

REPORT NO. MCW-DOT-03SN01

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING**

MITSUBISHI MOTOR MANUFACTURING OF AMERICA
2003 MITSUBISHI ECLIPSE RS 3 DOOR SPORTS COUPE

NHTSA NUMBER: M3 5601

MEDICAL COLLEGE OF WISCONSIN
5000 WEST NATIONAL AVENUE
MILWAUKEE, WI 53295



04 December 2002

FINAL REPORT

U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Rulemaking
Office of Crashworthiness Standards
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Washington, DC 20590

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16. Abstract A 55/28 km/h 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2003 Mitsubishi Eclipse RS in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for generation of consumer information on vehicle side crash protection. This test was conducted at the Medical College of Wisconsin Vehicle Crashworthiness Lab in Milwaukee, Wisconsin, on 04 December 2002. The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 km/h, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21.5 degrees celcius. The target vehicle post-test maximum crush was 259 mm at Level 3. The test vehicle's performance follows: <table border="1"> <thead> <tr> <th></th><th><u>DRIVER</u></th><th><u>PASSENGER</u></th></tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration G</td><td>67.6</td><td>N/A</td></tr> <tr> <td>Left Lower Rib Acceleration G</td><td>69.0</td><td>N/A</td></tr> <tr> <td>Lower Spine Acceleration G</td><td>76.7</td><td>N/A</td></tr> <tr> <td>Thoracic Trauma Index TTI</td><td>73</td><td>N/A</td></tr> <tr> <td>Pelvis Acceleration G</td><td>66</td><td>N/A</td></tr> </tbody> </table> The door on the struck side of the vehicle did not separate from the body at the hinges or latches, and the opposite door did not open during the side impact event.					<u>DRIVER</u>	<u>PASSENGER</u>	Left Upper Rib Acceleration G	67.6	N/A	Left Lower Rib Acceleration G	69.0	N/A	Lower Spine Acceleration G	76.7	N/A	Thoracic Trauma Index TTI	73	N/A	Pelvis Acceleration G	66	N/A
	<u>DRIVER</u>	<u>PASSENGER</u>																			
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Lower Spine Acceleration G	76.7	N/A																			
Thoracic Trauma Index TTI	73	N/A																			
Pelvis Acceleration G	66	N/A																			
17. Key Words New Car Assessment Program (NCAP) Side Impact MDB Side Impact Dummy (SID H-III) NHTSA No. M3 5601		18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Rulemaking Room 5313 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590																			
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test was part of the FY03 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-01-D-02003. The purpose of this test was to evaluate side impact protection of a 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe. This side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated May 1999.

The Medical College of Wisconsin does not endorse or certify products. The manufacturer's name appears solely for identification purposes only.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) that was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.0 km/h (38.5 mph). The target vehicle was stationary and 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 04 December 2002.

One restrained Side Impact Dummy with a Hybrid III head and neck (SID H-III) was placed in the designated seating position, according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated May 1999. The side impact event was documented by three high-speed film cameras, five high-speed video cameras, and one real-time camera. Camera locations and other pertinent camera information can be found in this report.

The SID H-III was instrumented as follows.

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)
5. Head Center of Gravity triaxial accelerometers (X-, Y-, and Z-direction)
6. Upper Neck (NKU) six axis load cell (Fx, Fy, Fz, Mx, My, and Mz)

Pre- and post-test photographs of the test vehicle, the MDB, and the side impact dummy (SID H-III) are included in Appendix A. Appendix B contains the vehicle, MDB, and dummy response data traces. A summary of the SID H-III configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

The following table summarizes the results of this test.

Injury Criteria	Front SID H-III	Rear SID H-III
TTI (G)	73	N/A
PELVIS (G)	66	N/A
HIC36	825.3	N/A

Airbag information for the test vehicle is listed below

	Frontal	Side-Torso	Side-Torso/Head	Side-Head
Driver	Yes – Steering Wheel	None	None	None
Front Pass.	Yes- Dashboard	None	None	None
Left Rear Pass.	None	None	None	None

SECTION 3
SUMMARY OF TEST RESULTS

DATA SHEET NO. 1

GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION

Year/ Make/ Model/ Body Style				2003 Mitsubishi Eclipse RS 3 Door Sport Coupe					
Vehicle NHTSA NO.				M3 5601		VIN		4A3AC34G53E089234	
Vehicle Body Color				Titanium Pearl		Build Date		October 2002	
Engine Data		<u>4</u>	Cylinders	CID		<u>2.4</u>	Liter	<u> </u> cc	
Placement		<u> </u>	Longitudinal	<u>X</u>	Lateral				
Transmission		<u>5</u>	Speed	<u>X</u>	Manual	<u> </u> Automatic		<u>X</u>	Overdrive
Final Drive		<u> </u>	Rear Wheel Drive	X	Front Wheel Drive	<u> </u> Four Wheel Drive			
Odometer Reading		<u> 18 </u>		Date	<u> 14 November 2002 </u>				
Options		<u>X</u>	A/C	<u>X</u>	Power Steering	<u>X</u>	Power Brakes	<u>X</u>	Power Windows
			Cruise Control	X	Tilt Wheel	X	Power Locks		

DATA FROM TIRE PLACARD:

Tire Pressure (at Capacity)	<u> 32 </u> PSI Front	
	<u> 29 </u> PSI Rear	
Recommended Tire Size	<u> P195 65R15 89H </u>	
Tires on Test Vehicle	<u> P195 65R15 89H </u>	Manufacturer <u> Bridgestone Turanza </u>

TEST VEHICLE AIRBAG INFORMATION:

	<u>Frontal</u>	<u>Side-Torso</u>	<u>Side-Torso/Head</u>	<u>Side-Head</u>
Driver	Yes – Steering Wheel	None	None	None
Front Passenger	Yes- Dashboard	None	None	None
Left Rear Passenger	None	None	None	None

VEHICLE CAPACITY DATA:

Number of Occupants:	<u> 2 </u> Front	<u> 2 </u> Rear	<u> </u> 3 rd Seat	<u> 4 </u> Total
Type of Front Seats	<u>X</u> Bucket	<u> </u> Bench	<u> </u> Split Bench	
Type of Front Seat Back	<u> </u> Fixed	<u>X</u> Adjustable w/	<u>X</u> Lever	<u> </u> Knob
Vehicle Max Capacity Loading	<u> 300 </u>		kg (A)	
No. of Occupants X 68.04 kg	<u> 272.2 </u>		kg (B)	
Cargo Capacity (A) – (B)	<u> 27.8 </u>		kg	

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	<u> 413.2 </u> kg	Left Rear	=	<u> 248.6 </u> kg
Right Front	=	<u> 416.9 </u> kg	Right Rear	=	<u> 254.5 </u> kg
TOTAL FRONT	=	<u> 830.1 </u> kg	TOTAL REAR	=	<u> 503.1 </u> kg
% Total Weight	=	<u> 62.3 </u> %	%Total Weight	=	<u> 37.7 </u> %
TOTAL WEIGHT	=	<u> 1333.2 </u> kg			

DATA SHEET 1 (continued)

GENERAL VEHICLE TEST PARAMETER DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max Fluids	=	<u>1333.2</u>	kg	(A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>27.8</u>	kg	(B)
Weight of (2) instrumented Side Impact Dummies	=	<u>161.3</u>	kg	(C)
TEST VEHICLE TARGET WEIGHT	=	<u>1522.3</u>	kg	(A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 OR 2 SID H-III(s) + CARGO)

Left Front	=	<u>464.5</u>	kg	Left Rear	=	<u>335.2</u>	kg
Right Front	=	<u>424.1</u>	kg	Right Rear	=	<u>298.5</u>	kg
TOTAL FRONT	=	<u>888.6</u>	kg	TOTAL REAR	=	<u>633.7</u>	kg
% Total Weight	=	<u>58.4</u>	%	%Total Weight	=	<u>41.6</u>	%
TOTAL WEIGHT	=	<u>1522.3</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (UDVW+ SID H-III(s)+CARGO+EQUIPMENT & INSTRUMENTATION)

Left Front	=	<u>460.8</u>	kg	Left Rear	=	<u>331.1</u>	kg
Right Front	=	<u>424.1</u>	kg	Right Rear	=	<u>298</u>	kg
TOTAL FRONT	=	<u>884.9</u>	kg	TOTAL REAR	=	<u>629.1</u>	kg
% Total Weight	=	<u>58.4</u>	%	%Total Weight	=	<u>41.6</u>	%
TOTAL WEIGHT	=	<u>1514</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED

Left Front	<u>739</u>	Right Front	<u>744</u>	Left Rear	<u>798</u>	Right Rear	<u>796</u>
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FULLY LOADED

Left Front	<u>723</u>	Right Front	<u>738</u>	Left Rear	<u>760</u>	Right Rear	<u>777</u>
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AS TESTED

Left Front	<u>725</u>	Right Front	<u>740</u>	Left Rear	<u>762</u>	Right Rear	<u>778</u>
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Test Vehicle Wheelbase 2565 mm

As Tested CG = 1067 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side	=	<u>4025</u>	mm
Left Side	=	<u>4025</u>	mm
Centerline	=	<u>4500</u>	mm

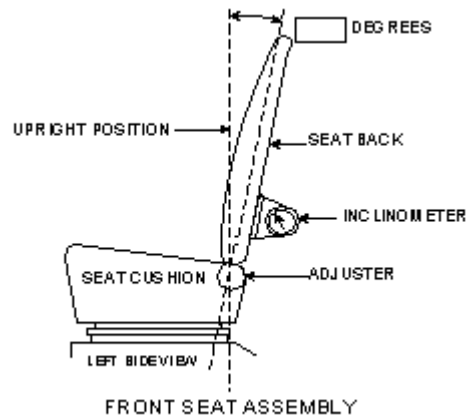
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

Nominal Design Riding Position for adjustable driver and passenger seats. Please describe how to position the inclinometer to measure the seat back angle. Include a description of the adjustment latch detent if applicable



FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel		<u>220 mm</u>	
Total Number of Detents	<u>23</u>	Test Position	<u>Mid-Position</u>

FRONT SEAT BACK ADJUSTMENT:

Seat Back Angle	<u>34.8 degrees measured at seatback frame</u>
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SECOND POSITION SEAT:

Total Length Fore/Aft Adjustment	<u>N/A</u>
Seat Back Adjustment Position	<u>N/A</u>

ADJUSTABLE STEERING COLUMN POSITION:

<u>Mid-Position</u>	
---------------------	--

WINDOW POSITIONS:

Left Front	<u>Up</u>	Right Front	<u>Down</u>
Left Rear	<u>N/A</u>	Right Rear	<u>N/A</u>

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel System usable Capacity	<u>62 L</u>	
Test Volume	<u>57.68 L</u>	<u>93% usable capacity</u>

LOCATIONS OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase	<u>2565 mm</u>	
Impact Point is	<u>342 mm rearward</u>	of front axle centerline
Actual Impact Point is	<u>329 mm rearward</u>	of front axle centerline

DATA SHEET 2
TEST VEHICLE SUMMARY

VEHICLE IDENTIFICATION:

Year/Make/Model/Body Style	2003 Mitsubishi Eclipse RS 3 Door Sport Coupe		
Body Color	Titanium Pearl	VIN	4A3AC34G53E089234
NHTSA No.	M3 5601	Test Date	04 December 2002
Overall Length	4500	Overall Width	1750

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	460.8	kg	Left Rear	=	331.1	kg
Right Front	=	424.1	kg	Right Rear	=	298	kg
TOTAL FRONT	=	884.9	kg	TOTAL REAR	=	629.1	kg
% Total Weight	=	58.4	%	%Total Weight	=	41.6	%
TOTAL WEIGHT	=	1514	kg				
Wheelbase	=				=	2565	mm
Longitudinal CG from Center of Front Axle	=				=	1067	mm
Impact Angle with Respect to Impactor	=				=	90	

ACTUAL IMPACT POINT

Actual Impact Point is 13 mm forward of nominal impact reference line (lateral)

Actual Impact Point is 7 mm below nominal impact line (vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1	(224 mm above ground)	=	106	mm
2. LEVEL 2	(416 mm above ground)	=	248	mm
3. LEVEL 3	(566 mm above ground)	=	259	mm
4. LEVEL 4	(850 mm above ground)	=	193	mm
5. LEVEL 5	(1198 mm above ground)	=	52	mm

Maximum Post-Test intrusion at Level 3 is 259 mm

OCCUPANTS

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Dummy Identification	SID HIII/058	N/A
Restraints Used	3-Point Belt	N/A

INSTRUMENTATION:

Number of Vehicle Data Channels	22
Number of Cameras	Onboard
	Off board
	Real Time
	MDB
	TOTAL
	2
	1
	2
	9

DATA SHEET NO. 3**MOVING DEFORMABLE BARRIER (MDB) SUMMARY**Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport CoupeNHTSA No. M3 5601MDB FACE MANUFACTURER AND SERIAL NUMBER:Plascore Serial Number 059C0901-1 020C1001POSITION OF IMPACT (MDB) ON TOW SYSTEMCrabbed 27° to the leftMDB DETAILS:

Overall Width of Framework Carriage	=	<u>1250 mm</u>
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4116 mm</u>
Wheelbase of Framework Carriage	=	<u>2578 mm</u>
Tread of Framework Carriage (Front & Rear)	=	<u>1880 mm</u>
C.G. Location Rearward of Front Axle	=	<u>1109.3 mm</u>
C.G. Location From Center Line	=	<u>-1.9 mm</u>
C.G. Location Above Ground Level	=	<u>477.2 mm</u>

MDB WEIGHT:

Left Front	=	<u>495.2</u>	kg	Left Rear	=	<u>184.8</u>	kg
Right Front	=	<u>278</u>	kg	Right Rear	=	<u>399.2</u>	kg
TOTAL FRONT	=	<u>773.2</u>	kg	TOTAL REAR	=	<u>584</u>	kg
% Total Weight	=	<u>57.0</u>	%	%Total Weight	=	<u>43.0</u>	%
TOTAL WEIGHT	=	<u>1357.2</u>	kg				

MDB IMPACT:

Impact Angle (MDB C/L to Target Vehicle)		<u>90°</u>	
Impact Speed	Primary	<u>62.0 km/h</u>	<u>38.5 mph</u>
	Secondary	<u>61.8 km/h</u>	<u>38.4 mph</u>

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Center of Bumper	=	<u>229</u>	mm
2. Row B Top of Bumper	=	<u>188</u>	mm
3. Row C Mid-Level	=	<u>202</u>	mm
4. Row D Top of Stack	=	<u>202</u>	mm

INSTRUMENTATION:

Number of MDB Data Channels	=	<u>5</u>
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DATA SHEET NO. 4**POST-TEST OBSERVATIONS**Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport CoupeNHTSA No. M3 5601**VISIBLE DUMMY CONTACT POINTS:**

	<u>LEFT FRONT SID H-III</u>	<u>LEFT REAR SID H-III</u>
Head	Front of head to driver side window sill; back of head to MDB barrier face	N/A
Upper Torso	To front left hand side door panel 140 mm below window sill	N/A
Lower Torso	To front left hand side door panel just above arm rest	N/A
Left Knee	To front left hand side door panel 40 mm below arm rest	N/A
Left Leg	To front left hand side door panel just below arm rest	N/A

DOOR OPENING:

	<u>LEFT DOOR</u>	<u>RIGHT DOOR</u>
Front	Closed/latched/inoperable	Close/latched/operable
Rear	N/A	N/A

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal	<u>7 mm downward</u>	Vertical	<u>13 mm forward</u>
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ARM REST LOCATIONS:

Front	<u>295 mm below window sill</u>
Rear	<u>N/A</u>

SEAT MOVEMENT:

Front	<u>Front seat crush 45 mm; Front seat back crush 20 mm</u>
Rear	<u>N/A</u>

GLAZING DAMAGE

Windshield	<u>No damage</u>
Window	<u>Front and rear left side windows shattered on impact</u>

PILLAR PERFORMANCE:

<u>None Noted</u>

SILL SEPARATION

<u>None Noted</u>

AIRBAG DEPLOYMENT STATUS:

	<u>DRIVER</u>	<u>FRONT PASSENGER</u>	<u>REAR PASSENGER</u>
FRONT	Did not deploy	Did not deploy	N/A
SIDE	N/A	N/A	N/A

OTHER NOTABLE IMPACT EFFECTS:

<u>None</u>

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID H-III INSTRUMENTATION DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

	Front Dummy ID SID HIII/058 Accelerations				Rear Dummy Accelerations			
	Max		Min		Max		Min	
	G's	msec	G's	msec	G's	msec	G's	msec
HEAD ACCELERATIONS								
Longitudinal (X)	9.5	13.3	-44.2	61.5	N/A	N/A	N/A	N/A
Lateral (Y)	113.5	63.3	-7.3	85.6	N/A	N/A	N/A	N/A
Vertical (Z)	72.7	48.6	-13.6	63.3	N/A	N/A	N/A	N/A
Resultant (R)	116.6	63.3			N/A	N/A		
HIC36	825.3				N/A			
RIB ACCELERATIONS								
Upper Rib Lateral (Y)	67.6	25.6	-9.0	71.2	N/A	N/A	N/A	N/A
Upper Rib Lateral (Y _R)	67.3	25.6	-8.8	71.2	N/A	N/A	N/A	N/A
Lower Rib Lateral (Y)	69.0	27.5	-13.2	76.2	N/A	N/A	N/A	N/A
Lower Rib Lateral (Y _R)	68.4	26.9	-12.4	75.6	N/A	N/A	N/A	N/A
SPINE ACCELERATIONS								
Lower Lateral (Y)	76.7	31.2	-25.3	66.2	N/A	N/A	N/A	N/A
Lower Lateral (Y _R)	76.6	31.2	-26.0	65.6	N/A	N/A	N/A	N/A
PELVIS ACCELERATIONS								
Lateral (Y)	66.1	26.2	-6.6	47.5	N/A	N/A	N/A	N/A
Lateral (Y _R)	66.1	26.2	-5.8	47.5	N/A	N/A	N/A	N/A

REFERENCE:

Positive Direction -	Anterior/Posterior	+(X) = anterior
	Lateral	+(Y)= right
	Superior/Inferior	+(Z)= inferior
Negative Direction	Anterior/Posterior	-(X) = posterior
	Lateral	-(Y)= left
	Superior/Inferior	-(Z)= superior

All the above data (except head accelerations) has been filtered using FIR (Version 1.0; July 16, 1990)

Head Accelerations have been filtered at SAE Class 1000

Y_R denotes redundant Y-direction accelerometer

DATA SHEET 5 (continued)

SID H-III INSTRUMENTATION DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe:

NHTSA No. M3 5601

	Front Dummy ID SID HIII/058 Accelerations				Rear Dummy ID 058 Accelerations			
	Max		Min		Max		Min	
	N	msec	N	msec	N	msec	N	msec
NECK FORCES								
Longitudinal (X)	282.3	13.3	-902.5	58.5	N/A	N/A	N/A	N/A
Lateral (Y)	909.6	45.9	-204.0	14.7	N/A	N/A	N/A	N/A
Vertical (Z)	2176.7	46.3	-15.9	13.4	N/A	N/A	N/A	N/A
NECK MOMENTS								
	Nm	msec	Nm	msec	Nm	msec	Nm	msec
Lateral Bending (X)	99.2	61.4	-65.7	38.9	N/A	N/A	N/A	N/A
Flexion/Extension (Y)	24.7	63.2	-30.3	42.6	N/A	N/A	N/A	N/A
Rotation (Z)	15.3	56.3	-13.9	39.3	N/A	N/A	N/A	N/A

REFERENCE:

Upper neck load cell polarity follows the dummy manipulation table A-1 in the NHTSA Test Reference Guide version 5

Force

Fx positive response: Head rearward, chest forward
 Fy positive response: Head leftward, chest rightward
 Fz positive response: Head upward, chest downward

Moment

Mx positive response: Left ear to left shoulder
 My positive response: Chin to sternum
 Mz positive response: Chin to left shoulder

Neck forces have been filtered at SAE Class 1000

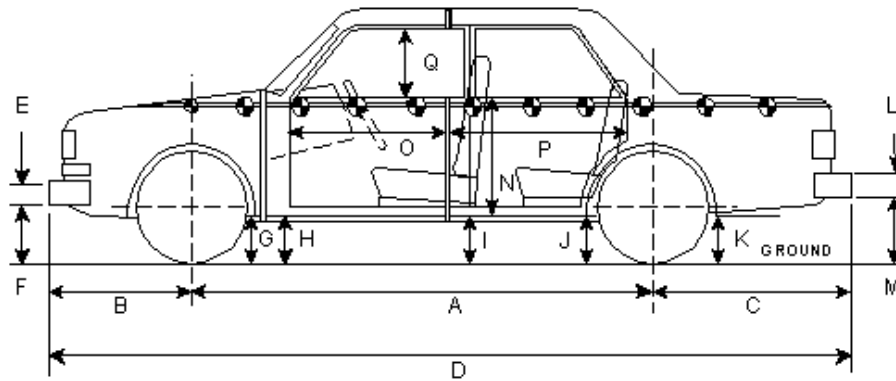
Neck moments have been filtered at SAE Class 600

DATA SHEET 6

VEHICLE PRE- AND POST- MEASUREMENTS

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



LEFT SIDE VIEW

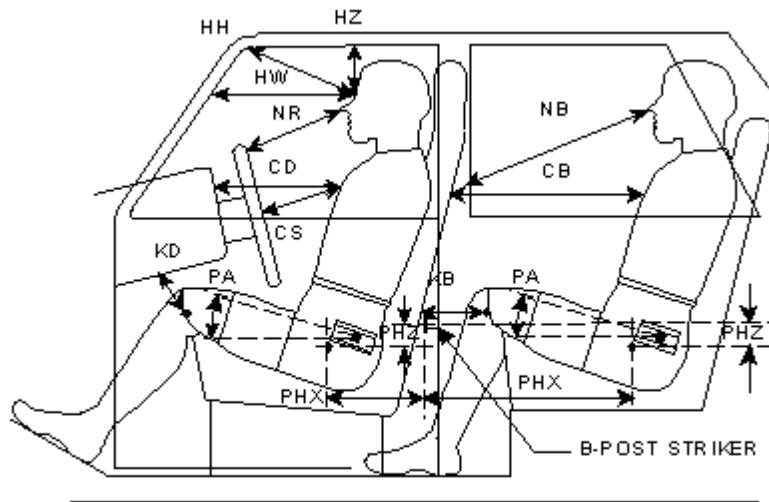
	PRE-TEST As delivered (mm)	PRE-TEST As Tested (mm)	POST-TEST (mm)	Δ CHANGE (mm)
A	2565	-	2550	-15
B	723	-	713	-10
C	737	-	711	-26
D	4500	-	4488	-12
E	280	-	280	0
F	210	210	217	7
G	216	202	240	38
H	216	202	238	36
I	232	207	228	21
J1	177	148	132	-16
J2	237	208	218	10
K	233	193	200	7
L	238	-	238	0
M	291	251	274	23
N	715	-	642	-73
O	1332	-	1325	-7
P	515	-	486	-29
Q	408	-	407	-1
R	4025	-	4026	1
S	4025	-	3974	-51
T	1750	-	1530	-220

DATA SHEET 7

SID H-III LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



LEFT SIDE VIEW

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID SID HIII/058	LEFT REAR PASSENGER
HH	456	N/A
HW	717	N/A
HZ	129	N/A
NR/NB	422	N/A
CD/CB	638	N/A
CS	327	N/A
KDL(KDA°)/KBL(KDA°)	210/21.0	N/A
KDR(KDA°)/KBR(KDA°)	194/21.9	N/A
PA°	24.5	N/A
PHX	2154	N/A
PHZ	102	N/A

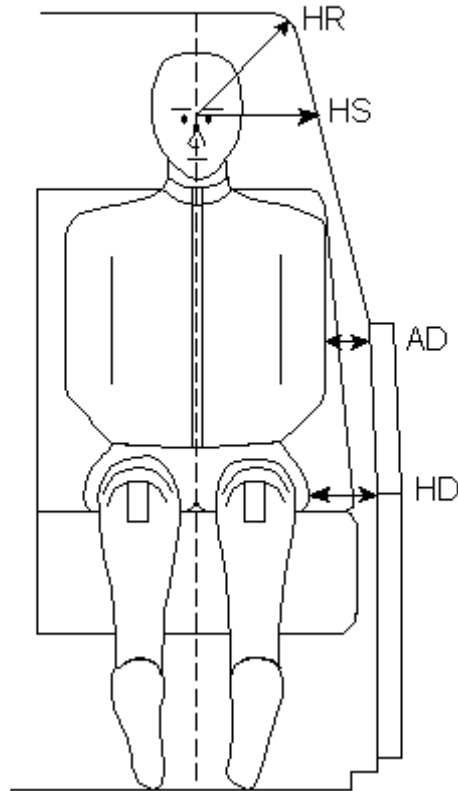
Note: PHX and PHZ use point L(Middle of Rear Bumper) as reference point

DATASHEET 8

SID H-III LATERAL CLEARANCE DIMENSIONS

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

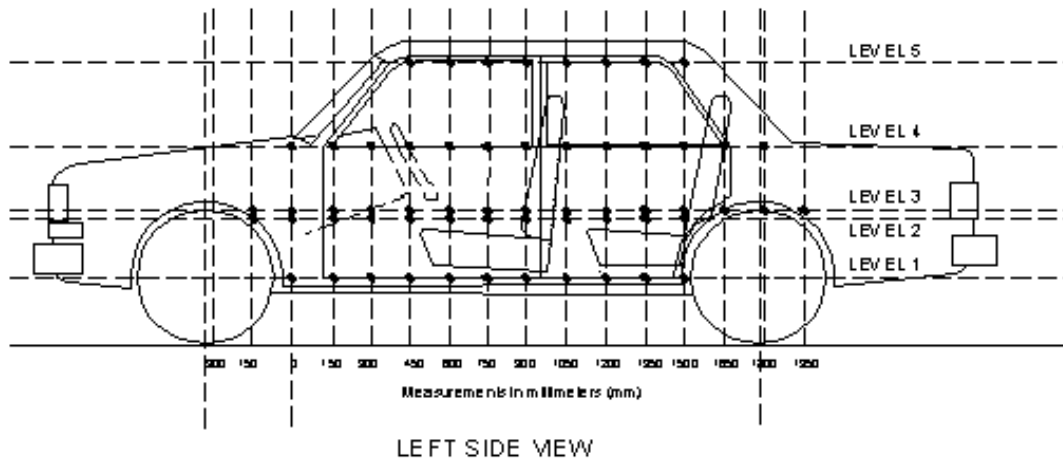
	DRIVER ID SID HIII/058	LEFT REAR PASSENGER ID
HR	172	N/A
HS	287	N/A
AD	Upper 84 Lower 70	Upper N/A Lower N/A
HD	139	N/A

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



LEVEL 5 = WINDOW TOP
LEVEL 4 = WINDOW SILL
LEVEL 3 = MID-DOOR
LEVEL 2 = OCCUPANT H-POINT
LEVEL 1 = AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE “AS TESTED” CONFIGURATION
Measurements along the Vertical 750 mm line as shown

Level 5 @ Window Top	1198 mm
Level 4 @ Window Sill	850 mm
Level 3 @ Mid-Door	566 mm
Level 2 @ Occupant H-Point	416 mm
Level 1 @ Axle Centerline or Sill Top Height	224 mm

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES – ALL LEVELS

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

			DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
HEIGHT			-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1	224	PRE								230	227	227	228	228	229	228	227	228	228	227	227									
		POST								270	292	292	297	304	311	320	333	315	302	289	272									
		CRUSH								40	65	65	69	76	82	92	106	87	74	62	45									
LEVEL 2	416	PRE	244	219						204	210	210	210	208	208	206	205	203	200	200	201							228		
		POST	255	233						345	370	397	407	417	426	432	436	440	448	430	358							235		
		CRUSH	11	14						141	160	187	197	209	218	226	231	237	248	230	157							7		
LEVEL 3	566	PRE	248	212					194	193	193	192	192	192	192	192	193	193	193	195	196	195					206	224		
		POST	260	226					339	332	352	378	398	416	414	408	411	422	441	454	416	320					213	229		
		CRUSH	12	14					145	139	159	186	206	224	222	216	218	229	248	259	220	125					7	5		
LEVEL 4	850	PRE		321	302	285	280	282	281	277	274	270	270	273	276	282	286	292	297	306	317	327	346	363	388	415	445	476		
		POST		330	314	302	300	304	307	319	341	363	383	397	411	428	447	463	490	478	436	393	360	365	390	414	442	480		
		CRUSH		9	12	17	20	22	26	42	67	93	113	124	135	146	161	171	193	172	119	66	14	2	2	-1	-3	4		
LEVEL 5	1198	PRE												496	512	518	520	522	524	523										
		POST												516	536	547	562	574	559	542										
		CRUSH												20	24	29	42	52	35	19										

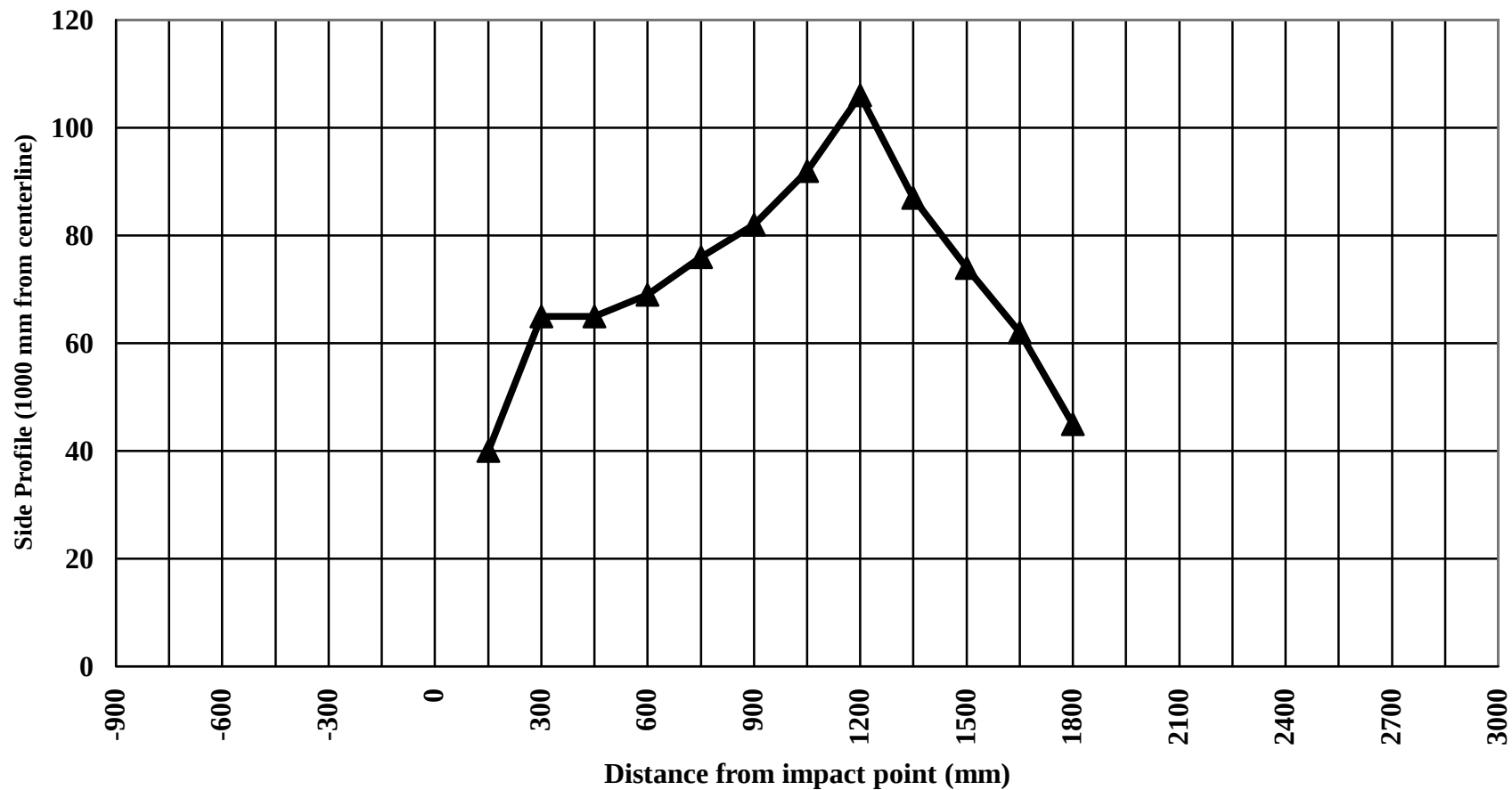
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

SIDE PROFILE LEVEL 1 -224 mm above ground



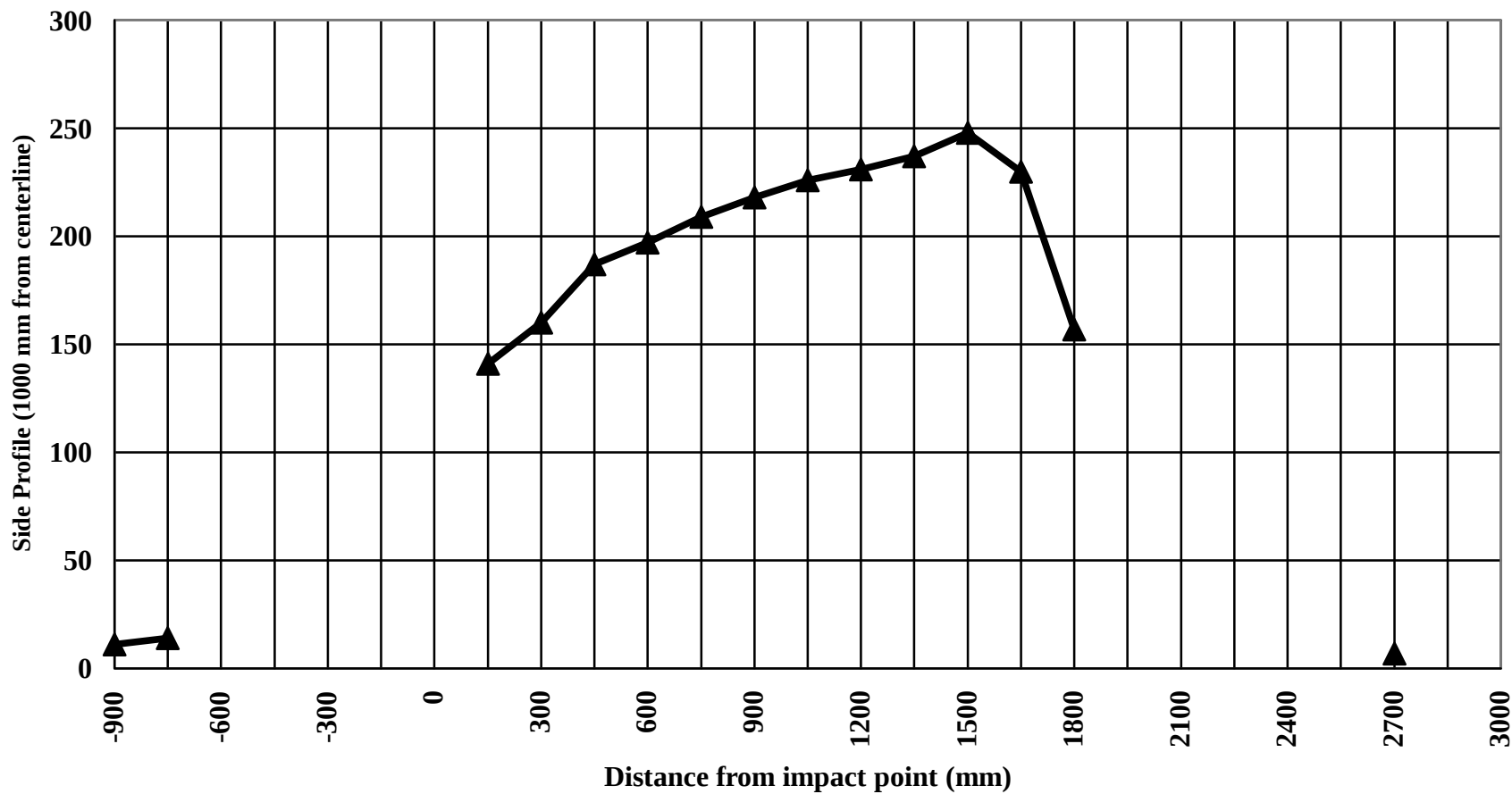
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

SIDE PROFILE LEVEL 2 - 416 mm above ground



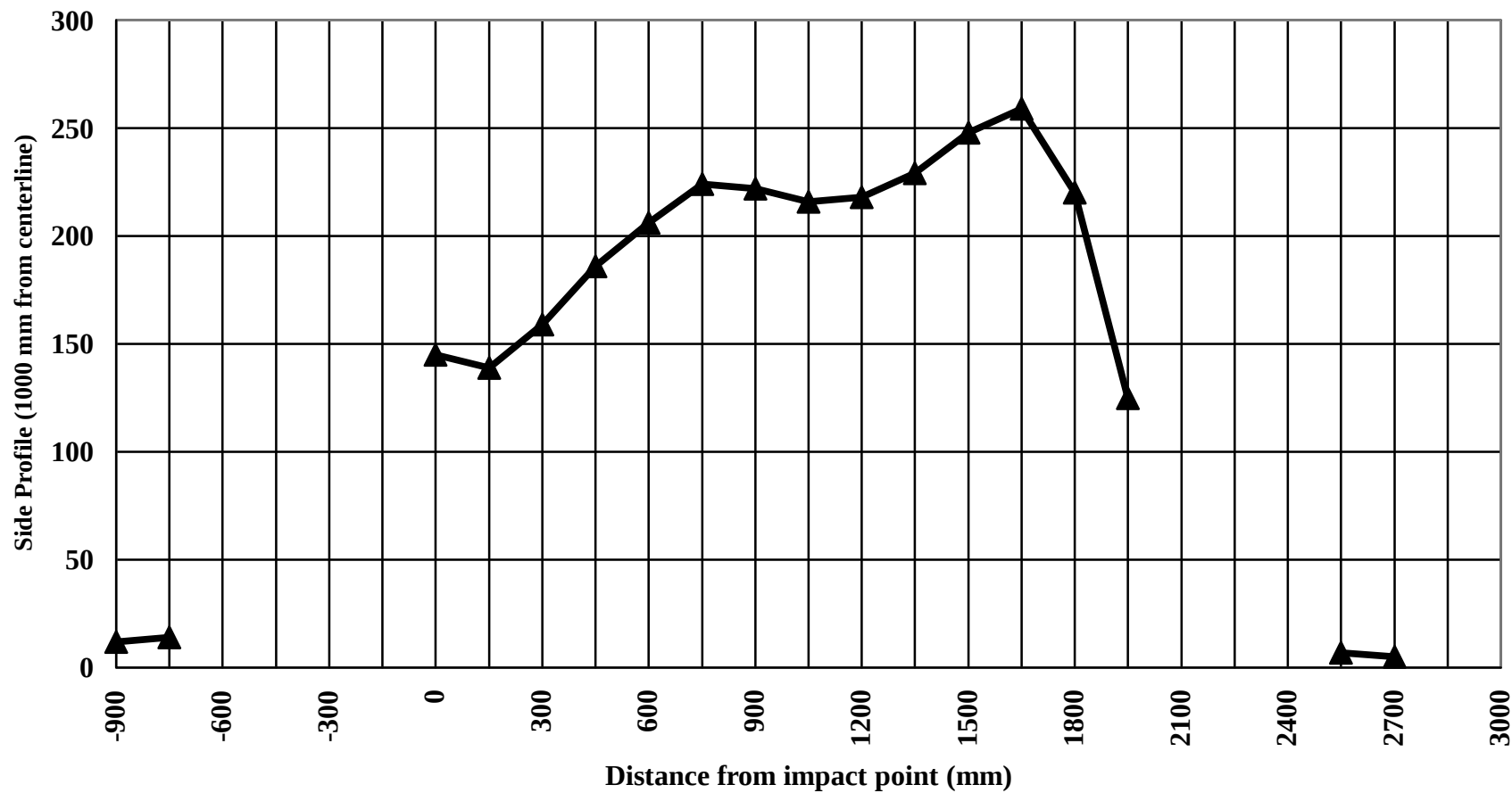
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

SIDE PROFILE LEVEL 3 - 566 mm above ground



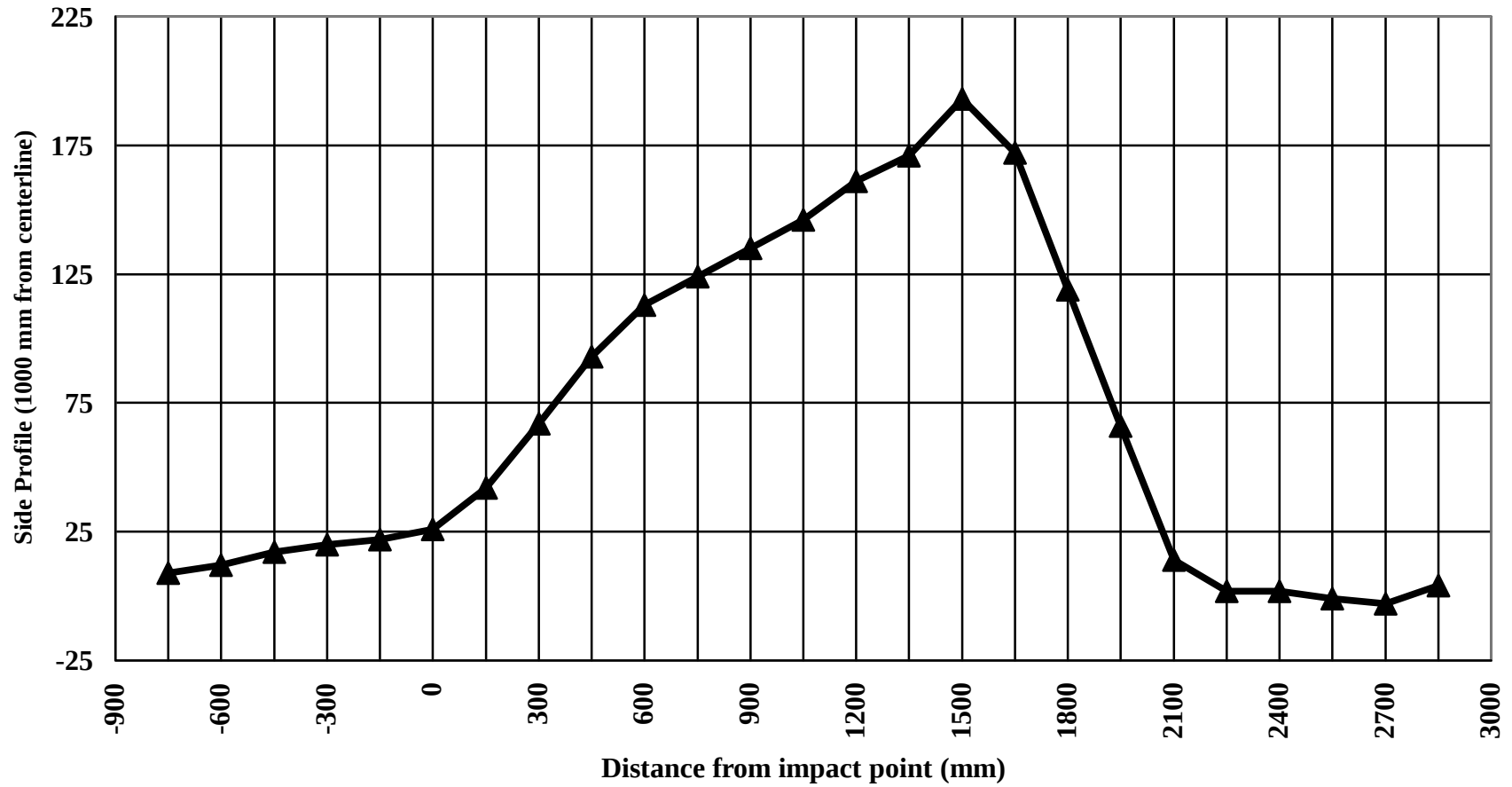
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

SIDE PROFILE LEVEL 4 - 930 mm above ground



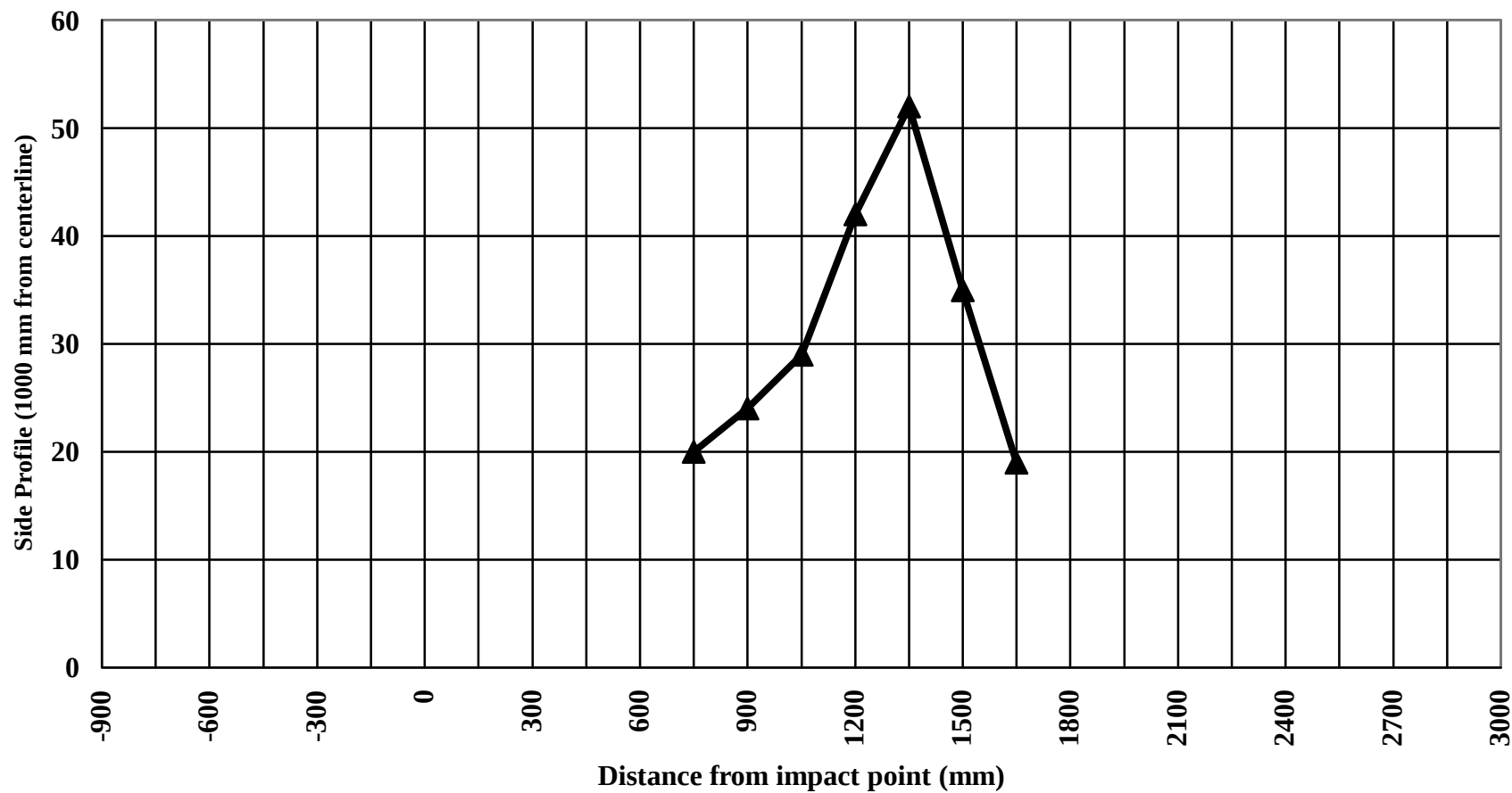
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

SIDE PROFILE LEVEL 5 - 1933 mm above ground

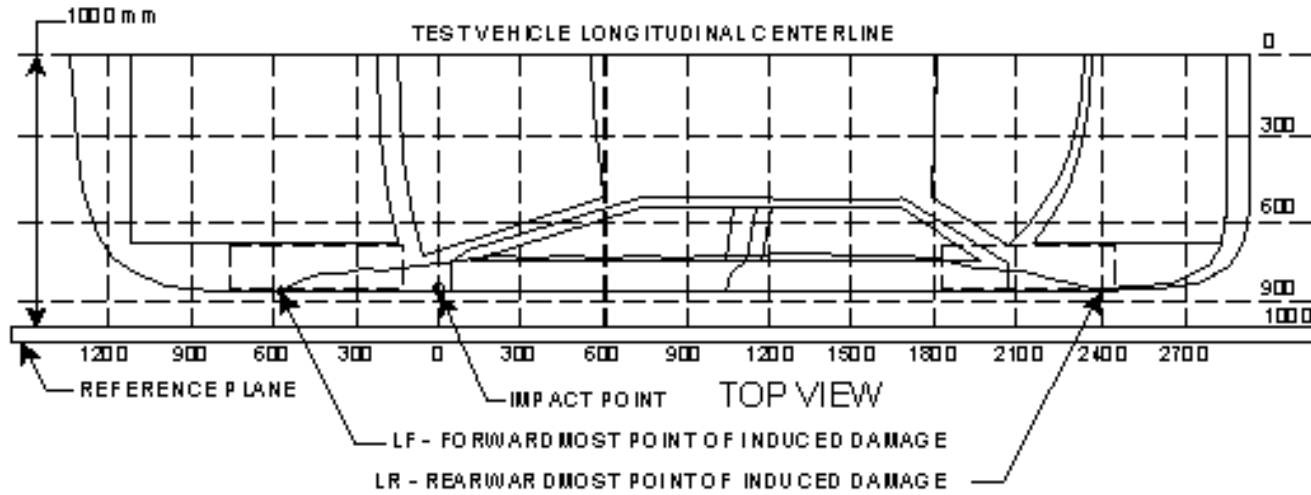


DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



DPD MEASUREMENTS (mm)		POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1	-600	220	220	0
2	30	344	223	121
3	600	401	219	182
4	1290	410	213	197
5	1920	326	212	114
6	2550	214	214	0

DATA SHEET 12

STATIC CRUSH OF IMPACTOR FACE (Grid as looking at MDB from front)

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

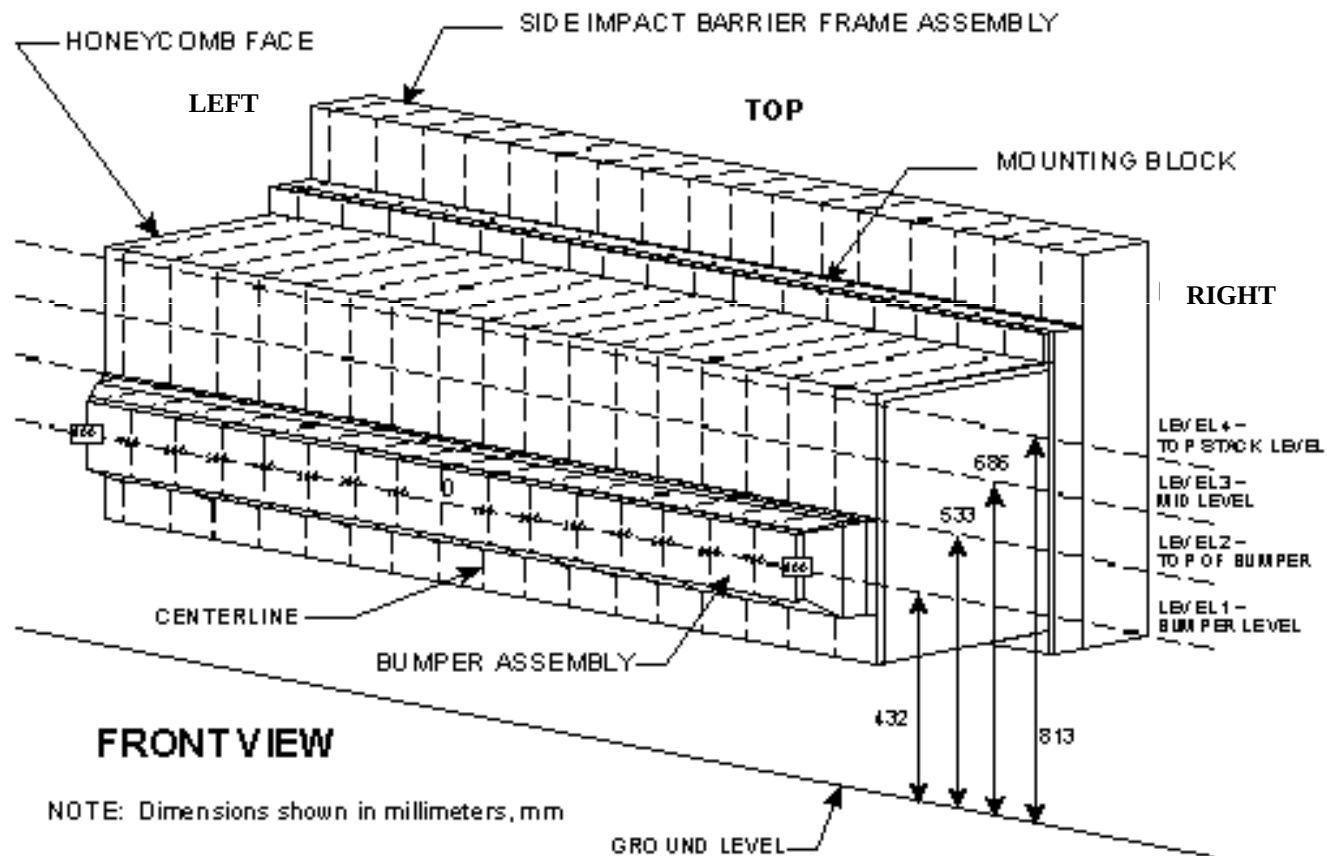
LEVEL	HEIGHT AT CL (mm)		DISTANCE LEFT OF CENTER								0	DISTANCE RIGHT OF CENTER							
			800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
LEVEL 4 TOP STACK	810	PRE-	525	525	525	525	525	524	524	524	524	524	524	524	524	524	524	524	524
		POST-	590	548	542	550	542	543	546	560	568	582	599	609	624	645	667	696	726
		CRUSH	65	23	17	25	17	19	22	36	44	58	75	85	100	121	143	172	202
LEVEL 3 MID- LEVEL	685	PRE-	524	524	525	524	524	524	524	523	523	524	524	524	524	524	524	523	523
		POST-	576	566	580	573	556	550	551	556	560	567	587	602	625	652	681	708	725
		CRUSH	52	42	55	49	32	26	27	33	37	43	63	78	101	128	157	185	202
LEVEL 2 TOP BUMPER	560	PRE-	522	522	522	522	522	522	522	522	522	522	523	522	522	522	522	522	522
		POST-	617	615	615	613	613	603	603	608	615	622	624	632	637	646	666	699	710
		CRUSH	95	93	93	91	91	81	81	86	93	100	101	110	115	124	144	177	188
LEVEL 1 MID- BUMPER	432	PRE-	432	419	419	419	419	419	419	419	419	419	419	419	419	419	419	419	430
		POST-	608	589	582	582	578	573	569	568	570	573	577	581	590	606	622	648	658
		CRUSH	176	170	163	163	159	154	150	149	151	154	158	162	171	187	203	229	228

DATA SHEET 12 (continued)

STATIC CRUSH OF IMPACTOR FACE

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

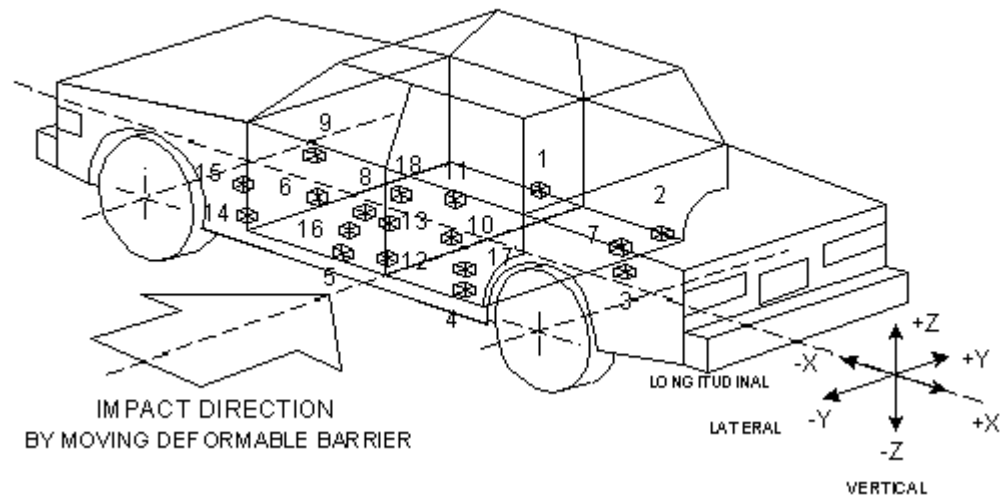


DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



1. Right Side Sill at Front Seat	10. Mid-rear of Left Rear Door
2. Right Side Sill at Rear Seat	11. Left Rear Door Upper Centerline
3. Rear Floorpan Above Axle	12. Left Lower B-Pillar
4. Left Side Sill at Rear Seat	13. Left Middle B-Pillar
5. Left Side Sill at Front Seat	14. Left Lower A-Pillar
6. Left Front Door on Centerline	15. Left Middle A-Pillar
7. Right Rear Occupant Compartment	16. Front Seat Track
8. Mid-rear of Left Front Door	17. Rear Seat Track
9. Left Front Door Upper Centerline	18. Vehicle CG

DATASHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND SUMMARY DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X mm	Y mm	Z mm	Max		Min		Max		Min		Max		Min		Max	
					G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
1	Right Side Sill at Front Seat	2666	667	283	4.5	59.9	-6.1	12.4	24.1	7.8	-2.1	162.3	6.0	37.3	-7.1	21.9	24.4	7.8
2	Right Side Sill at Rear Seat	1579	655	300	4.5	62.5	-7.1	12.6	23.5	8.1	-3.5	81.7	6.7	33.3	-6.5	14.4	24.5	8.2
3	Rear Floorpan Above Axle	1080	8	15	2.3	76.6	-9.0	14.1	22.9	34.6	-3.0	81.5	9.6	39.0	-16.4	43.8	24.7	43.9
4	Left Side Sill at Rear Seat	1602	-653	356					36.2	4.6	-3.3	96.1						
5	Left Side Sill at Front Seat	2697	-652	355					31.6	14.0	-12.8	8.4						
6	Left Front Door on Centerline	2277	-734	29					218.6	4.9	-122.9	22.2						
7	Right Rear Occupant Compartment	1733	362	205					22.4	6.0	-13.1	111.9						
8	Midrear of Left Front Door	Accelerometer not requested																
9	Left Front Door Upper Centerline	2231	-741	-258					227.4	16.3	-133.0	24.6						
10	Midrear of Left Rear Door	Rear door not present																

Axis Origin	X – Point L	Axis Orientation	+(X) Forward where x axis is the vector from middle of rear bumper to mid front bumper
	Y – Point L		+(Y) Right where y axis is parallel to ground reference plane
	Z – Point L		+(Z) Down where z axis is cross product of +(X) and +(Y)

4-19

4-19

4-19

4-19

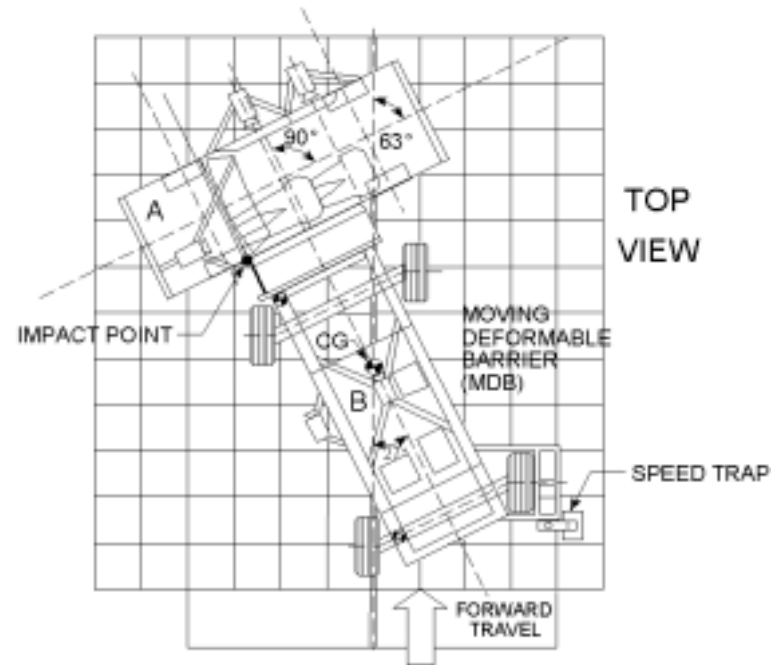
4-19

4-19

4-19

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY



Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X mm	Y mm	Z mm	Max		Min		Max		Min		Max		Min		Max	
					G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
1	MDB Center of Gravity	1113	-1	311	0.6	100.5	-23.5	31.2	1.8	62.8	-6.2	24.4	3.3	13.2	-4.4	39.1	23.8	31.2
2	MDB Rear Frame Member	2812	-614	585	1.5	122.9	-23.4	39.8	-5	22.3	-1.4	59.6						

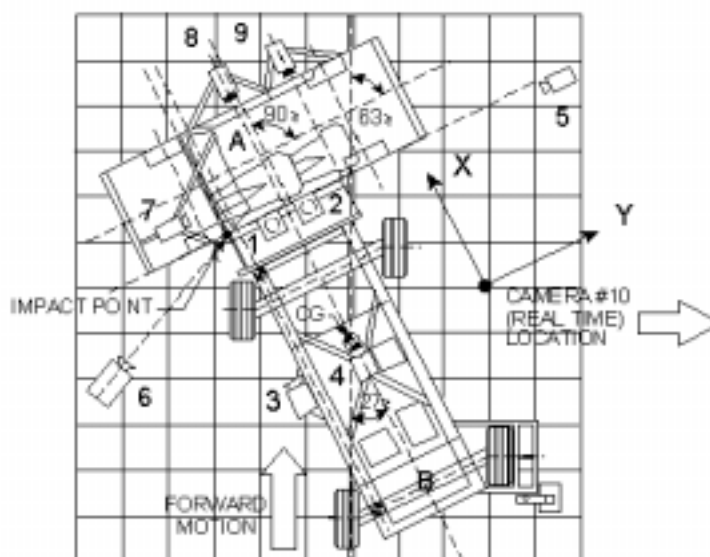
Axis Origin	X – Rear Bumper	Axis Orientation	+(X) Forward
	Y – Vehicle Centerline		+(Y) Right
	Z – Middle of rear bumper		+(Z) Down

DATA SHEET 15

HIGH-SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



Camera No.	View	Coordinates (mm)*			Angle wrt Horiz.	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead view of test vehicle	2154	-677	-3758	-90	12.5	1000
2	Overhead close-up view of impact plane	2839	-757	-3761	-90	25	1000
3	MDB onboard close-up view of impact point	3218	-3393	-212	0	35	1000
4	MDB onboard view of driver dummy	2305	-3348	-676	-5	13	1000
5	Right side ground level overall view	-9956	-1007	-175	0	50	1000
6	Left side ground level overall view	7104	-127	-70	0	12.5	500
7	Test vehicle onboard driver front view	3494	-283	-636	-15	13	1000
8	Test vehicle onboard driver side view	2089	801	-508	-5	7.5	1000
9	Test vehicle onboard passenger side view	N/A	N/A	N/A	N/A	N/A	N/A
10	Real-time film coverage of test	-	-	-	-	-	24

* Reference: Middle of rear bumper on test vehicle (Point L)

+ (X) Forward where x axis is the vector from middle of rear bumper to mid front bumper

+ (Y) Right where y axis is parallel to ground reference plane

+ (Z) Down where z axis is cross product of + (X) and + (Y)

SECTION 5
FUEL SYSTEM INTEGRITY

DATA SHEET 16

FUEL SYSTEM INTEGRITY DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601

TEST REQUIREMENTS:

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

TEST VEHICLE IMPACT TYPE: Side impacting Moving Deformable Barrier contacting the driver side.

FUEL SPILLAGE MEASUREMENT:

POST IMPACT TEST	TEST RESULTS	MAXIMUM ALLOWABLE
1. From impact until vehicle motion ceases	0	1 oz.
2. For 5 minute period after vehicle motion ceases	0	5 oz.
3. For next 25 minutes	0	1 oz./minute

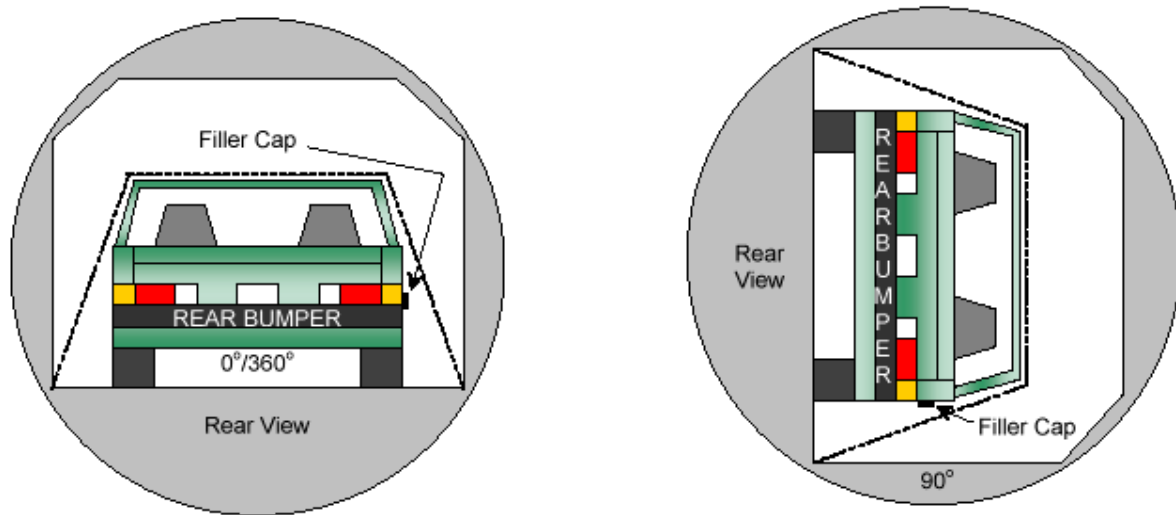
FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



0° TO 90°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	1	minutes	2	seconds
(Spec Range =1 to 3 minutes)				
FMVSS 301 Position Hold Time	5	minutes	3	seconds
TOTAL	6	minutes	5	seconds
Next whole minute interval	7	minutes		

FUEL SPILLAGE MEASUREMENT:

0° TO 90° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

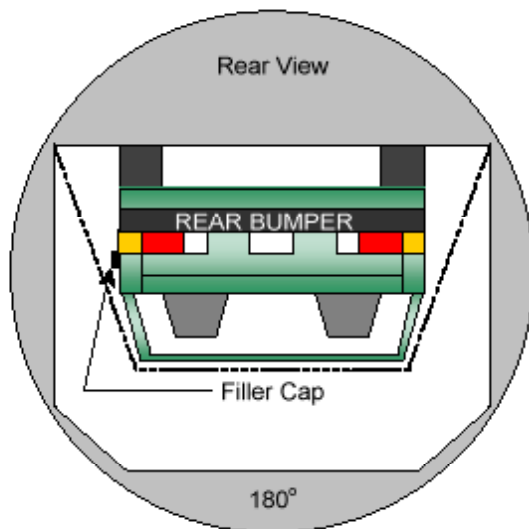
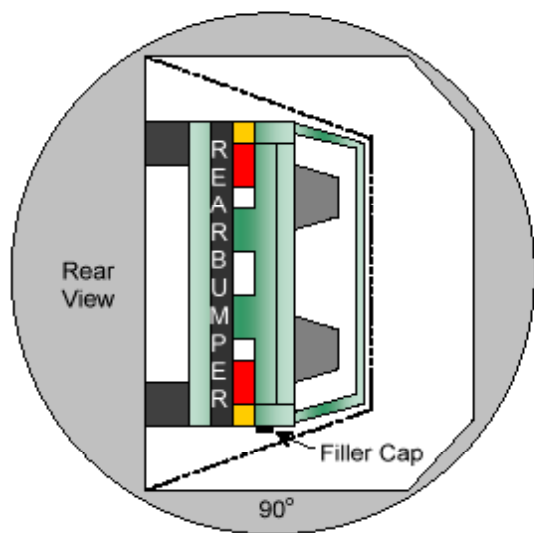
FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17 (continued)

ROLLOVER VEHICLE

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



90° TO 180°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>0</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>4</u> seconds
TOTAL	<u>6</u> minutes	<u>4</u> seconds
Next whole minute interval	<u>7</u> minutes	

FUEL SPILLAGE MEASUREMENT:

90° TO 180° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

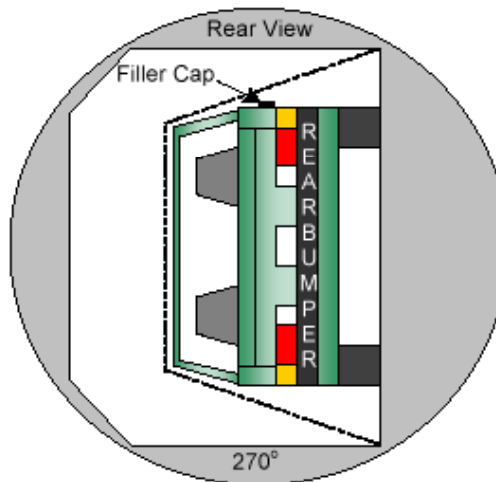
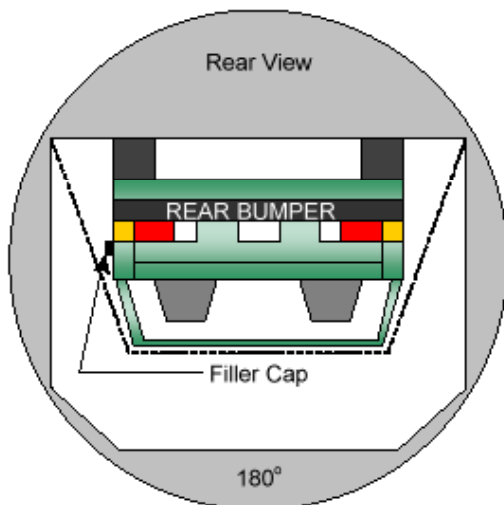
FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17 (continued)

ROLLOVER VEHICLE

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



180° TO 270°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>1</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>0</u> seconds
TOTAL	<u>6</u> minutes	<u>1</u> seconds
Next whole minute interval	<u>7</u> minutes	

FUEL SPILLAGE MEASUREMENT:

180° TO 270° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute From Onset of Rotation	-	1 oz.

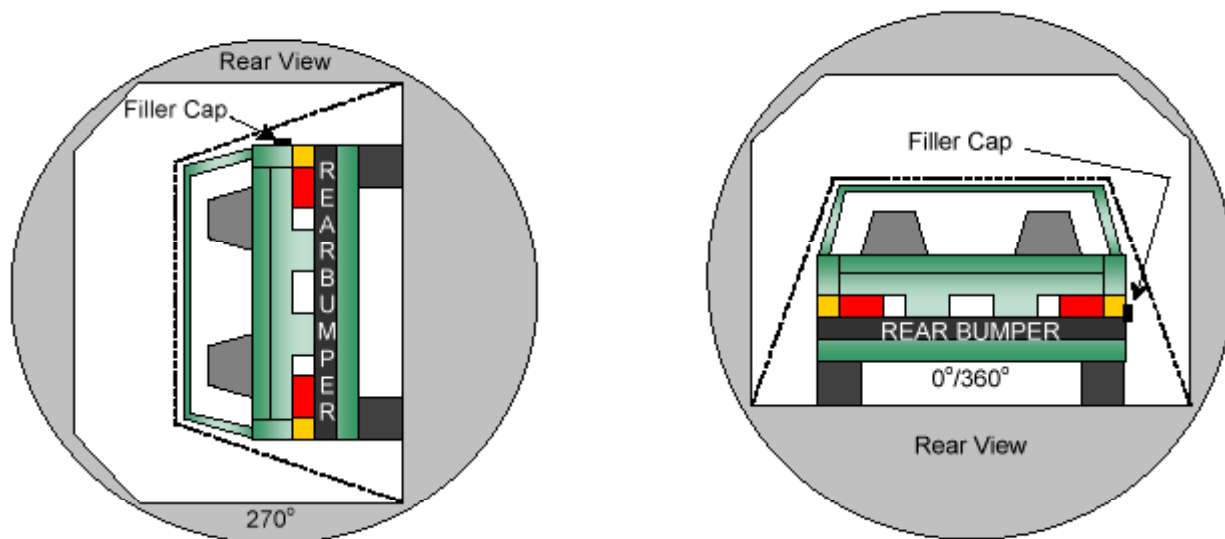
FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17 (continued)

ROLLOVER VEHICLE

Vehicle: 2003 Mitsubishi Eclipse RS 3 Door Sport Coupe

NHTSA No. M3 5601



270° TO 360°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>4</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>4</u> seconds
TOTAL	<u>6</u> minutes	<u>8</u> seconds
Next whole minute interval	<u>7</u> minutes	

FUEL SPILLAGE MEASUREMENT:

270° TO 360° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

FUEL SPILLAGE LOCATION(S): None

APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

<u>Figure</u>	<u>Photograph Title</u>	<u>Page</u>
A-1	PRE-TEST FRONTAL VIEW OF TEST VEHICLE	A-3
A-2	POST-TEST FRONTAL VIEW OF TEST VEHICLE	A-4
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Figure A-4: POST-TEST LEFT FRONT VIEW OF TEST VEHICLE (MDB MOVED)



Figure A-5: PRE-TEST LEFT SIDE VIEW OF TEST VEHICLE



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Figure A-7: PRE-TEST LEFT REAR VIEW OF TEST VEHICLE



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Figure A-13: PRE-TEST RIGHT SIDE VIEW OF TEST VEHICLE



Figure A-14: POST-TEST RIGHT SIDE VIEW OF TEST VEHICLE (MDB MOVED)



Figure A-15: PRE-TEST RIGHT FRONT VIEW OF TEST VEHICLE



Figure A-16: POST-TEST RIGHT FRONT VIEW OF TEST VEHICLE (MDB MOVED)



Figure A-17: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-18: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID (MDB MOVED)



Figure A-19: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-20: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID (MDB MOVED)



Figure A-21: PRE-TEST INTERIOR OF FRONT DOOR



Figure A-22: POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS



Figure A-23: PRE-TEST LEFT SIDE VIEW OF MDB IN IMPACT POSITION



Figure A-24: POST-TEST LEFT SIDE VIEW OF MDB



Figure A-25: PRE-TEST RIGHT SIDE VIEW OF MDB IN IMPACT POSITION



Figure A-26: POST-TEST RIGHT SIDE VIEW OF MDB

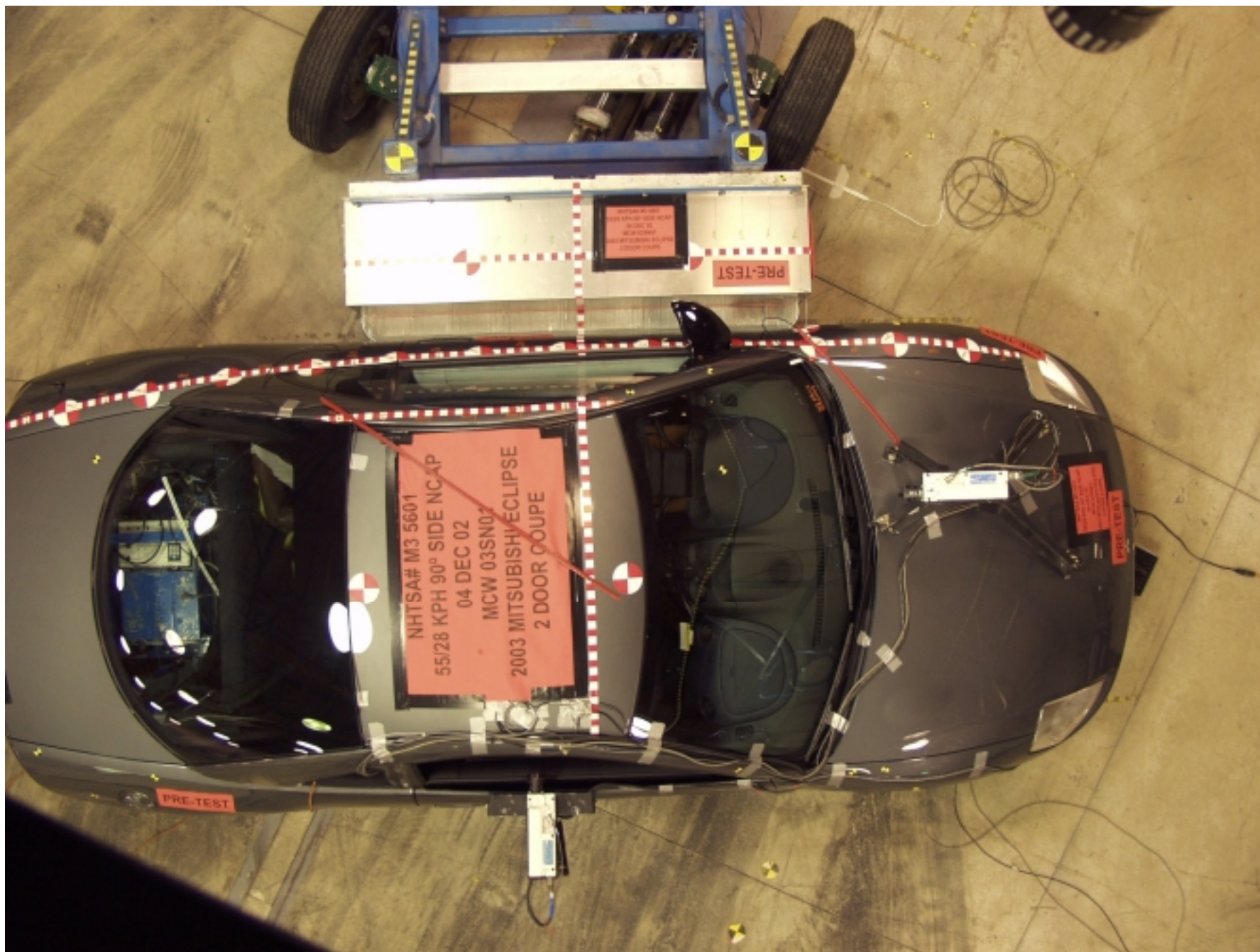


Figure A-27: PRE-TEST OVERHEAD VIEW OF MDB IN IMPACT POSITION

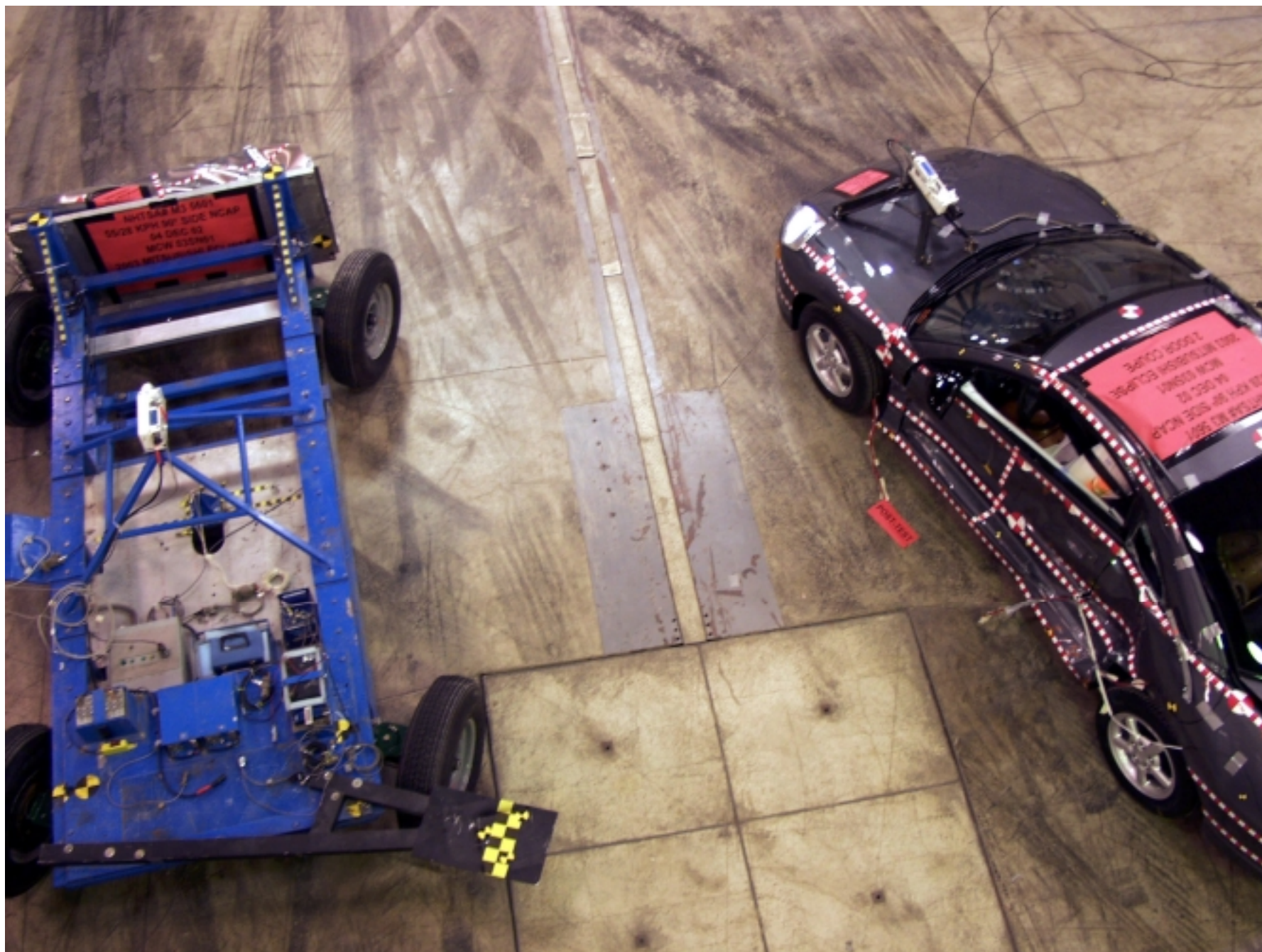


Figure A-28: POST-TEST OVERHEAD VIEW OF MDB



Figure A-29: PRE-TEST CLOSE-UP OF IMPACT POINT TARGET SHOWING WELDING ROD



Figure A-30: POST-TEST CLOSE-UP OF IMPACT POINT TARGET



Figure A-31: CLOSE-UP OF VEHICLE'S CERTIFICATION LABELS



Figure A-32: CLOSE-UP OF VEHICLE'S TIRE PLACARD LABELS



Figure A-33: IMPACT



Figure A-34: ROLLOVER 0 DEGREES

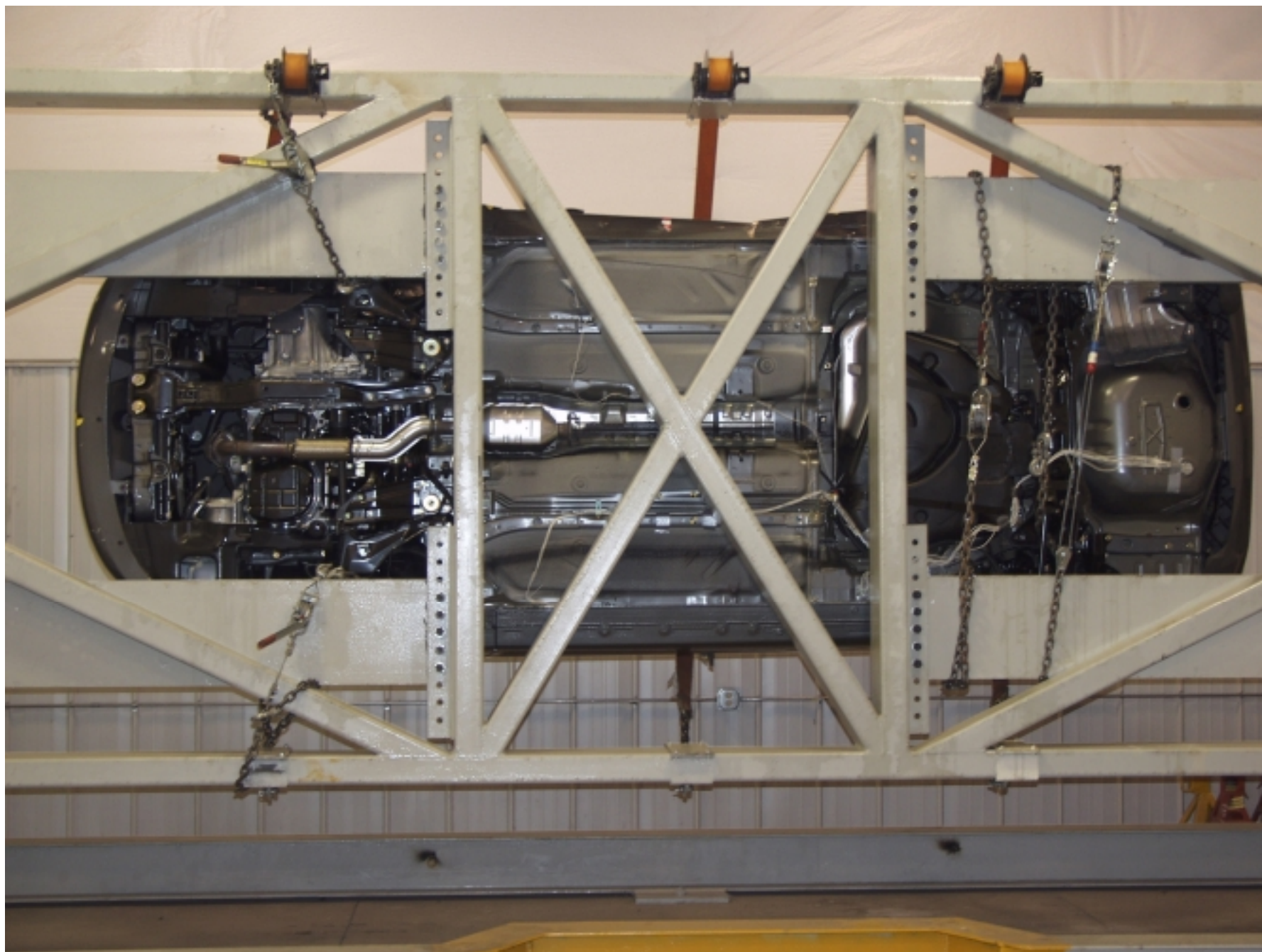


Figure A-35: ROLLOVER 90 DEGREES

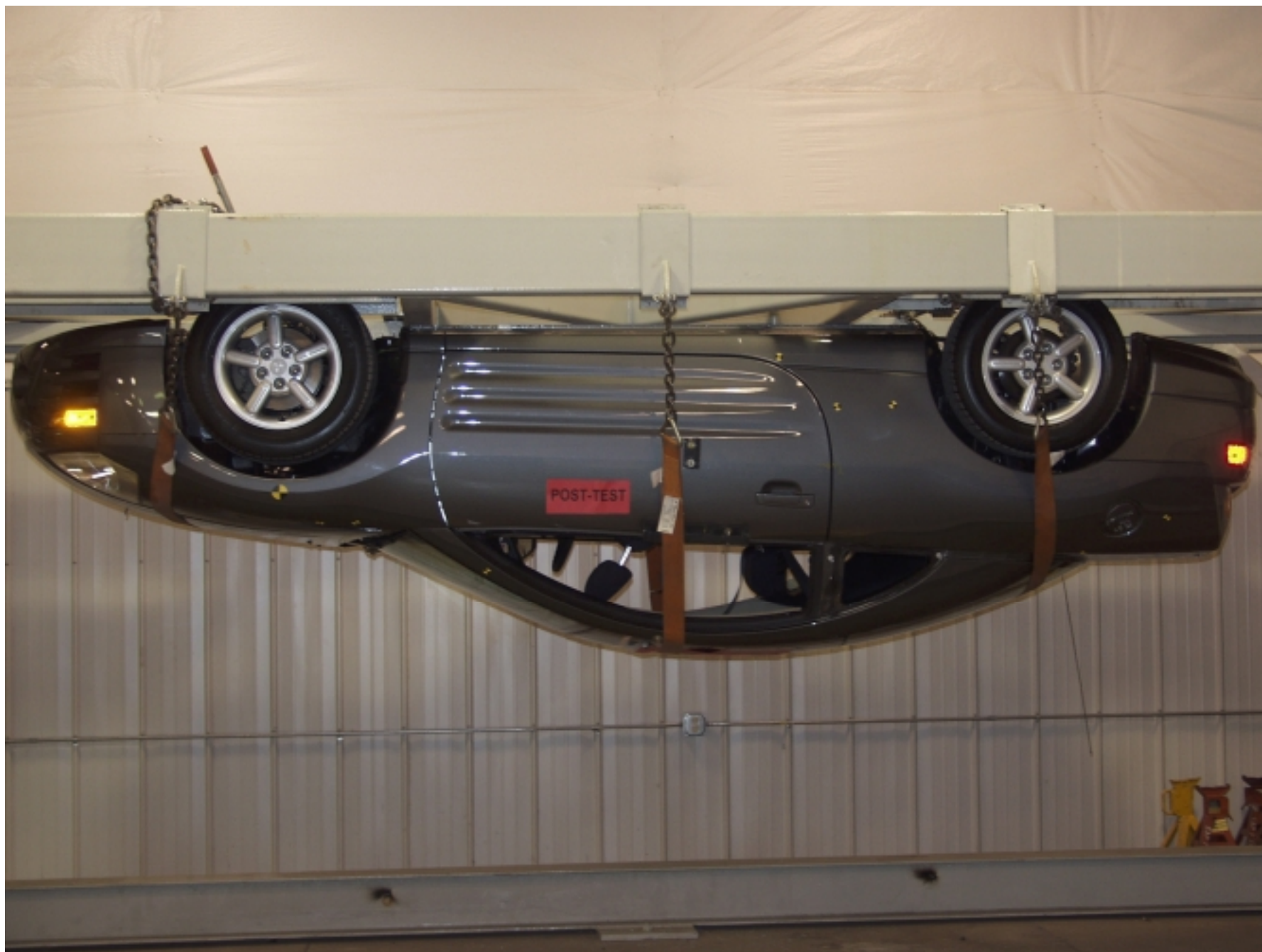


Figure A-36: ROLLOVER 180 DEGREES



Figure A-37: ROLLOVER 270 DEGREES



Figure A-38: ROLLOVER 360 DEGREES



Figure A-39: PRE-TEST ALUMINUM BARRIER FRONT



Figure A-40: POST-TEST ALUMINUM BARRIER FRONT

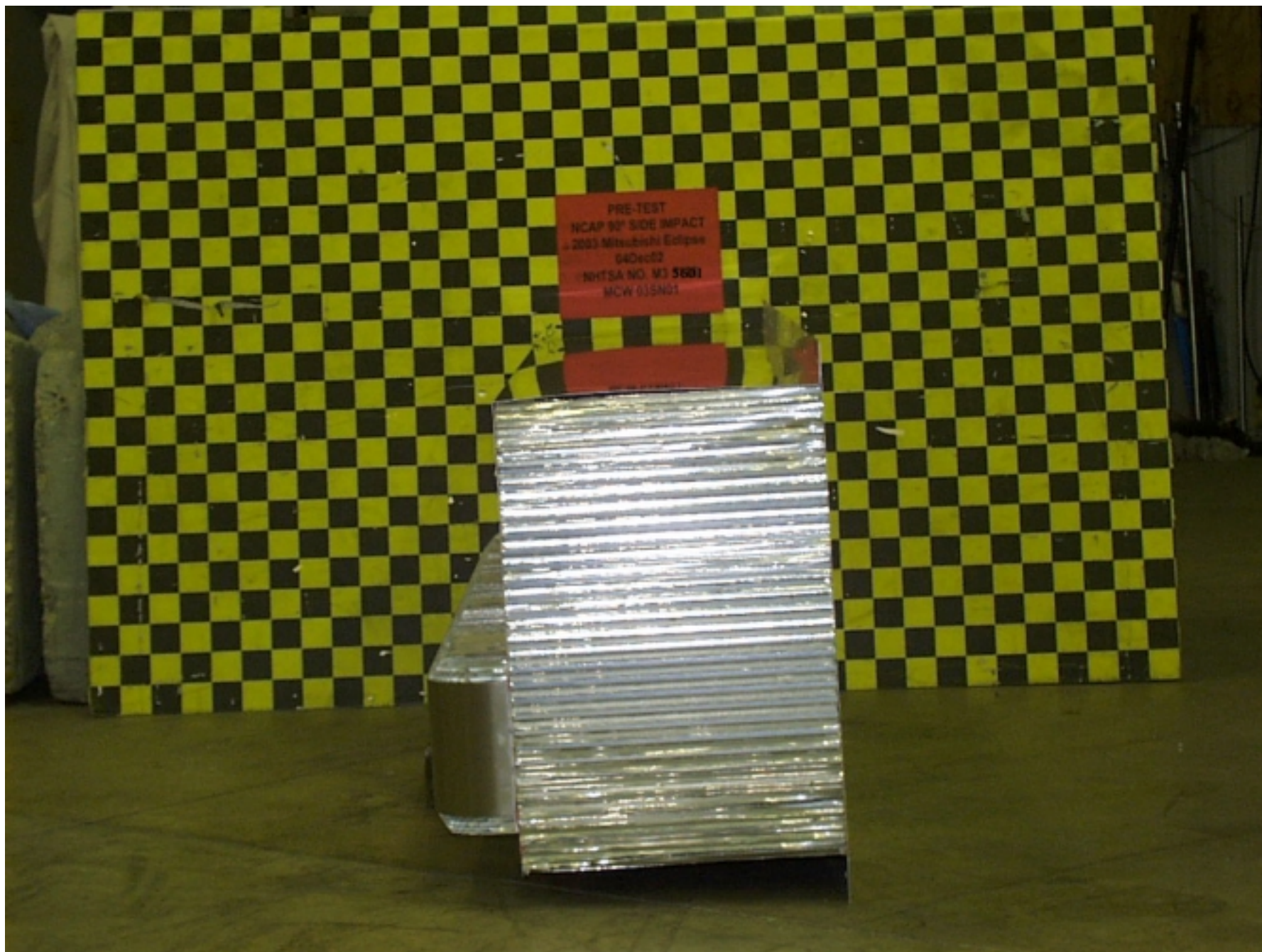


Figure A-41: PRE-TEST ALUMINUM BARRIER LEFT SIDE



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Figure A-44: POST-TEST ALUMINUM BARRIER RIGHT SIDE



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Figure A-47: BALLAST

APPENDIX B

VEHICLE, MDB, AND SID RESPONSE DATA

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UPPER NECK FORCES – FILTER CLASS 1000; UPPER NECK MOMENTS FILTER CLASS 600
INTEGRATION DATA FILTER CLASS 180

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2	DRIVER HEAD (X) VELOCITY	B-7
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15	DRIVER UPPER RIB (Y) VELOCITY	B-20
16	DRIVER LOWER RIB (Y) ACCELERATION	B-21
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DRIVER DUMMY INSTRUMENTATION PLOTS

ACCELERATION DATA – FIR FILTERED

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MDB INSTRUMENTATION PLOTS
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ACCELERATION DATA – FILTER CLASS 1000, LOWER SPINE FILTER CLASS 180
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91	DRIVER PELVIS (Y) ACCELERATION-REDUNDANT	B-96
92	DRIVER PELVIS (Y) VELOCITY-REDUNDANT	B-97

DRIVER DUMMY INSTRUMENTATION PLOT (REDUNDANT)
ACCELERATION DATA – FIR FILTERED

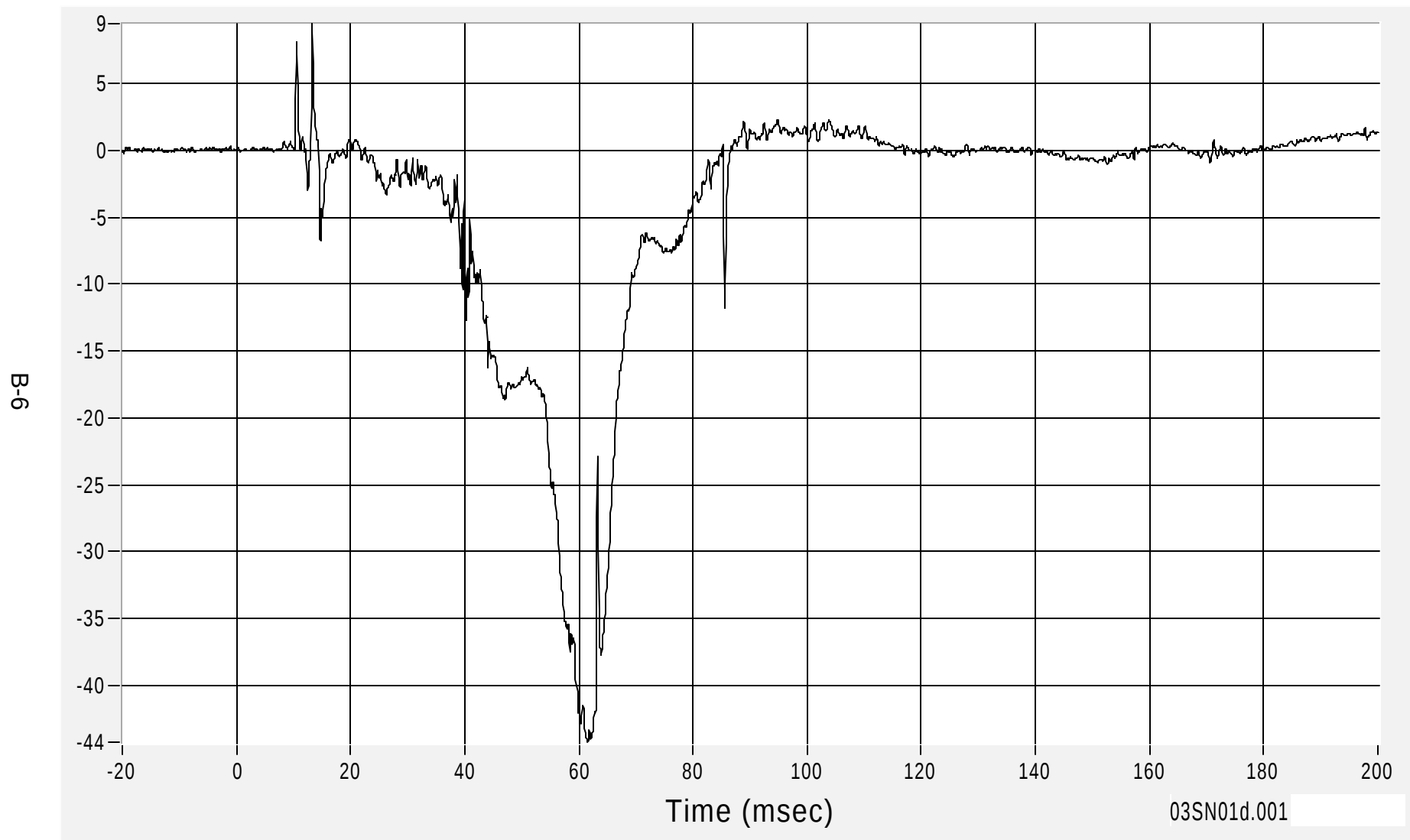
<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
93	DRIVER UPPER RIB (Y) ACCELERATION-REDUNDANT	B-98
94	DRIVER LOWER RIB (Y) ACCELERATION-REDUNDANT	B-99
95	DRIVER LOWER SPINE (Y) ACCELERATION-REDUNDANT	B-100
96	DRIVER PELVIS (Y) ACCELERATION-REDUNDANT	B-101

Driver Head CG (X) Acceleration

Max 9.5 G's at 13.3 msec

Acceleration (G's) CFC1000

Min -44.2 G's at 61.5 msec



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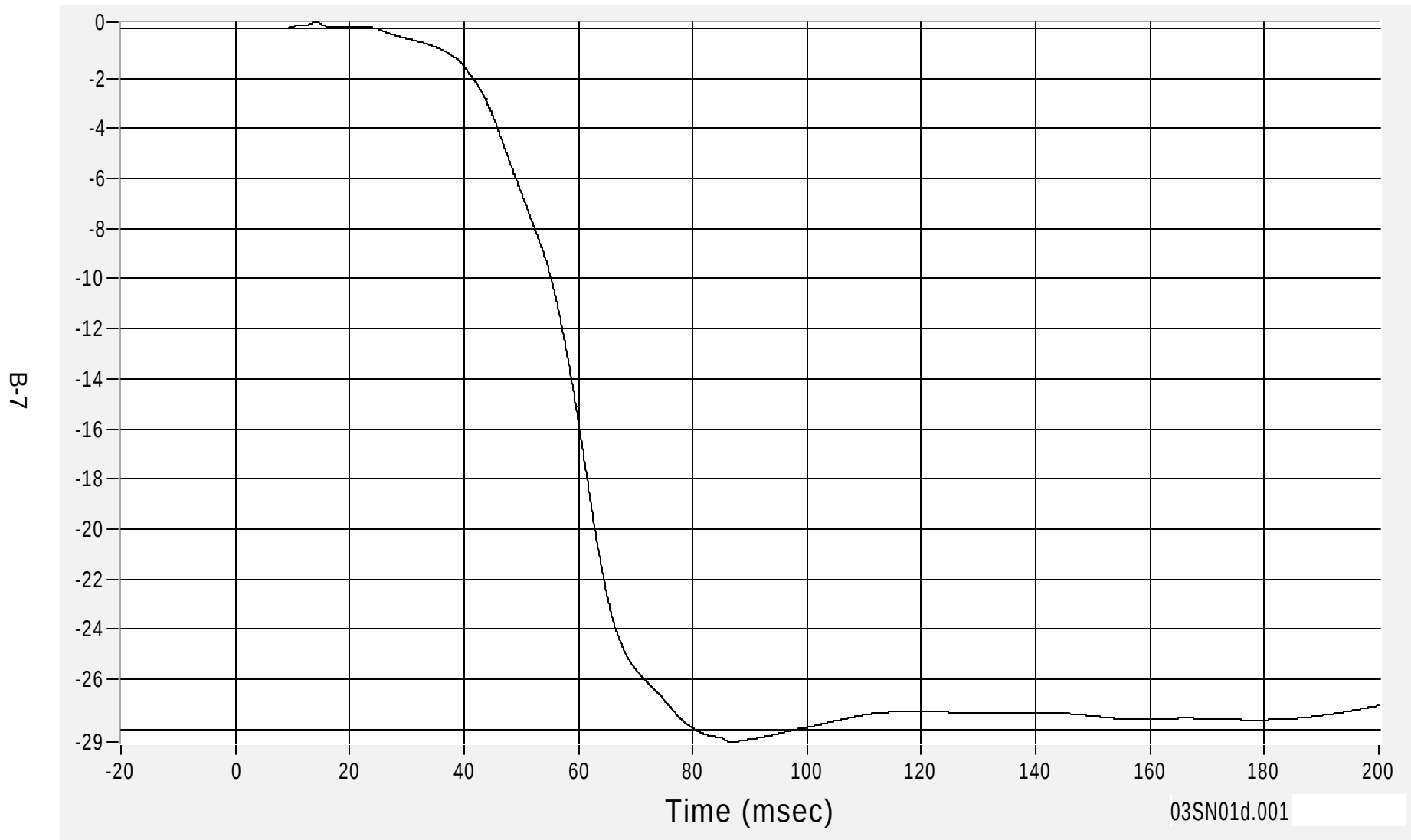
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (X) Velocity

Max 0.2 km/h at 14.1 msec

Min -28.5 km/h at 86.9 msec

Velocity (km/h) CFC180



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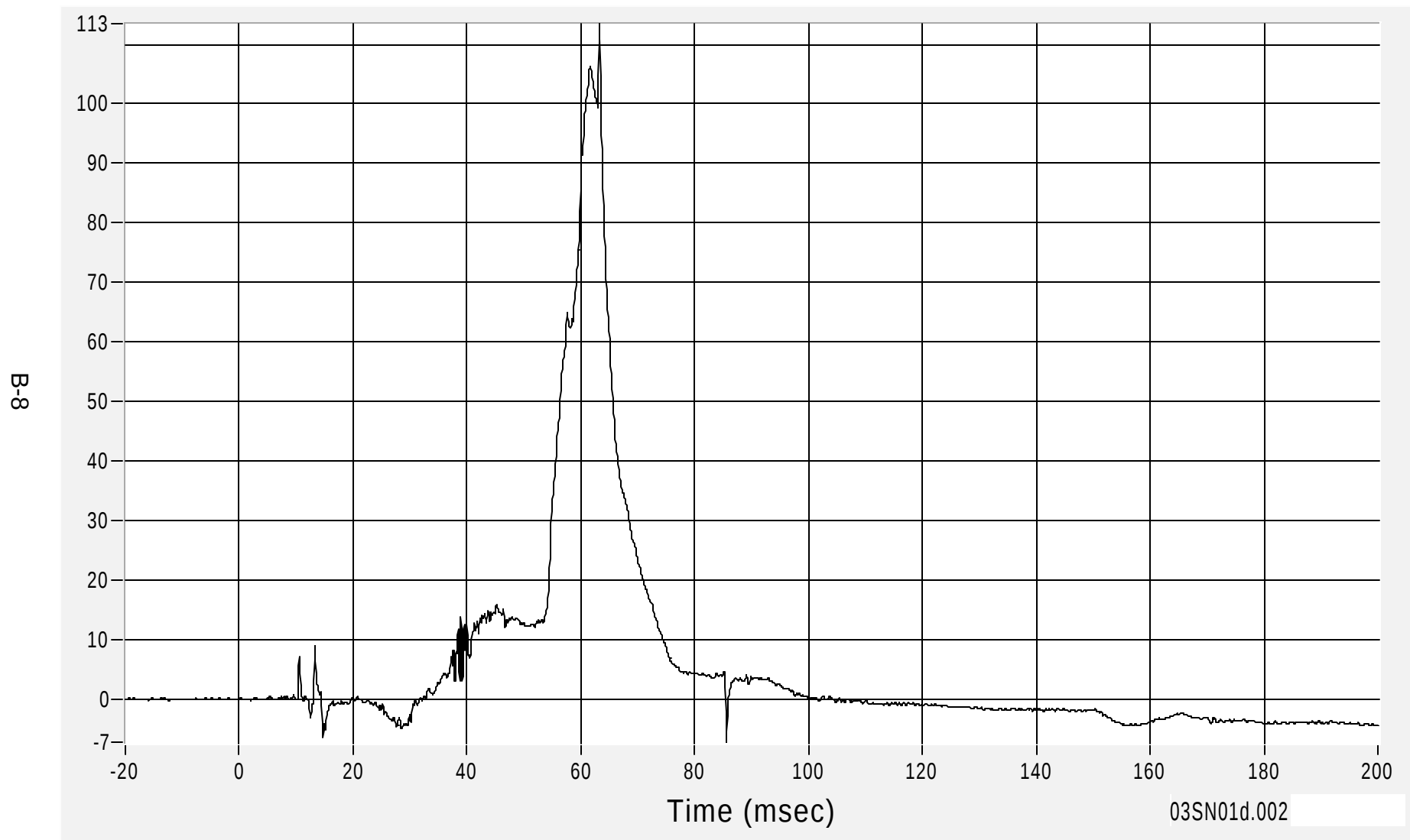
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (Y) Acceleration

Max 113.5 G's at 63.3 msec

Acceleration (G's) CFC1000

Min -7.3 G's at 85.6 msec



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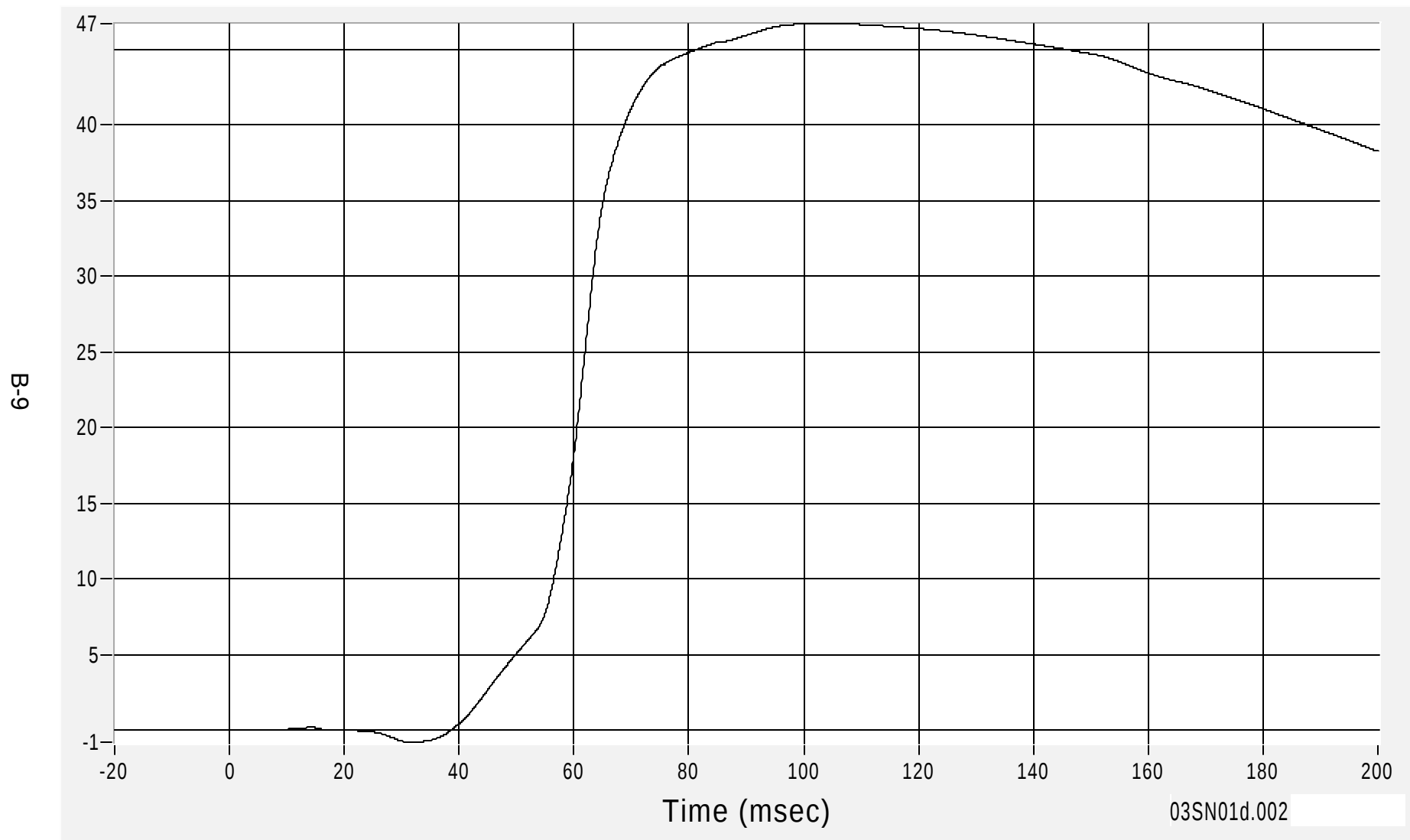
Medical College of Wisconsin
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Driver Head CG (Y) Velocity

Max 46.7 km/h at 104.2 msec

Velocity (km/h) CFC180

Min -0.8 km/h at 31.8 msec



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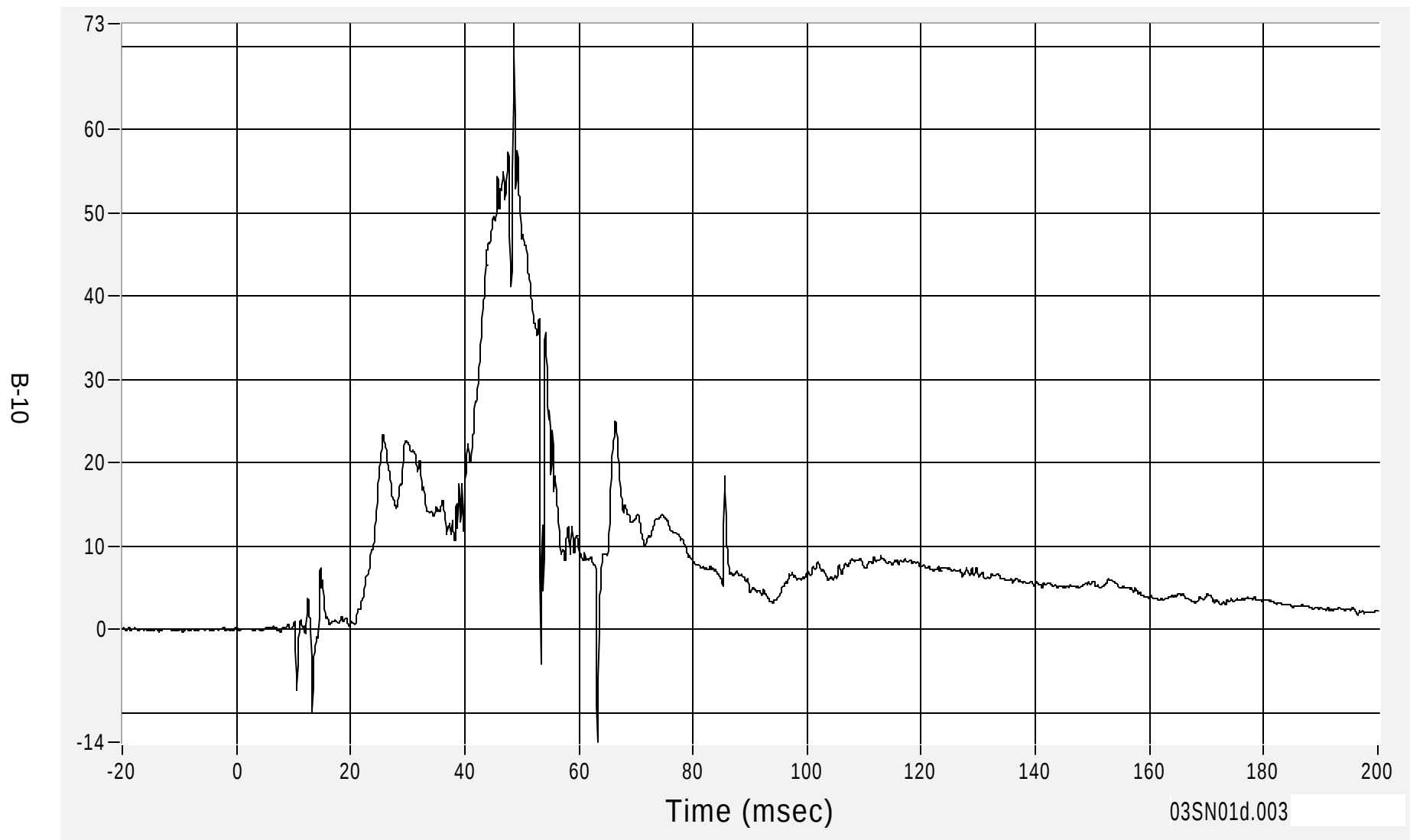
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (Z) Acceleration

Max 72.7 G's at 48.6 msec

Acceleration (G's) CFC1000

Min -13.6 G's at 63.3 msec



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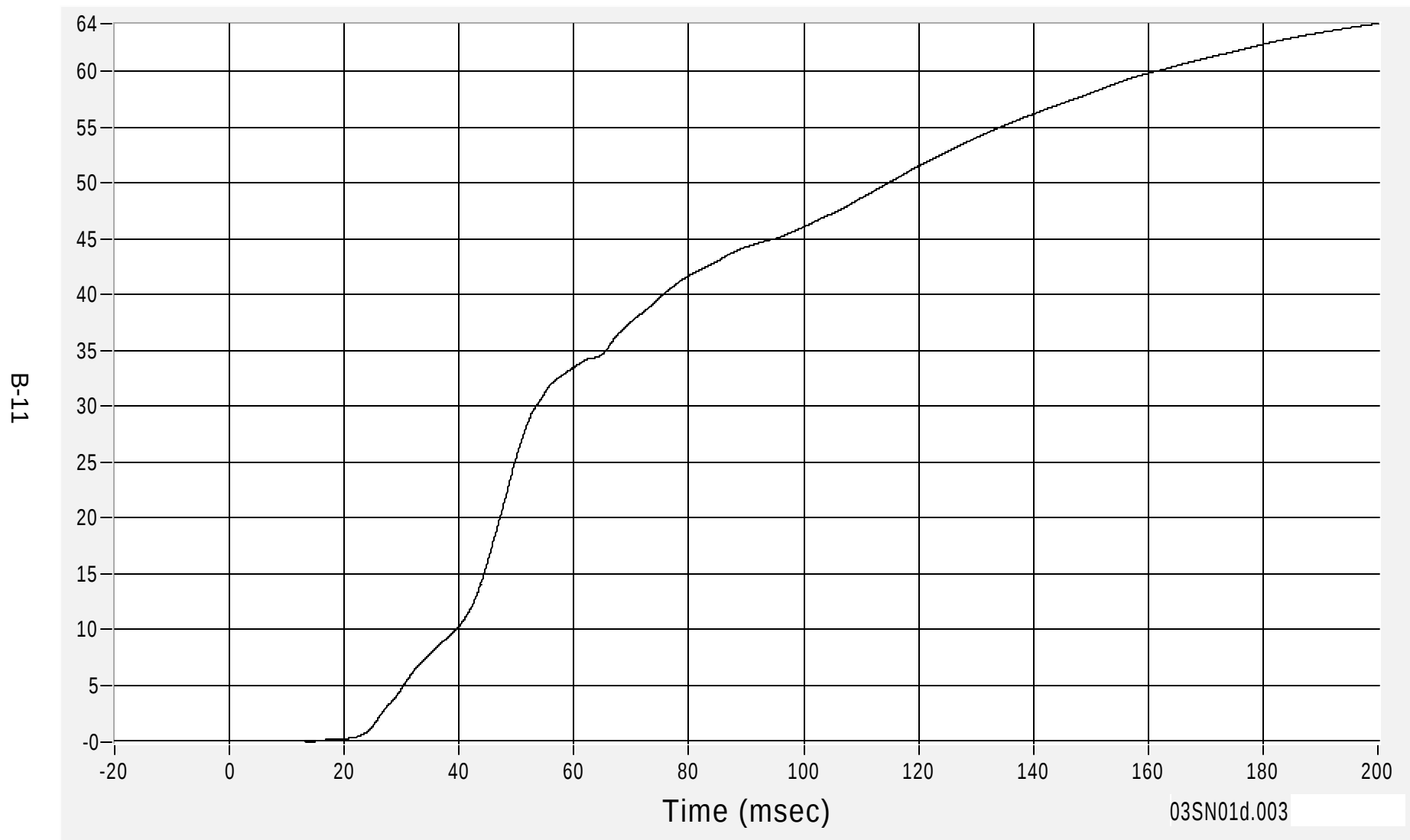
Medical College of Wisconsin
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Driver Head CG (Z) Velocity

Max 64.3 km/h at 199.9 msec

Velocity (km/h) CFC180

Min -0.1 km/h at 14.1 msec



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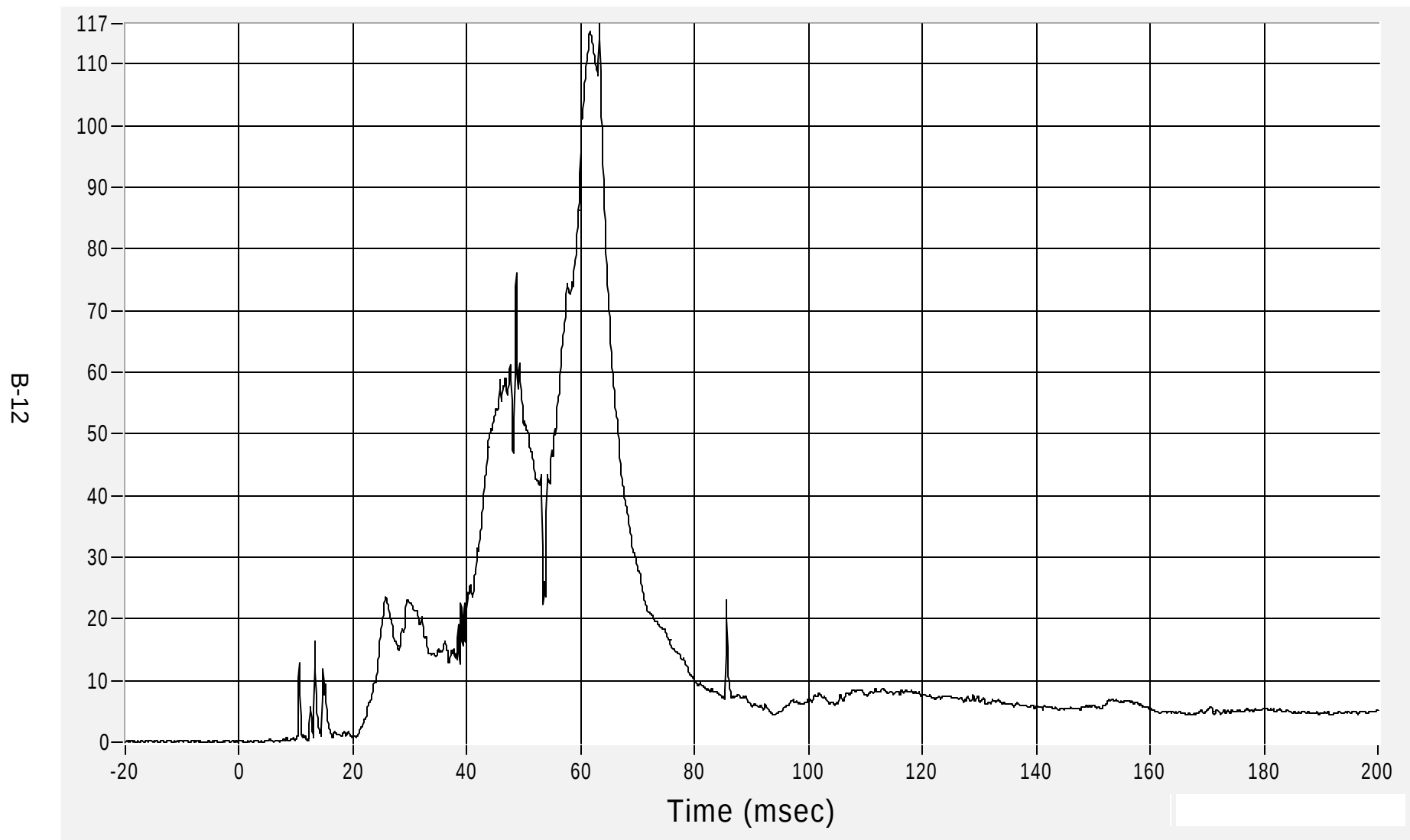
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Driver Head Resultant Acceleration

Max 116.6 G's at 63.3 msec

Acceleration (G's) CFC1000

Min 0.0 G's at 2.4 msec



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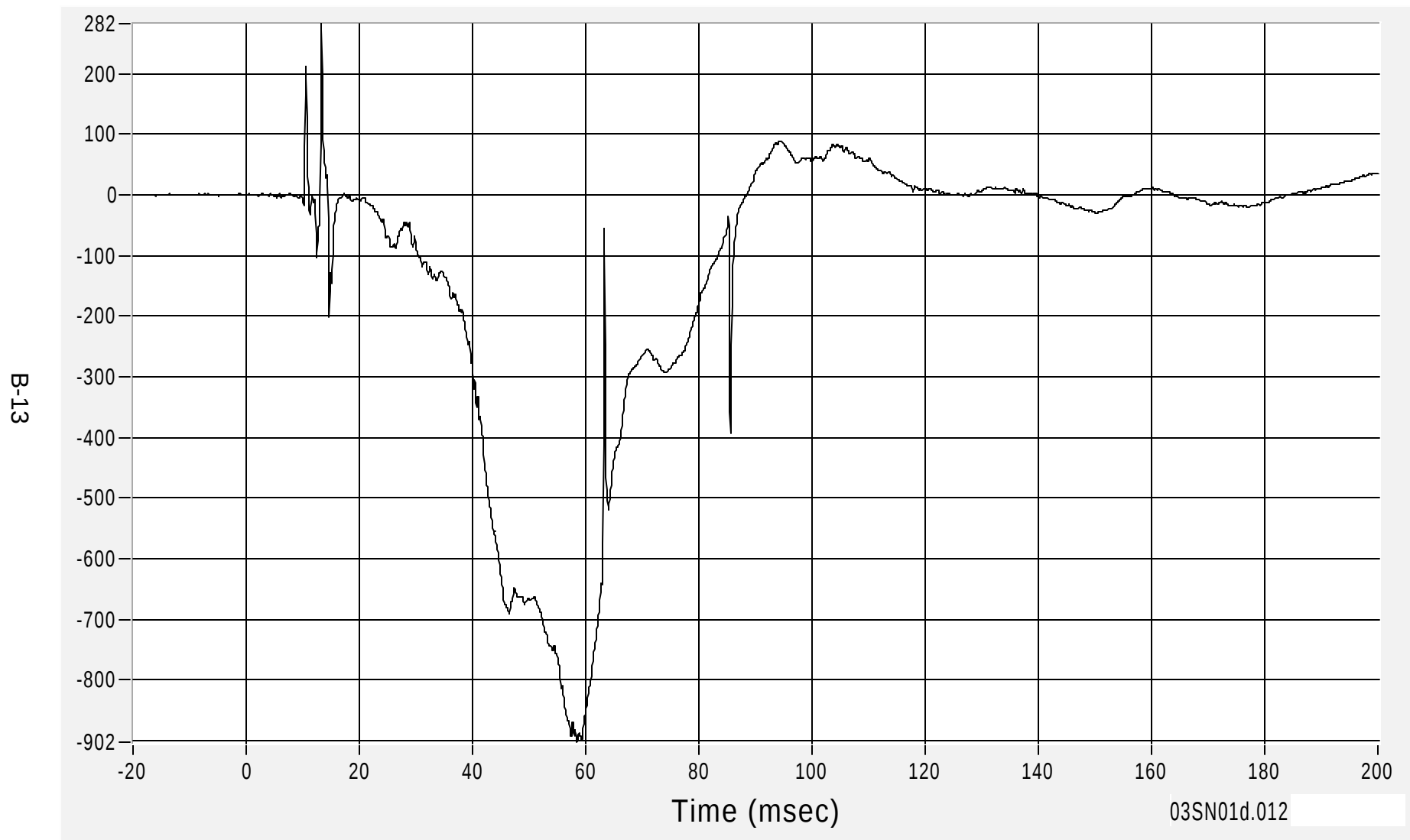
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Driver Upper Neck (X) Force

Max 282.3 N at 13.3 msec

Force (N) CFC1000

Min -902.5 N at 58.5 msec



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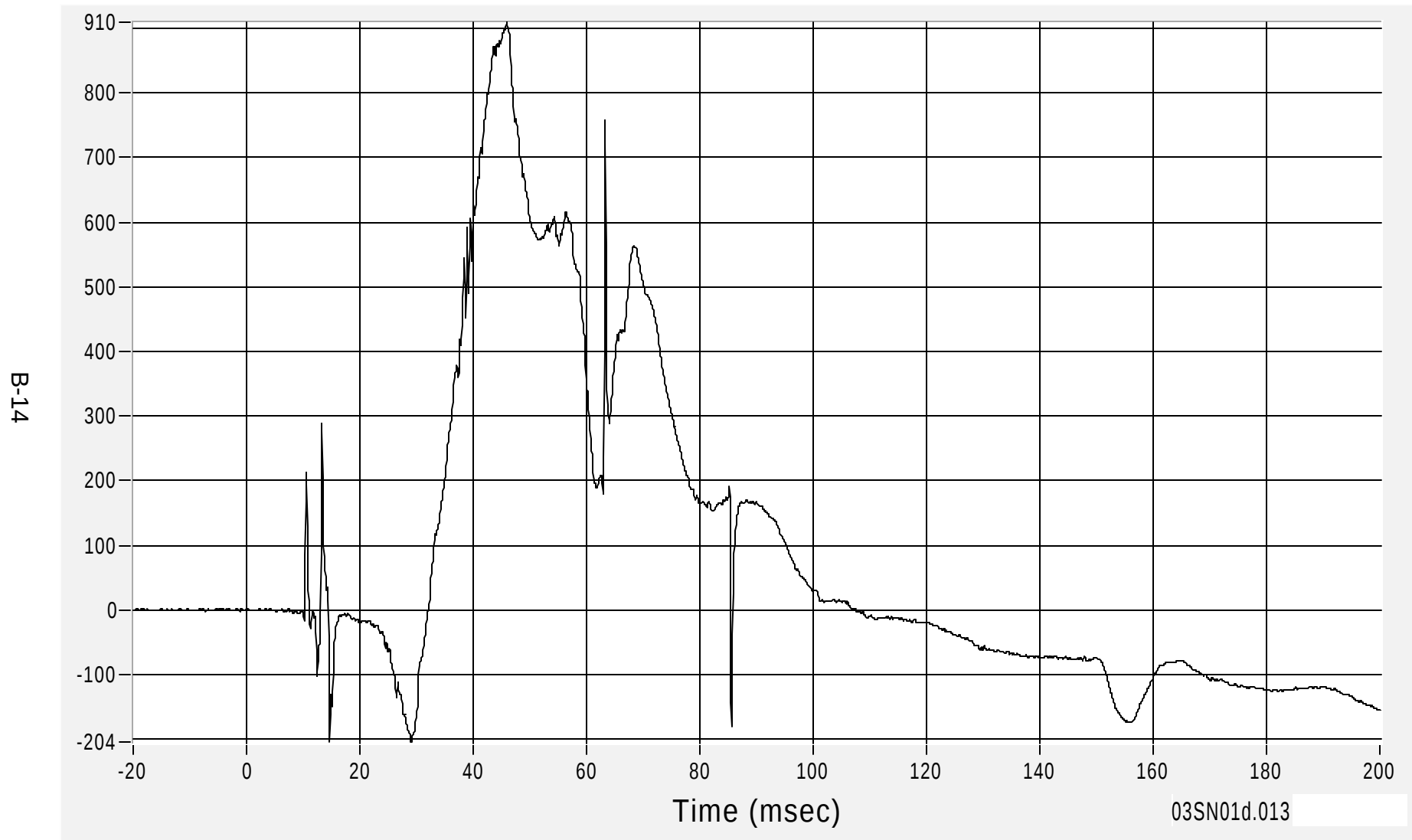
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Driver Upper Neck (Y) Force

Max 909.6 N at 45.9 msec

Force (N) CFC1000

Min -204.0 N at 14.7 msec



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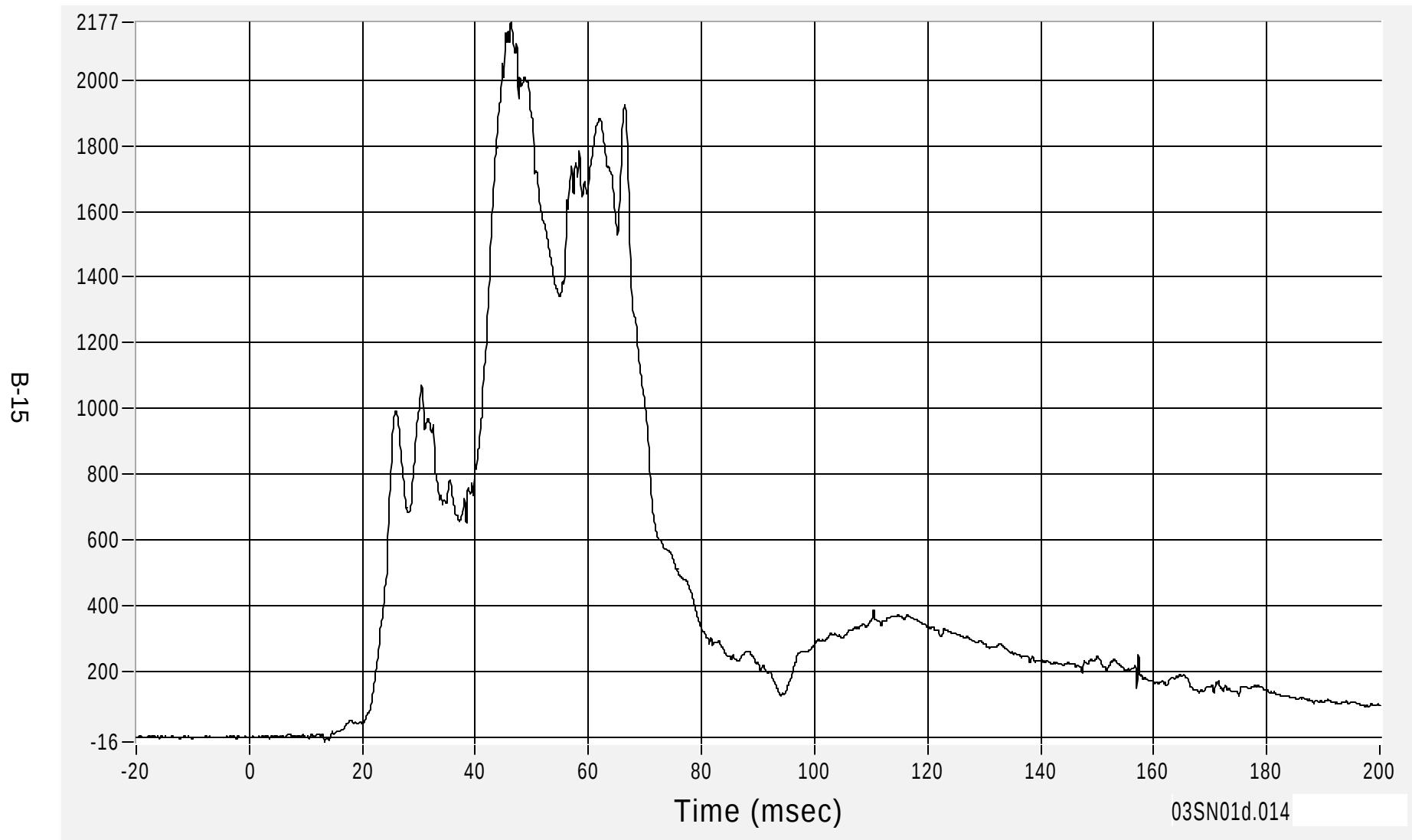
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Driver Upper Neck (Z) Force

Max 2176.7 N at 46.3 msec

Force (N) CFC1000

Min -15.9 N at 13.4 msec



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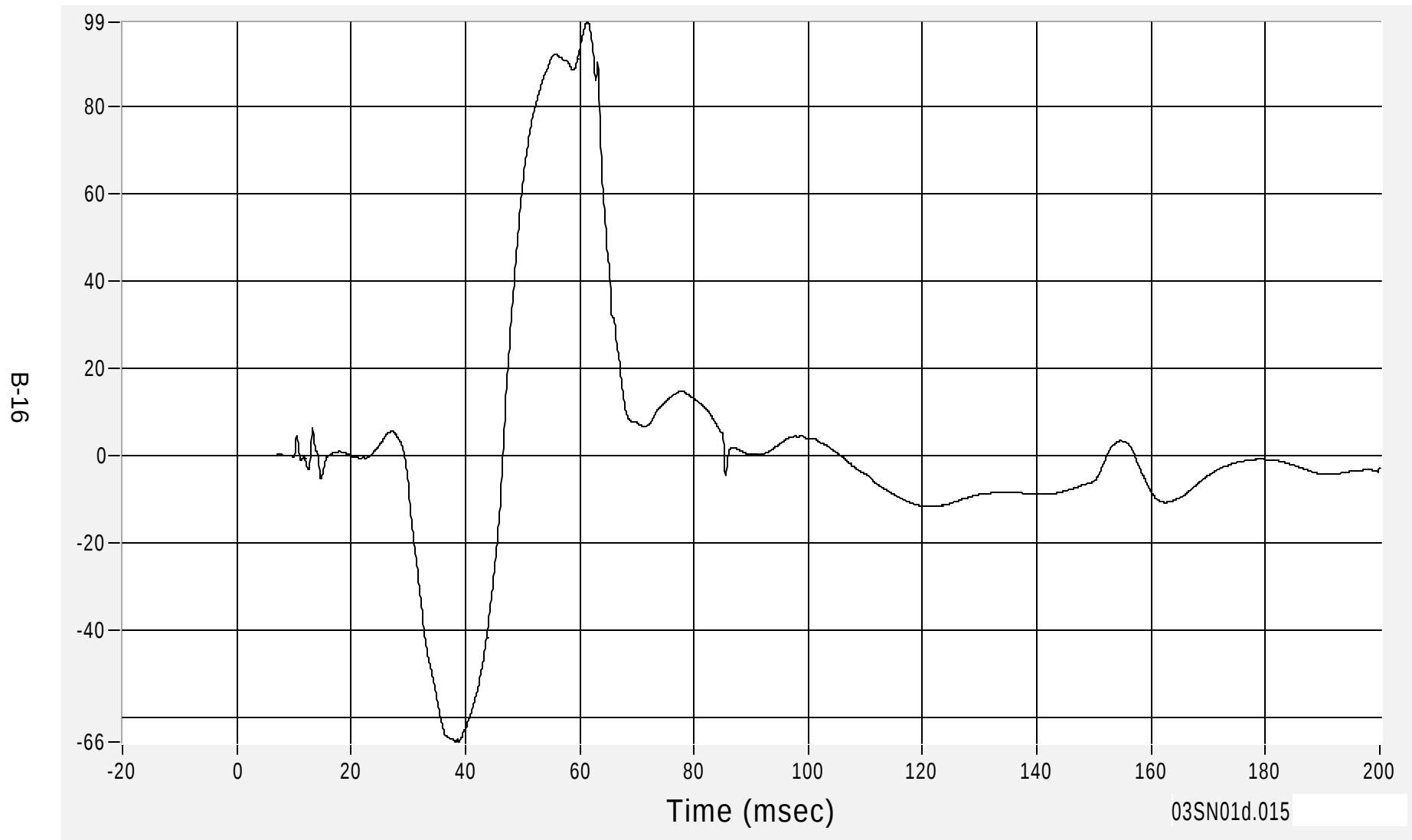
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Neck (X) Moment

Max 99.2 Nm at 61.4 msec

Moment (Nm) CFC600

Min -65.7 Nm at 38.9 msec



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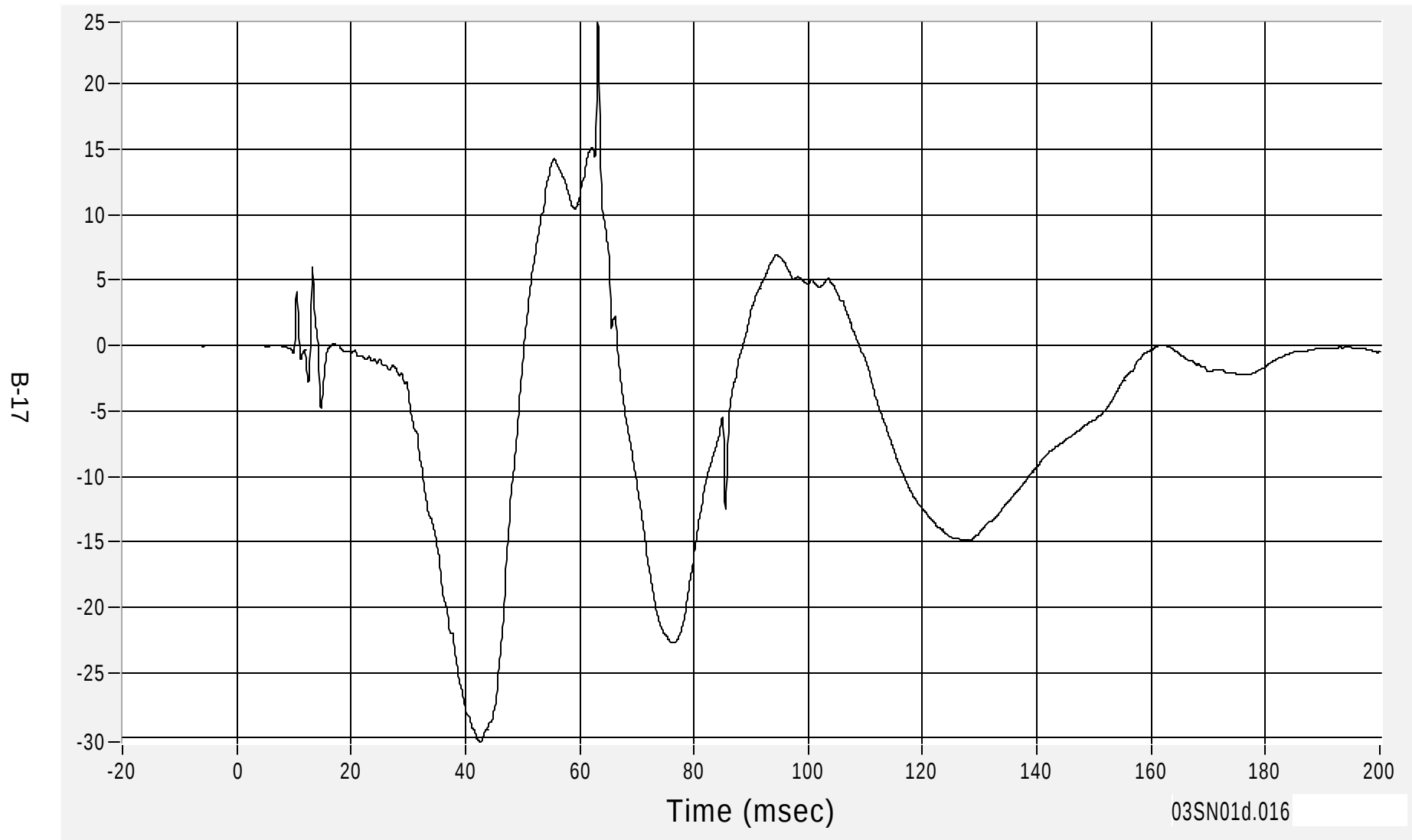
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Neck (Y) Moment

Moment (Nm) CFC600

Max 24.7 Nm at 63.2 msec

Min -30.3 Nm at 42.6 msec



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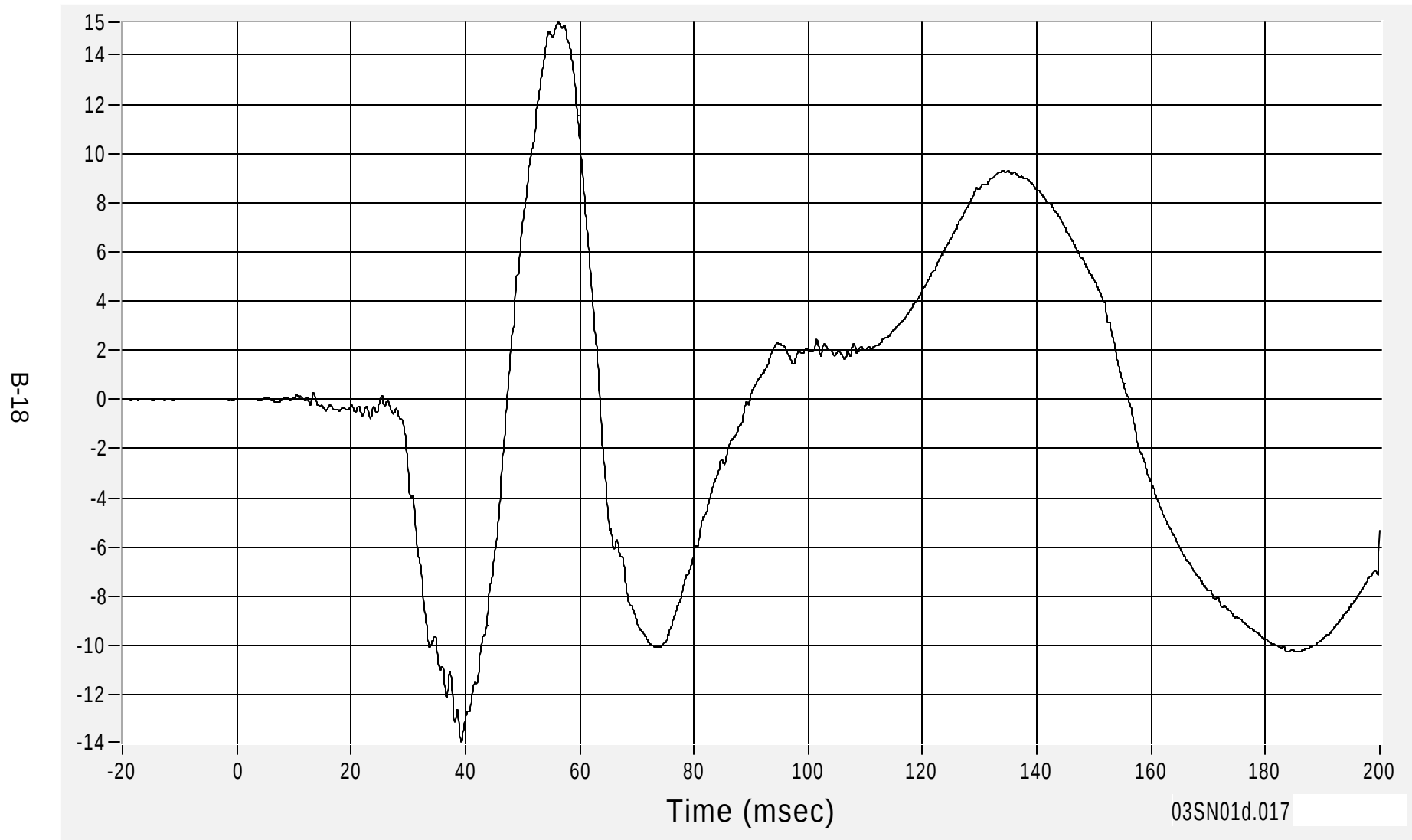
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Neck (Z) Moment

Max 15.3 Nm at 56.3 msec

Min -13.9 Nm at 39.3 msec

Moment (Nm) CFC600



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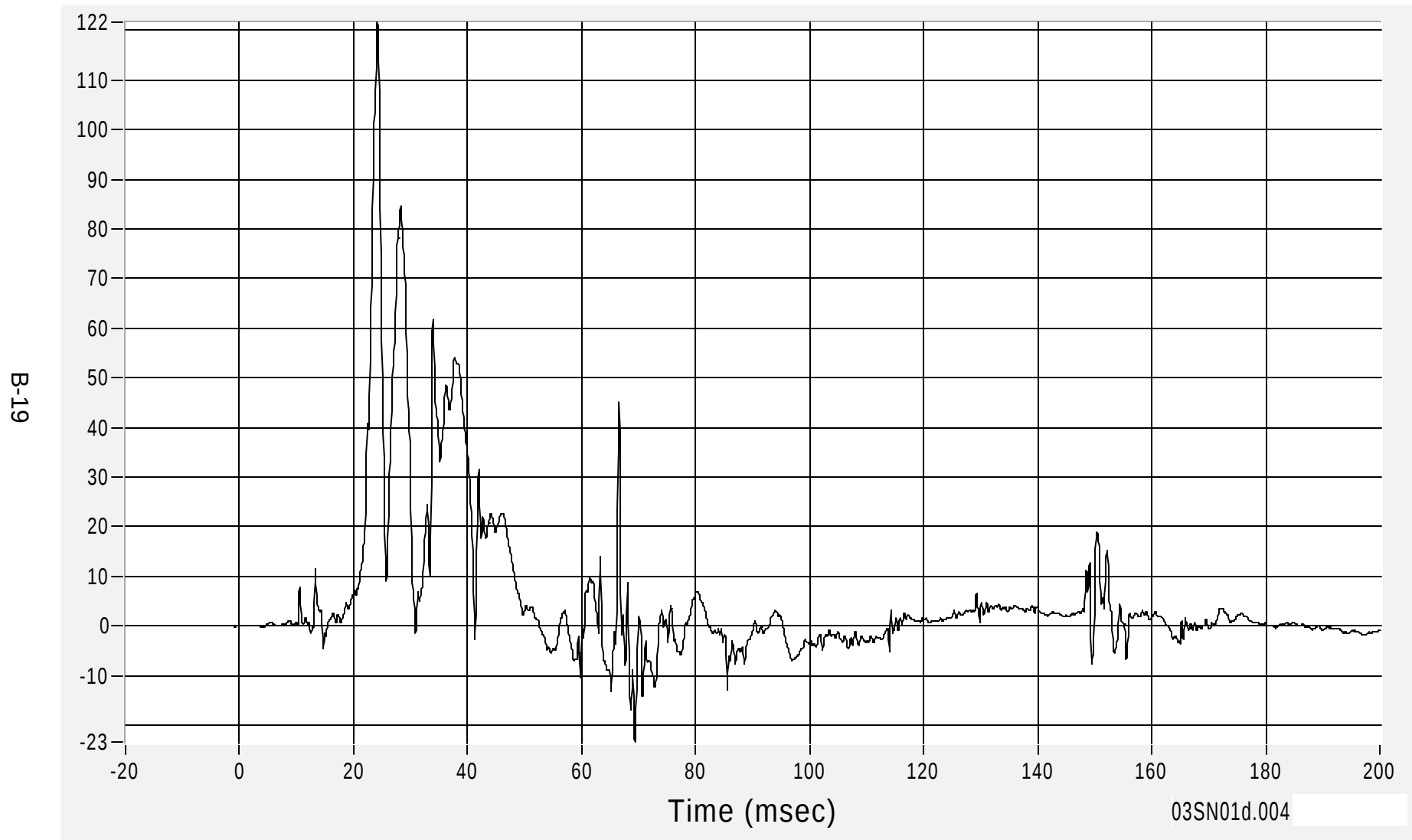
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Acceleration

Max 121.7 G's at 24.2 msec

Acceleration (G's) CFC1000

Min -23.4 G's at 69.4 msec



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4 December 2002

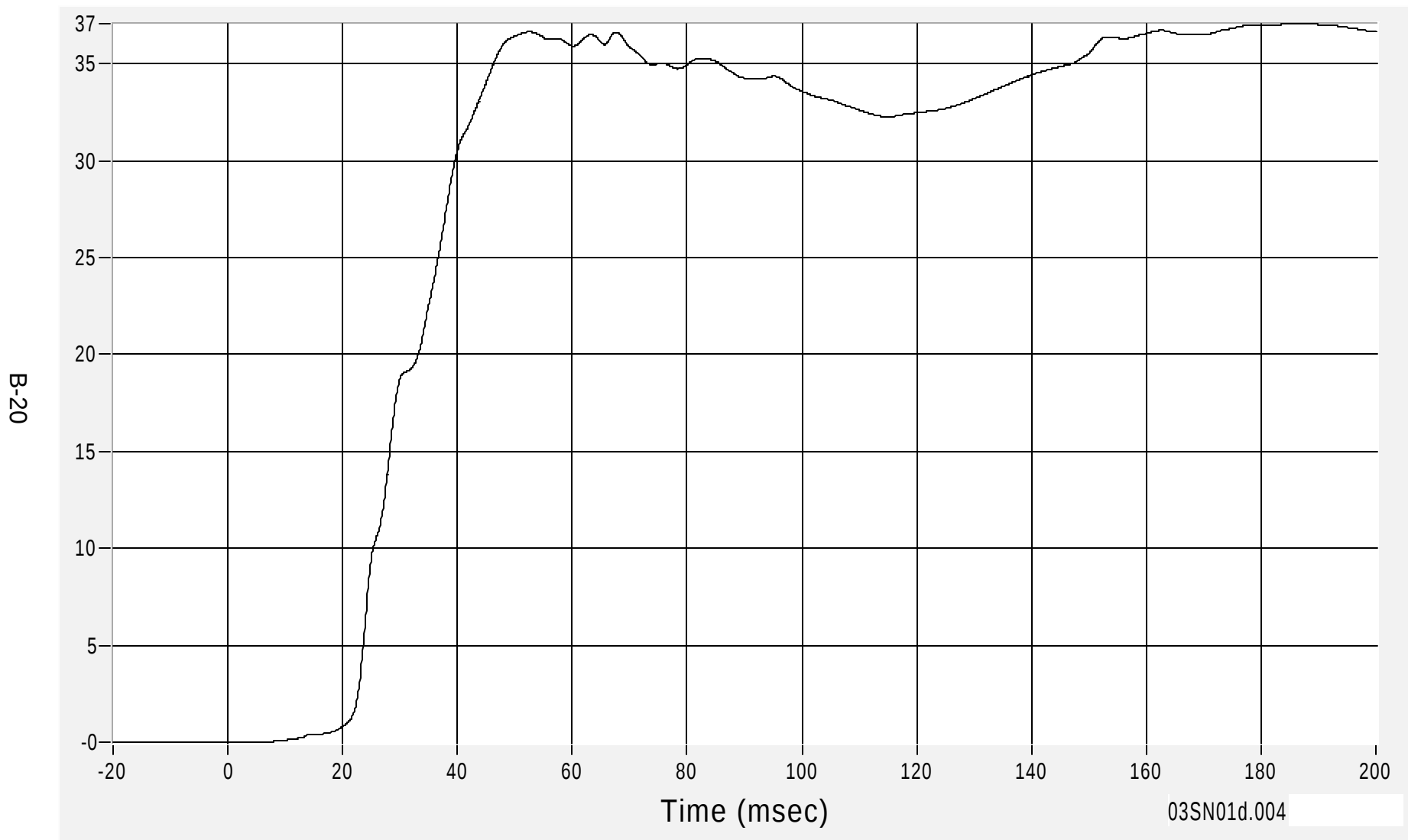
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Velocity

Velocity (km/h) CFC180

Max 37.1 km/h at 186.7 msec

Min 0.0 km/h at 0.0 msec



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4 December 2002

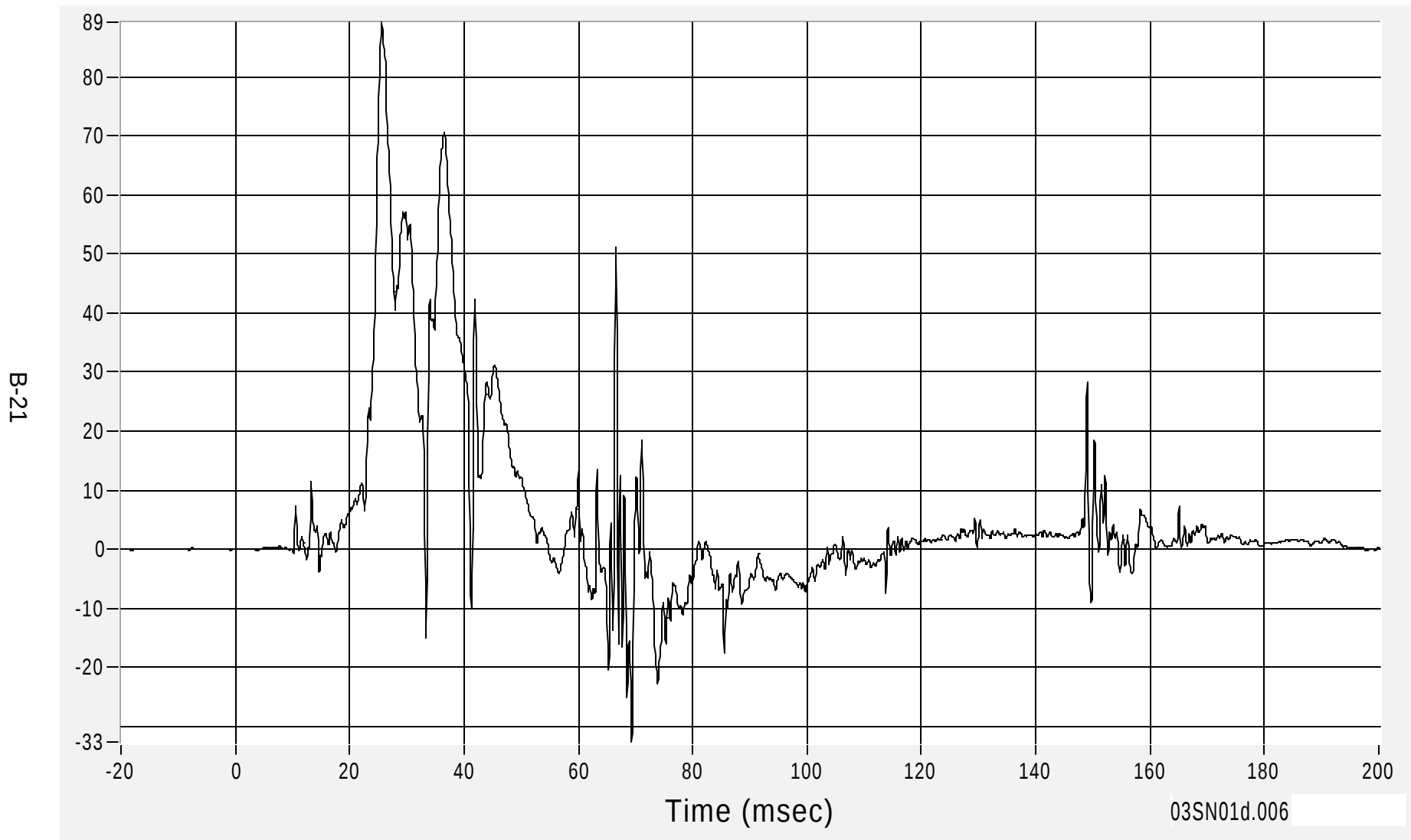
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Acceleration

Max 89.3 G's at 25.6 msec

Acceleration (G's) CFC1000

Min -32.6 G's at 69.4 msec



03SN01 - 2003 MITSUBISHI ECLIPSE RS 3 DOOR SPORTS COUPE

4 December 2002

Medical College of Wisconsin
Vehicle Crashworthiness Lab

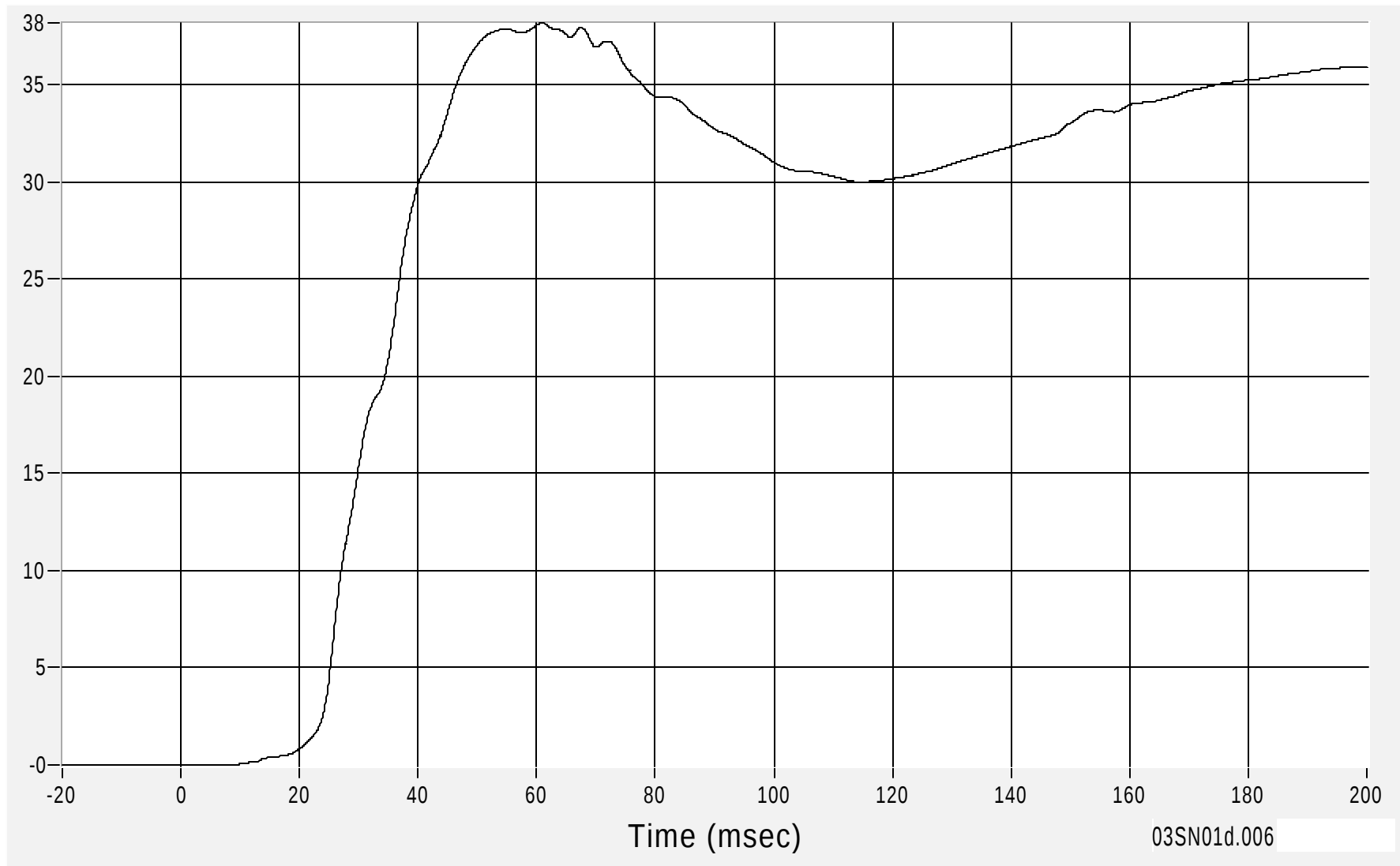
Driver Lower Rib (Y) Velocity

Velocity (km/h) CFC180

Max 38.2 km/h at 60.9 msec

Min 0.0 km/h at 4.2 msec

B-22



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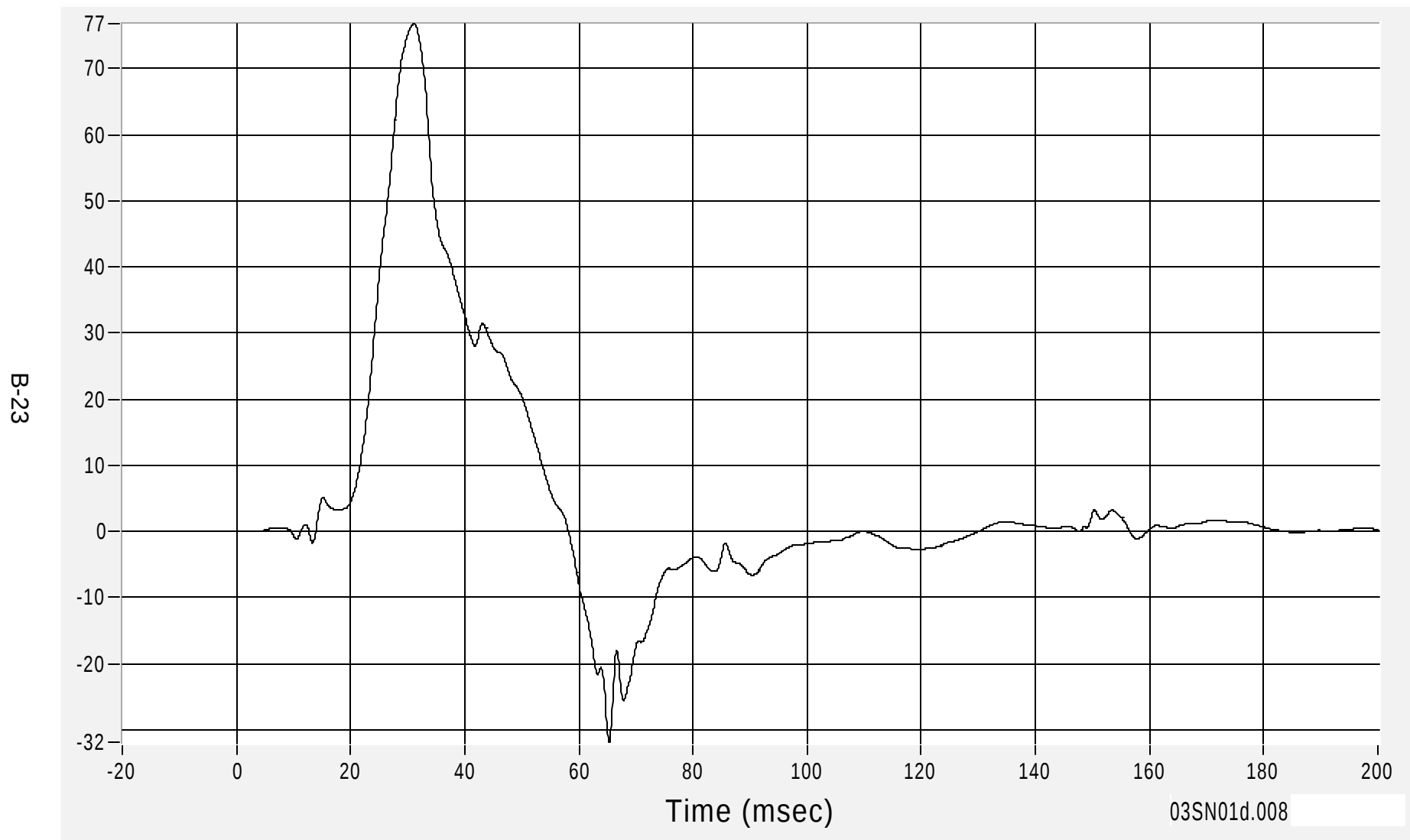
Medical College of Wisconsin
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Driver Lower Spine (Y) Acceleration

Max 76.8 G's at 31.0 msec

Acceleration (G's) CFC180

Min -31.9 G's at 65.3 msec



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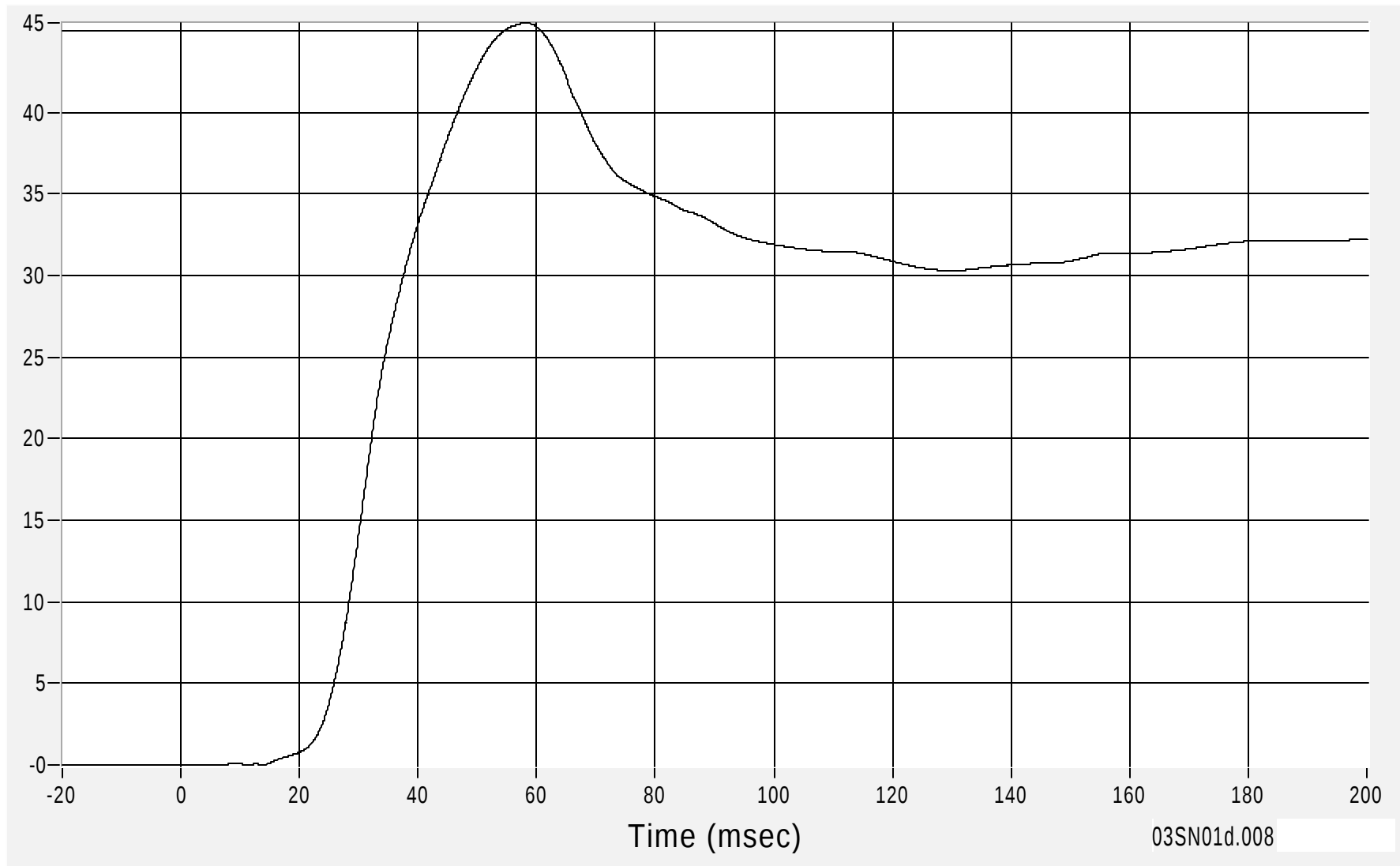
Driver Lower Spine (Y) Velocity

Velocity (km/h) CFC180

Max 45.5 km/h at 58.2 msec

Min 0.0 km/h at 2.9 msec

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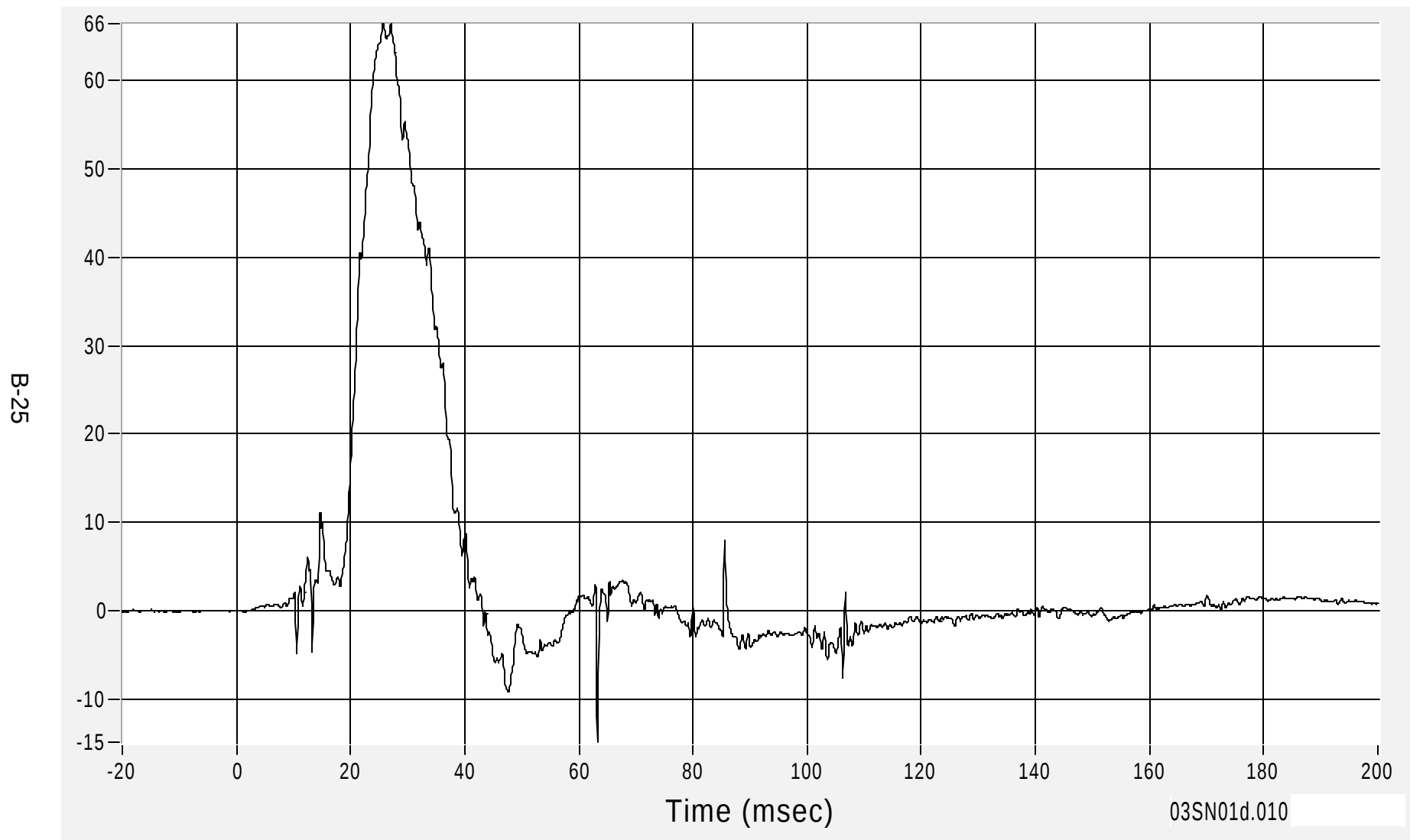
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Driver Pelvic (Y) Acceleration

Max 66.4 G's at 27.0 msec

Min -14.9 G's at 63.3 msec

Acceleration (G's) CFC1000



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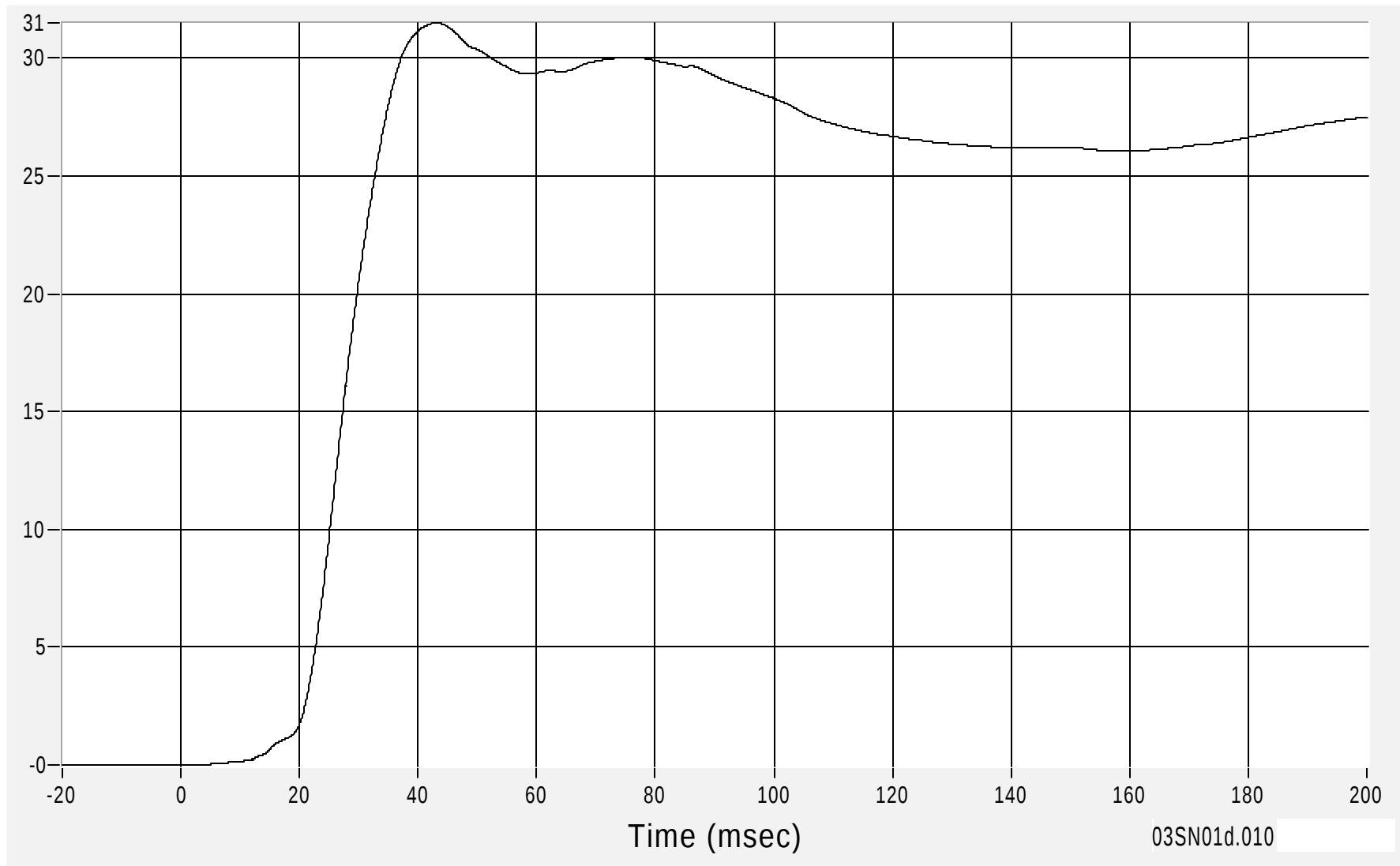
Driver Pelvic (Y) Velocity

Max 31.5 km/h at 43.0 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 1.8 msec

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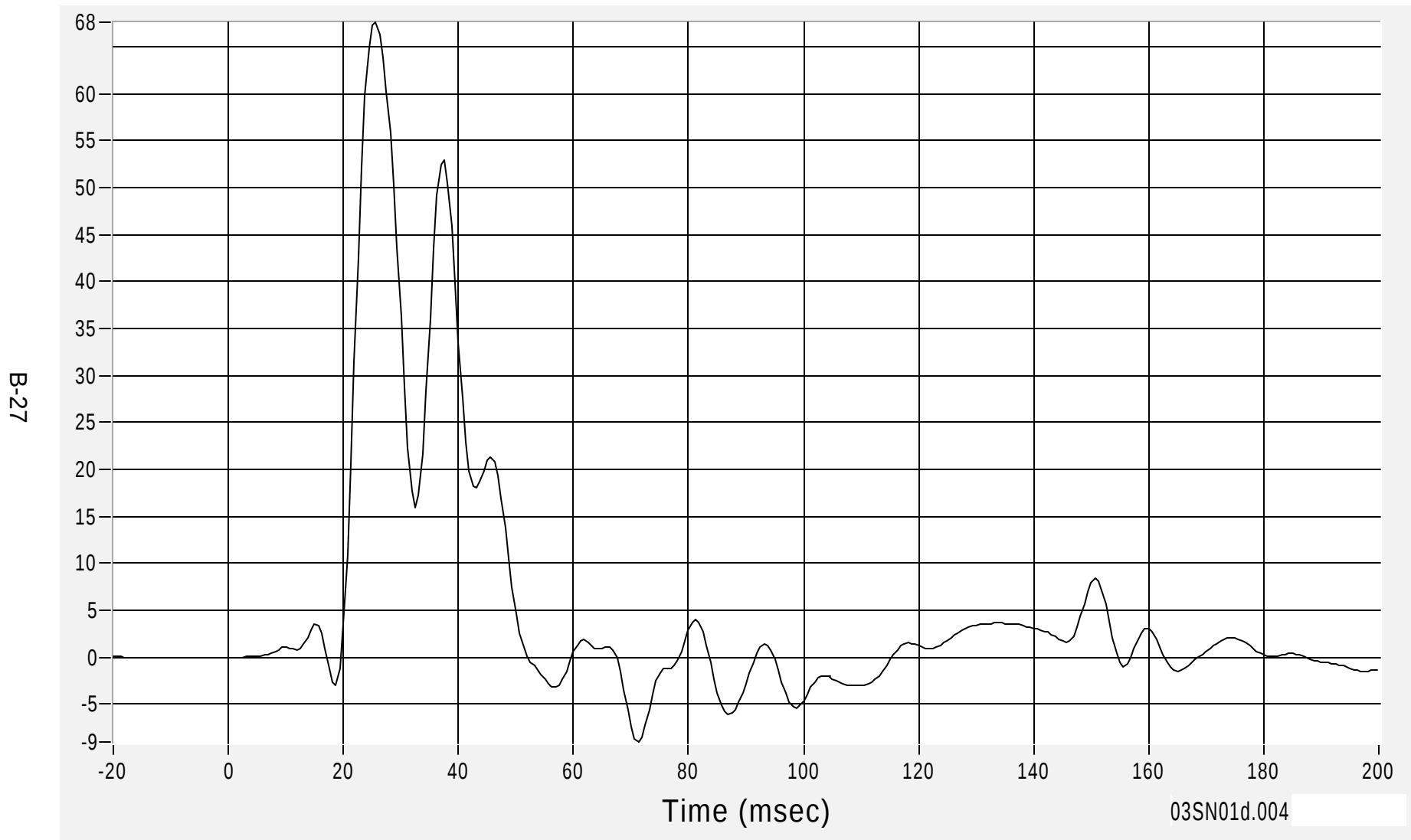
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Driver Upper Rib (Y) Acceleration

Max 67.6 G's at 25.6 msec

Min -9.0 G's at 71.2 msec

Acceleration (G's) FIR100



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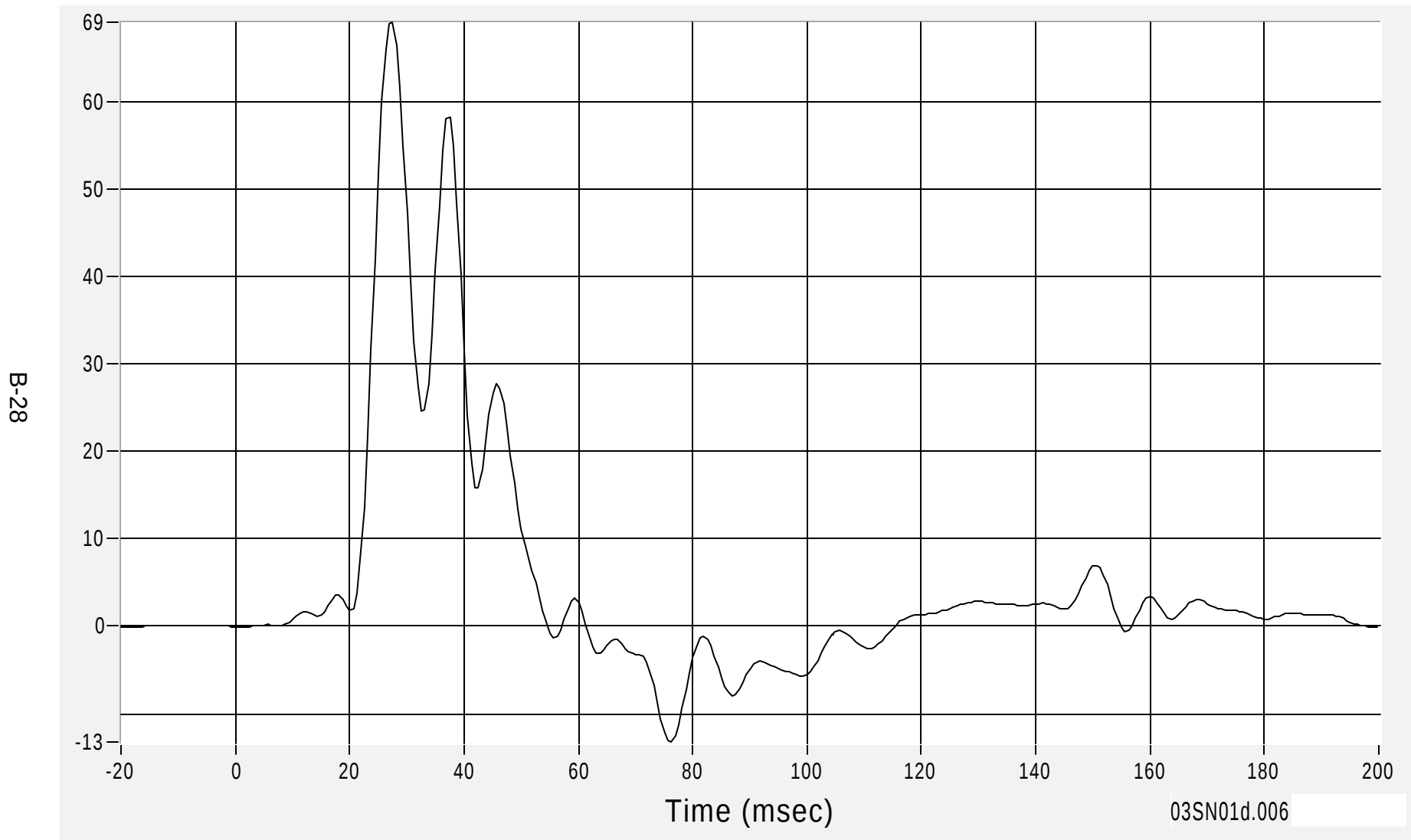
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Driver Lower Rib (Y) Acceleration

Max 69.0 G's at 27.5 msec

Min -13.2 G's at 76.2 msec

Acceleration (G's) FIR100



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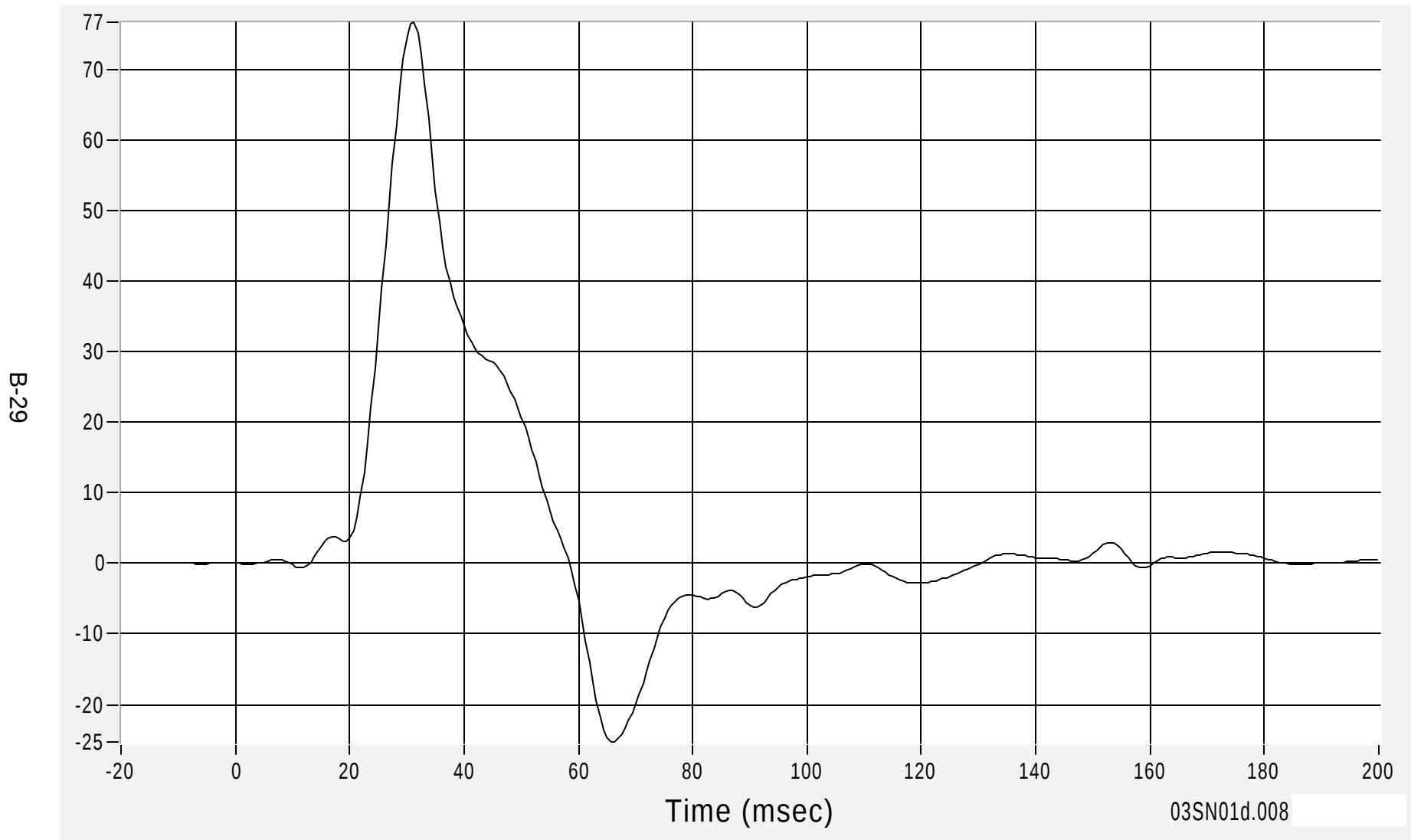
Medical College of Wisconsin
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Driver Lower Spine (Y) Acceleration

Max 76.7 G's at 31.2 msec

Acceleration (G's) FIR100

Min -25.3 G's at 66.2 msec



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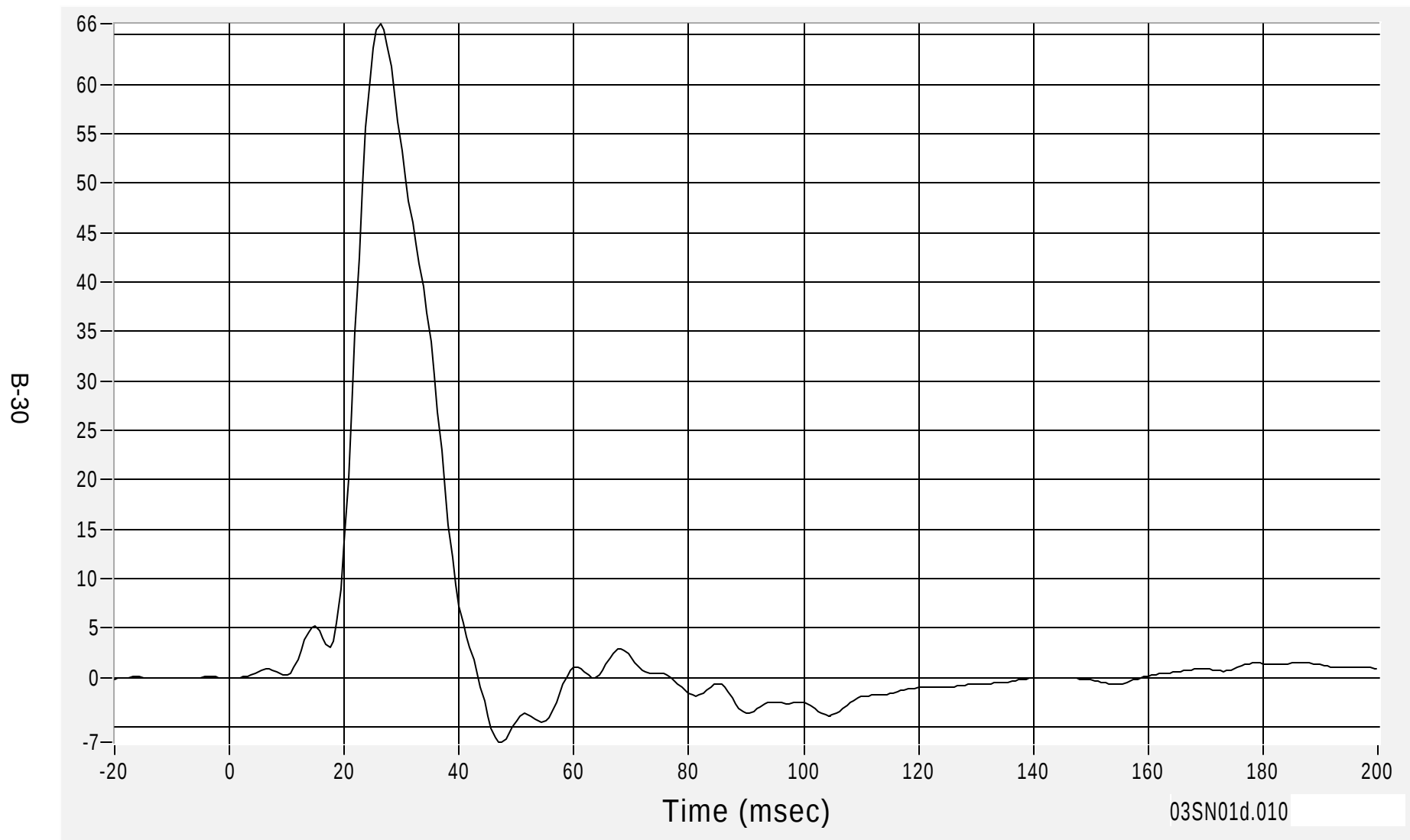
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Driver Pelvic (Y) Acceleration

Max 66.1 G's at 26.2 msec

Acceleration (G's) FIR100

Min -6.6 G's at 47.5 msec



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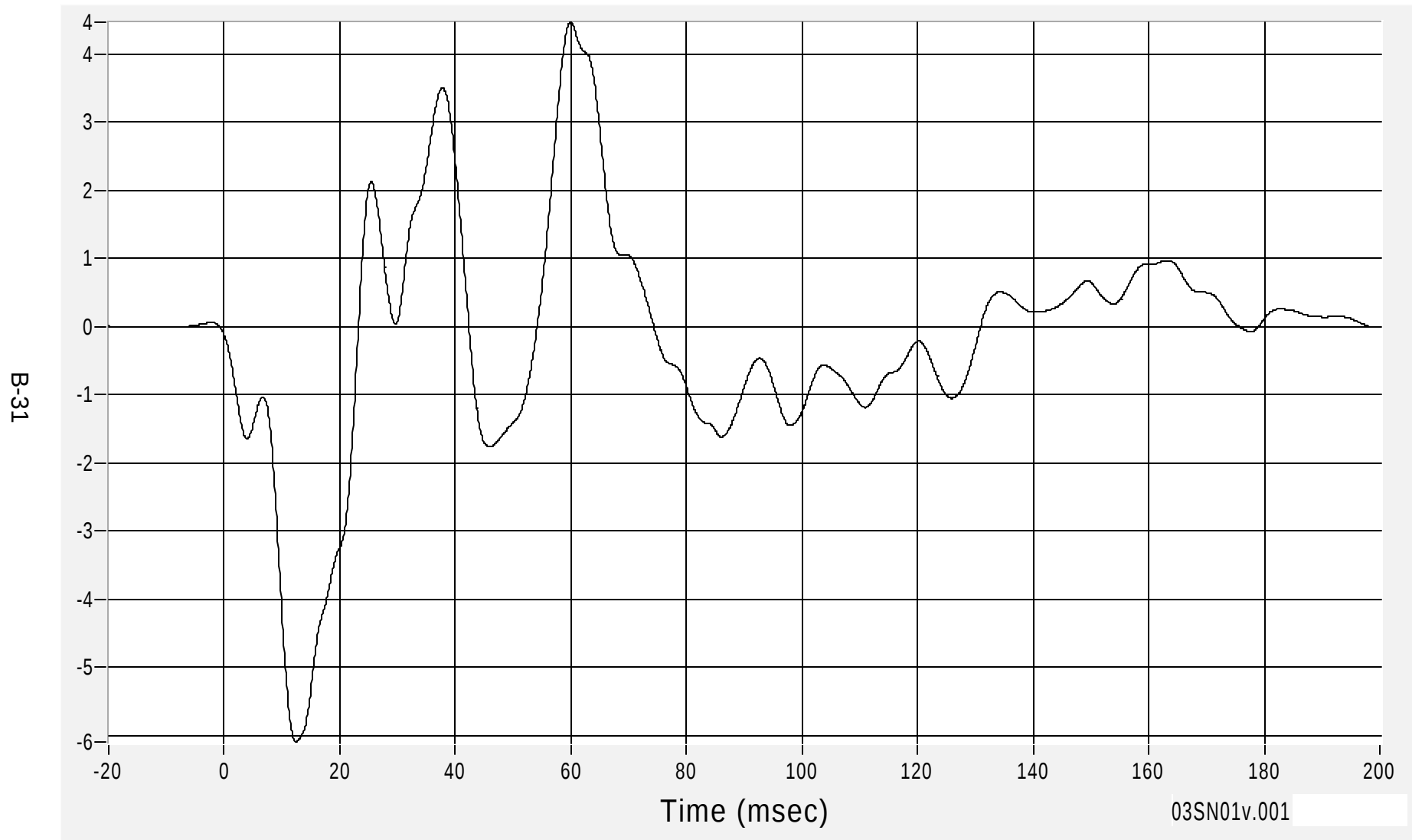
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Right Side Sill at Front Seat (X) Acceleration

Max 4.5 G's at 59.9 msec

Acceleration (G's) CFC60

Min -6.1 G's at 12.4 msec



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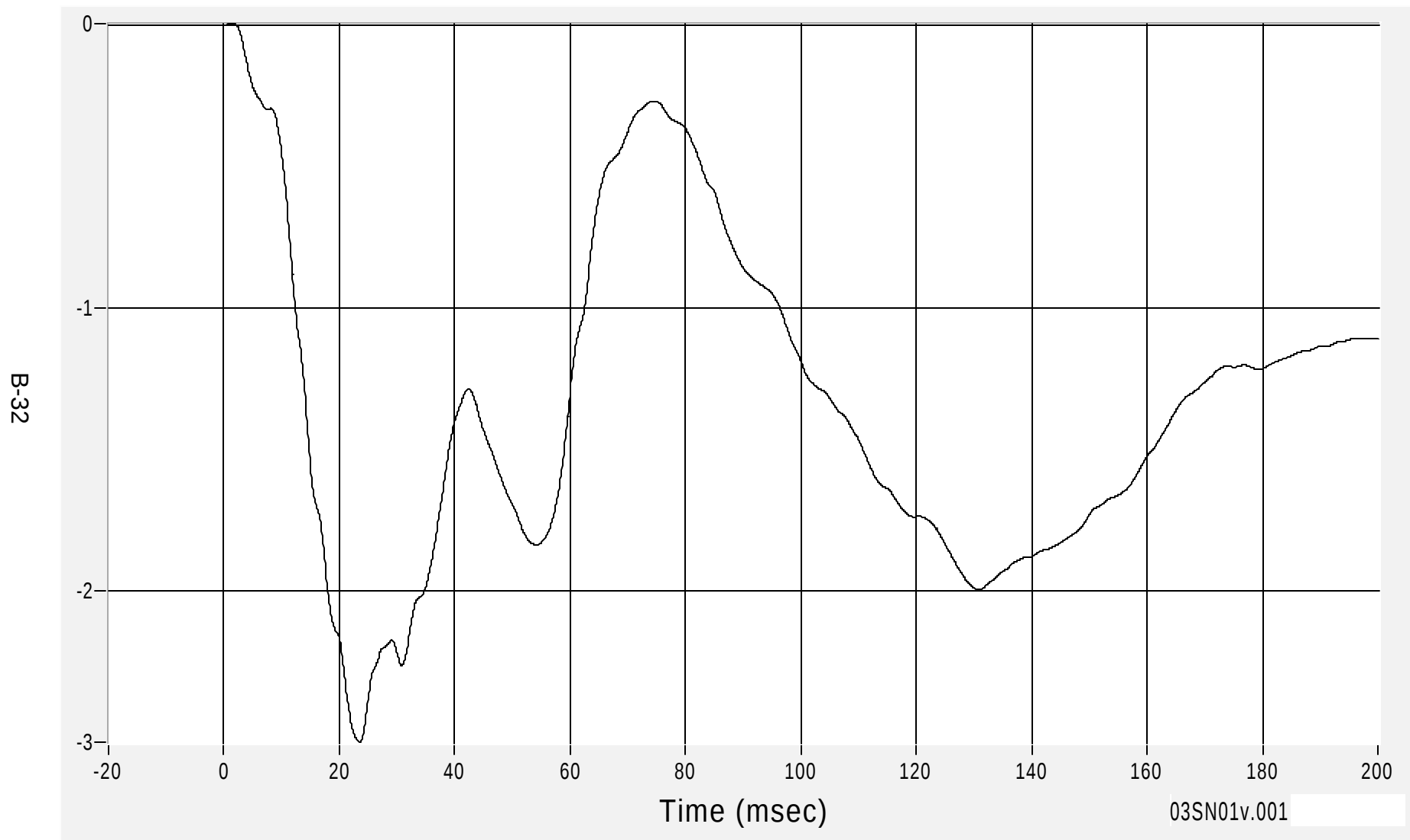
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Right Side Sill at Front Seat (X) Velocity

Max 0.0 km/h at 1.6 msec

Velocity (km/h) CFC180

Min -2.5 km/h at 23.6 msec



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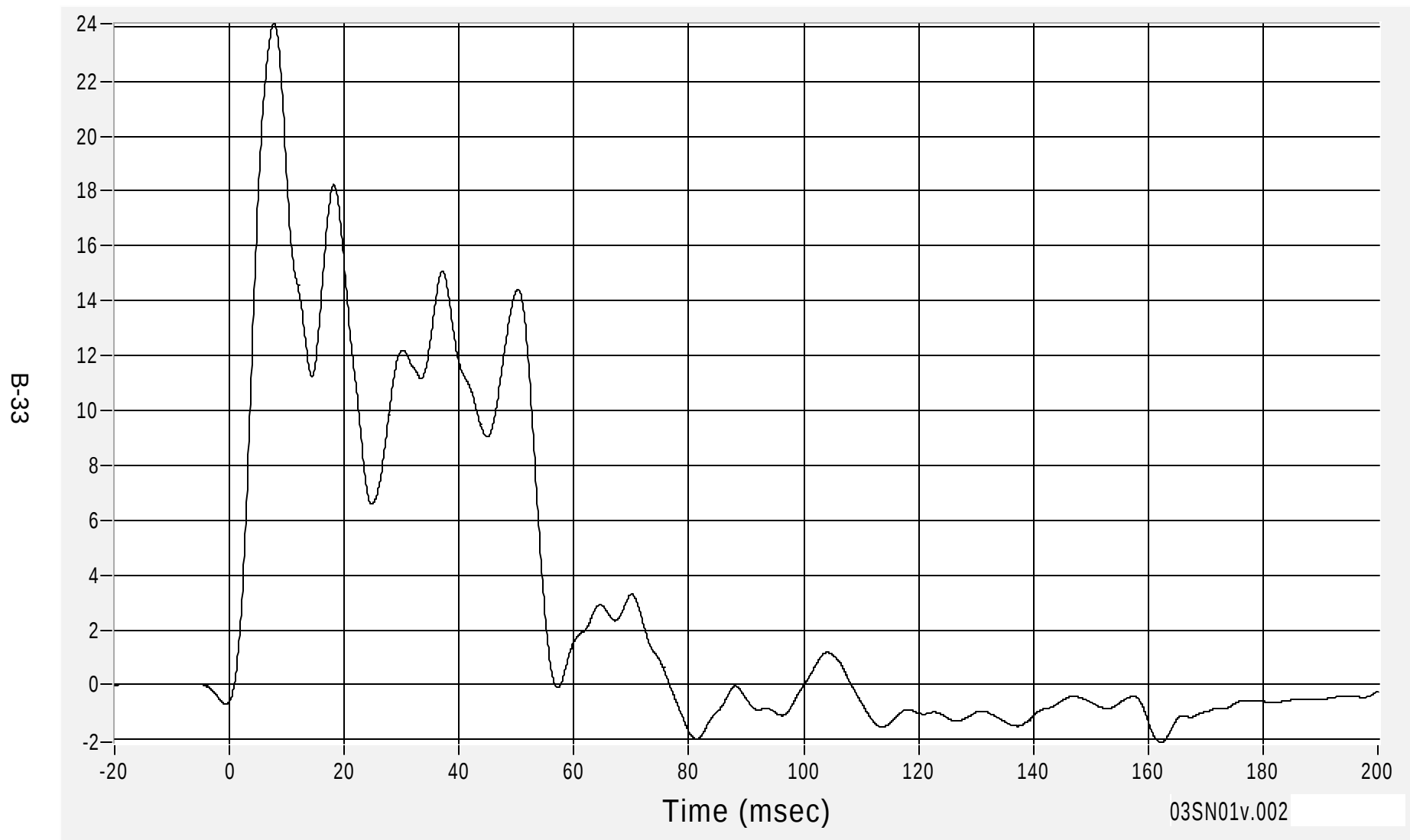
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Right Side Sill at Front Seat (Y) Acceleration

Max 24.1 G's at 7.8 msec

Acceleration (G's) CFC60

Min -2.1 G's at 162.3 msec



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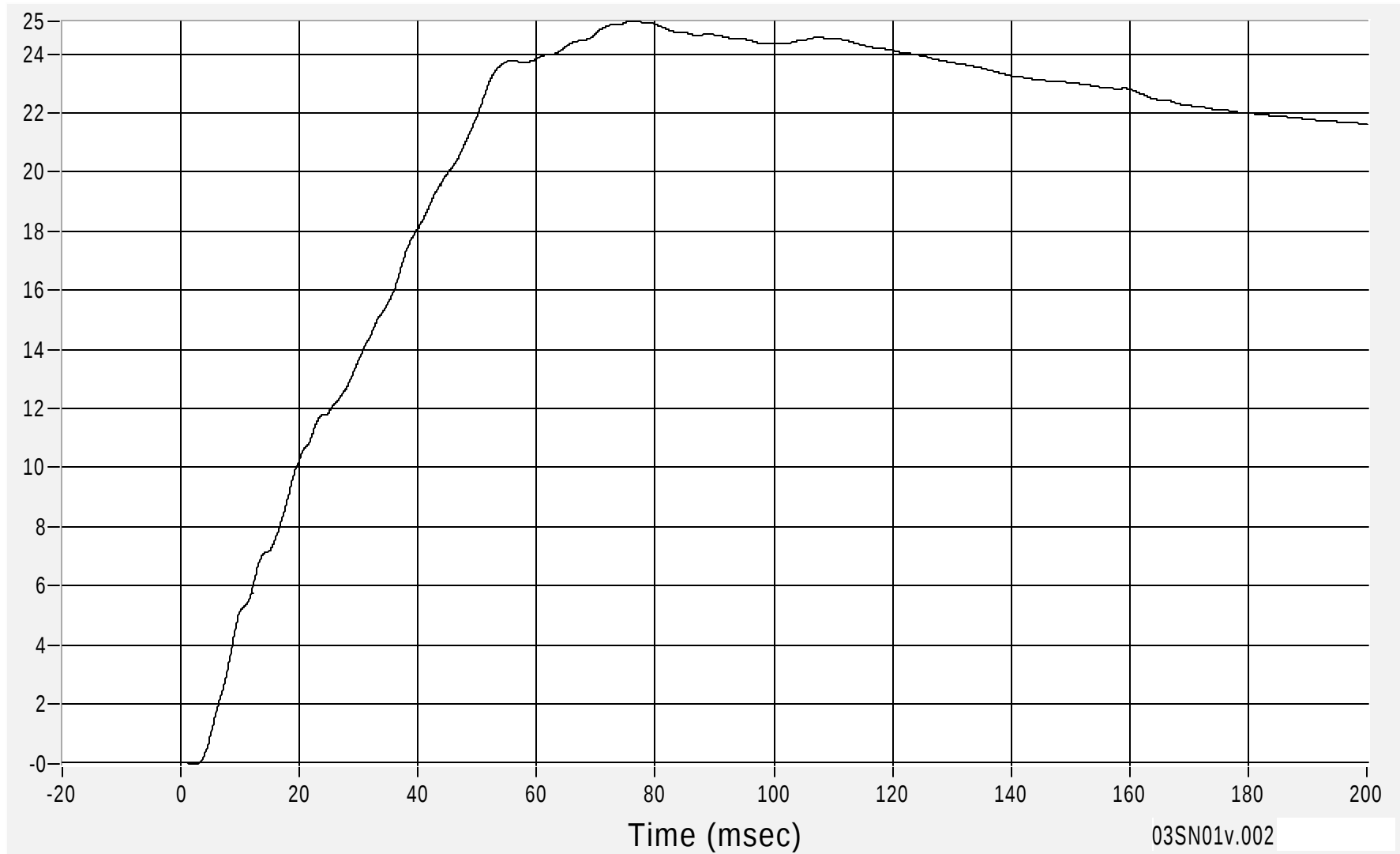
Right Side Sill at Front Seat (Y) Velocity

Max 25.1 km/h at 76.0 msec

Min 0.0 km/h at 2.5 msec

Velocity (km/h) CFC180

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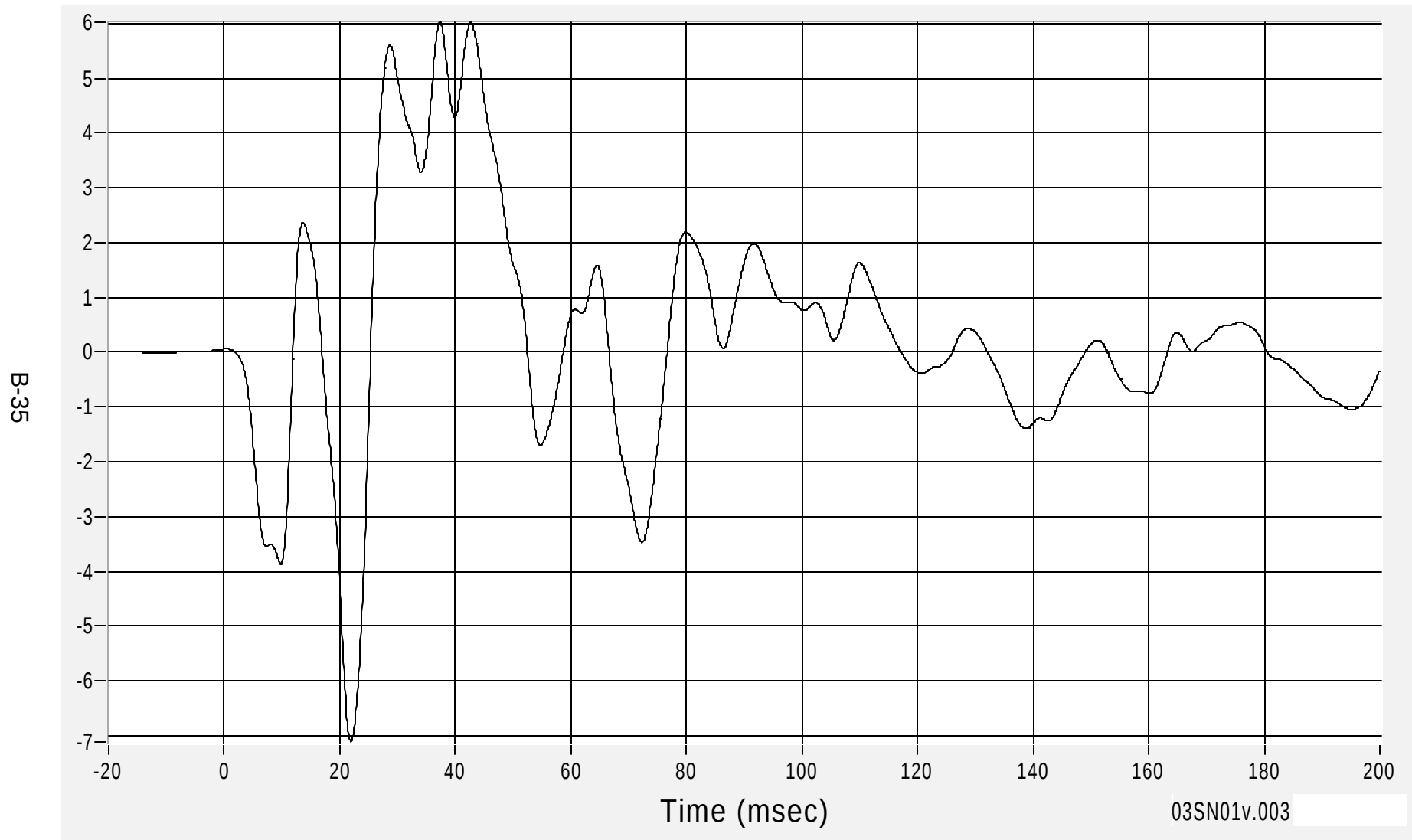
Medical College of Wisconsin
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Right Side Sill at Front Seat (Z) Acceleration

Max 6.0 G's at 37.3 msec

Acceleration (G's) CFC60

Min -7.1 G's at 21.9 msec



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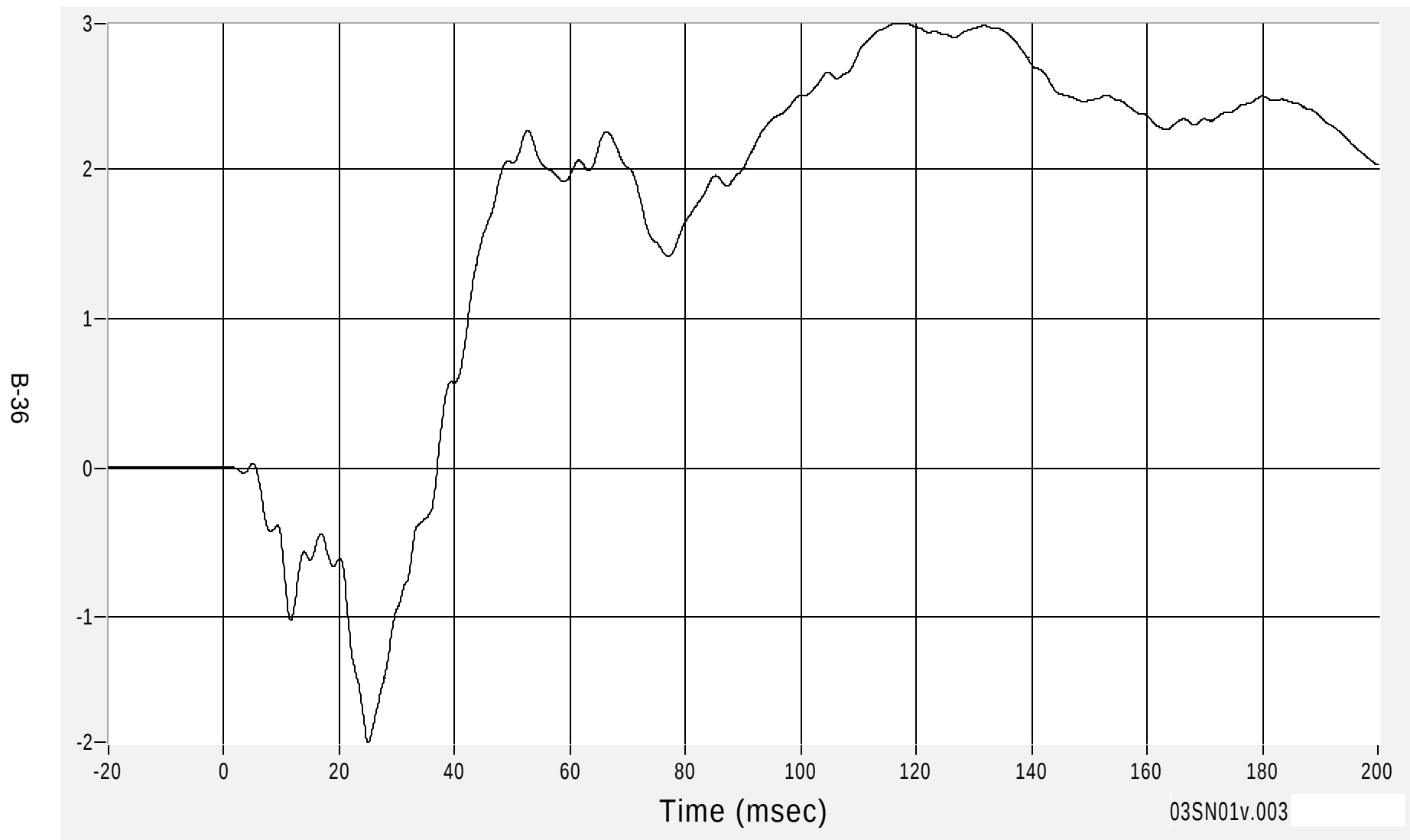
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Right Side Sill at Front Seat (Z) Velocity

Max 3.0 km/h at 118.3 msec

Velocity (km/h) CFC180

Min -1.8 km/h at 25.0 msec



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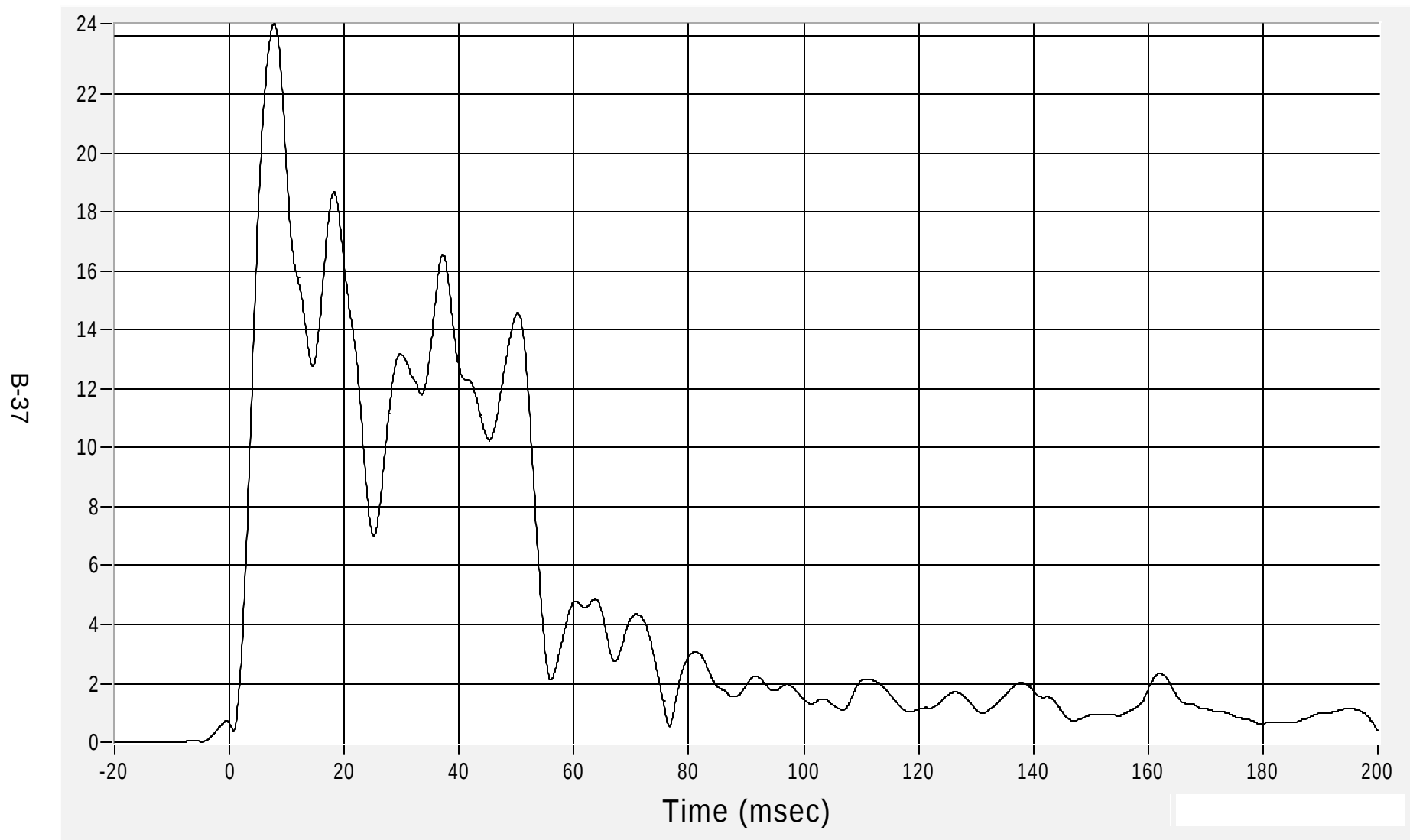
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Right Side Sill at Front Seat Resultant Acceleration

Max 24.4 G's at 7.8 msec

Acceleration (G's) CFC60

Min 0.4 G's at 0.7 msec



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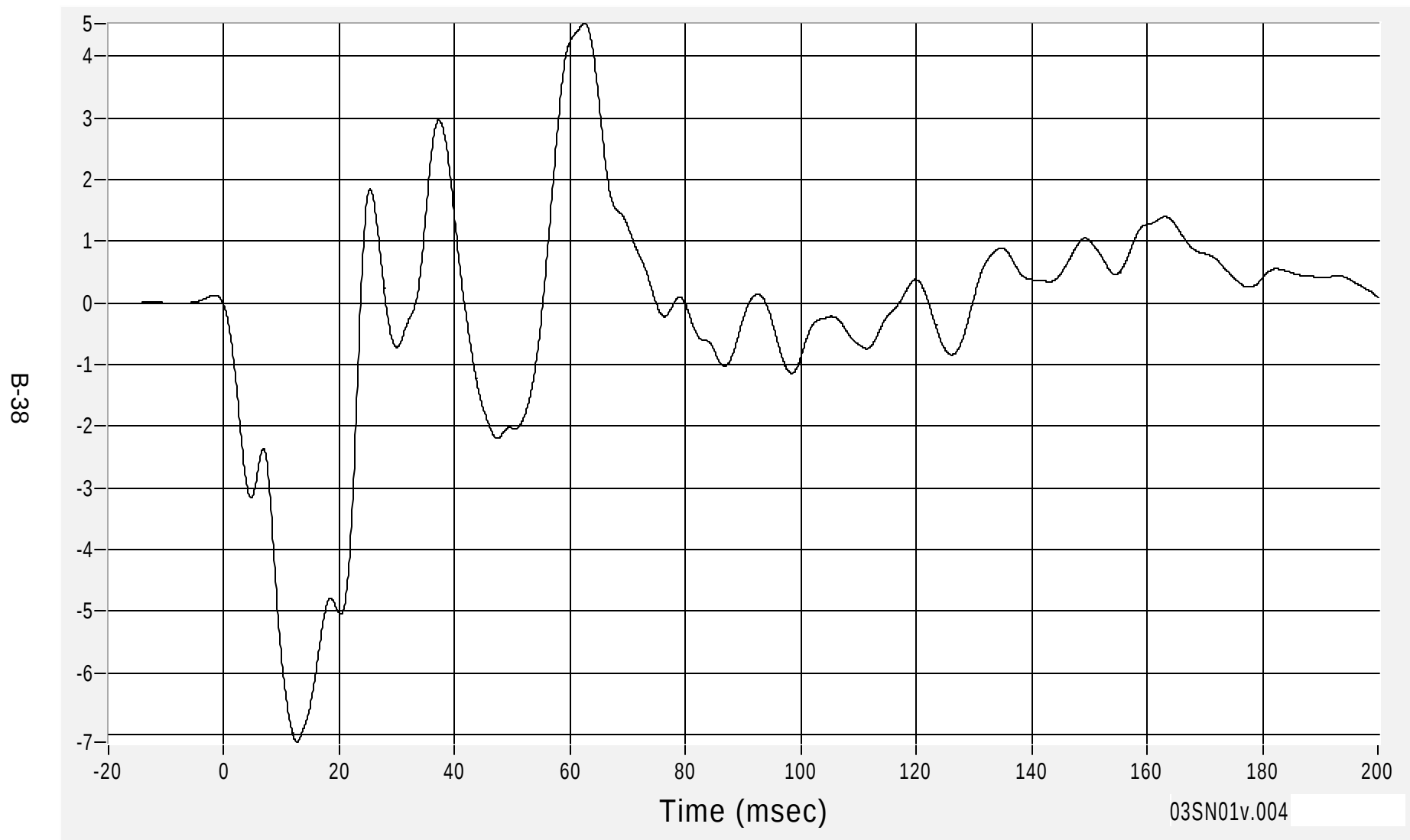
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Right Side Sill at Rear Seat (X) Acceleration

Max 4.5 G's at 62.5 msec

Acceleration (G's) CFC60

Min -7.1 G's at 12.6 msec



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4 December 2002

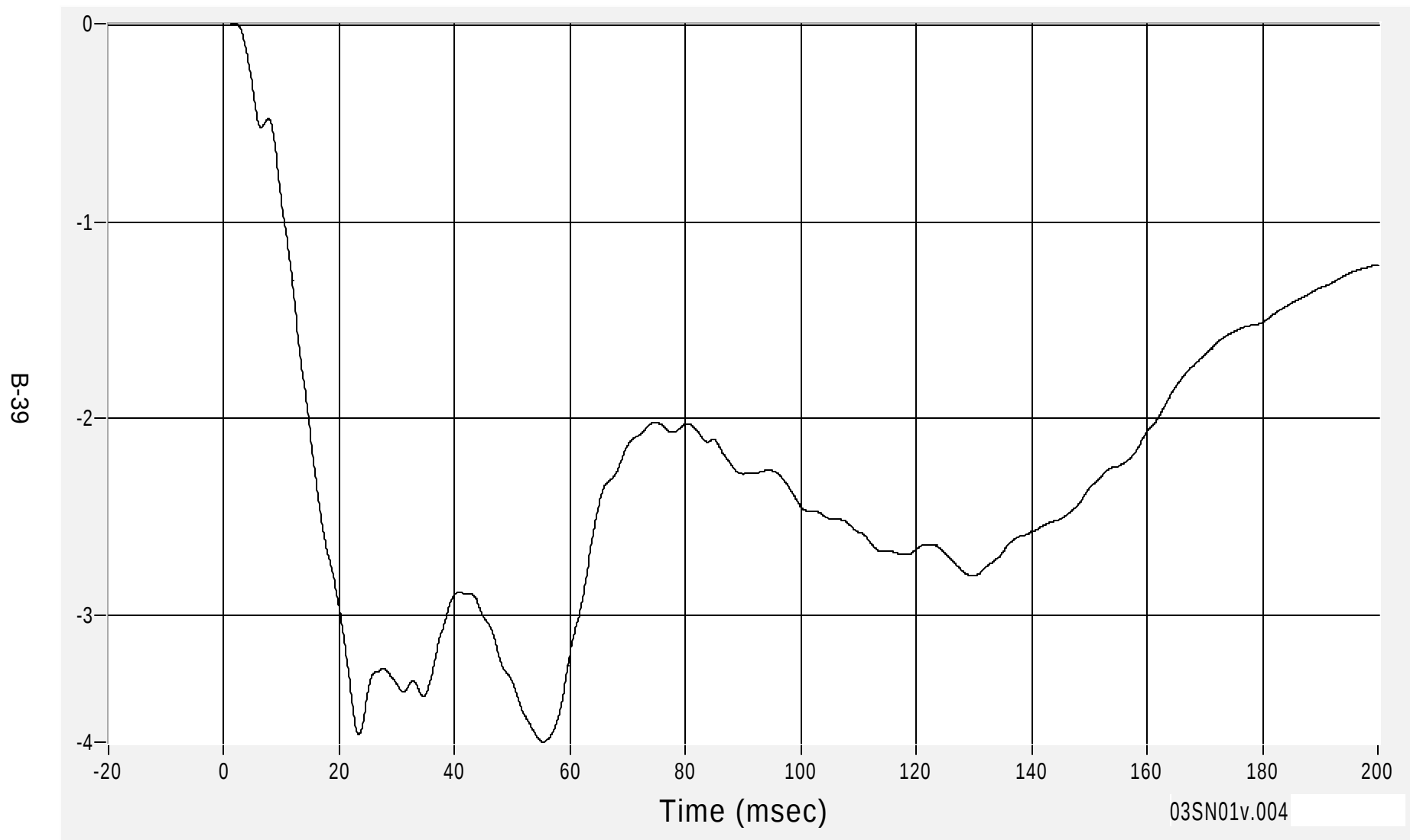
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Right Side Sill at Rear Seat (X) Velocity

Max 0.0 km/h at 2.0 msec

Velocity (km/h) CFC180

Min -3.6 km/h at 55.3 msec



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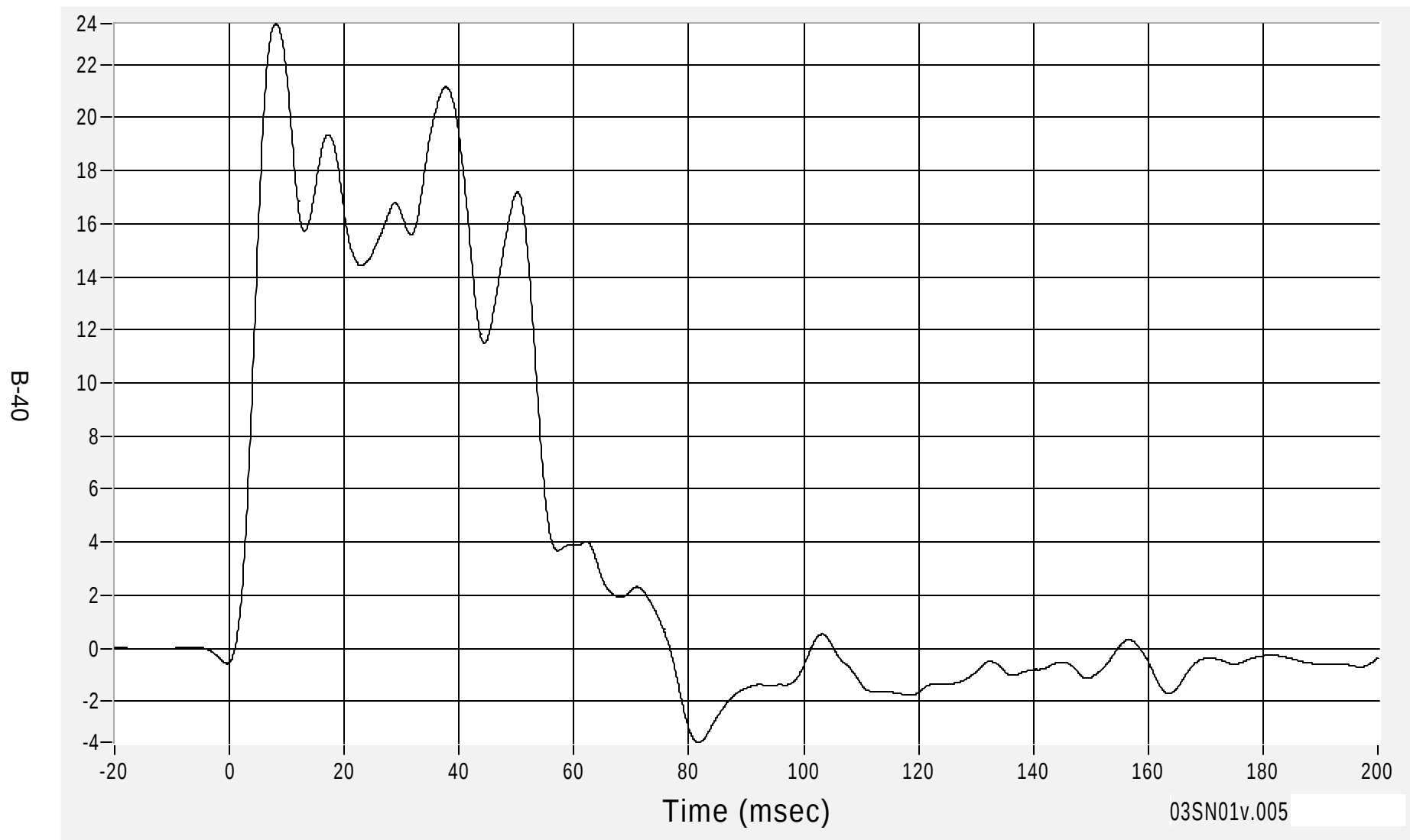
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Right Side Sill at Rear Seat (Y) Acceleration

Max 23.5 G's at 8.1 msec

Acceleration (G's) CFC60

Min -3.5 G's at 81.7 msec



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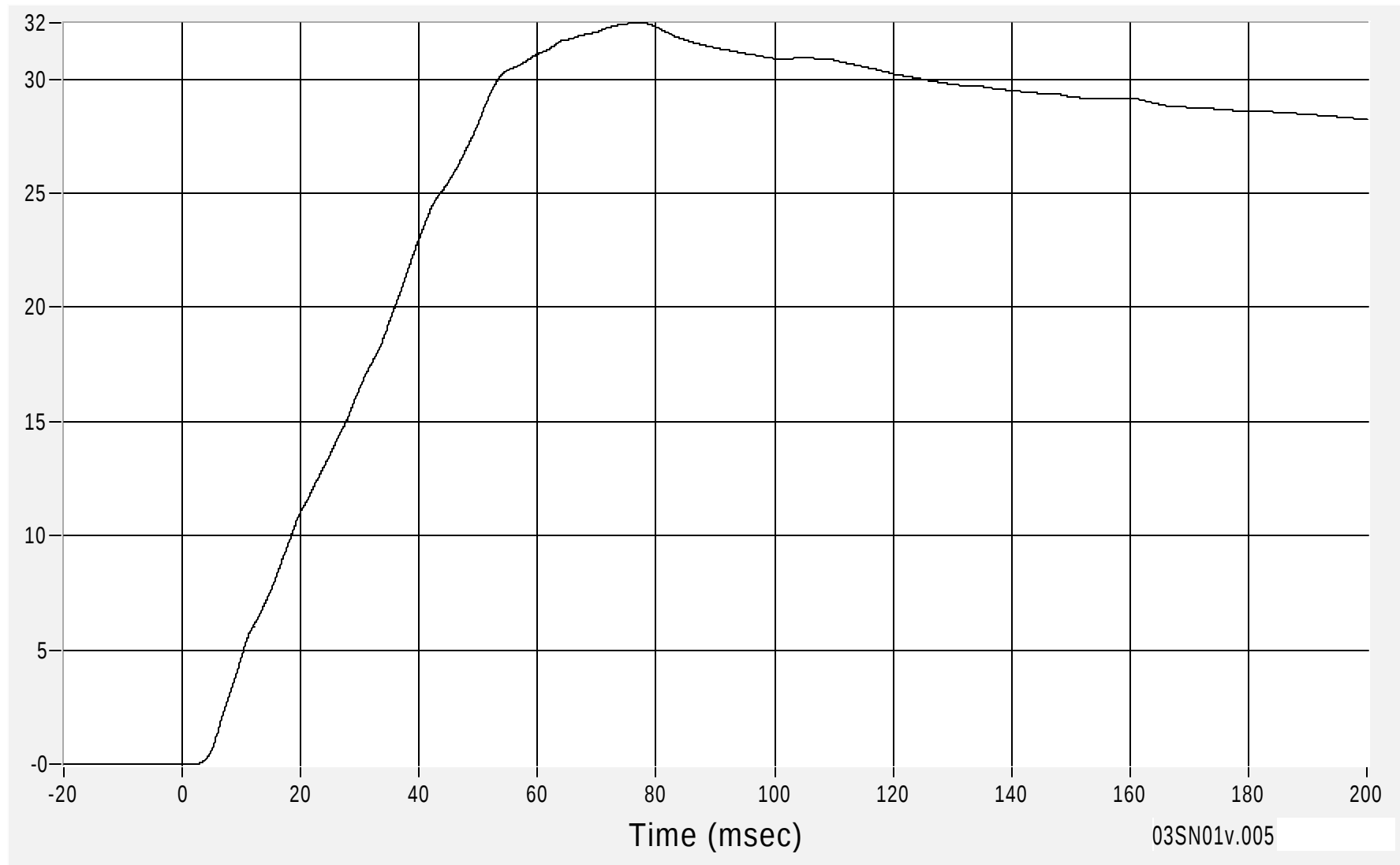
Right Side Sill at Rear Seat (Y) Velocity

Max 32.5 km/h at 77.5 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 2.0 msec

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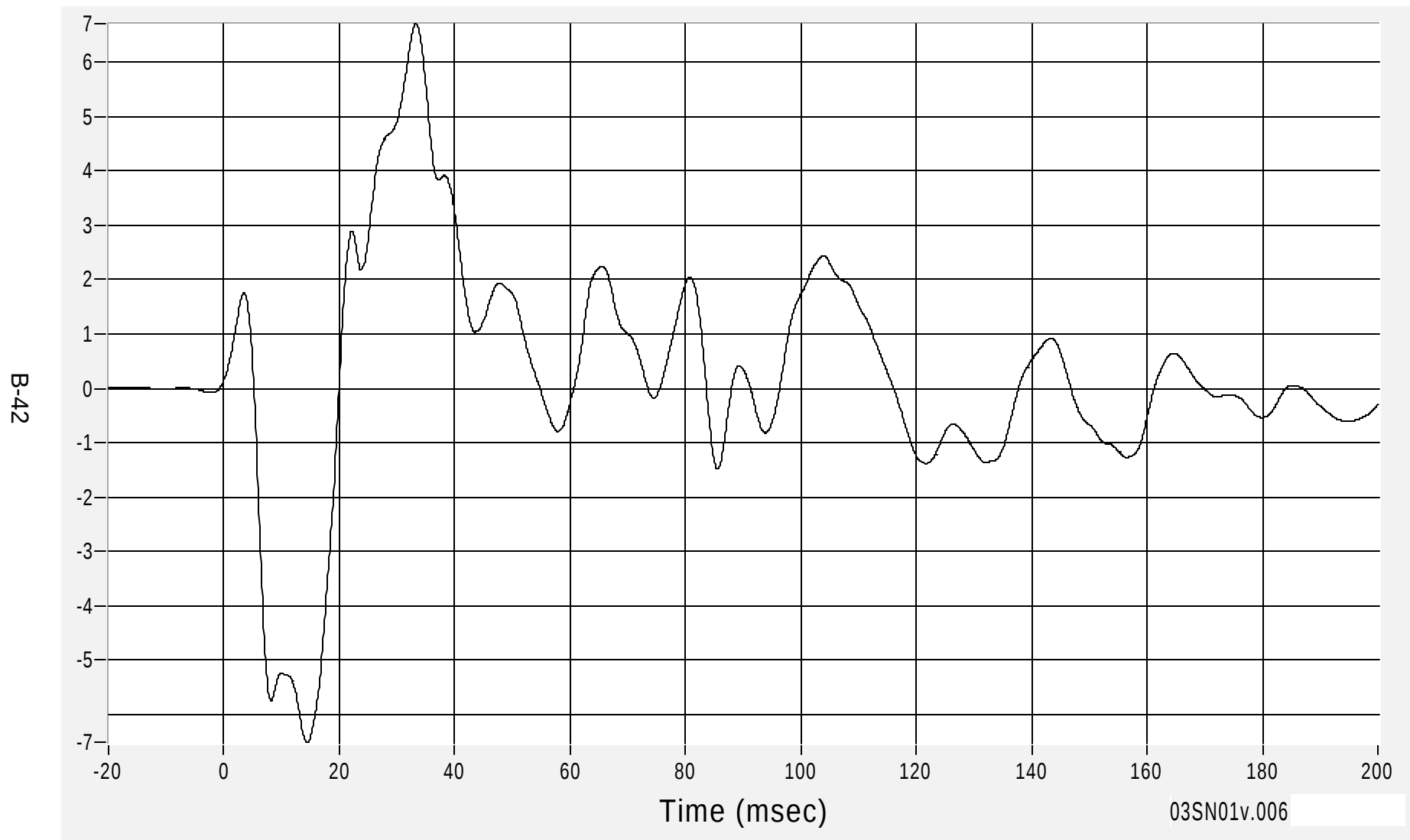
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Z) Acceleration

Max 6.7 G's at 33.3 msec

Acceleration (G's) CFC60

Min -6.5 G's at 14.4 msec



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4 December 2002

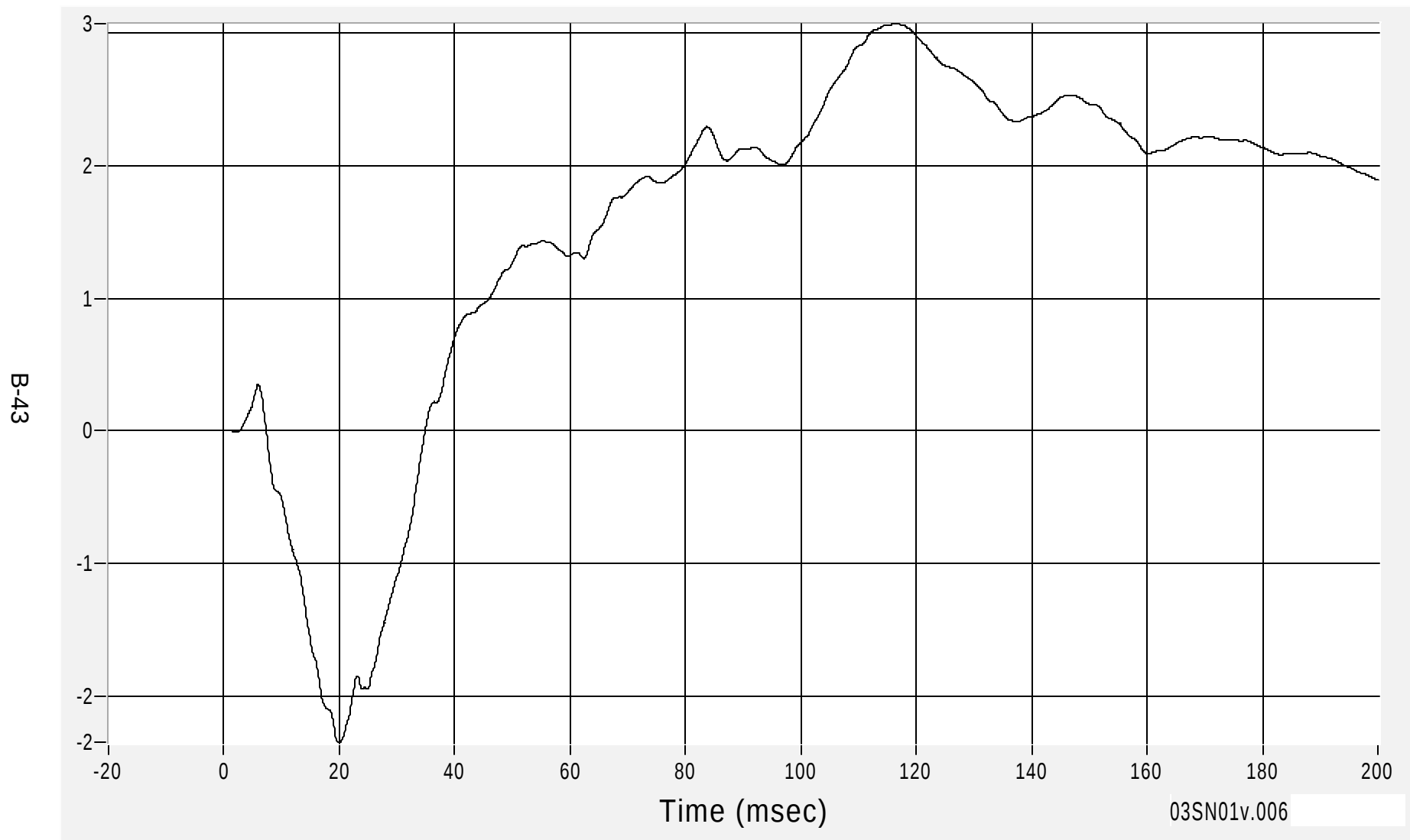
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Right Side Sill at Rear Seat (Z) Velocity

Max 3.1 km/h at 116.6 msec

Velocity (km/h) CFC180

Min -2.3 km/h at 19.8 msec



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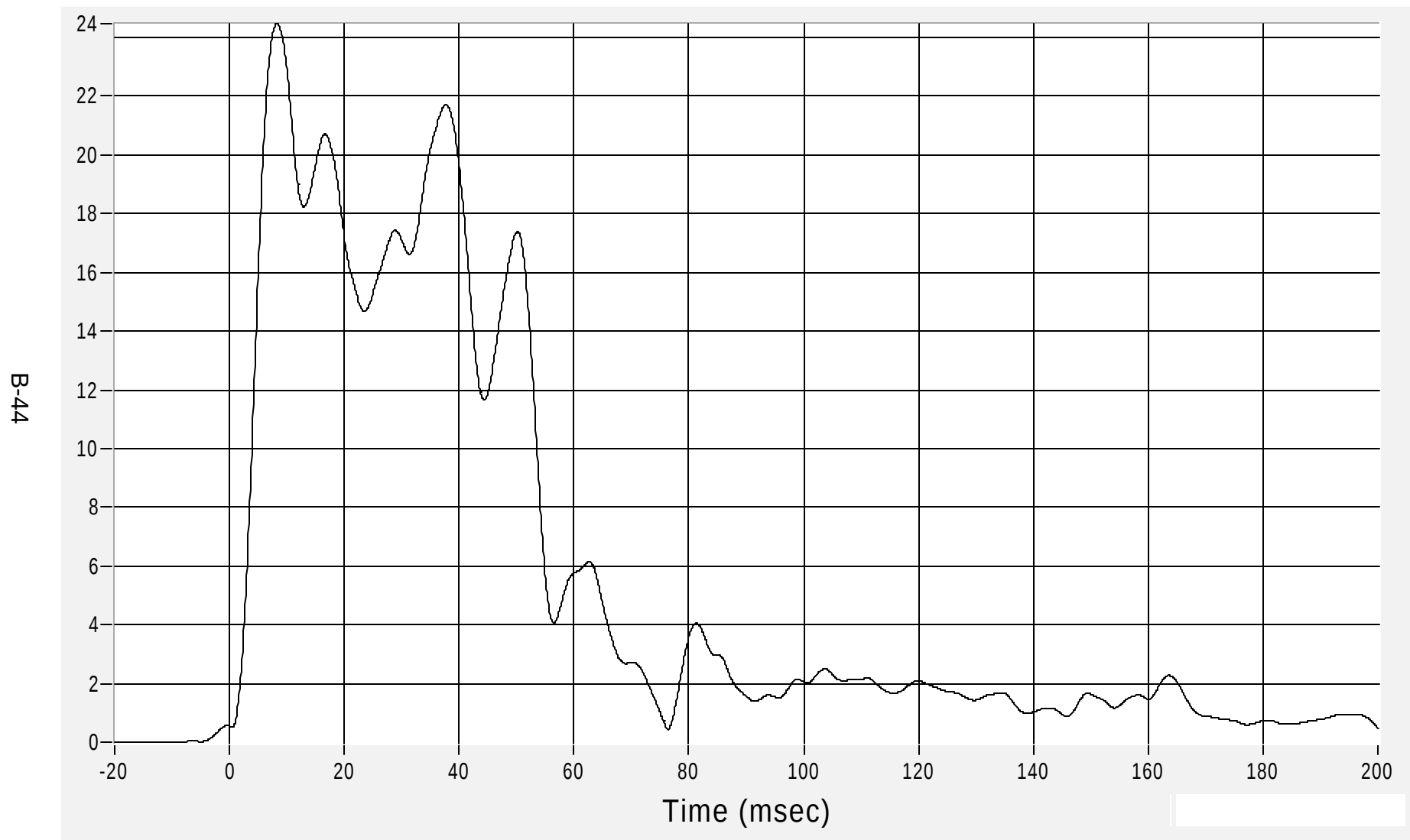
Medical College of Wisconsin
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Right Side Sill at Rear Seat Resultant Acceleration

Max 24.5 G's at 8.2 msec

Min 0.4 G's at 76.4 msec

Acceleration (G's) CFC60



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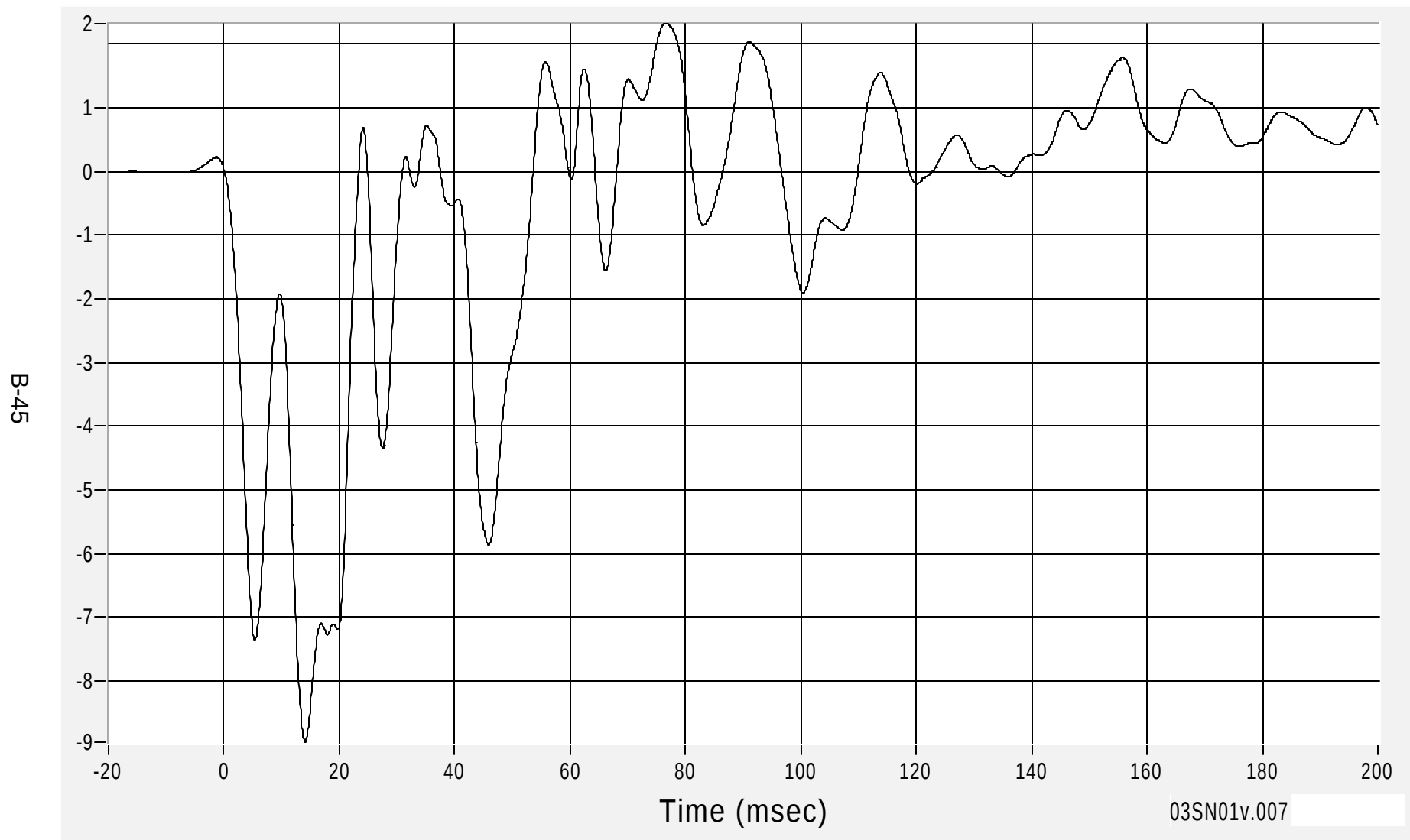
Medical College of Wisconsin
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Rear Floorpan Above Axle (X) Acceleration

Max 2.3 G's at 76.6 msec

Min -9.0 G's at 14.1 msec

Acceleration (G's) CFC60



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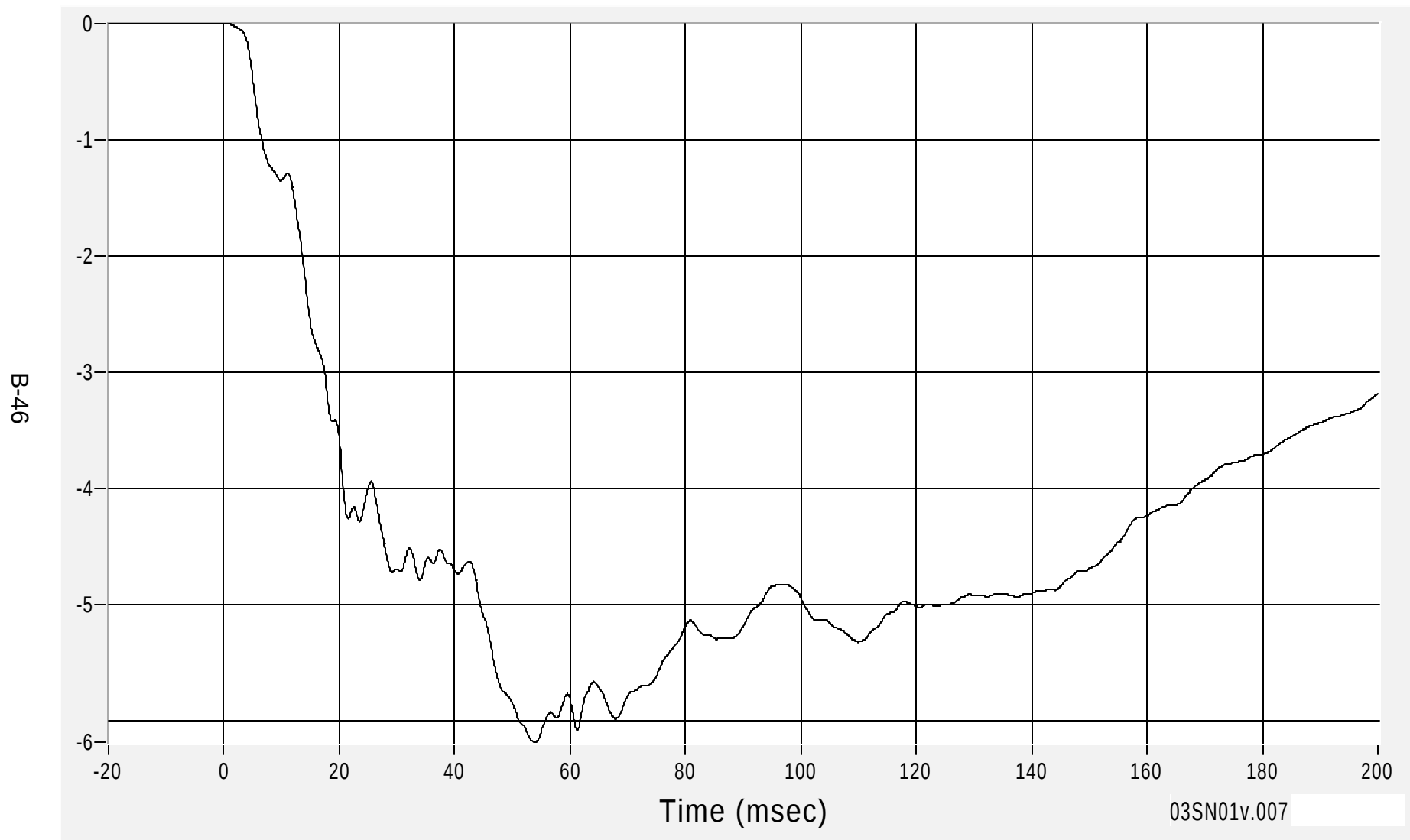
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Rear Floorpan Above Axle (X) Velocity

Max 0.0 km/h at 0.3 msec

Velocity (km/h) CFC180

Min -6.2 km/h at 54.0 msec



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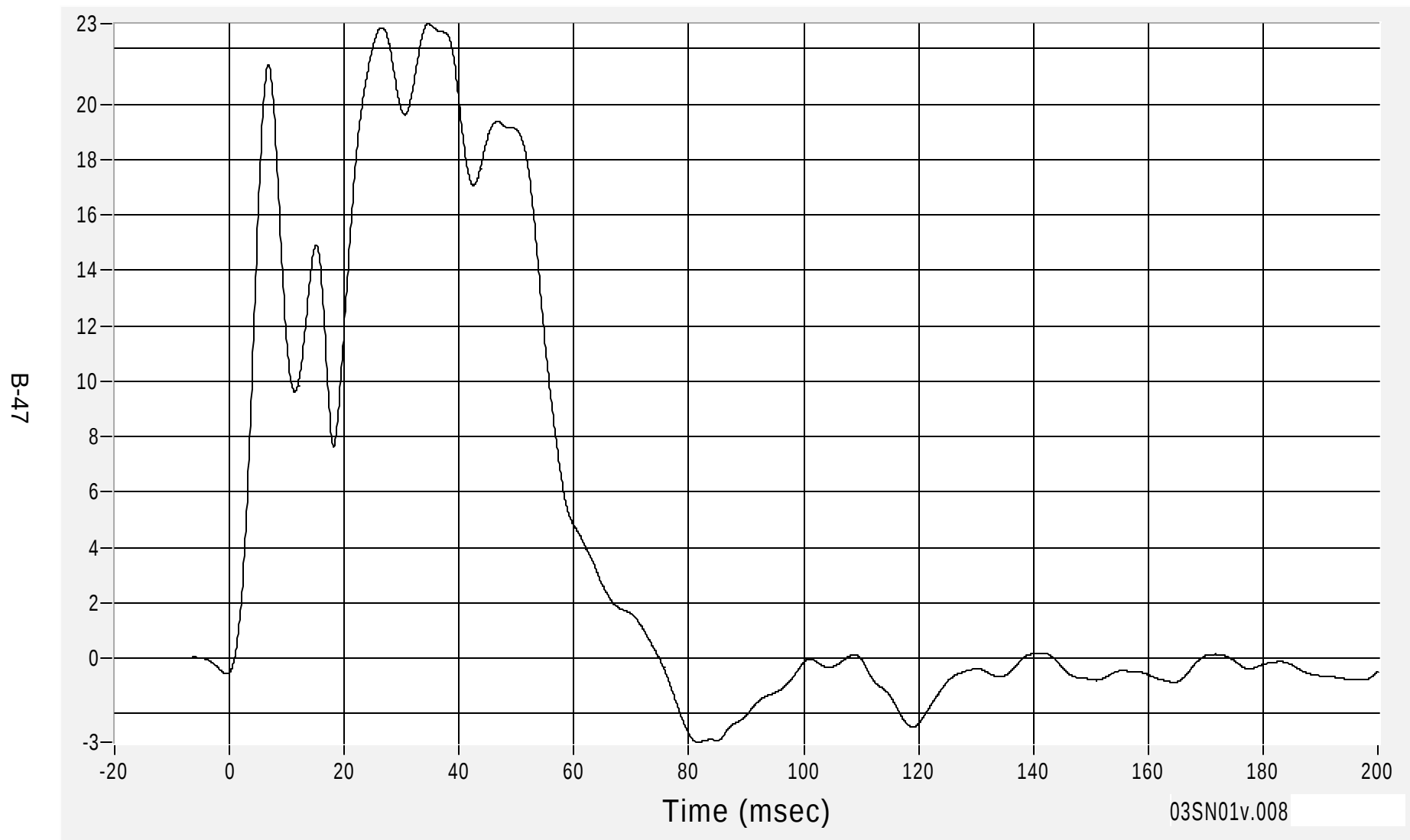
Medical College of Wisconsin
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Rear Floorpan Above Axle (Y) Acceleration

Max 22.9 G's at 34.6 msec

Min -3.0 G's at 81.5 msec

Acceleration (G's) CFC60



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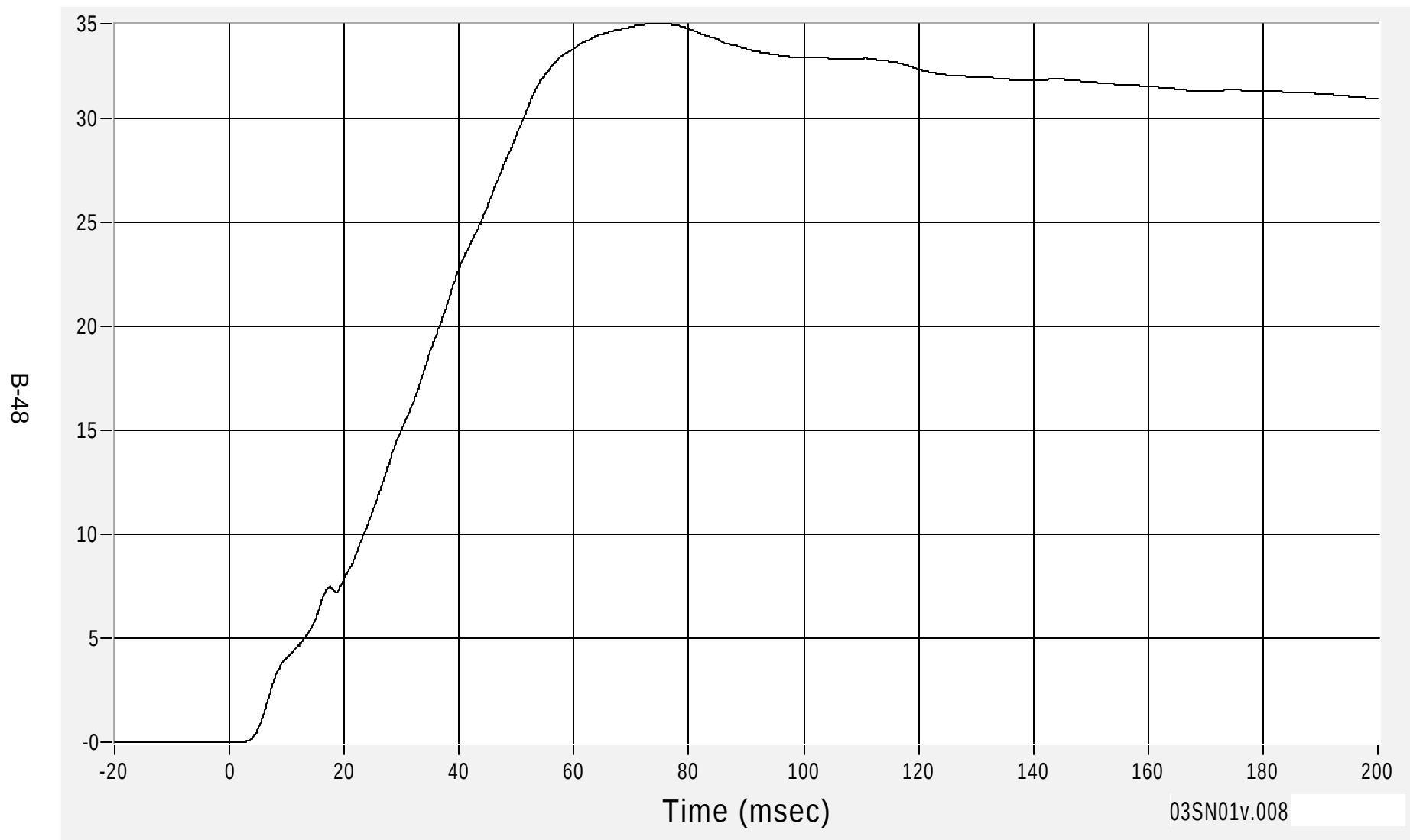
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Rear Floorpan Above Axle (Y) Velocity

Max 34.6 km/h at 75.4 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 0.1 msec



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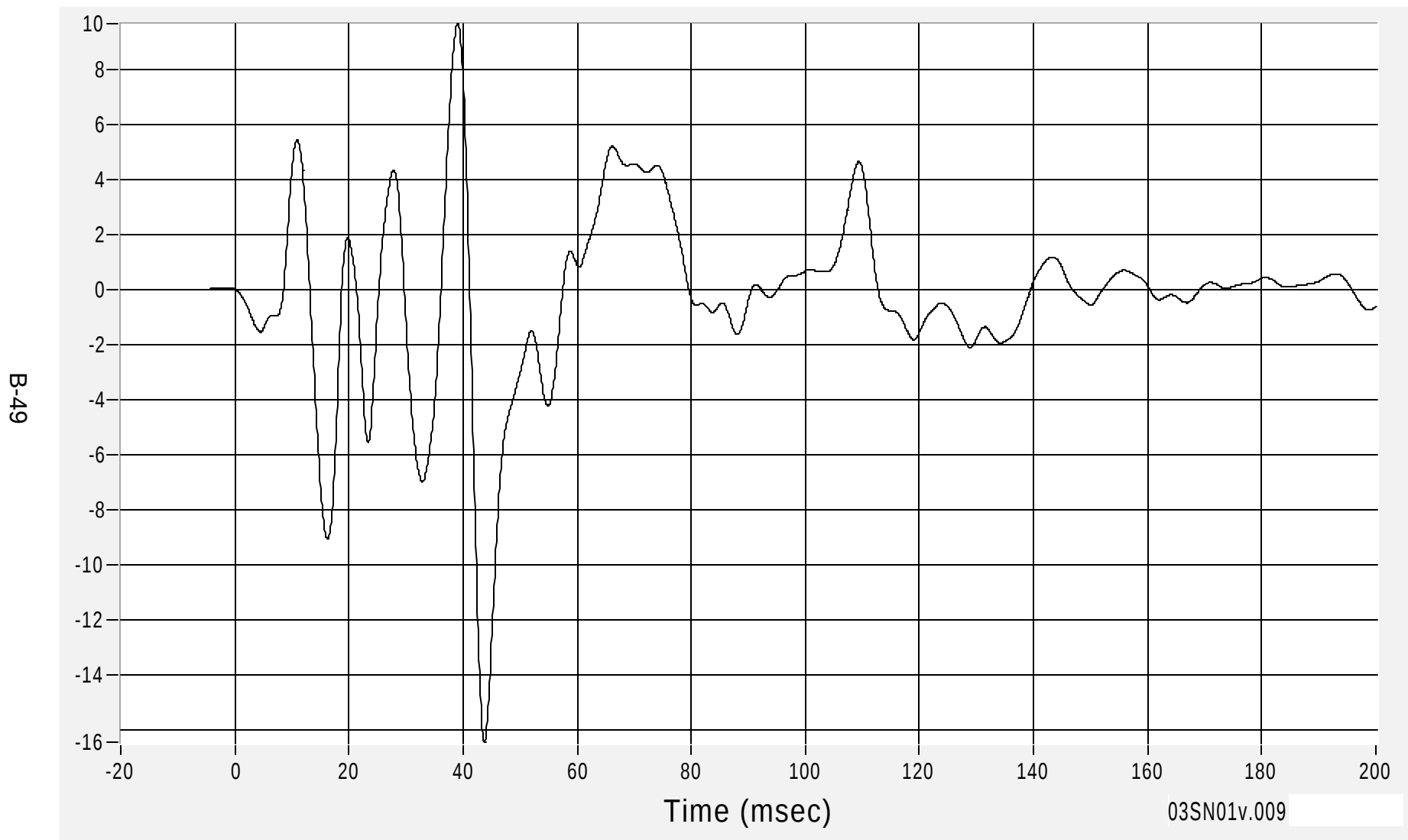
Medical College of Wisconsin
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Rear Floorpan Above Axle (Z) Acceleration

Max 9.6 G's at 39.0 msec

Min -16.4 G's at 43.8 msec

Acceleration (G's) CFC60



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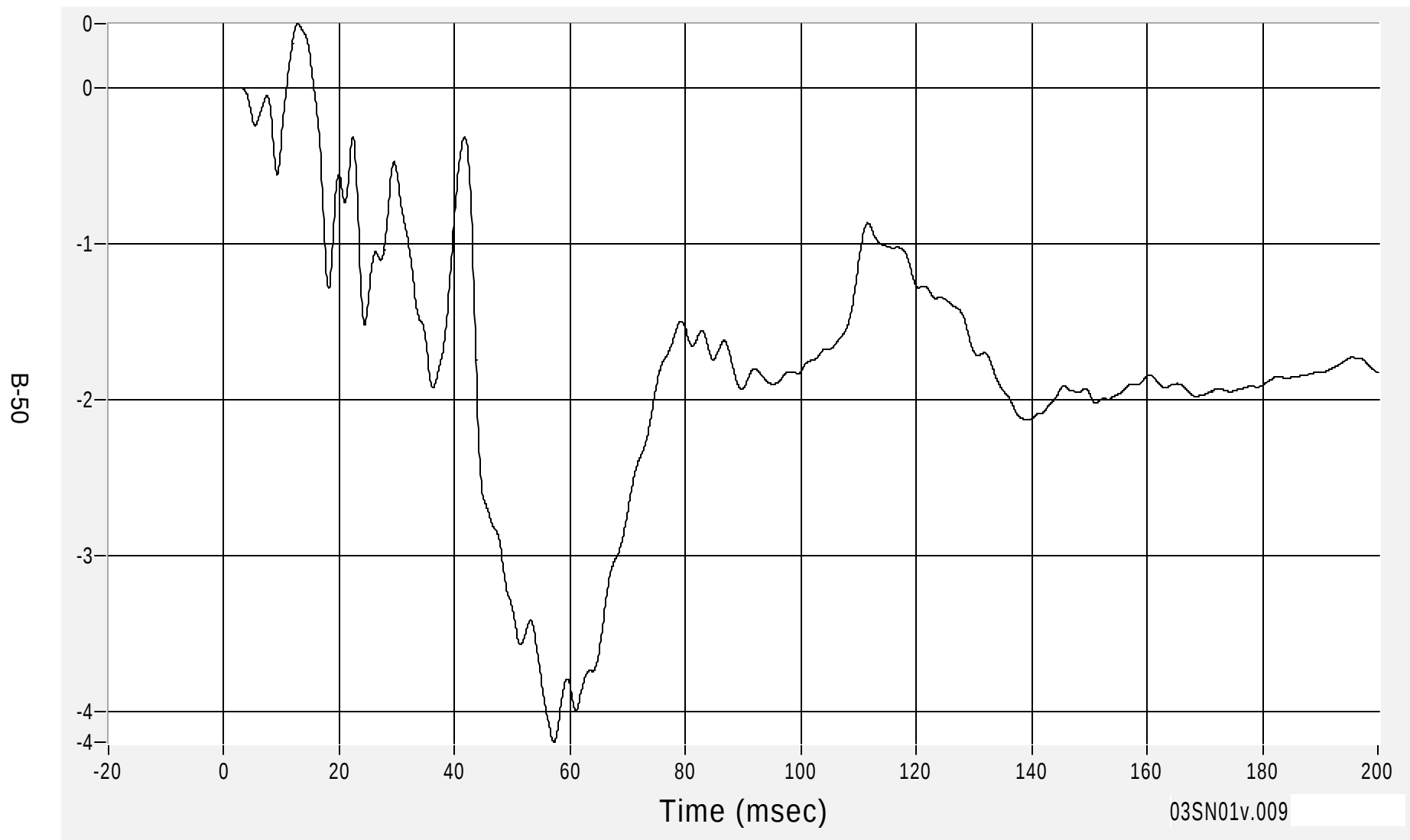
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Rear Floorpan Above Axle (Z) Velocity

Max 0.4 km/h at 12.8 msec

Min -4.2 km/h at 57.2 msec

Velocity (km/h) CFC180



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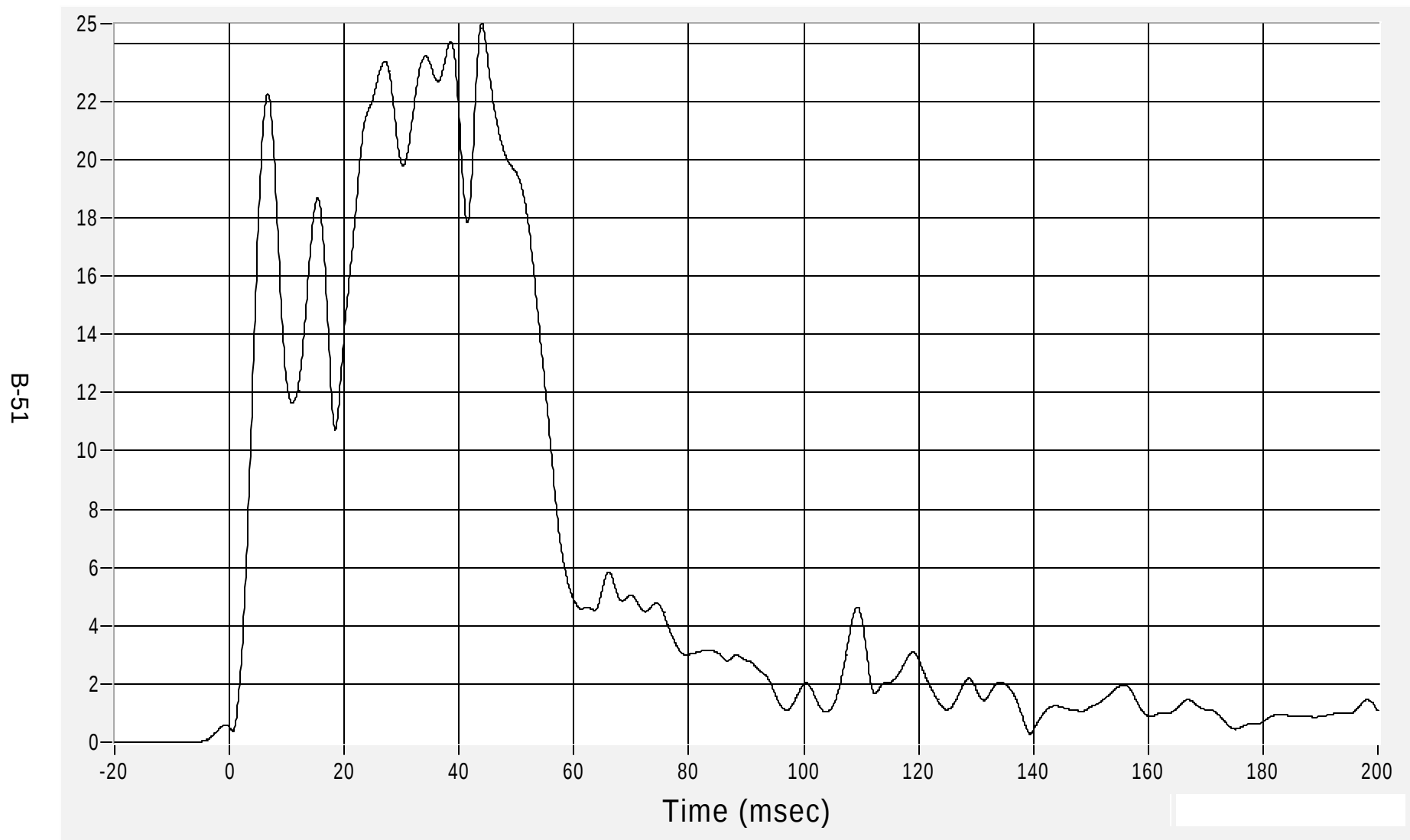
Medical College of Wisconsin
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Rear Floorpan Above Axle Resultant Acceleration

Max 24.7 G's at 43.9 msec

Acceleration (G's) CFC60

Min 0.3 G's at 139.4 msec



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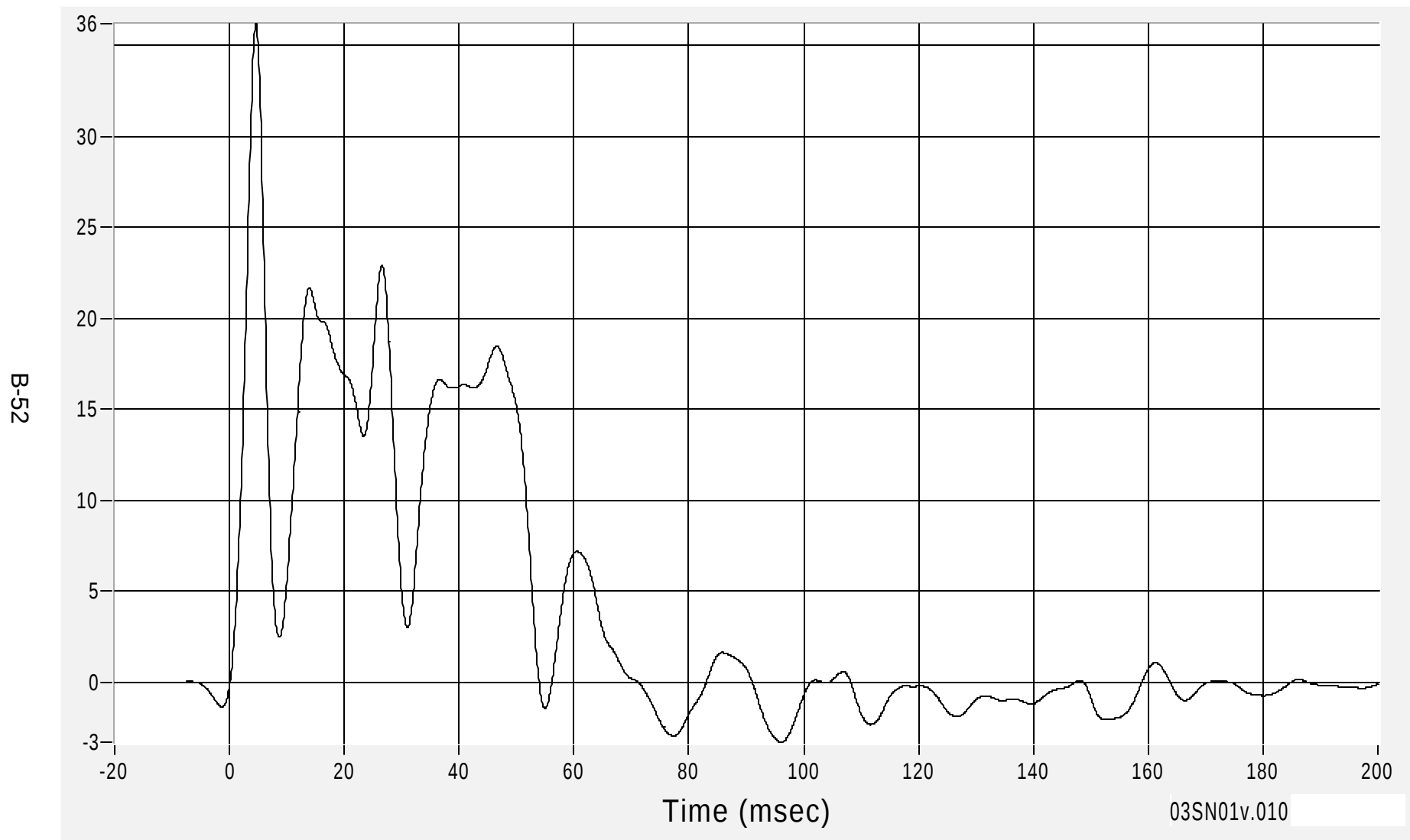
Medical College of Wisconsin
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Left Side Sill at Rear Seat (Y) Acceleration

Max 36.2 G's at 4.6 msec

Min -3.3 G's at 96.1 msec

Acceleration (G's) CFC60



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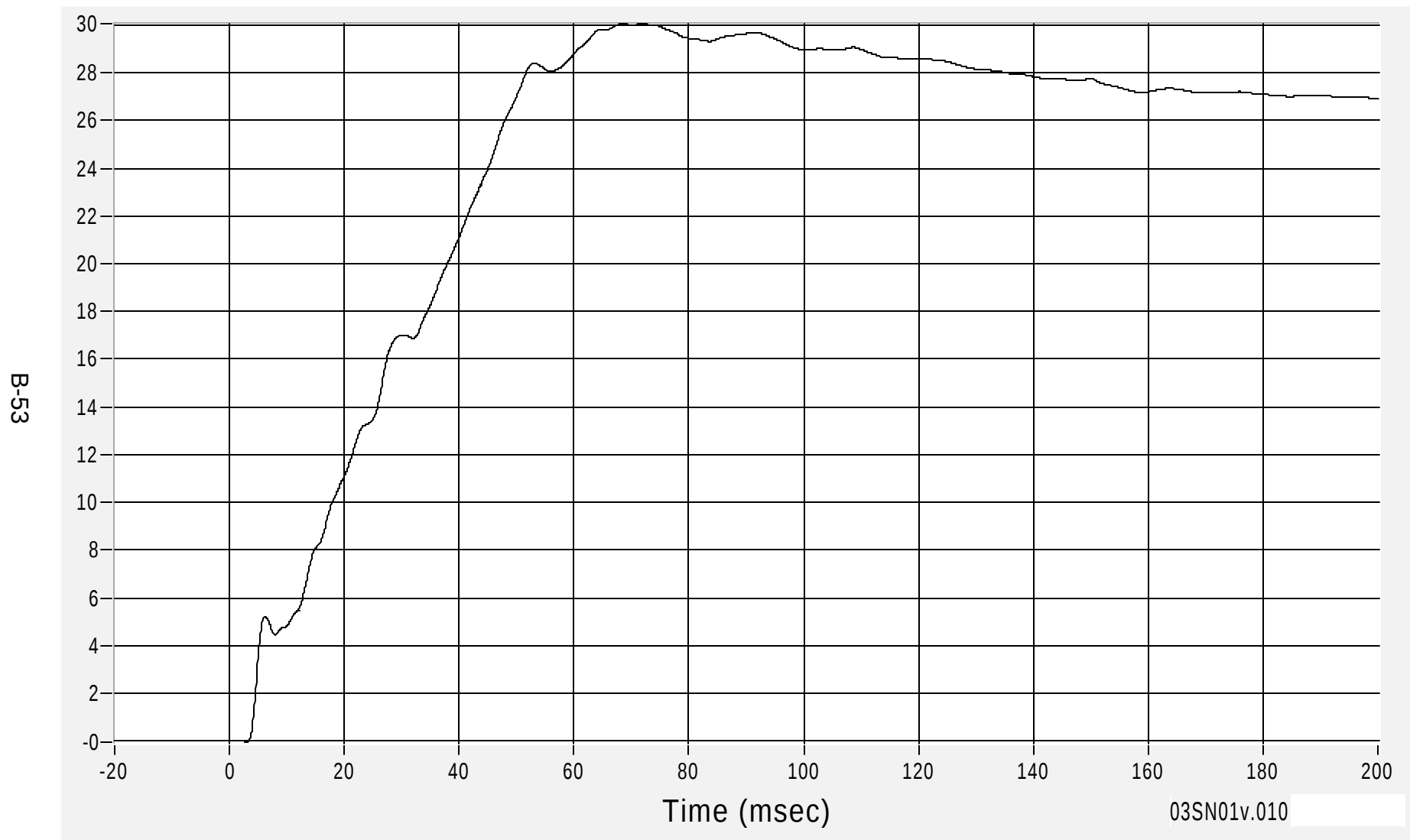
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Left Side Sill at Rear Seat (Y) Velocity

Max 30.0 km/h at 71.9 msec

Min 0.0 km/h at 3.0 msec

Velocity (km/h) CFC180



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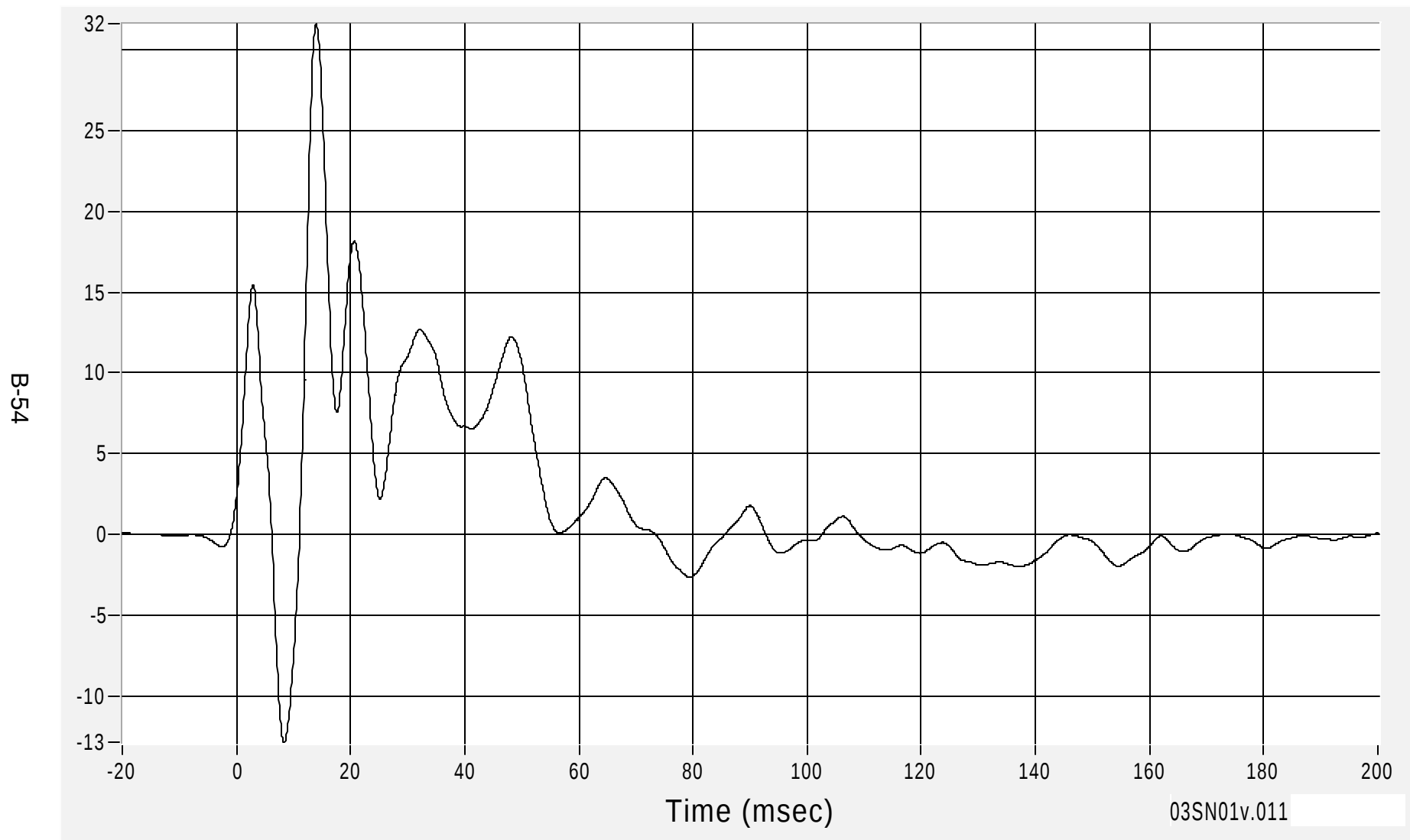
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Side Sill at Front Seat (Y) Acceleration

Max 31.6 G's at 14.0 msec

Acceleration (G's) CFC60

Min -12.8 G's at 8.4 msec



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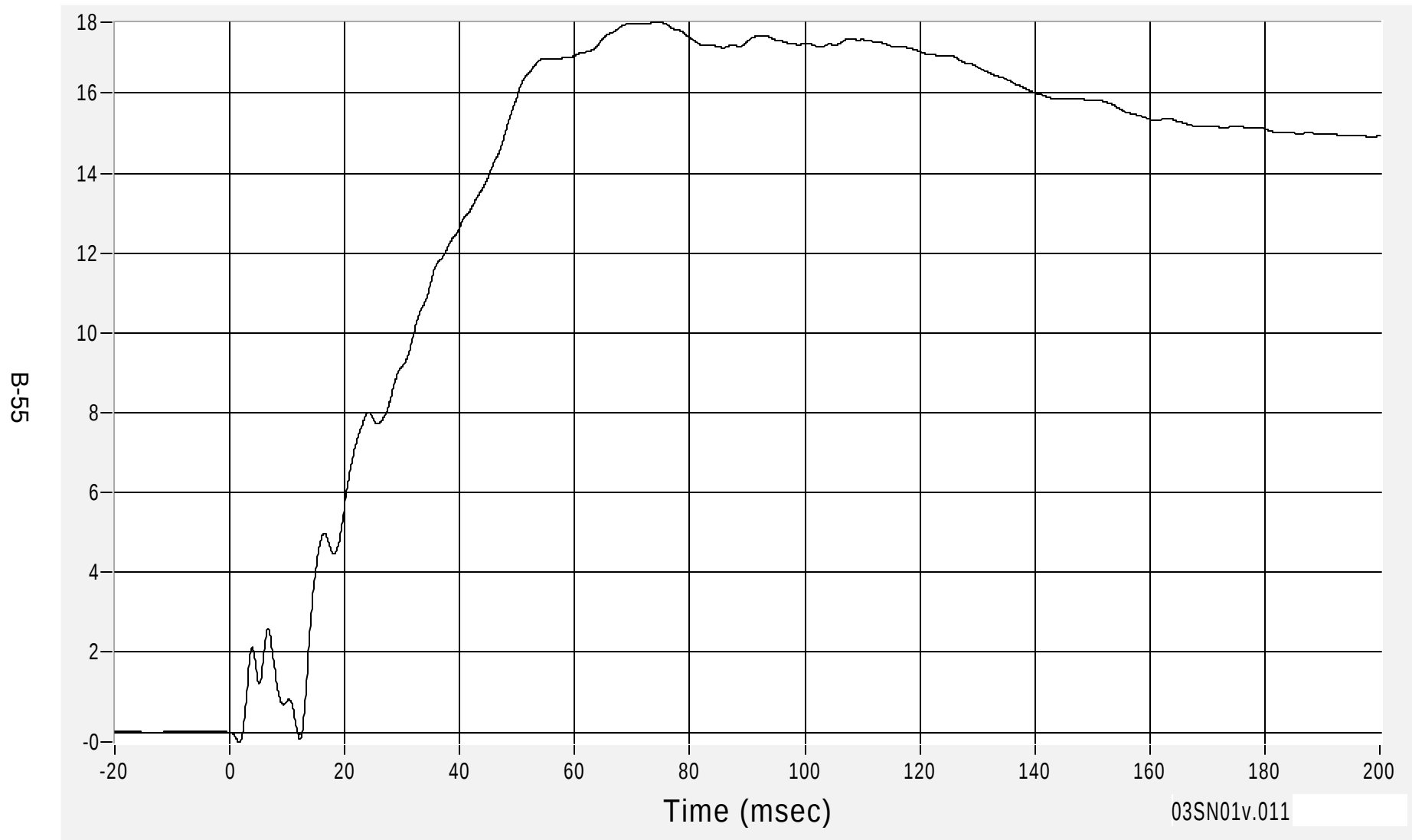
Medical College of Wisconsin
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Left Side Sill at Front Seat (Y) Velocity

Max 17.8 km/h at 74.6 msec

Min -0.2 km/h at 1.6 msec

Velocity (km/h) CFC180



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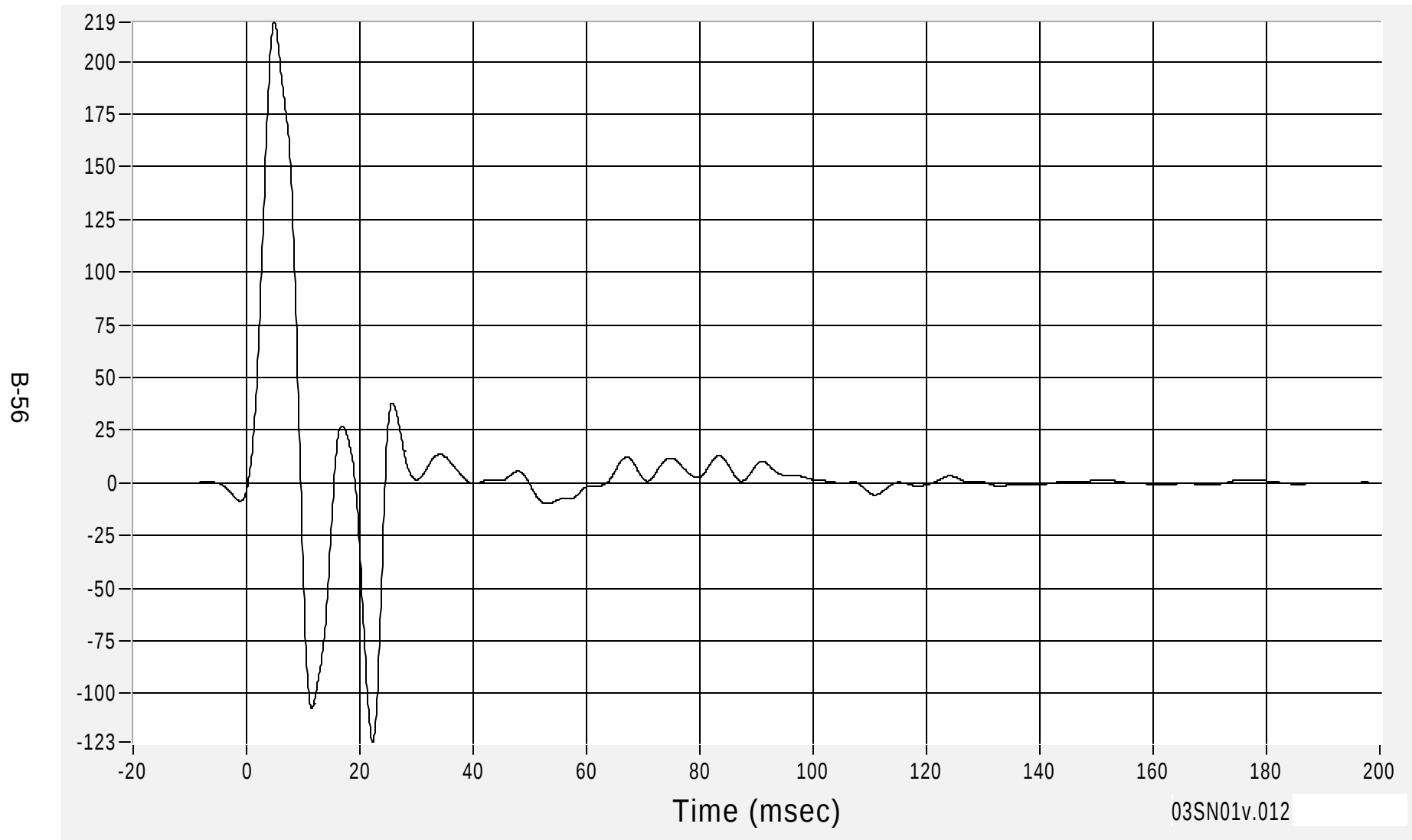
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Left Front Door on Centerline (Y) Acceleration

Max 218.6 G's at 4.9 msec

Min -122.9 G's at 22.2 msec

Acceleration (G's) CFC60



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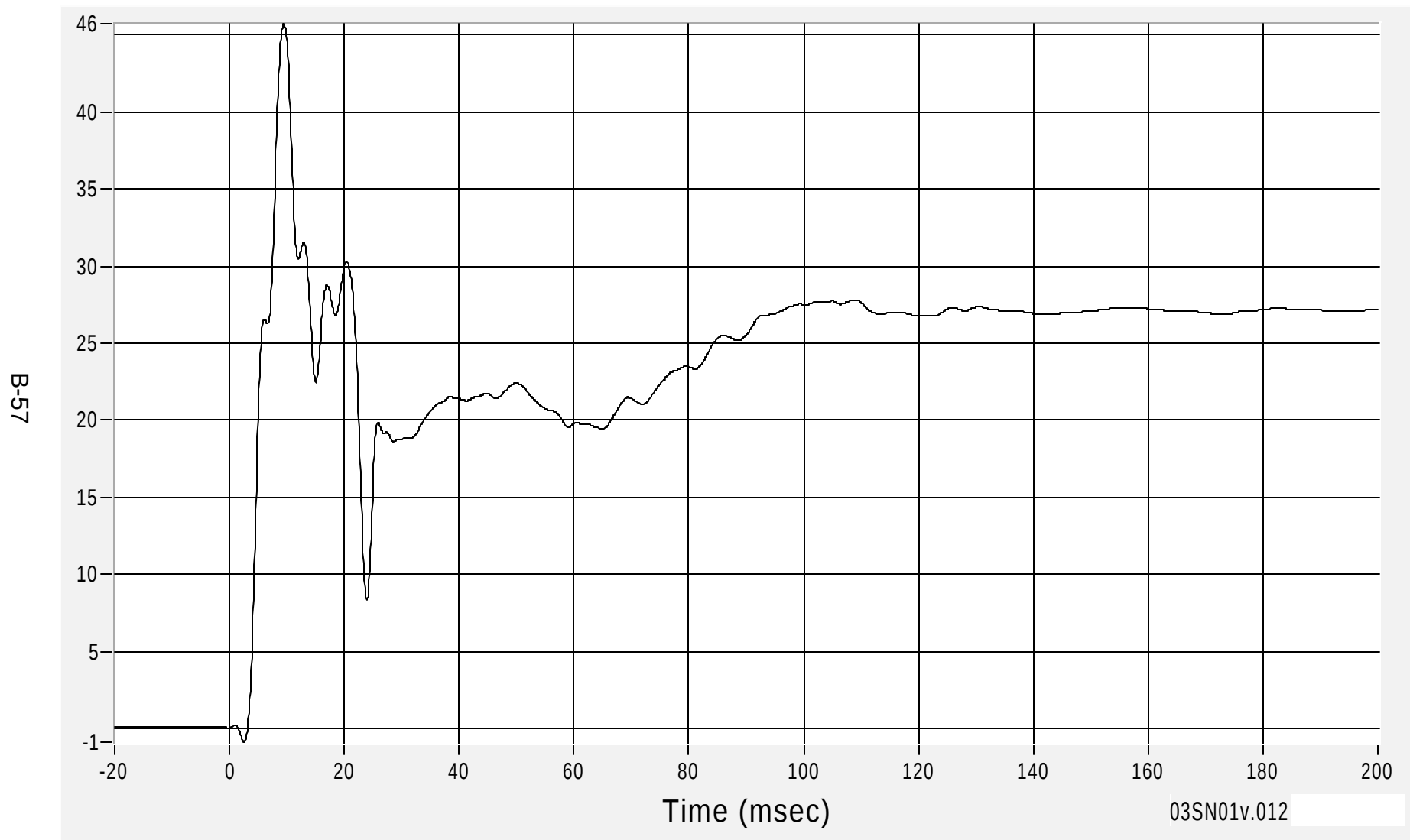
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Left Front Door on Centerline (Y) Velocity

Max 45.7 km/h at 9.4 msec

Min -0.9 km/h at 2.5 msec

Velocity (km/h) CFC180



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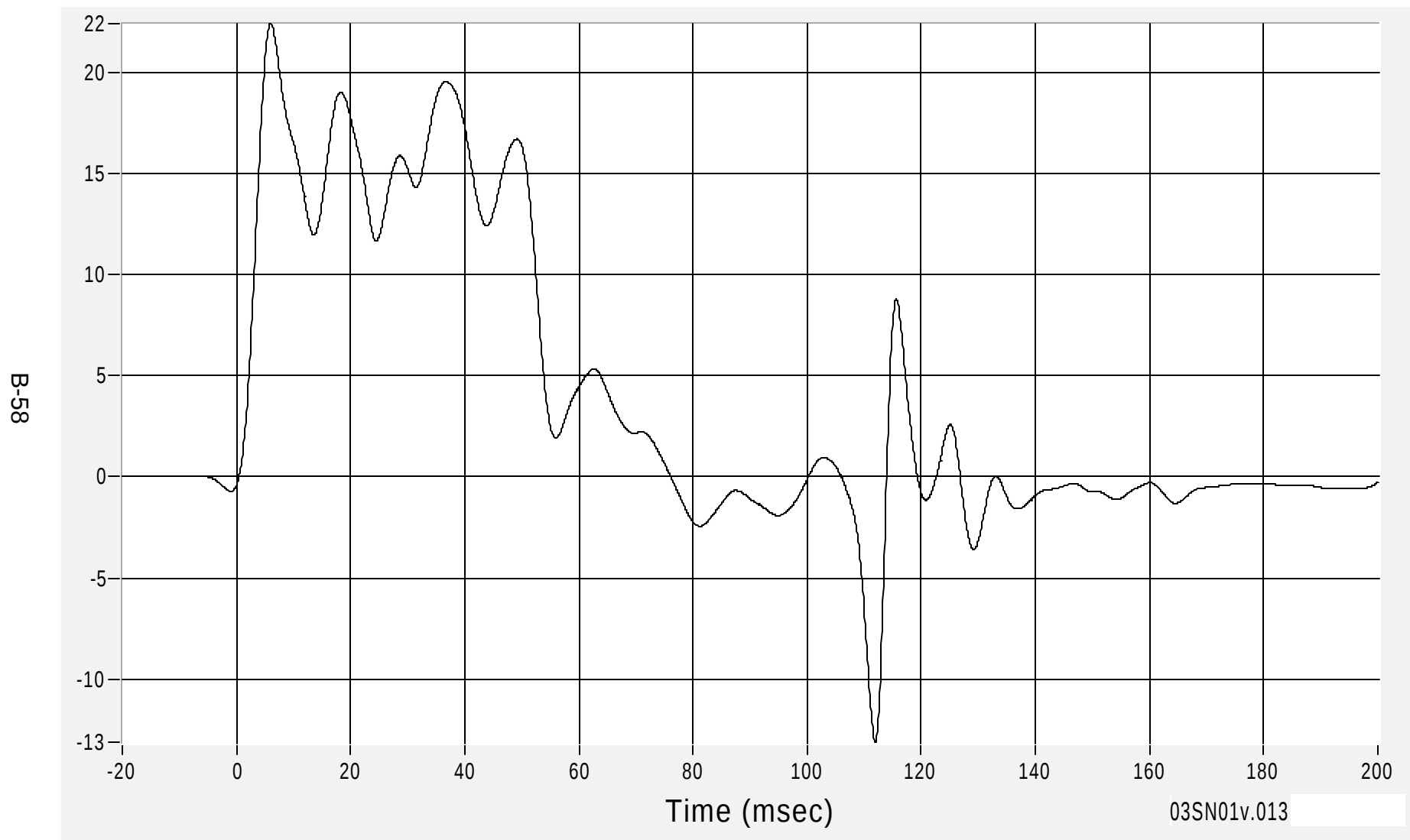
Medical College of Wisconsin
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Right Rear Occupant Compartment (Y) Acceleration

Max 22.4 G's at 6.0 msec

Acceleration (G's) CFC60

Min -13.1 G's at 111.9 msec



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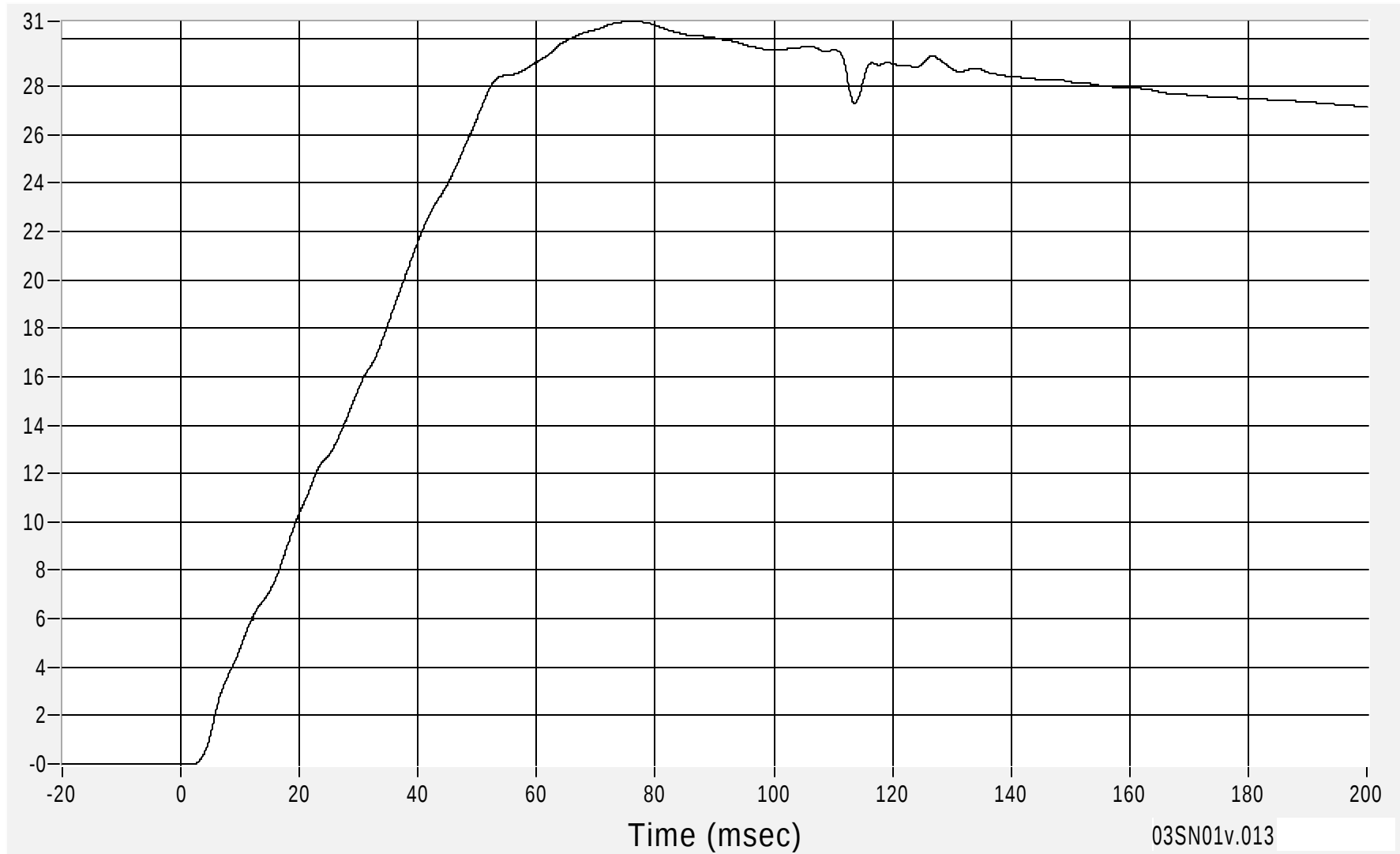
Right Rear Occupant Compartment (Y) Velocity

Velocity (km/h) CFC180

Max 30.7 km/h at 76.0 msec

Min 0.0 km/h at 2.0 msec

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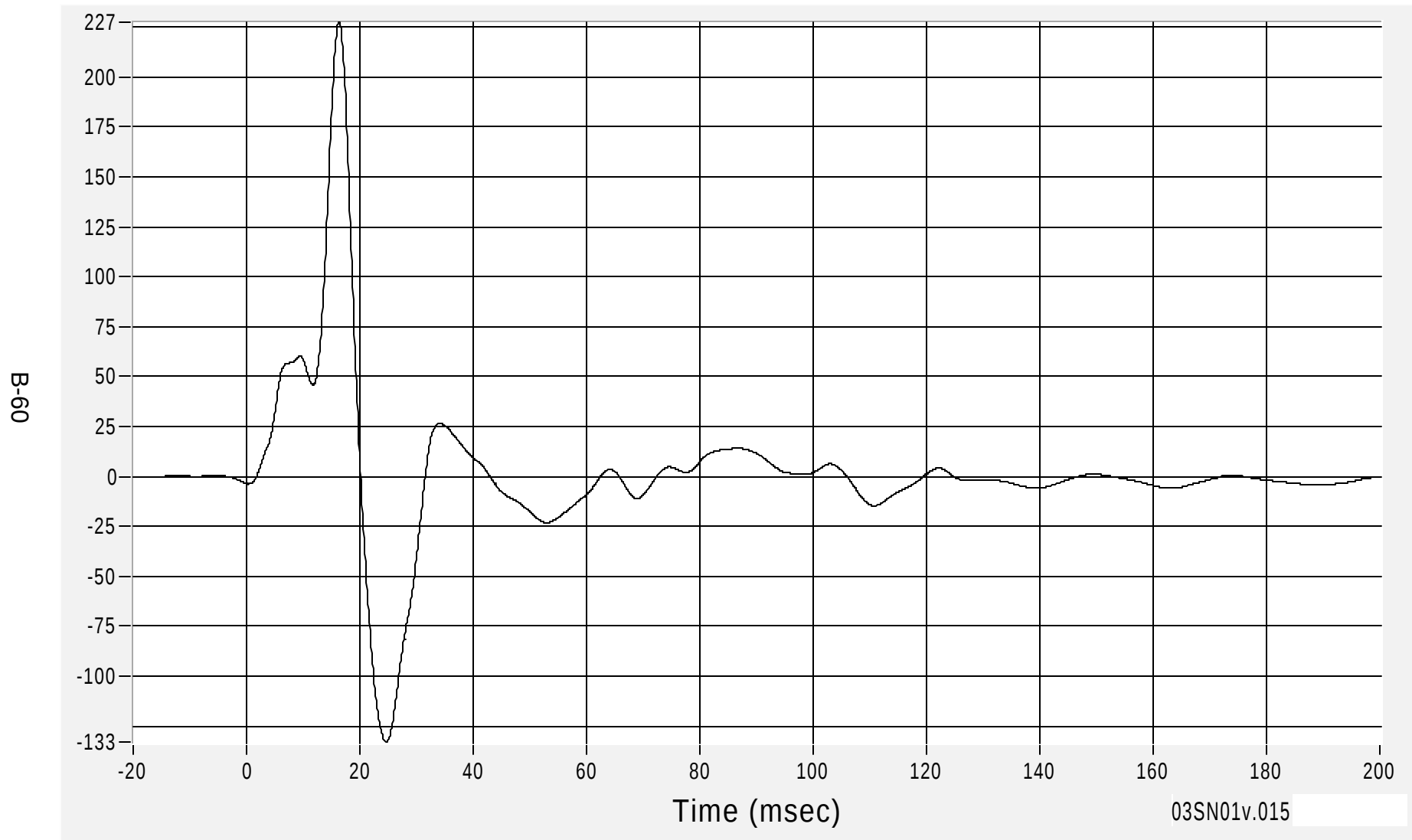
Medical College of Wisconsin
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Left Front Door Upper Centerline (Y) Acceleration

Max 227.4 G's at 16.3 msec

Acceleration (G's) CFC60

Min -133.0 G's at 24.6 msec



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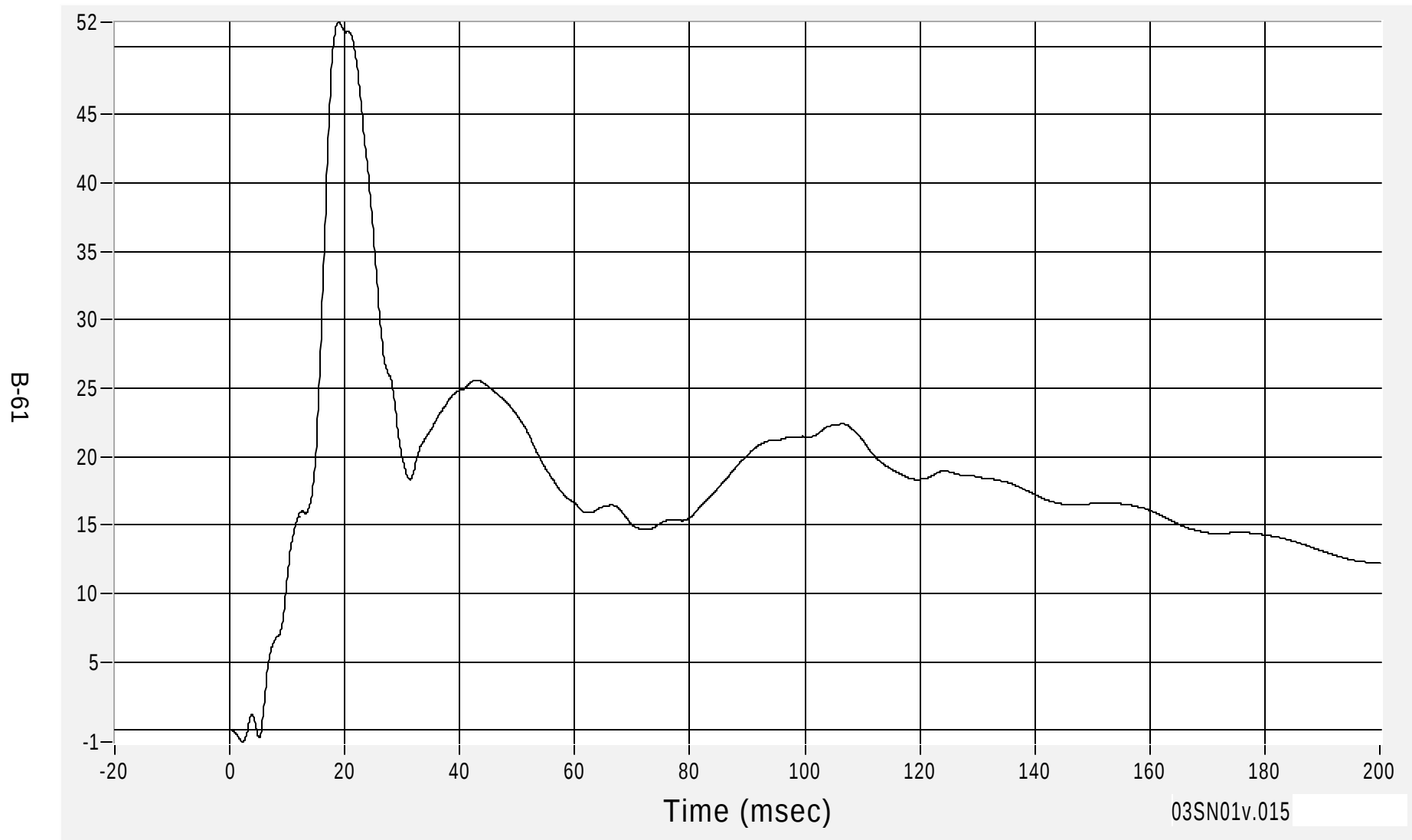
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Front Door Upper Centerline (Y) Velocity

Max 51.7 km/h at 19.0 msec

Min -0.9 km/h at 2.2 msec

Velocity (km/h) CFC180



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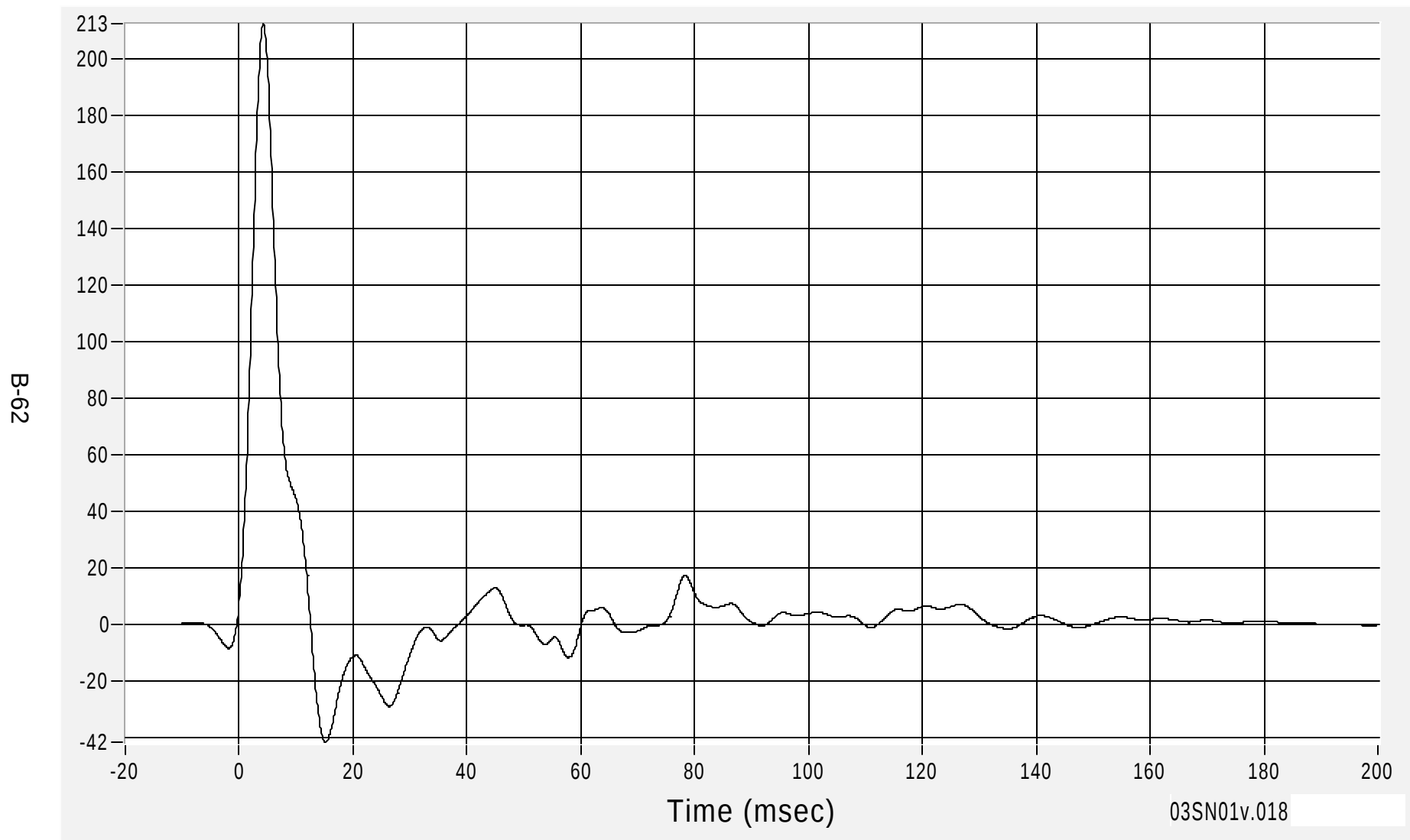
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Left Lower B-Pillar (Y) Acceleration

Max 212.5 G's at 4.2 msec

Acceleration (G's) CFC60

Min -41.8 G's at 15.1 msec



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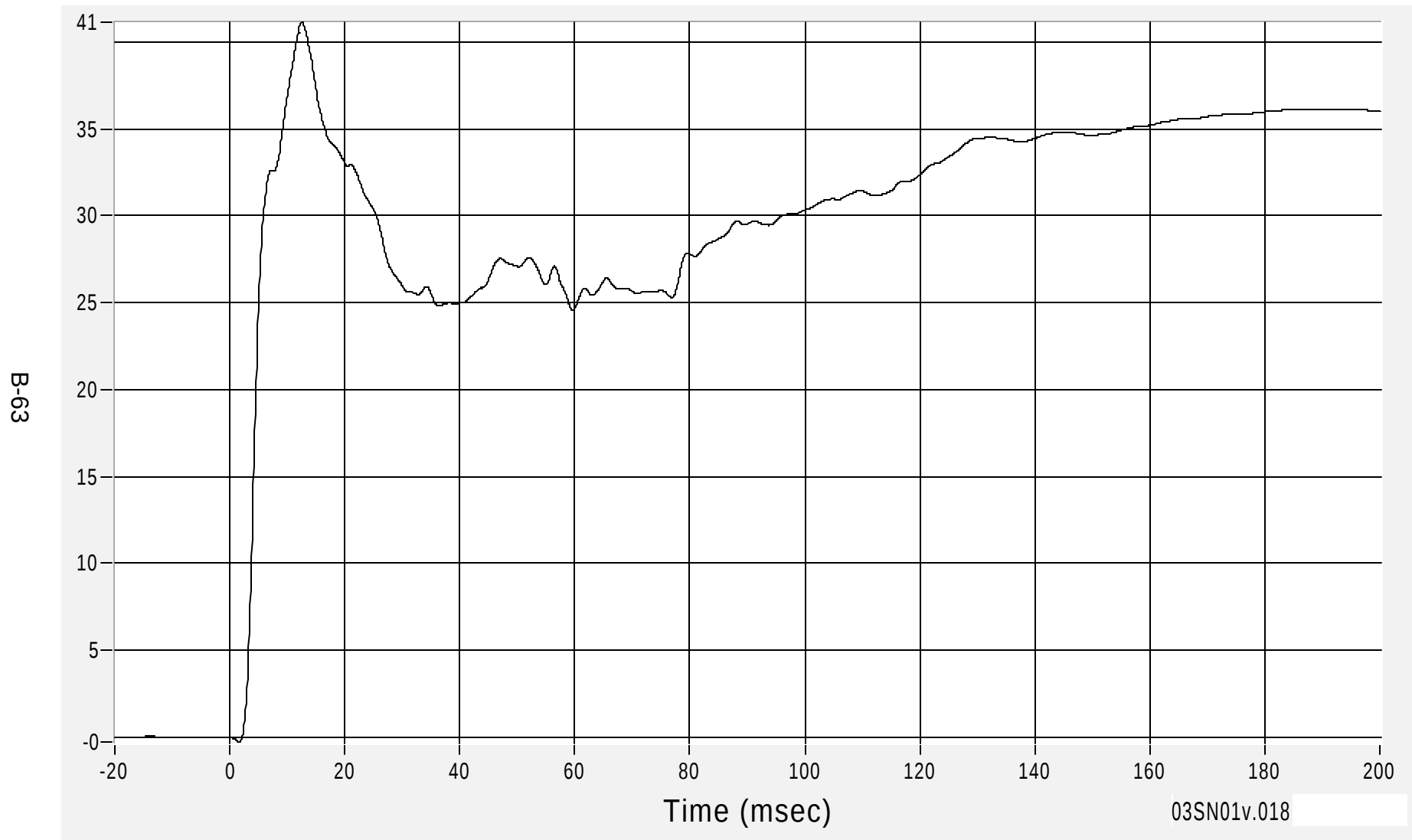
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Left Lower B-Pillar (Y) Velocity

Max 41.1 km/h at 12.5 msec

Min -0.3 km/h at 1.6 msec

Velocity (km/h) CFC180



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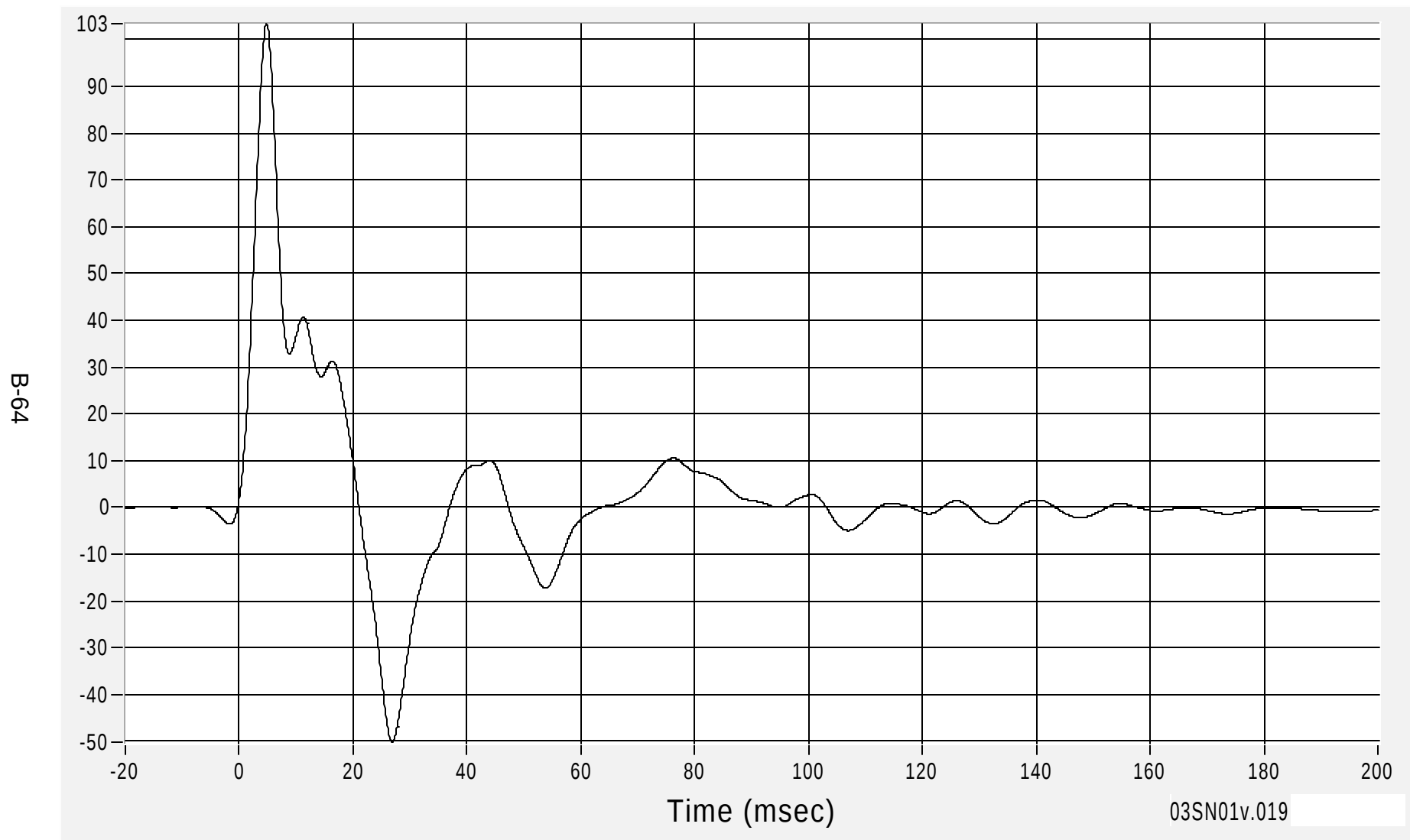
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Left Middle B-Pillar (Y) Acceleration

Max 103.4 G's at 4.8 msec

Acceleration (G's) CFC60

Min -50.2 G's at 26.9 msec



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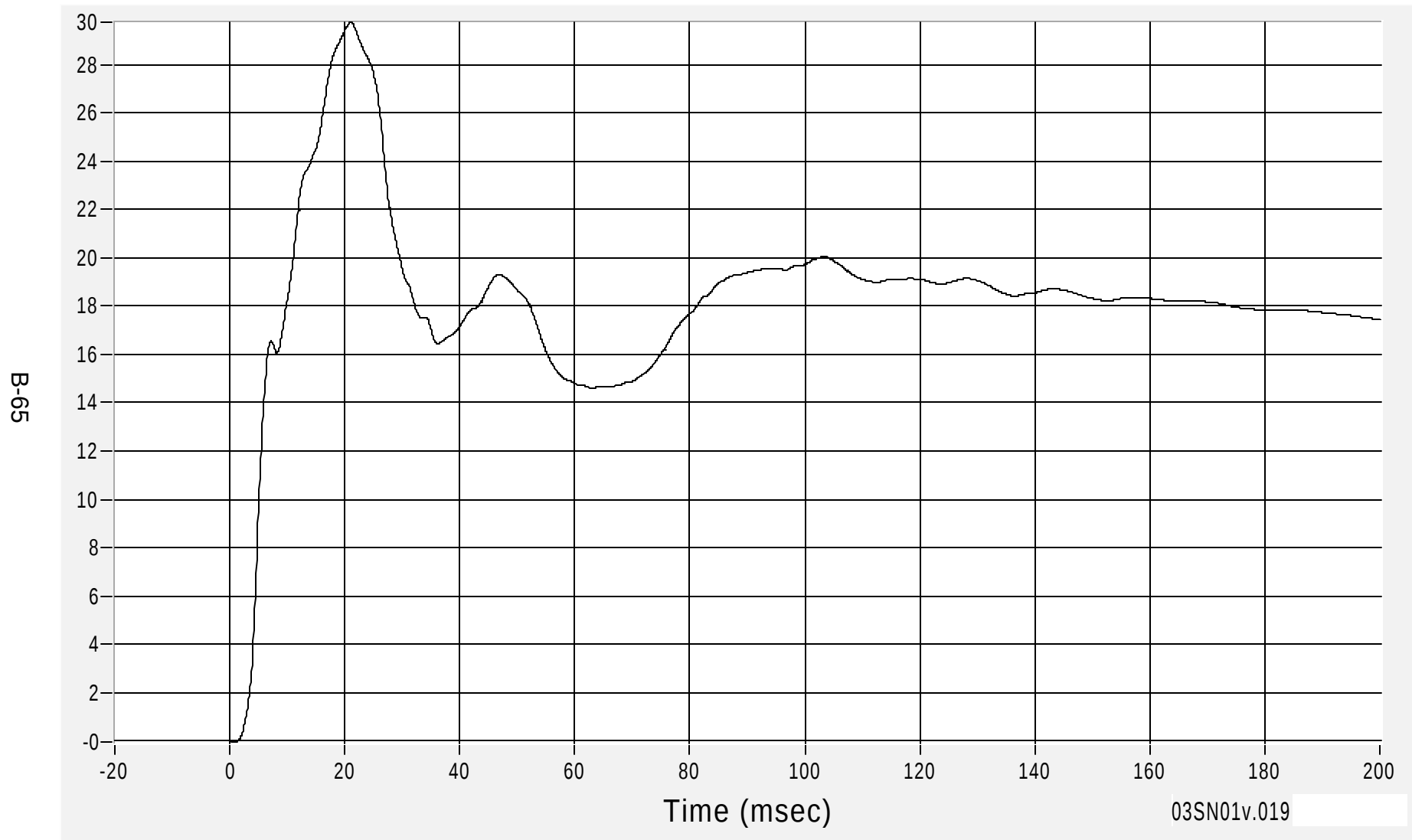
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Middle B-Pillar (Y) Velocity

Max 29.8 km/h at 21.0 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 1.0 msec



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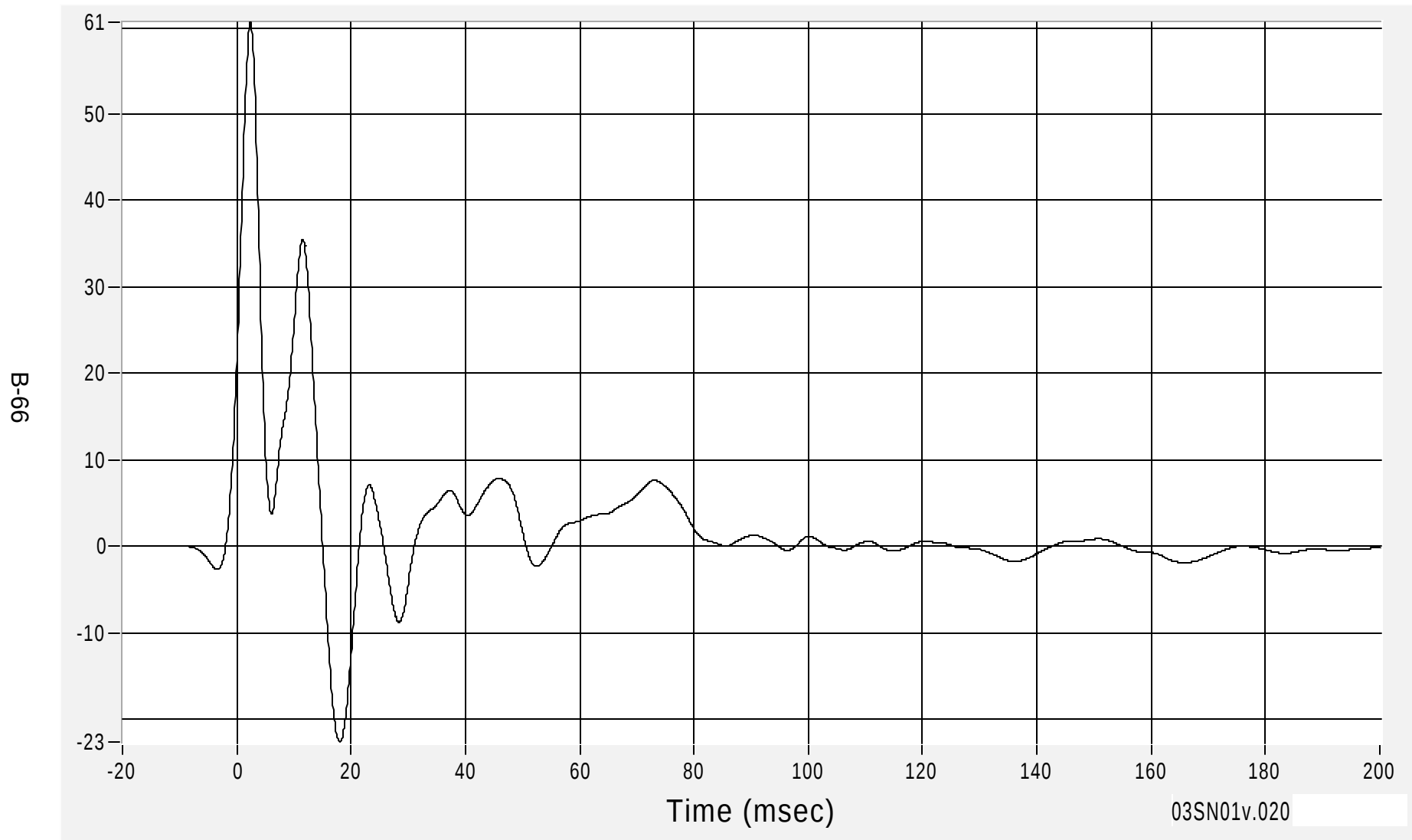
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Lower A-Pillar (Y) Acceleration

Max 60.6 G's at 2.4 msec

Min -22.7 G's at 18.0 msec

Acceleration (G's) CFC60



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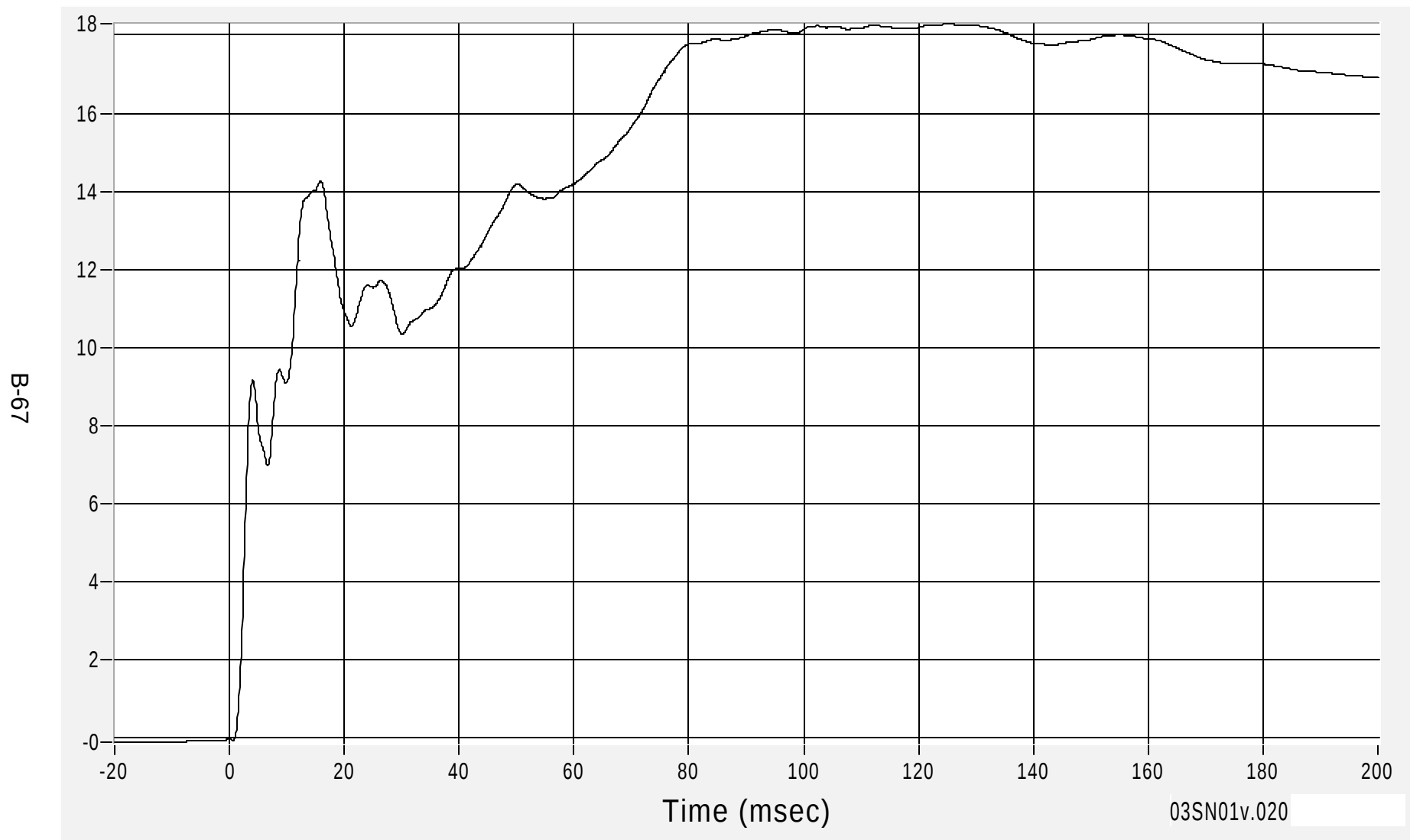
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Lower A-Pillar (Y) Velocity

Max 18.3 km/h at 125.2 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 0.6 msec



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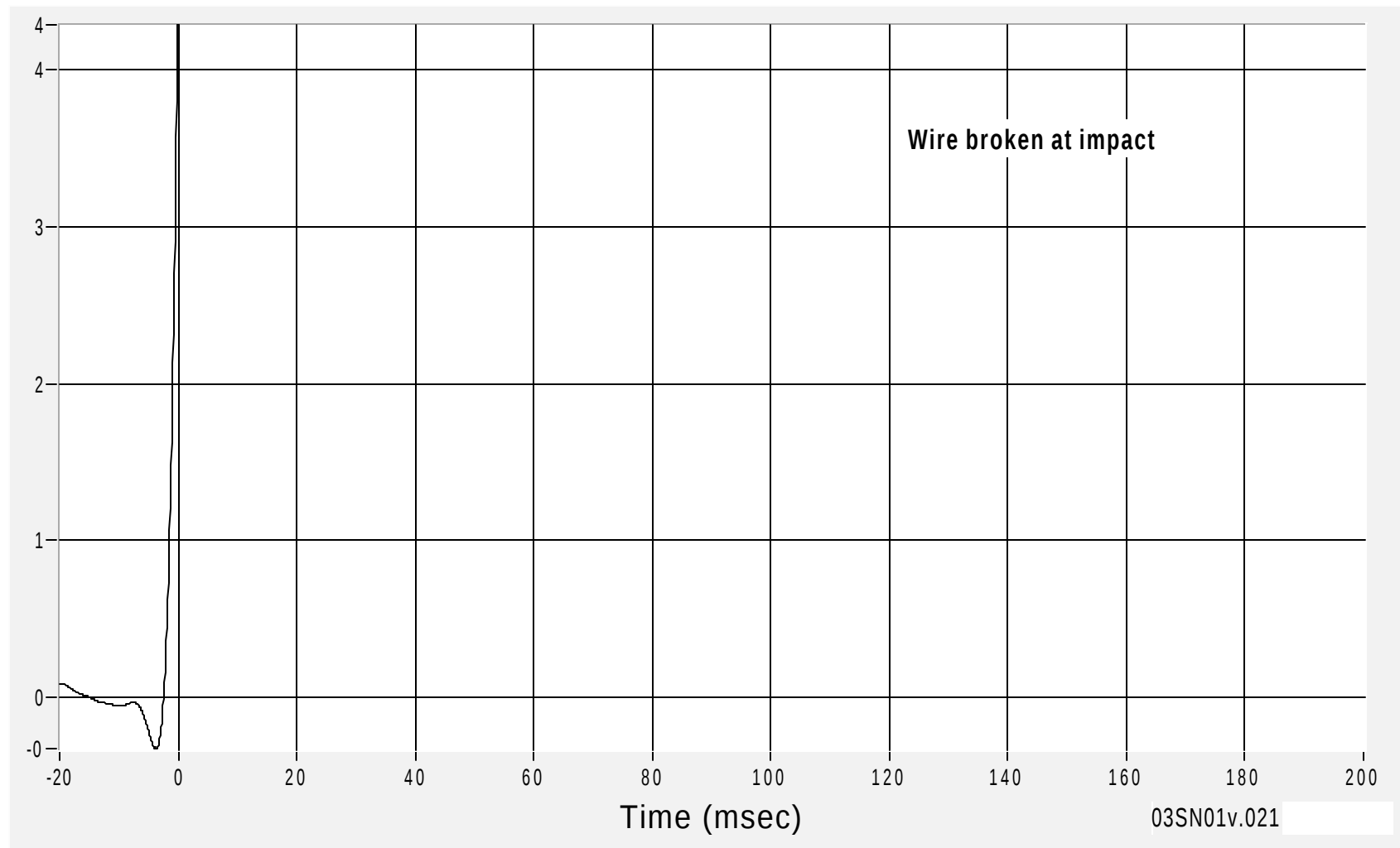
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Middle A-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 4.5 G's at 0.0 msec
Min 4.5 G's at 0.0 msec

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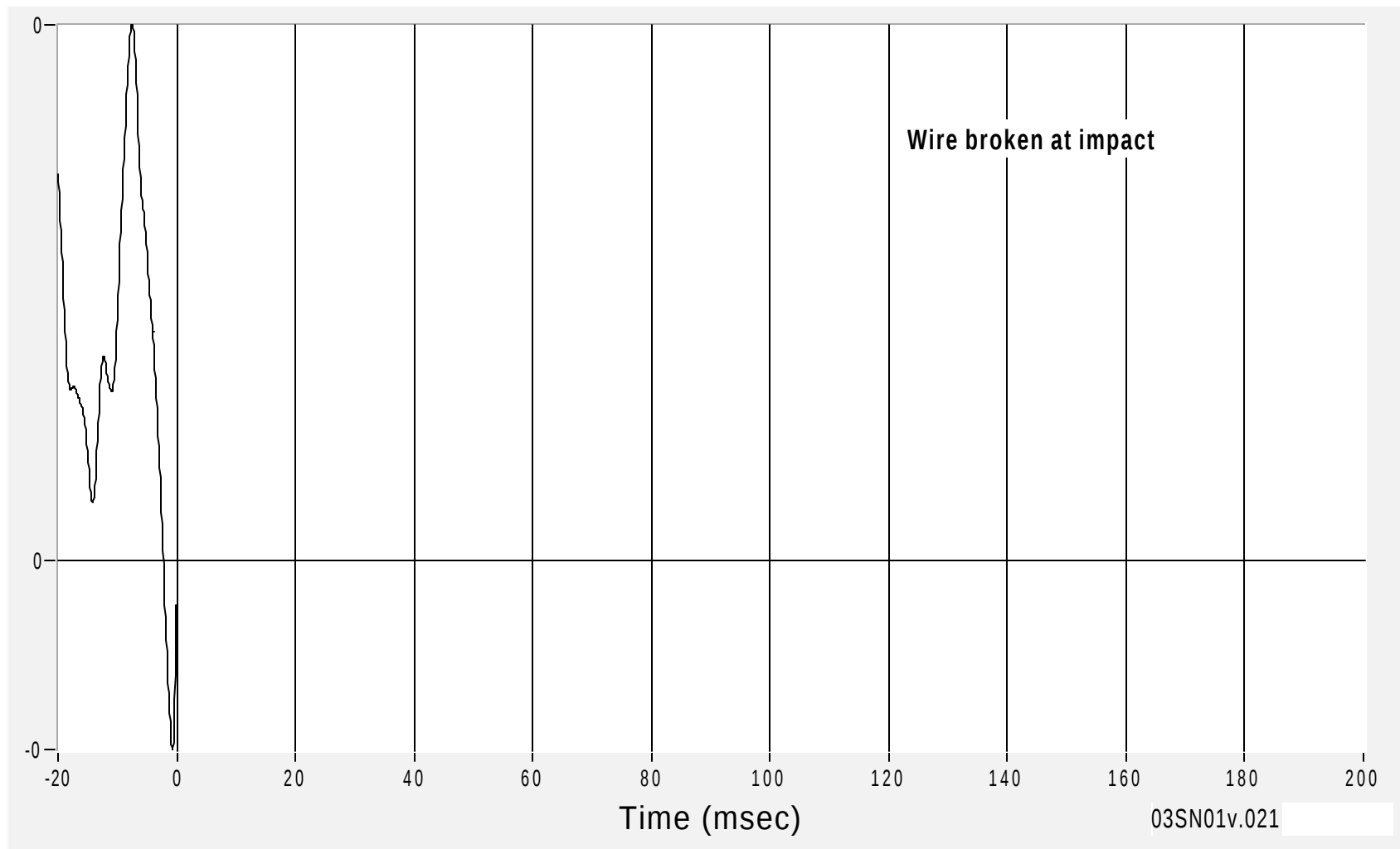
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Middle A-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec
Min 0.0 km/h at 0.0 msec

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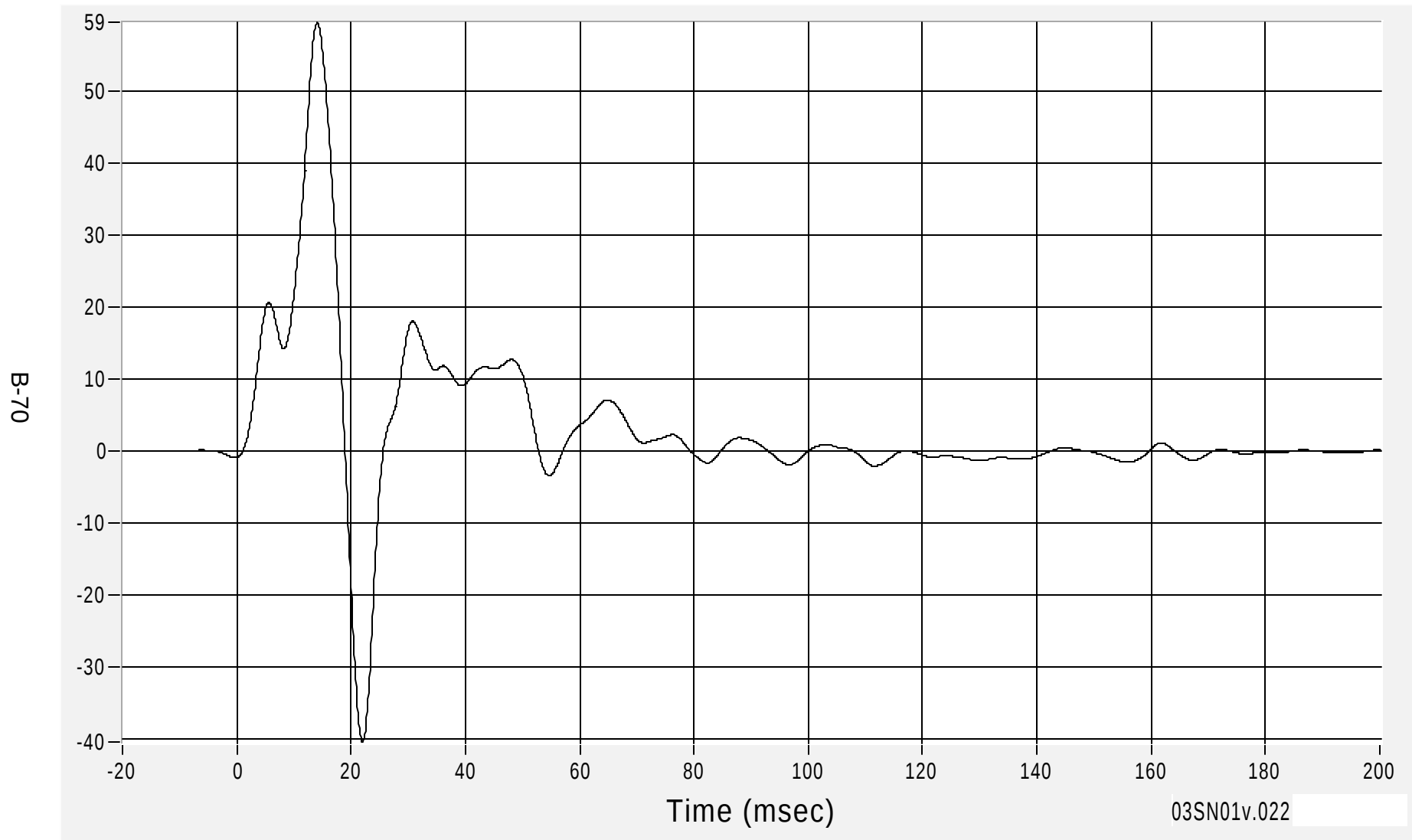
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Front Seat Track (Y) Acceleration

Max 59.5 G's at 14.1 msec

Acceleration (G's) CFC60

Min -40.4 G's at 22.0 msec



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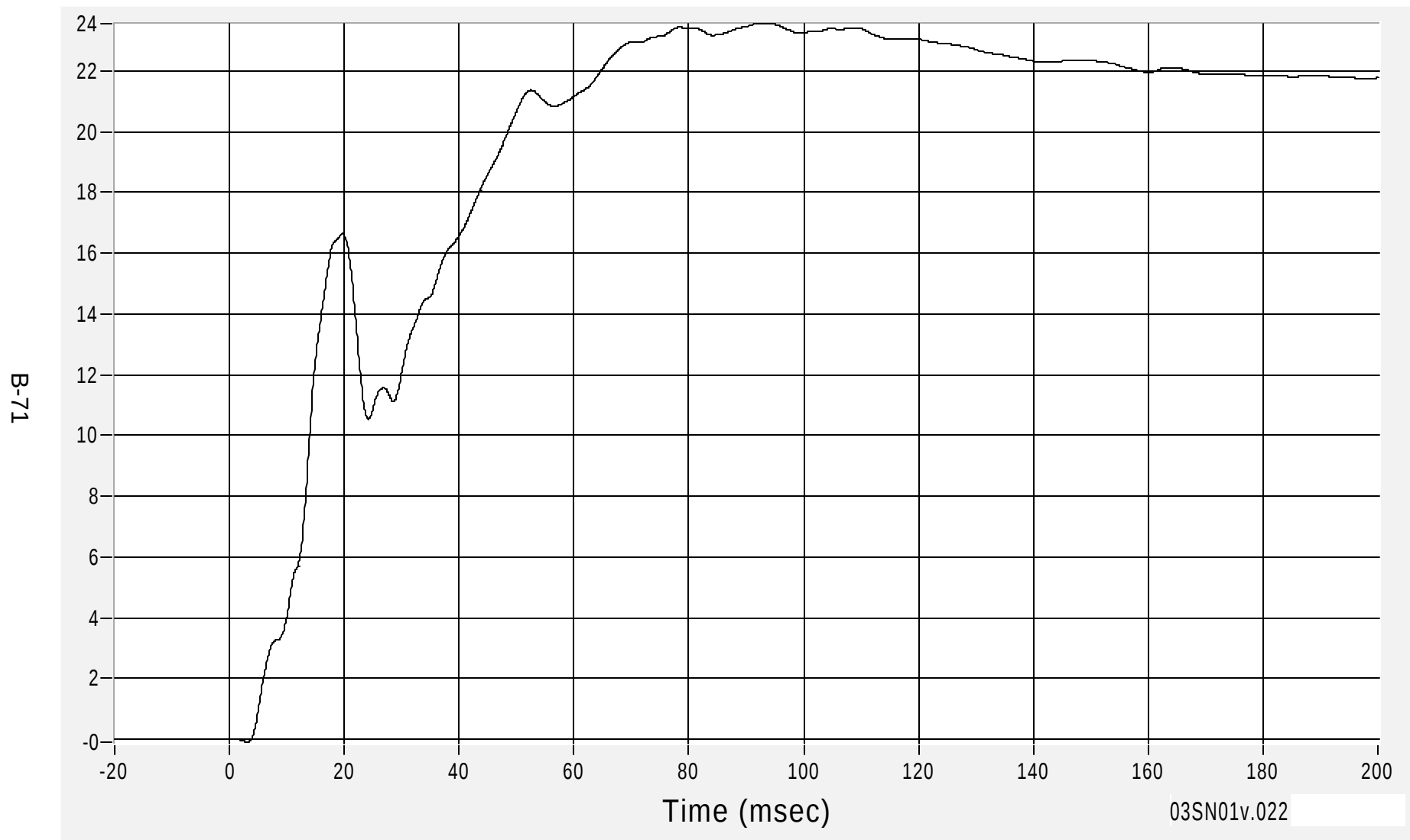
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Front Seat Track (Y) Velocity

Max 23.5 km/h at 92.1 msec

Velocity (km/h) CFC180

Min -0.1 km/h at 3.1 msec



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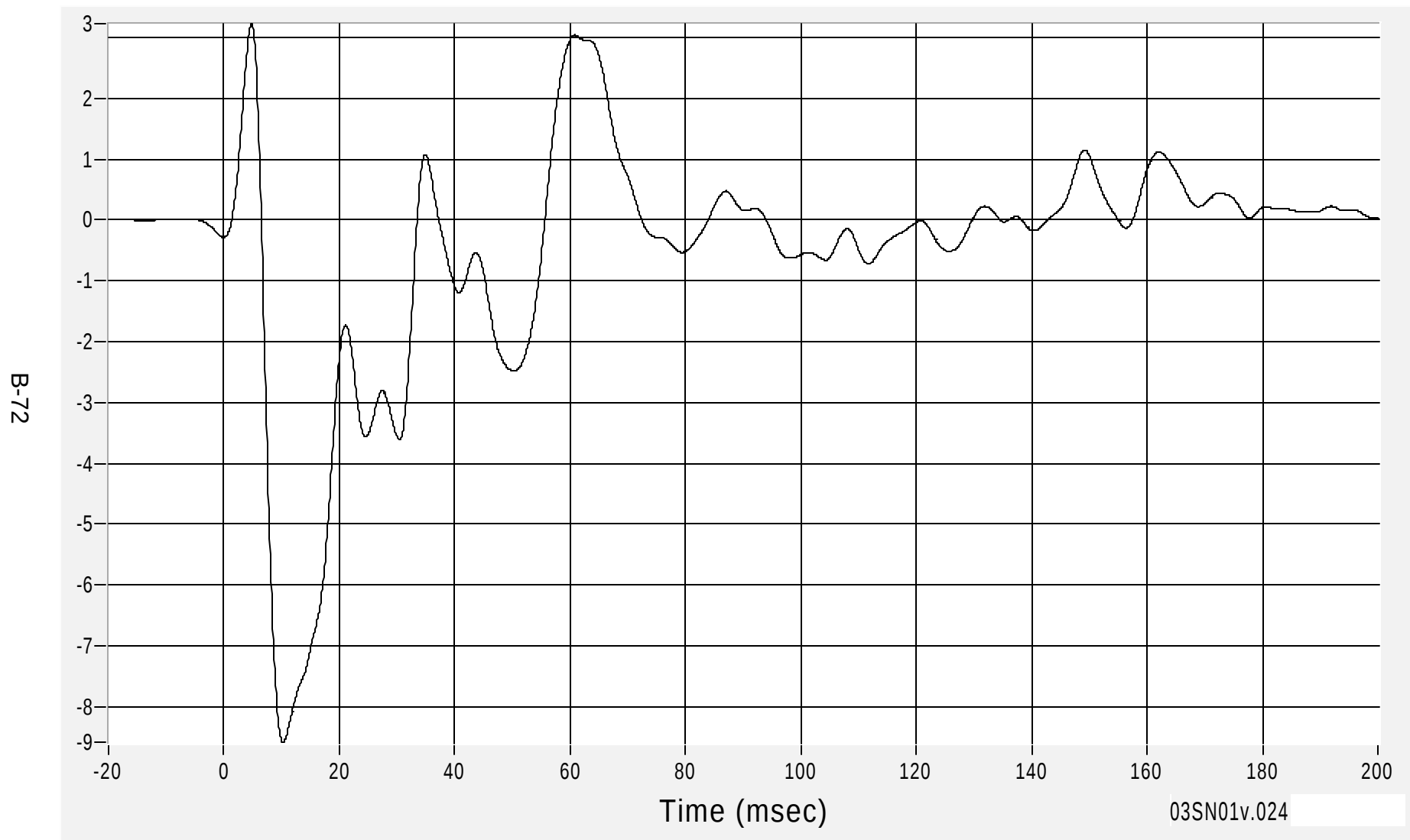
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (X) Acceleration

Max 3.2 G's at 4.8 msec

Acceleration (G's) CFC60

Min -8.6 G's at 10.2 msec



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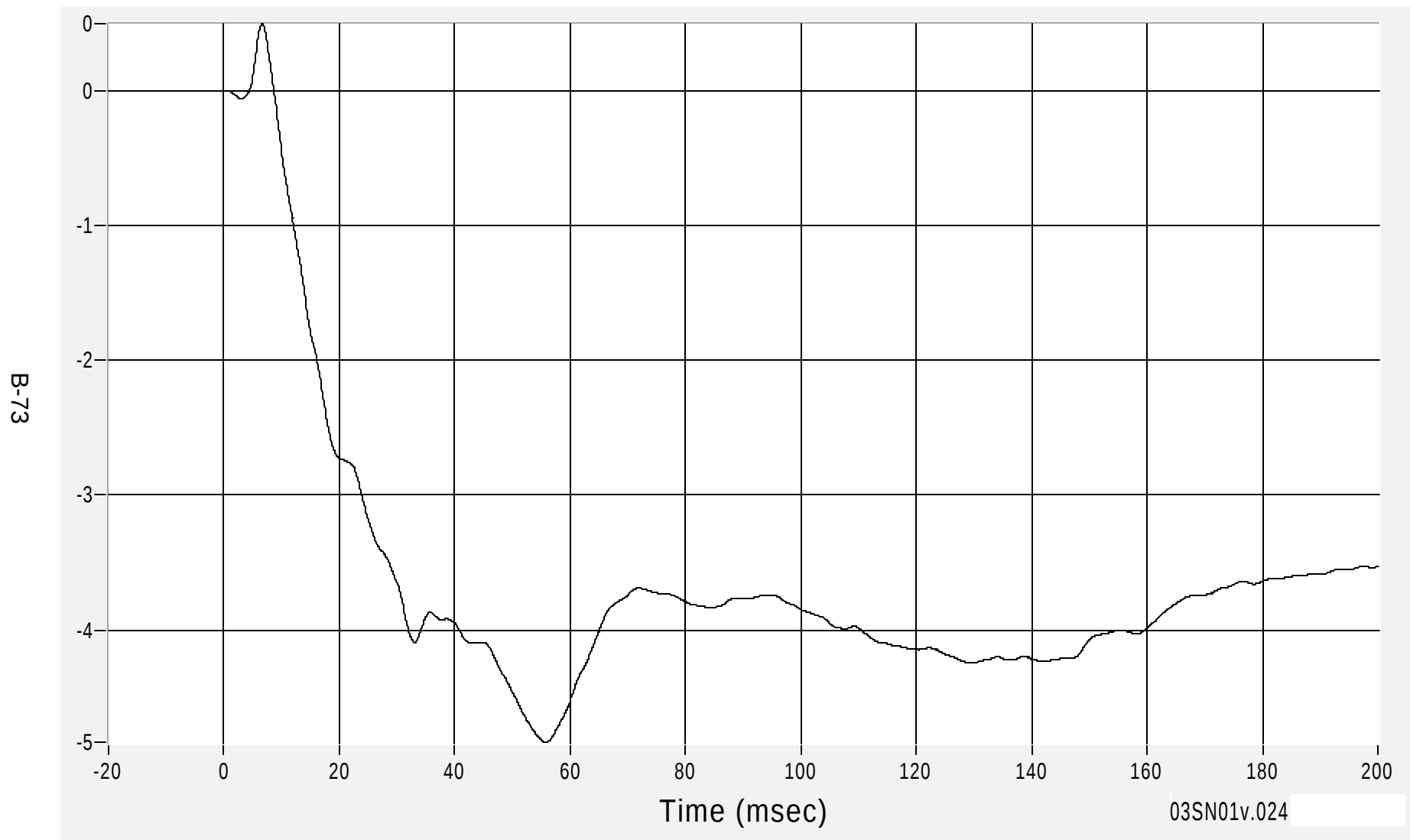
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (X) Velocity

Max 0.5 km/h at 6.6 msec

Velocity (km/h) CFC180

Min -4.8 km/h at 55.8 msec



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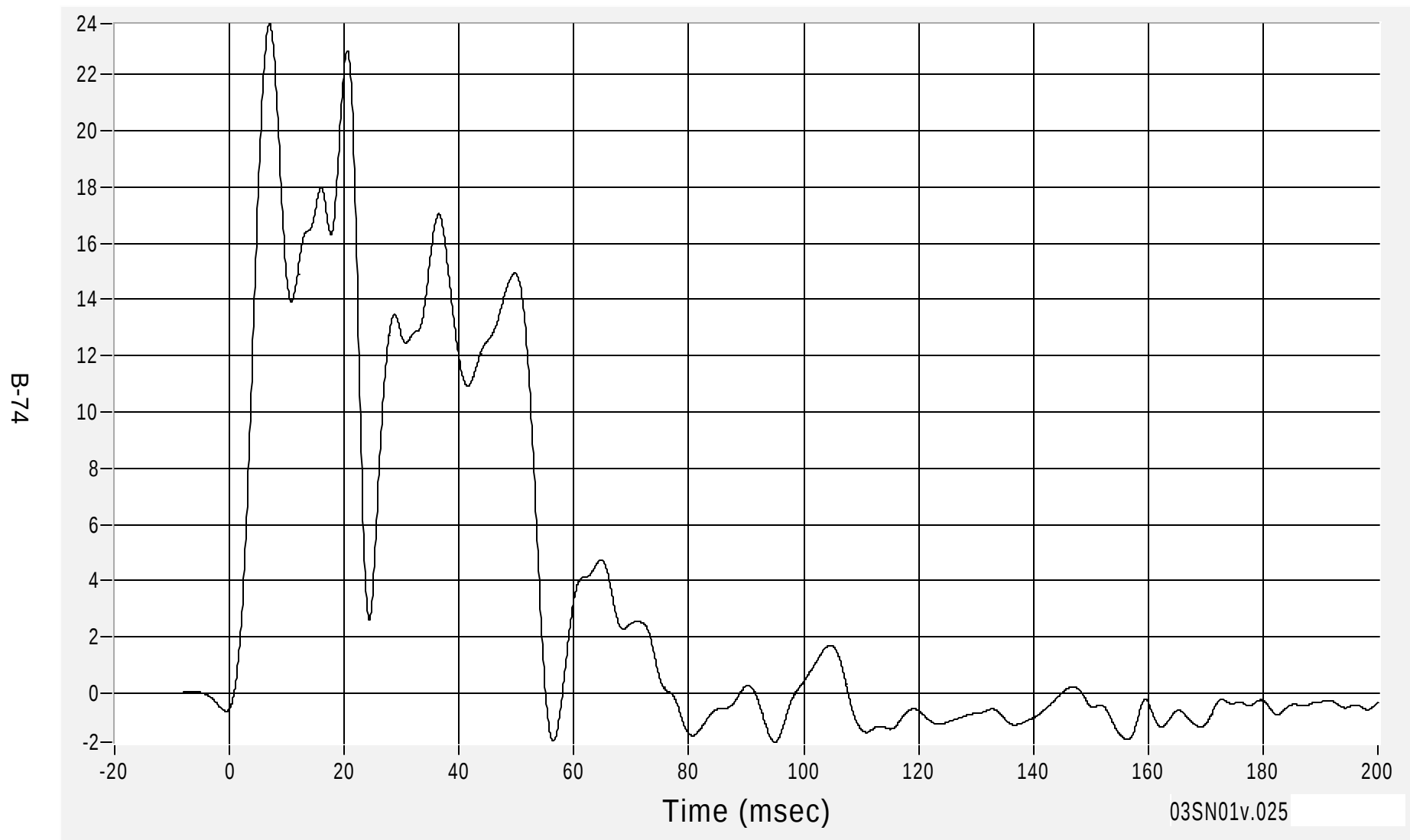
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Y) Acceleration

Max 23.8 G's at 7.0 msec

Min -1.7 G's at 95.0 msec

Acceleration (G's) CFC60



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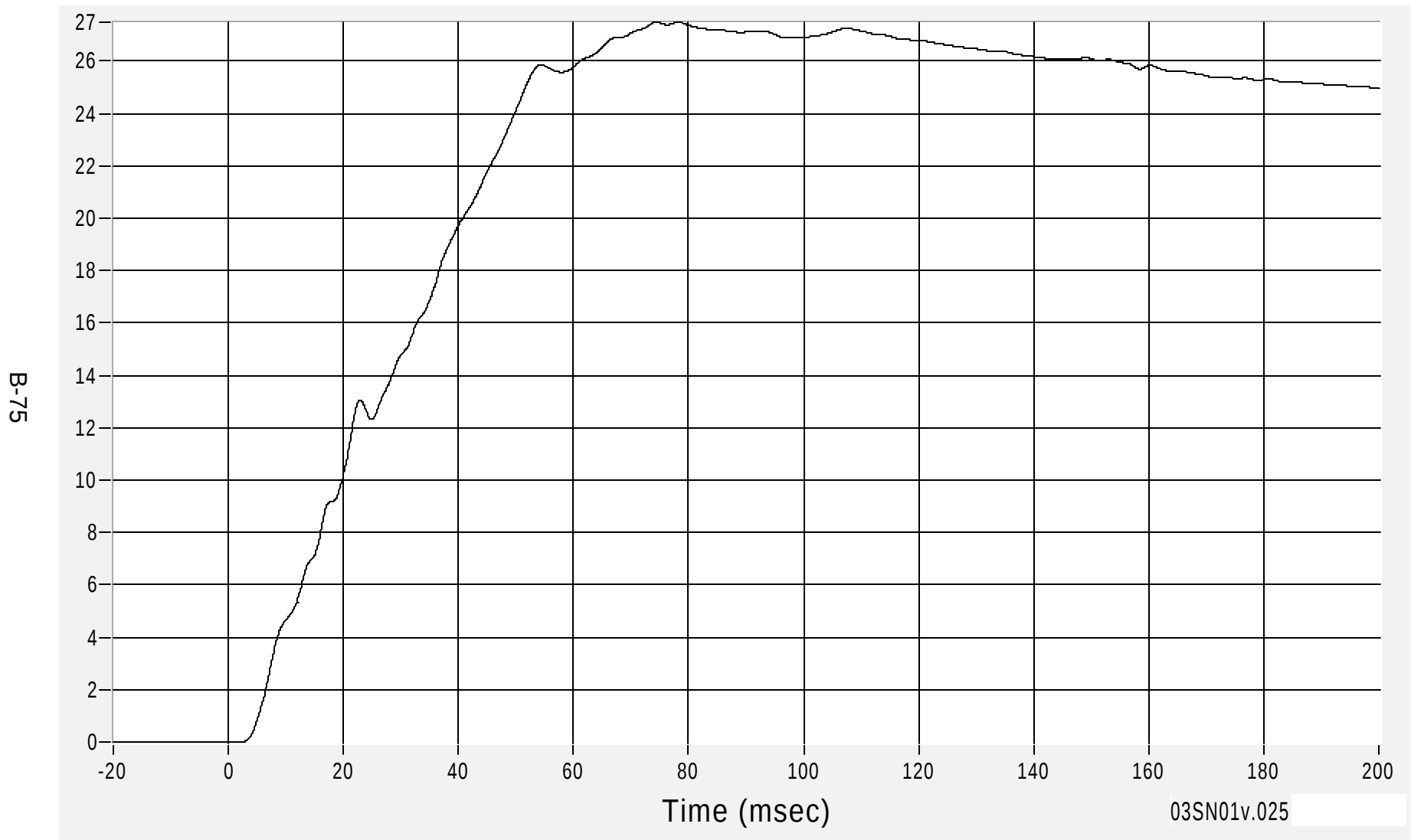
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Y) Velocity

Max 27.5 km/h at 78.2 msec

Min 0.0 km/h at 0.0 msec

Velocity (km/h) CFC180



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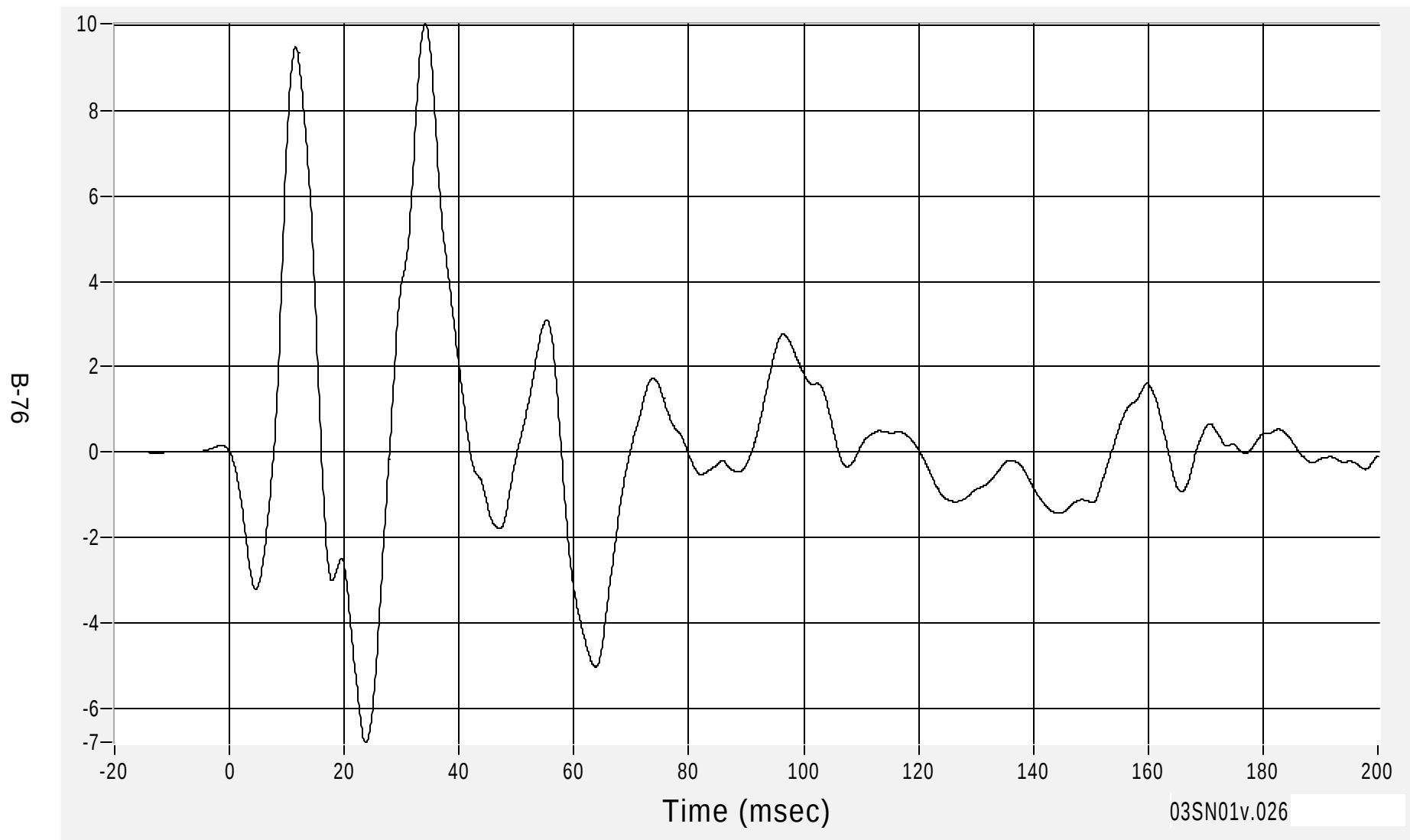
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Z) Acceleration

Max 10.1 G's at 34.1 msec

Acceleration (G's) CFC60

Min -6.8 G's at 23.7 msec



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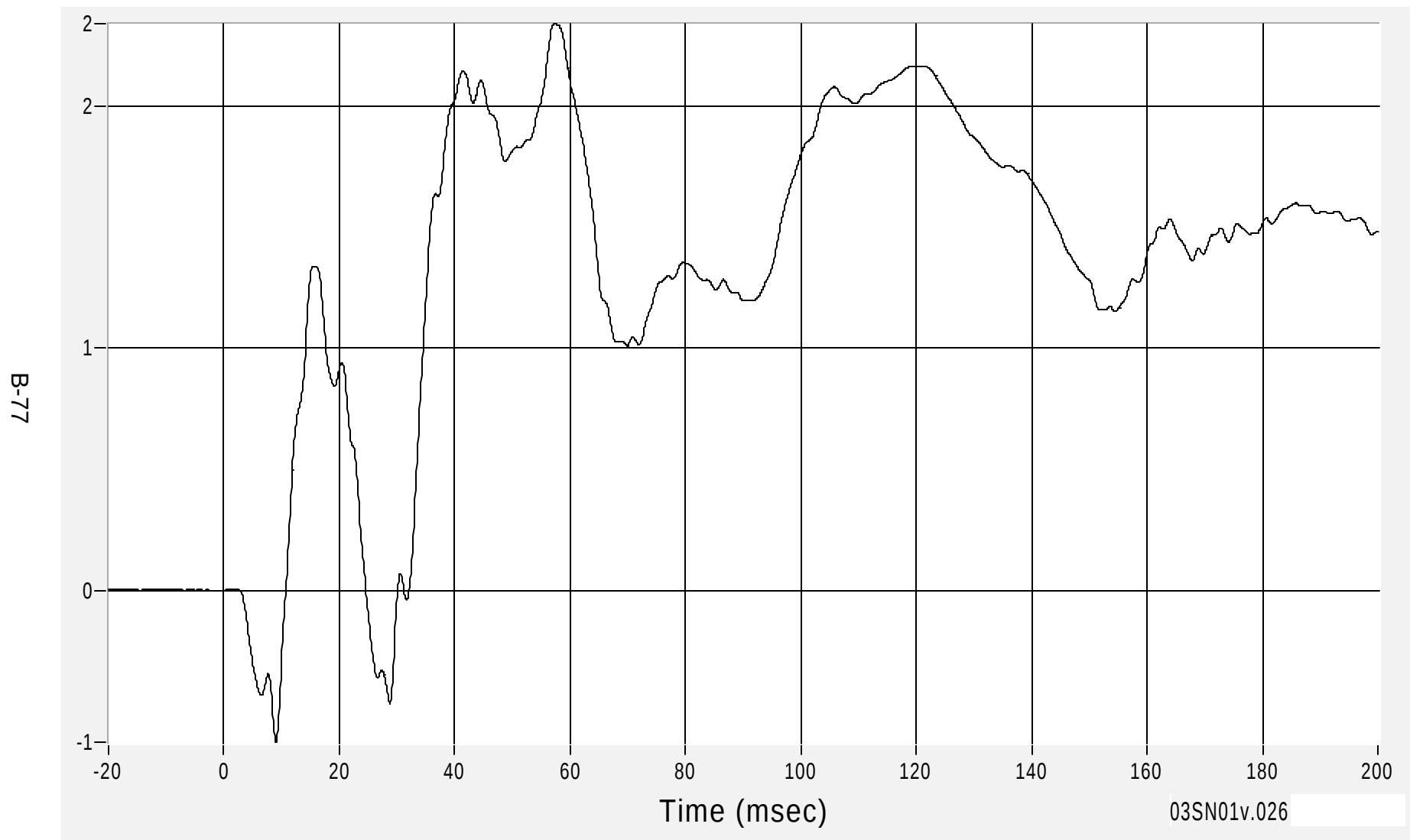
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Z) Velocity

Max 2.3 km/h at 57.3 msec

Velocity (km/h) CFC180

Min -0.6 km/h at 9.0 msec



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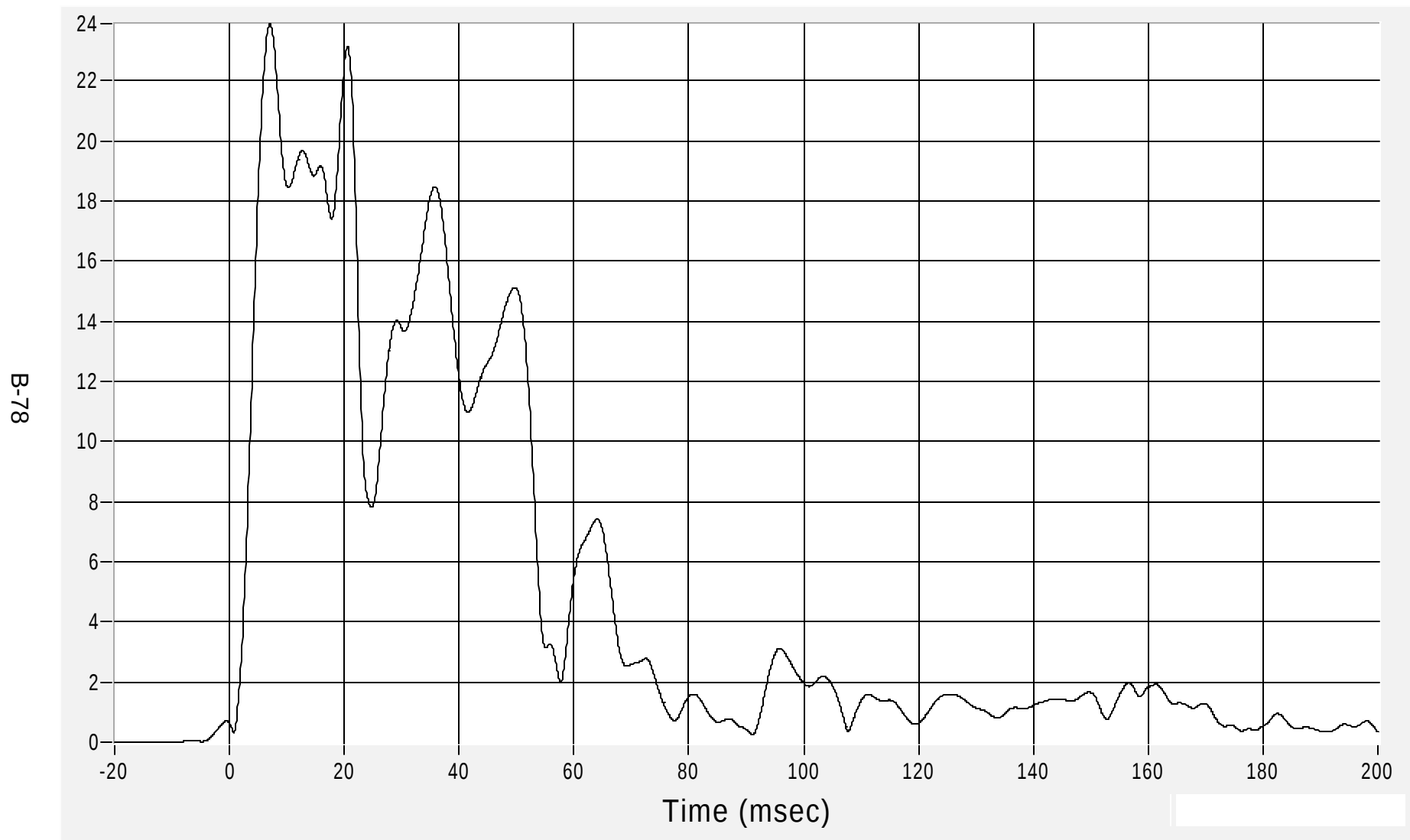
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity Resultant Acceleration

Max 23.9 G's at 7.0 msec

Acceleration (G's) CFC60

Min 0.2 G's at 91.1 msec



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4 December 2002

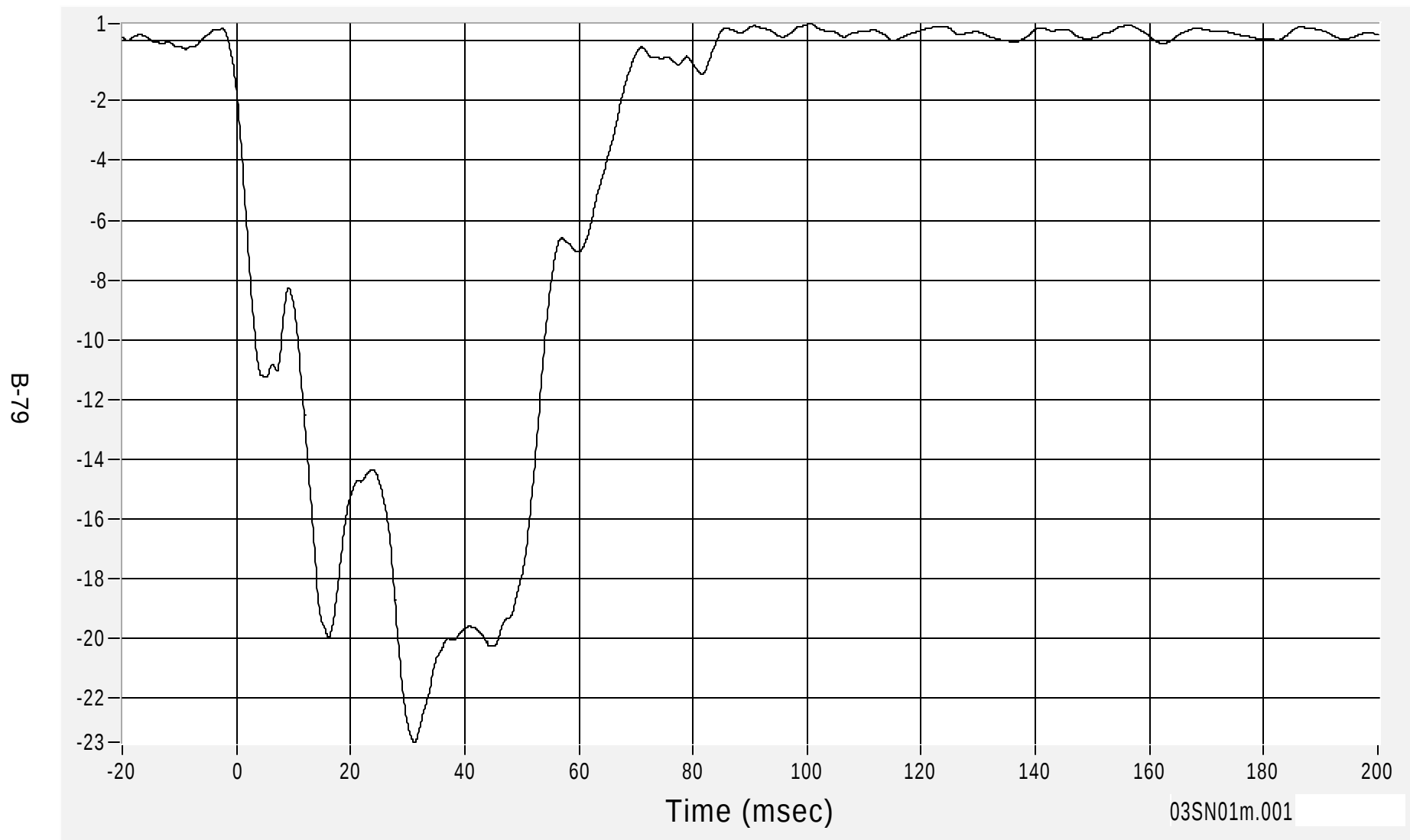
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Center of Gravity (X) Acceleration

Max 0.6 G's at 100.5 msec

Acceleration (G's) CFC60

Min -23.5 G's at 31.2 msec



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4 December 2002

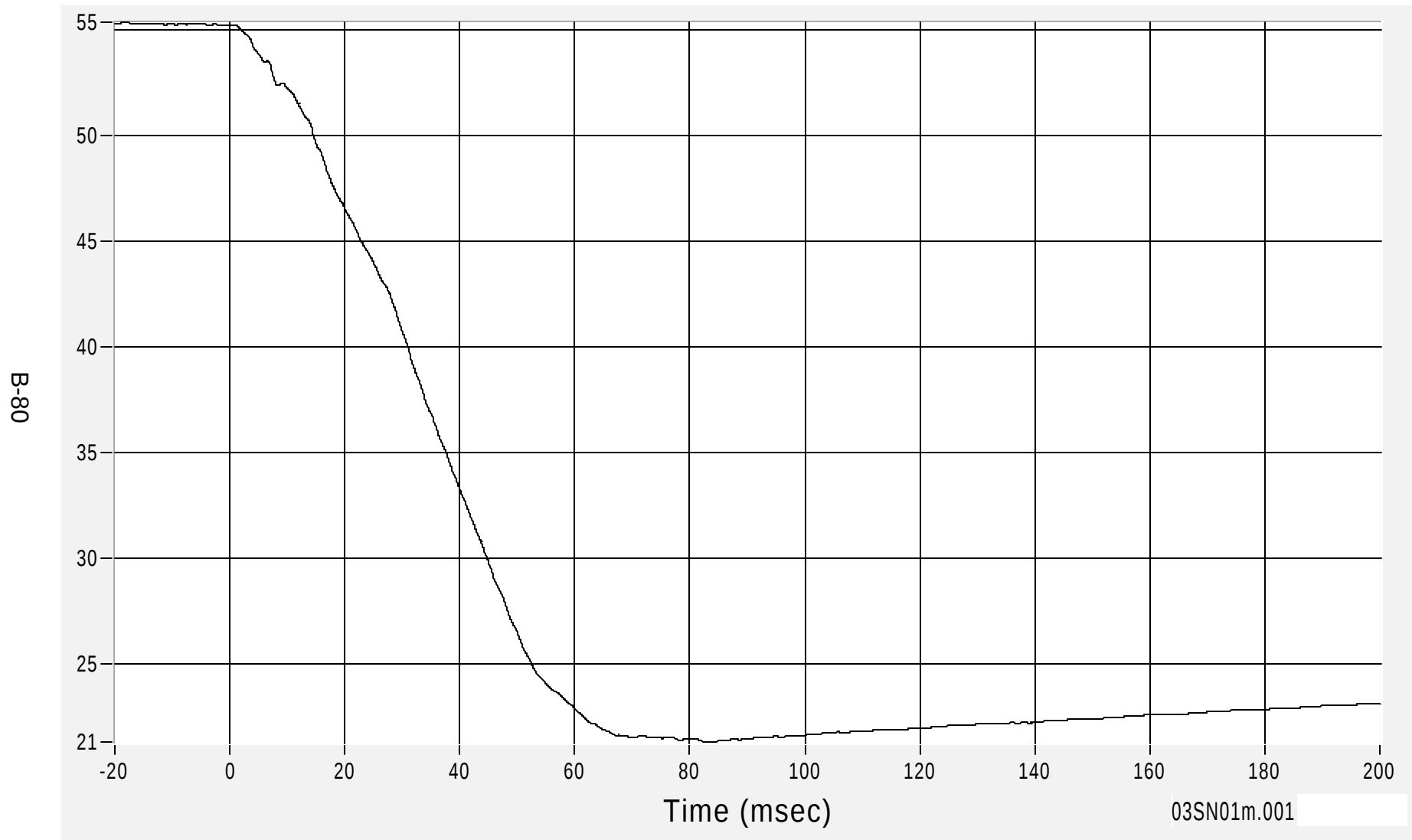
Medical College of Wisconsin
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MDB Center of Gravity (X) Velocity

Max 55.2 km/h at 0.6 msec

Min 21.3 km/h at 82.7 msec

Velocity (km/h) CFC180



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4 December 2002

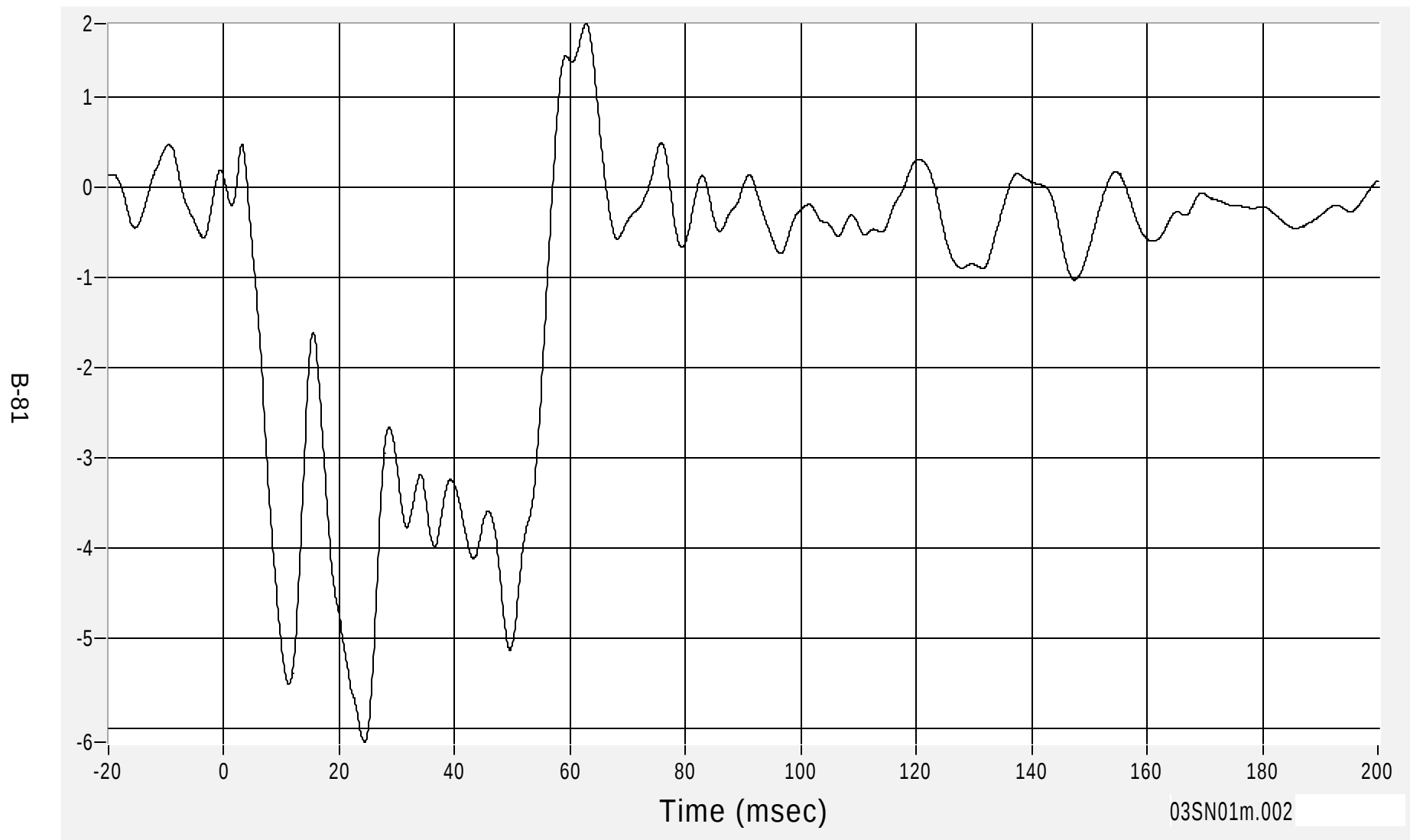
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

MDB Center of Gravity (Y) Acceleration

Max 1.8 G's at 62.8 msec

Acceleration (G's) CFC60

Min -6.2 G's at 24.4 msec



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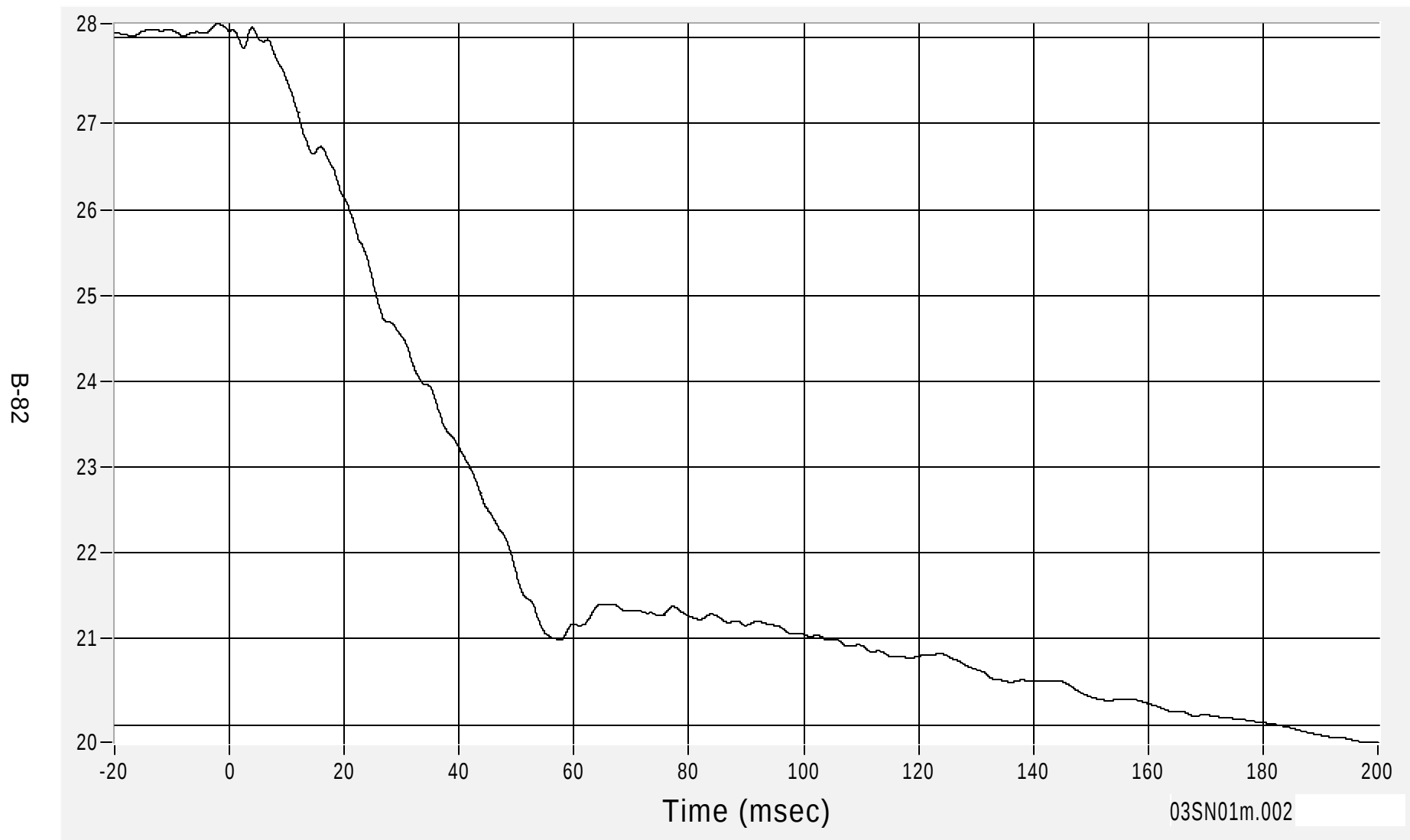
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Center of Gravity (Y) Velocity

Max 28.1 km/h at 3.9 msec

Velocity (km/h) CFC180

Min 19.8 km/h at 199.1 msec



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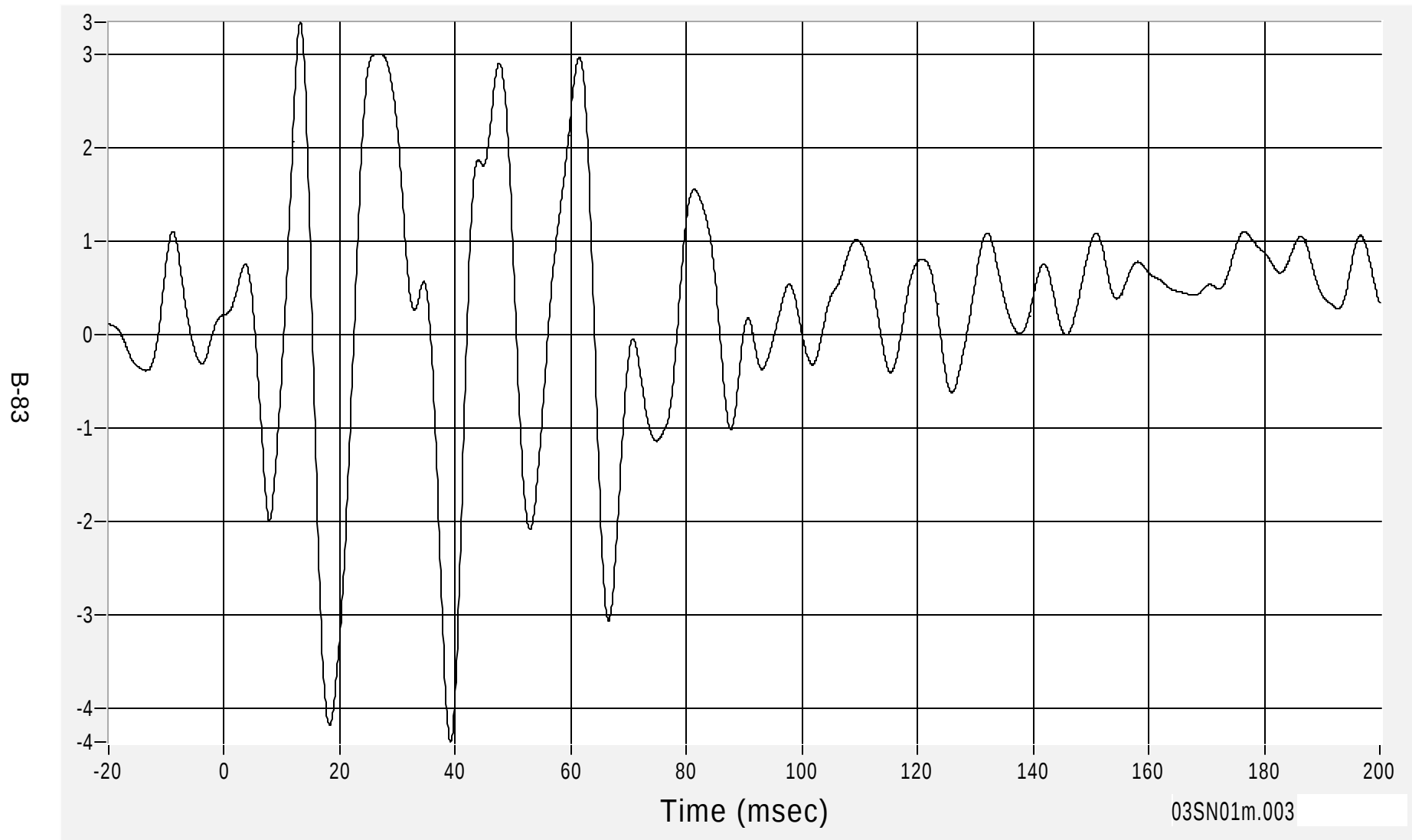
*Medical College of Wisconsin
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MDB Center of Gravity (Z) Acceleration

Max 3.3 G's at 13.2 msec

Acceleration (G's) CFC60

Min -4.4 G's at 39.1 msec



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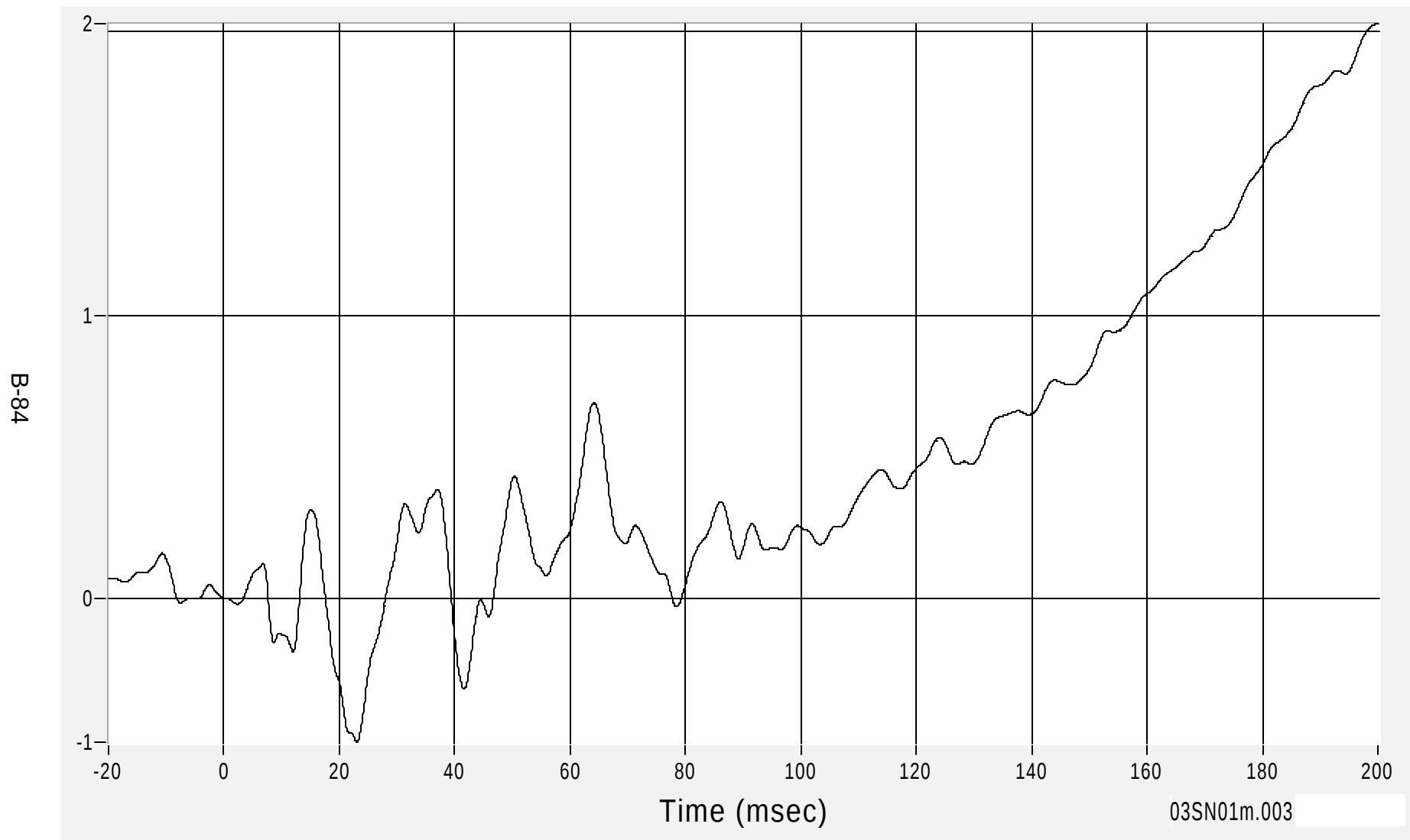
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

MDB Center of Gravity (Z) Velocity

Max 2.0 km/h at 199.9 msec

Velocity (km/h) CFC180

Min -0.5 km/h at 23.0 msec



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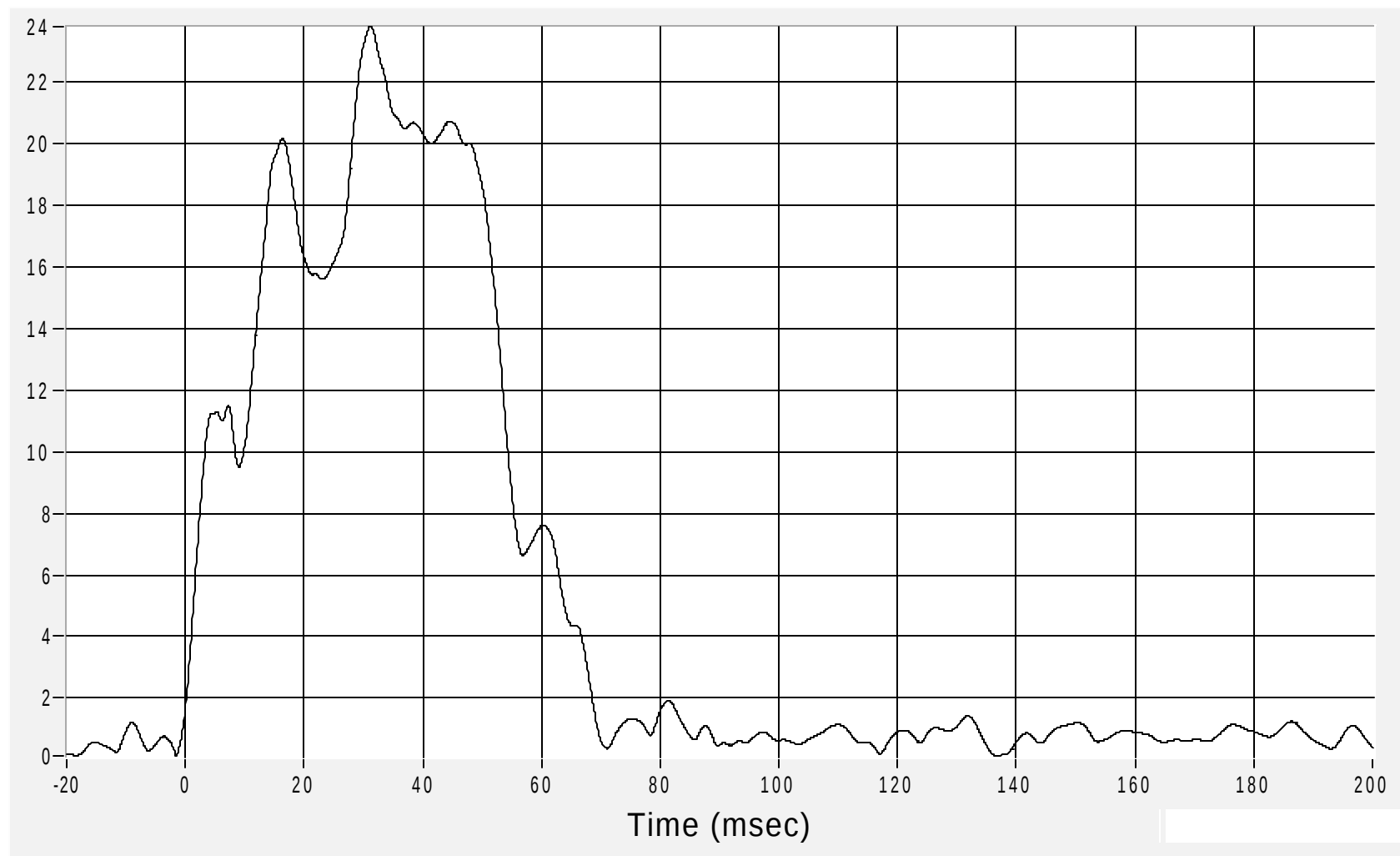
MDB Center of Gravity Resultant Acceleration

Acceleration (G's) CFC60

Max 23.8 G's at 31.2 msec

Min 0.1 G's at 136.6 msec

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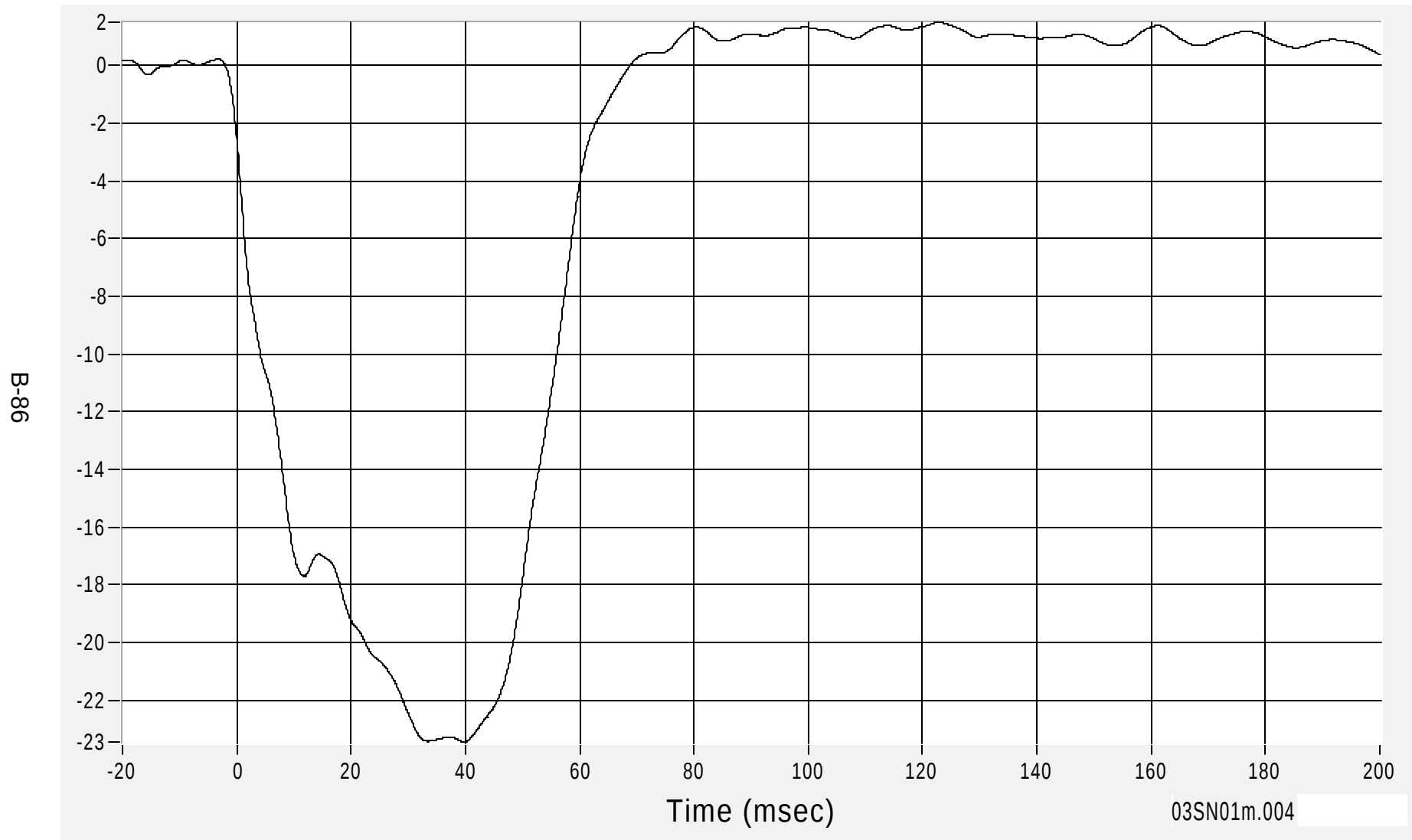
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (X) Acceleration

Max 1.5 G's at 122.9 msec

Acceleration (G's) CFC60

Min -23.4 G's at 39.8 msec



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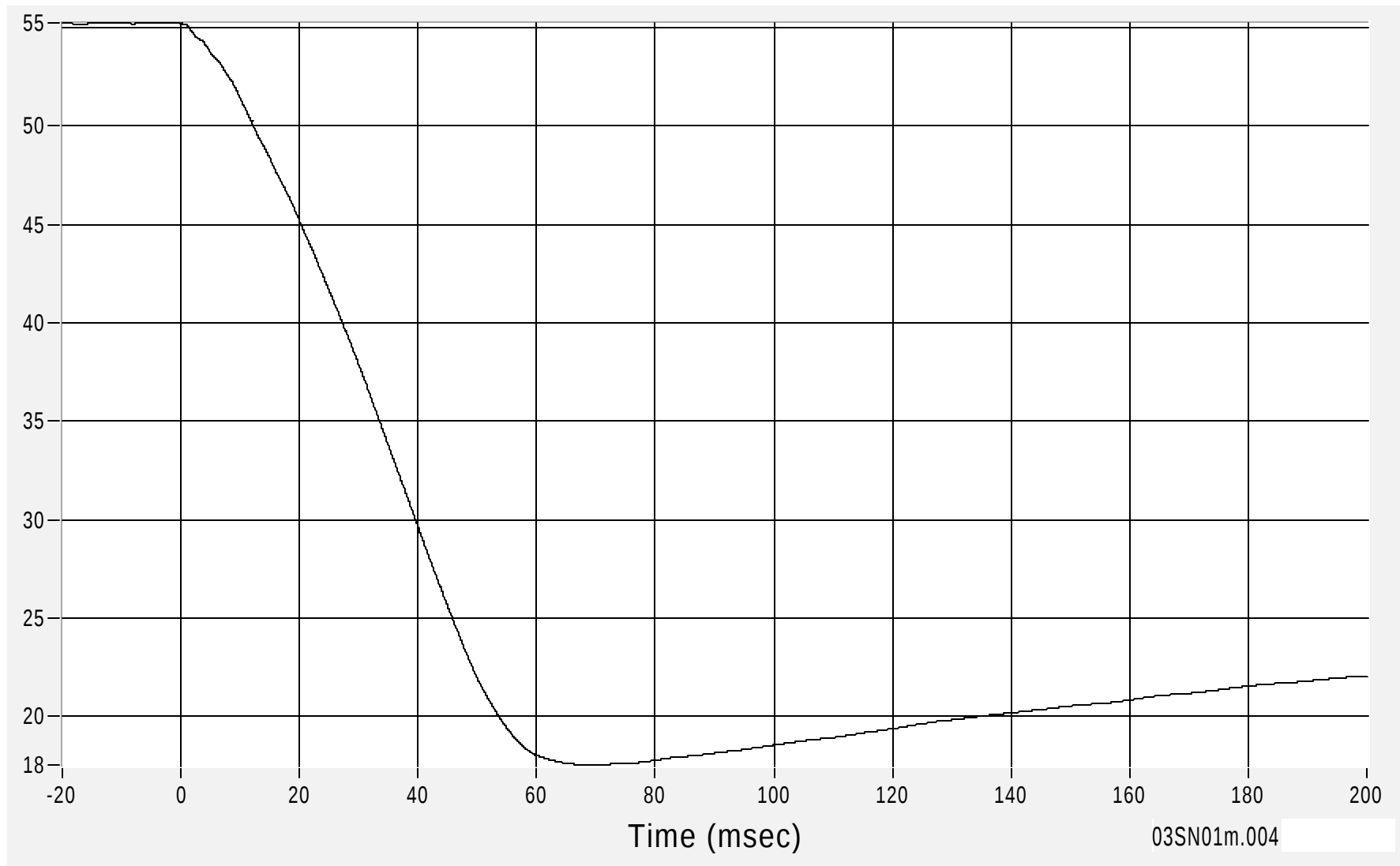
MDB Rear (X) Velocity

Velocity (km/h) CFC180

Max 55.2 km/h at 0.2 msec

Min 17.5 km/h at 68.8 msec

B-87



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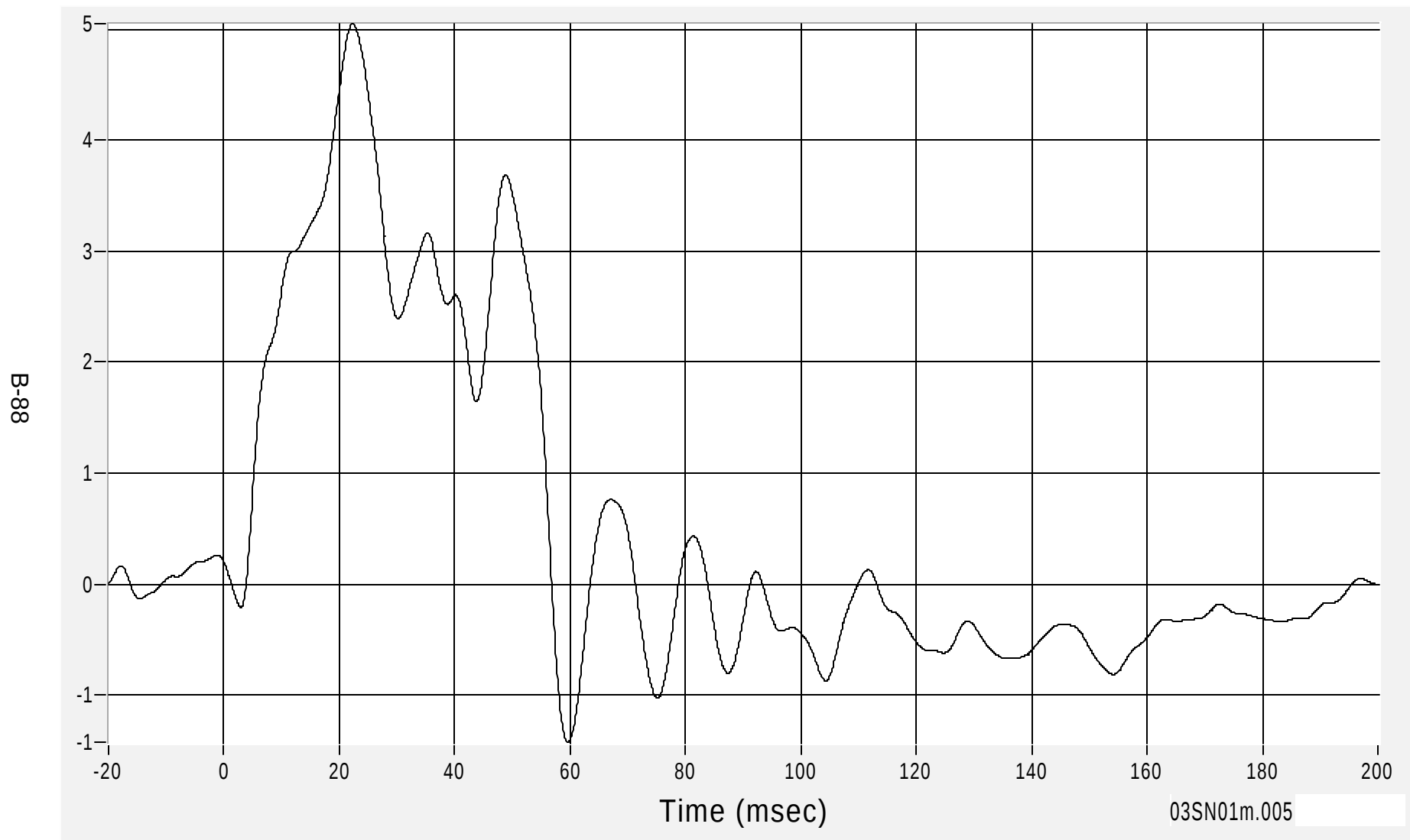
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (Y) Acceleration

Max 5.0 G's at 22.3 msec

Acceleration (G's) CFC60

Min -1.4 G's at 59.6 msec



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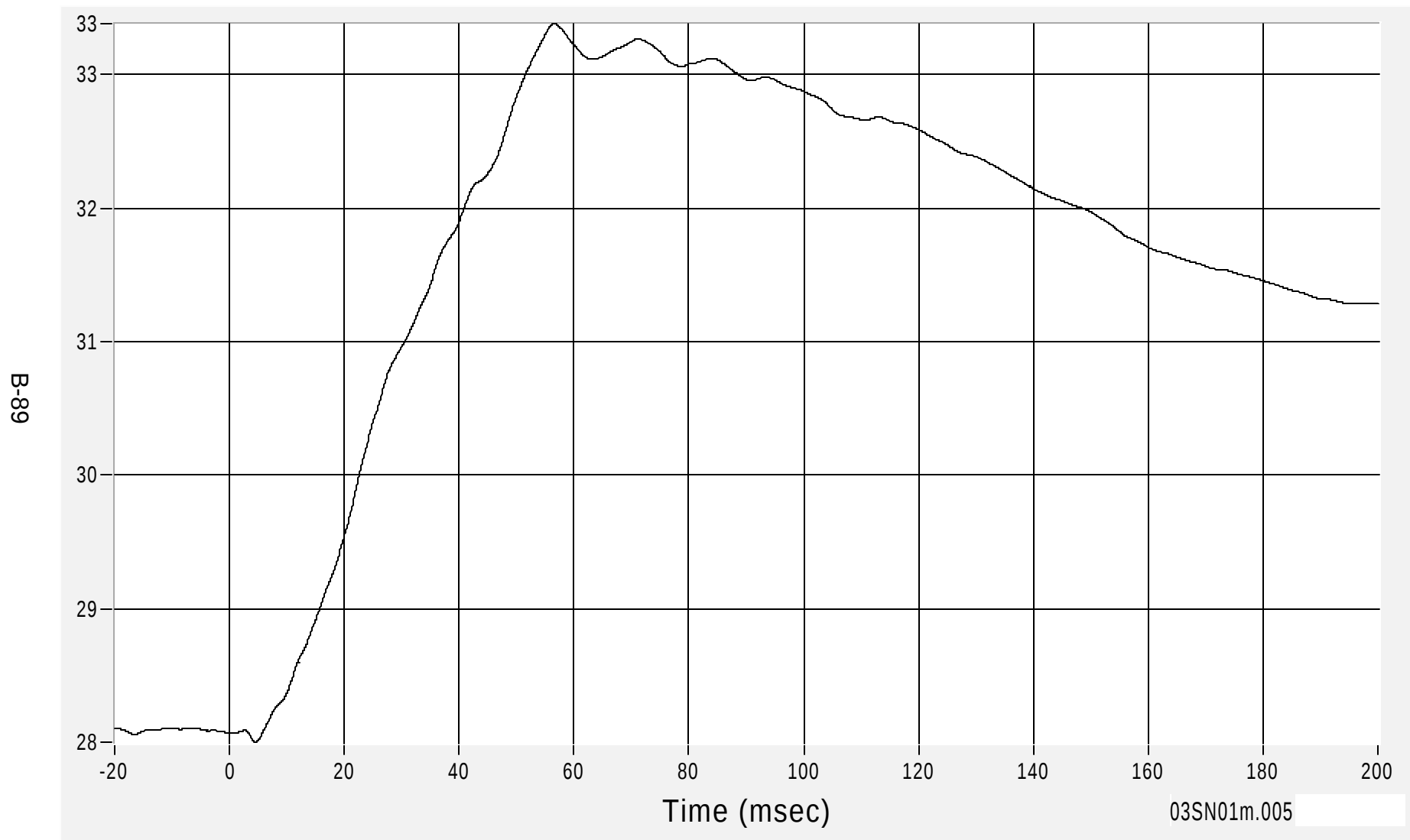
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (Y) Velocity

Max 33.4 km/h at 56.5 msec

Velocity (km/h) CFC180

Min 28.0 km/h at 4.6 msec



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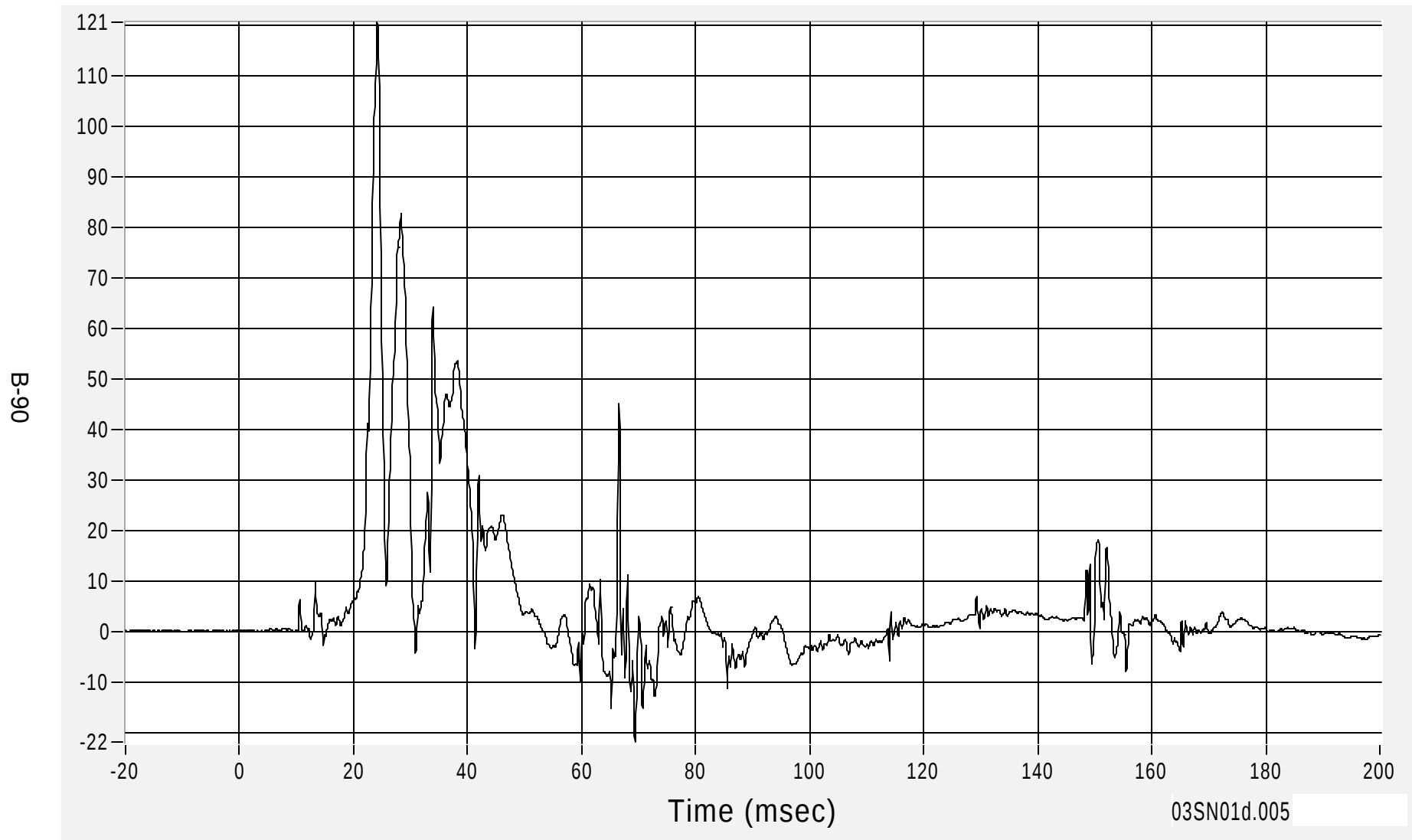
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Acceleration - Redundant

Max 120.6 G's at 24.2 msec

Min -22.0 G's at 69.4 msec

Acceleration (G's) CFC1000



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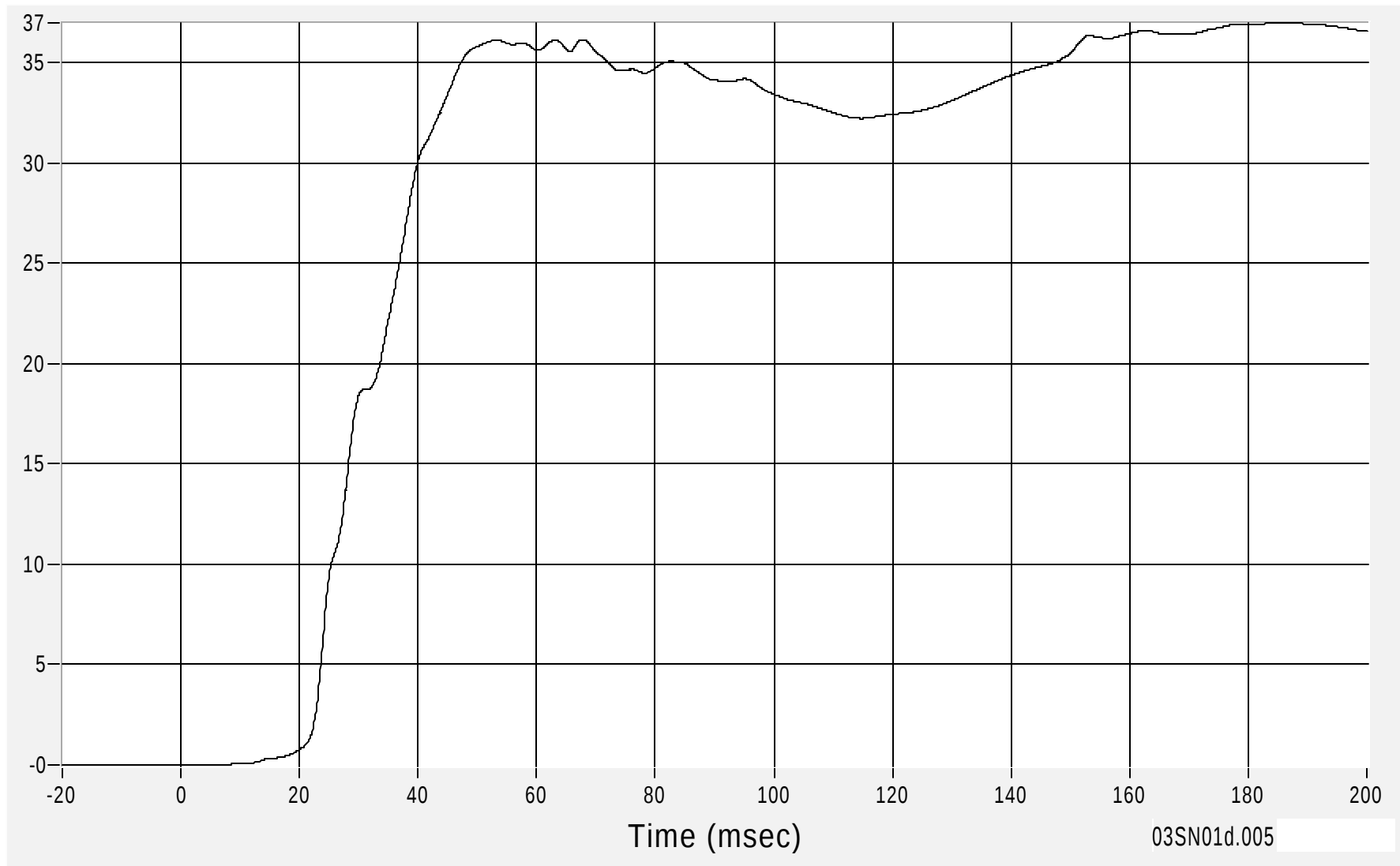
Driver Upper Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 37.0 km/h at 186.1 msec

Min 0.0 km/h at 4.2 msec

B-91



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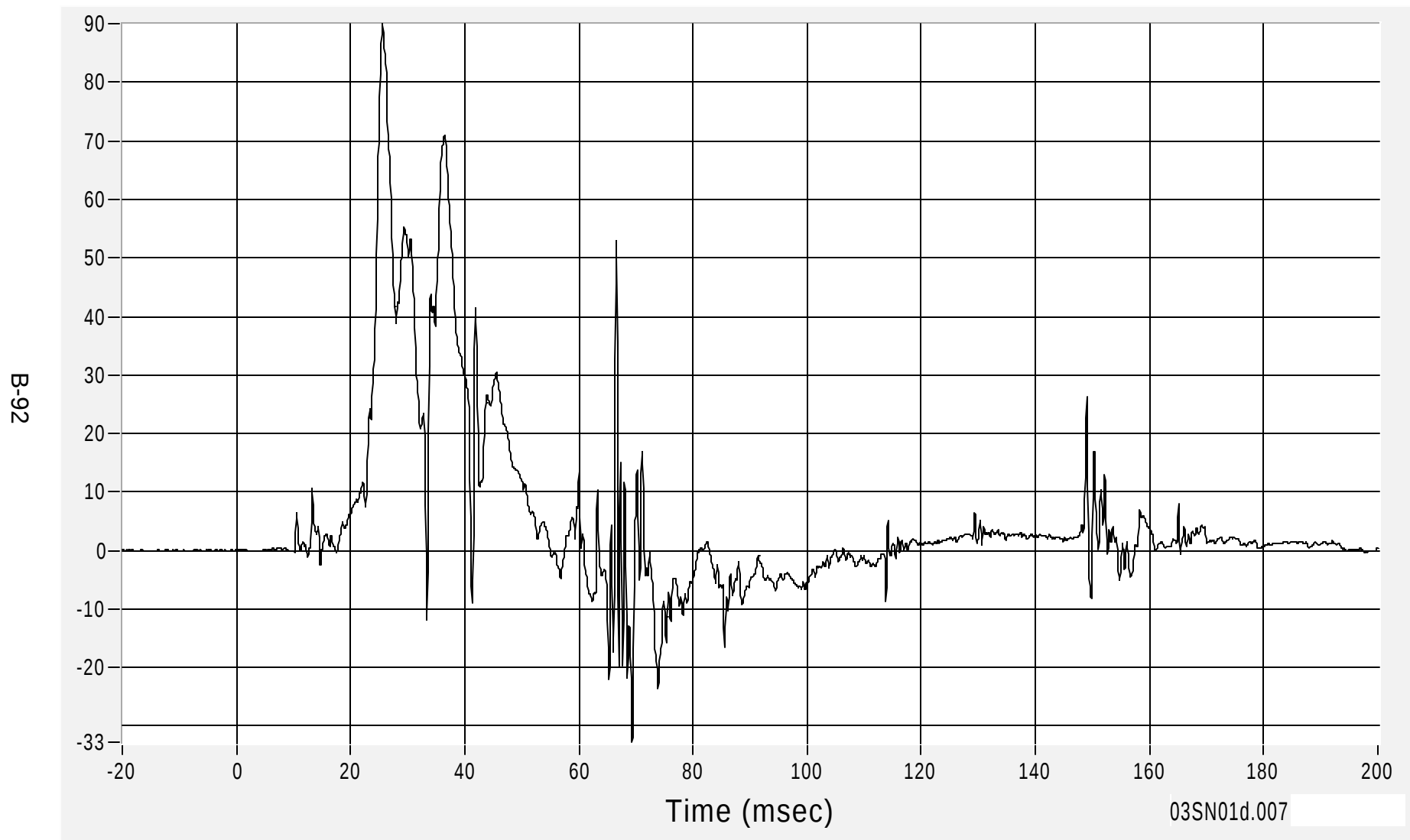
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Acceleration - Redundant

Max 90.0 G's at 25.6 msec

Acceleration (G's) CFC1000

Min -32.8 G's at 69.4 msec



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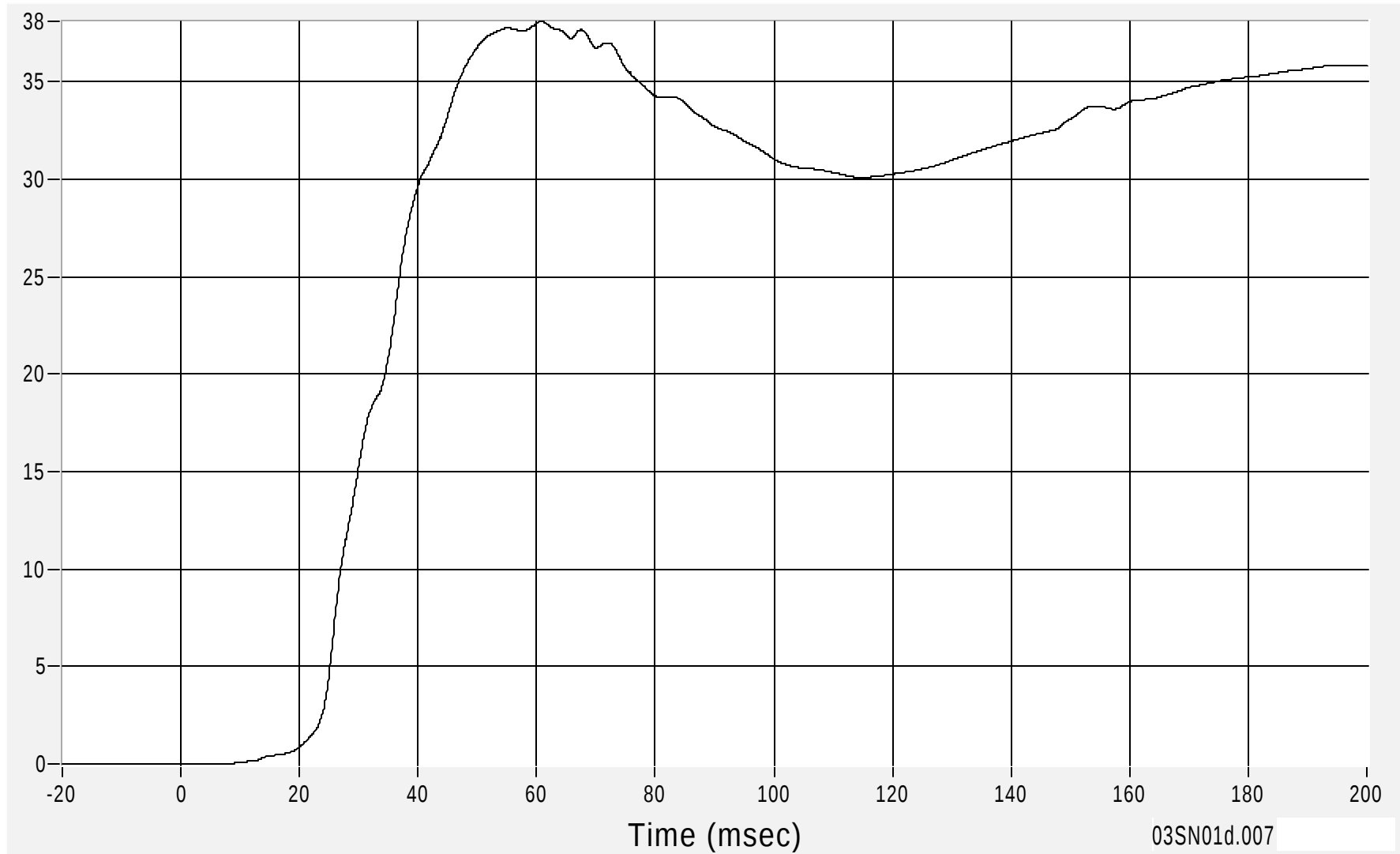
Driver Lower Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 38.1 km/h at 60.8 msec

Min 0.0 km/h at 0.0 msec

B-93



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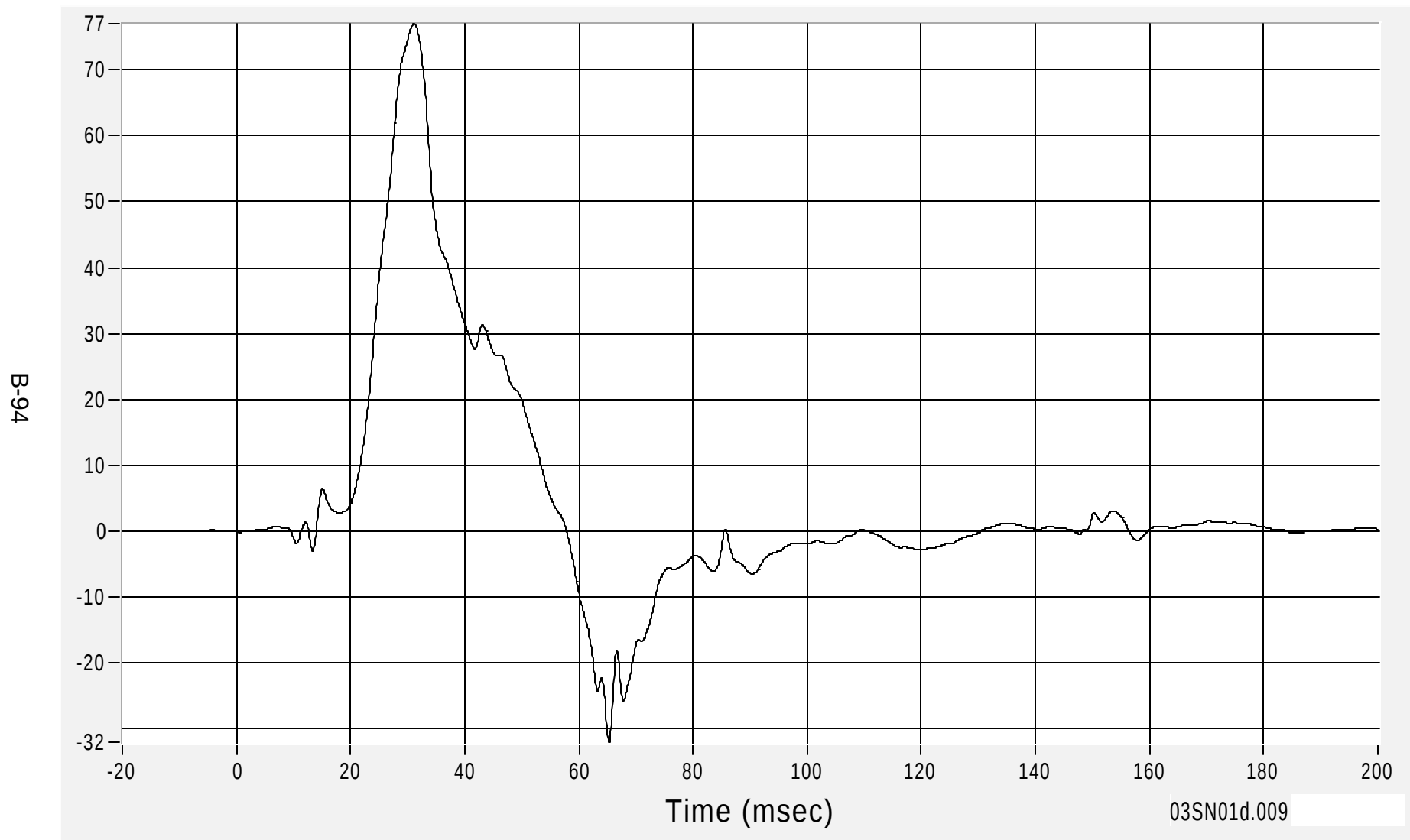
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Acceleration - Redundant

Max 77.0 G's at 31.1 msec

Acceleration (G's) CFC180

Min -32.0 G's at 65.3 msec



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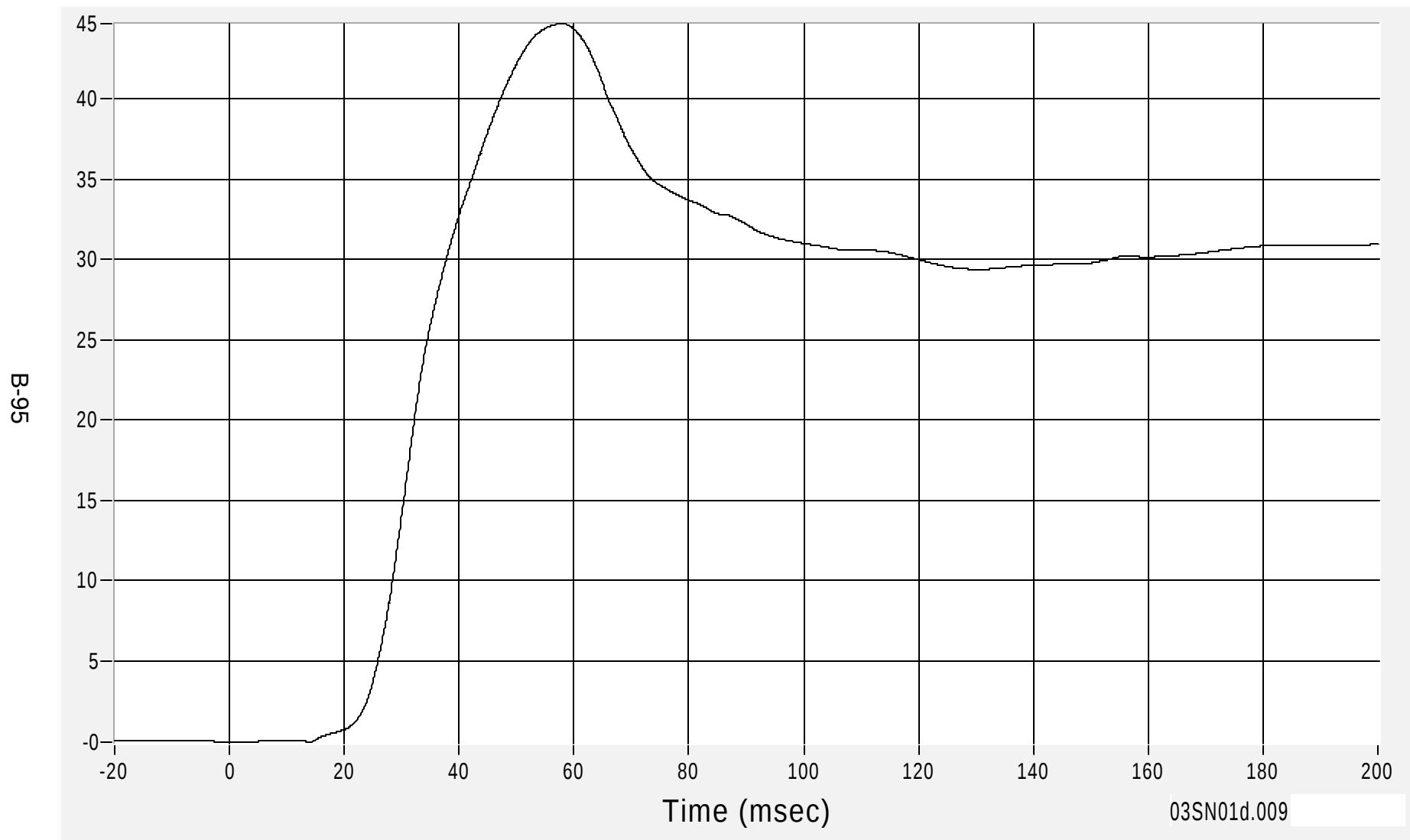
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Velocity - Redundant

Max 44.7 km/h at 57.8 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 14.0 msec



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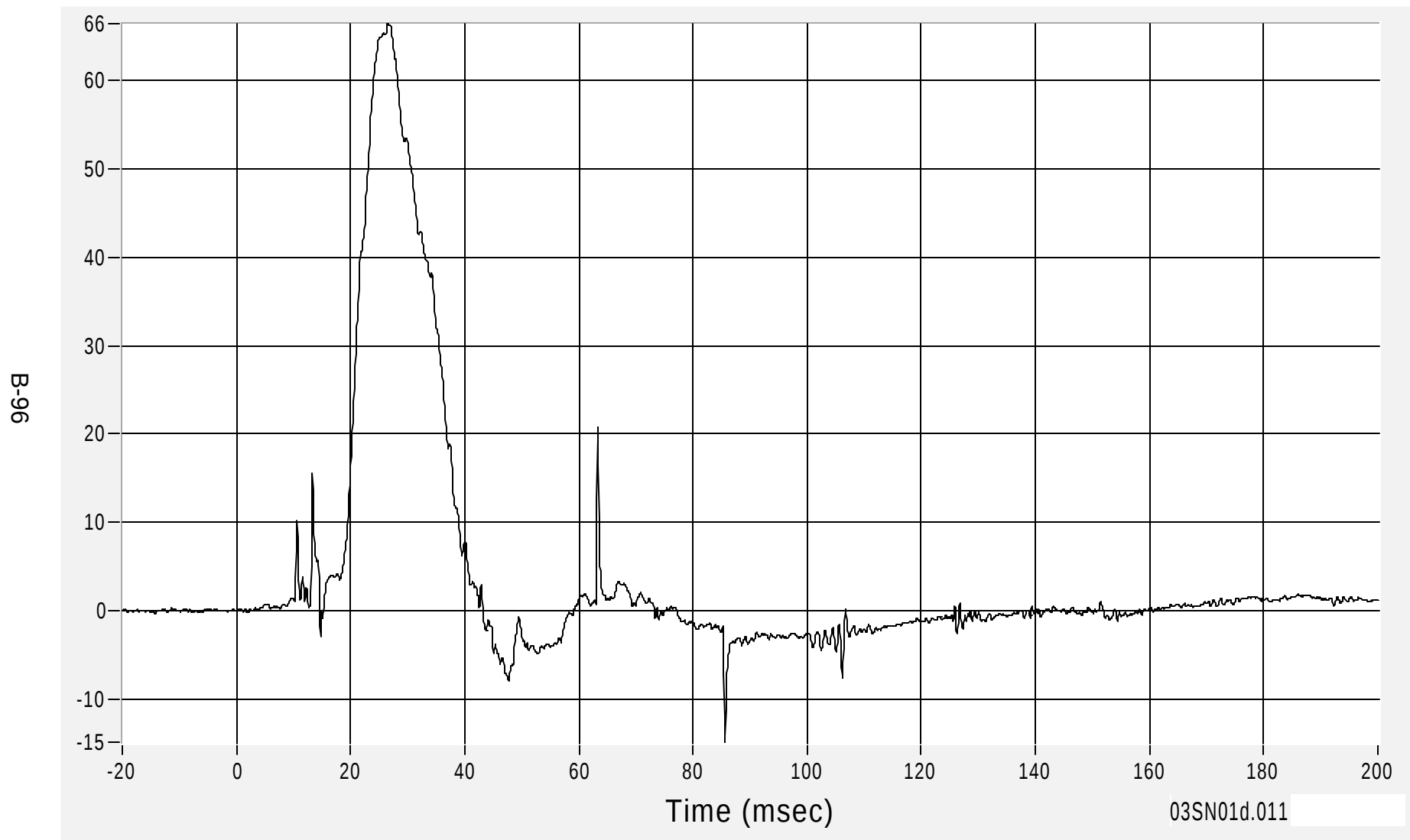
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) Acceleration - Redundant

Max 66.4 G's at 26.5 msec

Acceleration (G's) CFC1000

Min -14.8 G's at 85.6 msec



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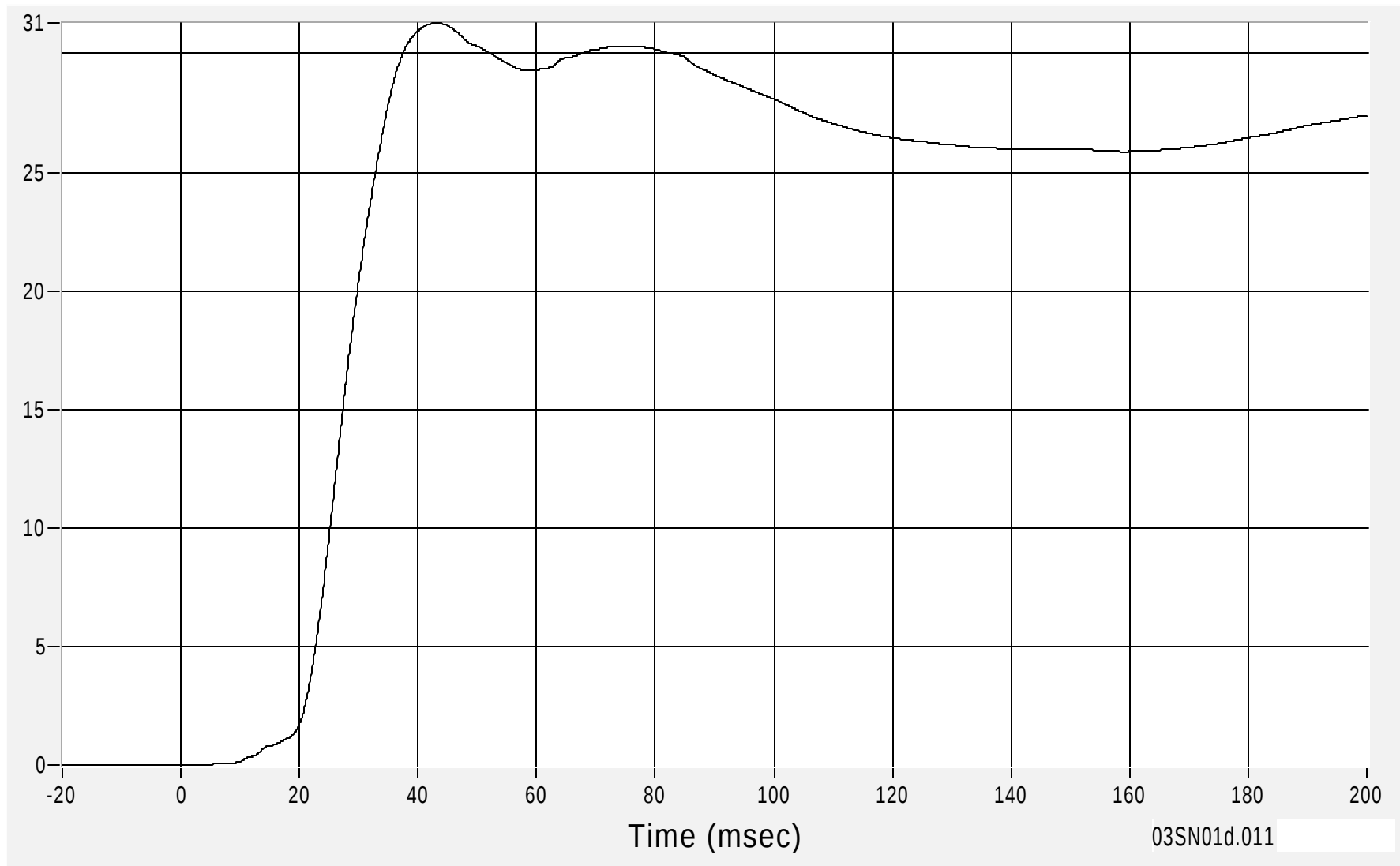
Driver Pelvic (Y) Velocity - Redundant

Max 31.3 km/h at 43.1 msec

Velocity (km/h) CFC180

Min 0.0 km/h at 0.0 msec

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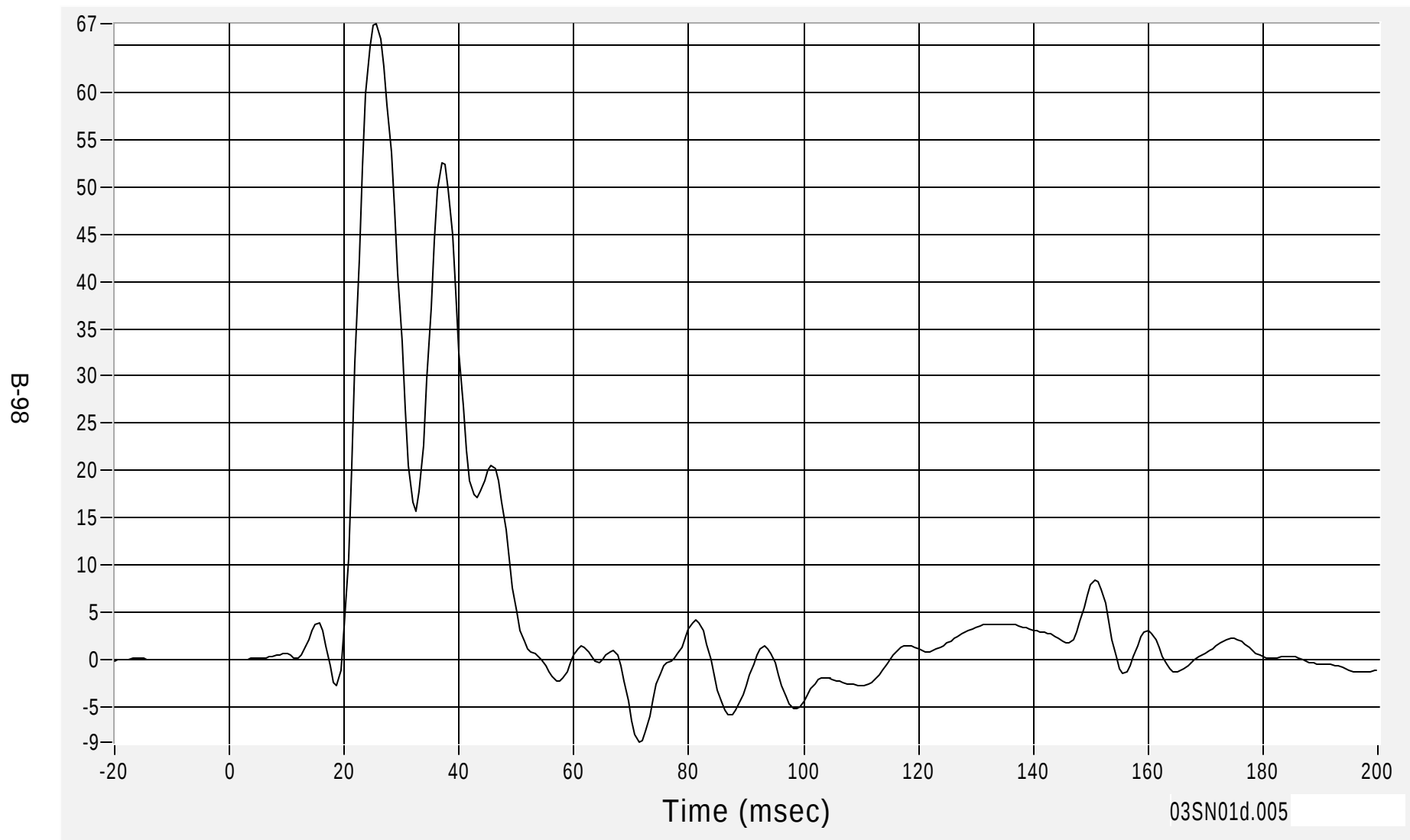
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Acceleration - Redundant

Max 67.3 G's at 25.6 msec

Acceleration (G's) FIR100

Min -8.8 G's at 71.2 msec



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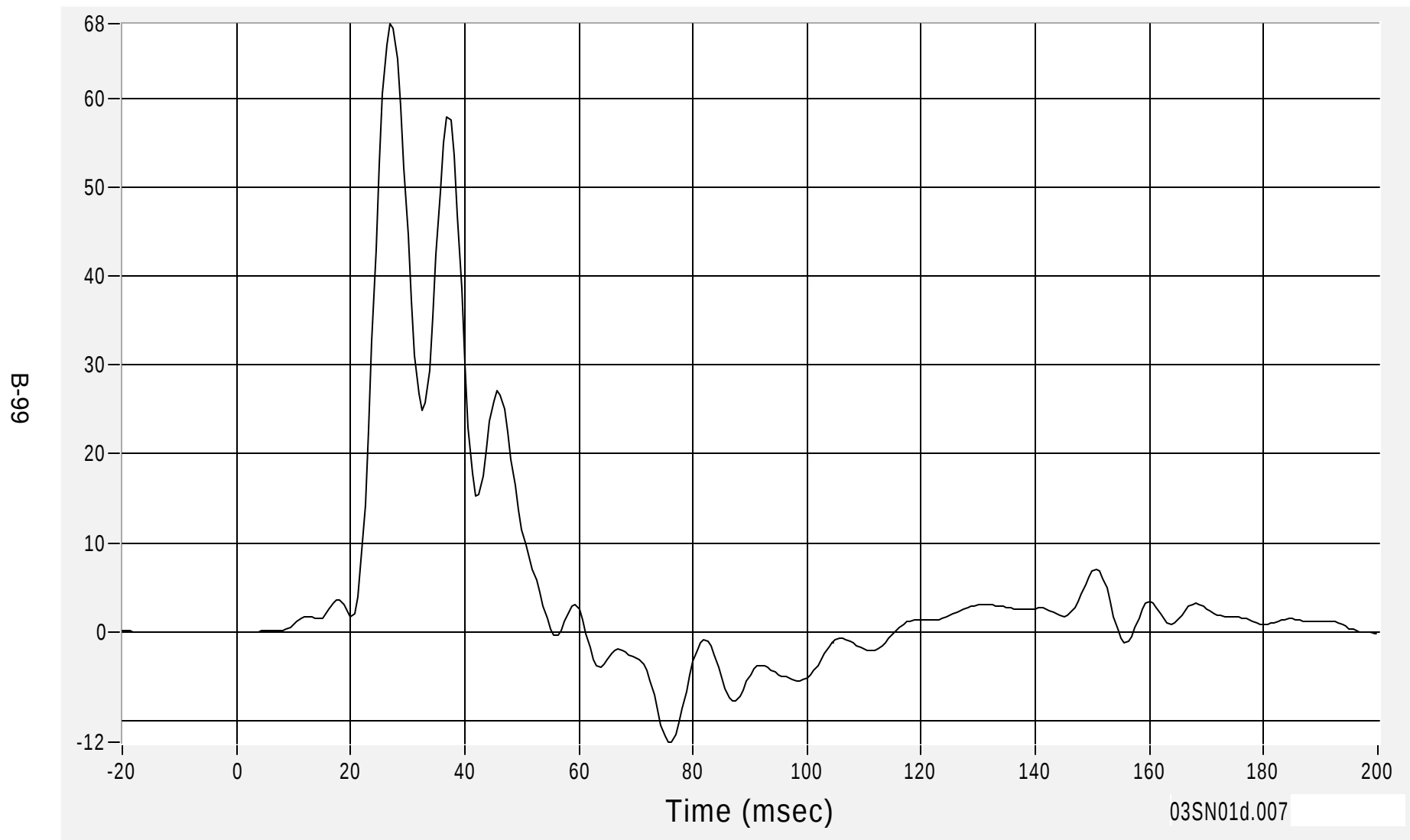
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Acceleration - Redundant

Max 68.4 G's at 26.9 msec

Acceleration (G's) FIR100

Min -12.4 G's at 75.6 msec



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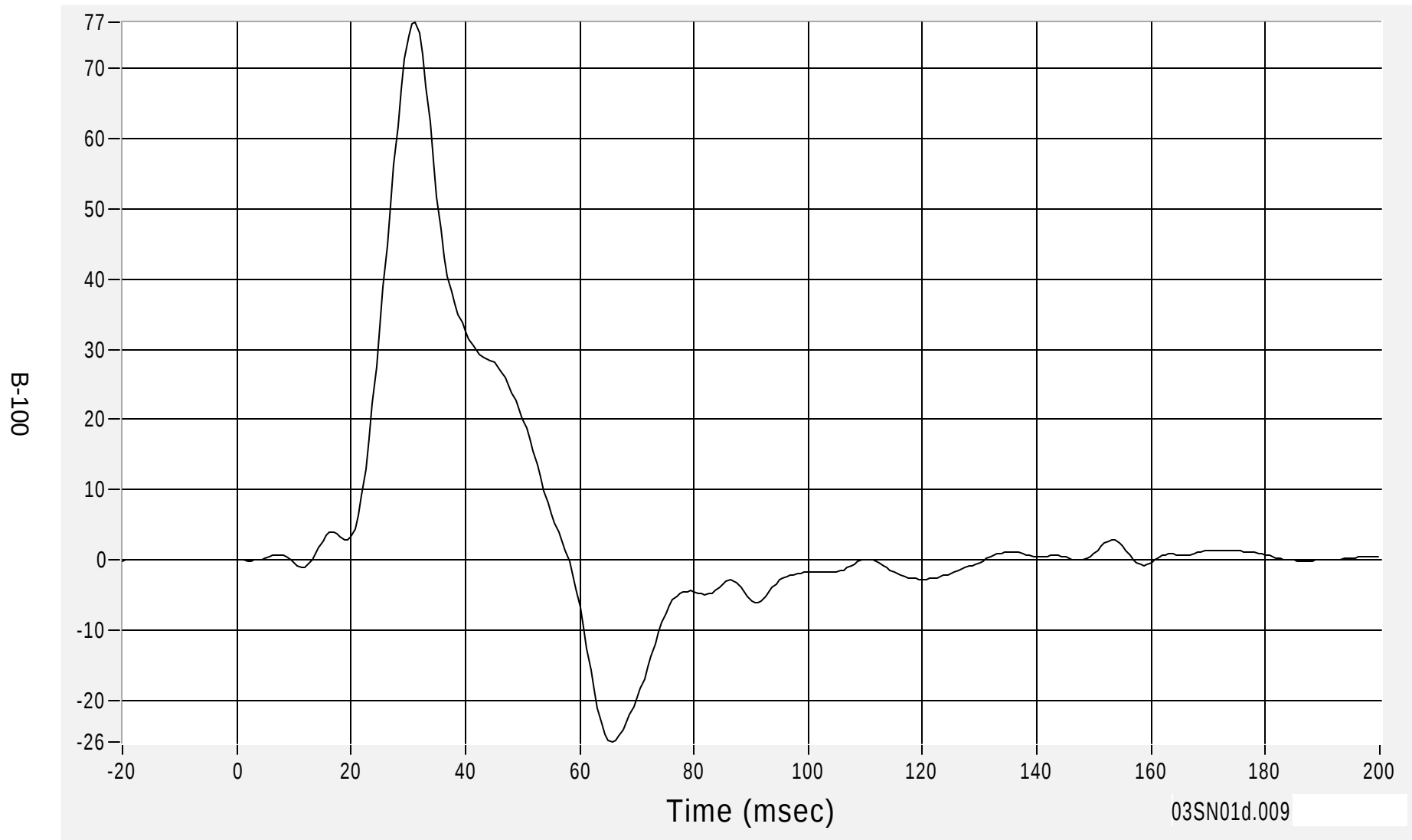
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Acceleration - Redundant

Max 76.6 G's at 31.2 msec

Min -26.0 G's at 65.6 msec

Acceleration (G's) FIR100



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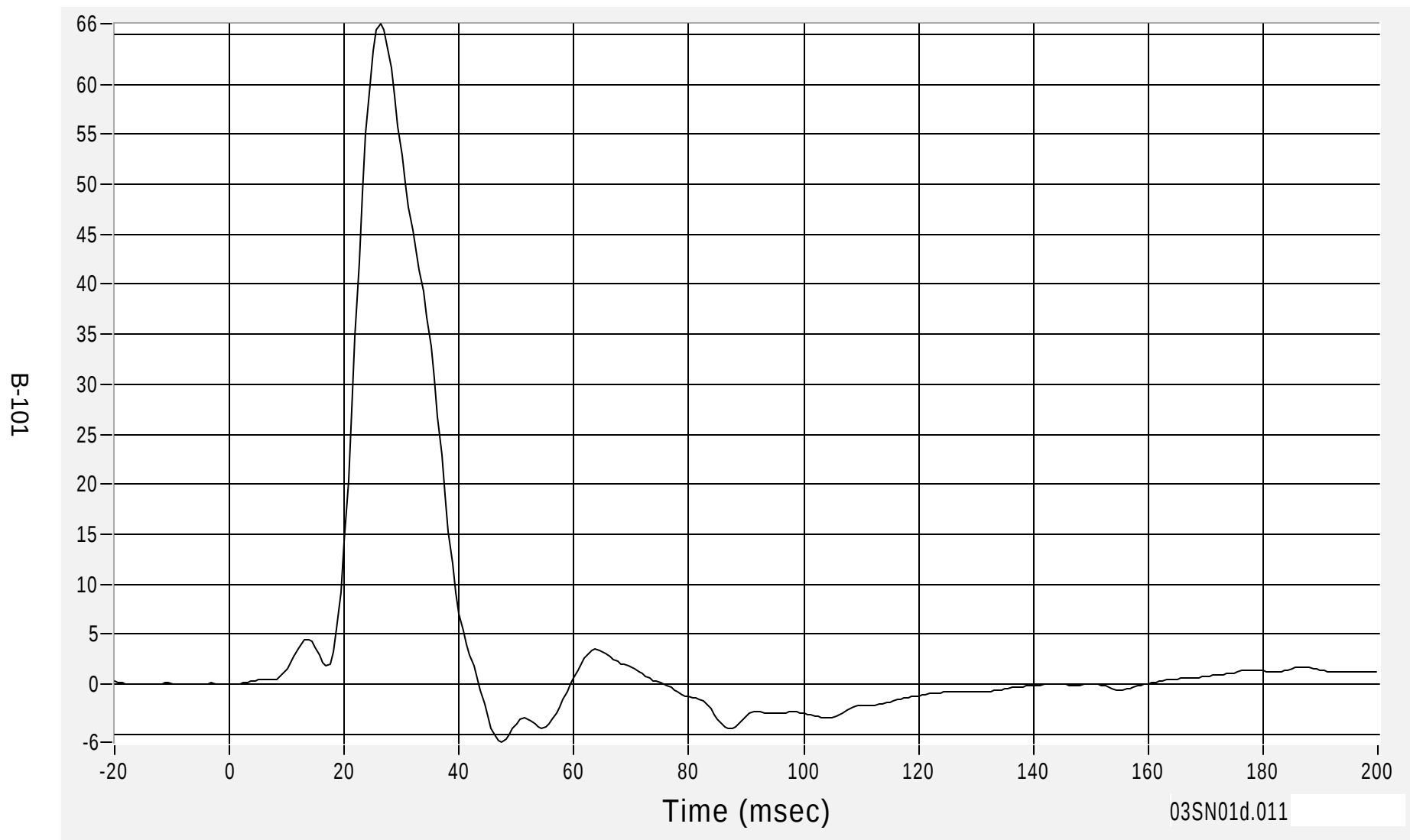
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) Acceleration - Redundant

Max 66.1 G's at 26.2 msec

Acceleration (G's) FIR100

Min -5.8 G's at 47.5 msec



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4 December 2002

Medical College of Wisconsin
Vehicle Crashworthiness Lab

APPENDIX C

SID CONFIGURATION AND VERIFICATION RESULTS

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VERIFICATION TEST RESULTS SUMMARY PRE AND POST TEST	Page No.
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	C-5

**VERIFICATION TEST RESULTS SUMMARY
PRE AND POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID HII Serial Number 058

Test Sequences 01 and 02

TEST	PRE		POST	
	COMMENTS	BY	COMMENTS	BY
EXTERNAL DIMENSIONS	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
THORACIC SHOCK ABSORBER TEST	Pass all requirements	John Humm	-	-
LATERAL THORAX IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL PELVIS IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
ABDOMINAL COMPRESSION	Pass all requirements	John Humm	-	-
LUMBAR FLEXION	Pass all requirements	Mark Meyer	-	-
HYBRID III LATERAL NECK TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL HEAD DROP	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer

SUMMARY
SID PRE AND POST VERIFICATION

CONFIGURED FOR LEFT SIDE IMPACT

SID HIII Serial Number 058

Test Sequences

01 and 02

TEST PARAMETER	SPECIFICATION	SID HIII/058		N/A	
		PRE	POST	PRE	POST
MEASUREMENTS					
Date	-	26Nov02	16Dec02	N/A	N/A
Sequential Test Number	-	01	02	N/A	N/A
Temperature (°C)	18.9-25.5	21.5	19.6	N/A	N/A
Relative Humidity (%)	10-70	19.2	25.8	N/A	N/A
SH – Seated Height (mm)	889-909	901	904	N/A	N/A
RH – Rib Height (mm)	501-521	505	511	N/A	N/A
HP – Hip Pivot Height (mm)	99	99/99	99/99	N/A	N/A
RD – Rib From Back Line (mm)	229-241	230	233	N/A	N/A
KH – Knee Pivot from Back Line (mm)	511-526	518/523	525/523	N/A	N/A
KV – Knee Pivot to Floor (mm)	490-505	497/497	498/499	N/A	N/A
HW – Hip Width (mm)	356-391	358	357	N/A	N/A
THORAX IMPACTS					
Date	-	26Nov02	16Dec02	N/A	N/A
Sequential Test Number	-	01	02	N/A	N/A
Temperature (°C)	18.9-25.5	21.5	19.6	N/A	N/A
Relative Humidity (%)	10-70	19.2	25.8	N/A	N/A
Probe Speed (m/s)	4.21-4.33	4.27	4.27	N/A	N/A
Upper Rib Acceleration (G)	37-46	45.8	41.6	N/A	N/A
Lower Rib Acceleration (G)	37-46	43.3	41.0	N/A	N/A
Lower Spine Acceleration (G)	15-22	19.5	19.3	N/A	N/A
PELVIS IMPACTS					
Date	-	27Nov02	16Dec02	N/A	N/A
Sequential Test Number	-	01	02	N/A	N/A
Temperature (°C)	18.9-25.5	22.7	19.6	N/A	N/A
Relative Humidity (%)	10-70	23.0	25.8	N/A	N/A
Probe Speed (m/s)	4.21-4.33	4.29	4.30	N/A	N/A
Pelvis Acceleration (G)	40-60	42.0	40.7	N/A	N/A
THORACIC SHOCK ABSORBER					
Shock Absorber ID Number	-	03130164	-	N/A	-
Damper Setting	1-10	5	-	N/A	-
Date	-	11Nov02		N/A	-
Sequential Test Number	-	01		N/A	-
Temperature	18.9-25.5	23.1	-	N/A	-
Relative Humidity	10-70	18.9	-	N/A	-
Probe Speed (m/s) Low	3.05	3.05	-	N/A	-
Force (N)	836 – 1125	929.5	-	N/A	-
Displacement (mm)	30 – 35	30.6	-	N/A	-
Probe Speed (m/s) Middle	4.27	4.27	-	N/A	-
Force (N)	1730 – 2099	34.3	-	N/A	-
Displacement (mm)	32 – 37	1745.5	-	N/A	-
Probe Speed (m/s) High	6.10	6.10	-	N/A	-
Force (N)	3741 – 4448	36.0	-	N/A	-
Displacement (mm)	33 - 40	4026.9	-	N/A	-

TEST PARAMETER	SPECIFICATION	SID HIII/058		N/A	
		PRE	POST	PRE	POST
ABDOMINAL COMPRESSION					
Date	-	12Nov02	-	N/A	-
Sequential Test Number	-	01	-	N/A	-
Temperature (°C)	18.9-25.5	24.2	-	N/A	-
Relative Humidity (%)	10-70	27.6	-	N/A	-
Force at 13 mm (N)	104-162	114.6	-	N/A	-
Force at 19 mm (N)	163-221	163.1	-	N/A	-
Force at 25 mm (N)	222-280	233.8	-	N/A	-
Force at 33 mm (N)	325-391	362.3	-	N/A	-
LUMBAR FLEXION					
Date	-	12Nov02	-	N/A	-
Sequential Test Number	-	01	-	N/A	-
Temperature (°C)	18.9-25.5	24.2	-	N/A	-
Relative Humidity (%)	10-70	27.6	-	N/A	-
Force at 0° (N)	0-26.7	0	-	N/A	-
Force at 0° (N)	97.8-151.2	103	-	N/A	-
Force at 0° (N)	151.2-204.6	166	-	N/A	-
Force at 0° (N)	204.6-258	217	-	N/A	-
Return Angle	12° Maximum	3.2	-	N/A	-
HYBRID III LATERAL NECK					
Date	-	13Nov02	11Dec02	N/A	N/A
Sequential Test Number	-	01	02	N/A	N/A
Temperature (°C)	18.9-25.5	20.2	21.5	N/A	N/A
Relative Humidity (%)	10-70	27.5	10.3	N/A	N/A
Pendulum Speed (m/s)	6.89-7.13	7.05	7.05	N/A	N/A
Pendulum Pulse 10ms (m/s)	1.96-2.55	2.19	1.99	N/A	N/A
Pendulum Pulse 20ms (m/s)	4.12-5.10	4.69	4.29	N/A	N/A
Pendulum Pulse 30ms (m/s)	5.73-7.01	6.99	6.34	N/A	N/A
Pendulum Pulse 40 –70 ms (m/s)	6.27-7.64	7.21	7.34	N/A	N/A
Max Head rotation (deg)	64-78	70.9	65.4	N/A	N/A
Head angle crosses zero (ms)	50-70	56.7	50.7	N/A	N/A
Peak Moment (Nm)	88-108	100.7	100.3	N/A	N/A
Moment crosses zero (ms)	40-60	50.6	44.8	N/A	N/A
Max rotation wrt peak moment (ms)	0-20	6.2	5.6	N/A	N/A
HYBRID III LATERAL HEAD DROP					
Date	-	10Nov02	10Dec02	N/A	N/A
Sequential Test Number	-	01	02-	N/A	N/A
Temperature (°C)	18.9-25.5	21.4	21.2	N/A	N/A
Relative Humidity (%)	10-70	23.3	13.5	N/A	N/A
Resultant Max (G)	120-150	145.8	140.9	N/A	N/A
Longitudinal Max (G)	<15	14.2	13.4	N/A	N/A

**DUMMY INSPECTION LIST
PRE AND POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID HIII Serial Number 058

Test Sequences

01 and 02

		SID HIII/058	
		PRE	POST
	Date	29Nov02	17Dec02
	Performed By	Mark Meyer	Mark Meyer
PART	INSPECTION	Pass	Pass
Skin	Visual	Pass	Pass
Head	Visual, Ballast, Accelerometer Mount	Pass	Pass
Neck	Visual and Palpated, Cable Torque	Pass	Pass
Spine Box	Visual, Ballast, Weldment, Accelerometer Mount	Pass	Pass
Rib Cage	Visual, Palpated, Measured, Stiffness	Pass	Pass
Sternum	Visual	Pass	Pass
Lumbar Spine	Visual	Pass	Pass
Abdomen	Visual	Pass	Pass
Pelvis	Visual, Palpated, Accelerometer Mount	Pass	Pass
Upper Legs	Visual	Pass	Pass
Knees	Visual, Stops, Inserts	Pass	Pass
Lower Legs	Visual, Range of Motion	Pass	Pass
Ankles	Visual, Range of Motion	Pass	Pass
Feet	Visual, Range of Motion	Pass	Pass
Joints	1 to 2 G Range	Pass	Pass
Other		None	None

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

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SID INSTRUMENTATION

FRONT SID HIII NO. 058

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD X ACCELERATION	J35641	ENDEVCO	01Nov02
HEAD Y ACCELERATION	J19089	ENDEVCO	05Nov02
HEAD Z ACCELERATION	J34364	ENDEVCO	05Nov02
SIX AXIS UPPER NECK LOAD CELL (FX, FY, FZ, MX, MY, MZ)	0452	DENTON ATD	18Nov02
UPPER RIB ACCELERATION	J36031	ENDEVCO	04Nov02
LOWER RIB ACCELERATION	J35932	ENDEVCO	06Nov02
LOWER SPINE ACCELERATION	J21552	ENDEVCO	05Nov02
PELVIS ACCELERATION	J35937	ENDEVCO	04Nov02
UPPER RIB REDUNDANT ACCELERATION	J18553	ENDEVCO	01Nov02
LOWER RIB REDUNDANT ACCELERATION	J36616	ENDEVCO	05Nov02
LOWER SPINE REDUNDANT ACCELERATION	J35839	ENDEVCO	04Nov02
PELVIS REDUNDANT ACCELERATION	J32565	ENDEVCO	15Nov02

VEHICLE INSTRUMENTATION

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL X	P13846	ENDEVCO	15Nov02
RIGHT FRONT SILL Y	P22230	ENDEVCO	14Nov02
RIGHT FRONT SILL Z	P13725	ENDEVCO	14Nov02
RIGHT REAR SILL X	P22993	ENDEVCO	06Nov02
RIGHT REAR SILL Y	P23582	ENDEVCO	15Nov02
RIGHT REAR SILL Z	P21820	ENDEVCO	06Nov02
REAR FLOORPAN ABOVE AXLE X	P13837	ENDEVCO	14Nov02
REAR FLOORPAN ABOVE AXLE Y	P22521	ENDEVCO	15Nov02
REAR FLOORPAN ABOVE AXLE Z	P22239	ENDEVCO	14Nov02
LEFT REAR SILL Y	P22313	ENDEVCO	14Nov02
LEFT FRONT SILL Y	P12825	ENDEVCO	15Nov02
LEFT FRONT DOOR CENTERLINE Y	98F98E11-K07	ENTRAN	15Nov02
RIGHT REAR OCCUPANT COMP Y	P23414	ENDEVCO	14Nov02
MID-REAR OF LEFT FRONT DOOR Y	N/A	N/A	N/A
LEFT FRONT DOOR UPPER C/L Y	98F98D06-F05	ENTRAN	15Nov02
MID-REAR OF LEFT REAR DOOR Y	N/A	N/A	N/A
LEFT REAR DOOR UPPER C/L Y	N/A	N/A	N/A
LEFT LOWER B-PILLAR Y	P22283	ENDEVCO	15Nov02
LEFT MIDDLE B-PILLAR Y	P22321	ENDEVCO	14Nov02
LEFT LOWER A-PILLAR Y	P13836	ENDEVCO	14Nov02
LEFT UPPER A-PILLAR	P12931	ENDEVCO	15Nov02
FRONT SEAT TRACK Y	P12746	ENDEVCO	14Nov02
REAR SEAT TRACK Y	N/A	N/A	N/A
VEHICLE CG X	P13598	ENDEVCO	14Nov02
VEHICLE CG Y	P13868	ENDEVCO	15Nov02
VEHICLE CG Z	P13869	ENDEVCO	14Nov02

MDB INSTRUMENTATION

MDB CG X	P22322	ENDEVCO	14Nov02
MDB CG Y	P21151	ENDEVCO	27Nov02
MDB CG Z	98B98A26-D10	ENTRAN	14Nov02
MDB REAR FRAME MEMBER X	P22350	ENDEVCO	27Nov02
MDB REAR FRAME MEMBER Y	P22978	ENDEVCO	27Nov02