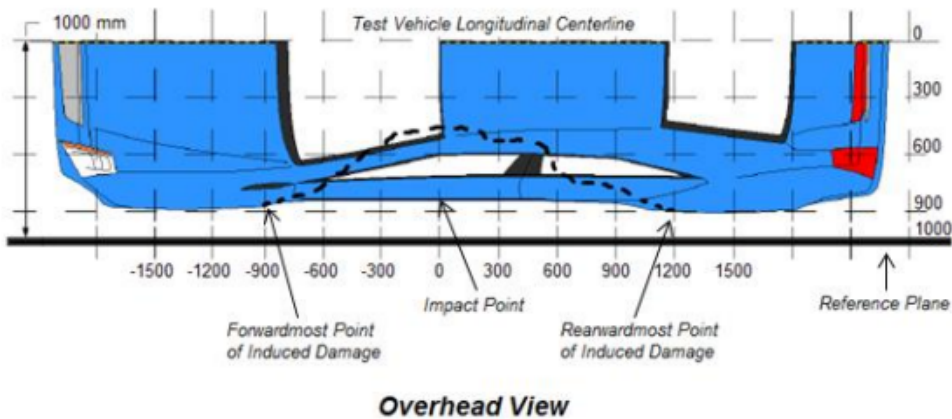
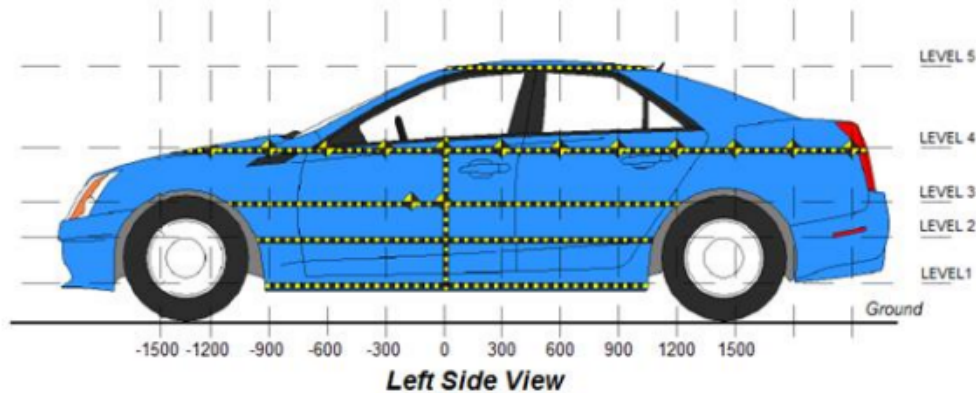
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

No.	Measurement Description	Pre-Test	Post-Test	Difference
A	Vehicle Wheelbase	2626	2584	-43
B	Front Axle to FSOV	915	932	17
C	Rear Axle to RSOV	862	857	-5
D	Total Vehicle Length at Centerline	4403	4372	-31
E	Front Bumper Thickness	105	105	0
F	Front Bumper Bottom to Ground	518	527	9
G	Sill Height at Front Wheel Well	237	247	10
H	Sill Height at Front Door Leading Edge	240	248	8
I	Sill Height at B Pillar	277	285	8
J1	Sill Height at Rear Wheel Well	235	246	11
J2	Pinch Weld Height at Rear Wheel Well	281	292	11
K	Sill Height Aft of Rear Wheel Well	303	302	-1
L	Rear Bumper Thickness	146	146	0
M	Rear Bumper Bottom to Ground	553	549	-4
N	Sill Height to Window Bottom Sill	783	793	10
O	Front Door Leading Edge to Impact CL	745	674	-71
P	Rear Door Trailing Edge to Impact CL	1273	1196	-77
Q	Front Window Opening	410	406	-4
R	Right Side Length	4305	4299	-6
S	Left Side Length	4307	4255	-51
T	Vehicle Width at B-Pillars	1779	1636	-143

DATA SHEET NO. 14
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
 Test Facility: Calspan

NHTSA No.: C20240304
 Test Date: 03/22/2024



MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Units	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	mm	419	286	0
2	Occupant H-Point	mm	718	338	0
3	Mid-Door	mm	779	345	0
4	Window Sill	mm	1101	307	0
5	Window Top	mm	1584	126	0

NOTE: The above measurements should be taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

DATA SHEET NO. 14
VEHICLE EXTERIOR CRUSH MEASUREMENTS (CONTINUED)

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
 Test Facility: Calspan

NHTSA No.: C20240304
 Test Date: 03/22/2024

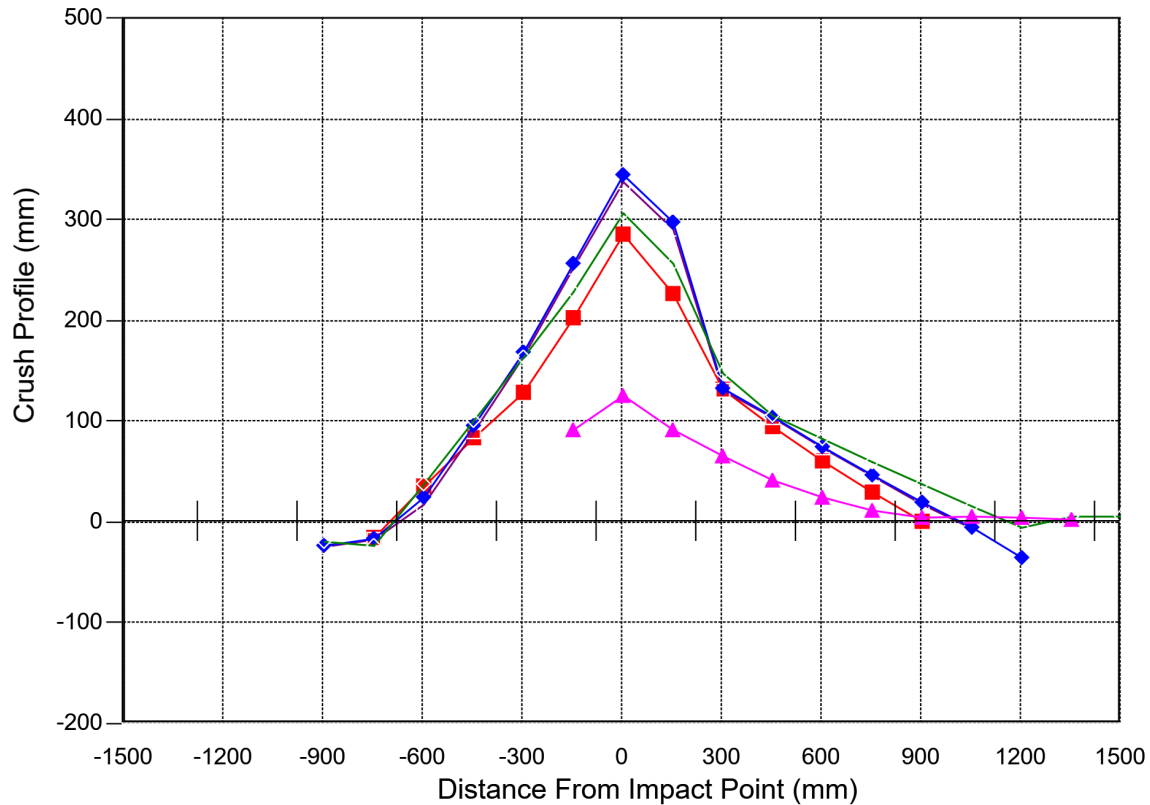
EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1500															
-1350															
-1200															
-1050															
-900		911	908	796			935	931	815			-24	-23	-19	
-750	889	903	901	811		904	920	917	834		-15	-17	-16	-23	
-600	870	891	892	822		834	873	867	784		36	18	25	38	
-450	851	888	891	829		767	798	795	728		84	90	96	101	
-300	849	889	892	835		720	724	723	671		129	165	169	164	
-150	850	890	893	839	609	647	637	636	610	517	203	253	257	229	92
0	850	889	893	845	619	564	551	548	538	493	286	338	345	307	126
150	850	888	892	847	618	623	597	594	590	526	227	291	298	257	92
300	848	886	890	850	617	716	755	757	702	551	132	131	133	148	66
450	844	884	888	851	613	749	780	783	745	571	95	104	105	106	42
600	843	881	884	853	610	782	807	809	770	585	61	74	75	83	25
750	855	883	884	852	604	825	837	837	792	592	30	46	47	60	12
900	874	894	893	852	597	873	876	873	814	592	1	18	20	38	5
1050		905	906	835	585		911	911	819	579		-6	-5	16	6
1200			912	846	568			947	851	563			-35	-5	5
1350				840	546				834	543				6	3
1500				832					826					6	

DATA SHEET NO. 14
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS (CONTINUED)

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024



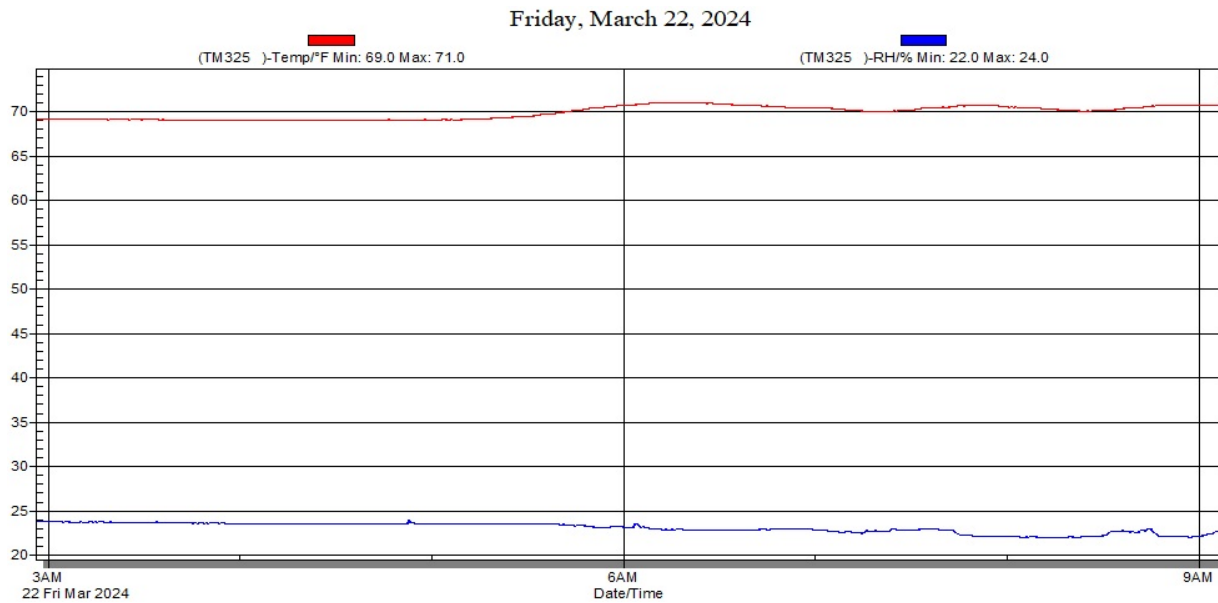
LEVEL 1 Side Sill: 419 mm above ground	LEVEL 2 H-Point: 718 mm above ground
LEVEL 3 Mid Door: 779 mm above ground	LEVEL 4 Window Sill: 1101 mm above ground
LEVEL 5 Window Top: 1584 mm above ground	

Vehicle Exterior Crush Measurements - Visual Representation

DATA SHEET NO. 16
DUMMY / VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2024 Jeep Compass Sport 5 Door SUV
Test Facility: Calspan

NHTSA No.: C20240304
Test Date: 03/22/2024



Temperature and Humidity Stabilization Chart/Data for Dummies and Test Vehicle

APPENDIX I
PHOTOGRAPHS

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24	Post-Test Close-Up View of Impact Point Target	I-14
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26	Close-Up View of Vehicle's Tire Placard Label	I-15

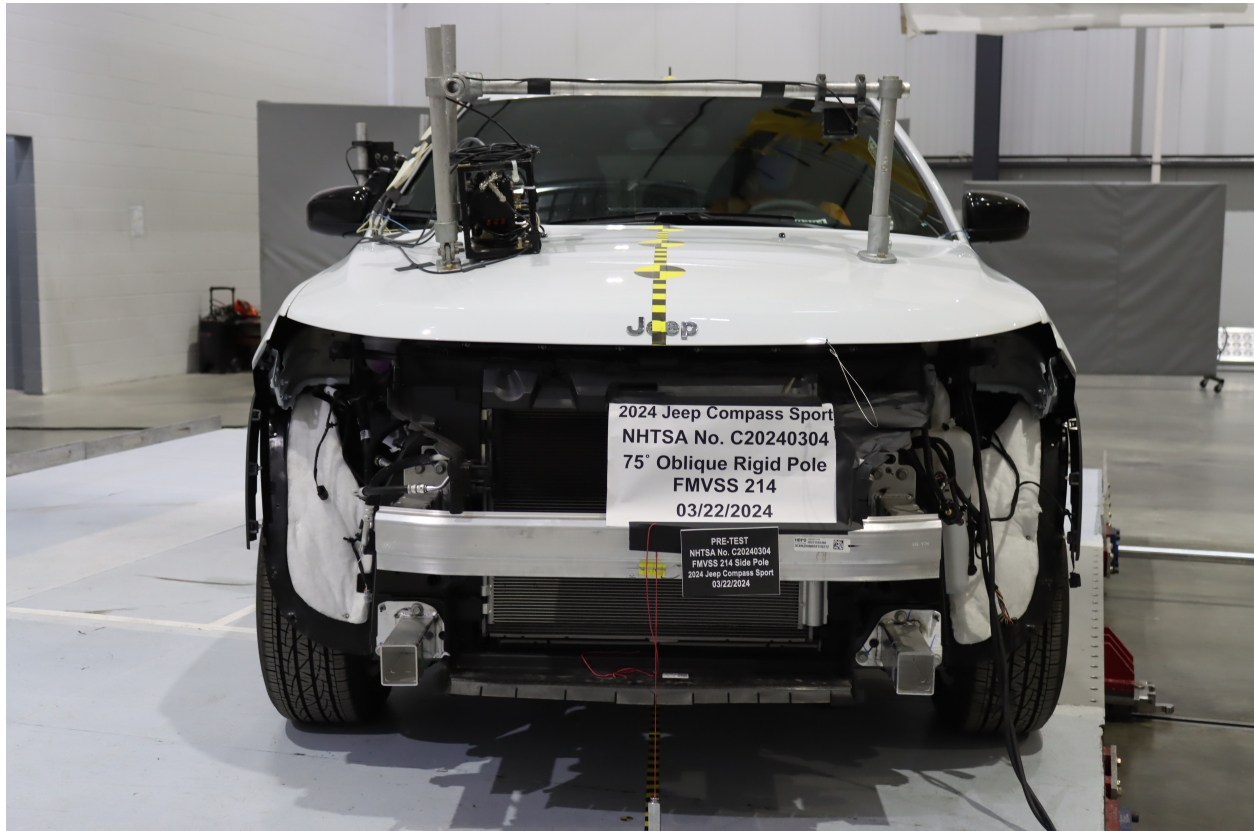


Figure A-1: Pre-Test Frontal View of Test Vehicle



Figure A-2: Post Test Frontal View of Test Vehicle



Figure A-3: Pre-Test Rear View of Test Vehicle



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



Figure A-5: Pre-Test Impacted Side View of Test Vehicle



Figure A-6: Post-Test Impacted Side View of Test Vehicle



Figure A-7: Pre-Test Left $\frac{3}{4}$ Front View of Vehicle and Pole



Figure A-8: Pre-Test Left $\frac{3}{4}$ Rear View of Vehicle and Pole



Figure A-9: Pre-Test Overhead View of Test Vehicle

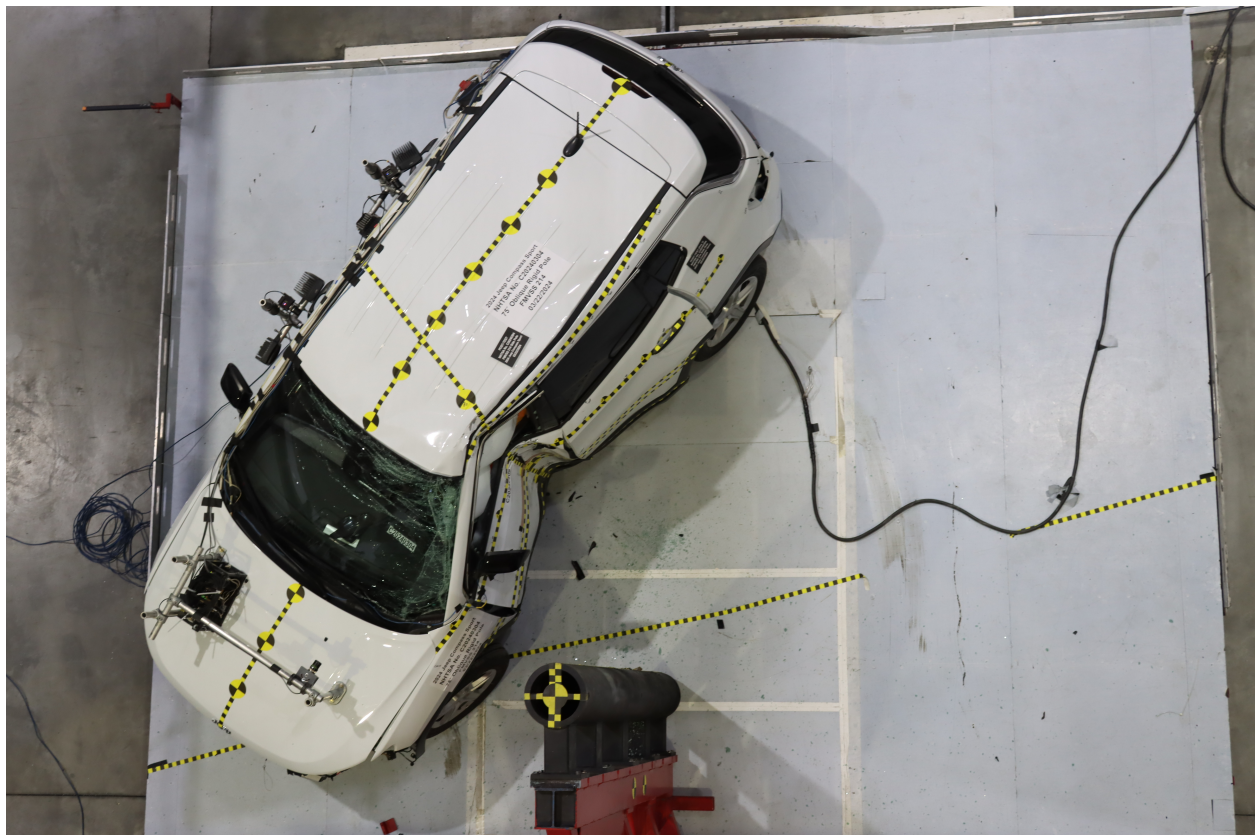


Figure A-10: Post-Test Overhead View of Test Vehicle



Figure A-11: Pre-Test Dummy Through Opposite Window



Figure A-12: Post-Test Dummy Through Opposite Window



Figure A-13: Pre-Test Close-Up of Dummy with Door Closed (Impact Side)



Figure A-14: Post-Test Close-Up of Dummy with Door Closed (Impact Side)



Figure A-15: Pre-Test Dummy with Door Open



Figure A-16: Pre-Test Dummy Shoulder and Door Top View



Figure A-17: Post-Test Dummy Shoulder and Door Top View



Figure A-18: Pre-Test Interior of Front Door Closed (through opposite window)



Figure A-19: Post-Test Interior of Front Door Showing Dummy Impact Locations



Figure A-20: Impact Event



Figure A-21: Post-Test Impact Zone Close-Up View



Figure A-22: Post-Test $\frac{3}{4}$ Front View of Impact Zone



Figure A-23: Post-Test ¾ Rear View of Impact Zone



Figure A-24: Post-Test Close-Up View of Impact Point Target

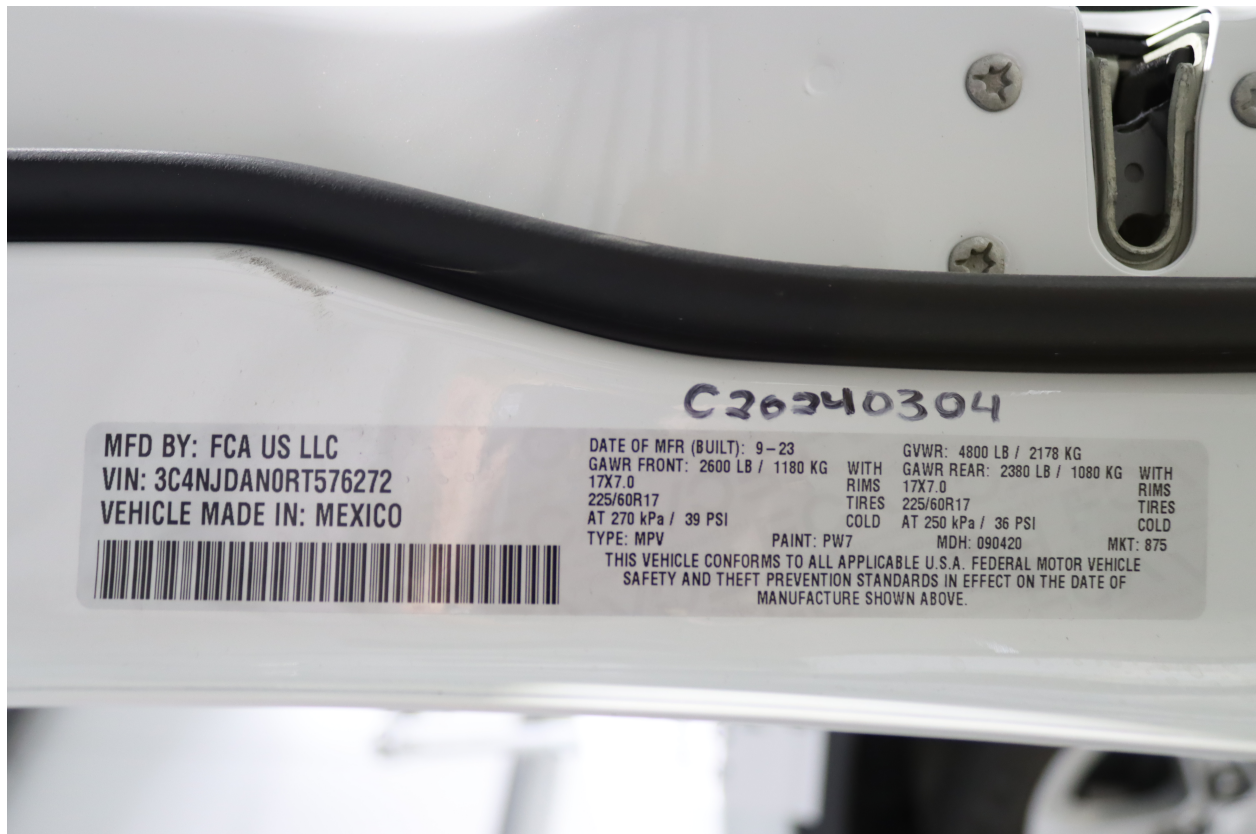


Figure A-25: Close-Up View of Vehicle's Certification Label

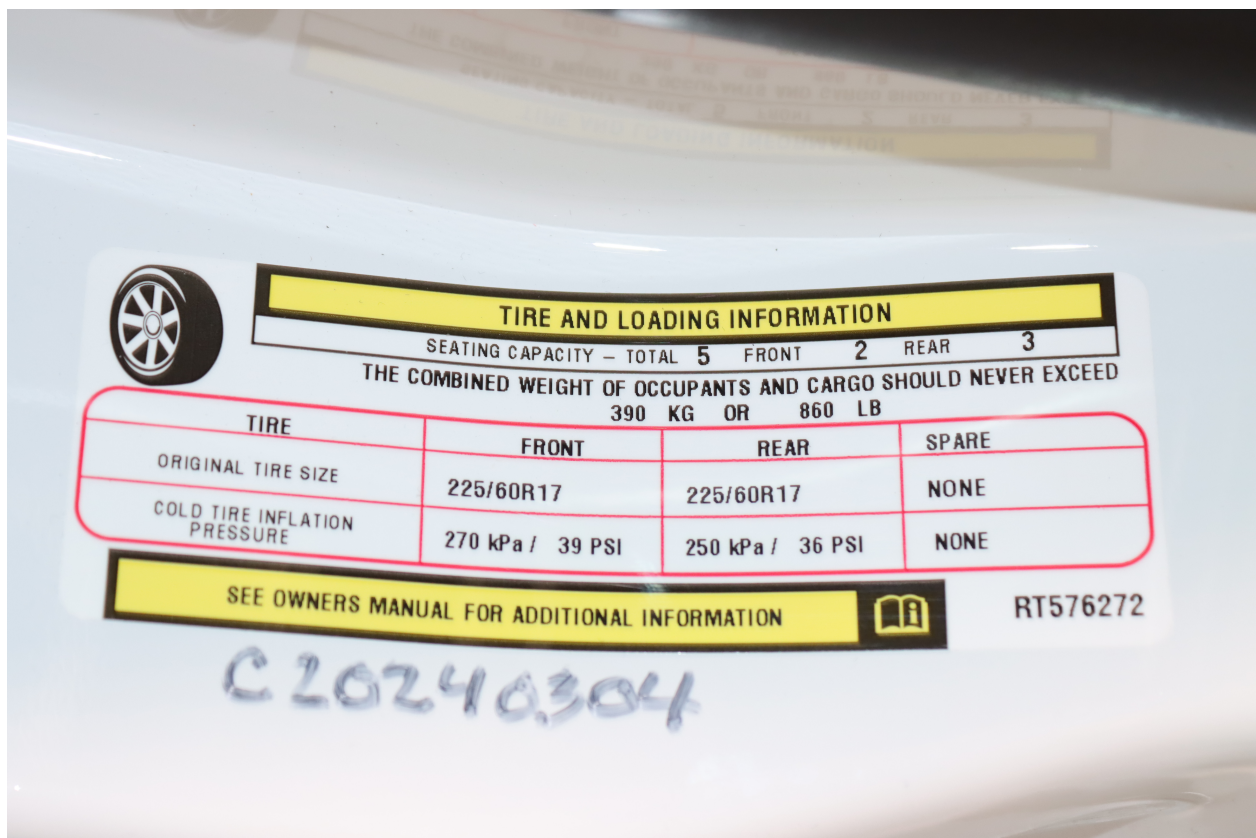


Figure A-26: Close-Up View of Vehicle's Tire Placard Label

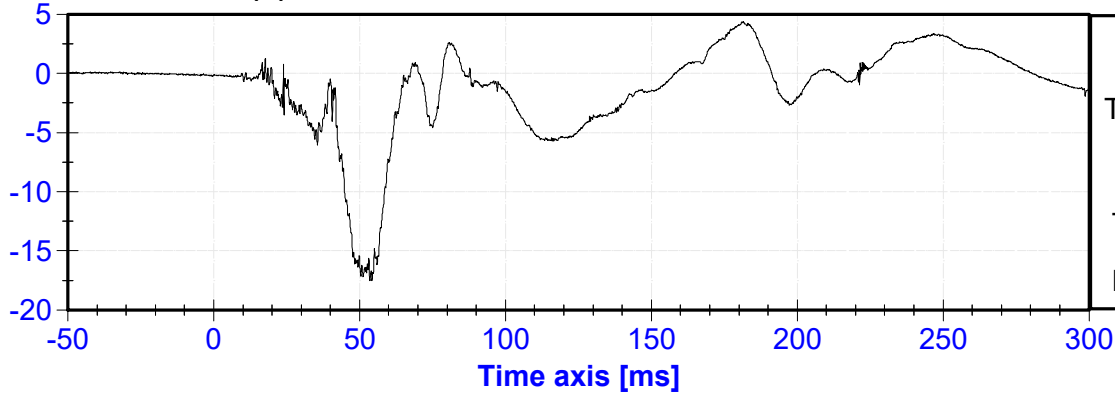
APPENDIX II
ES-2re DUMMY RESPONSE DATA TRACES

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14	ES-2re Front Abdomen Force (Y) vs. Time	II-6
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17	ES-2re Sum of Abdomen Forces vs. Time	II-7
18	ES-2re Pubic Symphysis Force (Y) vs. Time	II-7

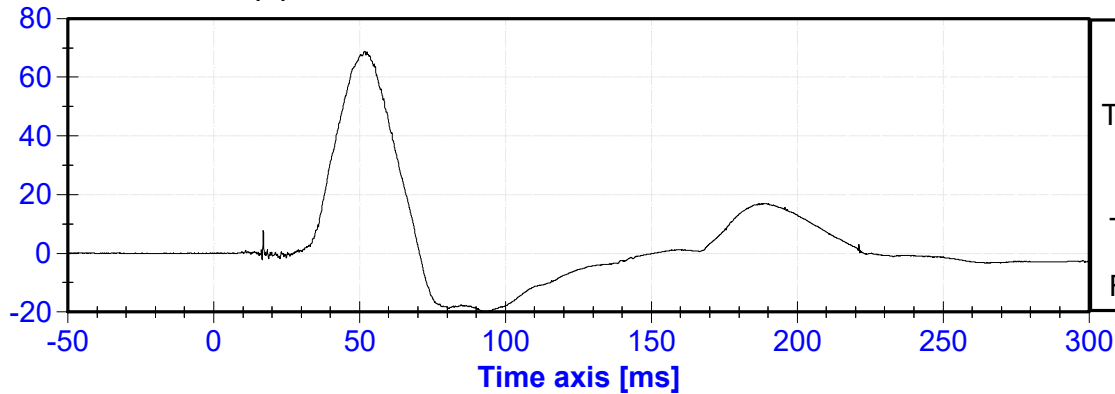
ACCELERATION [g's]

ES-2re Head (X) Acceleration vs. Time



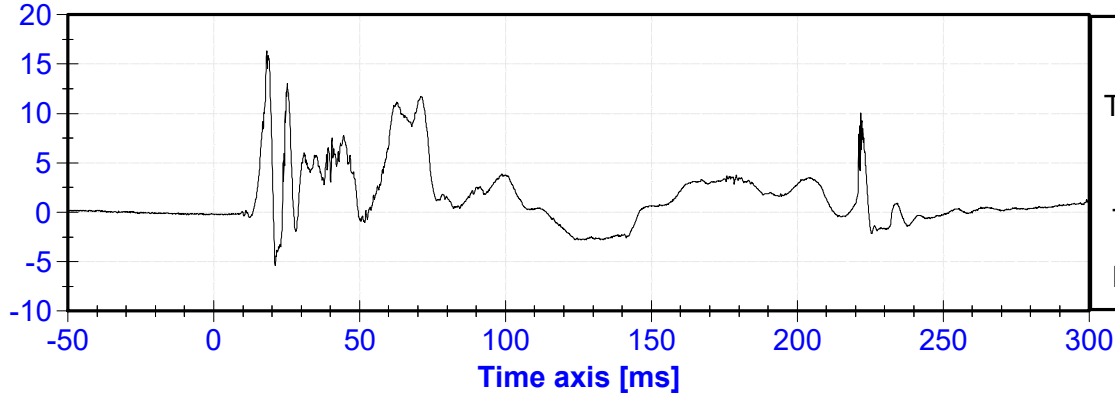
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ES-2re Head (Y) Acceleration vs. Time



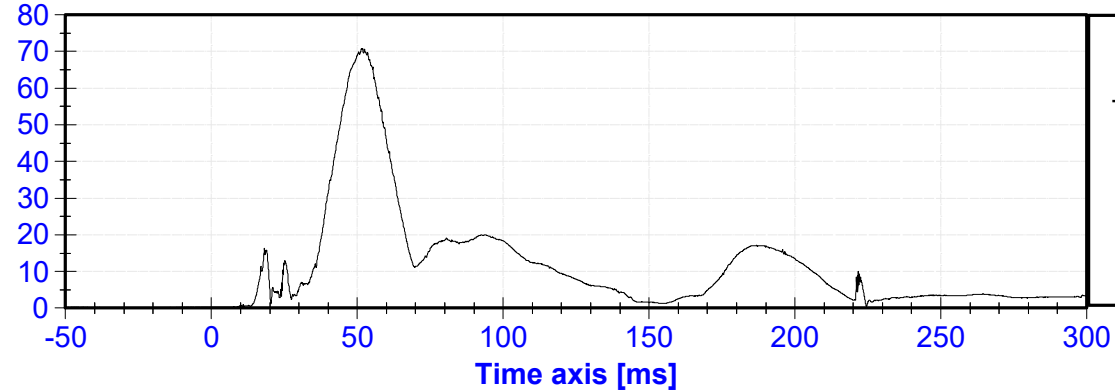
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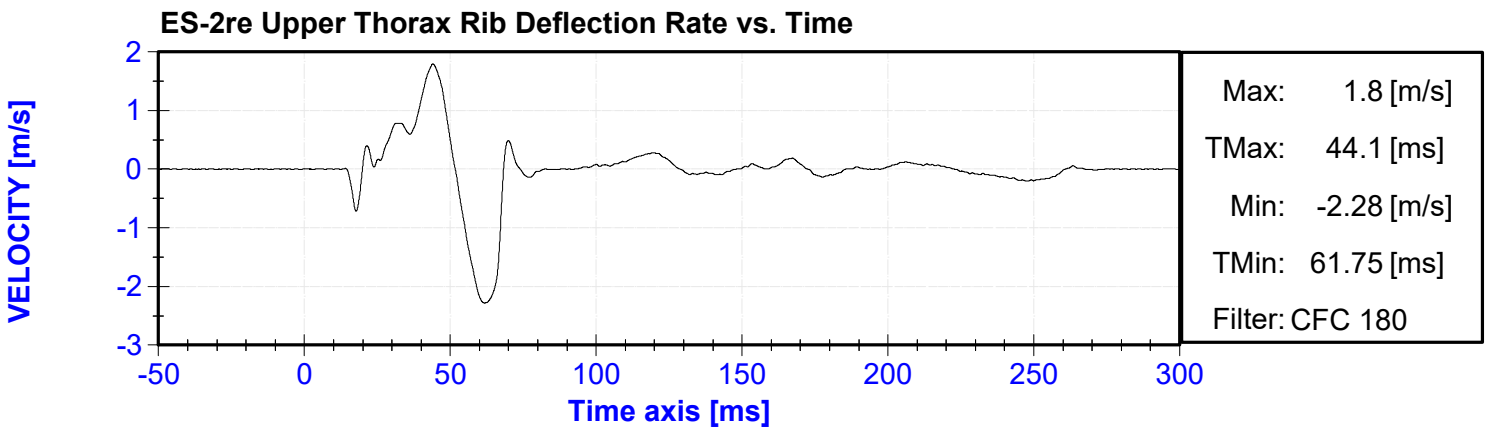
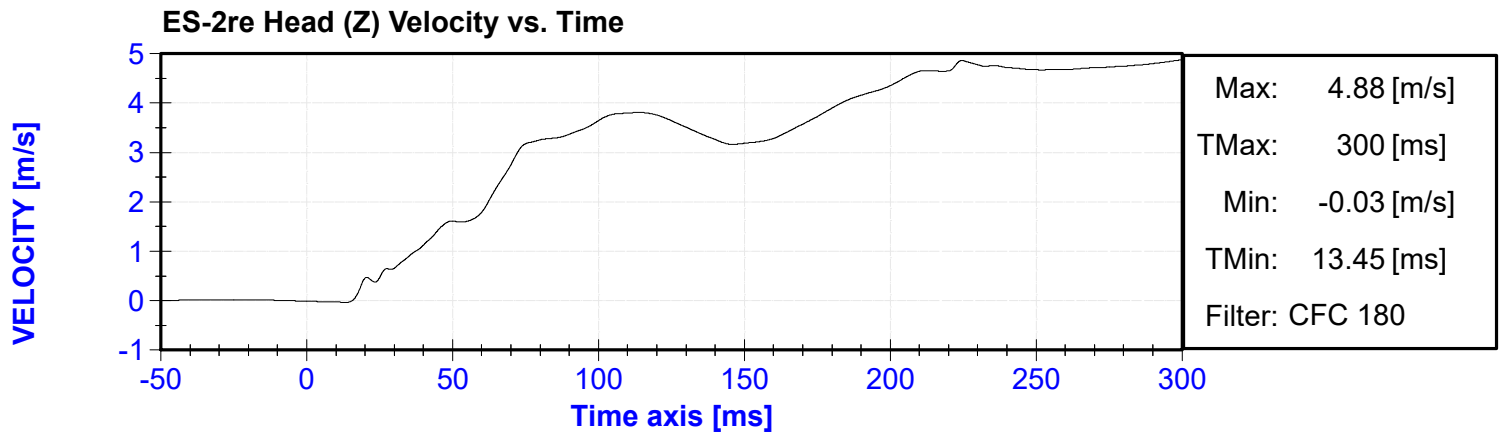
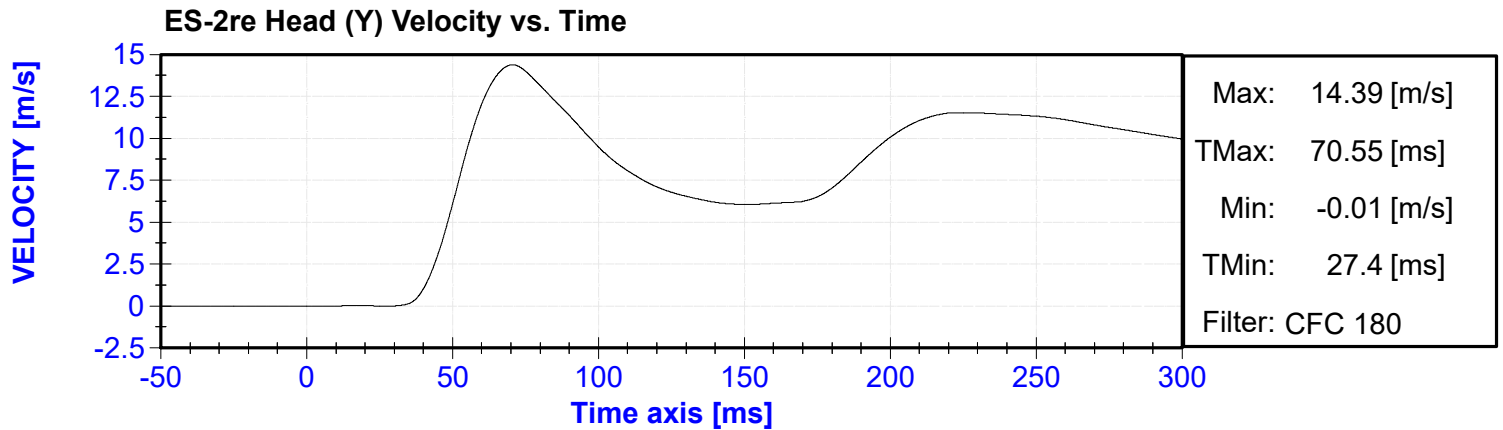
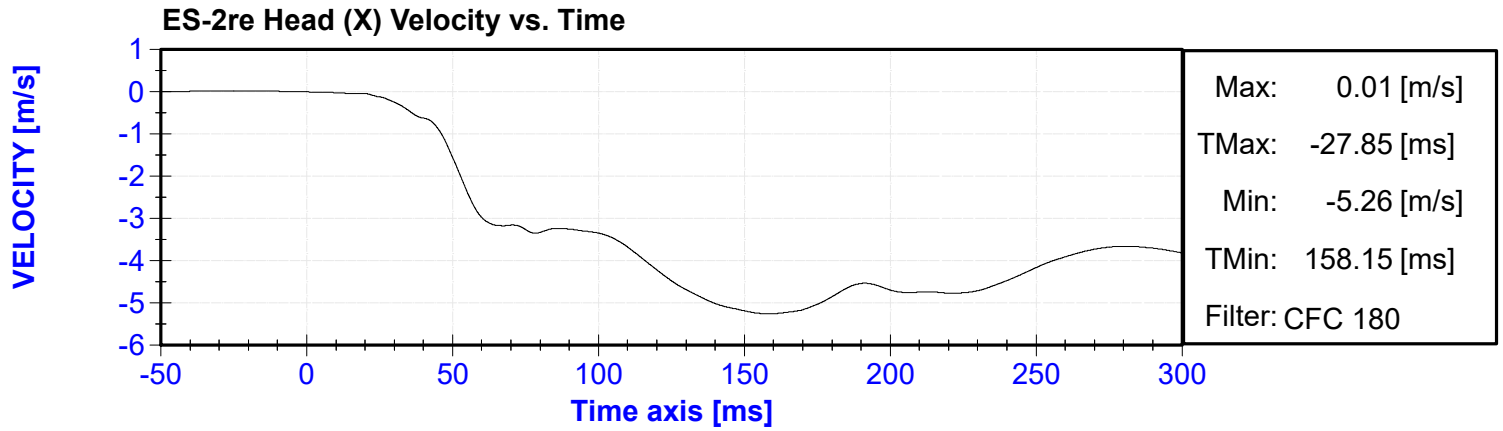
ES-2re Head (Z) Acceleration vs. Time



ACCELERATION [g's]

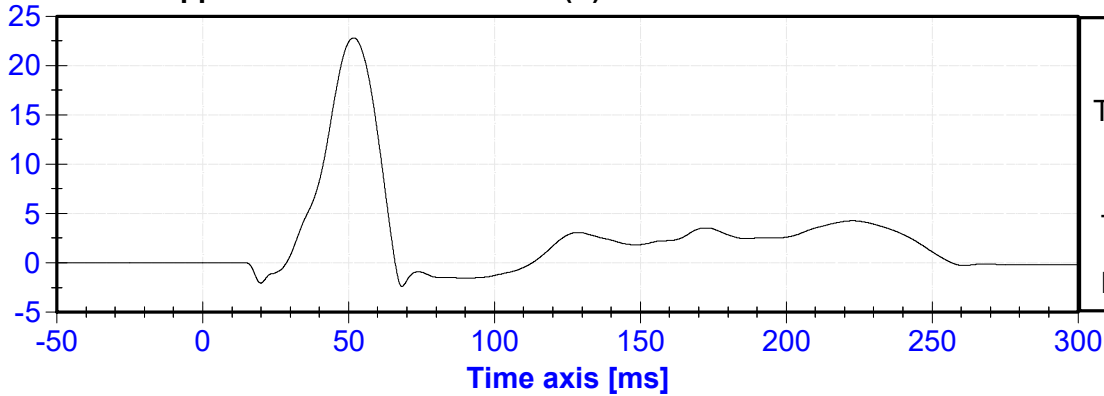
ES-2re Head Resultant Acceleration vs. Time





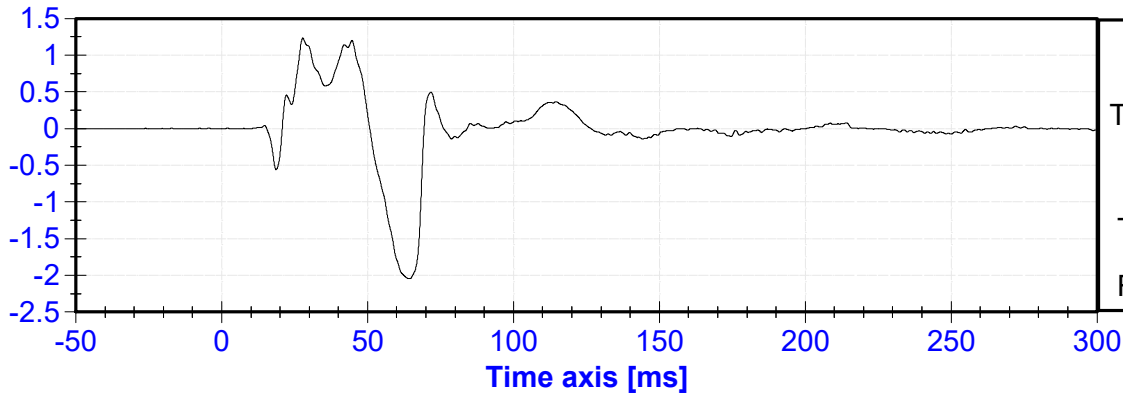
ES-2re Upper Thorax Rib Deflection (Y) vs. Time

DISPLACEMENT [mm]



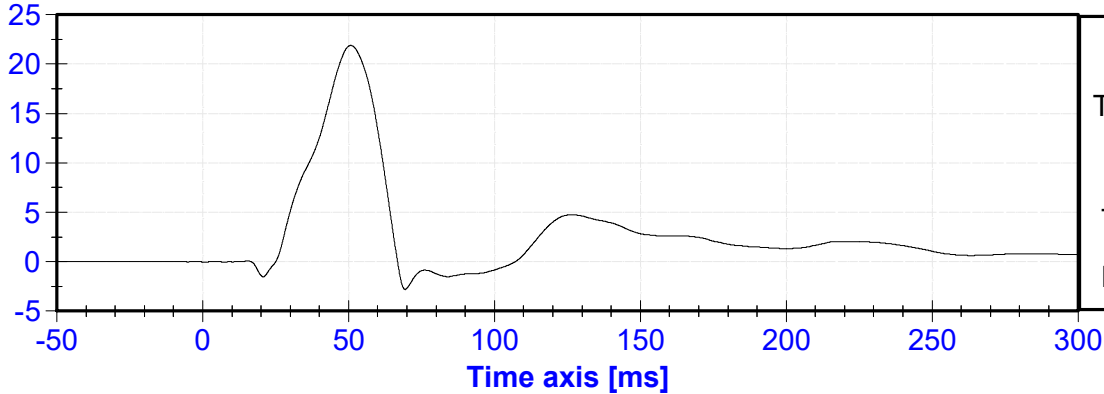
ES-2re Middle Thorax Rib Deflection Rate vs. Time

VELOCITY [m/s]



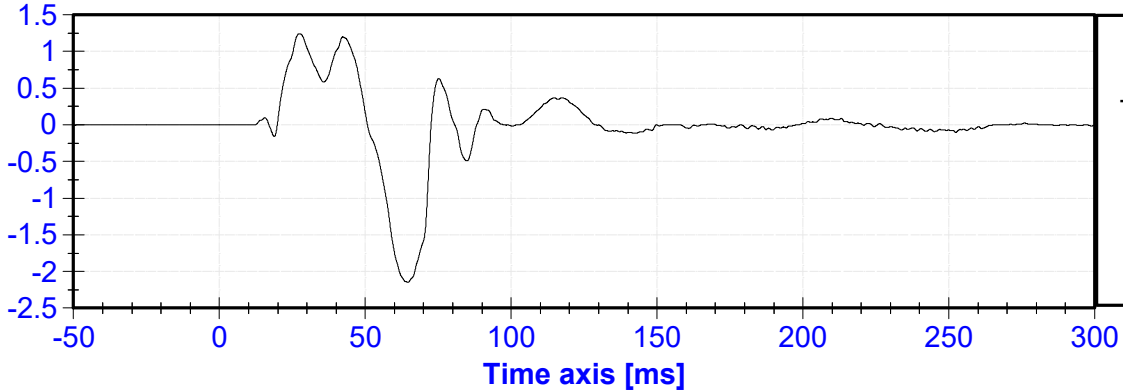
ES-2re Middle Thorax Rib Deflection (Y) vs. Time

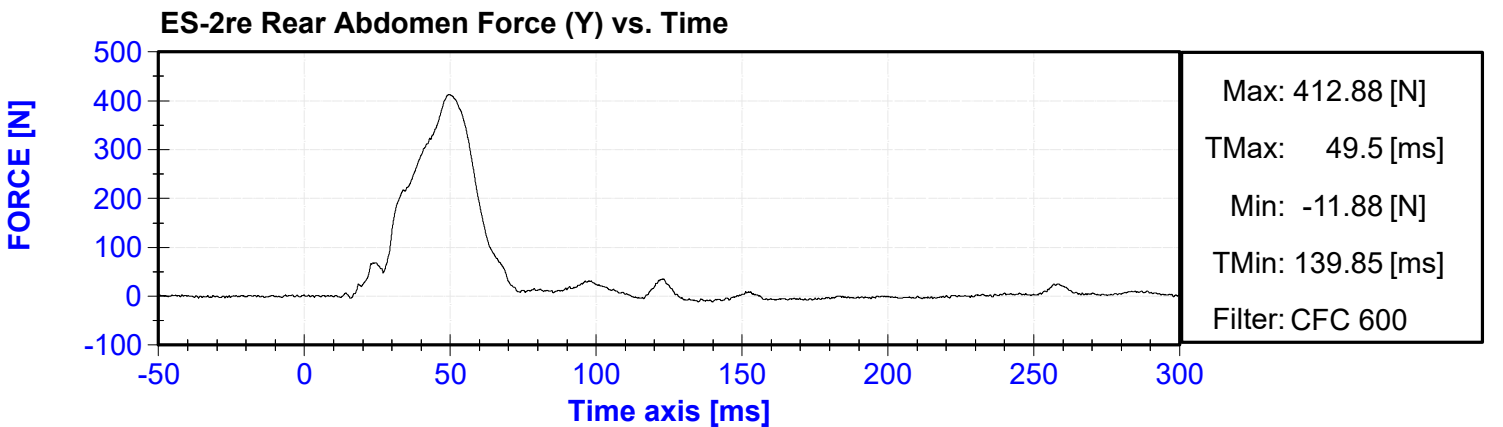
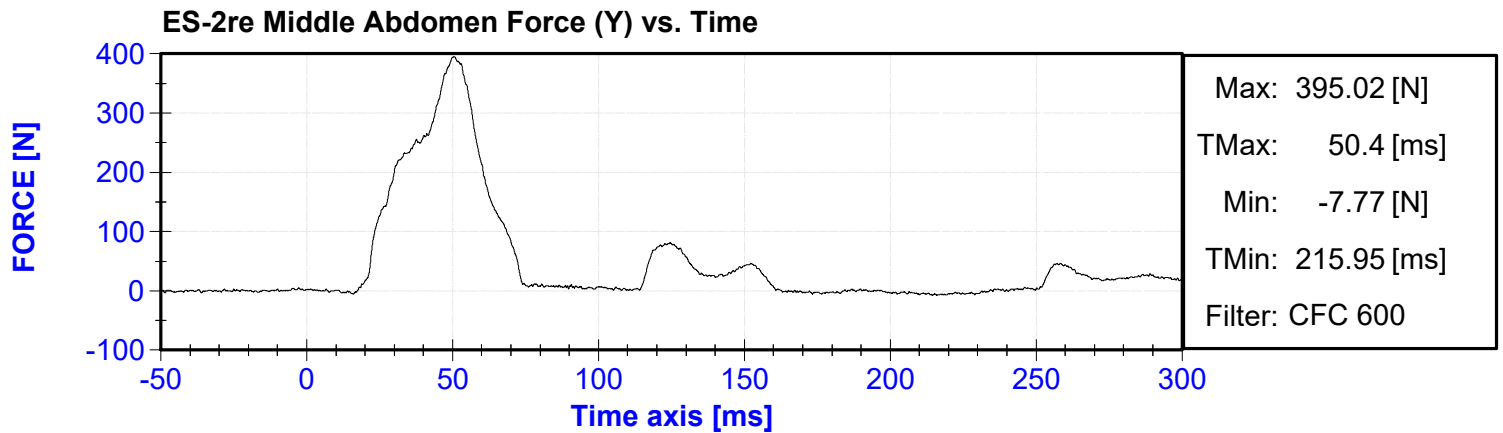
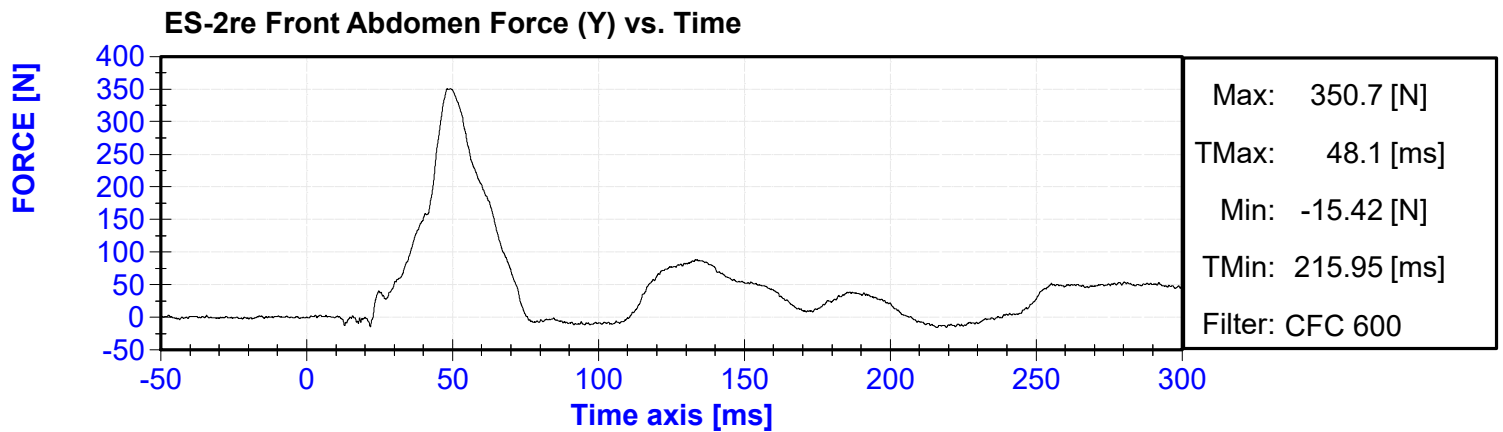
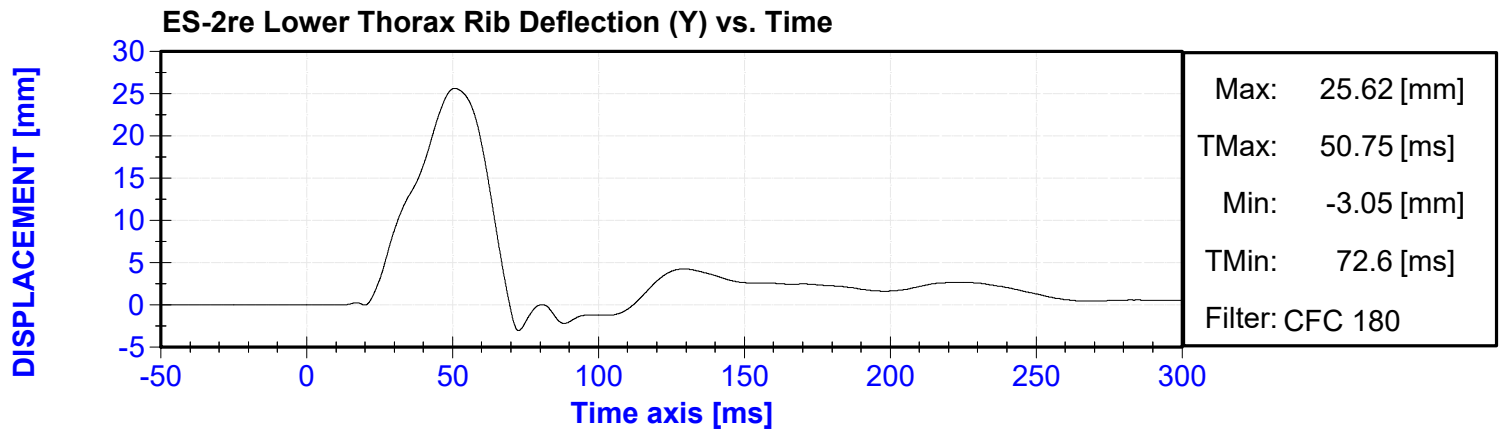
DISPLACEMENT [mm]

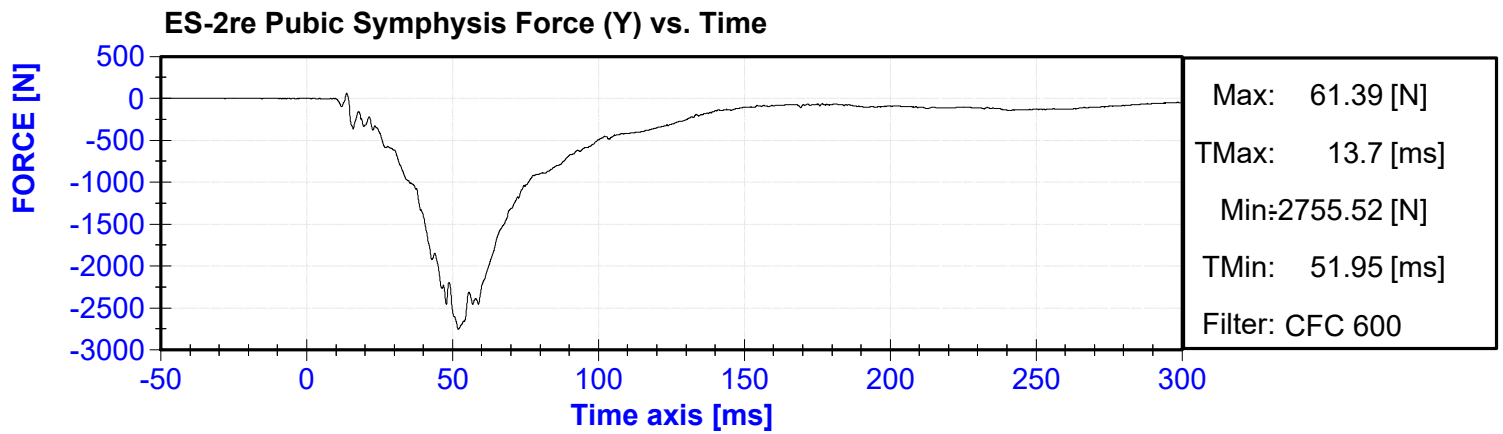
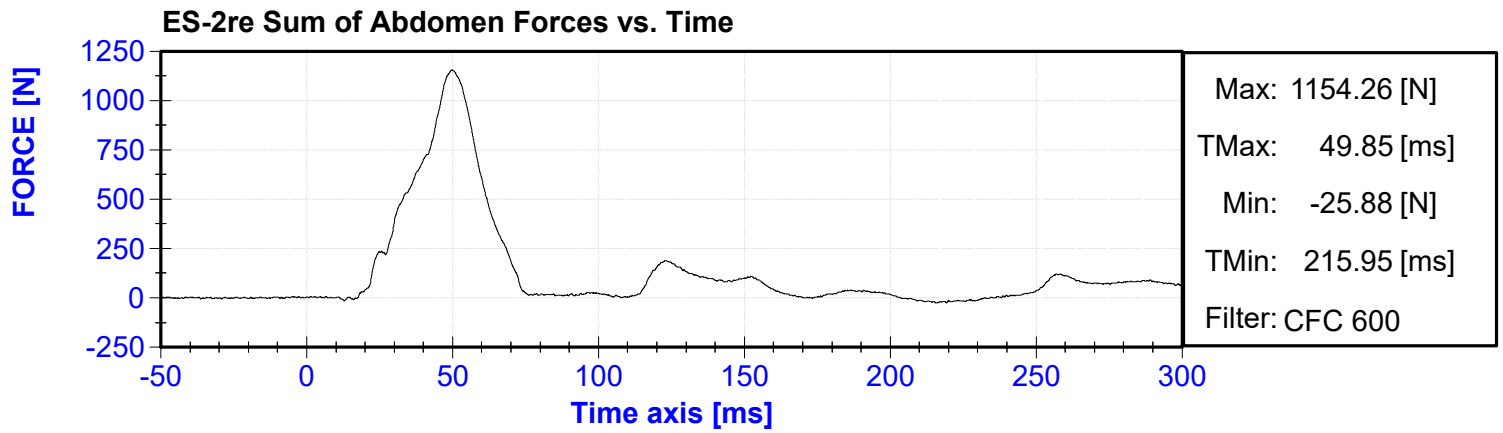


ES-2re Lower Thorax Rib Deflection Rate vs. Time

VELOCITY [m/s]





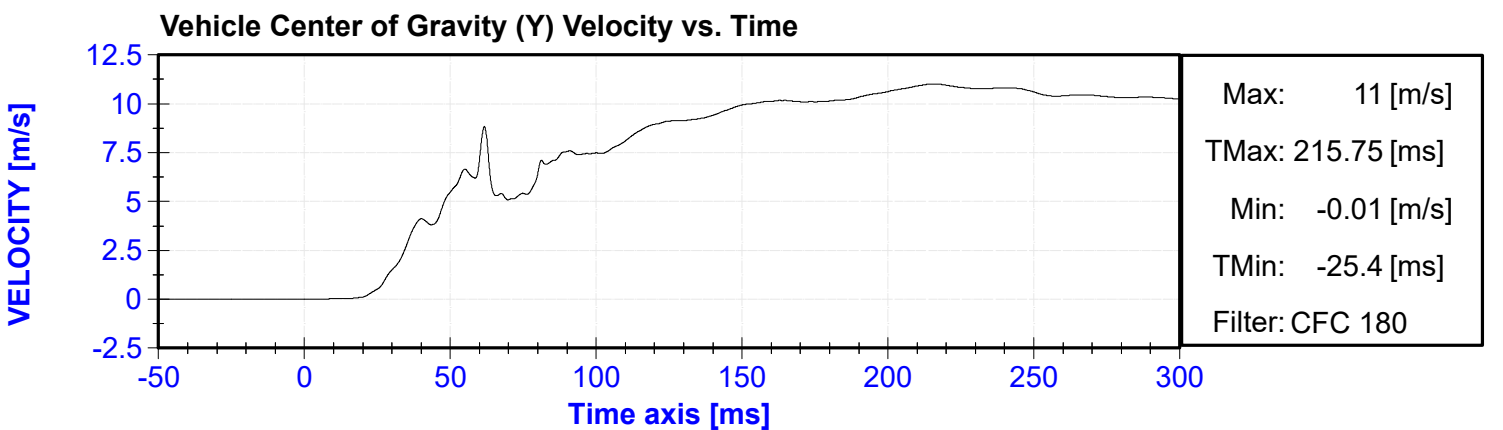
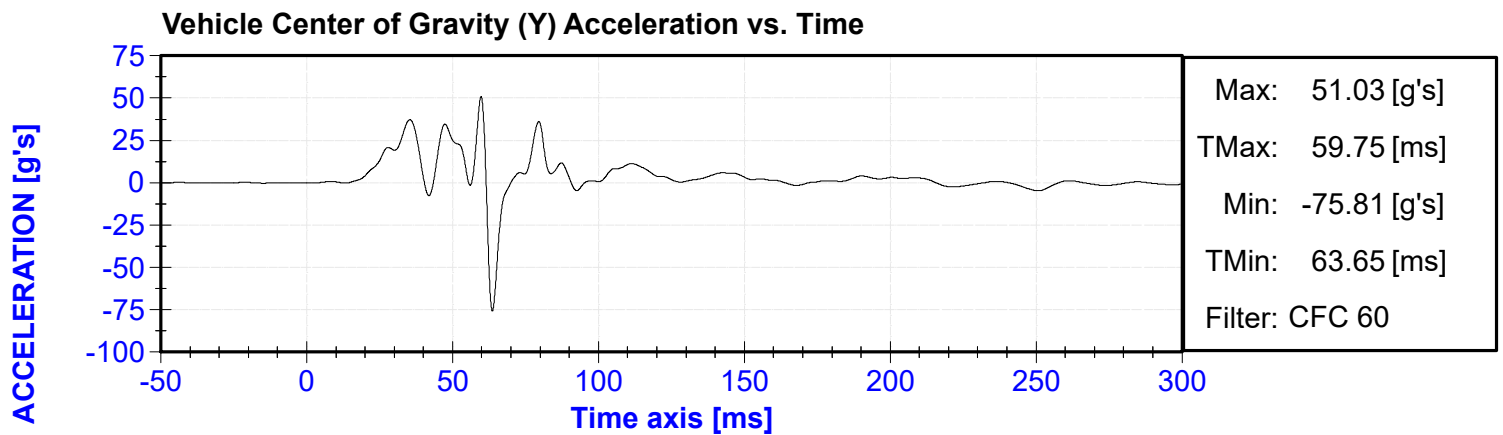
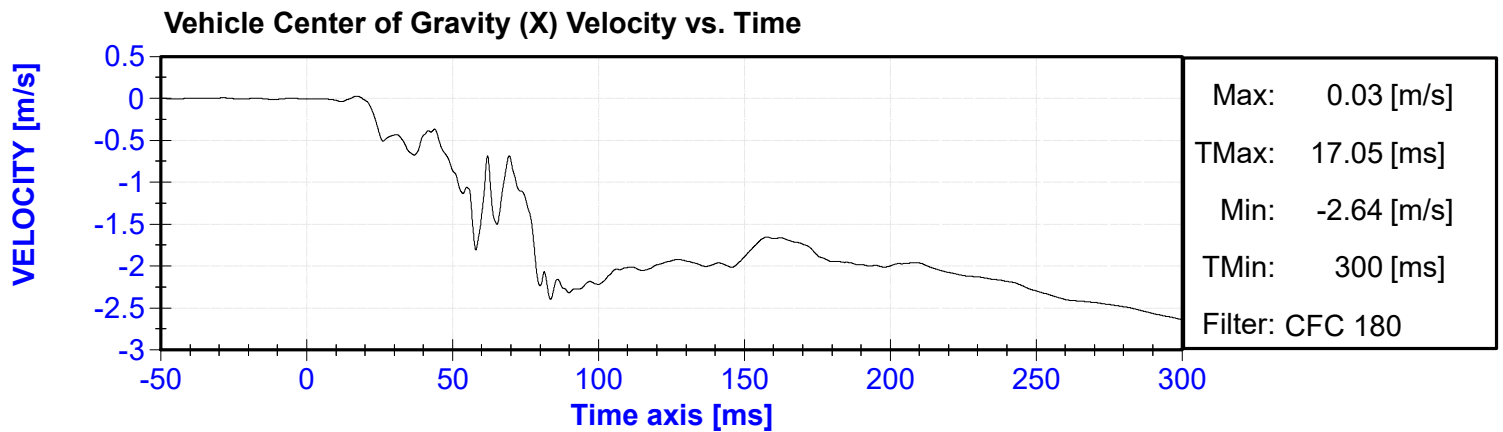
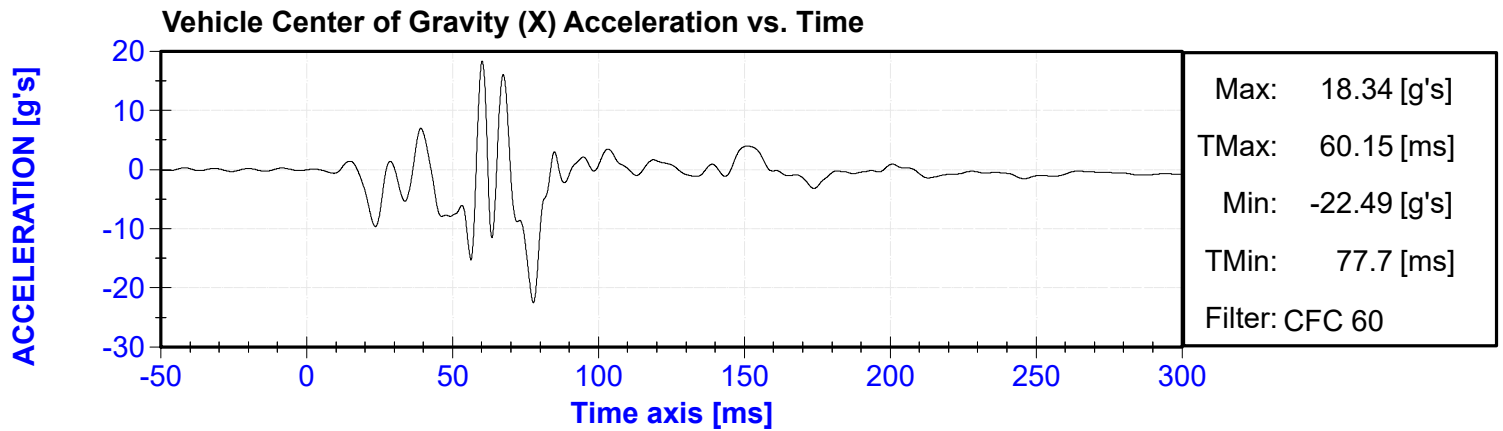


APPENDIX III

VEHICLE ACCELEROMETER RESPONSE DATA

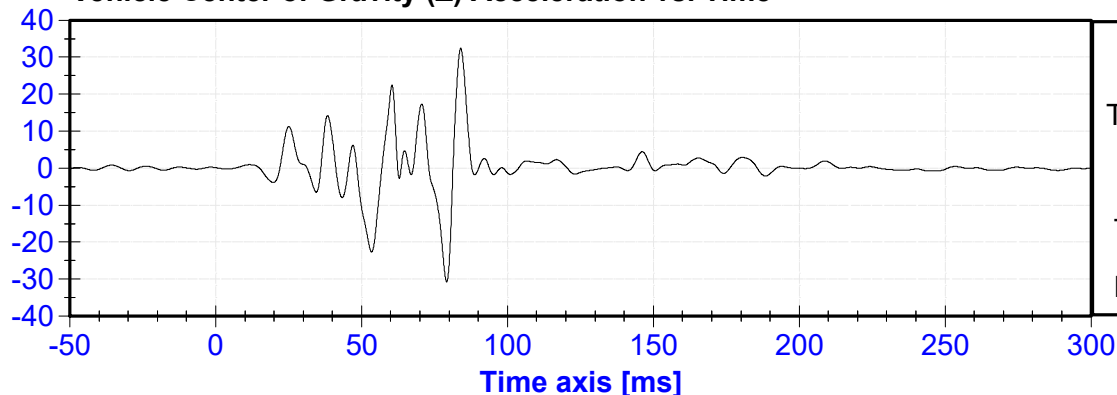
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17	A-Pillar Mid (Y) Acceleration vs. Time	III-7
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19	A-Pillar Mid (Y) Displacement vs. Time	III-7
20	B-Pillar Sill (Y) Acceleration vs. Time	III-7
21	B-Pillar Sill (Y) Velocity vs. Time	III-8
22	B-Pillar Sill (Y) Displacement vs. Time	III-8
23	B-Pillar Low (Y) Acceleration vs. Time	III-8
24	B-Pillar Low (Y) Velocity vs. Time	III-8
25	B-Pillar Low (Y) Displacement vs. Time	III-9
26	B-Pillar Mid (Y) Acceleration vs. Time	III-9
27	B-Pillar Mid (Y) Velocity vs. Time	III-9
28	B-Pillar Mid (Y) Displacement vs. Time	III-9
29	Seat (Y) Acceleration vs. Time	III-10
30	Seat (Y) Velocity vs. Time	III-10
31	Seat (Y) Displacement vs. Time	III-10
32	Engine (X) Acceleration vs. Time	III-10
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35	Engine (Y) Velocity vs. Time	III-11
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42	Rear Deck (X) Acceleration vs. Time	III-13
43	Rear Deck (X) Velocity vs. Time	III-13
44	Rear Deck (Y) Acceleration vs. Time	III-13
45	Rear Deck (Y) Velocity vs. Time	III-14



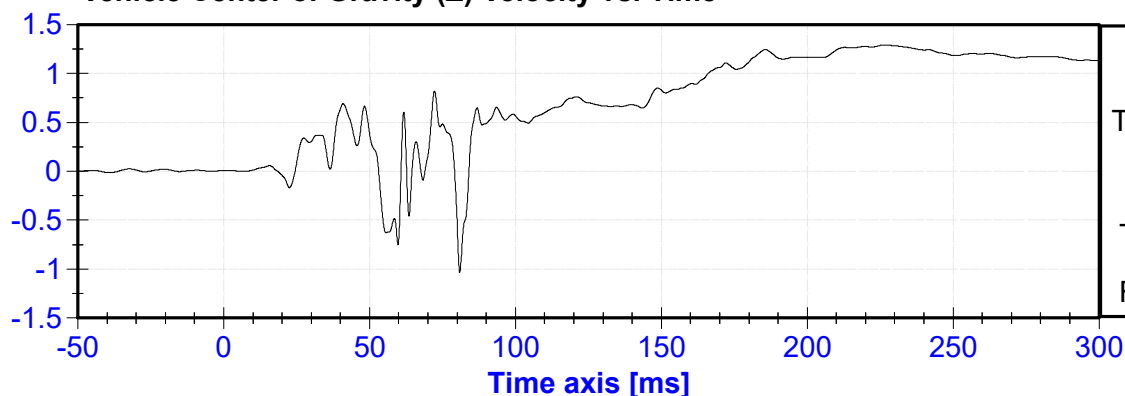
ACCELERATION [g's]

Vehicle Center of Gravity (Z) Acceleration vs. Time



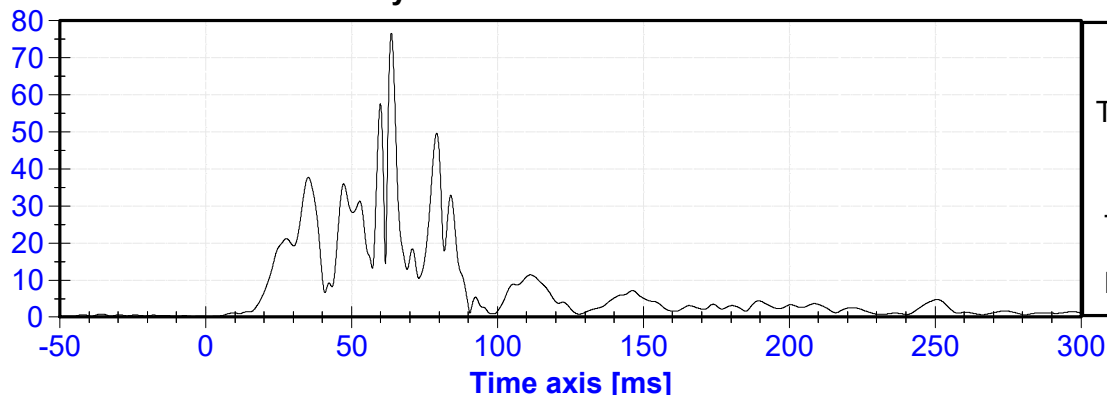
VELOCITY [m/s]

Vehicle Center of Gravity (Z) Velocity vs. Time



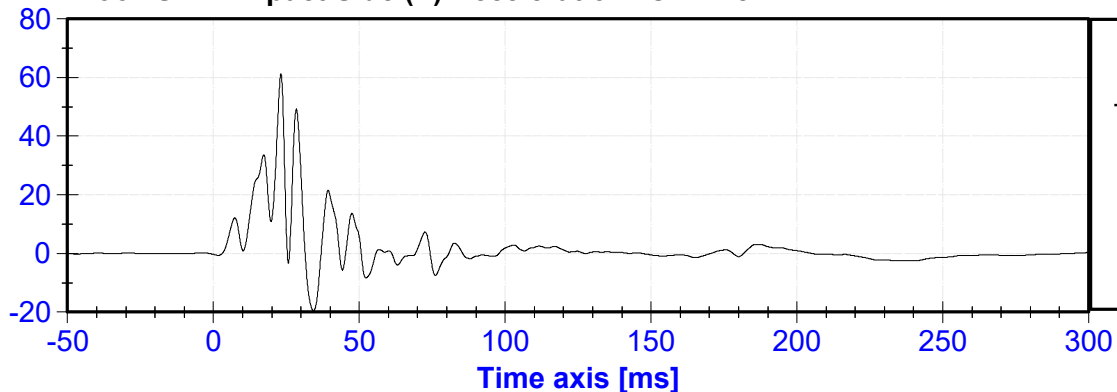
ACCELERATION [g's]

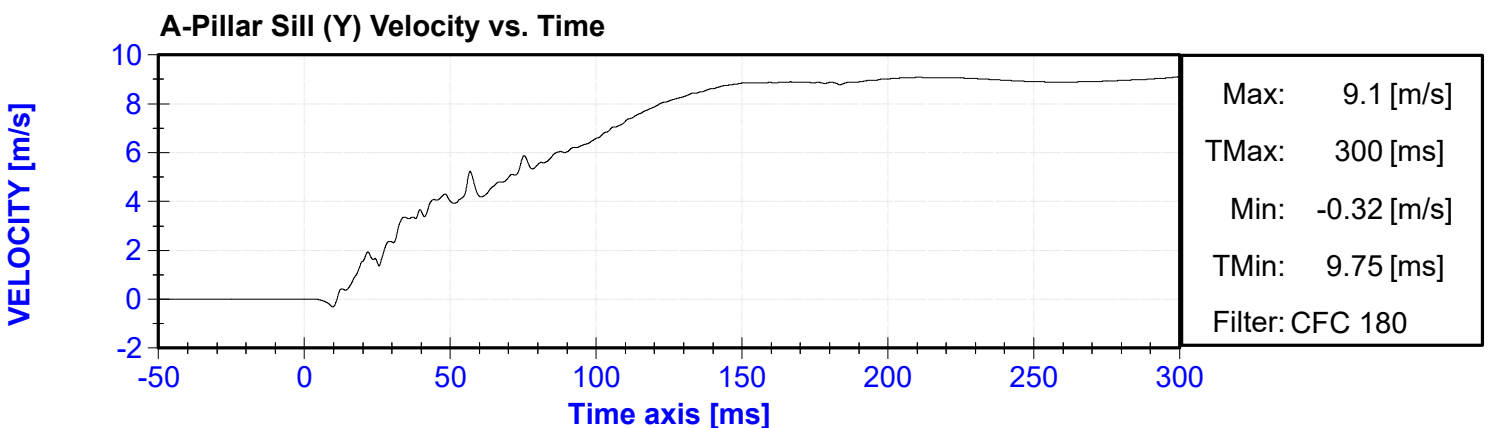
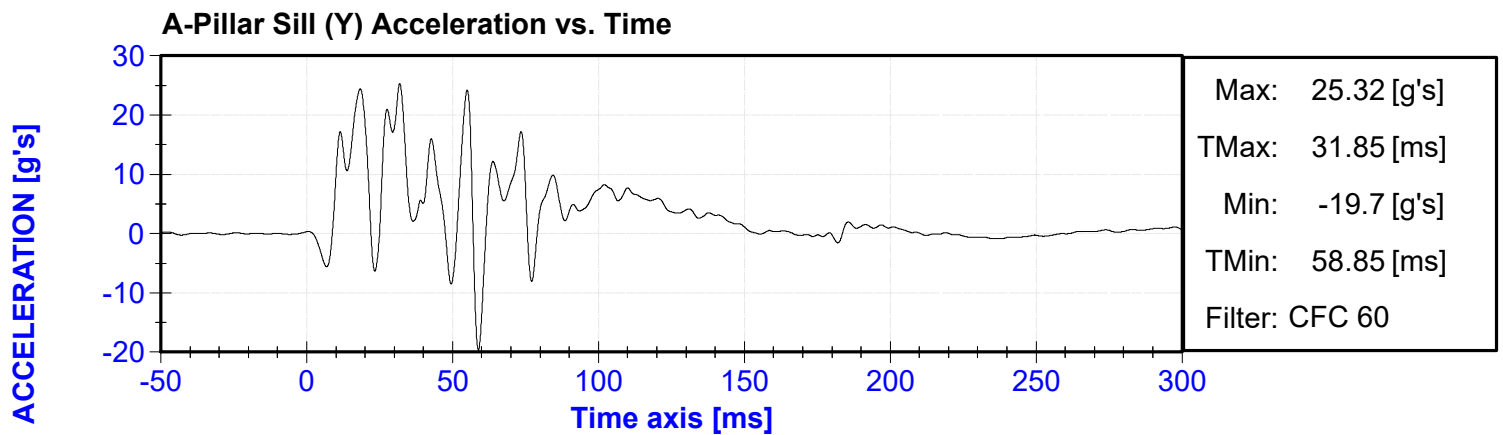
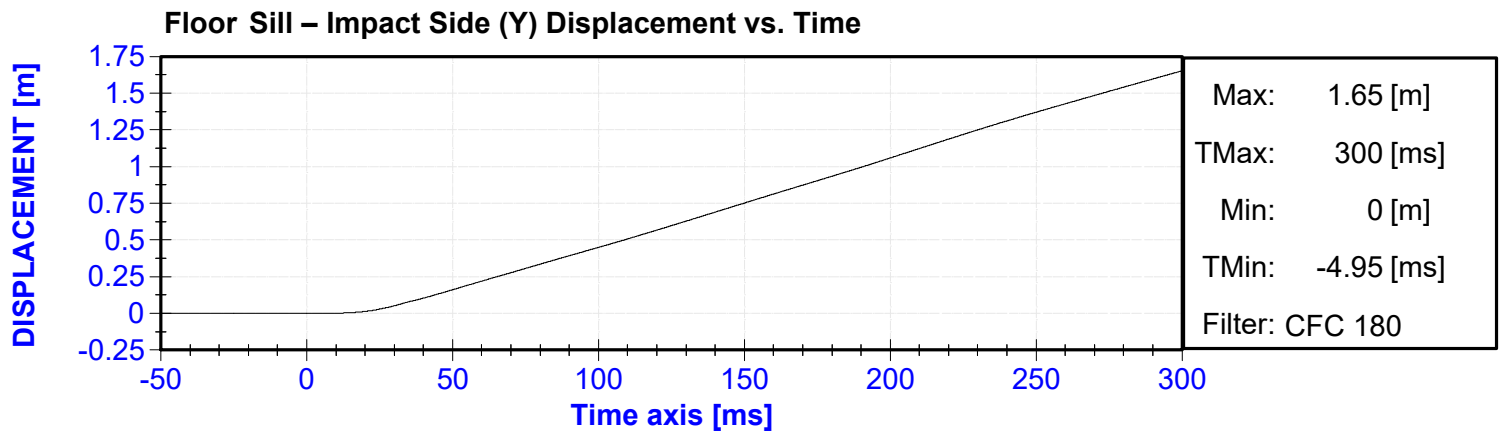
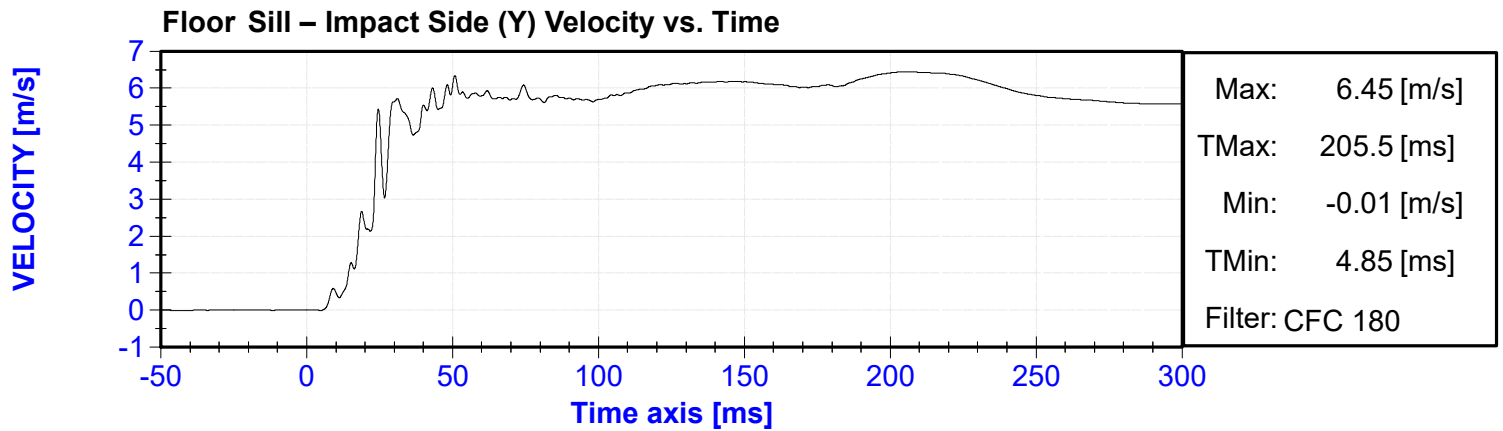
Vehicle Center of Gravity Resultant Acceleration vs. Time

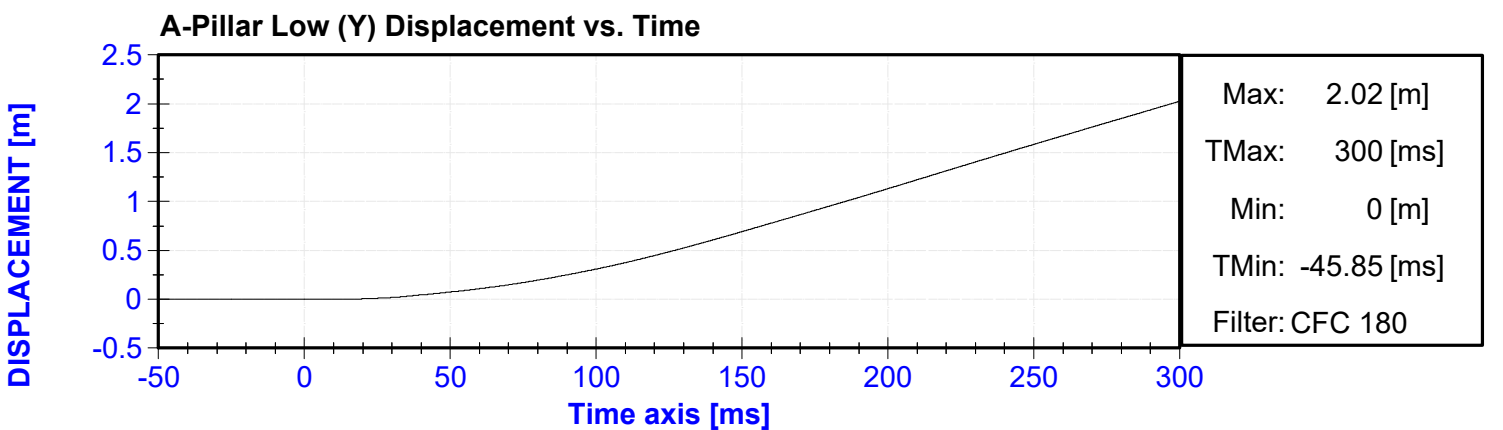
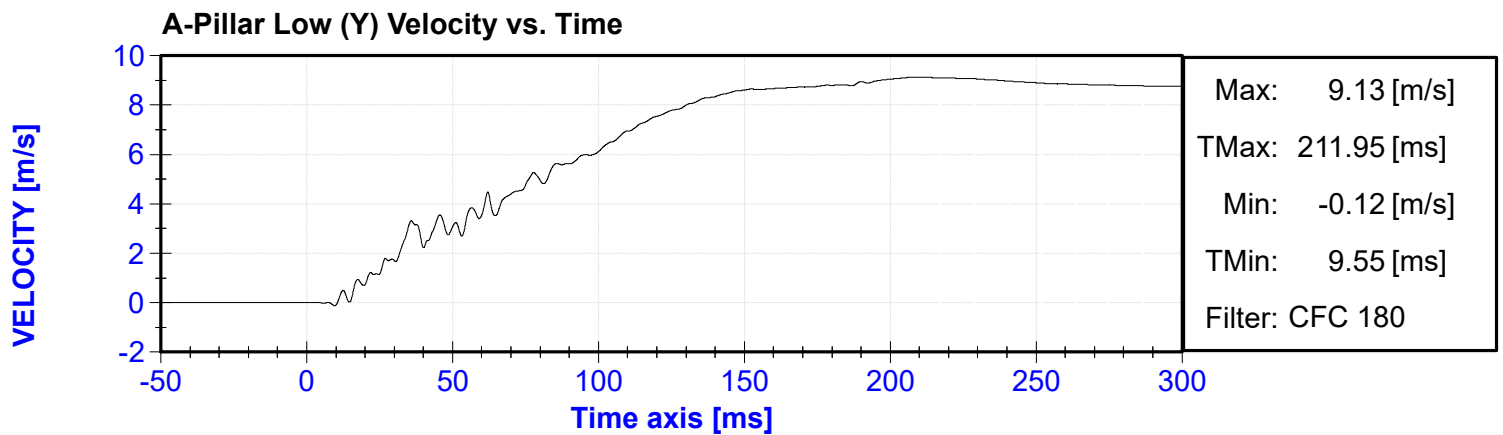
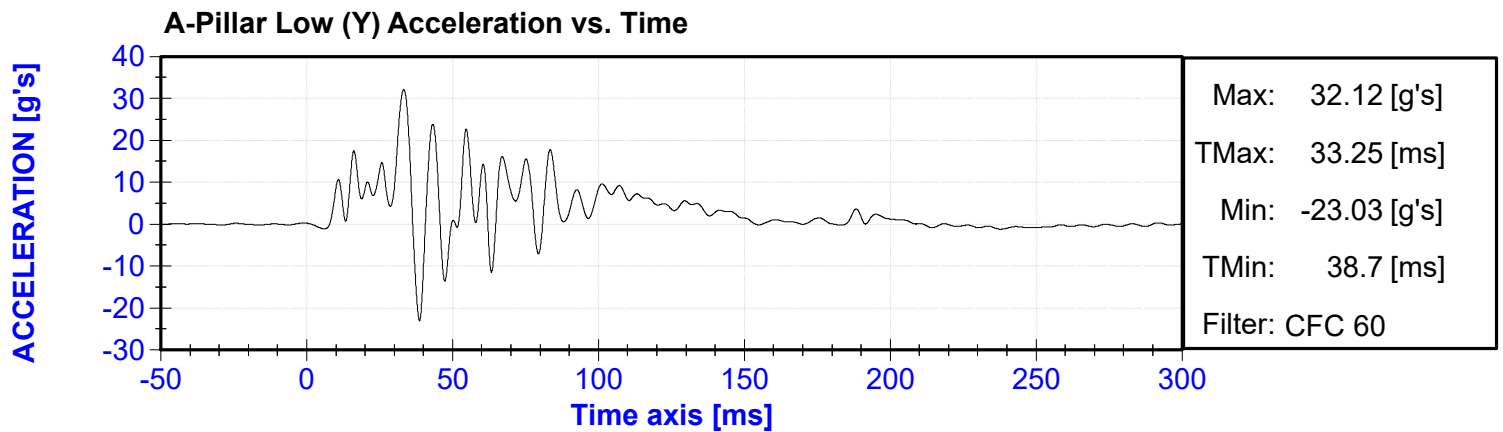
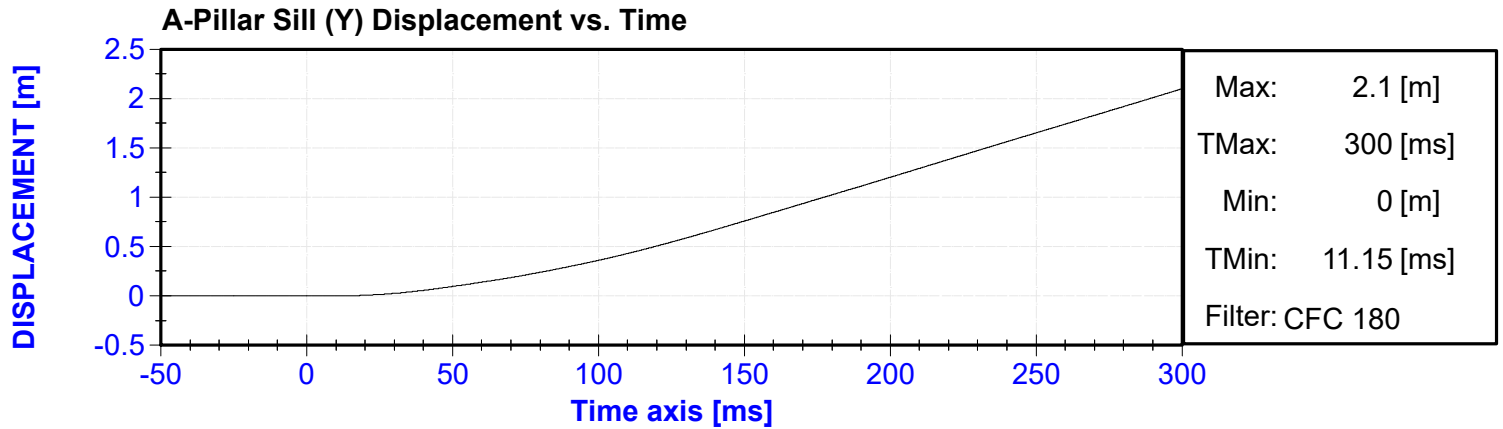


ACCELERATION [g's]

Floor Sill – Impact Side (Y) Acceleration vs. Time

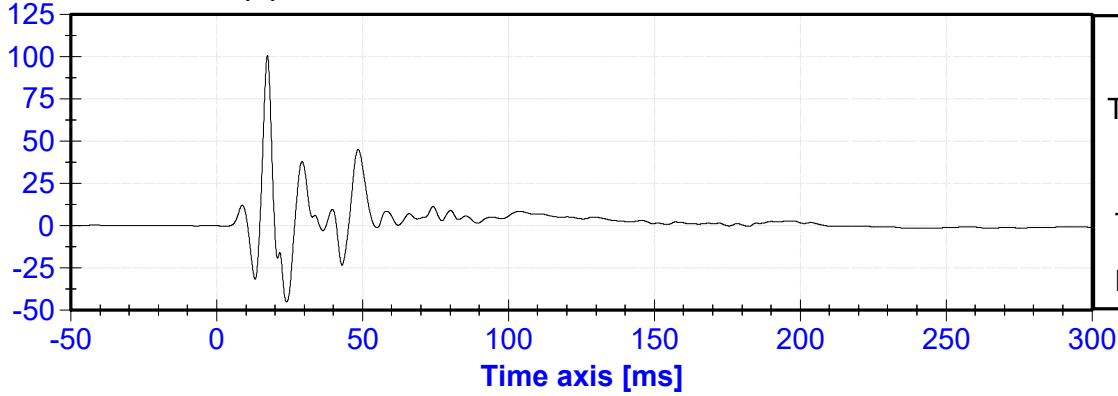






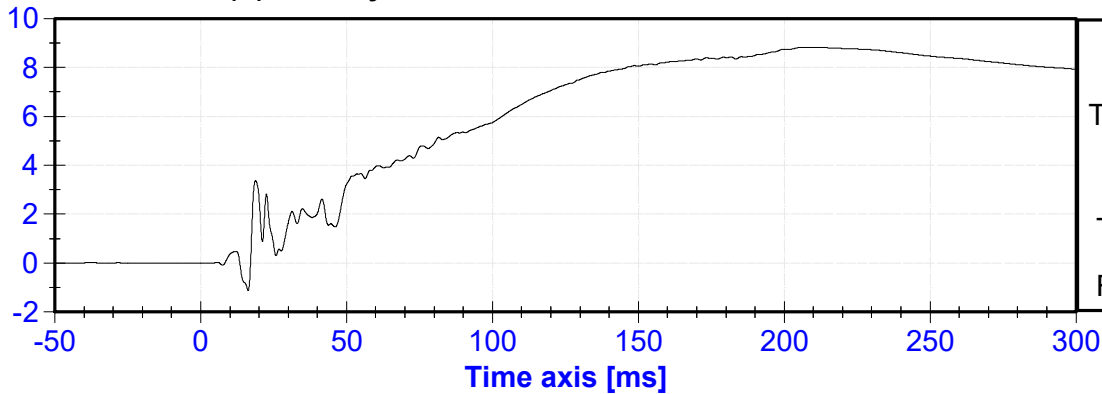
ACCELERATION [g's]

A-Pillar Mid (Y) Acceleration vs. Time



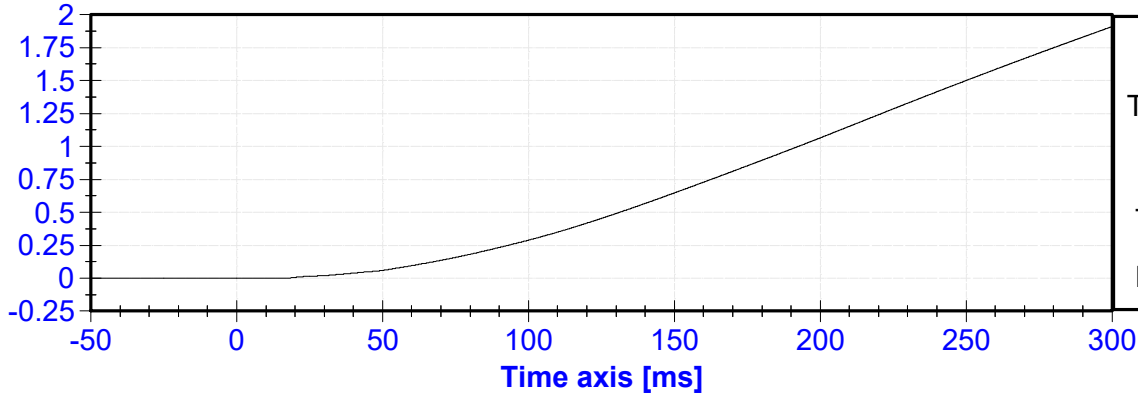
VELOCITY [m/s]

A-Pillar Mid (Y) Velocity vs. Time



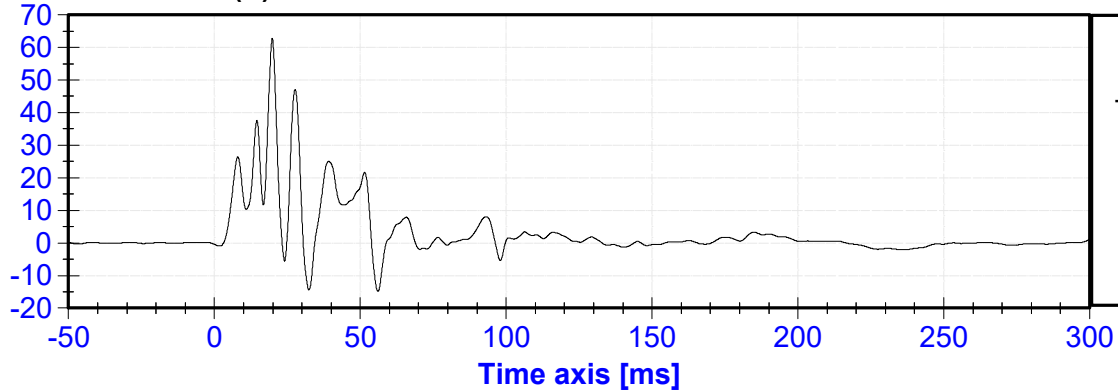
DISPLACEMENT [m]

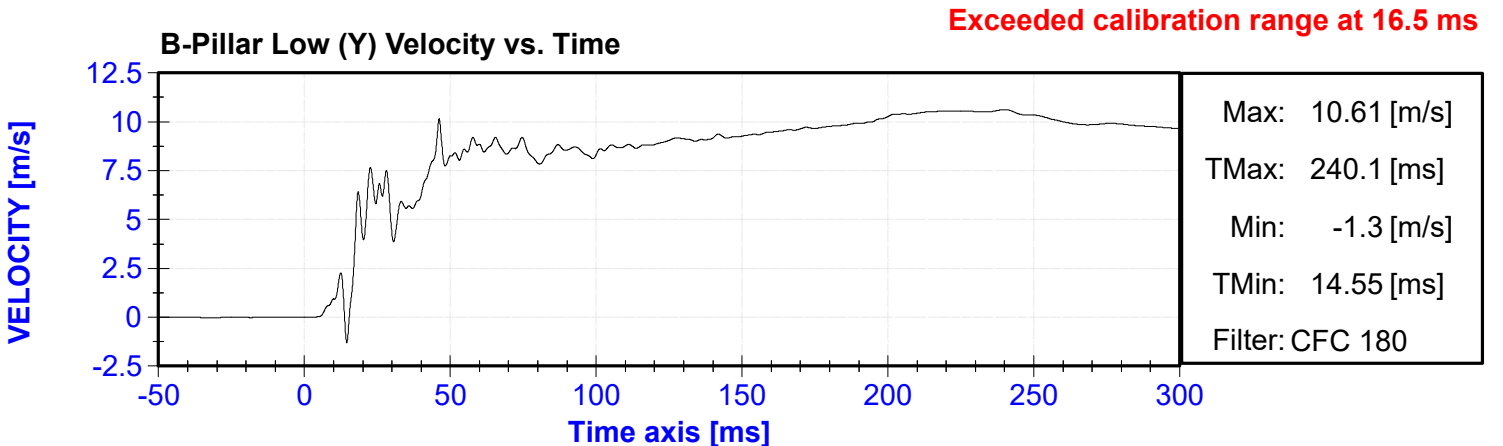
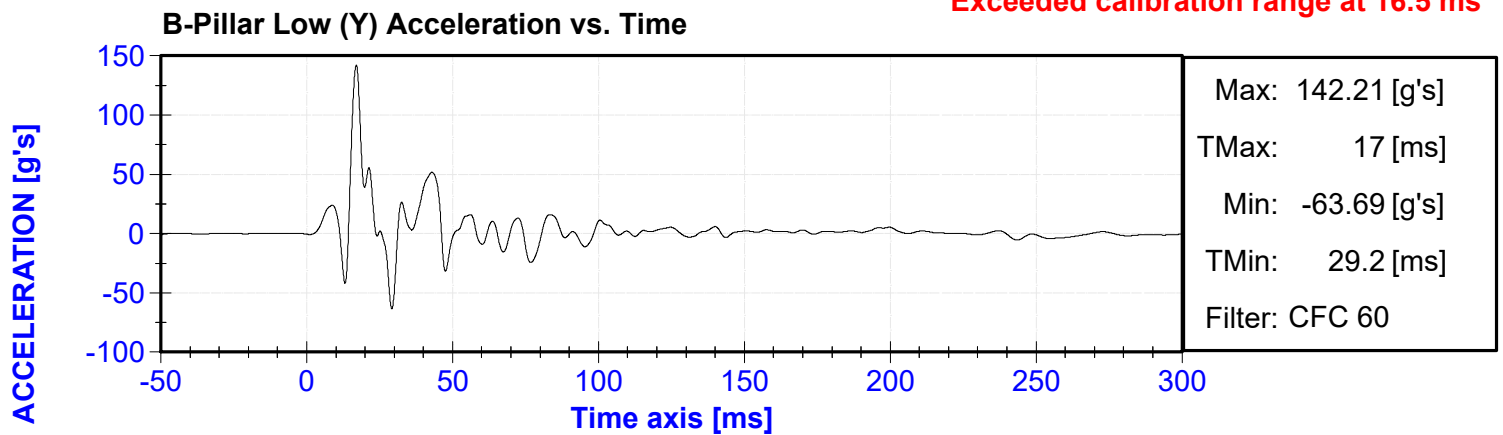
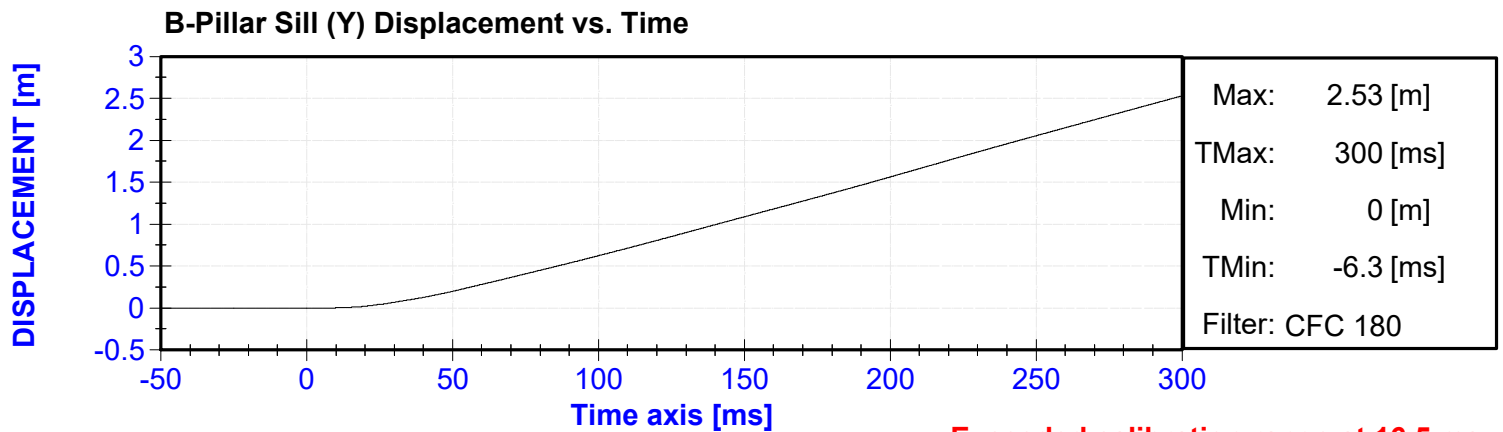
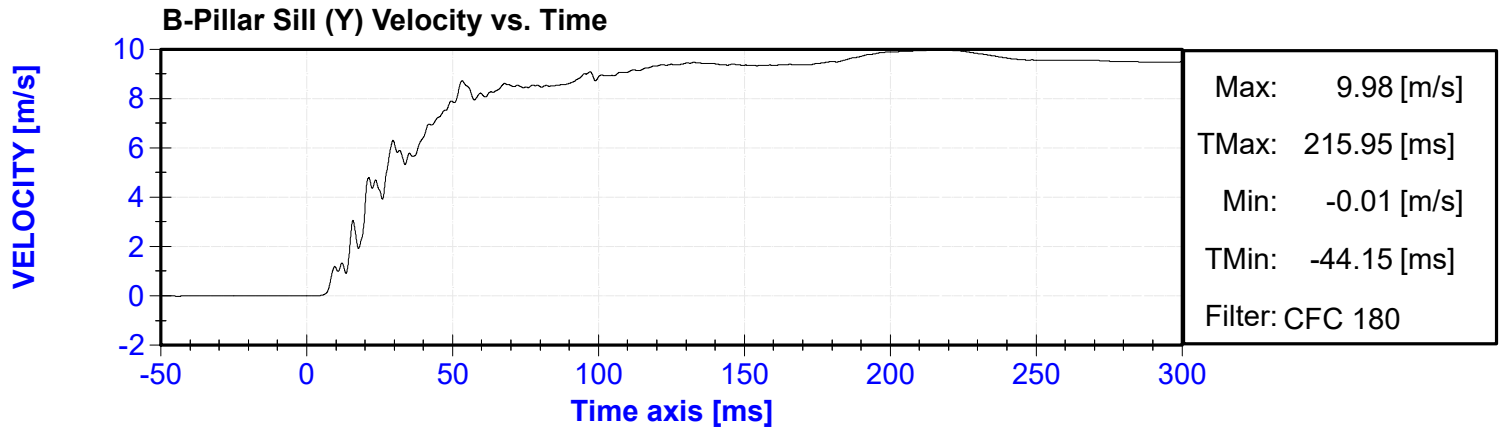
A-Pillar Mid (Y) Displacement vs. Time



ACCELERATION [g's]

B-Pillar Sill (Y) Acceleration vs. Time

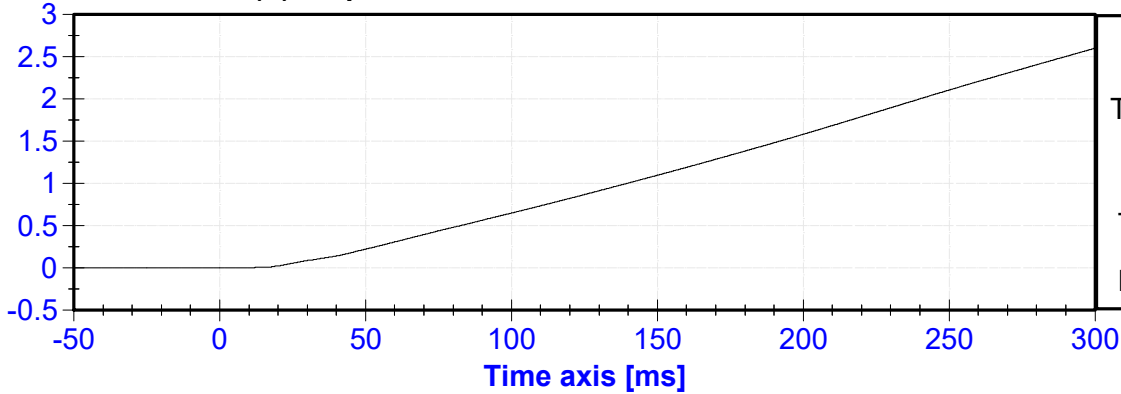




DISPLACEMENT [m]

B-Pillar Low (Y) Displacement vs. Time

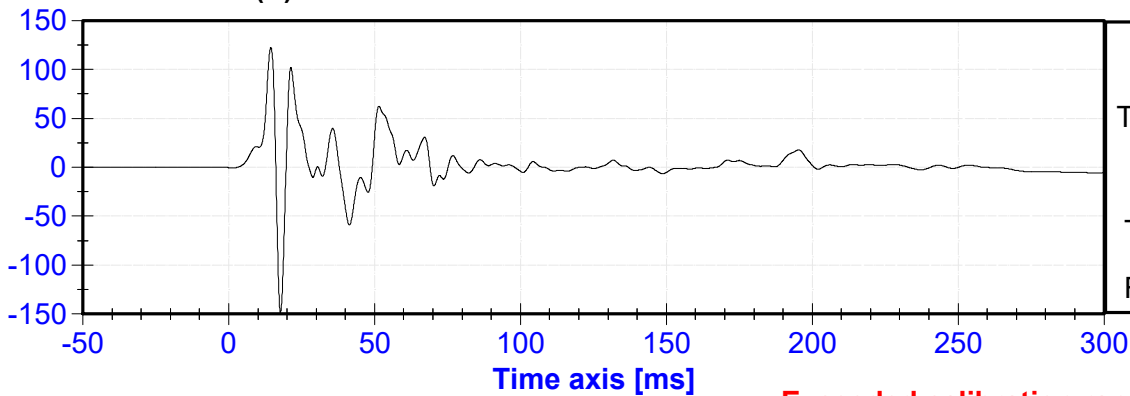
Exceeded calibration range at 16.5 ms



ACCELERATION [g's]

B-Pillar Mid (Y) Acceleration vs. Time

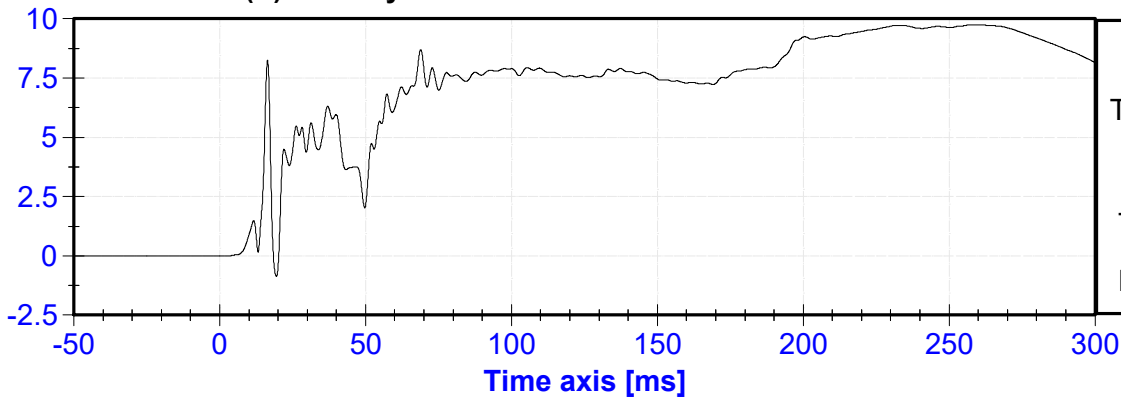
Exceeded calibration range at 13.5 ms 17 ms



VELOCITY [m/s]

B-Pillar Mid (Y) Velocity vs. Time

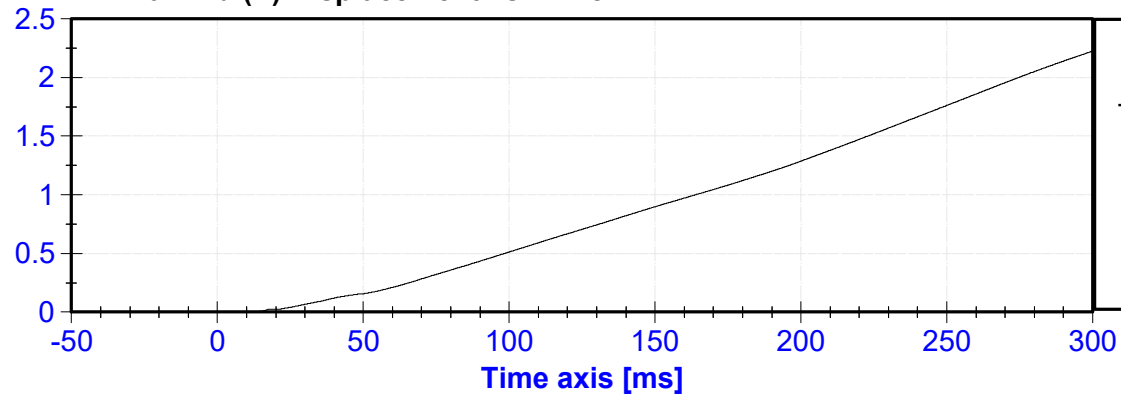
Exceeded calibration range at 13.5 ms 17 ms

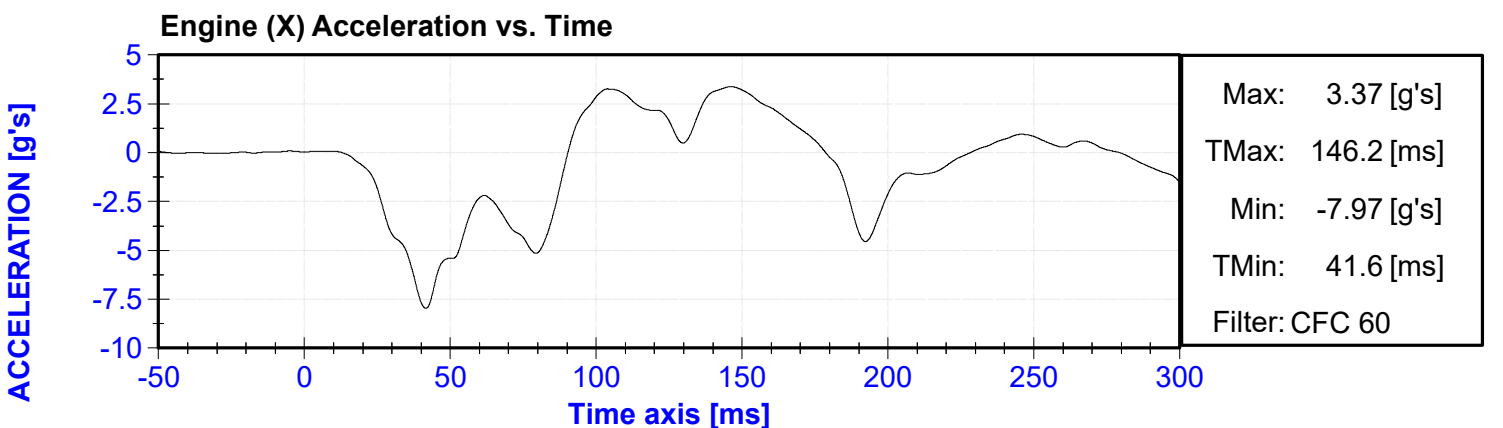
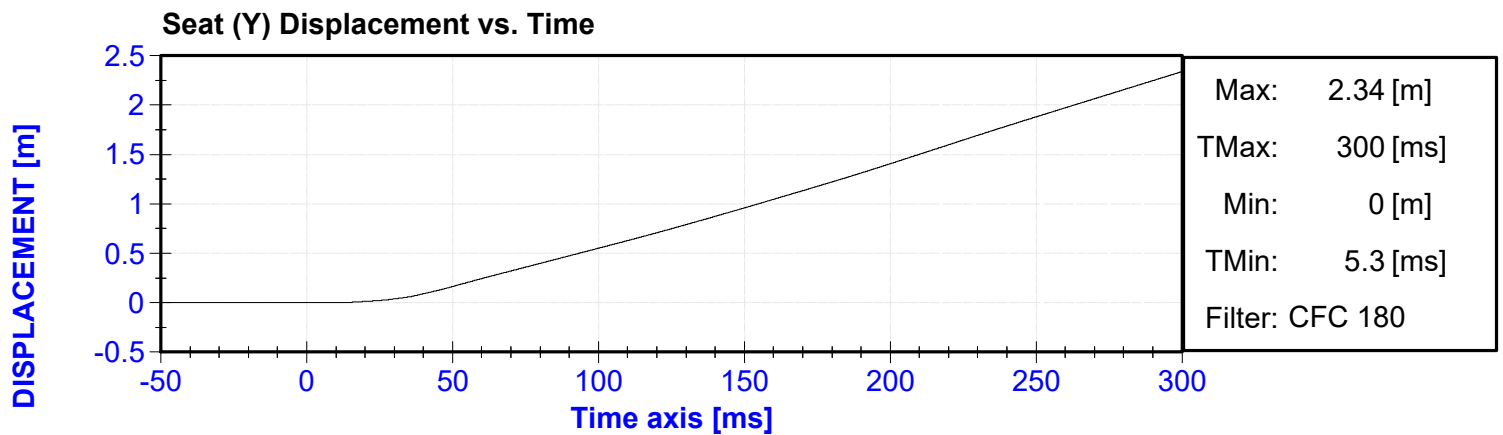
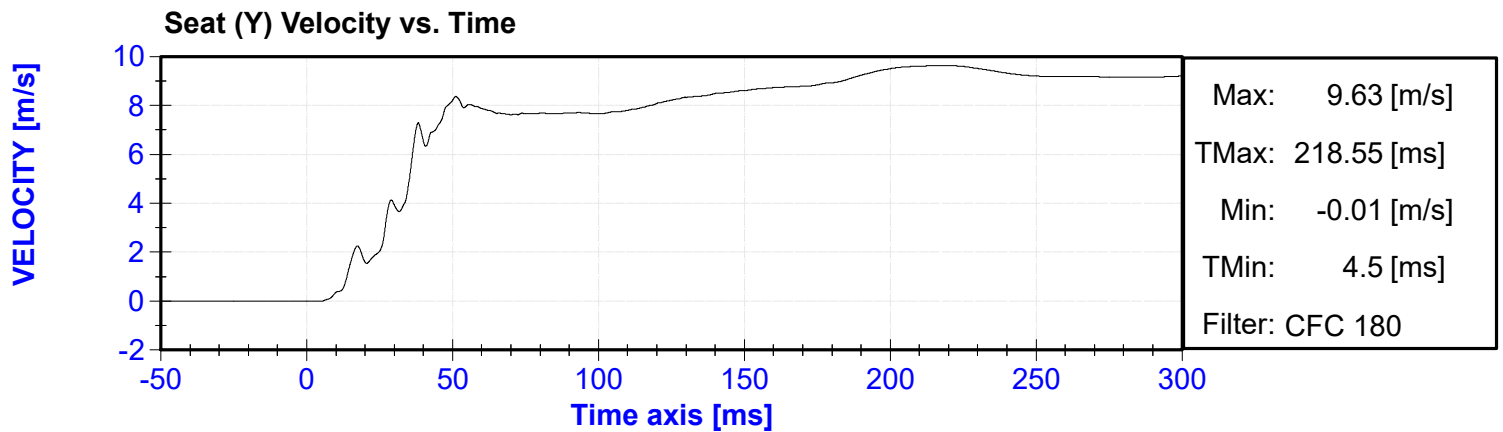
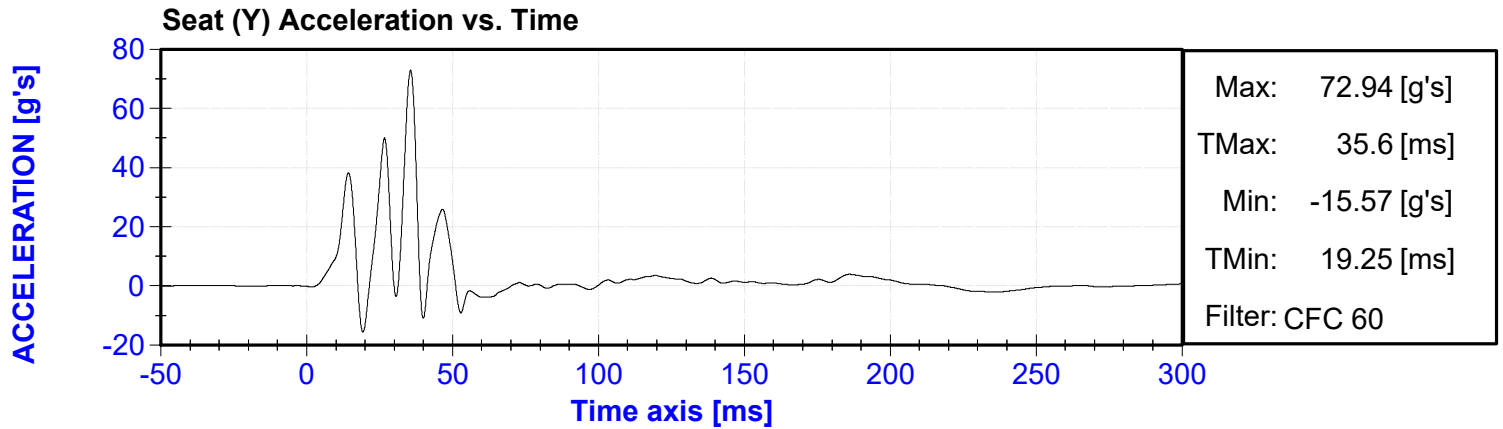


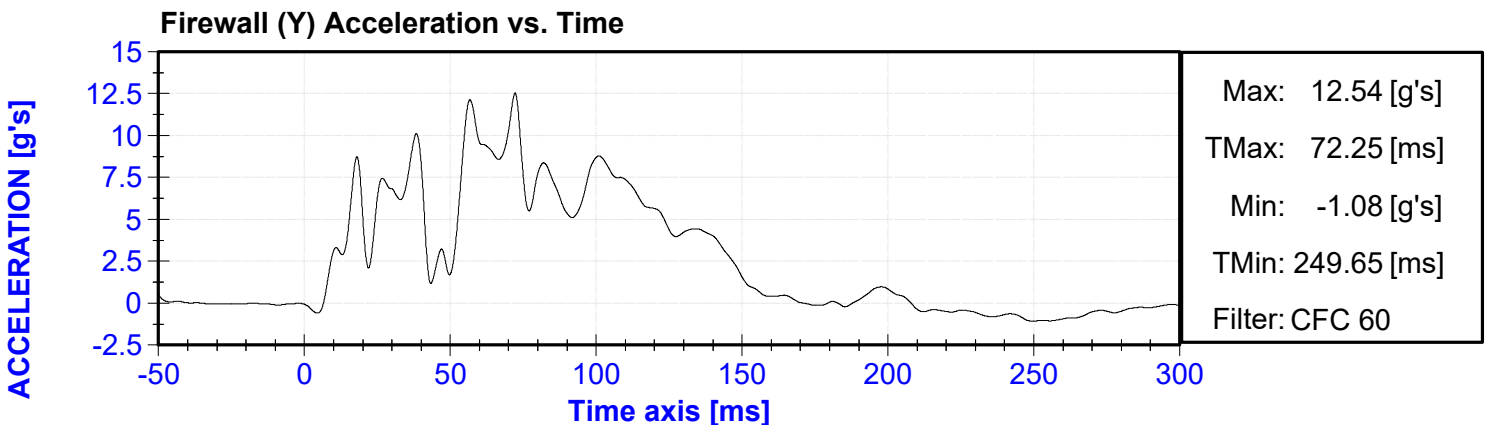
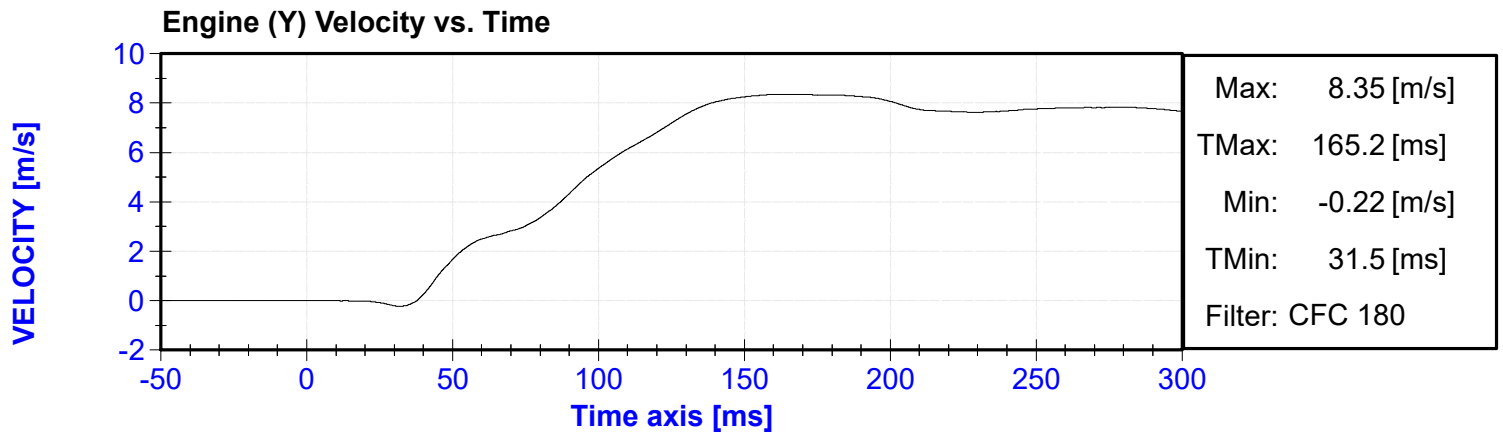
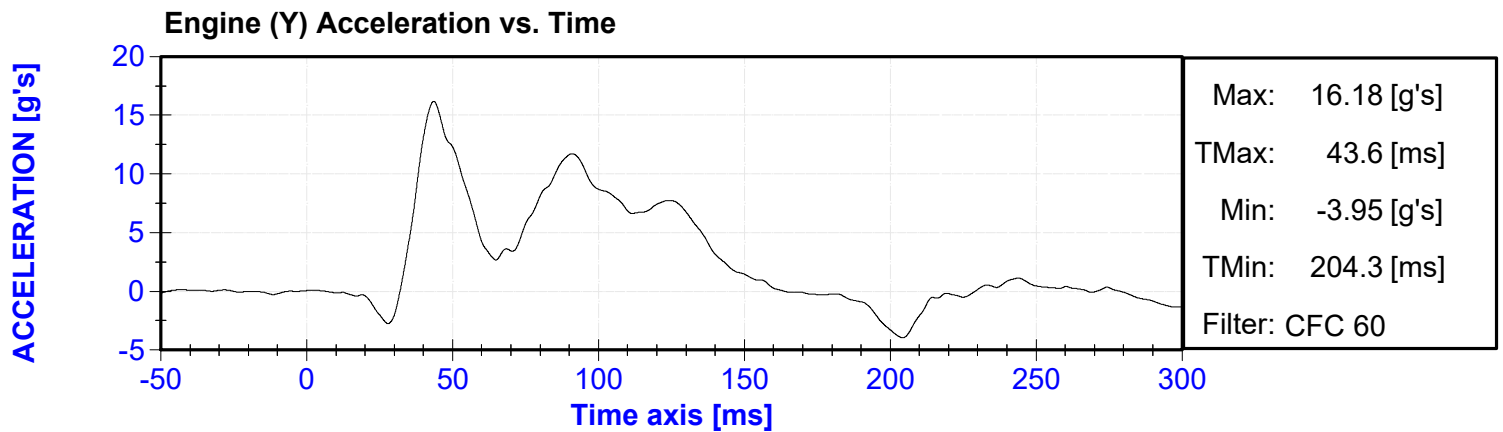
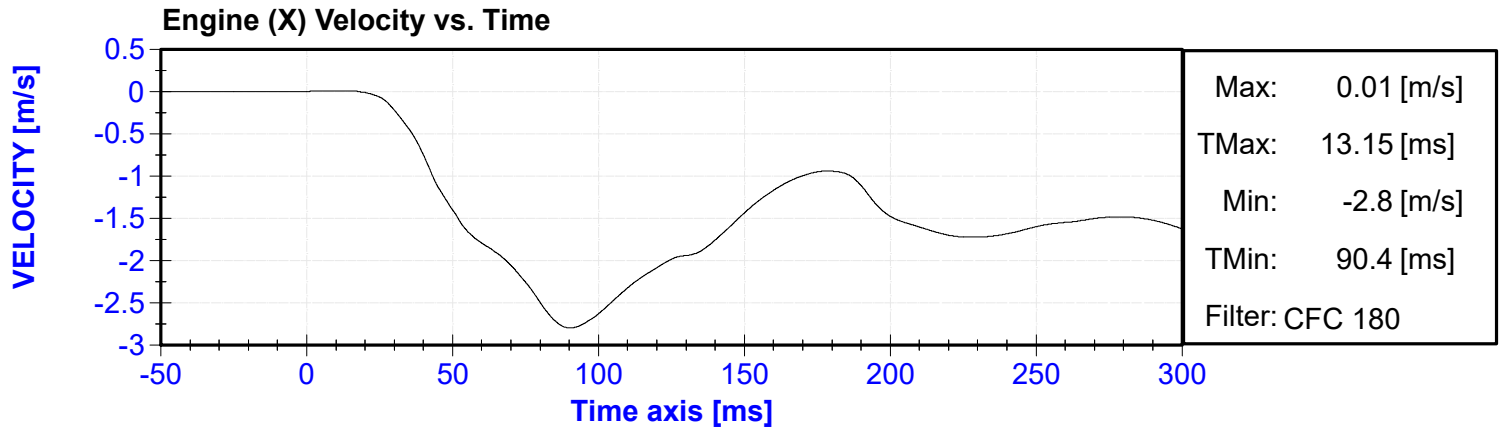
DISPLACEMENT [m]

B-Pillar Mid (Y) Displacement vs. Time

Exceeded calibration range at 13.5 ms 17 ms

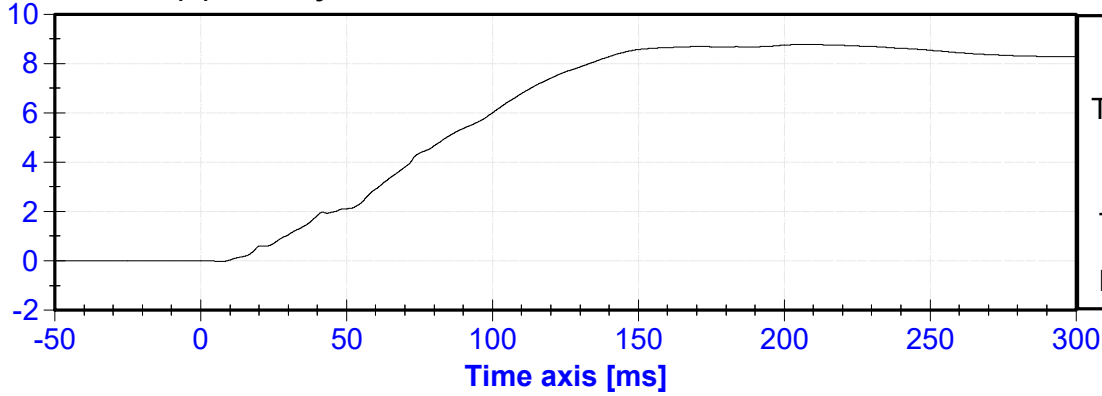






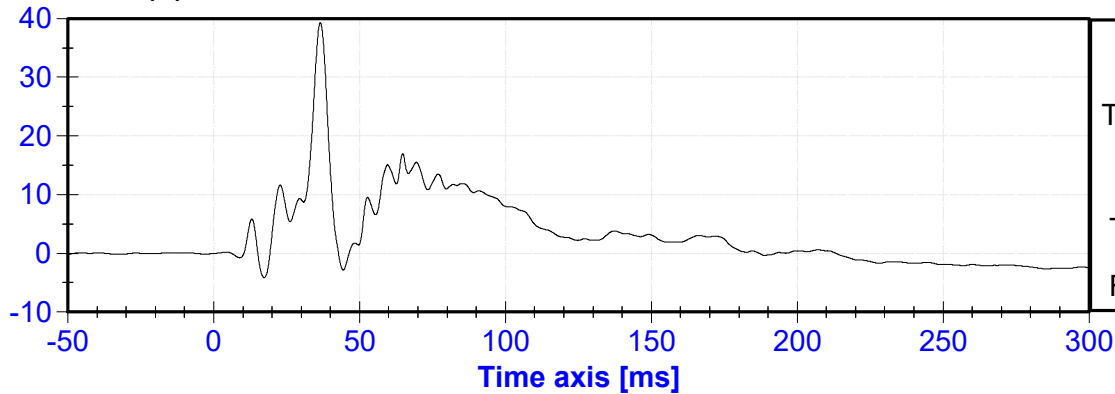
VELOCITY [m/s]

Firewall (Y) Velocity vs. Time



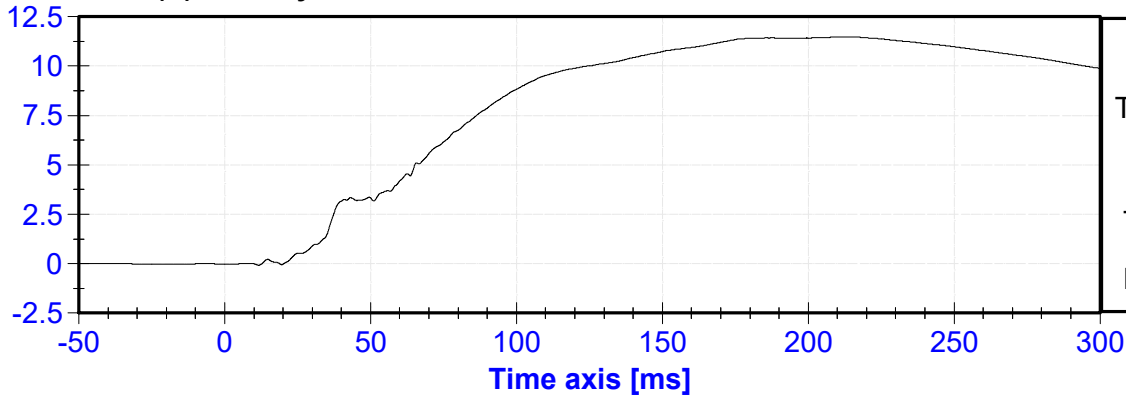
ACCELERATION [g's]

Roof (Y) Acceleration vs. Time



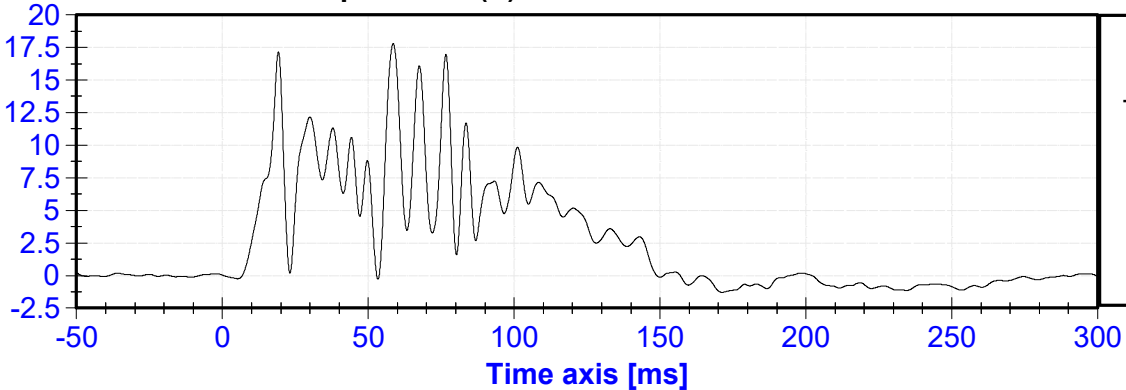
VELOCITY [m/s]

Roof (Y) Velocity vs. Time



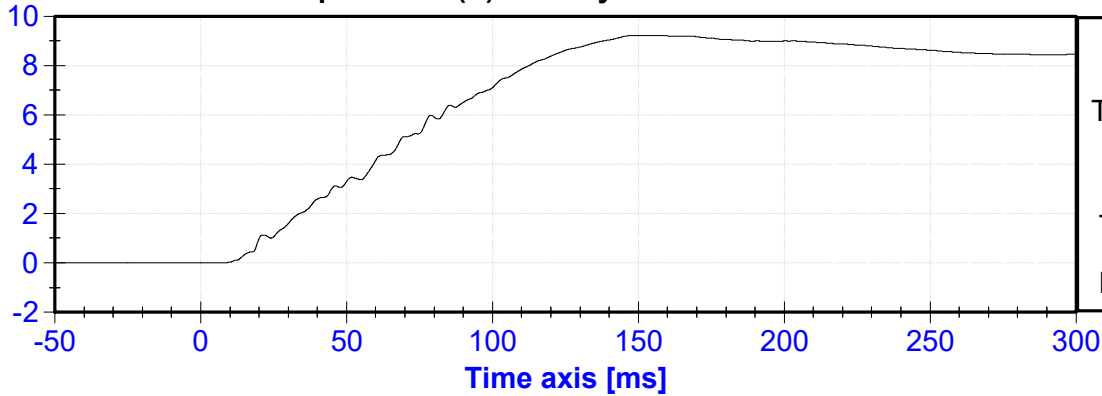
ACCELERATION [g's]

Floor Sill – Non Impact Side (Y) Acceleration vs. Time



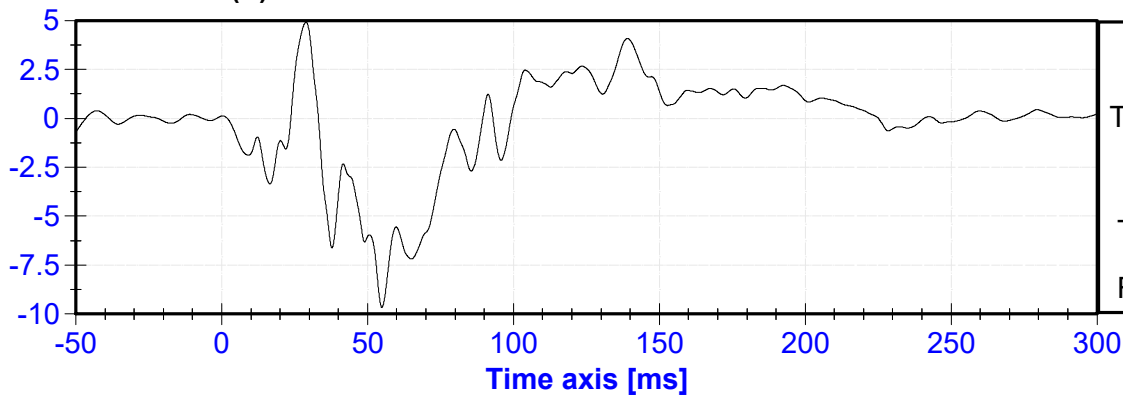
Floor Sill – Non Impact Side (Y) Velocity vs. Time

VELOCITY [m/s]



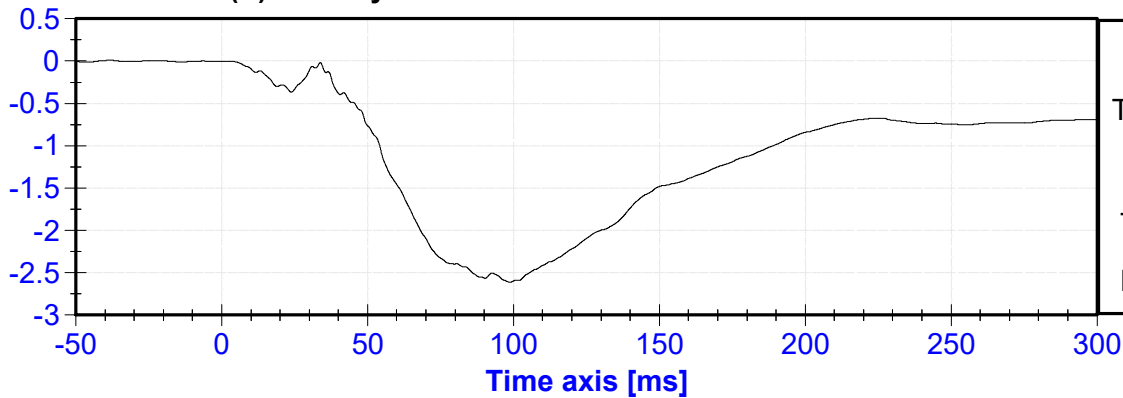
Rear Deck (X) Acceleration vs. Time

ACCELERATION [g's]



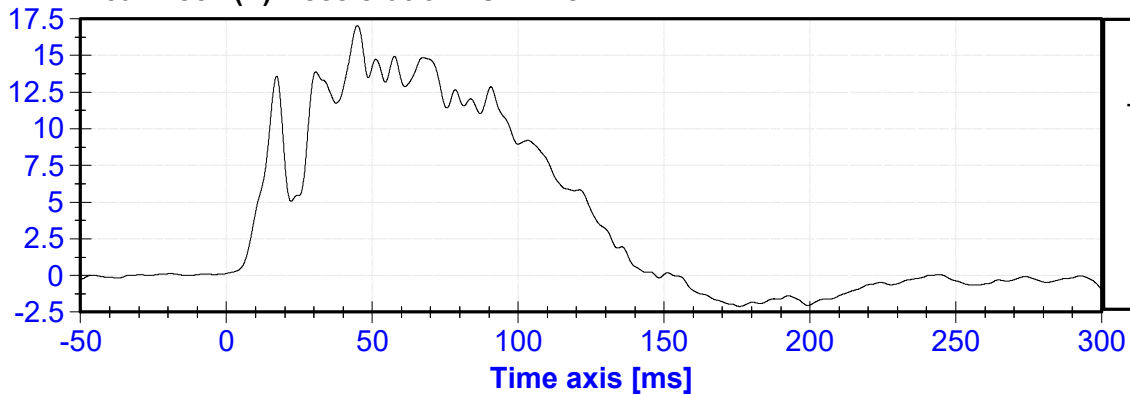
Rear Deck (X) Velocity vs. Time

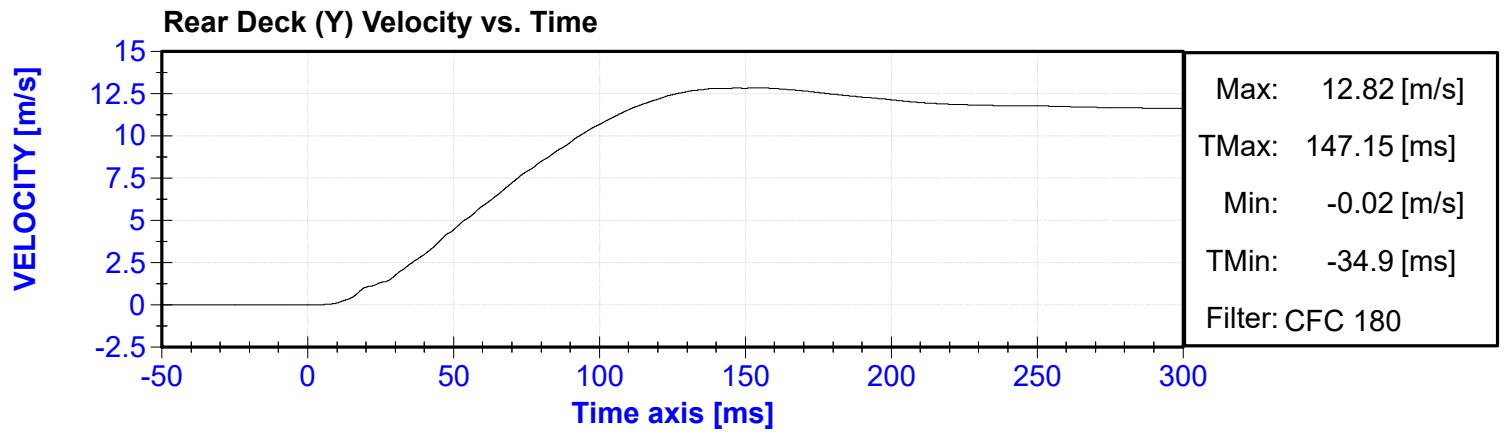
VELOCITY [m/s]



Rear Deck (Y) Acceleration vs. Time

ACCELERATION [g's]





APPENDIX IV

PRE-TEST DUMMY PERFORMANCE CALIBRATION TEST DATA

(Subpart U, ES-2re)

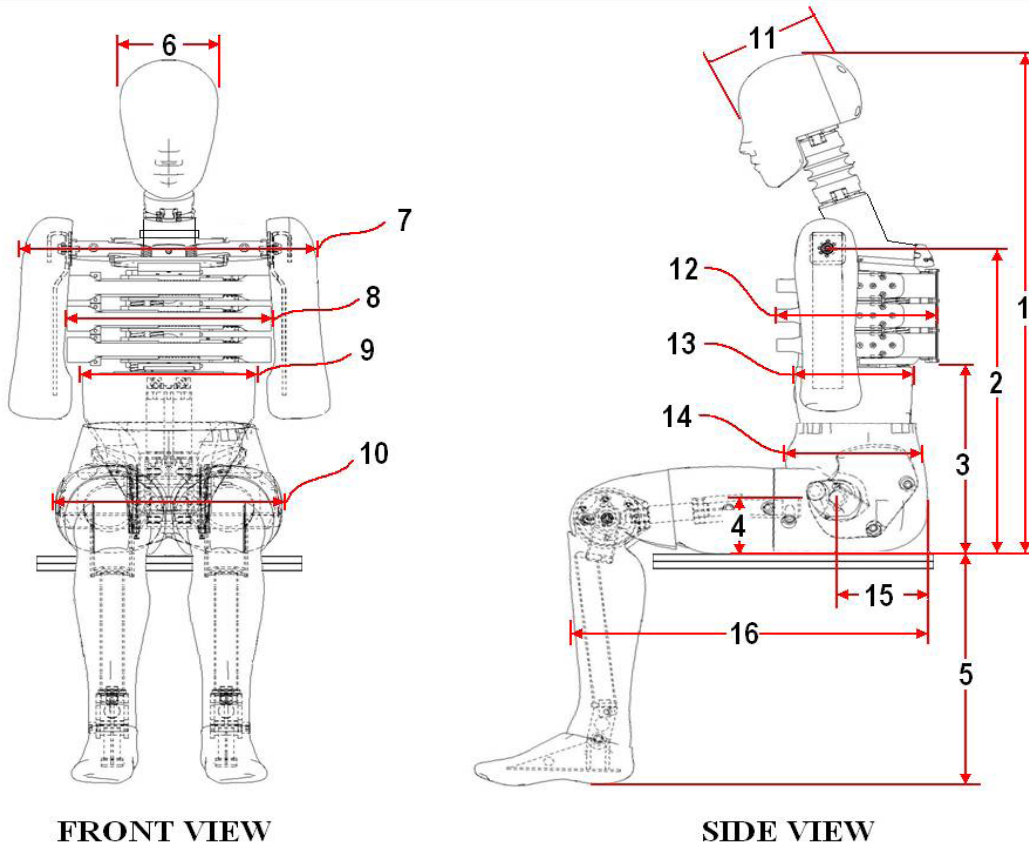


External Measurements - EuroSID-2re

Technician: K. Brogan

Date: 03/05/2024

Dummy Serial Number: DG5348



FRONT VIEW

SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	914	Pass
2	Seat to Shoulder Joint	558	572	568	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	350	Pass
4	Seat to Hip Joint (center of bolt)	97	103	102	Pass
5	Sole to Seat, Sitting	333	451	414	Pass
6	Head Width	152	158	156	Pass
7	Shoulder/Arm Width	461	479	472	Pass
8	Thorax Width	322	332	327	Pass
9	Abdomen Width	273	287	281	Pass
10	Pelvis Lap Width	359	373	367	Pass
11	Head Depth	196	206	200	Pass
12	Thorax Depth	262	272	268	Pass
13	Abdomen Depth	194	204	198	Pass
14	Pelvis Depth	235	245	241	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	155	Pass
16	Back of Buttocks to Front Knee	597	615	607	Pass

ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

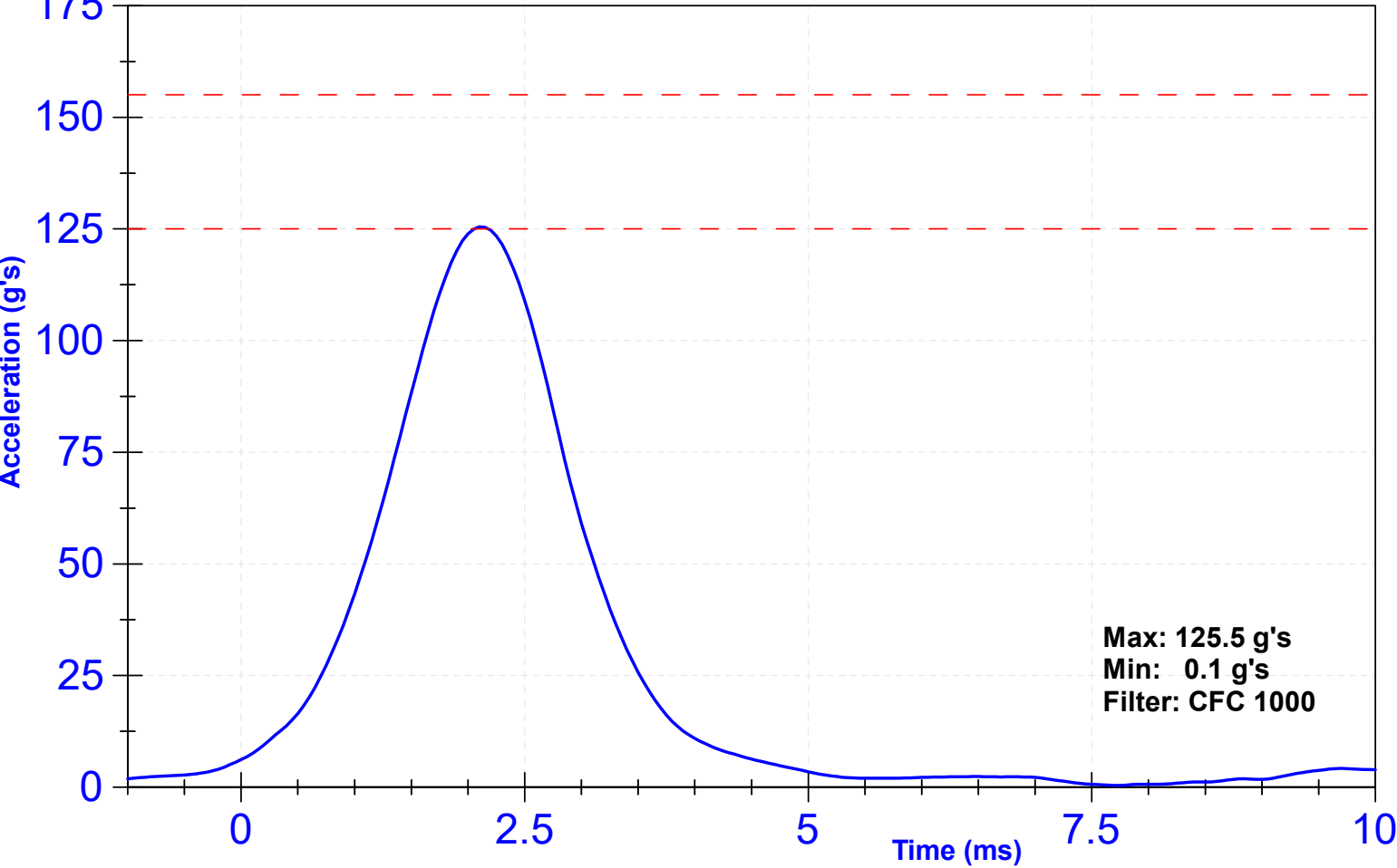
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	27	Pass
Resultant Acceleration	125	155	g's	125.5	Pass
Oscillation	0	15	%	3.35	Pass
Fore-Aft Acceleration	-15	15	g's	9.2	Pass

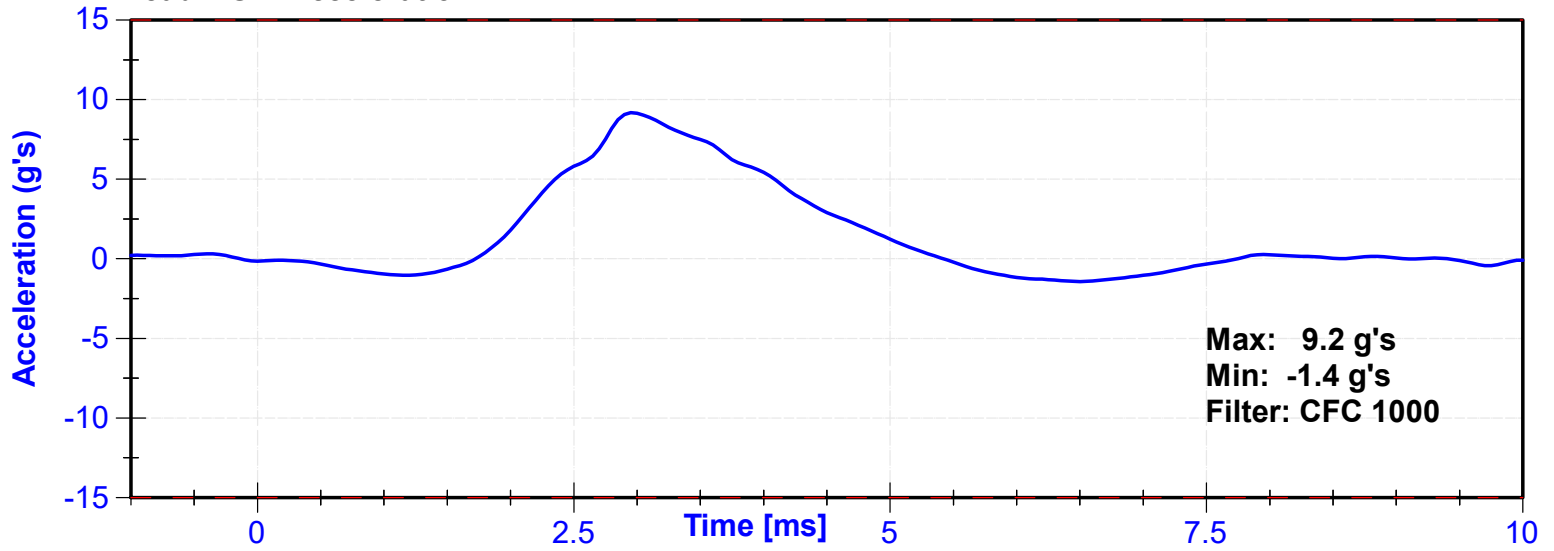
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	Endevco	18613	2/8/2024	8/6/2024
Y Accelerometer	Endevco	18472	2/8/2024	8/6/2024
Z Accelerometer	Endevco	18663	2/8/2024	8/6/2024

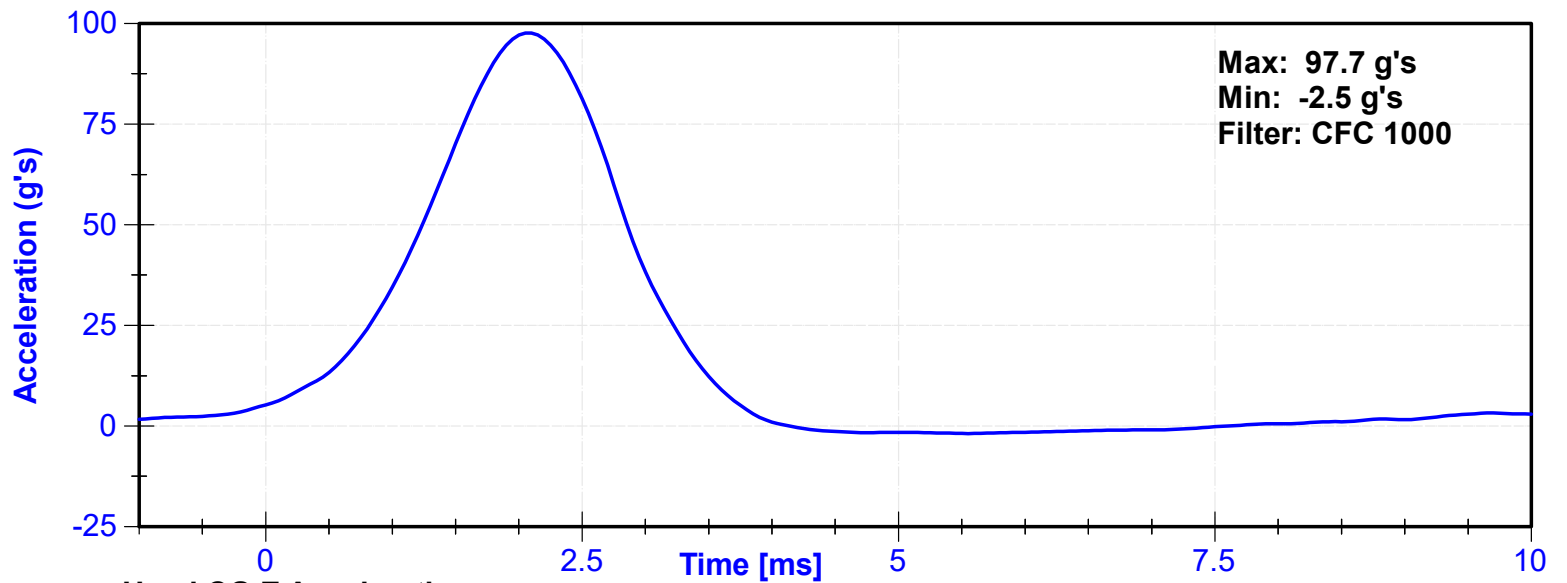
Resultant Acceleration



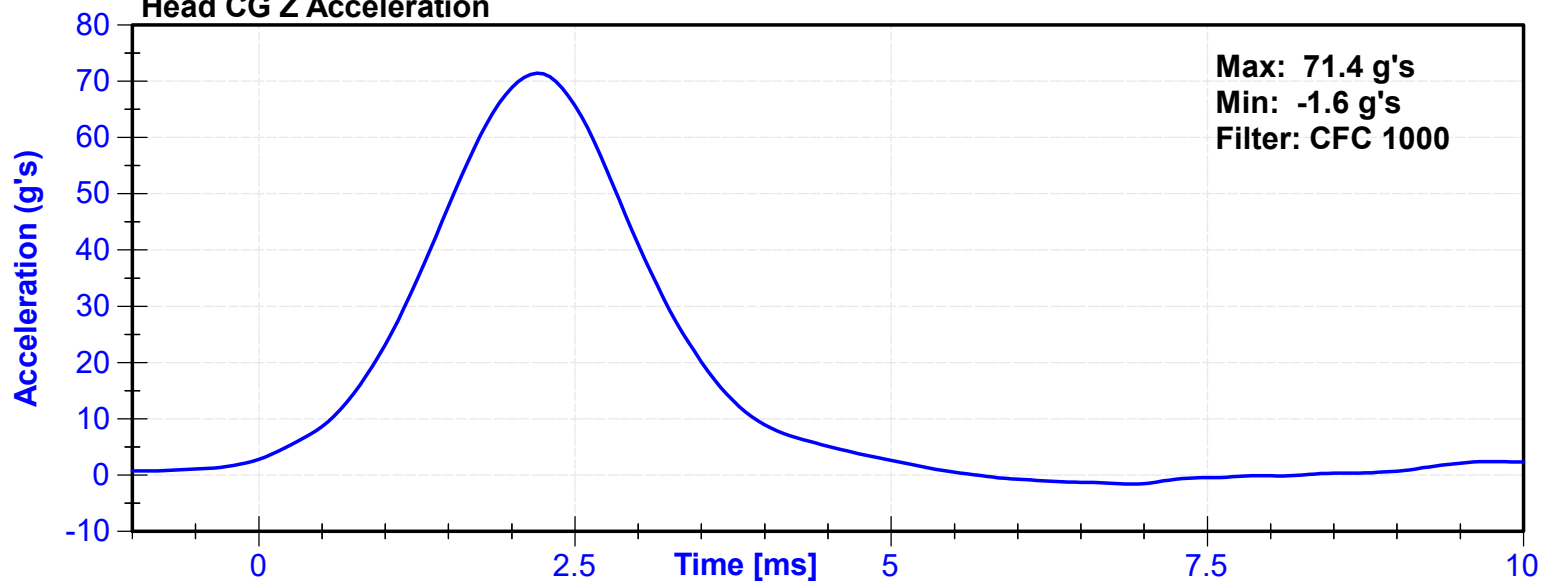
Head CG X Acceleration



Head CG Y Acceleration



Head CG Z Acceleration



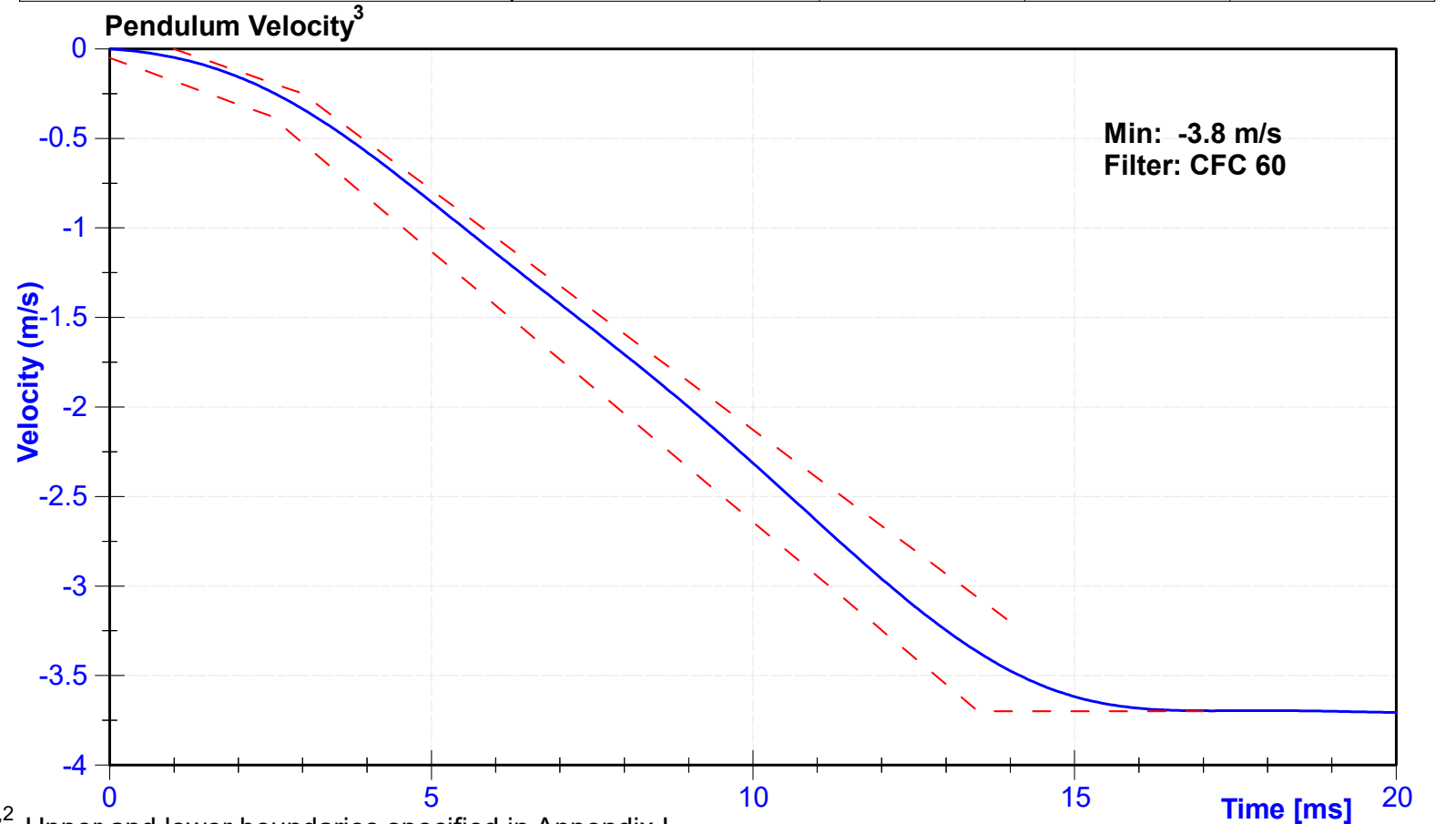
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

Results

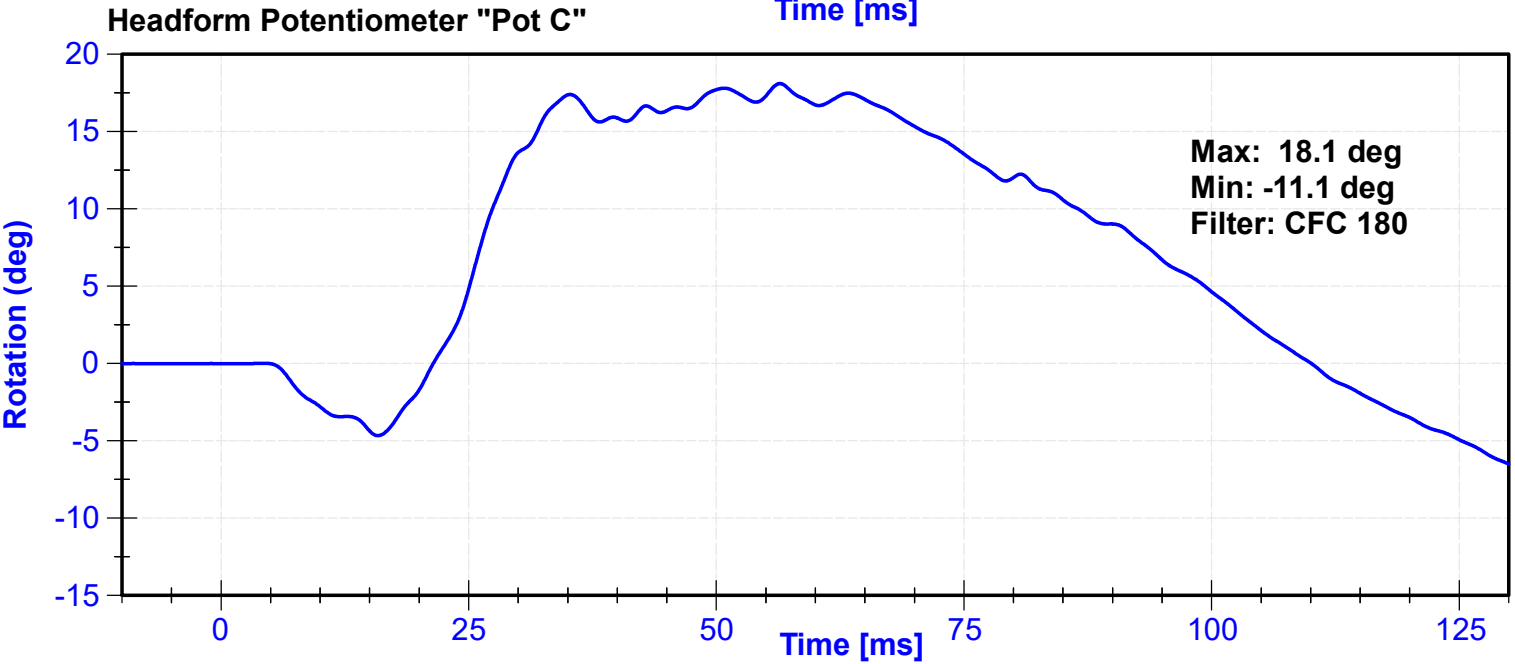
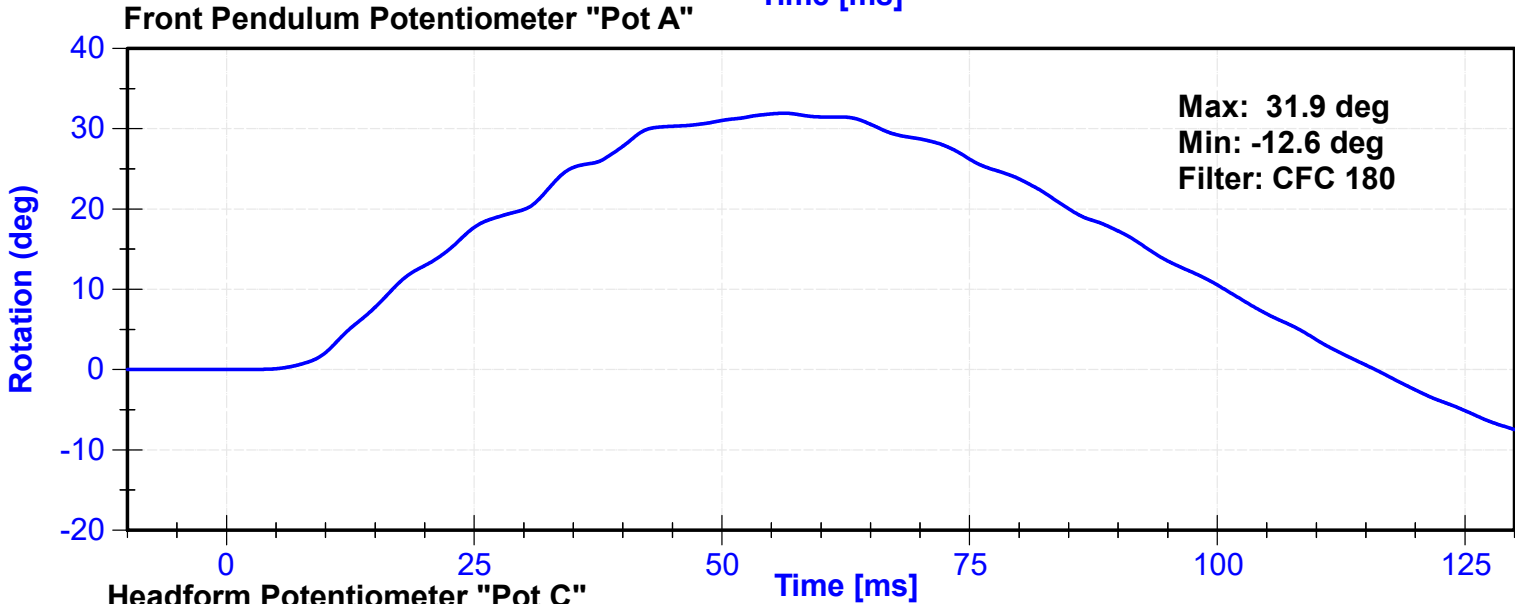
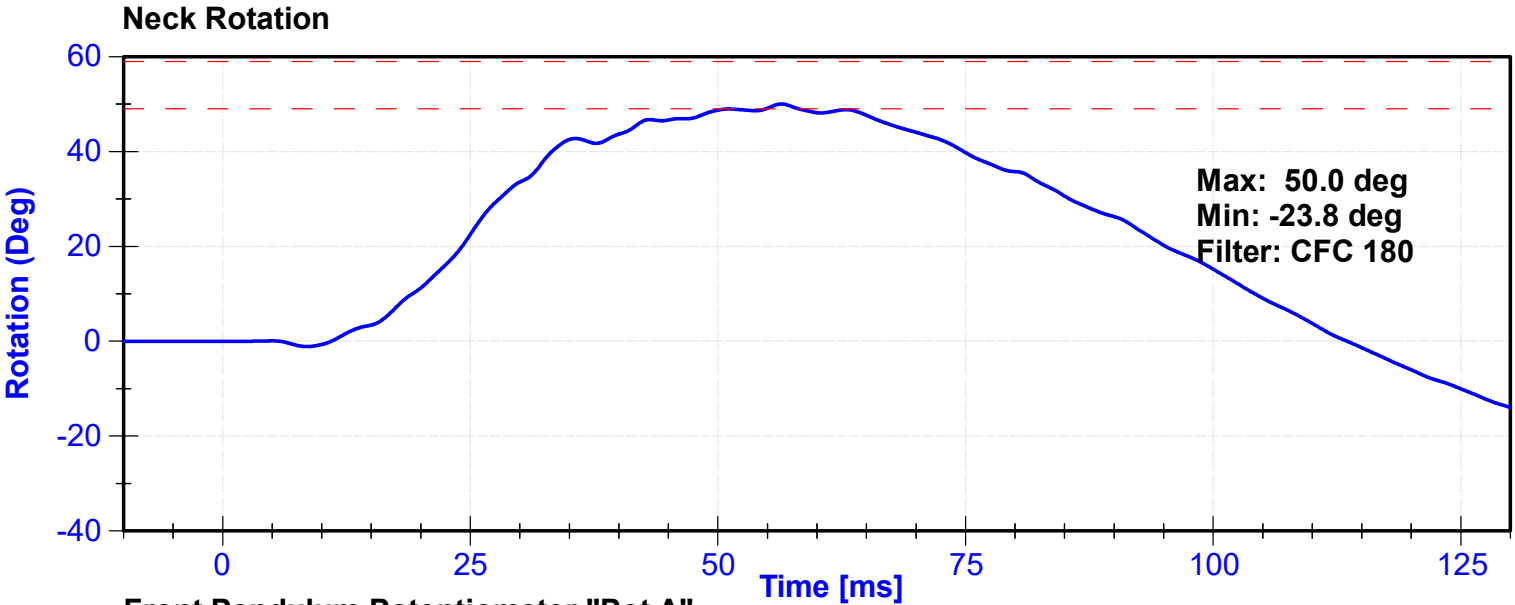
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	22.1	Pass
Humidity	10	70	%	40	Pass
Velocity	3.3	3.5	m/s	3.47	Pass
Lateral Neck Rotation	49	59	deg	50.0	Pass
Time at Maximum Rotation	54	66	ms	56.4	Pass
Time of Rotation Decay from Maximum	53	88	ms	57.1	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/31/2023	4/28/2024
Front Pendulum Potentiometer	Sfernice	2247	12/5/2023	12/4/2024
Headform Potentiometer	Sfernice	095	9/29/2023	9/28/2024



^{1,2} Upper and lower boundaries specified in Appendix I



Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.25	2.5	-0.375
14.0	-3.20	13.5	-3.7
		17.0	-3.7

ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

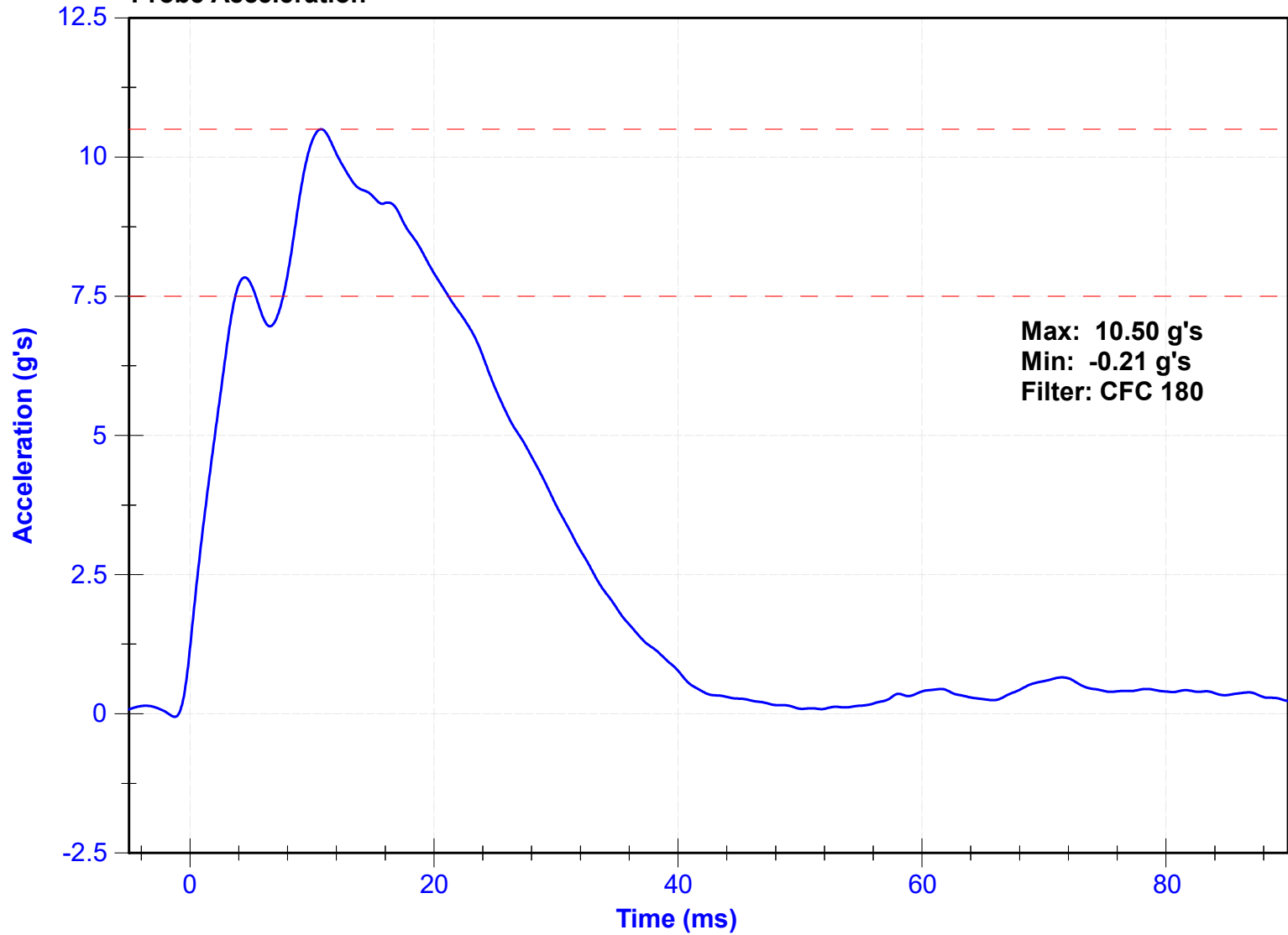
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	18	Pass
Velocity	4.2	4.4	m/s	4.29	Pass
Probe Acceleration	7.5	10.5	g's	10.50	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	18587	11/20/2023	11/19/2024

Probe Acceleration



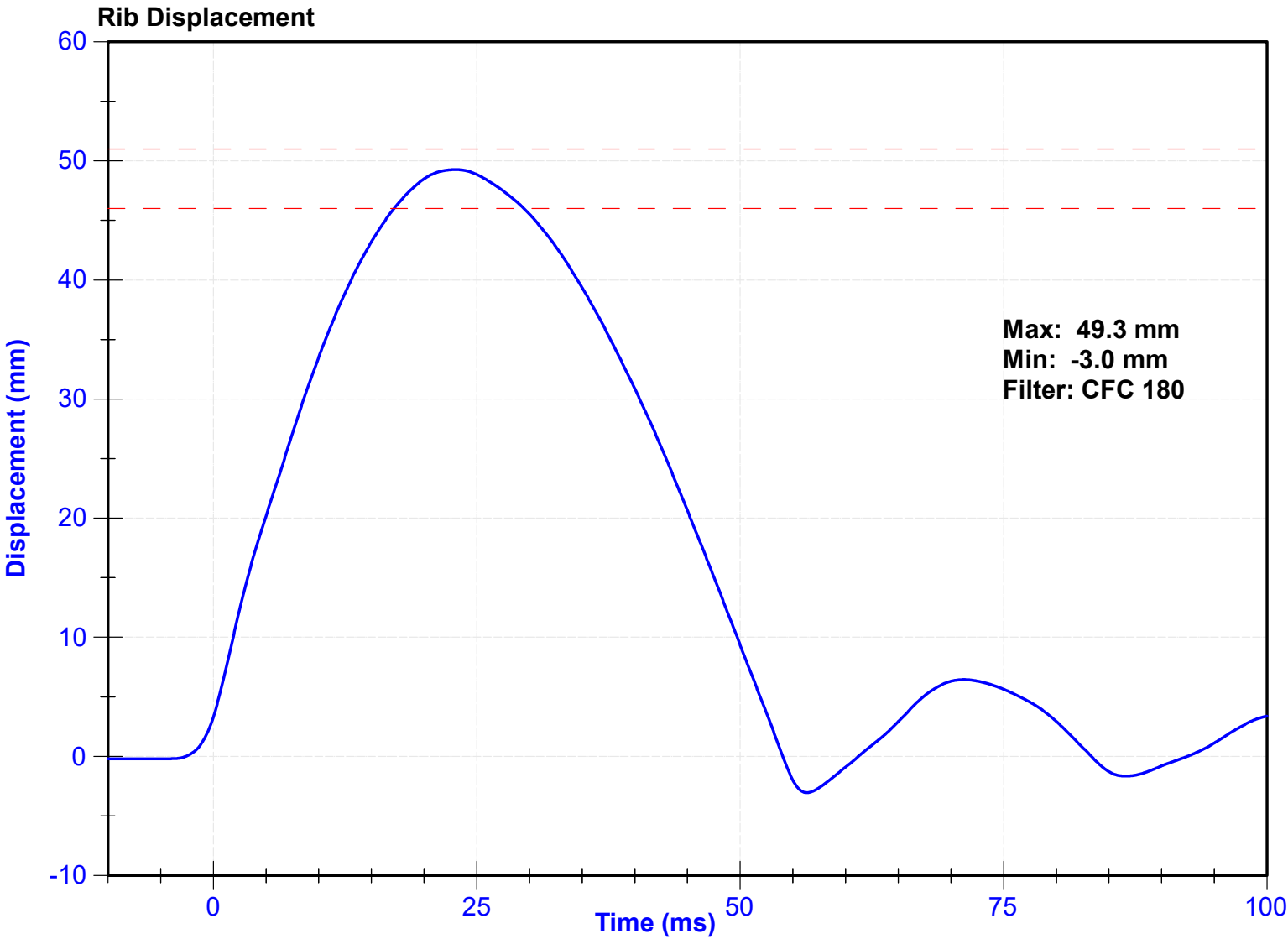
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	39	Pass
Rib Displacement	46	51	mm	49.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	268GFE	2/8/2024	8/8/2024



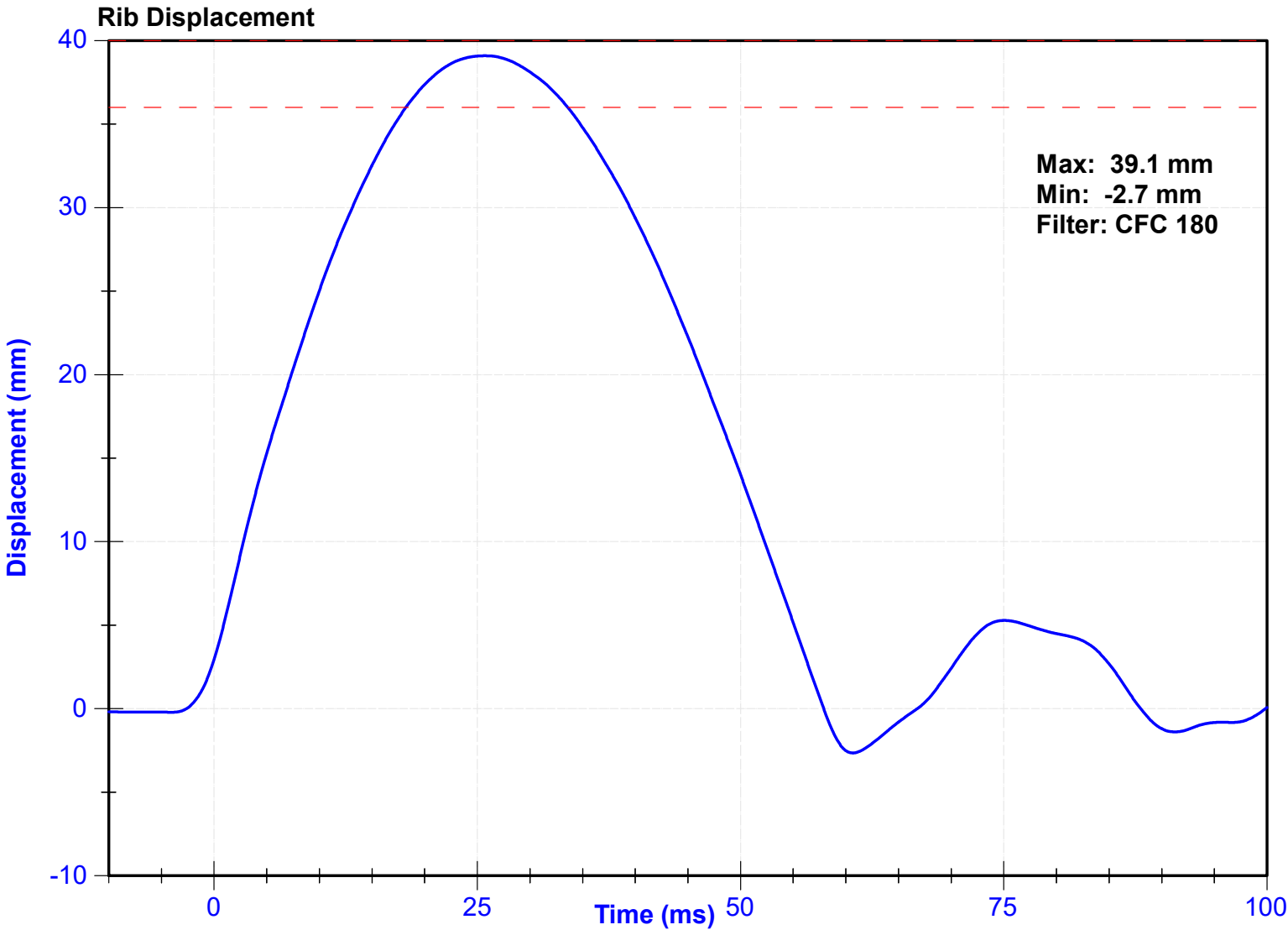
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	39	Pass
Rib Displacement	36	40	mm	39.1	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	268GFE	2/8/2024	8/8/2024



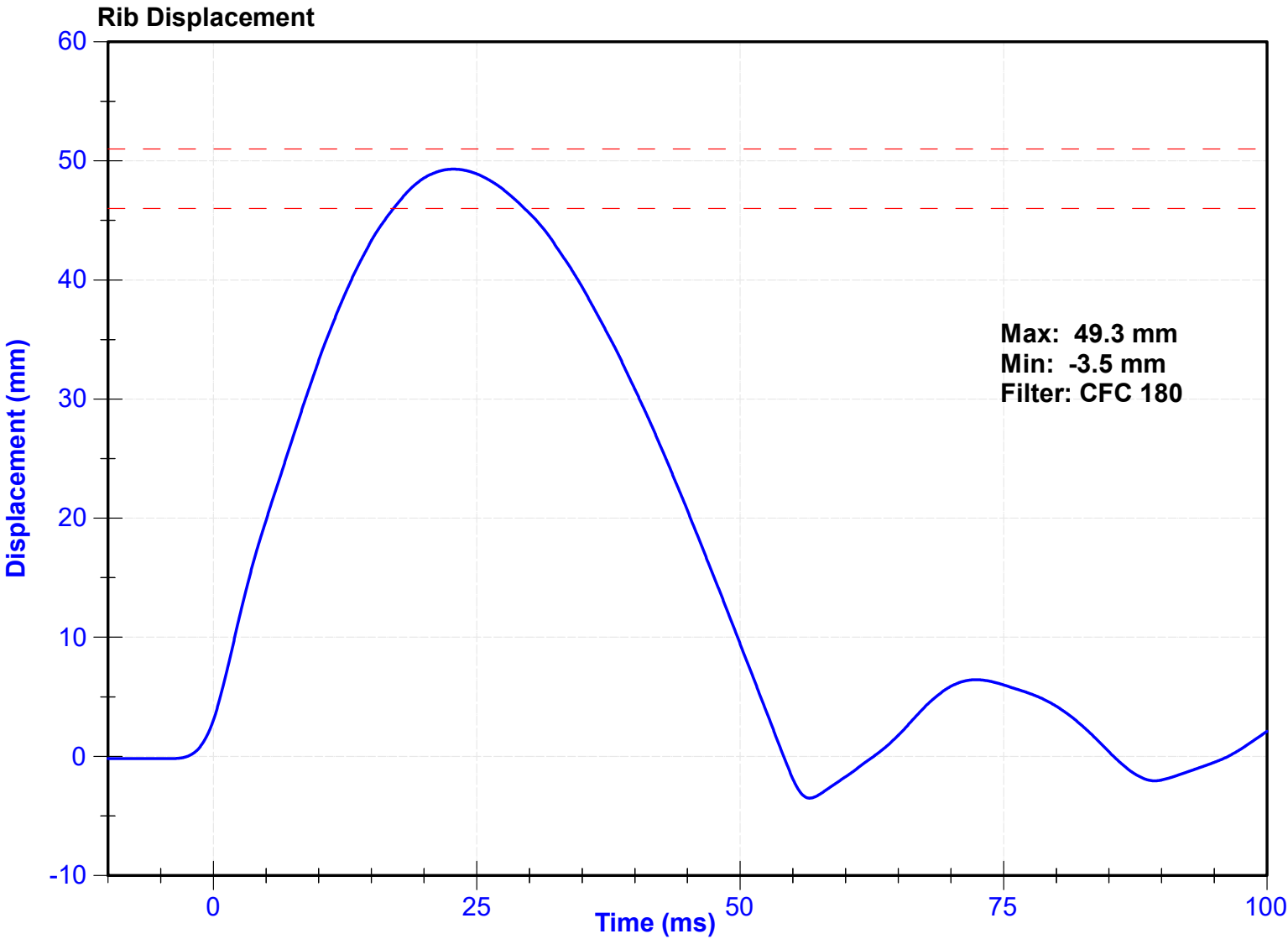
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	39	Pass
Rib Displacement	46	51	mm	49.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	269GFE	2/8/2024	8/8/2024



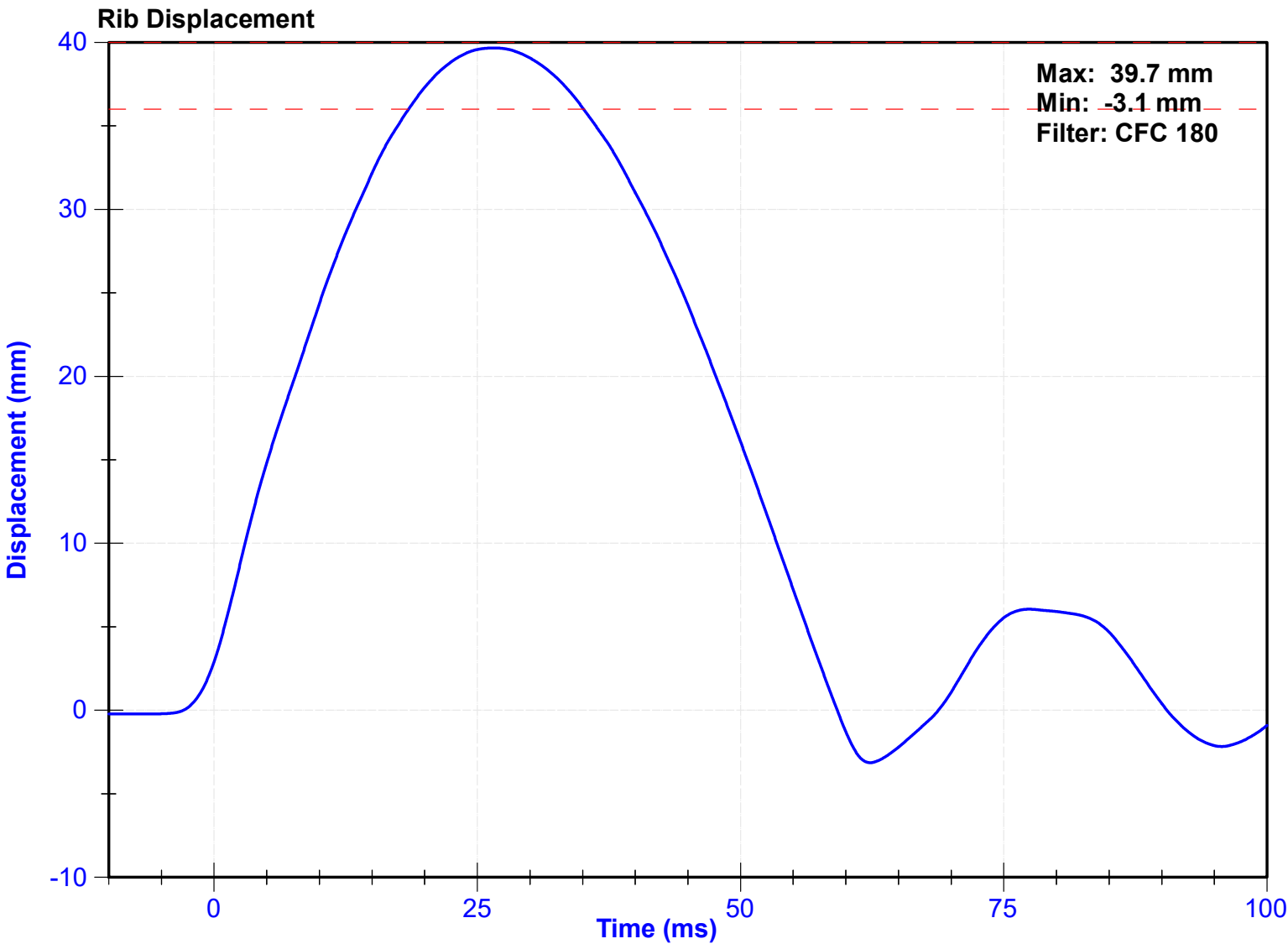
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	39	Pass
Rib Displacement	36	40	mm	39.7	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	269GFE	2/8/2024	8/8/2024



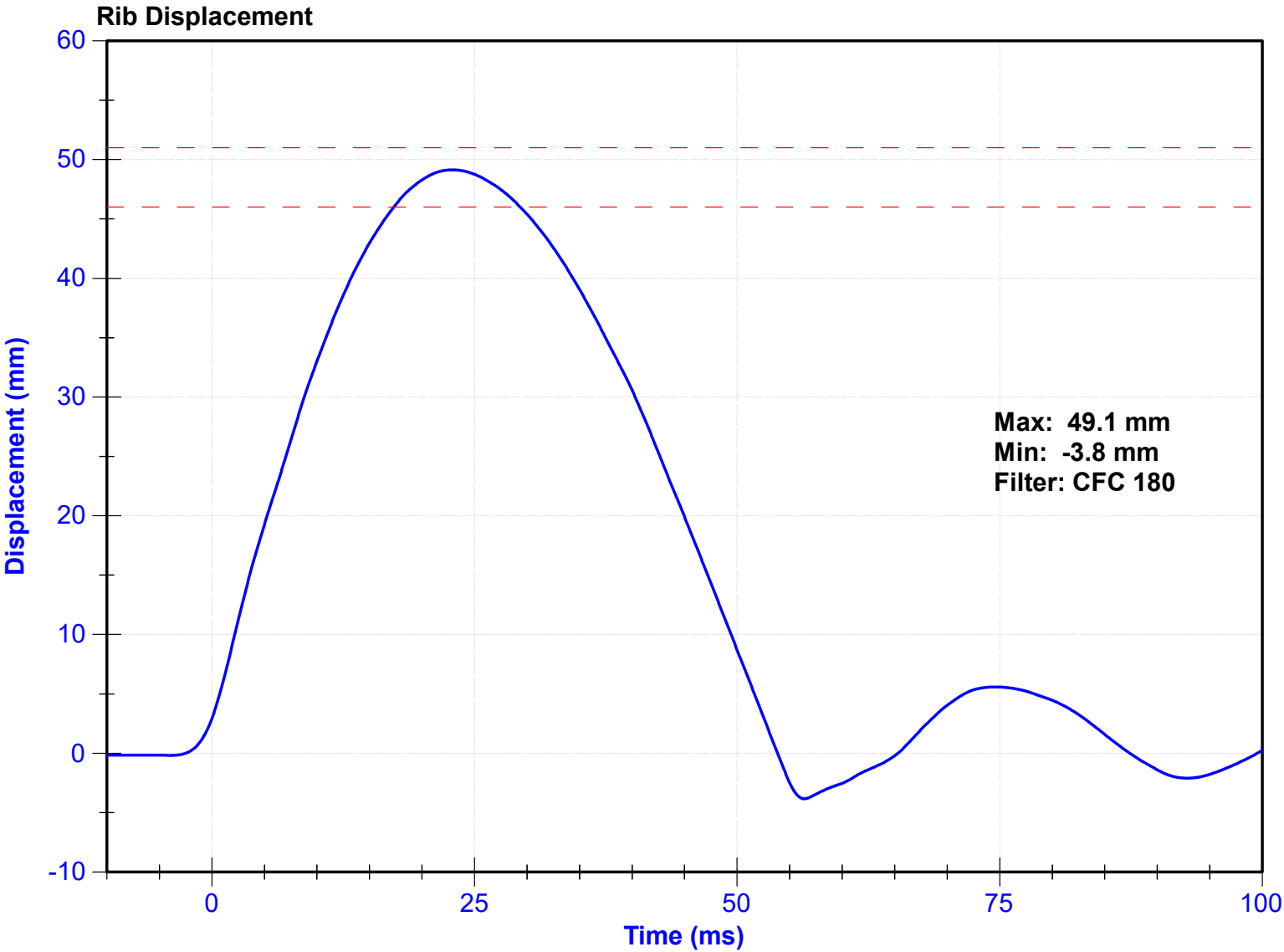
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	39	Pass
Rib Displacement	46	51	mm	49.1	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	270GFE	2/8/2024	8/8/2024



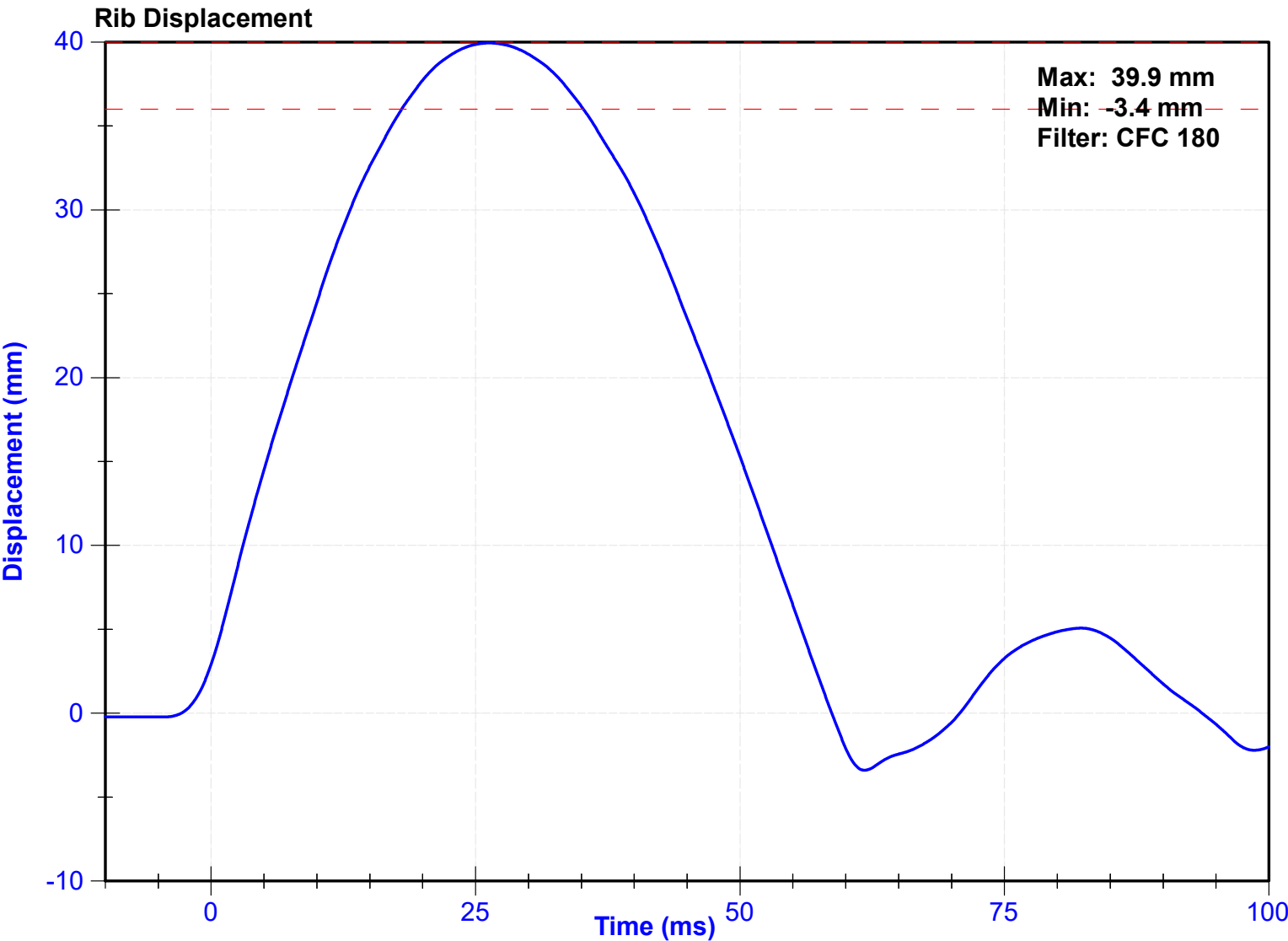
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	39	Pass
Rib Displacement	36	40	mm	39.9	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	270GFE	2/8/2024	8/8/2024



ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

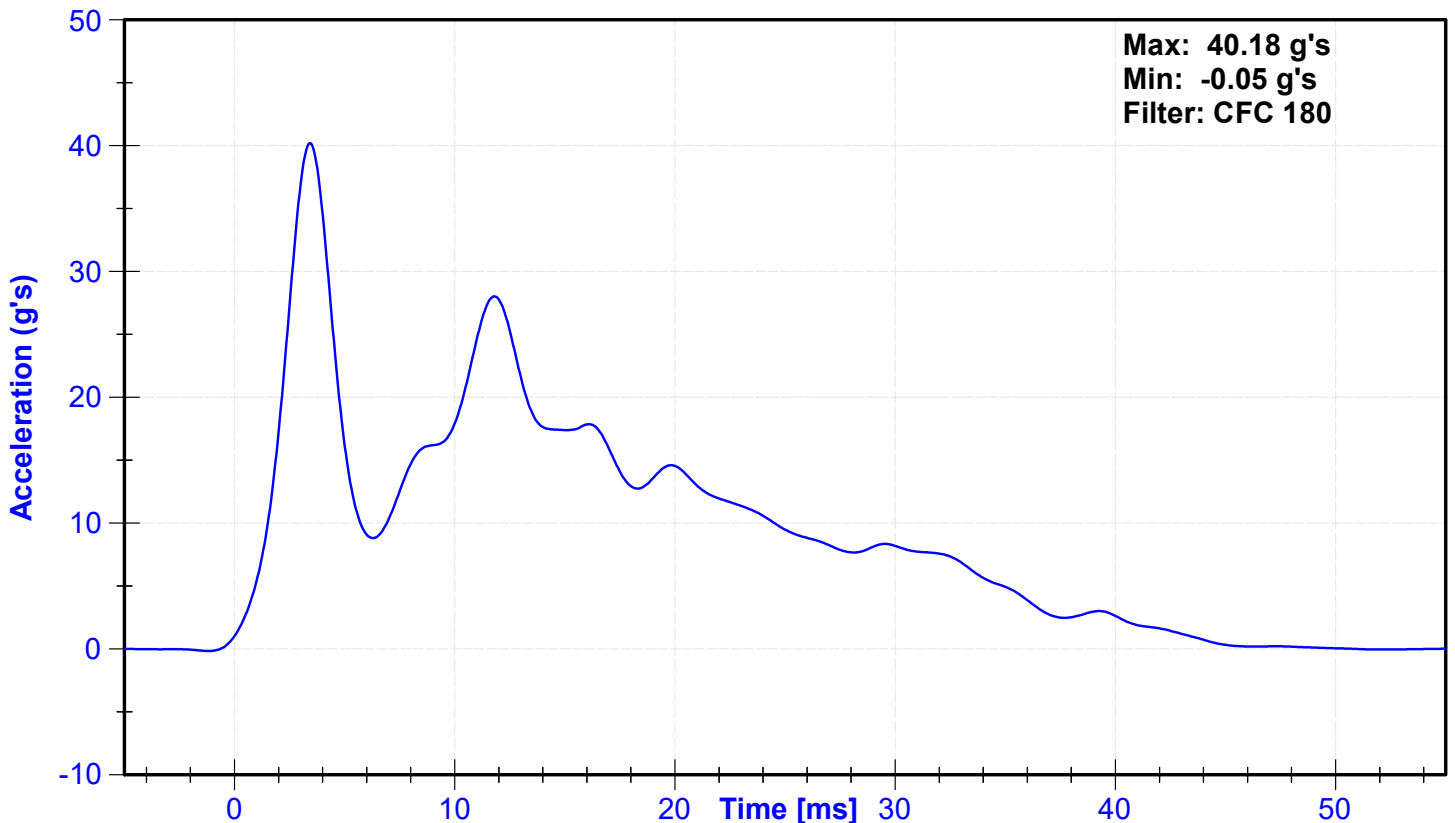
Results

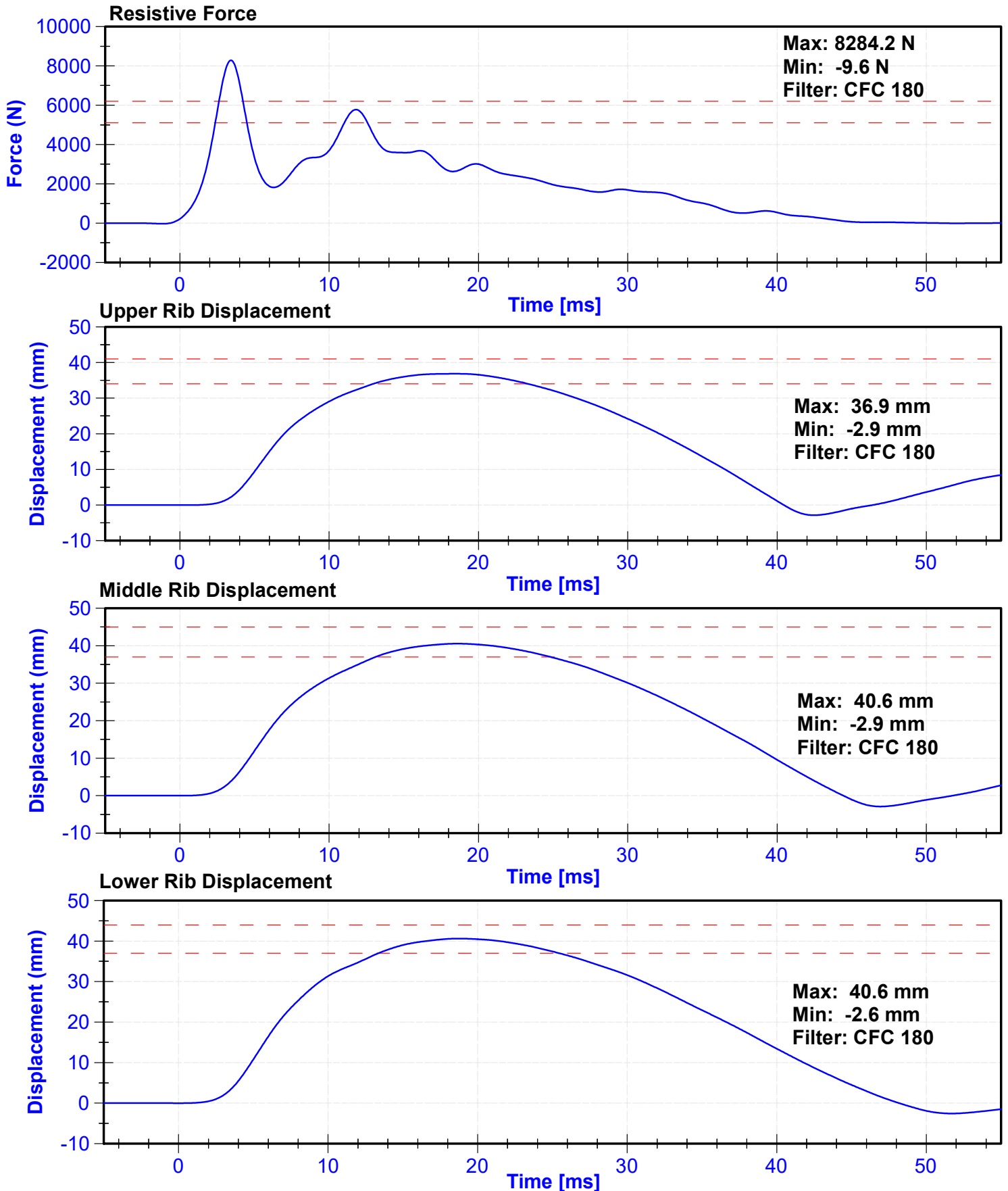
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	18	Pass
Velocity	5.4	5.6	m/s	5.52	Pass
Resistive Force after 6ms	5100	6200	N	5775.7	Pass
Upper Thorax Rib Deflection	34	41	mm	36.9	Pass
Mid Thorax Rib Deflection	37	45	mm	40.6	Pass
Lower Thorax Rib Deflection	37	44	mm	40.6	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	18587	11/20/2023	11/19/2024
Upper Thorax Rib Potentiometer	Honeywell	268GFE	2/8/2024	8/8/2024
Middle Thorax Rib Potentiometer	Honeywell	269GFE	2/8/2024	8/8/2024
Lower Thorax Rib Potentiometer	Honeywell	270GFE	2/8/2024	8/8/2024

Probe Acceleration





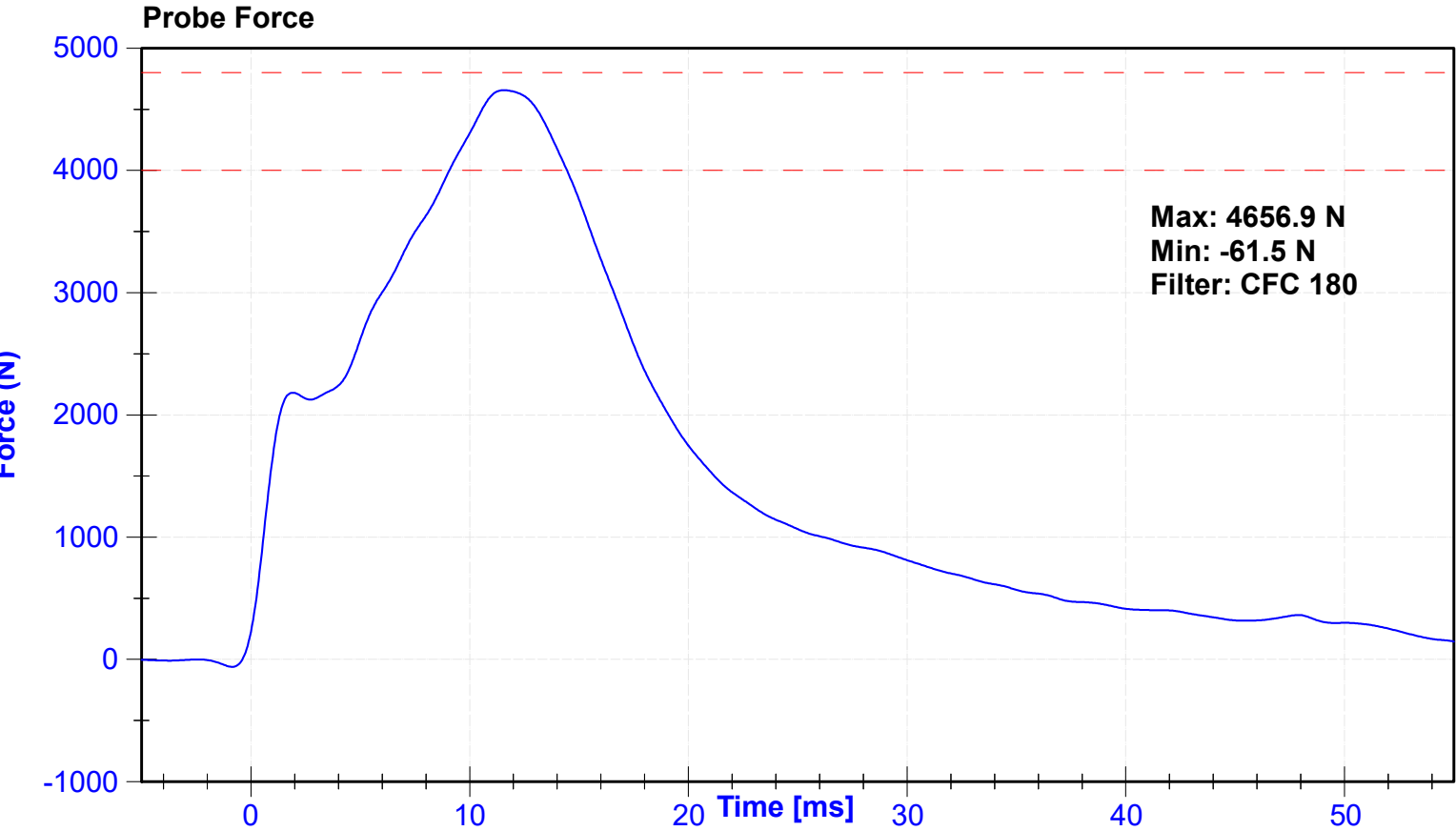
ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

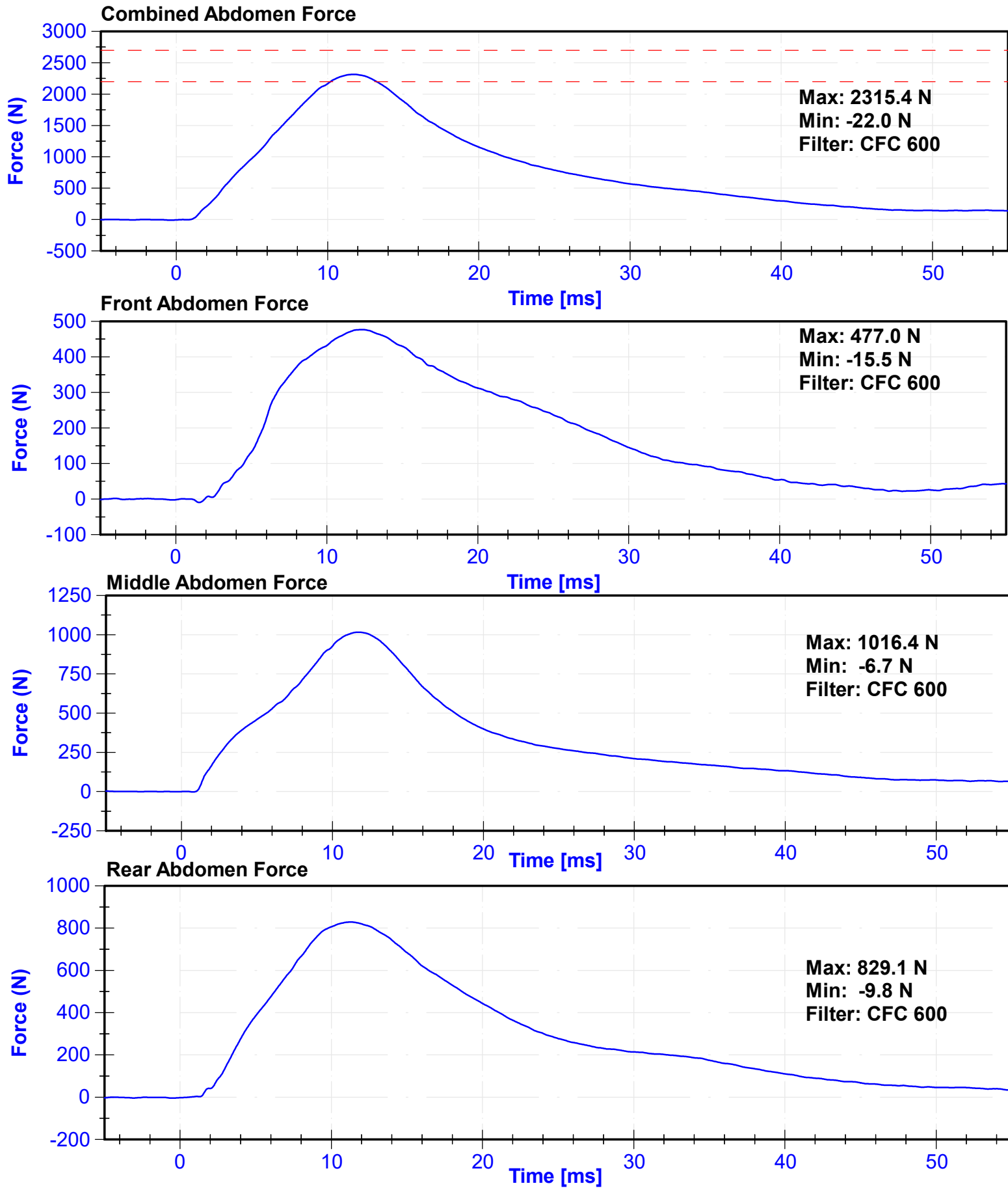
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	18	Pass
Velocity	3.9	4.1	m/s	4.02	Pass
Combined Abdomen Force	2200	2700	N	2315.4	Pass
Time at Peak Abdomen Force	10.0	12.3	ms	11.75	Pass
Resistive Probe Force	4000	4800	N	4656.9	Pass
Time at Peak Resistive Force	10.6	13.0	ms	11.55	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	18587	11/20/2023	11/19/2024
Front Abdomen Load Cell	Denton	1512	8/15/2023	8/14/2024
Middle Abdomen Load Cell	Denton	1526	8/15/2023	8/14/2024
Rear Abdomen Load Cell	Denton	1516	8/15/2023	8/14/2024





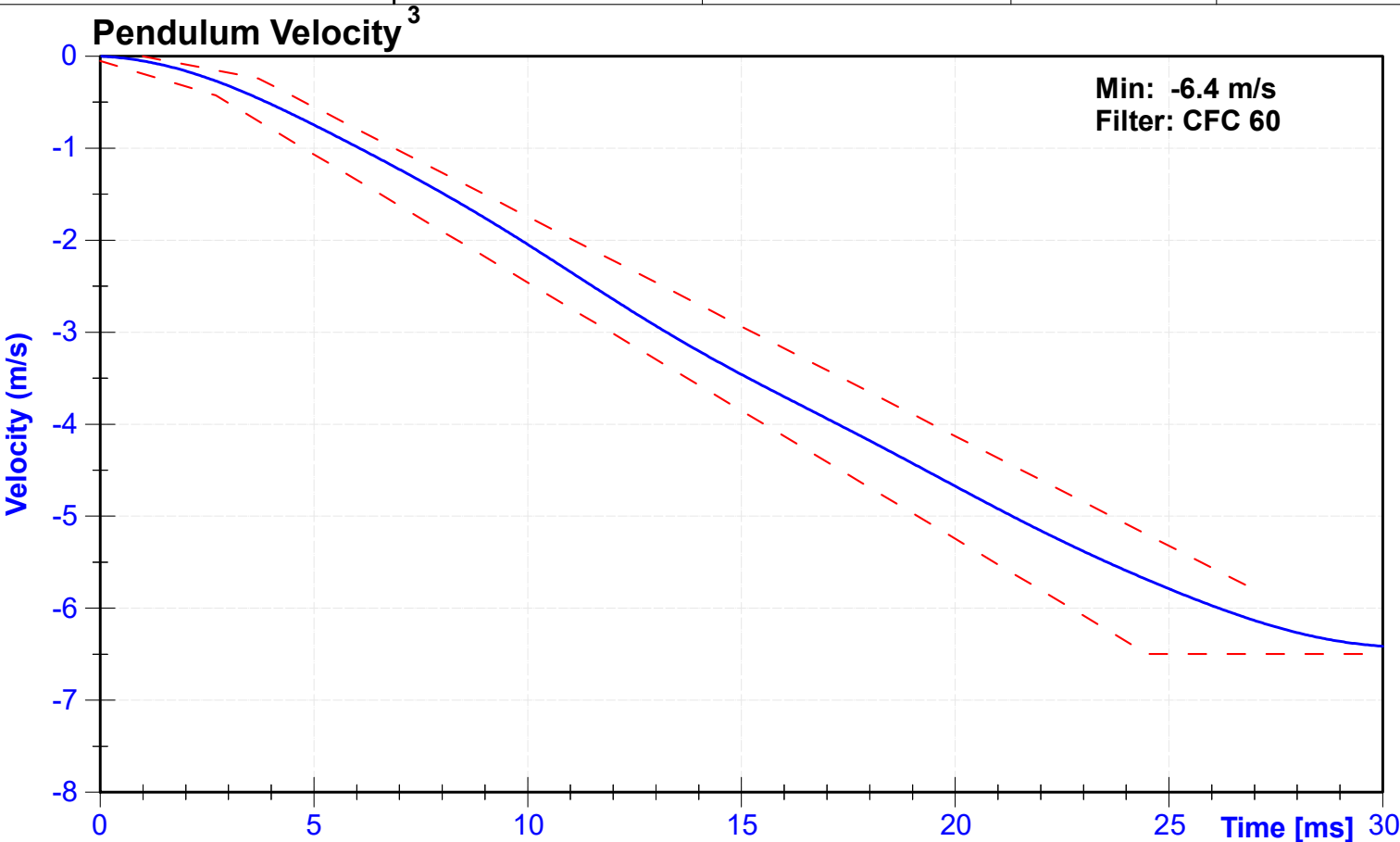
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

Results

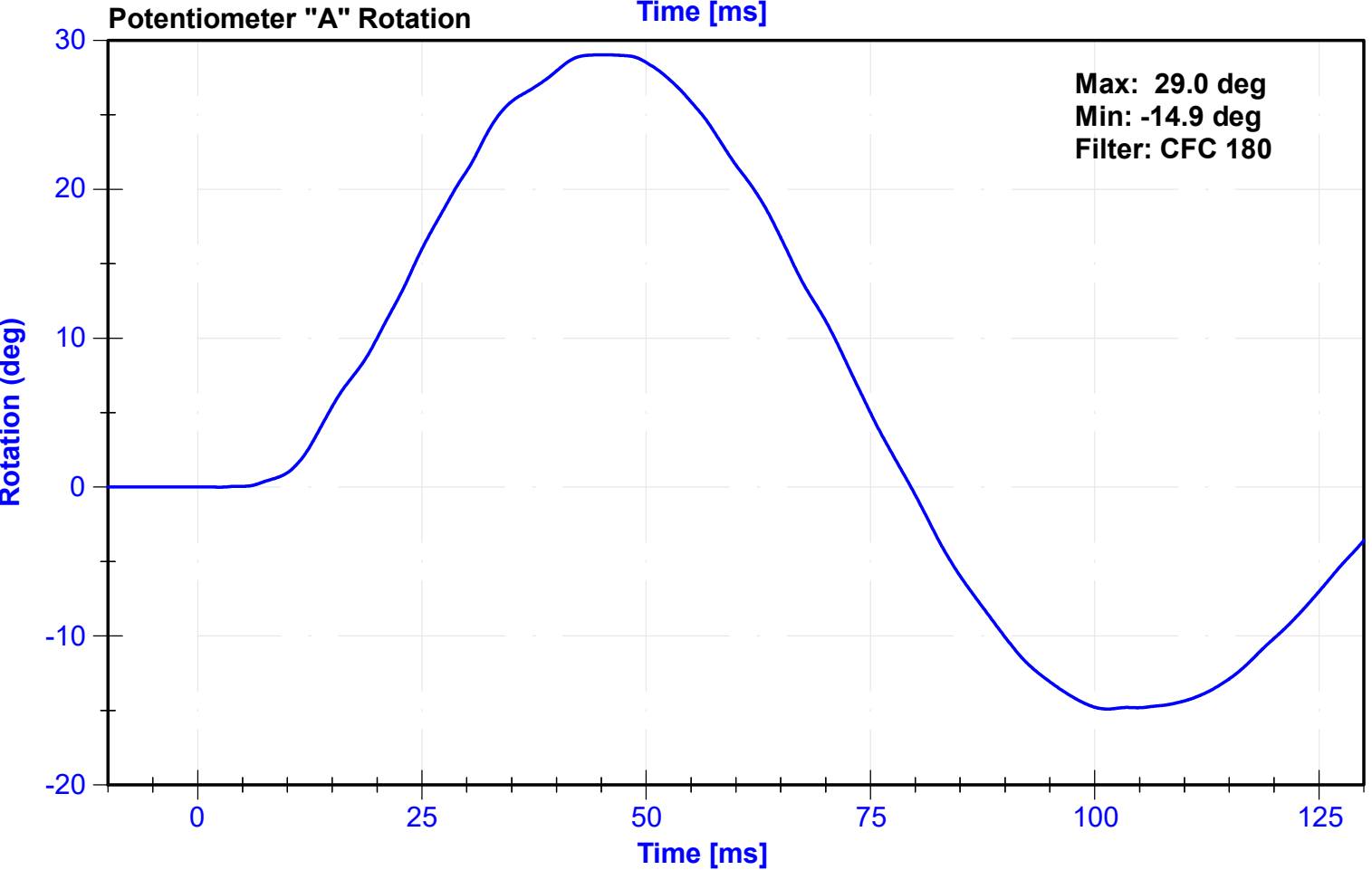
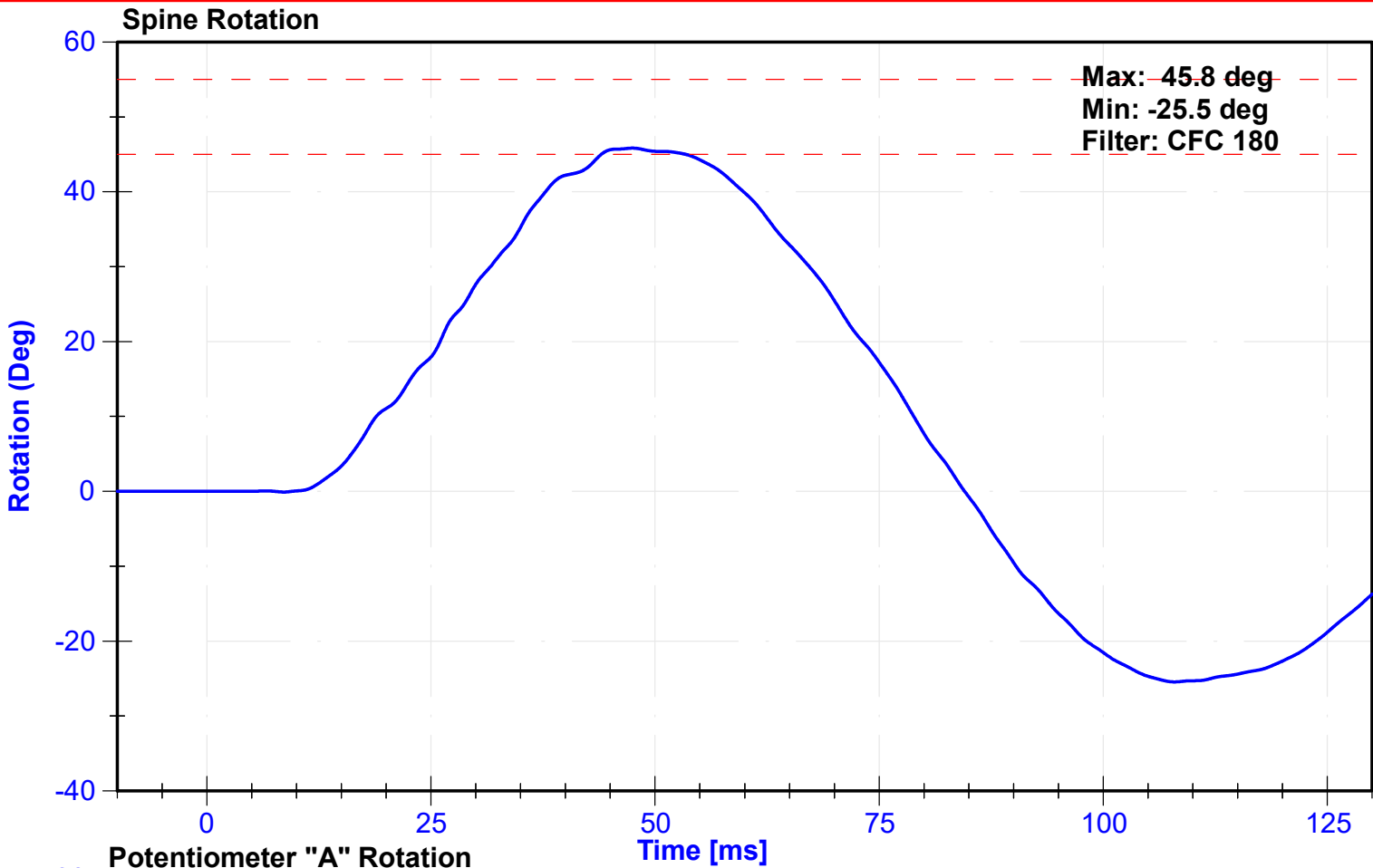
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.2	Pass
Humidity	10	70	%	37	Pass
Velocity	5.95	6.15	m/s	5.994	Pass
Lateral Spine Rotation	45	55	deg	45.8	Pass
Time at Maximum Rotation	39	53	ms	47.5	Pass
Time of Decay to Zero Degrees	37	57	ms	37.1	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

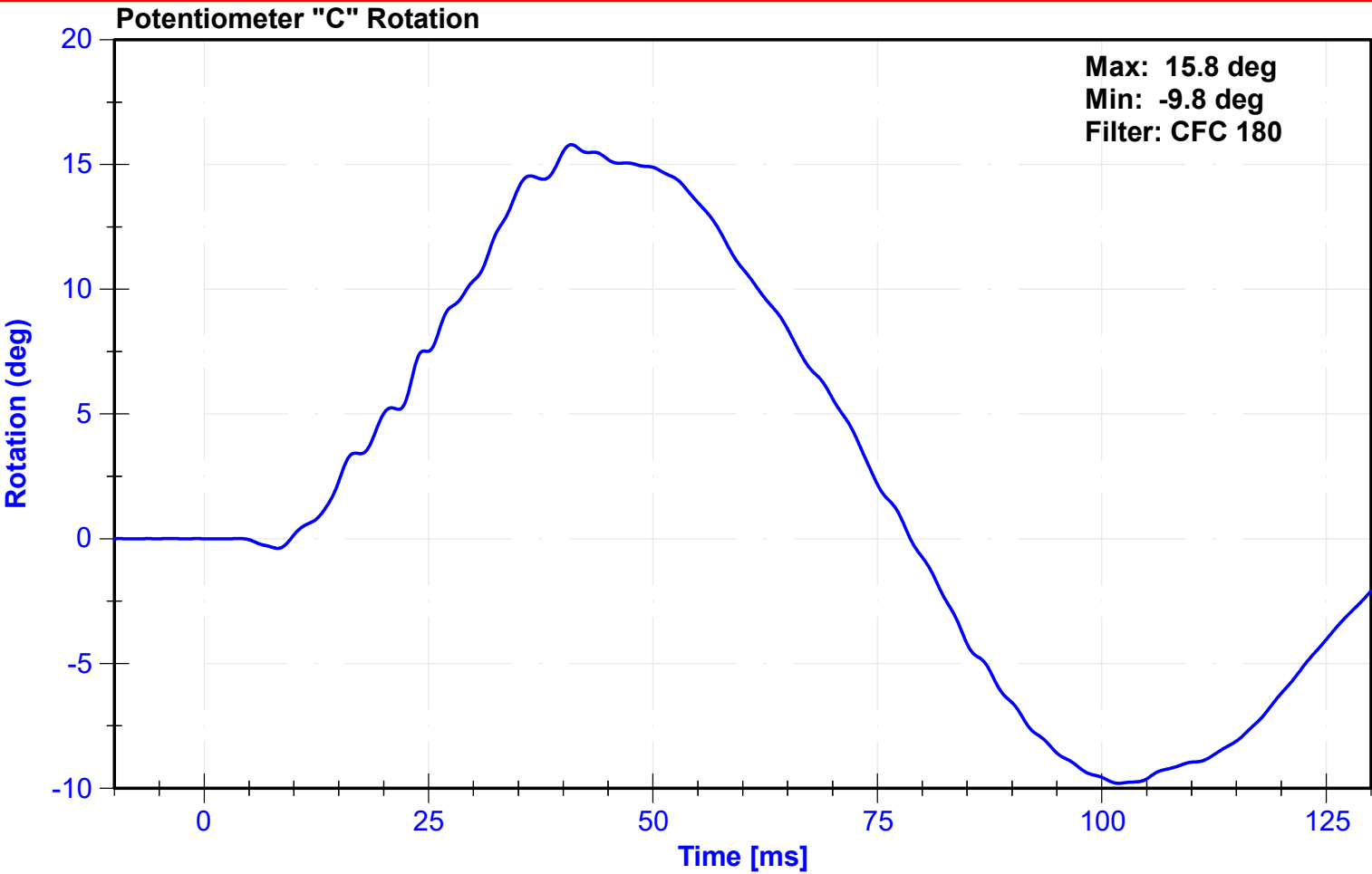
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/31/2023	4/28/2024
Pendulum "A" Potentiometer	Sfernice	2247	12/5/2023	12/4/2024
Condyle "B" Potentiometer	Sfernice	095	9/29/2023	9/28/2024



^{1,2} Upper and lower boundaries specified in Appendix I
IV-19





Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.5
		30.0	-6.5

ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

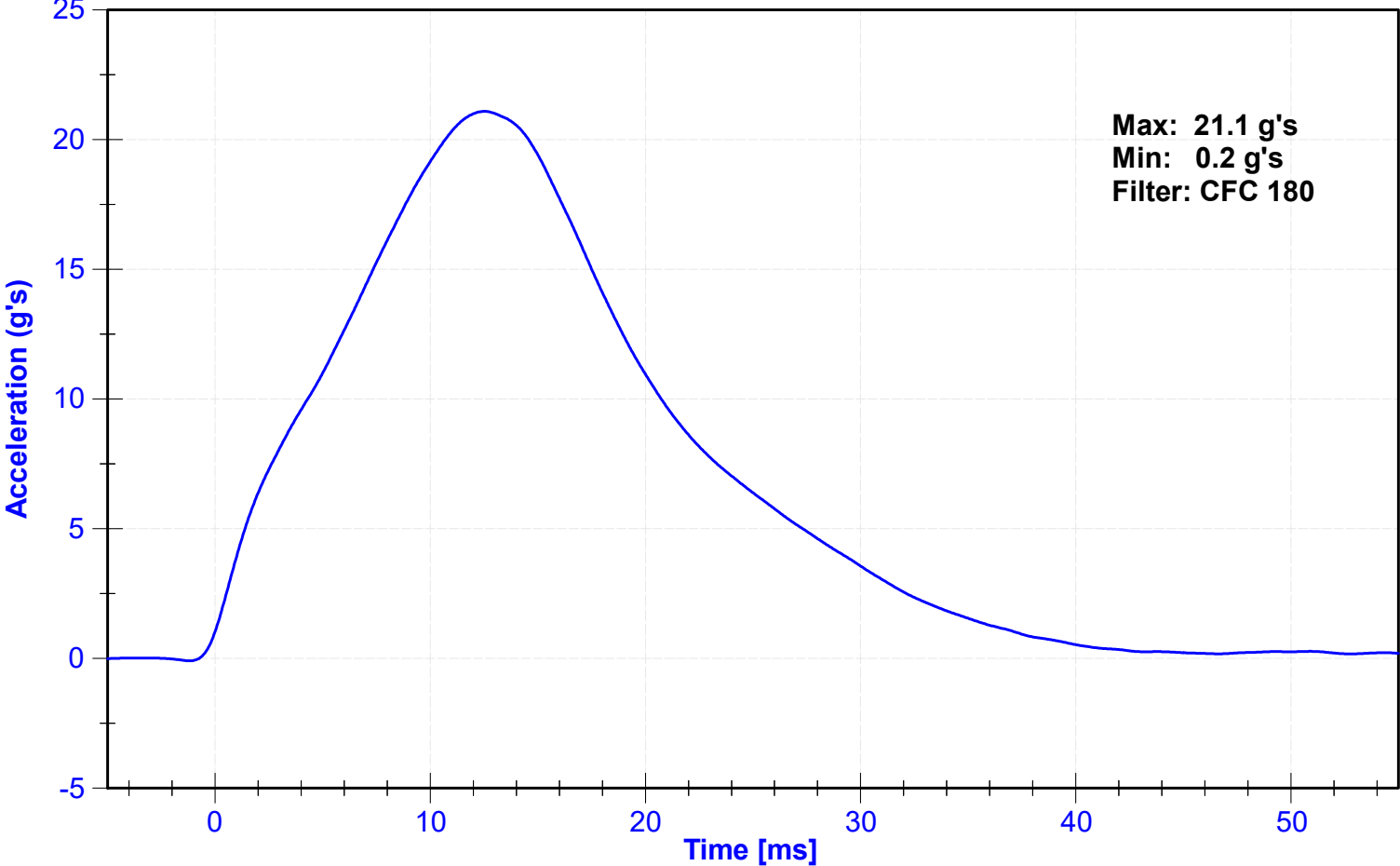
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	18	Pass
Velocity	4.2	4.4	m/s	4.27	Pass
Resistive Force	4700	5400	N	4830.1	Pass
Time at Peak Resistive Force	11.8	16.1	ms	12.50	Pass
Pubic Force	-1590	-1230	N	-1234.5	Pass
Time at Peak Pubic Force	12.2	17.0	ms	14.55	Pass

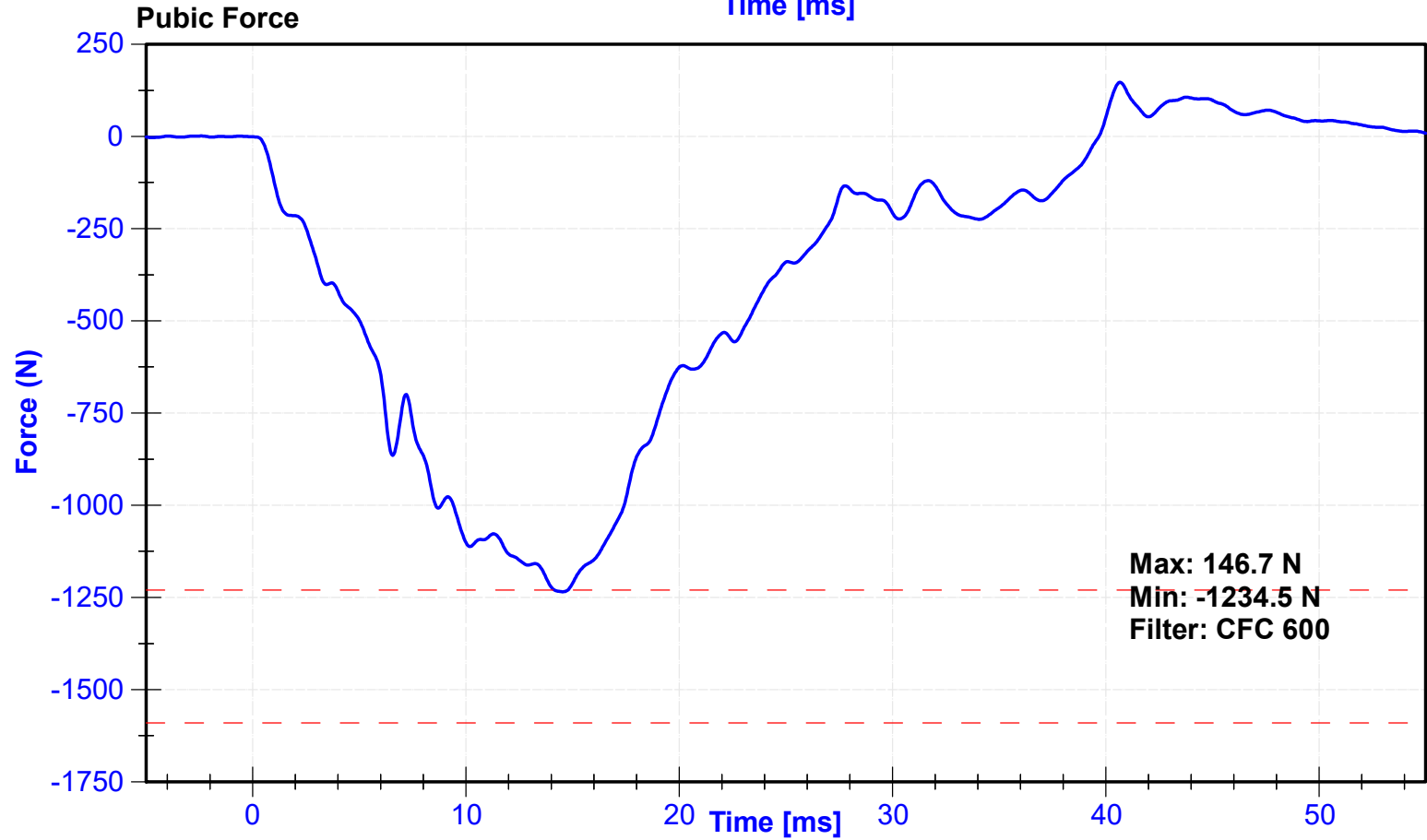
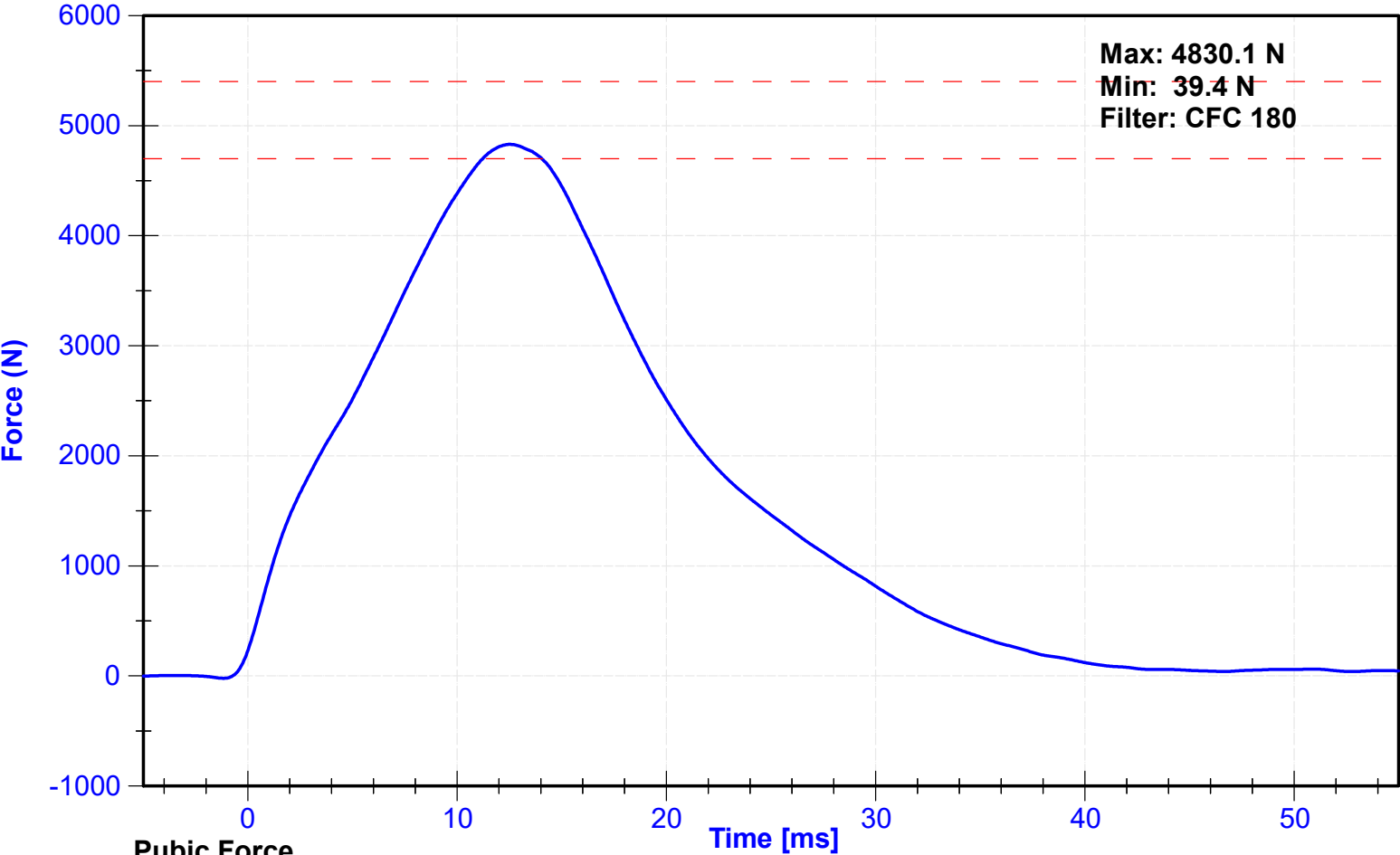
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	18587	11/20/2023	11/19/2024
Pubic Load Cell	Denton	464-FY	8/15/2023	8/14/2024

Probe Acceleration



Resistive Force



POST-TEST DUMMY PERFORMANCE CALIBRATION TEST DATA
(Subpart U, ES-2re)

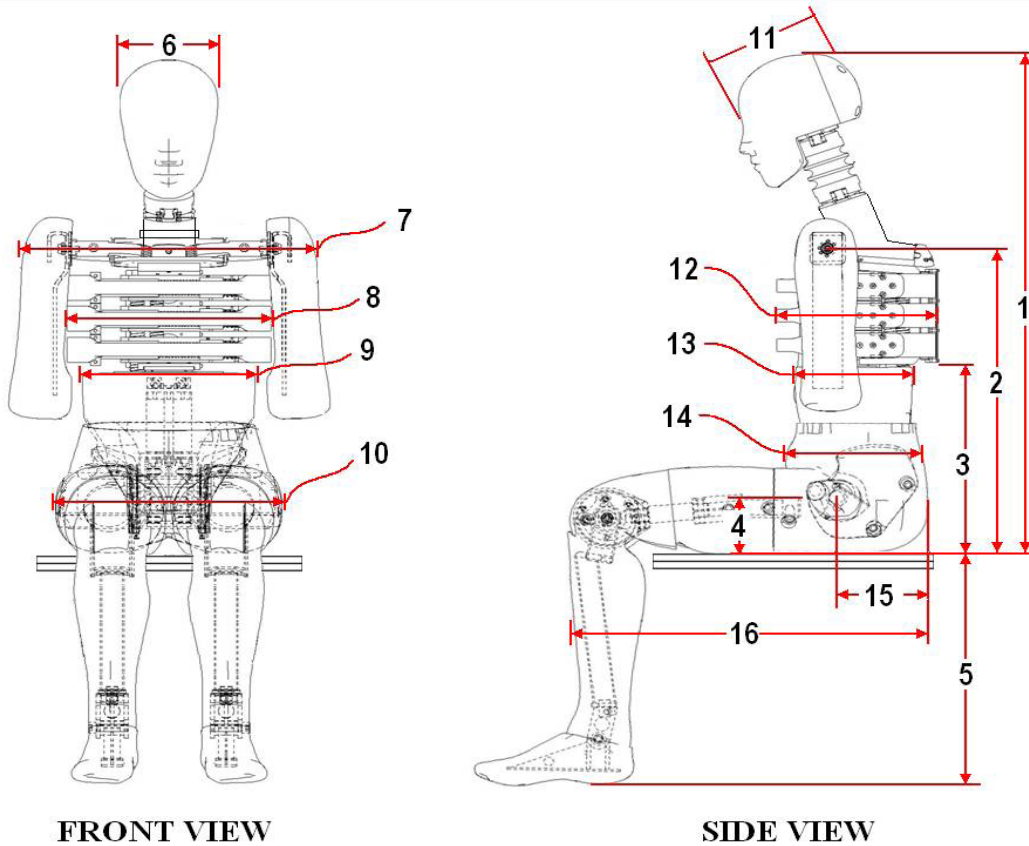


External Measurements - EuroSID-2re

Technician: K. Brogan

Date: 03/25/2024

Dummy Serial Number: DG5348



FRONT VIEW

SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	913	Pass
2	Seat to Shoulder Joint	558	572	568	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	351	Pass
4	Seat to Hip Joint (center of bolt)	97	103	102	Pass
5	Sole to Seat, Sitting	333	451	414	Pass
6	Head Width	152	158	155	Pass
7	Shoulder/Arm Width	461	479	472	Pass
8	Thorax Width	322	332	327	Pass
9	Abdomen Width	273	287	280	Pass
10	Pelvis Lap Width	359	373	367	Pass
11	Head Depth	196	206	200	Pass
12	Thorax Depth	262	272	268	Pass
13	Abdomen Depth	194	204	198	Pass
14	Pelvis Depth	235	245	240	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	155	Pass
16	Back of Buttocks to Front Knee	597	615	600	Pass

ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

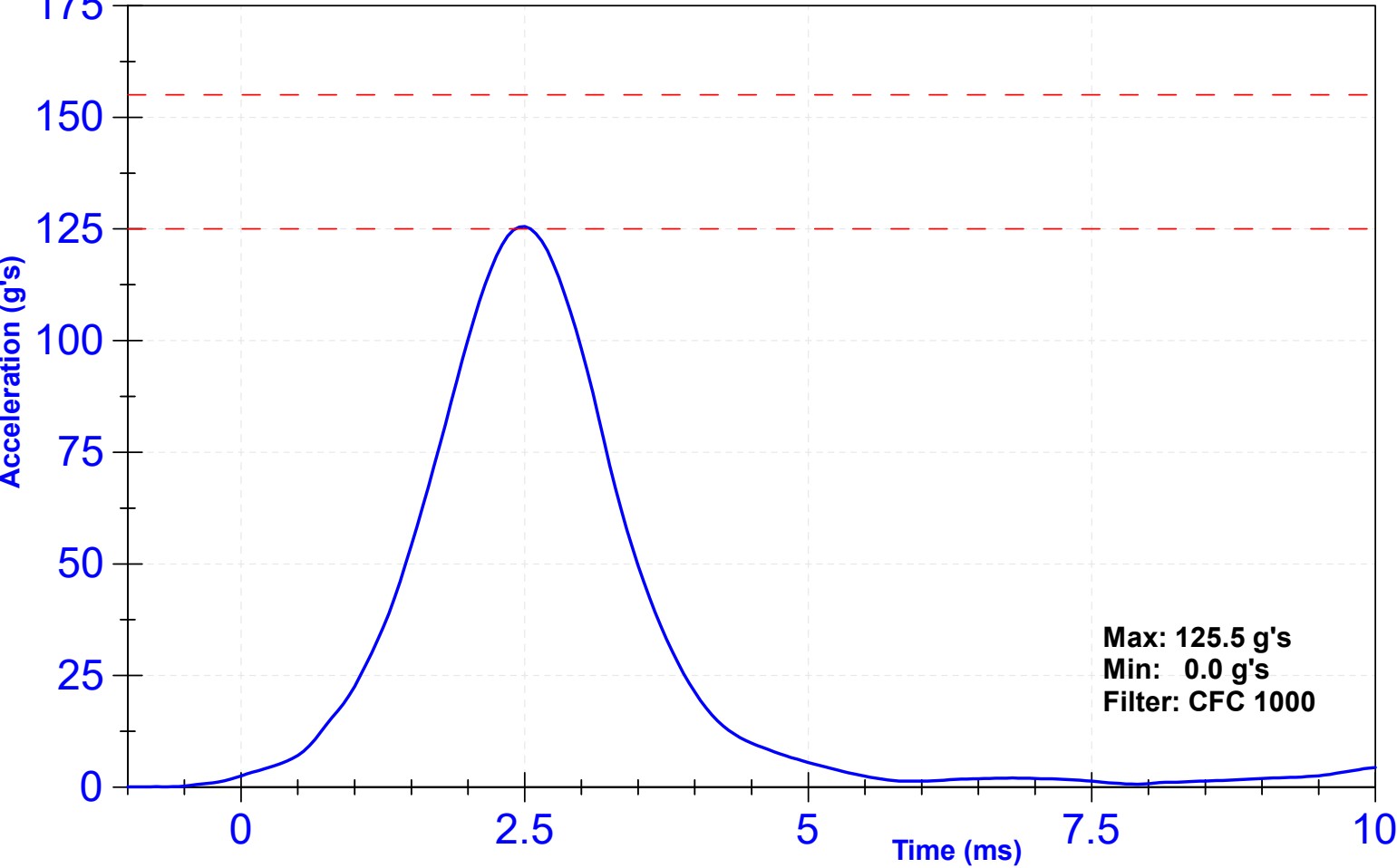
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	18	Pass
Resultant Acceleration	125	155	g's	125.5	Pass
Oscillation	0	15	%	3.51	Pass
Fore-Aft Acceleration	-15	15	g's	10.6	Pass

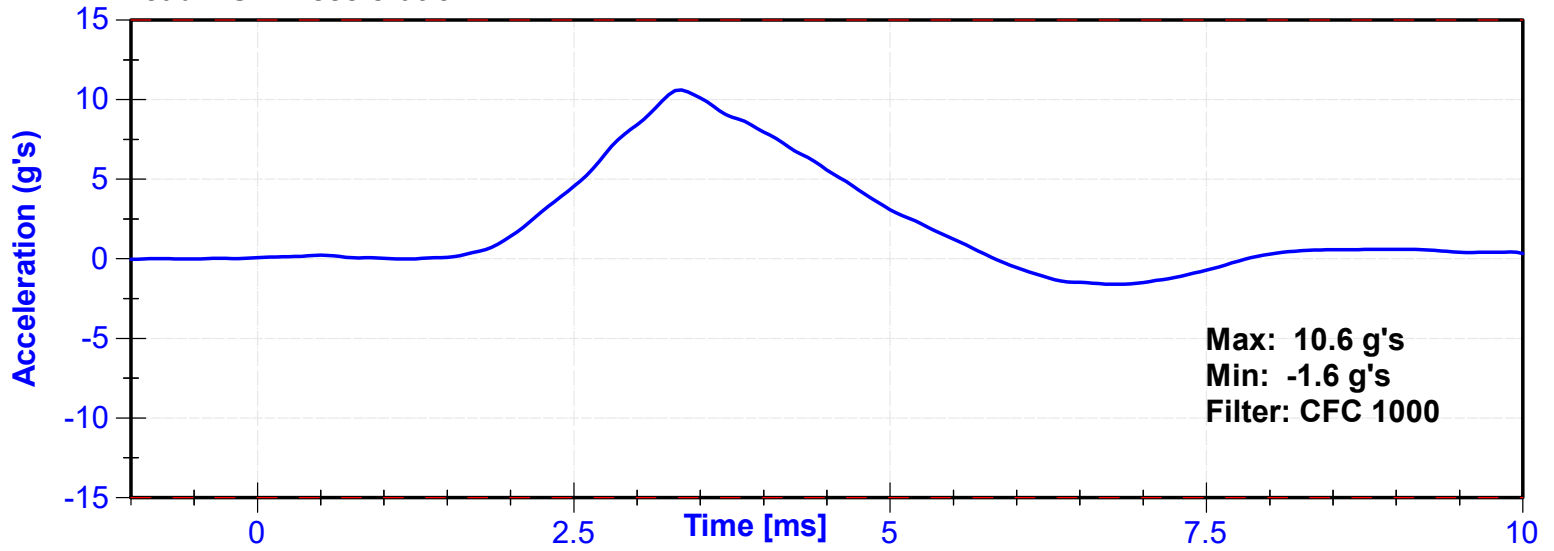
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	Endevco	18613	2/8/2024	8/6/2024
Y Accelerometer	Endevco	18472	2/8/2024	8/6/2024
Z Accelerometer	Endevco	18663	2/8/2024	8/6/2024

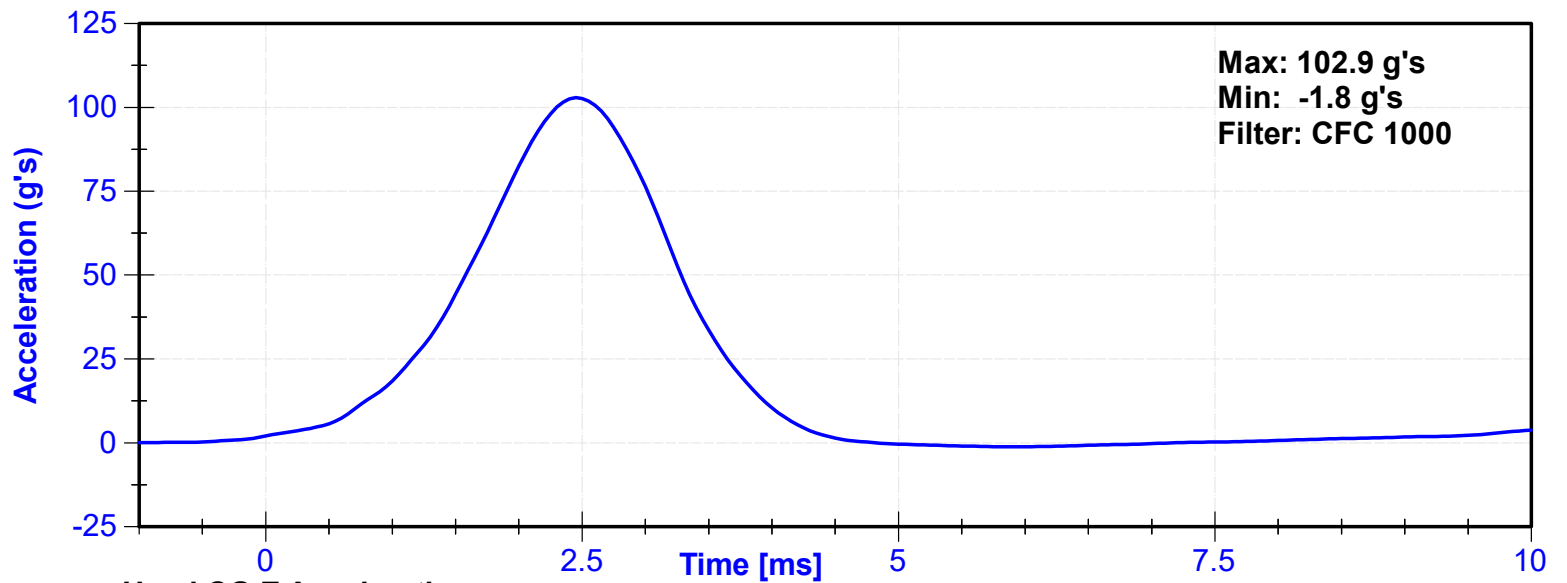
Resultant Acceleration



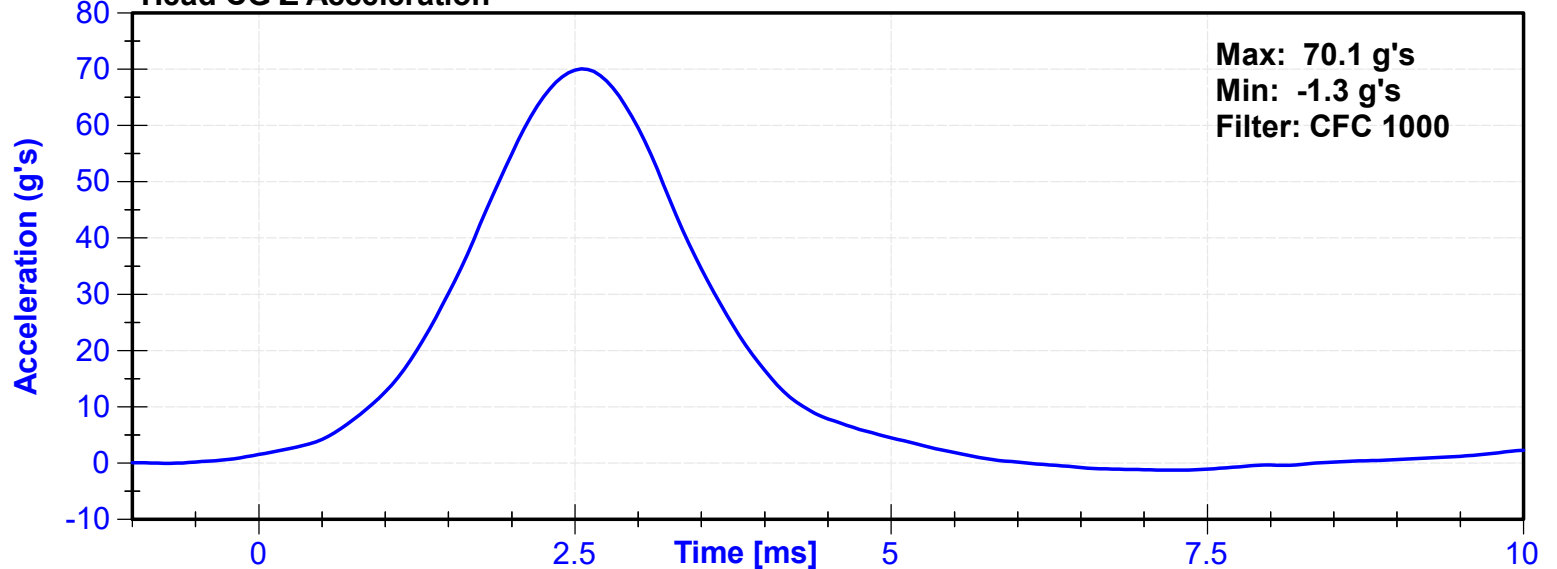
Head CG X Acceleration



Head CG Y Acceleration



Head CG Z Acceleration



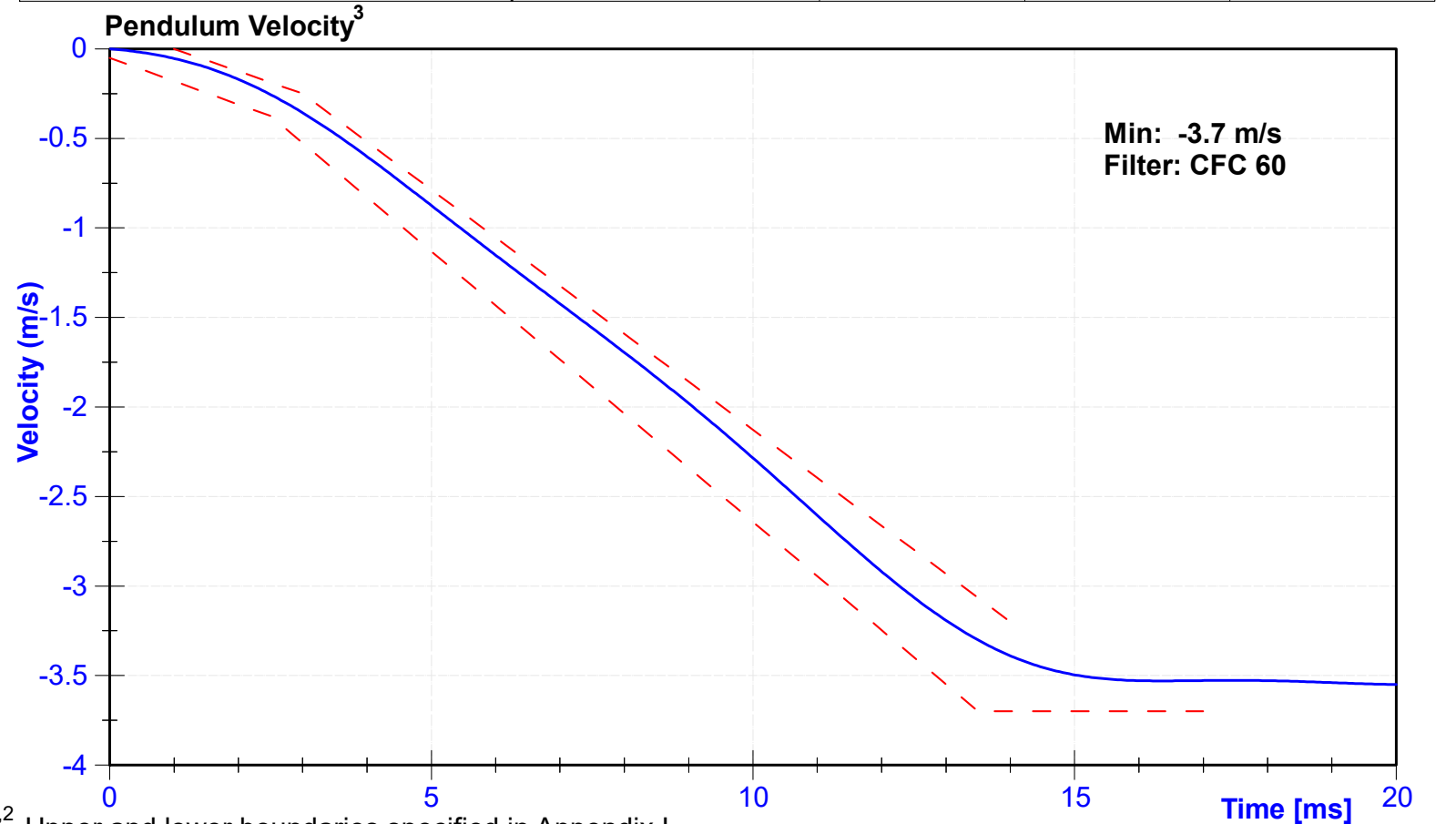
ATD Manufacturer	Denton	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	17	Pass
Velocity	3.3	3.5	m/s	3.31	Pass
Lateral Neck Rotation	49	59	deg	49.4	Pass
Time at Maximum Rotation	54	66	ms	55.9	Pass
Time of Rotation Decay from Maximum	53	88	ms	56.0	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

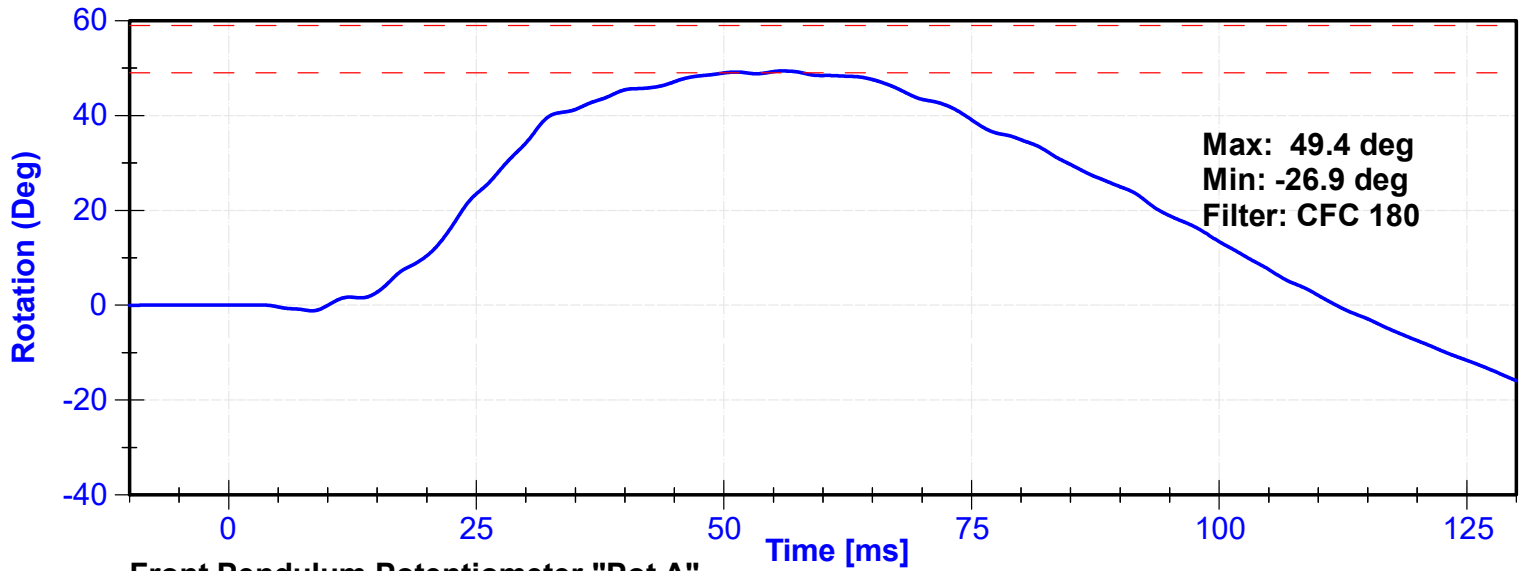
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/31/2023	4/28/2024
Front Pendulum Potentiometer	Sfernice	2247	12/5/2023	12/4/2024
Headform Potentiometer	Sfernice	095	9/29/2023	9/28/2024

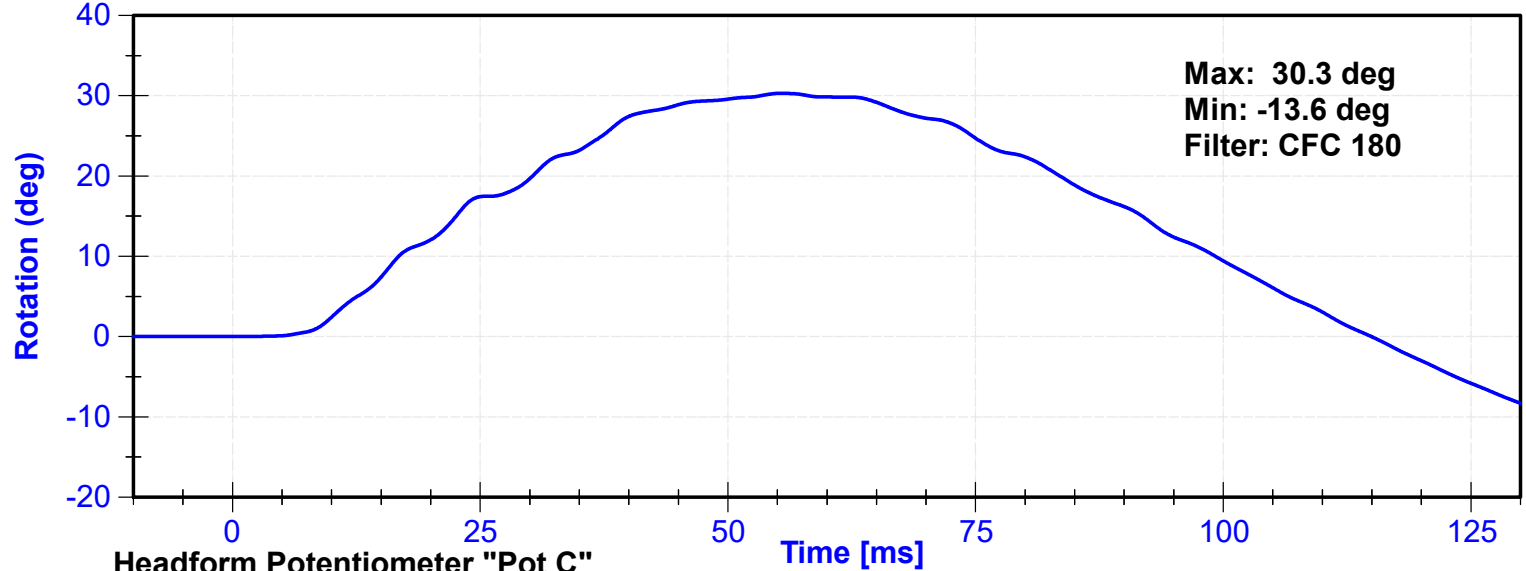


^{1,2} Upper and lower boundaries specified in Appendix I

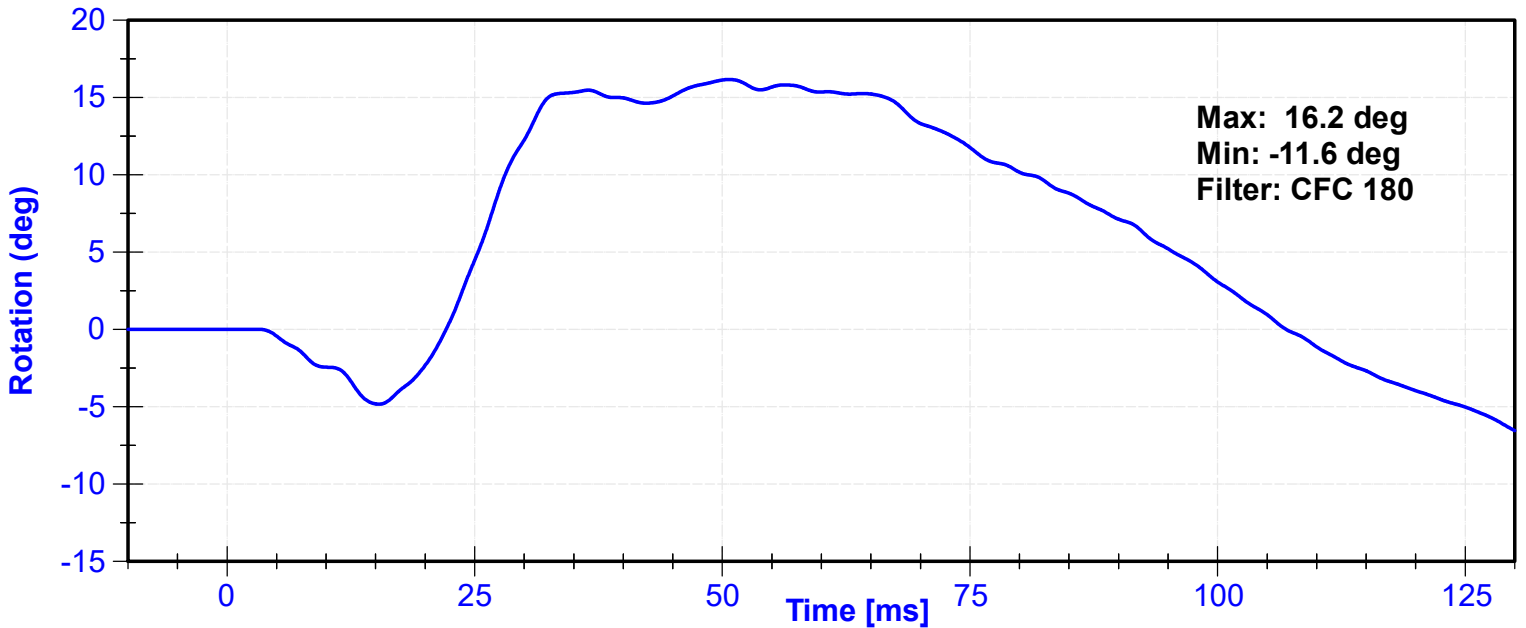
Neck Rotation



Front Pendulum Potentiometer "Pot A"



Headform Potentiometer "Pot C"



Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.25	2.5	-0.375
14.0	-3.20	13.5	-3.7
		17.0	-3.7

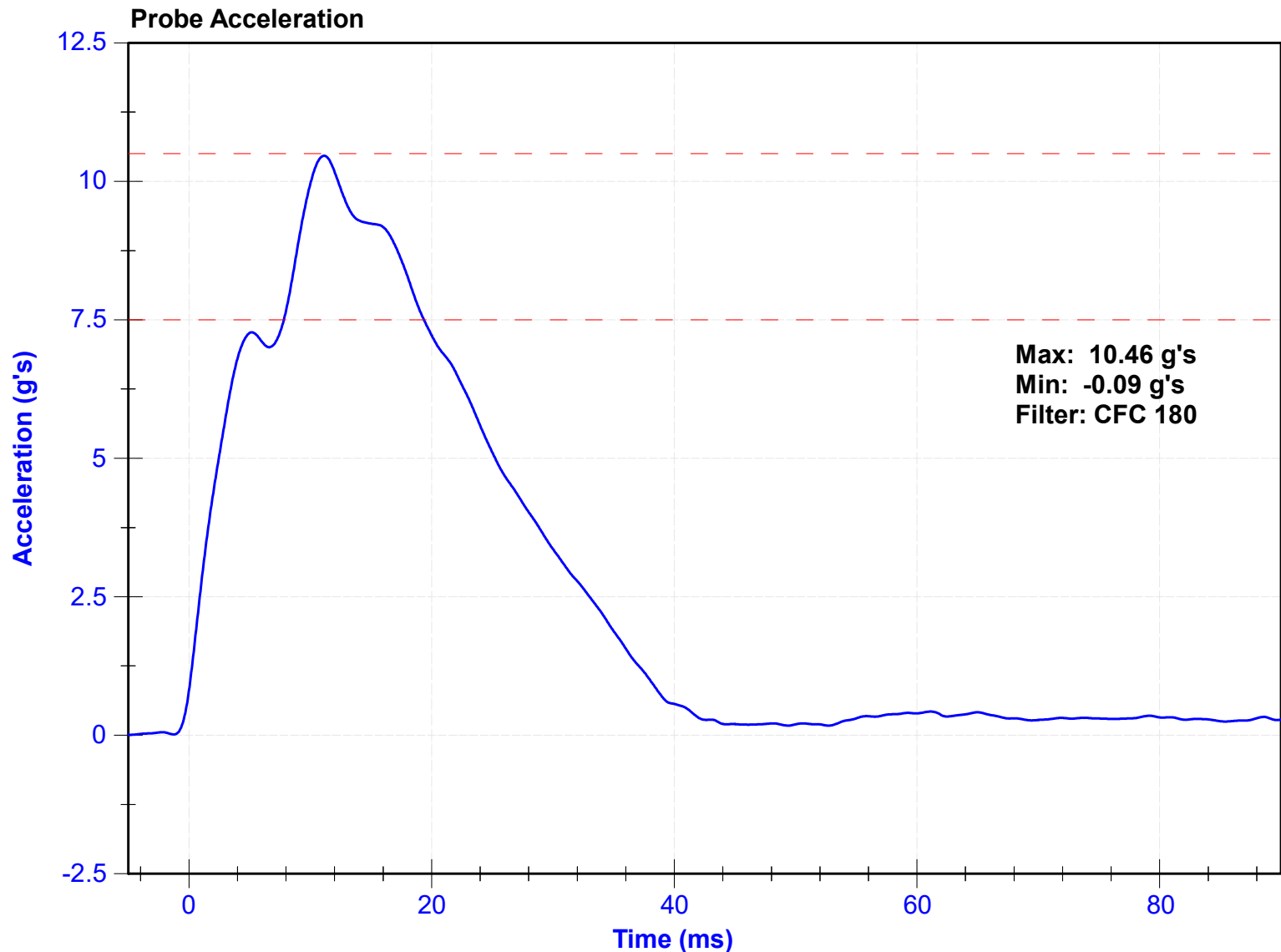
ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	19	Pass
Velocity	4.2	4.4	m/s	4.26	Pass
Probe Acceleration	7.5	10.5	g's	10.46	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	18587	11/20/2023	11/19/2024



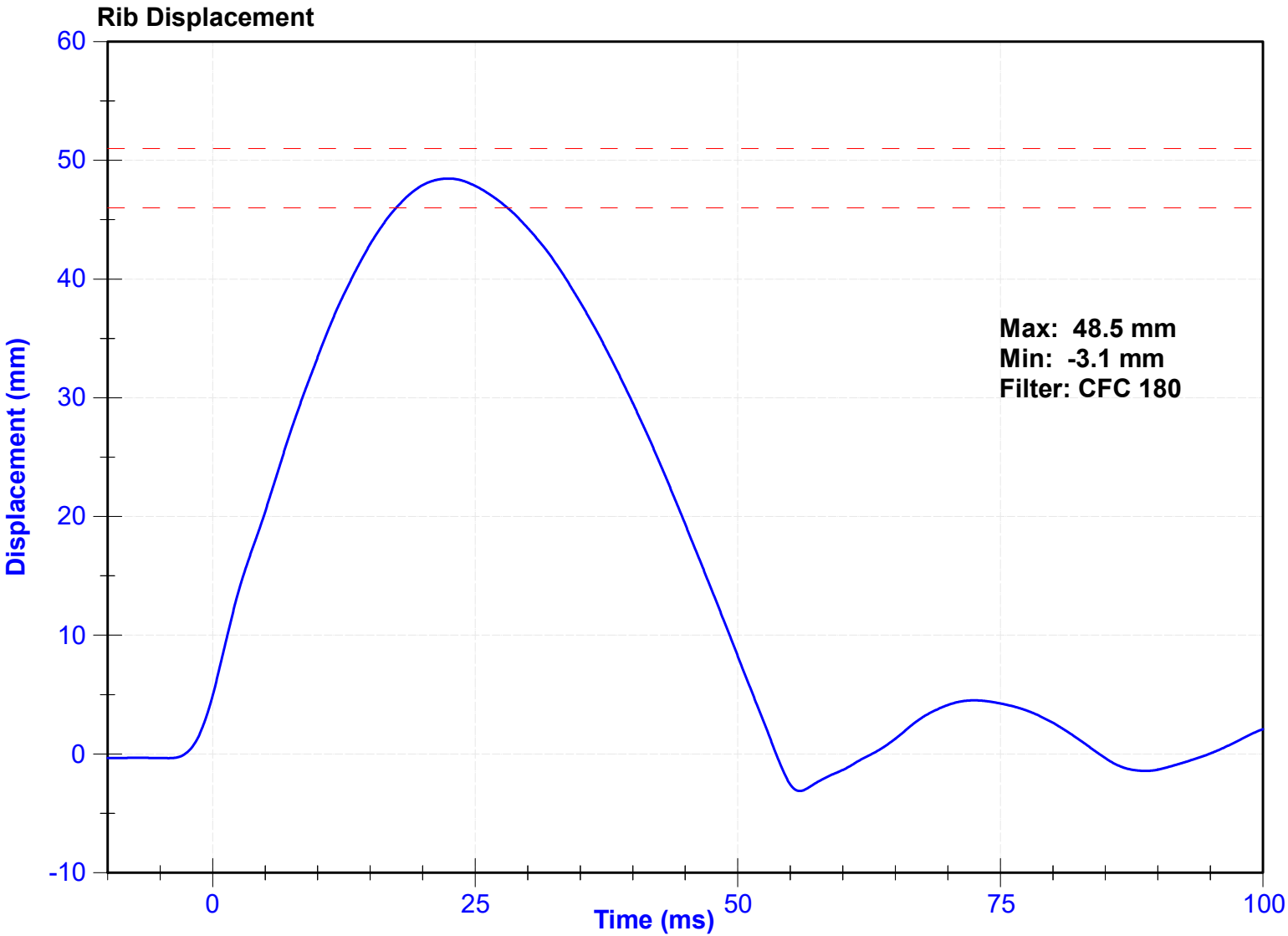
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	17	Pass
Rib Displacement	46	51	mm	48.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	268GFE	2/8/2024	8/8/2024



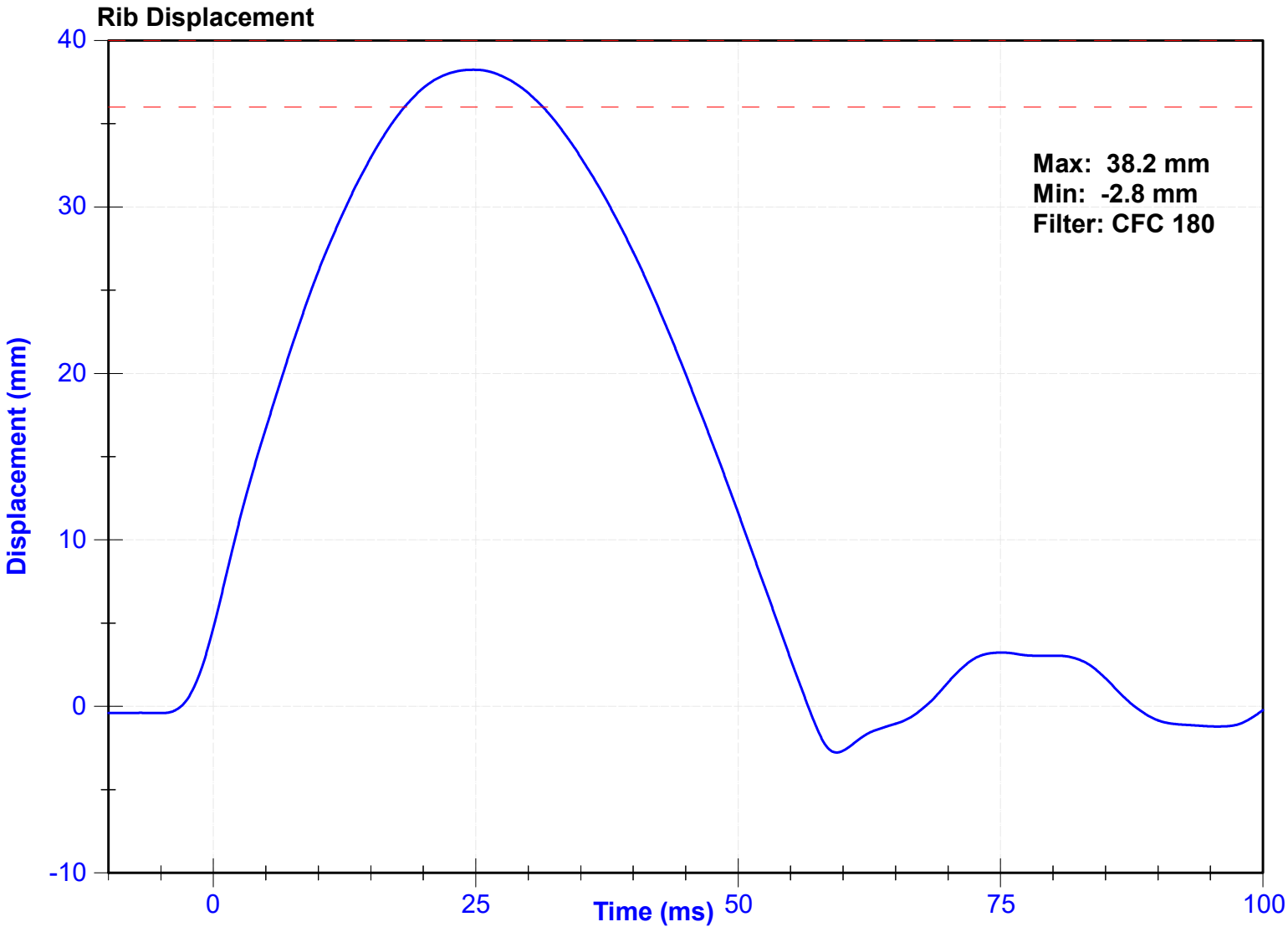
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	17	Pass
Rib Displacement	36	40	mm	38.2	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	268GFE	2/8/2024	8/8/2024



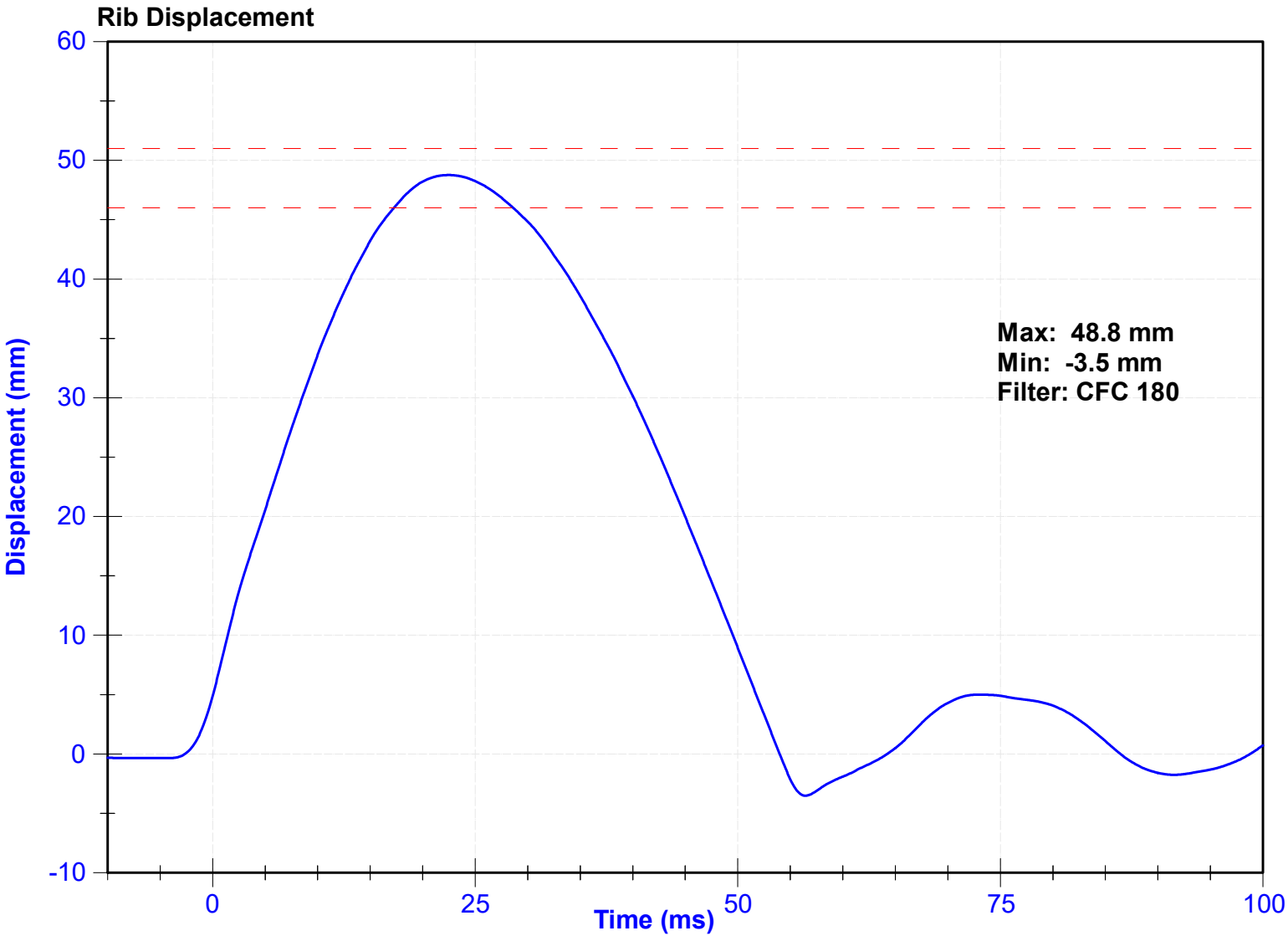
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	17	Pass
Rib Displacement	46	51	mm	48.8	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	269GFE	2/8/2024	8/8/2024



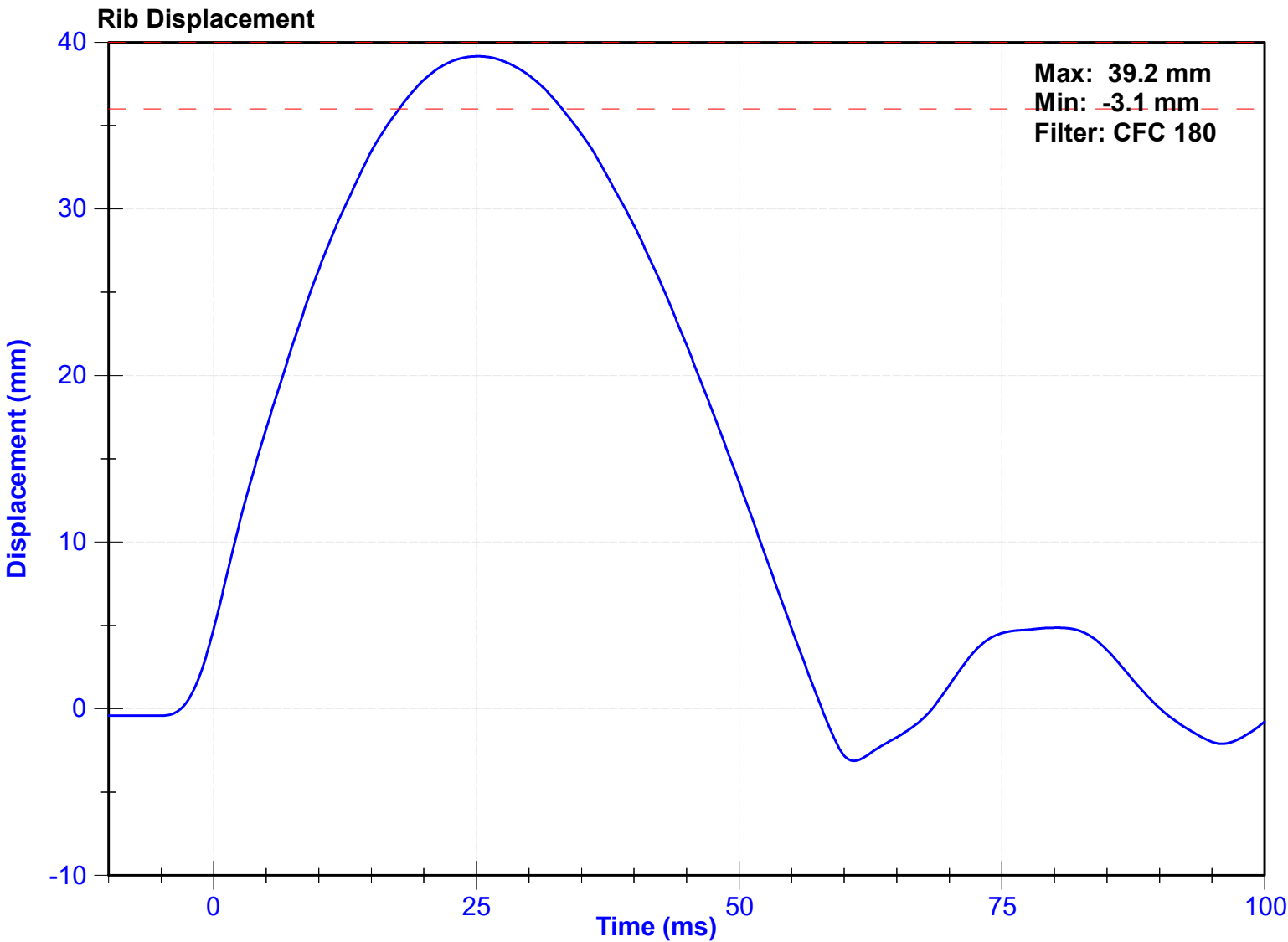
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	17	Pass
Rib Displacement	36	40	mm	39.2	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	269GFE	2/8/2024	8/8/2024



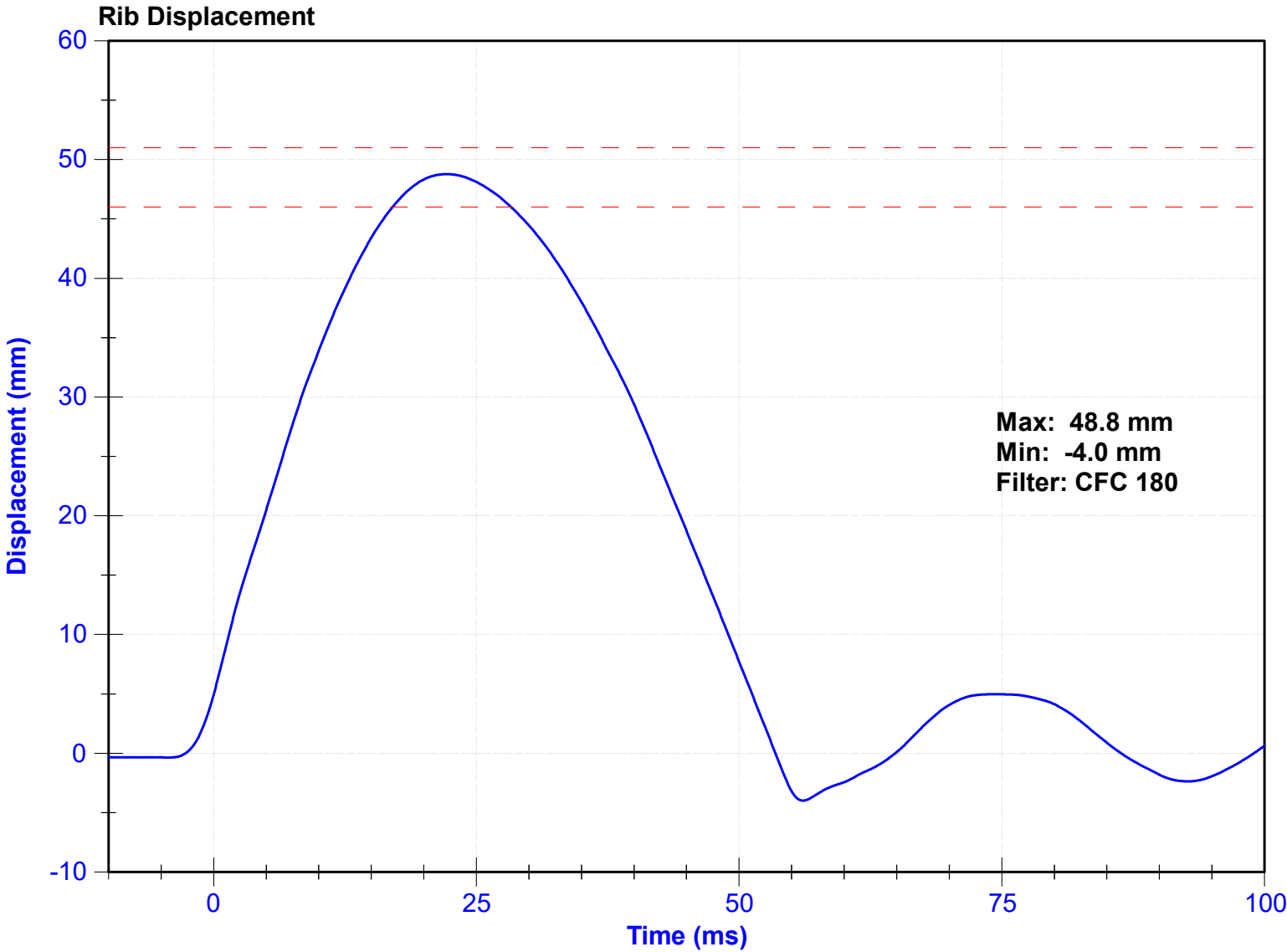
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	17	Pass
Rib Displacement	46	51	mm	48.8	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	270GFE	2/8/2024	8/8/2024



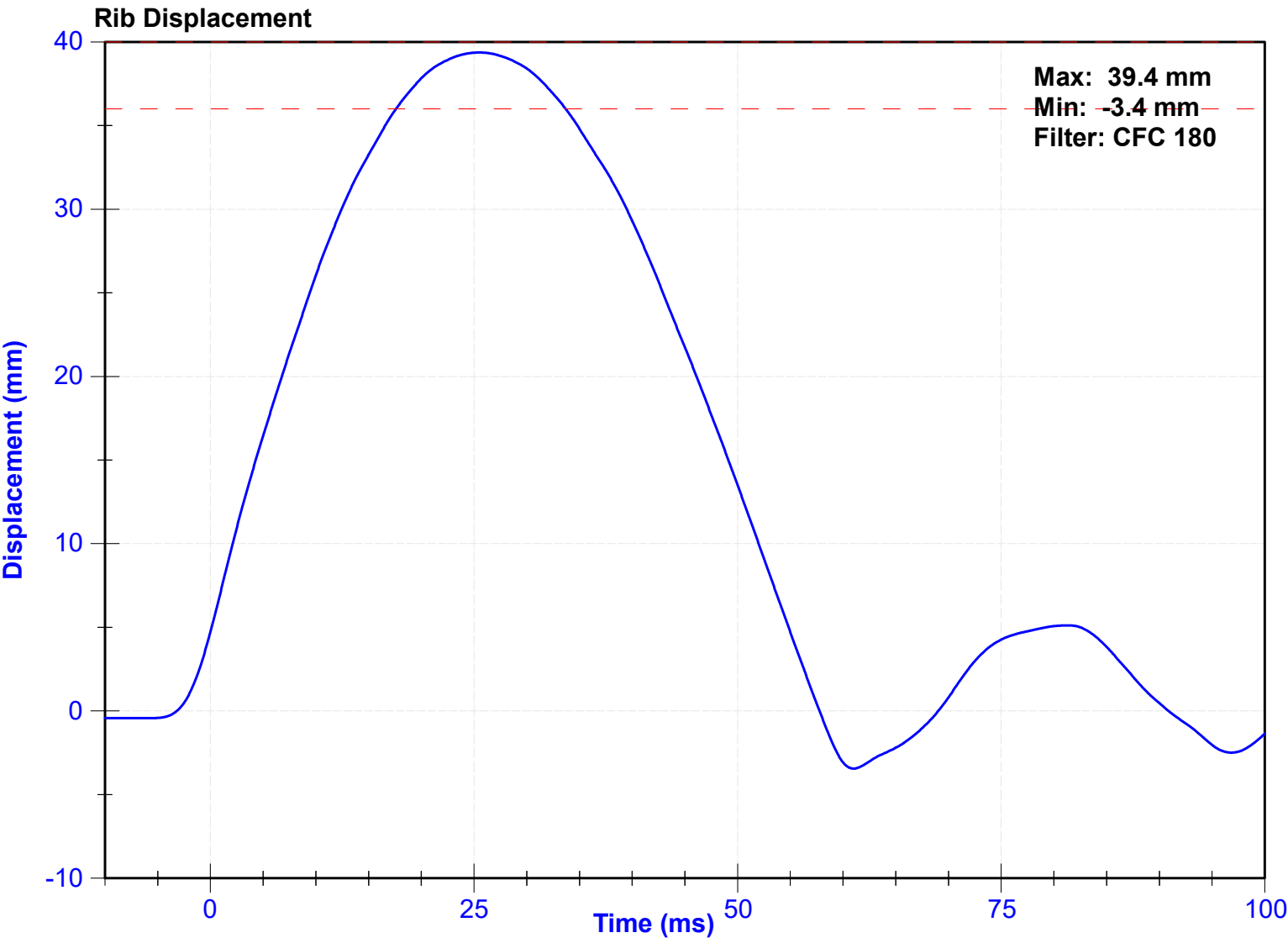
ATD Manufacturer	FTSS	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantel

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	17	Pass
Rib Displacement	36	40	mm	39.4	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	270GFE	2/8/2024	8/8/2024



ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

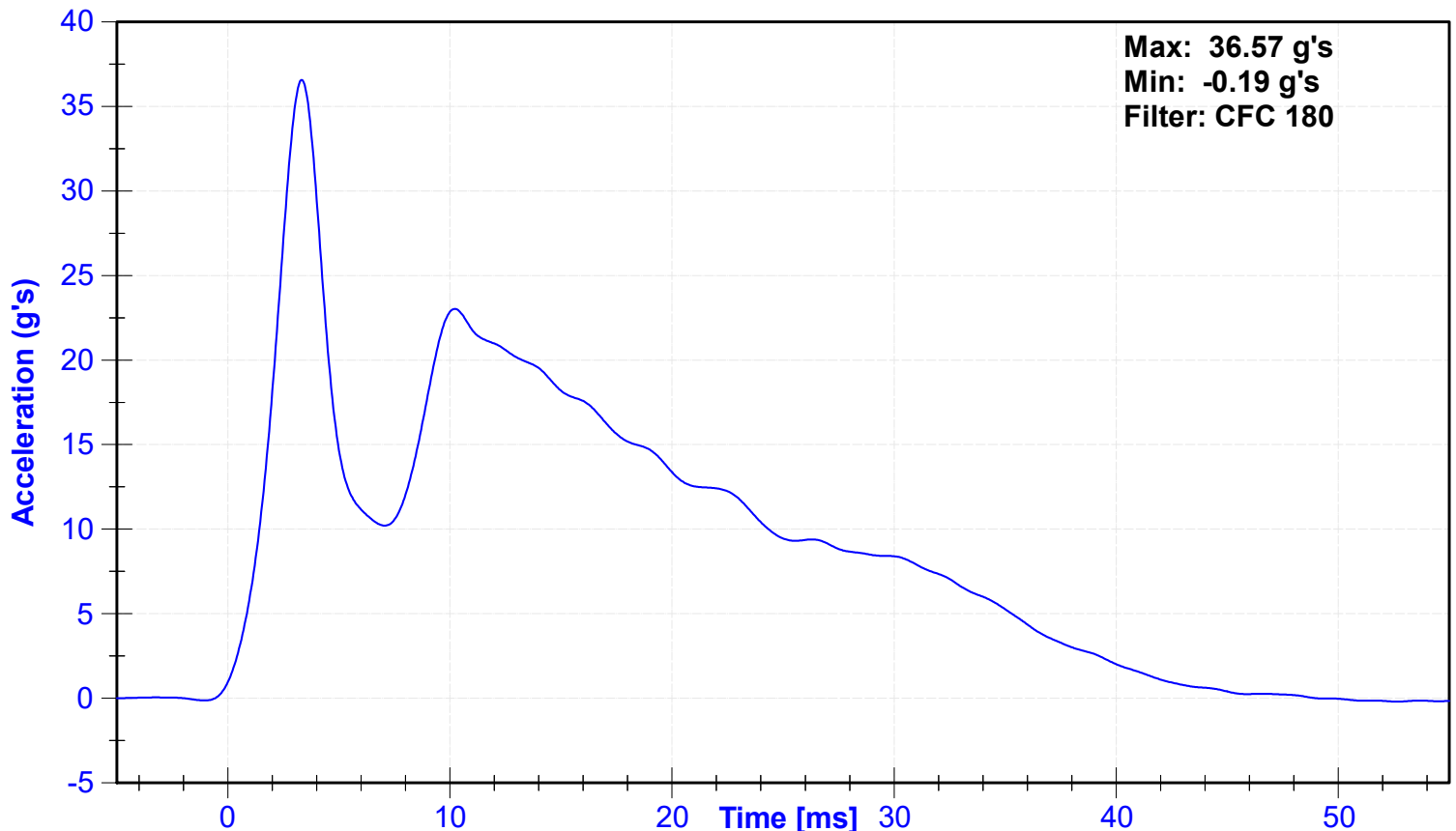
Results

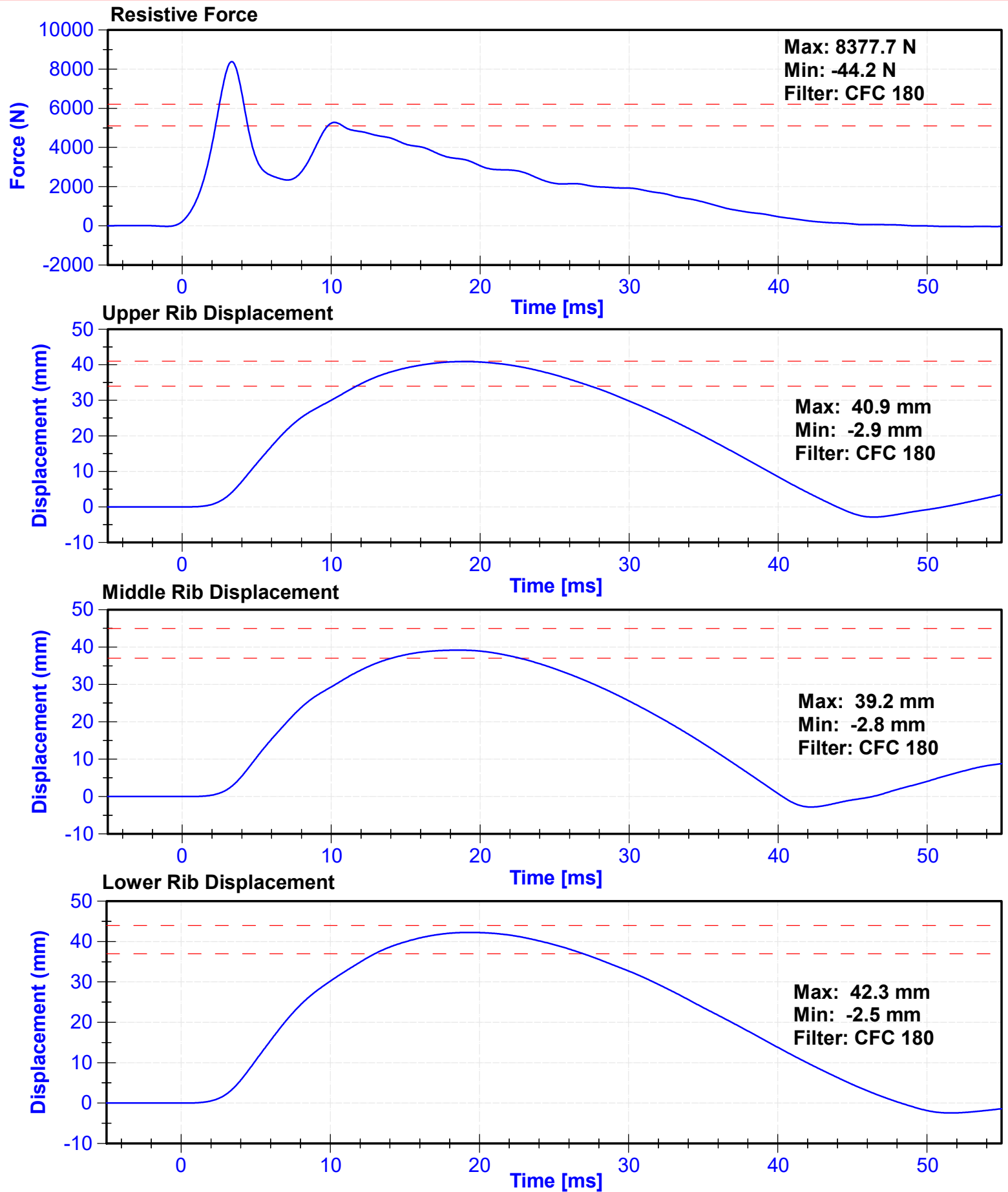
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	19	Pass
Velocity	5.4	5.6	m/s	5.51	Pass
Resistive Force after 6ms	5100	6200	N	5276.6	Pass
Upper Thorax Rib Deflection	34	41	mm	40.9	Pass
Mid Thorax Rib Deflection	37	45	mm	39.2	Pass
Lower Thorax Rib Deflection	37	44	mm	42.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	18587	11/20/2023	11/19/2024
Upper Thorax Rib Potentiometer	Honeywell	269GFE	2/8/2024	8/8/2024
Middle Thorax Rib Potentiometer	Honeywell	268GFE	2/8/2024	8/8/2024
Lower Thorax Rib Potentiometer	Honeywell	270GFE	2/8/2024	8/8/2024

Probe Acceleration





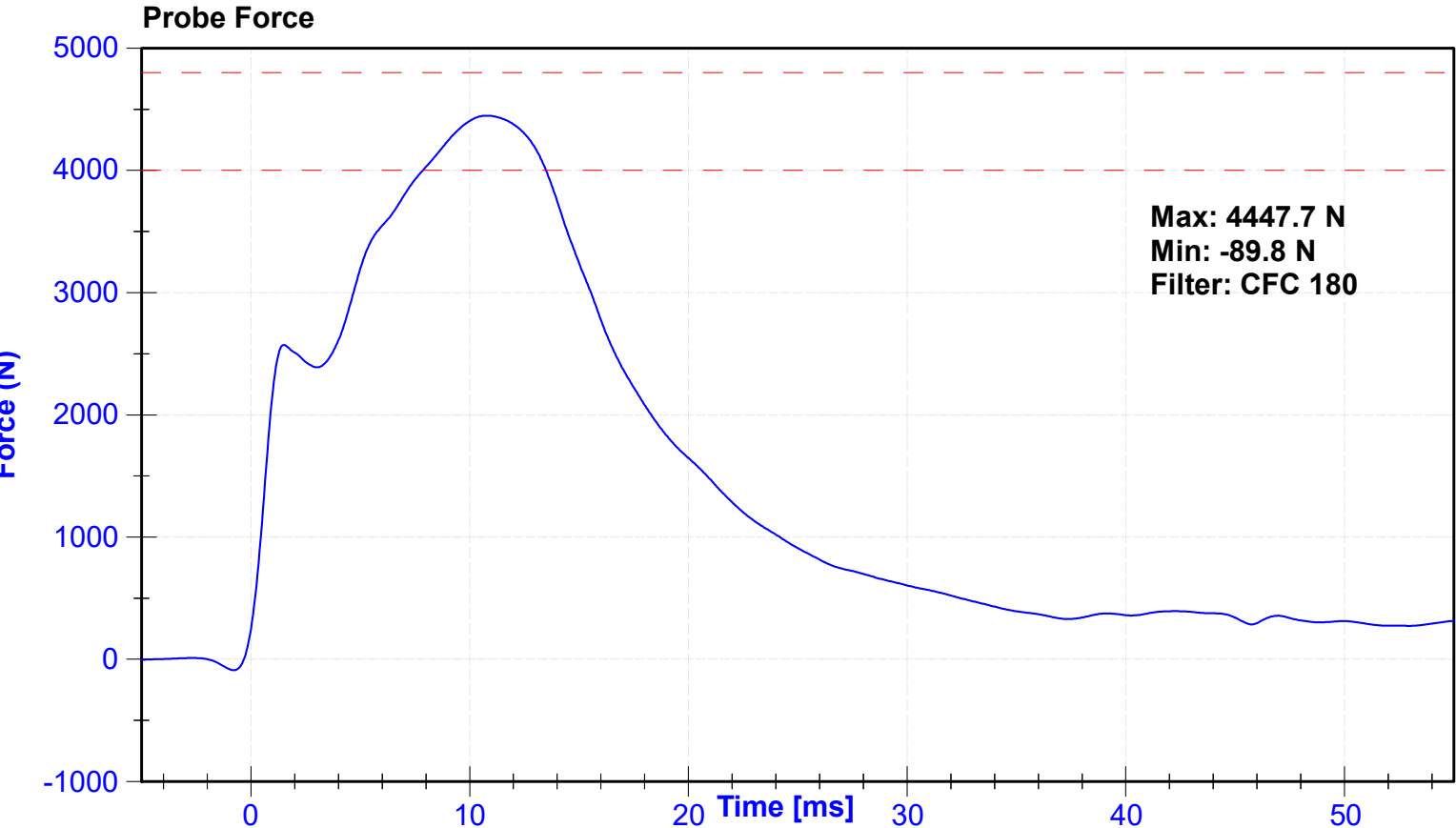
ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

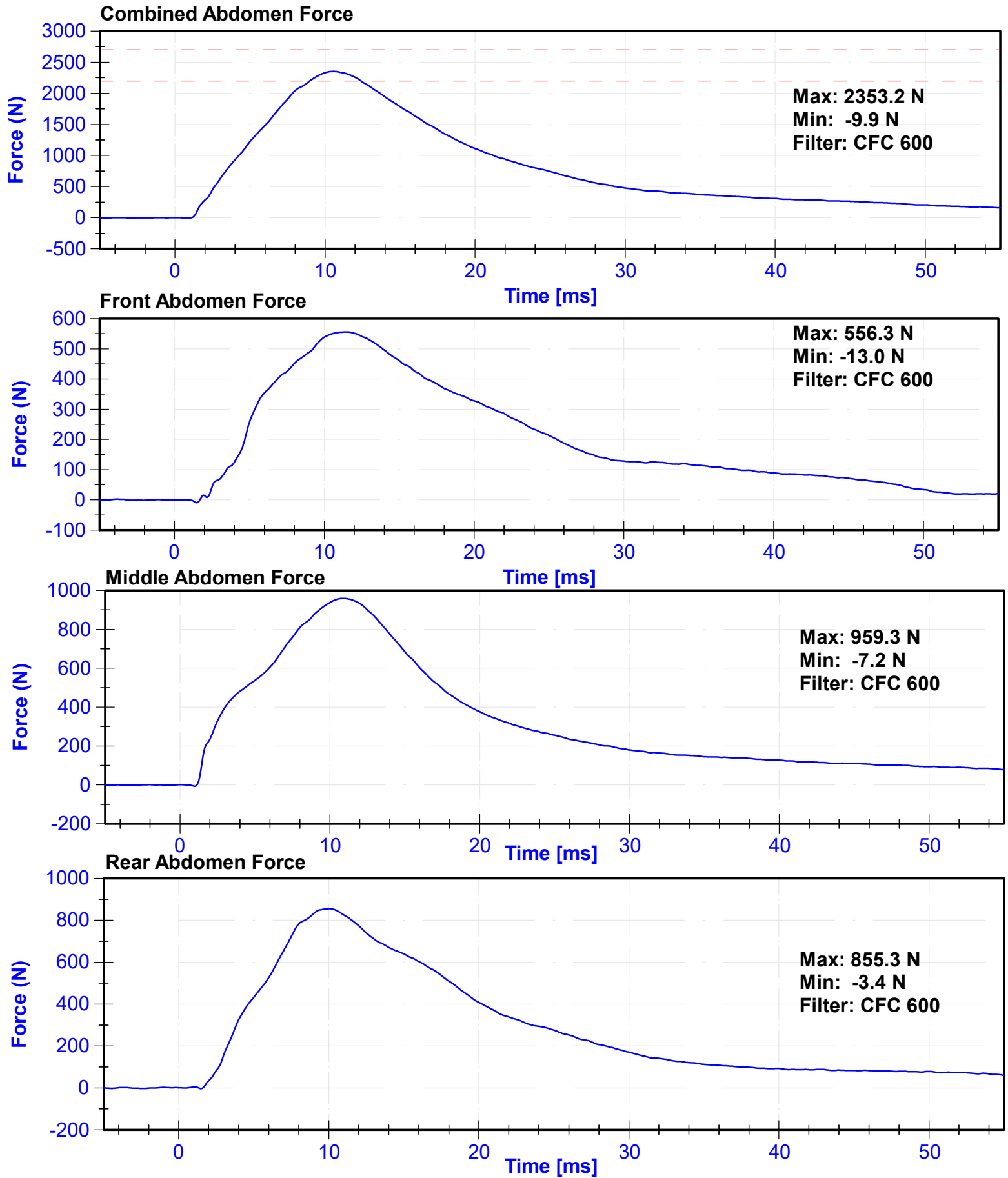
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	19	Pass
Velocity	3.9	4.1	m/s	4.03	Pass
Combined Abdomen Force	2200	2700	N	2353.2	Pass
Time at Peak Abdomen Force	10.0	12.3	ms	10.55	Pass
Resistive Probe Force	4000	4800	N	4447.7	Pass
Time at Peak Resistive Force	10.6	13.0	ms	10.80	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	18587	11/20/2023	11/19/2024
Front Abdomen Load Cell	Denton	1512	8/15/2023	8/14/2024
Middle Abdomen Load Cell	Denton	1526	8/15/2023	8/14/2024
Rear Abdomen Load Cell	Denton	1516	8/15/2023	8/14/2024





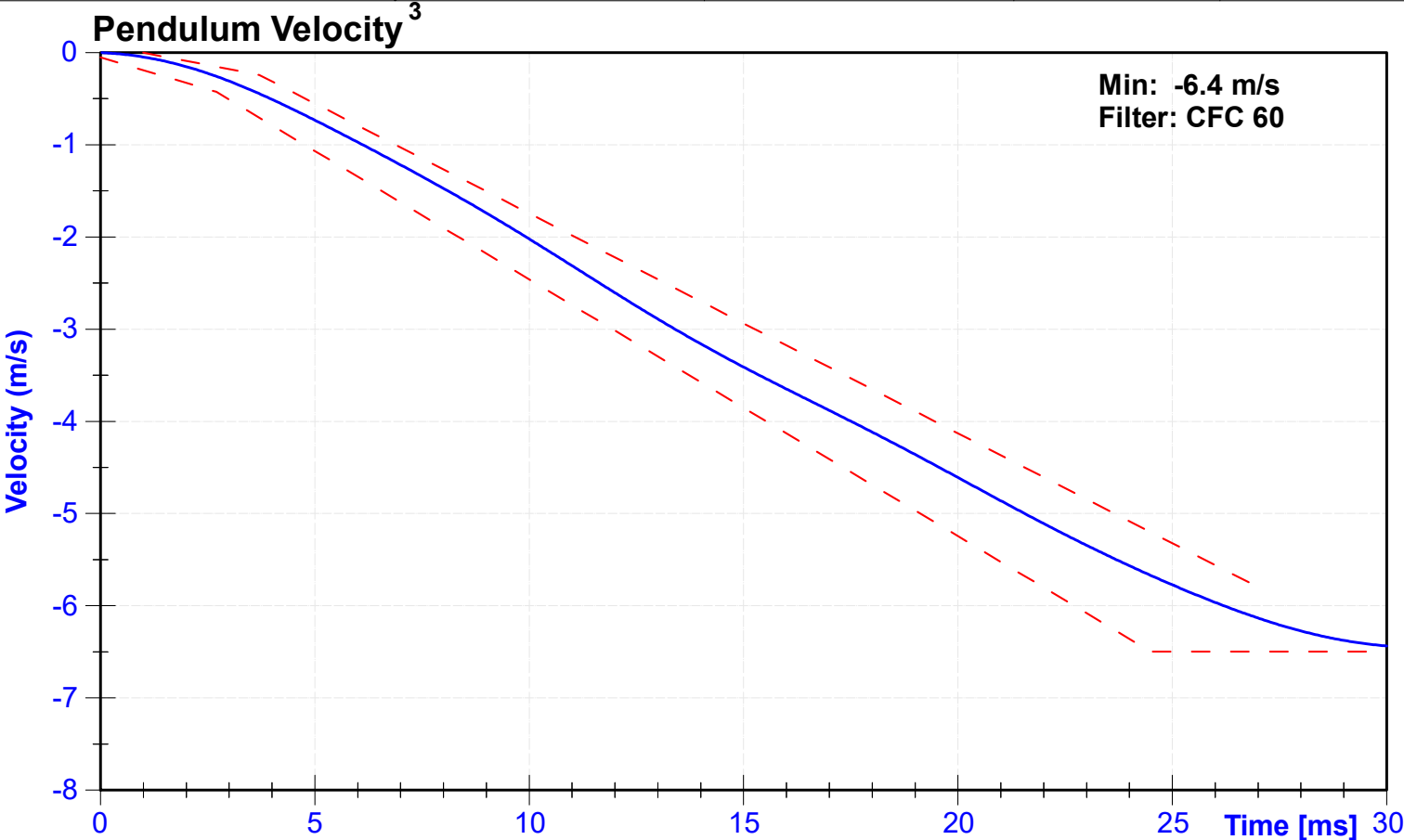
ATD Manufacturer	Denton	Test Technician	J. Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

Results

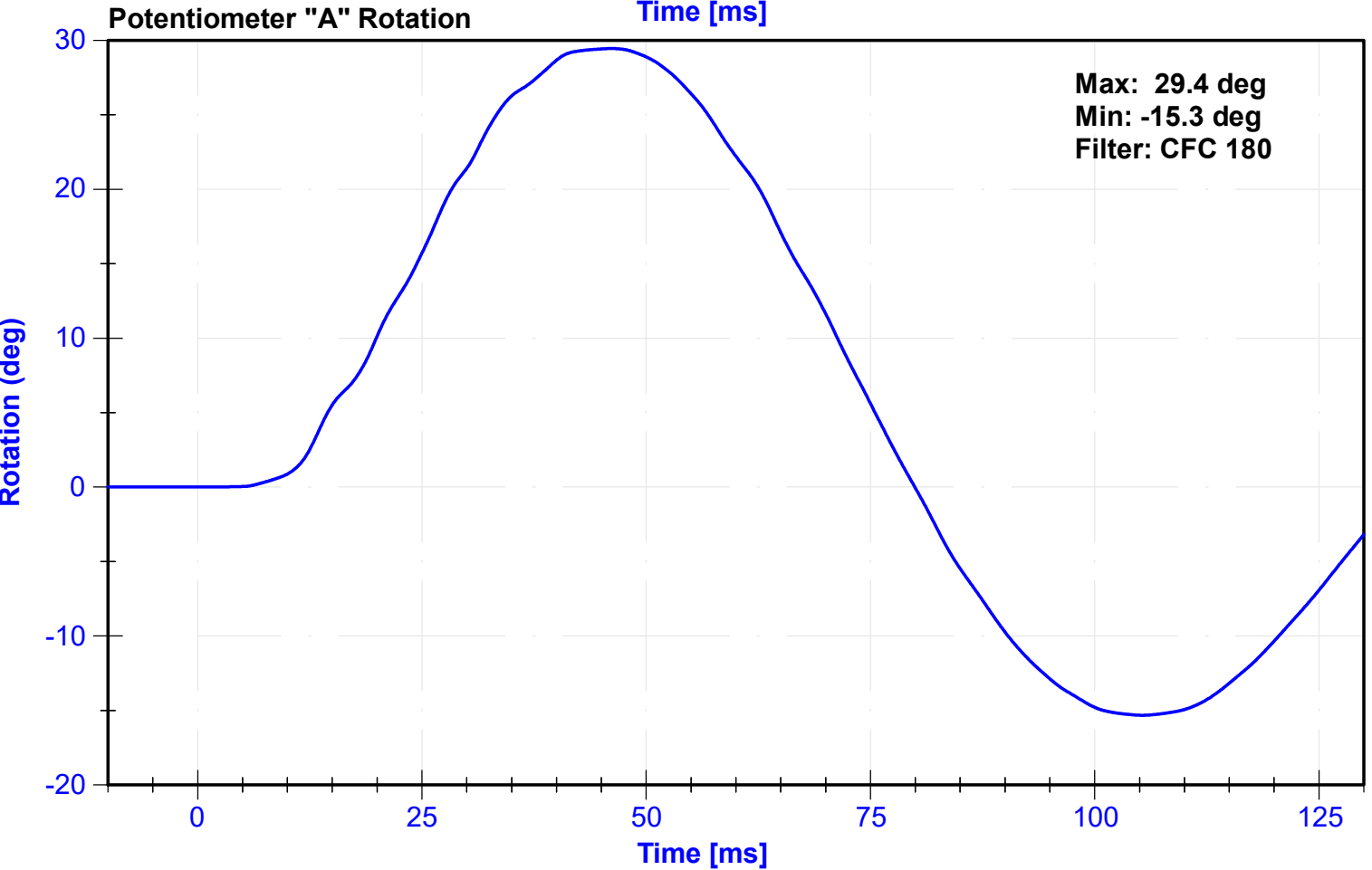
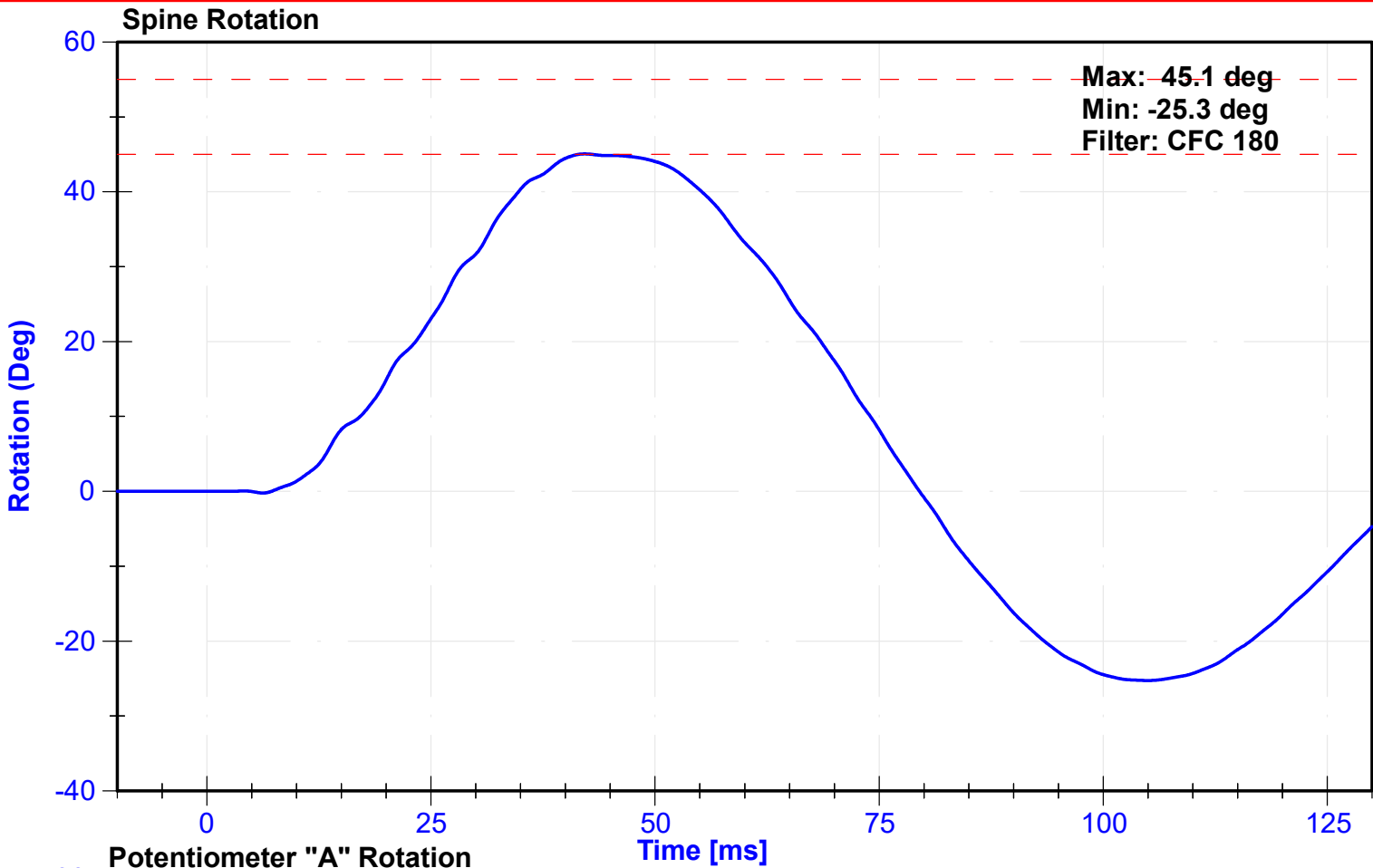
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	17	Pass
Velocity	5.95	6.15	m/s	5.970	Pass
Lateral Spine Rotation	45	55	deg	45.1	Pass
Time at Maximum Rotation	39	53	ms	42.1	Pass
Time of Decay to Zero Degrees	37	57	ms	37.4	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

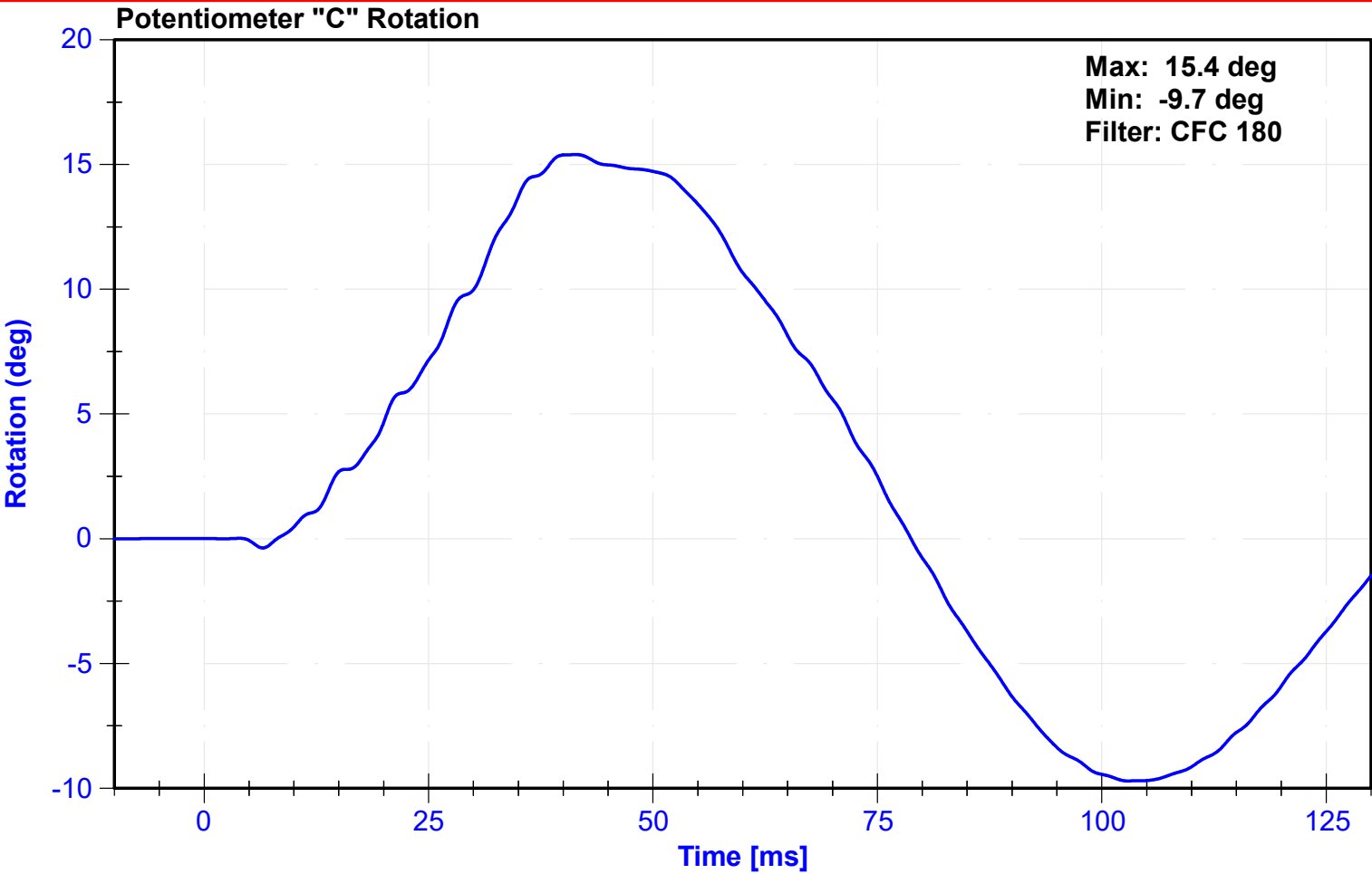
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/31/2023	4/28/2024
Pendulum "A" Potentiometer	Sfernice	2247	12/5/2023	12/4/2024
Condyle "B" Potentiometer	Sfernice	095	9/29/2023	9/28/2024



^{1,2} Upper and lower boundaries specified in Appendix I
IV-42





Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.5
		30.0	-6.5

ATD Manufacturer	FTSS	Test Technician	J.Rios
ATD Serial Number	DG5348	Laboratory Supervisor	C. Mantell

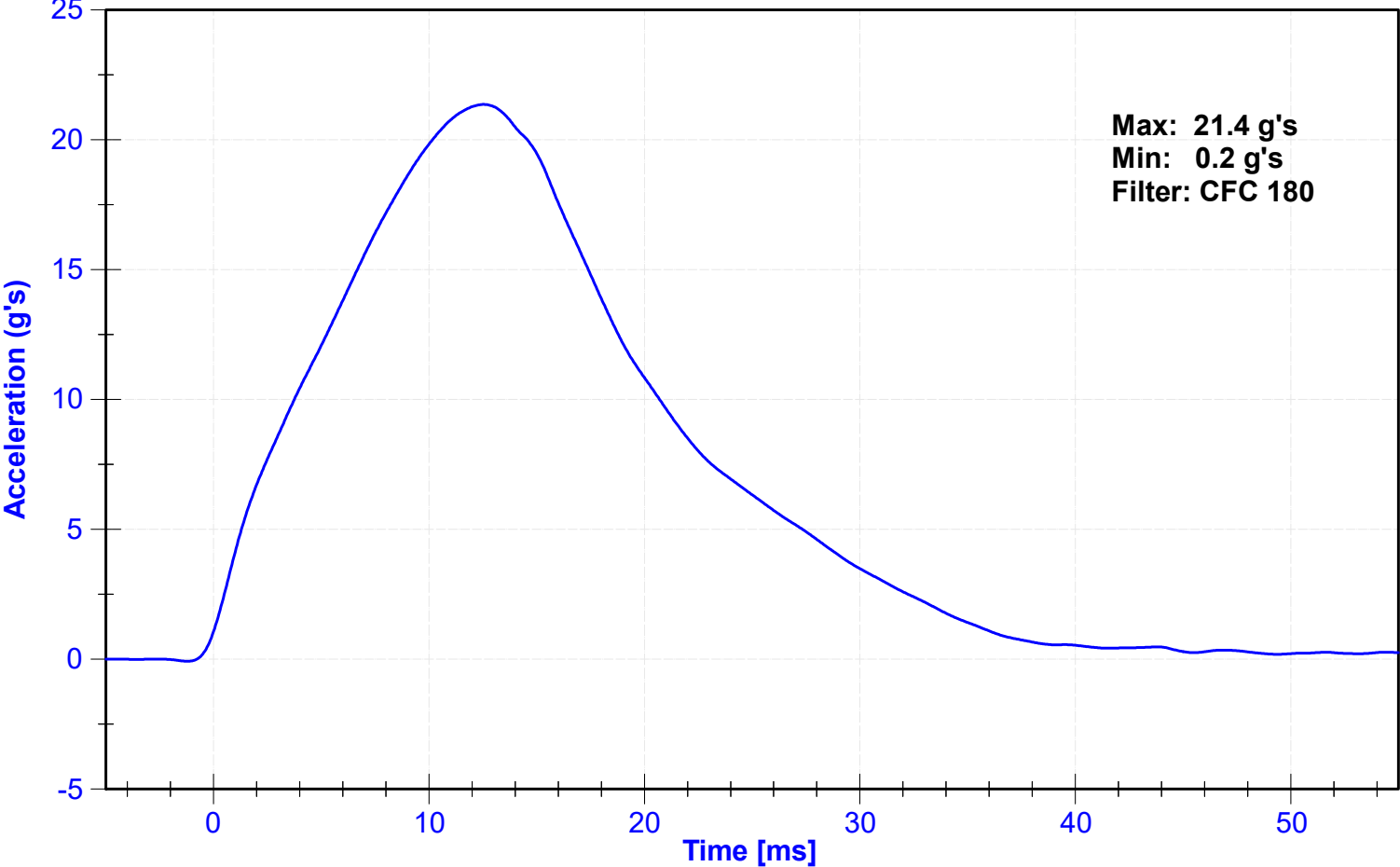
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	19	Pass
Velocity	4.2	4.4	m/s	4.29	Pass
Resistive Force	4700	5400	N	4892.6	Pass
Time at Peak Resistive Force	11.8	16.1	ms	12.55	Pass
Pubic Force	-1590	-1230	N	-1405.3	Pass
Time at Peak Pubic Force	12.2	17.0	ms	14.30	Pass

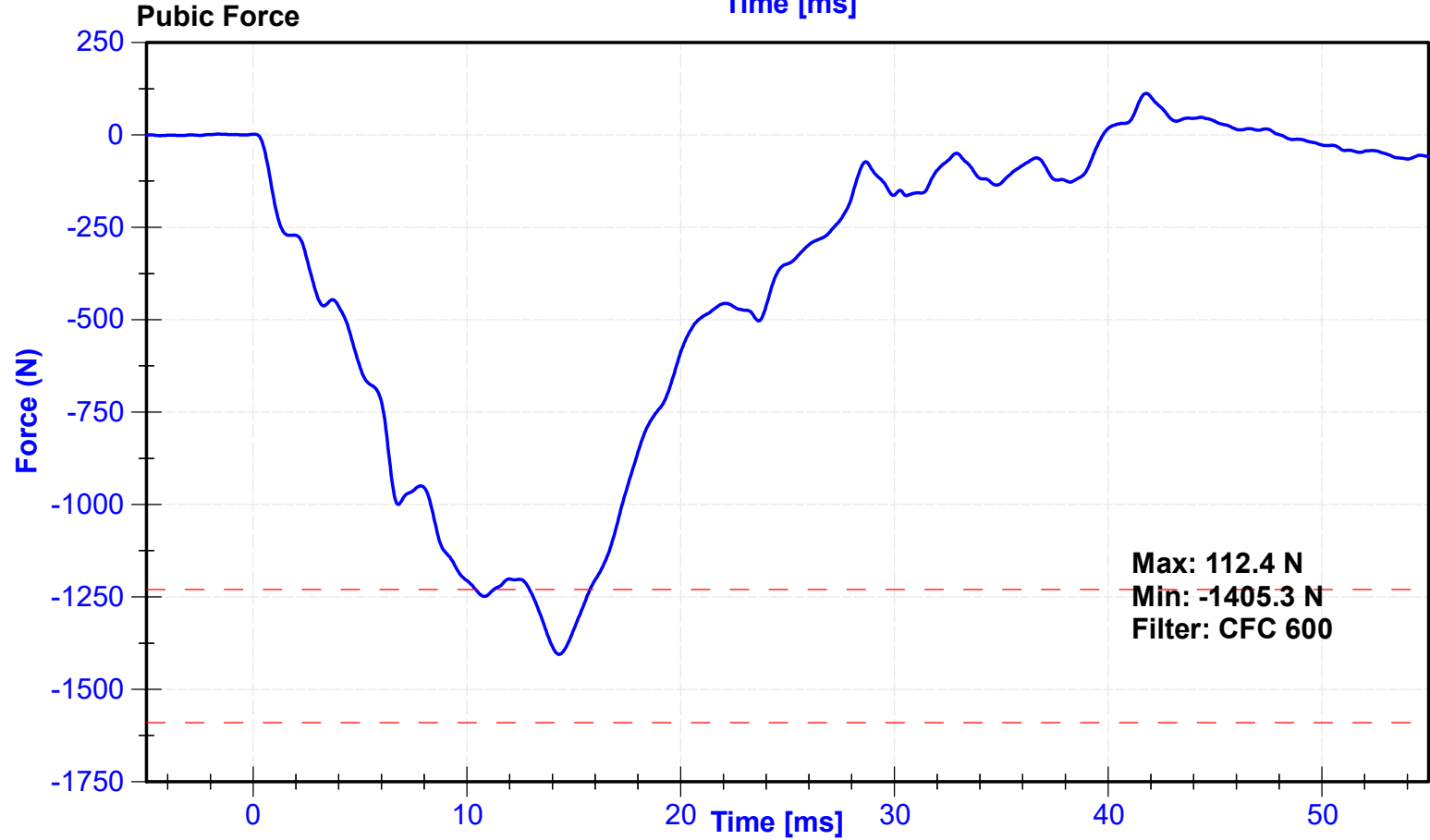
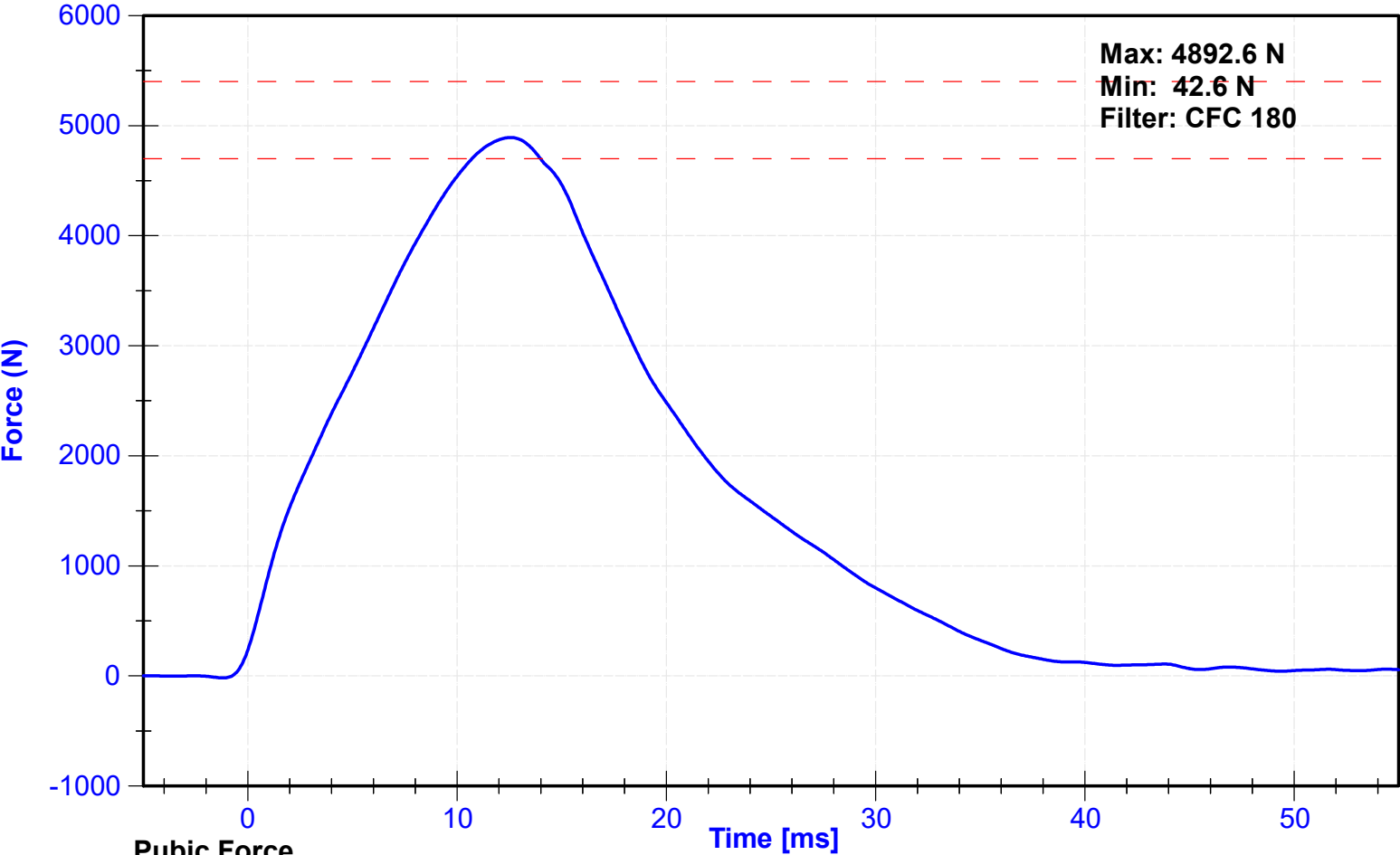
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	18587	11/20/2023	11/19/2024
Pubic Load Cell	Denton	464-FY	8/15/2023	8/14/2024

Probe Acceleration



Resistive Force



APPENDIX V

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N _DG5348_		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers	Primary	X	18613	Endevco	02/08/2024
		Y	18472	Endevco	02/08/2024
		Z	18663	Endevco	02/08/2024
	Redundant	X	18666	Endevco	02/08/2024
		Y	18664	Endevco	02/08/2024
		Z	18675	Endevco	02/07/2024
Thorax Rib Displacement Potentiometers	Upper	Y	268GFE	Honeywell	02/08/2024
	Middle	Y	269GFE	Honeywell	02/08/2024
	Lower	Y	270GFE	Honeywell	02/08/2024
Abdomen Load Cells	Forward	Y	1512	Denton	08/15/2023
	Middle	Y	1526	Denton	08/15/2023
	Rear	Y	1516	Denton	08/15/2023
Lower Spine Accelerometers (T12)		X	18524	Endevco	02/08/2024
		Y	18573	Endevco	02/07/2024
		Z	18657	Endevco	02/08/2024
Pubic Symphysis Load Cell		Y	464-FY	Denton	08/15/2023

Table 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	G24998	Endevco	01/29/2024
Vehicle Center of Gravity	Y	G25009	Endevco	01/29/2024
Vehicle Center of Gravity	Z	G24999	Endevco	01/29/2024
Left Floor Sill	Y	G25038	Endevco	01/29/2024
A-Pillar Sill	Y	G25040	Endevco	01/29/2024
A-Pillar Low	Y	G25039	Endevco	01/29/2024
A-Pillar Mid	Y	G25001	Endevco	01/29/2024
B-Pillar Sill	Y	G25037	Endevco	01/29/2024
B-Pillar Low	Y	G24994	Endevco	01/29/2024
B-Pillar Mid	Y	G25041	Endevco	01/29/2024
Driver Seat	Y	G24993	Endevco	01/29/2024
Engine Top	X	G25000	Endevco	01/29/2024
Engine Top	Y	A405578	Measurement Specialties	11/17/2023
Firewall	Y	G25002	Endevco	01/29/2024
Right Roof	Y	G23446	Endevco	11/29/2023
Right Floor Sill	Y	G24996	Endevco	01/29/2024
Rear Floorpan	X	A335451	Measurement Specialties	10/09/2023
Rear Floorpan	Y	A350980	Measurement Specialties	10/09/2023