

**Report Number: 214-TRC-03-012**

**Safety Compliance Testing For FMVSS 214**

**Side Impact Protection**

**Indicant**

**Toyota Motor Corporation  
2004 Lexus RX330 MPV**

**NHTSA Number: C45101**

**Transportation Research Center Inc.**

**10820 State Route 347**

**P. O. Box B-67**

**East Liberty, OH 43319**



**Test Date: September 24, 2003**

**Final Report: October 7, 2003**

**U. S. Department Of Transportation  
National Highway Traffic Safety Administration**

**Enforcement**

**Office of Vehicle Safety Compliance**

**400 Seventh Street, S. W.**

**Room No. 6111 (NVS-220)**

**Washington, DC 20590**

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16. Abstract <p>This 56/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2004 Lexus RX330 MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifies) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on September 24, 2003.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 km/h, and the ambient temperature at the struck (Driver's side) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 296 mm at Level 3.</p> <p>The test or target vehicle's performance is given below (with FIR filter):</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Front SID HIII</u></th> <th></th> <th style="text-align: center;"><u>Rear SID HIII</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;"><u>27.2</u></td> <td>g's</td> <td style="text-align: center;"><u>58.2</u></td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;"><u>31.4</u></td> <td>g's</td> <td style="text-align: center;"><u>53.9</u></td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;"><u>28.4</u></td> <td>g's</td> <td style="text-align: center;"><u>45.5</u></td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td style="text-align: center;"><u>29.9</u></td> <td>g's</td> <td style="text-align: center;"><u>51.9</u></td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;"><u>45.6</u></td> <td>g's</td> <td style="text-align: center;"><u>66.9</u></td> <td>g's</td> </tr> </tbody> </table> <p>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 side impact event.</p>					<u>Front SID HIII</u>		<u>Rear SID HIII</u>		Left Upper Rib Acceleration:	<u>27.2</u>	g's	<u>58.2</u>	g's	Left Lower Rib Acceleration:	<u>31.4</u>	g's	<u>53.9</u>	g's	Lower Spine Acceleration:	<u>28.4</u>	g's	<u>45.5</u>	g's	Thoracic Trauma Index, (TTI):	<u>29.9</u>	g's	<u>51.9</u>	g's	Pelvis Acceleration (PEV):	<u>45.6</u>	g's	<u>66.9</u>	g's
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## Section 1

### Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2004 Lexus RX330 MPV. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) (except the test was conducted 8 km/h (5 mph) faster than the standard specifies).

## Section 2

### Summary of Side Impact Test

A 2004 Lexus RX330 MPV was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.0 km/h (38.5 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on September 24, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID HIIIs) are included in Appendix A.

Two restrained Side Impact Dummies (SID HIIIs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SID HIII dummies were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID HIIIs were instrumented with the following accelerometers:

1. Head (HED) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T<sub>12</sub>) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact dummy (SID HIII) configuration and verification test data can be found in Appendix C. A total of seventy-two (72) channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID HIII	Rear SID HIII
TTI (g)	29.9	51.9
PEV (g)	45.6	66.9

Head Injury Criteria (HIC)

Injury Criteria	Front SID HIII	Rear SID HIII
HIC	87	301
t <sub>1</sub> (ms)	44.40	53.04
t <sub>2</sub> (ms)	76.72	73.28
Average Acceleration t <sub>1</sub> - t <sub>2</sub> (g)	23.6	46.6

HIC is as defined in FMVSS 208. The maximum time interval t<sub>1</sub> to t<sub>2</sub> is 36 ms.

Neck Injury Criteria

Maximum Values	Front SID HIII	Rear SID HIII
Neck X-axis Force (N)	-243	364
Neck Y-axis Force (N)	-193	-714
Neck Z-axis Force (N)	973	-798
Moment About X-axis (Nm) <sup>1</sup>	-43.5	-88.1
Moment About Y-axis (Nm)	-39.0	-35.3
Moment About Z-axis (Nm)	22.7	18.9

<sup>1</sup> Calculated about the occipital condyle with the following formula:  $M_{occ} = M_x + 0.01778F_y$ .

### Data Acquisition Explanations

The vehicle's left side sill at front seat Y-axis acceleration channel, LFSYG1, exceeded full-scale at approximately 15 milliseconds and recorded no useful data afterwards. The calculated left side sill at front seat velocity, displacement, and resultant were also affected.

The vehicle's right side sill at front seat X-axis acceleration channel, RFSXG1, recorded no useful data after approximately 16 milliseconds. The calculated right side sill at front seat velocity was also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2004 Lexus RX330  
Vehicle Body Style/Color: MPV/Breakwater Blue Metallic VIN: JTJGA31U940011659  
Vehicle NHTSA No.: C45101 Build Date: 06/03  
Engine Data: 6 Cylinders;      CID; 3.3 Liters;      cc  
Placement: - Longitudinal; or X Lateral; or - Horizontal  
Transmission: 5 Speed; - Manual; X Automatic; - Overdrive  
Final Drive: - RWD; X FWD; - Four-Wheel Drive  
Odometer Reading: 151 mi (243 km)  
Options: X A/C; X Power steering; X Pwr. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)\* 210 kPa Front; 210 kPa Rear  
Recommended Tire Size: 225/65R17  
Tires on Test Vehicle: P225/65R17 Manufacturer: Michelin, Energy

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; N/A 3rd seat; 5 Total  
Type of Front Seats: X Bucket; - Bench; - Split bench  
Type of Front Seat Back: - Fixed; X Adjustable with - Lever or X Knob  
Vehicle Max. Capacity Loading = 420 kg (A)  
No. of Occupants x 68.04 kg. = 340 kg (B)  
Vehicle Cargo Capacity (A-B) = 80 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>534.5</u> kg	Left Rear	=	<u>356.0</u> kg
Right Front	=	<u>484.5</u> kg	Right Rear	=	<u>366.0</u> kg
Total Front	=	<u>1019.0</u> kg	Total Rear	=	<u>722.0</u> kg
Front % of Total Weight	=	<u>58.5</u> %	Rear % of Total Weight	=	<u>41.5</u> %
Total Weight	=	<u>1741.0</u> kg			

\* Tire pressure used in test.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids = 1741 kg (A)  
Maximum Cargo Carrying Capacity of Test Vehicle = 80 kg (B)  
Weight of Instrumented Side Impact Dummies (2 X 84.0 kg) = 168 kg (C)  
Test Vehicle Target Weight: = 1989 kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SID HIII s + Cargo):

Left Front = 584.5 kg      Left Rear = 474.5 kg  
Right Front = 486.5 kg      Right Rear = 440.0 kg  
Total Front = 1071.0 kg      Total Rear = 914.5 kg  
Front % of Total Weight = 53.9 %      Rear % of Total Weight = 46.1 %  
Total Weight = 1985.5 kg

As Tested Weight of Test Vehicle (2 SID HIII s + Cargo + Equipment & Instrumentation):

Left Front = 572.6 kg      Left Rear = 463.5 kg  
Right Front = 512.4 kg      Right Rear = 433.0 kg  
Total Front = 1085.0 kg      Total Rear = 896.5 kg  
Front % of Total Weight = 54.8 %      Rear % of Total Weight = 45.2 %  
Total Weight = 1981.5 kg

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>828</u>	Right Front <u>817</u>	Right Front <u>818</u>
Left Front <u>820</u>	Left Front <u>808</u>	Left Front <u>810</u>
Right Rear <u>819</u>	Right Rear <u>785</u>	Right Rear <u>792</u>
Left Rear <u>816</u>	Left Rear <u>775</u>	Left Rear <u>781</u>

Test Vehicle Wheelbase: 2715 mm

C.G. = 1227 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4448 mm  
Left Side = 4450 mm  
Centerline = 4725 mm

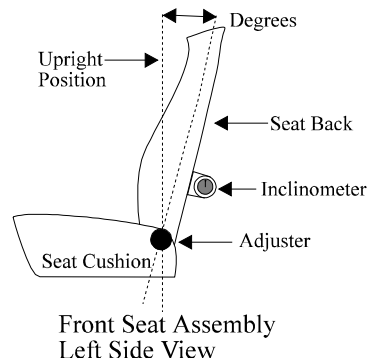
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

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



Front Seat Cushion Placement: Mid; 4.7" rearward from the foremost position

Total Length of Fore/Aft Adjustment Travel: 240 mm

Total Number of Adjustment Positions or Detents: N/A

Front Seat Back Adjustment Position: The seat back was adjusted to 87° measured at the headrest bar line

Seat Back Torso Angle: 3.3 degrees

Second Position Seat Placement: Mid; 4 notches rearward from foremost position

Total Length Of Fore/Aft Adjustment Travel: 124 mm

Seat Back Adjustment Position: The seat back was adjusted to 2 notches rearward from the most upright position

Adjustable Steering Column Position: 4 notches downward from the most upright position

Window Positions:

Right Front: Open

Right Rear: Open

Left Front: Closed

Left Rear: Closed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent In Fuel Tank:

72.5 liters (fuel tank usable capacity)

67.6 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2715 millimeters

Intended impact point is 417 millimeters rearward of front axle centerline (which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 438 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2004/Lexus/RX330

Body Style: MPV

VIN: JTJGA31U940011659

NHTSA No.: C45101

Build Date: 06/03

Test Date: 09/24/03

Vehicle Overall Length = 4725 mm

Overall Width = 1820 mm

Vehicle Test Weight (Pre-Test):

Left Front = 572.6 kg      Left Rear = 463.5 kg

Right Front = 512.4 kg      Right Rear = 433.0 kg

Total Front = 1085.0 kg      Total Rear = 896.5 kg

Total Weight = 1981.5 kg

Wheelbase = 2715 mm

Longitudinal C.G. From Center Of Front Axle = 1227 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 21 mm right of nominal impact ref. line (Lateral)

Actual Impact Point is 0 mm \_\_\_\_\_ from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 ( 340 mm above ground) = 85 mm

2. Level 2 ( 711 mm above ground) = 290 mm

3. Level 3 ( 750 mm above ground) = 296 mm

4. Level 4 ( 1080 mm above ground) = 193 mm

5. Level 5 ( 1630 mm above ground) = 33 mm

Maximum Post-Test Intrusion = 296 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification      055      906

Restraints Used      3-pt. seat belt, side curtain airbag, side torso airbag      3-pt. seat belt, side curtain airbag

Instrumentation:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3      Offboard = 8      Total = 11

Data Sheet 3

Moving Deformable Barrier(MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 033A0303 024A0403

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage	=	<u>1251</u>	mm
Overall Length of MDB (Incl. honeycomb impact face)	=	<u>4014</u>	mm
Wheelbase of Framework Carriage	=	<u>2591</u>	mm
Track of Framework Carriage (Front & Rear)	=	<u>1881</u>	mm
C.G. Location Rearward of Front Axle	=	<u>1138</u>	mm

MDB Weight:

Left Front	=	<u>419.6</u>	kg	Left Rear	=	<u>254.4</u>	kg
Right Front	=	<u>342.2</u>	kg	Right Rear	=	<u>342.6</u>	kg
Total Front	=	<u>761.8</u>	kg	Total Rear	=	<u>597.0</u>	kg
Total MDB Weight	=	<u>1358.8</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L)	=	<u>90</u>	degrees				
Impact Speed	=	<u>62.0</u>	km/h				

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	<u>161</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>82</u>	millimeters
3. Row C at Mid Level <sup>1</sup>	=	<u>107</u>	millimeters
4. Row D at Top of Stack Level	=	<u>137</u>	millimeters

Instrumentation:

Number of MDB Data Channels = 5

<sup>1</sup> Row C at Mid Level pre-test measurements were not collected prior to impact. Pre-test measurements from a second barrier face were used to determine difference.

Data Sheet 4

Post-Test Observations

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Visible Dummy Contact Points:

	<u>Left Front SID HIII</u>	<u>Left Rear SID HIII</u>
Head:	<u>Airbag, head restraint</u>	<u>Airbag, head liner</u>
Upper Torso:	<u>Torso airbag</u>	<u>Door panel</u>
Lower Torso:	<u>None</u>	<u>None</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

	<u>Left Side</u>	<u>Right Side</u>
Front:	<u>Jammed and latched</u>	<u>Easy</u>
Rear:	<u>Jammed and latched</u>	<u>Easy</u>

MDB Distance From Target Impact Point:

Vertical: 0 mm from target  
Horizontal: 21 mm right from target

Arm Rest Locations:

Front: 240 mm below the bottom of the window  
Rear: 273 mm below the bottom of the window

Seat Movement:

Front: None  
Rear: None

Glazing Damage:

Windshield: \_\_\_\_\_  
Window: Left rear window broken

Pillar Separation: None

Sill Separation: None

Other Notable Impact Effects:

None

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID HIII Instrumentation Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924

DRIVER DUMMY SERIAL NUMBER: 055

POSITIVE  
DIRECTION

NEGATIVE  
DIRECTION

---

HEAD ACCELERATION

LONGITUDINAL	2.7 g	@ 205.6 ms	16.4 g	@ 62.6 ms
LATERAL	29.0 g	@ 57.0 ms	3.4 g	@ 105.6 ms
VERTICAL	10.6 g	@ 57.4 ms	5.5 g	@ 65.7 ms
RESULTANT	33.5 g	@ 57.4 ms		
HIC	87 from 44.4 to 76.7 ms			

---

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	2.8 g	@ 206.6 ms	16.3 g	@ 62.6 ms
LATERAL	29.4 g	@ 57.0 ms	3.4 g	@ 102.2 ms
VERTICAL	10.4 g	@ 57.4 ms	5.5 g	@ 65.8 ms
RESULTANT	33.6 g	@ 57.4 ms		
HIC	88 from 44.6 to 76.7 ms			

---

NECK FORCE

X-AXIS SHEAR	87.3 N	@ 39.7 ms	243.2 N	@ 63.2 ms
Y-AXIS SHEAR	157.8 N	@ 62.6 ms	192.5 N	@ 94.7 ms
Z-AXIS AXIAL	973.5 N	@ 57.2 ms	91.7 N	@ 115.4 ms

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NECK MOMENT

ABOUT X-AXIS	9.6 N-m	@ 151.6 ms	45.9 N-m	@ 57.9 ms
ABOUT Y-AXIS	6.9 N-m	@ 139.6 ms	39.0 N-m	@ 63.1 ms
ABOUT Z-AXIS	22.7 N-m	@ 82.2 ms	6.4 N-m	@ 297.3 ms
OCCIPITAL COND	10.6 N-m	@ 151.7 ms	43.5 N-m	@ 57.8 ms

---

LEFT UPPER RIB ACCELERATION

LATERAL (P)	27.2 g	@ 53.7 ms	7.3 g	@ 40.0 ms
LATERAL (R)	27.0 g	@ 53.7 ms	7.2 g	@ 40.0 ms

---

LEFT LOWER RIB ACCELERATION

LATERAL (P)	31.4 g	@ 16.9 ms	4.9 g	@ 78.1 ms
LATERAL (R)	31.3 g	@ 16.9 ms	5.1 g	@ 78.1 ms
TTI d (P)	29.9			
TTI d (R)	29.5			

---

LOWER SPINE ACCELERATION

LATERAL (P)	28.4 g	@ 43.8 ms	9.3 g	@ 57.5 ms
LATERAL (R)	27.7 g	@ 43.8 ms	5.1 g	@ 58.1 ms

---

PELVIS ACCELERATION

LATERAL (P)	45.6 g	@ 35.0 ms	13.7 g	@ 62.5 ms
LATERAL (R)	45.6 g	@ 35.0 ms	13.7 g	@ 62.5 ms

---

POSITIVE DIRECTION

LONGITUDINAL: FORWARD  
LATERAL: RIGHTWARD  
VERTICAL: DOWNWARD

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NEGATIVE DIRECTION

LONGITUDINAL: REARWARD  
LATERAL: LEFTWARD  
VERTICAL: UPWARD

Data Sheet 5 (Continued)

SID HIII Instrumentation Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924

PASSENGER DUMMY SERIAL NUMBER: 906

POSITIVE  
DIRECTION

NEGATIVE  
DIRECTION

---

HEAD ACCELERATION

LONGITUDINAL	8.0 g	@ 203.9 ms	10.3 g	@ 70.9 ms
LATERAL	46.5 g	@ 66.1 ms	7.1 g	@ 88.6 ms
VERTICAL	16.8 g	@ 43.6 ms	39.8 g	@ 64.1 ms
RESULTANT	60.8 g	@ 64.0 ms		
HIC	301 from 53.0 to 73.3 ms			

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HEAD REDUNDANT ACCELERATION

LONGITUDINAL	8.1 g	@ 206.2 ms	9.3 g	@ 71.2 ms
LATERAL	48.2 g	@ 65.7 ms	6.9 g	@ 88.2 ms
VERTICAL	16.2 g	@ 43.6 ms	38.9 g	@ 64.4 ms
RESULTANT	61.1 g	@ 64.3 ms		
HIC	310 from 53.3 to 73.1 ms			

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NECK FORCE

X-AXIS SHEAR	364.3 N	@ 83.3 ms	123.1 N	@ 149.5 ms
Y-AXIS SHEAR	145.9 N	@ 153.3 ms	713.7 N	@ 80.3 ms
Z-AXIS AXIAL	682.4 N	@ 43.7 ms	798.4 N	@ 63.8 ms

---

NECK MOMENT

ABOUT X-AXIS	14.6 N-m	@ 83.3 ms	86.3 N-m	@ 61.4 ms
ABOUT Y-AXIS	12.2 N-m	@ 112.3 ms	35.3 N-m	@ 69.2 ms
ABOUT Z-AXIS	18.9 N-m	@ 82.5 ms	8.5 N-m	@ 243.4 ms
OCCIPITAL COND	15.4 N-m	@ 159.2 ms	88.1 N-m	@ 60.6 ms

---

LEFT UPPER RIB ACCELERATION

LATERAL (P)	58.2 g	@ 51.3 ms	4.0 g	@ 112.5 ms
LATERAL (R)	57.1 g	@ 51.3 ms	4.3 g	@ 112.5 ms

---

LEFT LOWER RIB ACCELERATION

LATERAL (P)	53.9 g	@ 50.0 ms	6.0 g	@ 76.9 ms
LATERAL (R)	52.5 g	@ 50.0 ms	5.8 g	@ 112.5 ms
TTI d (P)	51.9			
TTI d (R)	51.1			

---

LOWER SPINE ACCELERATION

LATERAL (P)	45.5 g	@ 40.6 ms	5.0 g	@ 73.1 ms
LATERAL (R)	45.0 g	@ 40.6 ms	4.8 g	@ 72.5 ms

---

PELVIS ACCELERATION

LATERAL (P)	66.9 g	@ 38.8 ms	13.9 g	@ 60.0 ms
LATERAL (R)	67.1 g	@ 38.8 ms	13.8 g	@ 60.0 ms

---

POSITIVE DIRECTION

LONGITUDINAL: FORWARD  
LATERAL: RIGHTWARD  
VERTICAL: DOWNWARD

---

NEGATIVE DIRECTION

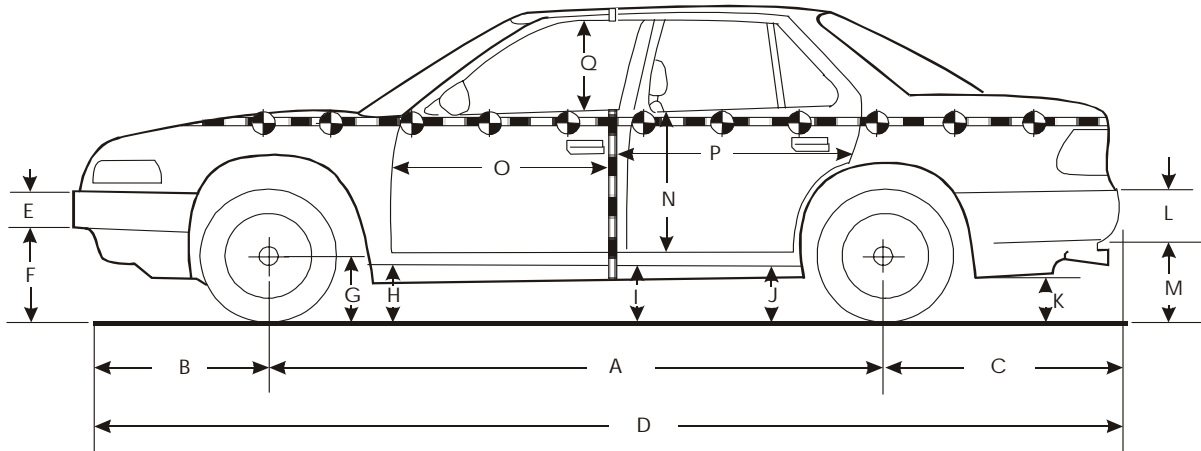
LONGITUDINAL: REARWARD  
LATERAL: LEFTWARD  
VERTICAL: UPWARD

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Left Side View

Note: All dimensions are in millimeters with tolerance of  $\pm 3$  mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2715	2715	2700	15
B	970	970	970	0
C	1040	1040	1040	0
D	4725	4725	4726	-1
E	185	185	185	0
F	502	504	530	-26
G	340	340	340	0
H	305	330	383	-53
I	325	326	392	-66
J1	270	240	257	-17
J2	290	290	362	-72
K	360	328	319	9
L	310	310	310	0
M	420	385	378	7
N	835	835	755	80
O	784	784	730	54
P	1366	1366	1300	66
Q	460	460	460	0
R	4448	4448	4433	15
S	4450	4450	4392	58
T	1405	1405	1275	130

D = Length at centerline  
T = Width at B-pillar

E&L = Bumper Thickness  
J1 = To Pinch Weld

R = Right Side Length  
J2 = To Sill

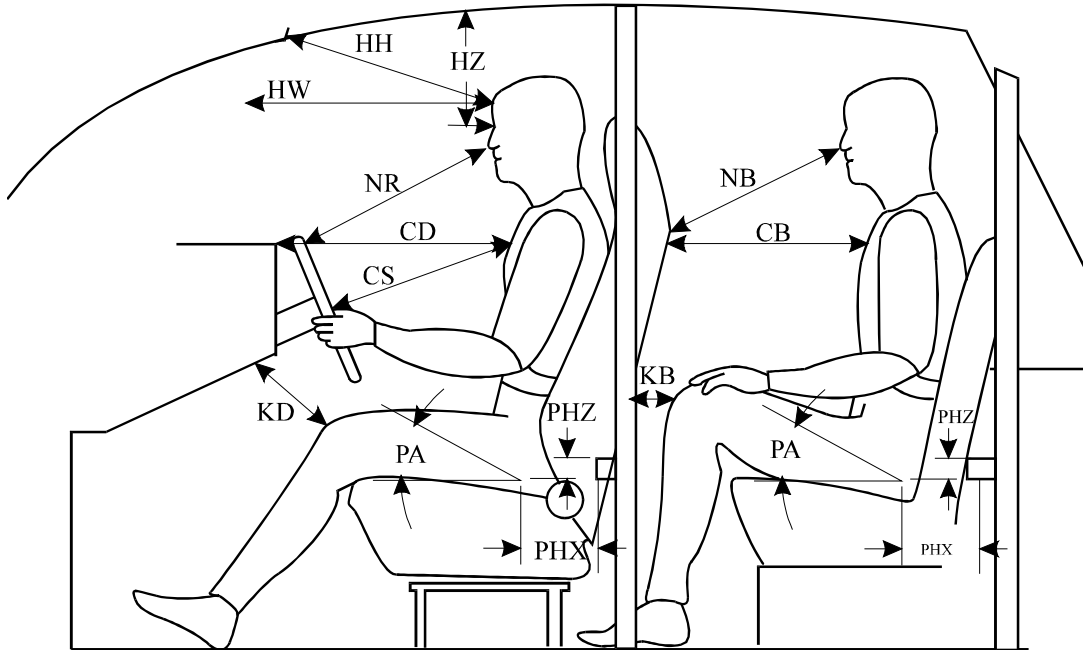
S = Left Side Length

Data Sheet 7

SID HIII Longitudinal Clearance Dimensions

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Left Side View

Note: All measurements are in millimeters with tolerance of  $\pm 3$  mm

Measurement	Driver SID HIII # 055	Left Rear Pass. SID HIII # 906
HH	473	N/A
HW	718	N/A
HZ	190	195
NR/NB	508	663
CD/CB	603	542
CS	361	N/A
KDL(KDA°)/KBL(KBA°)	90/(66.6°)	163/(89.9°)
KDR(KDA°)/KBR(KBA°)	73/(53.0°)	173/(86.7°)
PA°	23.3°	24°
PHX	212	348
PHZ	245	342

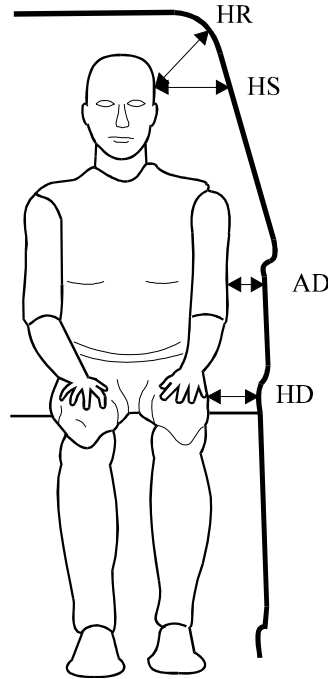
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID HIII Lateral Clearance Dimensions

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Note: All measurements are in millimeters with tolerance of  $\pm 3$  mm

Measurement	Driver SID HIII # 55	Left Rear Pass. SID HIII # 906
HR	190	215
HS	296	334
AD*	Lower: 119      Upper: 96	Lower: 123      Upper: 101
HD	167	138

\* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

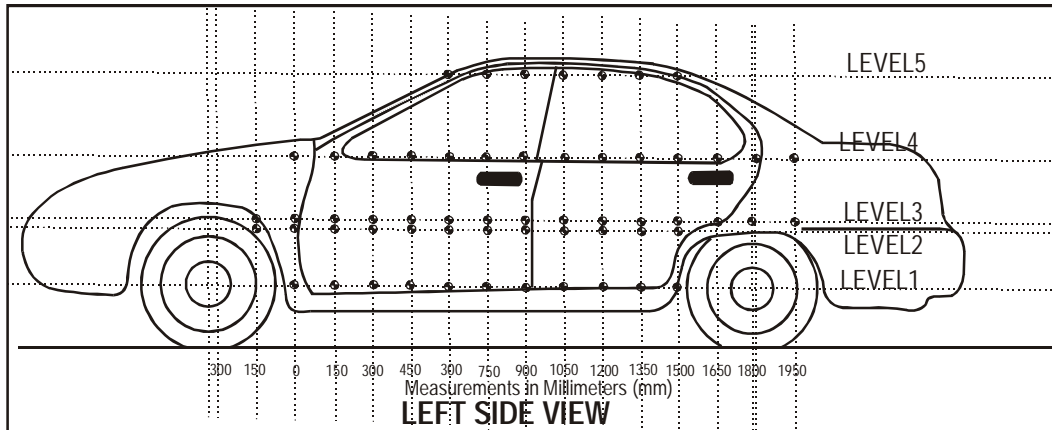
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



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 shown above:

Level 5 @ Window Top	=	<u>1630</u>	mm
Level 4 @ Window Sill	=	<u>1080</u>	mm
Level 3 @ Mid Door	=	<u>750</u>	mm
Level 2 @ Occupant H-Point	=	<u>711</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>340</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Location	Height		(mm) From Impact Point														
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	
Level 1 Side Sill	340	Pre	---	---	---	---	---	---	---	---	---	---	659	664	665	665	664
		Post	---	---	---	---	---	---	---	---	---	---	740	747	750	748	746
		Crush	---	---	---	---	---	---	---	---	---	---	81	83	85	83	82
Level 2 H-Point	711	Pre	---	664	625	600	---	---	590	---	580	596	596	587	586	585	
		Post	---	659	625	603	---	---	---	---	621	771	836	855	862	865	
		Crush	---	-5	0	3	---	---	---	---	41	175	240	268	276	280	
Level 3 Mid-Door	750	Pre	---	681	632	600	---	---	---	---	588	596	595	590	588	589	
		Post	---	680	634	605	---	---	---	---	613	767	835	857	868	876	
		Crush	---	-1	2	5	---	---	---	---	25	171	240	267	280	287	
Level 4 Window Sill	1080	Pre	---	---	---	745	720	705	691	685	670	660	652	640	635	625	
		Post	---	---	---	743	724	710	700	693	690	690	705	718	726	732	
		Crush	---	---	---	-2	4	5	9	8	20	30	53	78	91	107	
Level 5 Window Top	1630	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	905	
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	931	
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	26	

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	340	Pre	665	665	667	665	667	665	665	---	---	---	---	---	---
		Post	742	743	740	737	738	740	738	---	---	---	---	---	---
		Crush	77	78	73	72	71	75	73	---	---	---	---	---	---
Level 2 H-Point	711	Pre	582	580	581	580	583	585	590	590	---	---	---	---	600
		Post	867	862	832	869	873	871	850	710	---	---	---	---	620
		Crush	285	282	251	289	290	286	260	120	---	---	---	---	20
Level 3 Mid-Door	750	Pre	588	587	588	590	590	594	590	585	---	---	---	---	600
		Post	877	871	843	881	886	885	849	727	---	---	---	---	620
		Crush	289	284	255	291	296	291	259	142	---	---	---	---	20
Level 4 Window Sill	1080	Pre	620	615	612	610	610	610	610	602	600	621	630	639	650
		Post	739	745	760	775	803	779	750	714	651	671	690	676	633
		Crush	119	130	148	165	193	169	140	112	51	50	60	37	-17
Level 5 Window Top	1630	Pre	895	885	885	882	882	882	880	888	894	900	908	---	---
		Post	928	911	915	915	905	901	900	899	901	906	916	---	---
		Crush	33	26	30	33	23	19	20	11	7	6	8	---	---

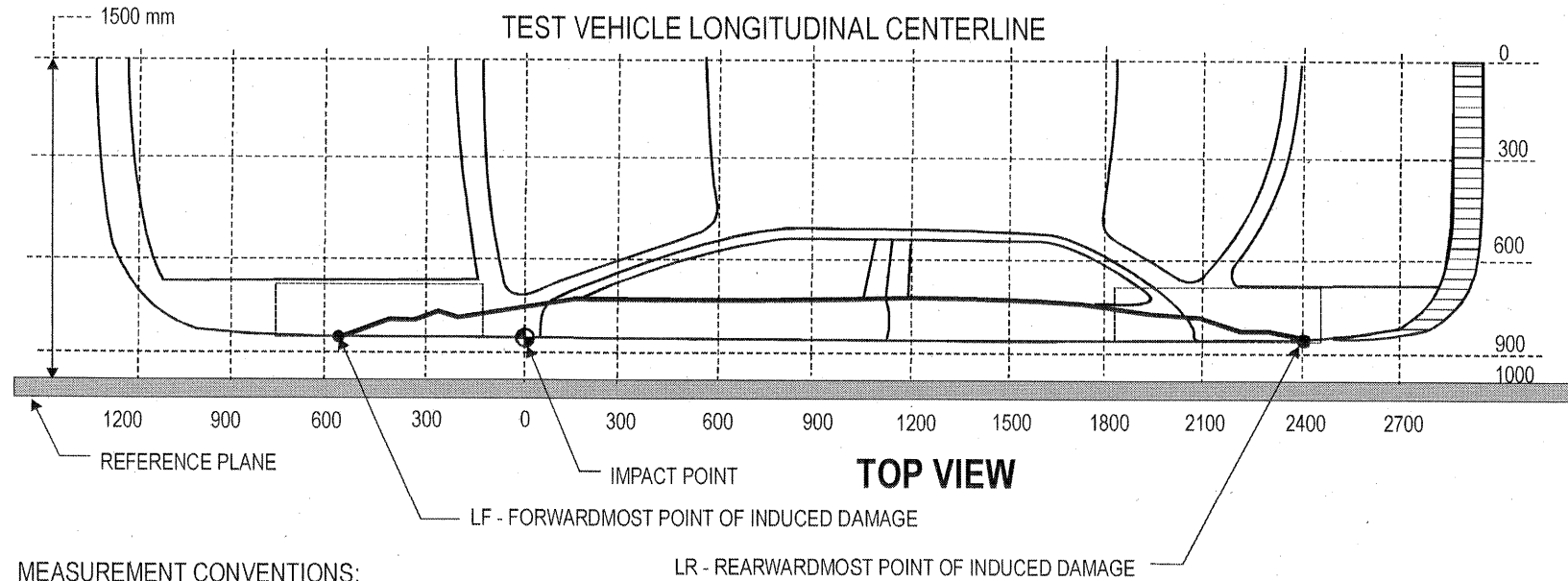
## Data Sheet 11

### Vehicle Damage Profile Distances

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

NOTE: All measurements are in millimeters (mm) and should be accurate to plus or minus 3mm.



**MEASUREMENT CONVENTIONS:**

Forward of the impact point (towards front of vehicle) is considered negative (-)  
 Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Post-Test (mm)	Pre-Test (mm)	Static Crush (mm)
6: LF = 0 mm (Level 2)	621	580	41
5: 600 mm (Level 3)	868	588	280
4: 900 mm (Level 3)	877	588	289
3: 1200 mm (Level 3)	846	588	258
2: 1500 mm (Level 3)	886	590	296
1: LR = 2100 mm (Level 4)	651	600	51

Full length of induced damage was 0 to 2100 mm.

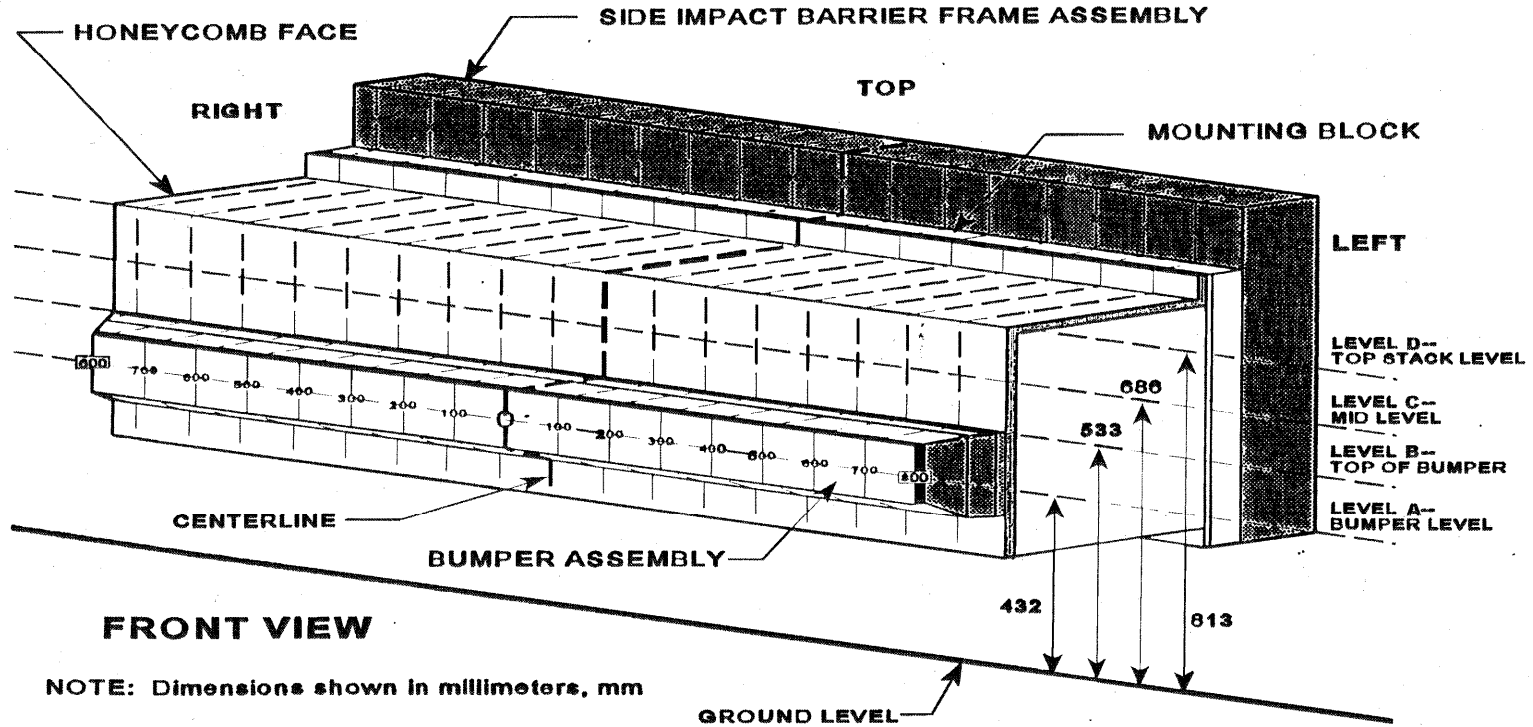
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



NOTE: Dimensions shown in millimeters, mm

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030924-1

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Location	Height At CL	Distance Right of Center (mm)									Distance Left of Center (mm)								
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800	
Top Stack Level - Level D	811	-36	-26	-17	-16	-24	-37	-57	-52	-42	-45	-48	-51	-57	-71	-85	-93	-137	
Mid Level Level C <sup>1</sup>	N/A	-21	-18	-14	-14	-19	-32	-53	-32	-20	-14	-14	-16	-50	-27	-42	-59	-107	
Top Bumper Level - Level B	557	-76	-72	-67	-65	-60	-59	-62	-64	-67	-68	-64	-65	-67	-69	-71	-76	-82	
Mid Bumper Level - Level A	432	-153	-161	-155	-150	-145	-144	-144	-144	-144	-146	-146	-147	-148	-149	-150	-156	-160	

All measurements are in millimeters and have a tolerance of  $\pm 3$ mm.

<sup>1</sup> Pre-test measurement height not recorded.

4-12

030924-1

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-380	801	-45
2	-380	701	-46
3	-381	601	-46
4	-380	500	-47
5	-381	401	-46
6	-381	300	-47
7	-381	200	-47
8	-381	100	-47
9	-382	0	-48
10	-382	-100	-48
11	-382	-200	-48
12	-382	-300	-48
13	-382	-400	-48
14	-382	-500	-49
15	-382	-600	-49
16	-382	-700	-49
17	-382	-800	-49

Post-Test

Index	Xmm	Ymm	Zmm
1	-344	748	-99
2	-355	650	-111
3	-364	551	-117
4	-365	453	-112
5	-357	355	-105
6	-345	256	-97
7	-325	159	-98
8	-330	60	-96
9	-340	-38	-95
10	-337	-138	-99
11	-334	-237	-96
12	-331	-336	-88
13	-325	-434	-81
14	-311	-532	-76
15	-297	-631	-70
16	-289	-730	-60
17	-246	-817	-64

Difference

Index	Xmm	Ymm	Zmm
1	-36	53	53
2	-26	51	65
3	-17	50	71
4	-16	48	65
5	-24	46	59
6	-37	44	51
7	-57	42	51
8	-52	40	49
9	-42	38	47
10	-45	38	51
11	-48	37	48
12	-51	36	40
13	-57	34	33
14	-71	32	28
15	-85	31	21
16	-93	30	11
17	-137	17	15

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level<sup>1</sup>

Pre-Test			
Index	Xmm	Ymm	Zmm
18	-376	801	-165
19	-377	701	-165
20	-377	601	-166
21	-377	501	-167
22	-379	401	-167
23	-379	301	-168
24	-378	201	-168
25	-381	101	-169
26	-379	0	-170
27	-378	-100	-170
28	-379	-200	-171
29	-380	-299	-171
30	-381	-399	-172
31	-380	-499	-173
32	-381	-599	-174
33	-381	-700	-175
34	-382	-800	-176

Post-Test			
Index	Xmm	Ymm	Zmm
18	-354	752	-241
19	-359	655	-240
20	-363	556	-237
21	-363	456	-234
22	-360	356	-230
23	-347	257	-223
24	-326	157	-222
25	-349	57	-218
26	-359	-43	-216
27	-364	-143	-213
28	-365	-243	-210
29	-364	-343	-207
30	-361	-442	-203
31	-353	-542	-199
32	-339	-641	-193
33	-322	-739	-185
34	-275	-831	-190

Difference			
Index	Xmm	Ymm	Zmm
18	-21	49	76
19	-18	46	74
20	-14	45	71
21	-14	45	67
22	-19	45	63
23	-32	44	56
24	-53	45	54
25	-32	44	49
26	-20	44	46
27	-14	43	43
28	-14	42	39
29	-16	44	36
30	-20	43	31
31	-27	43	26
32	-42	42	20
33	-59	40	10
34	-107	31	14

<sup>1</sup> Row C at Mid Level pre-test measurements were not collected prior to impact. Pre-test measurements from a second barrier face were used to determine difference.

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper  
Pre-Test

Index	Xmm	Ymm	Zmm
35	-380	800	-299
36	-381	700	-299
37	-381	599	-300
38	-381	500	-300
39	-381	400	-300
40	-381	300	-301
41	-381	200	-301
42	-382	100	-301
43	-381	0	-301
44	-382	-100	-301
45	-382	-200	-302
46	-382	-300	-302
47	-382	-400	-302
48	-383	-500	-302
49	-382	-600	-302
50	-382	-700	-302
51	-382	-800	-303

Post-Test

Index	Xmm	Ymm	Zmm
35	-305	752	-314
36	-308	651	-307
37	-314	550	-313
38	-316	450	-320
39	-321	347	-324
40	-322	254	-325
41	-319	155	-325
42	-317	56	-322
43	-314	-51	-318
44	-314	-147	-316
45	-318	-249	-309
46	-317	-349	-305
47	-315	-450	-302
48	-314	-549	-300
49	-311	-650	-297
50	-307	-750	-294
51	-300	-850	-293

Difference

Index	Xmm	Ymm	Zmm
35	-76	48	15
36	-72	49	8
37	-67	49	14
38	-65	50	20
39	-60	52	24
40	-59	46	24
41	-62	45	24
42	-64	44	21
43	-67	51	16
44	-68	47	15
45	-64	49	7
46	-65	49	4
47	-67	50	-1
48	-69	50	-3
49	-71	50	-5
50	-76	50	-8
51	-82	50	-9

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-474	798	-425
53	-484	700	-424
54	-484	601	-425
55	-485	501	-425
56	-485	400	-425
57	-485	300	-426
58	-485	201	-426
59	-485	101	-427
60	-485	0	-427
61	-485	-101	-428
62	-486	-200	-427
63	-485	-300	-428
64	-486	-400	-428
65	-486	-501	-428
66	-486	-600	-428
67	-486	-700	-429
68	-476	-799	-428

Post-Test

Index	Xmm	Ymm	Zmm
52	-321	778	-452
53	-323	649	-453
54	-330	550	-456
55	-335	450	-458
56	-340	349	-461
57	-341	249	-460
58	-341	150	-460
59	-341	50	-459
60	-341	-52	-459
61	-340	-152	-457
62	-340	-251	-456
63	-338	-351	-455
64	-338	-451	-454
65	-337	-551	-453
66	-336	-651	-451
67	-330	-751	-448
68	-316	-849	-440

Difference

Index	Xmm	Ymm	Zmm
52	-153	20	27
53	-161	52	28
54	-155	52	32
55	-150	51	34
56	-145	51	35
57	-144	51	35
58	-144	51	34
59	-144	51	32
60	-144	51	32
61	-146	51	30
62	-146	51	28
63	-147	51	27
64	-148	51	26
65	-149	51	25
66	-150	51	23
67	-156	51	19
68	-160	50	12

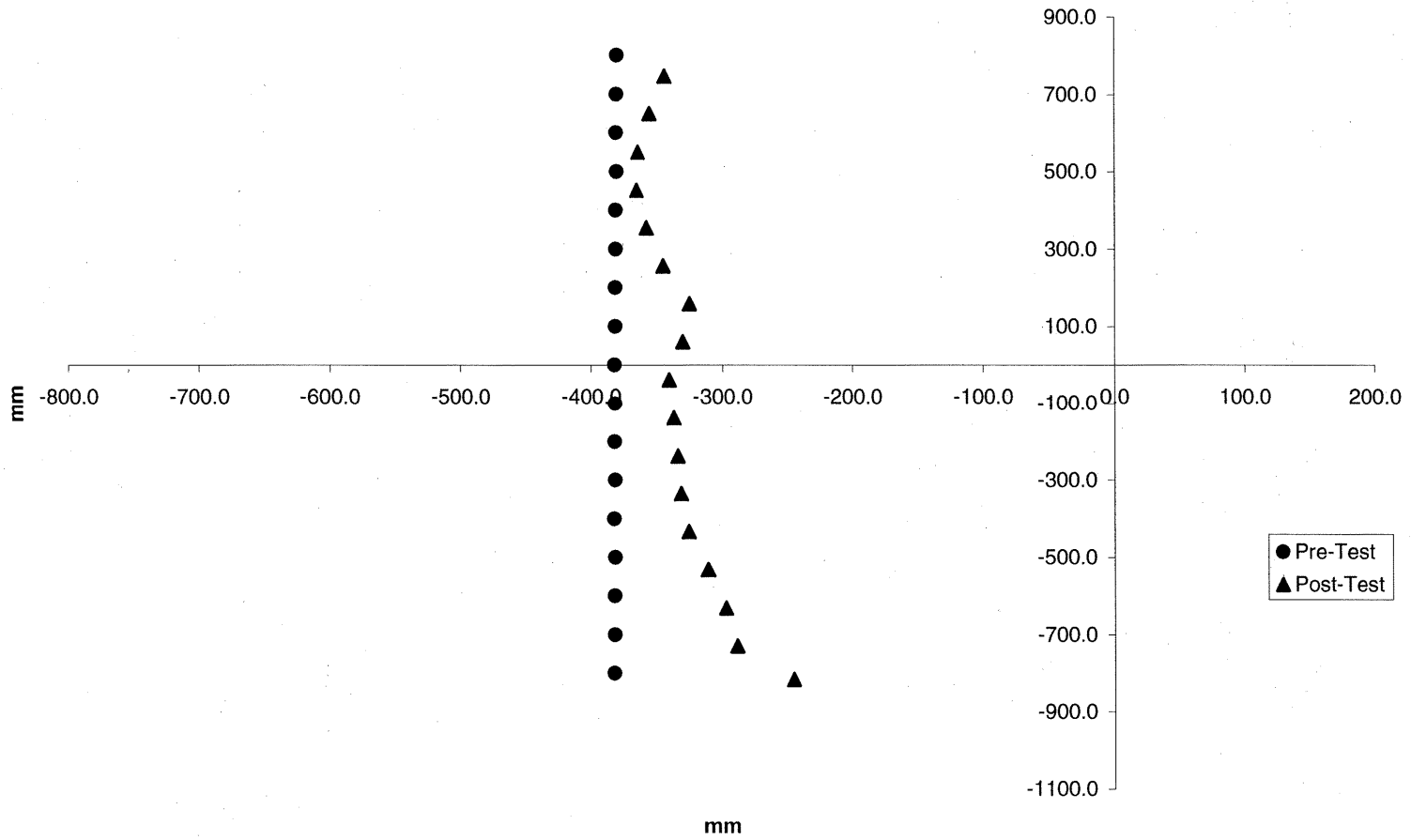
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NIITSA No.: C45101

**Level D - Deformable Barrier Face Profile 1-17**



4-17

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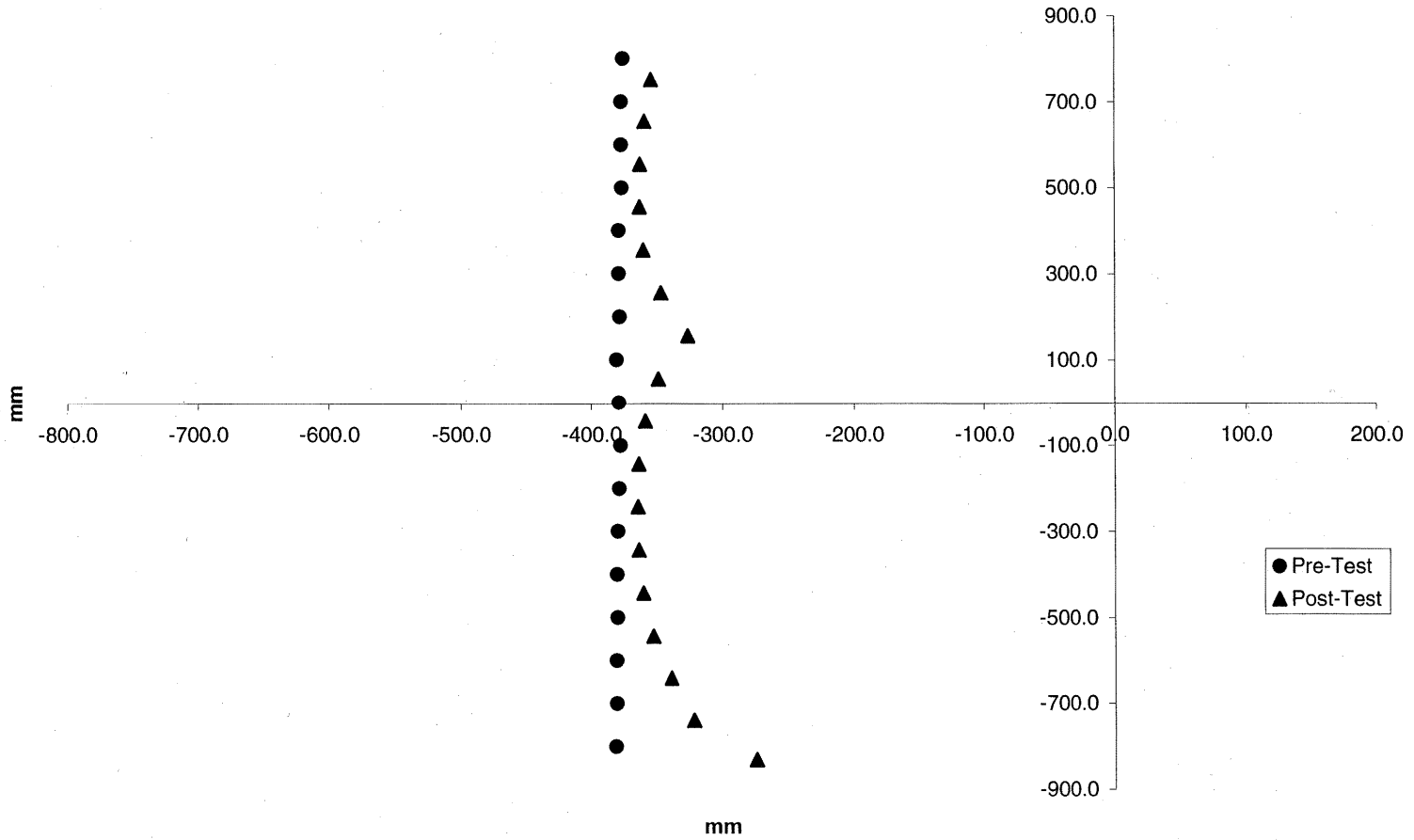
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NIHSA No.: C45101

**Level C - Deformable Barrier Face Profile 18-34**



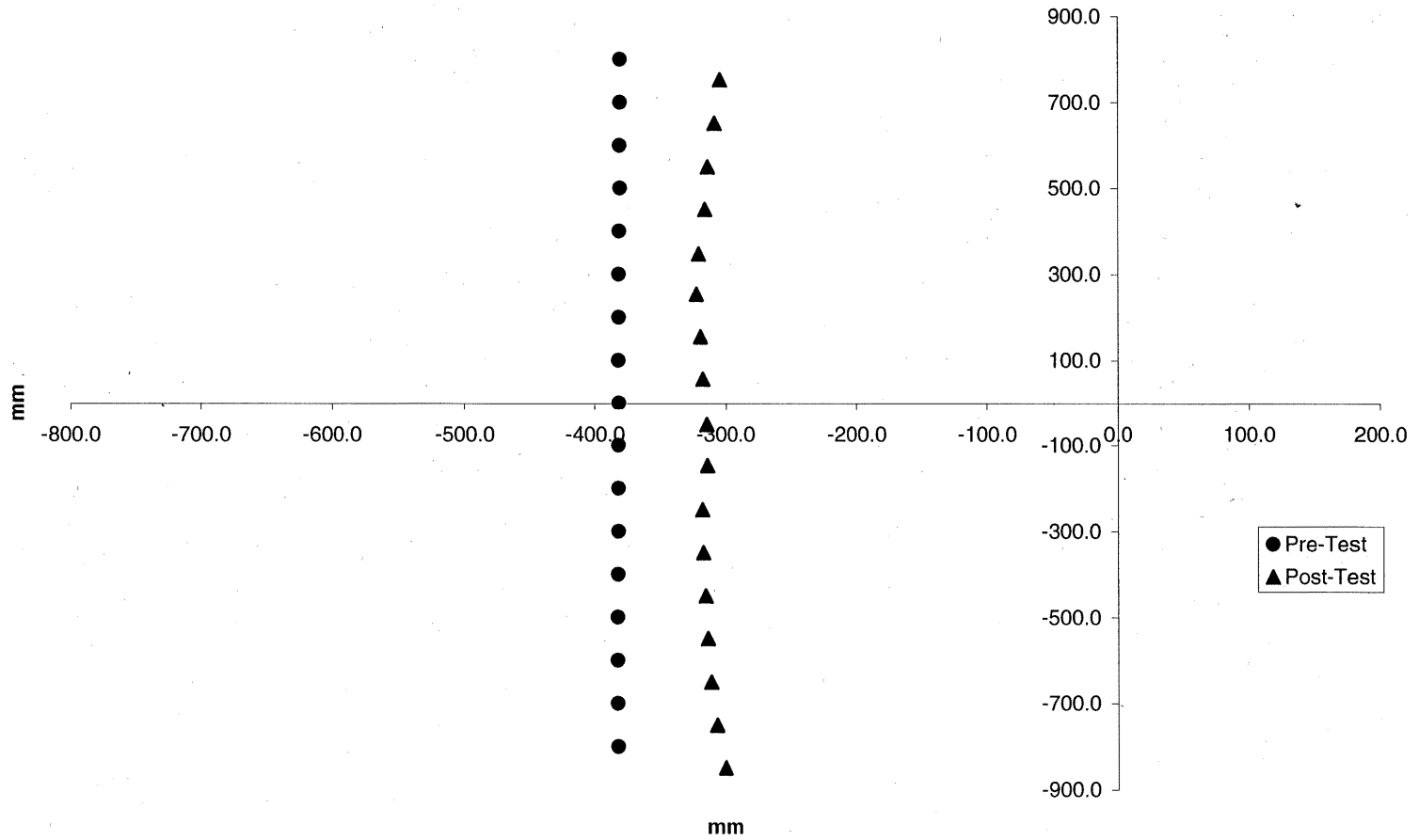
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

**Level B - Deformable Barrier Face Profile 35-51**



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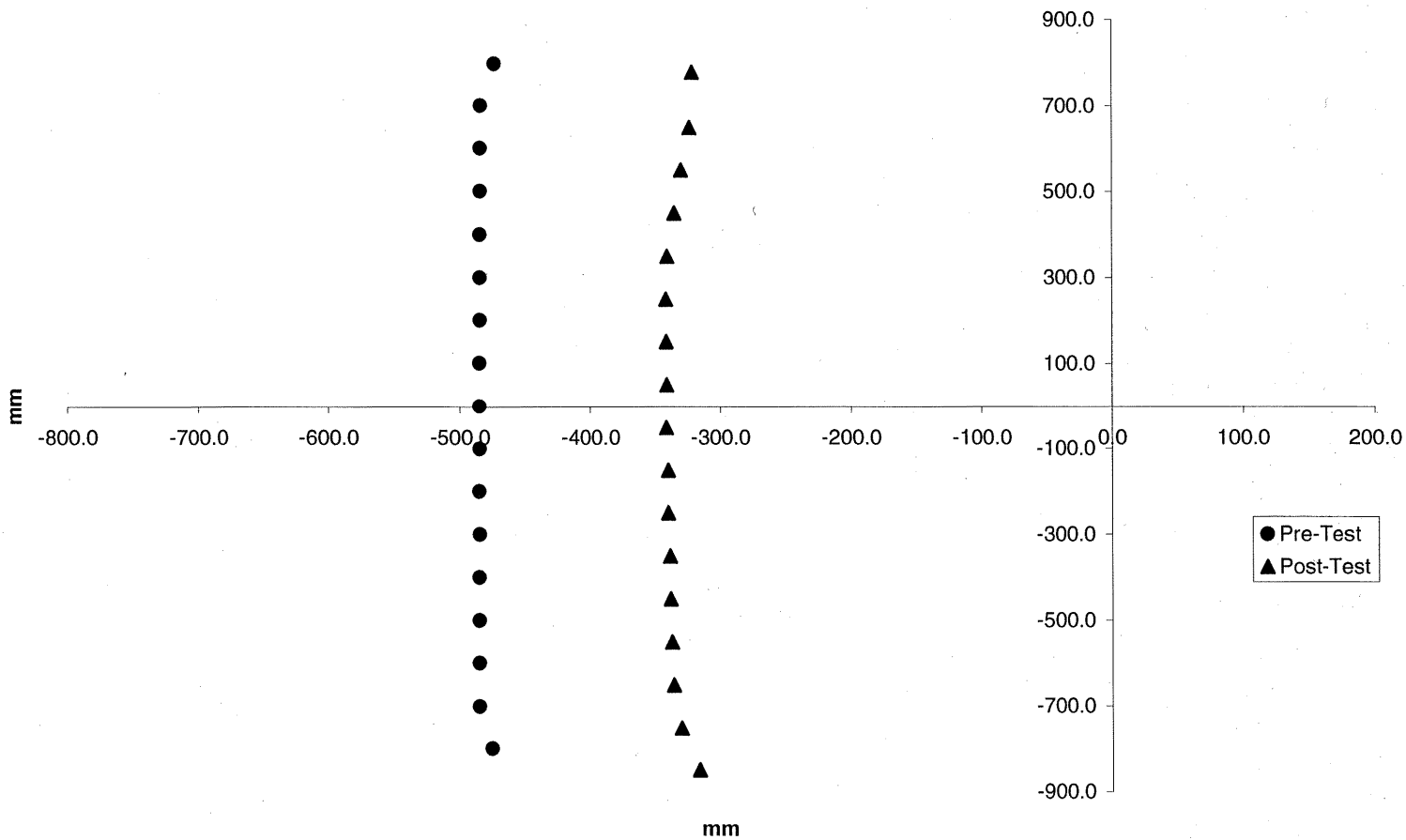
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

**Level A - Deformable Barrier Face Profile 52-68**

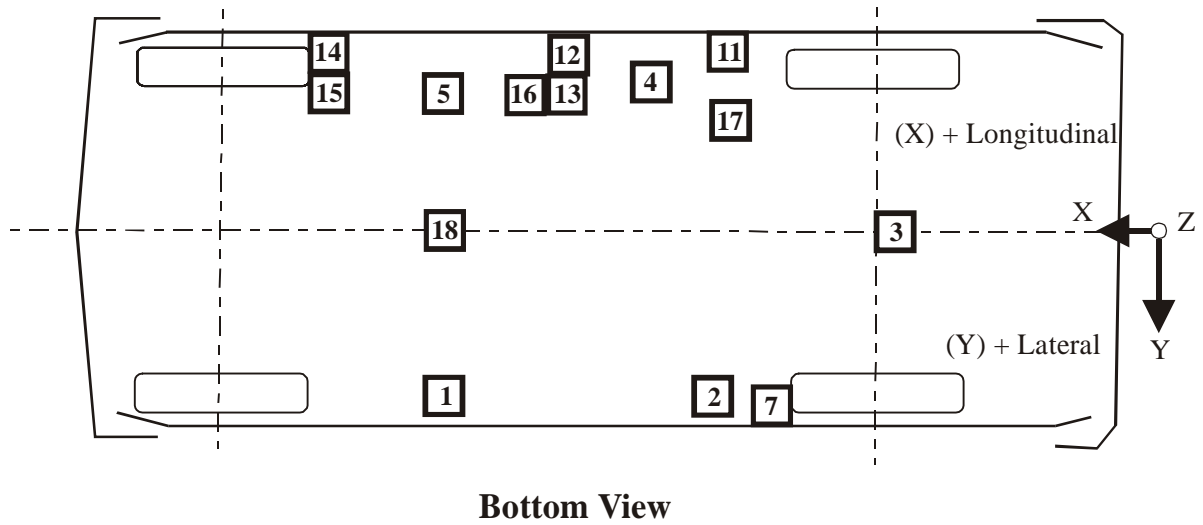
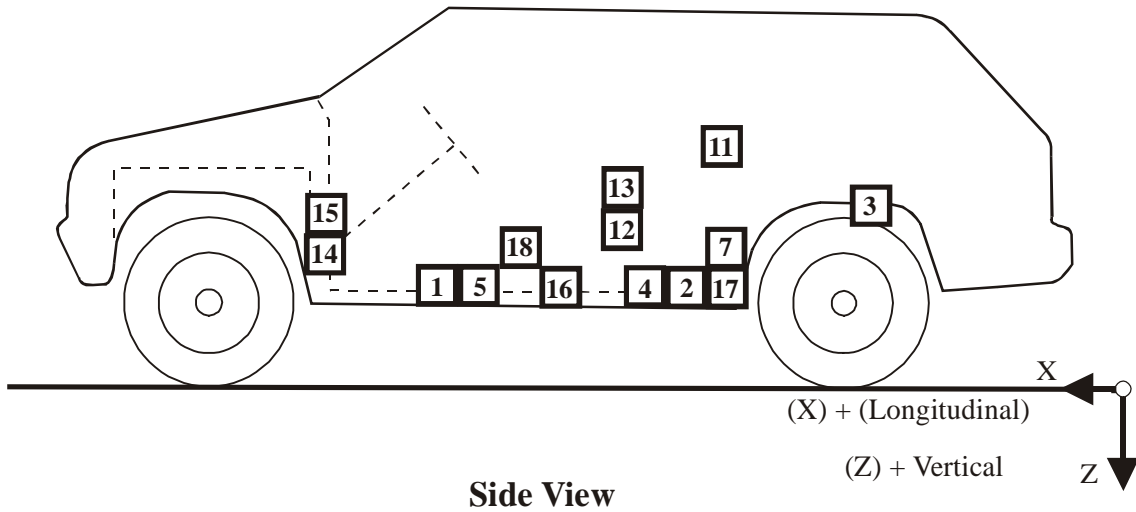


Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



- |                                    |  |
|------------------------------------|--|
| 1-Right Front Side Sill            | 10-Left Rear Door Mid Rear               |
| 2-Right Side Sill at Rear Seat     | 11-Left Rear Door Upper Centerline       |
| 3-Rear Floorpan above Axle         | 12-Left Side Lower B-pillar              |
| 4-Left Side Sill at Rear Seat      | 13-Left Side Middle B-pillar             |
| 5-Left Front Side Sill             | 14-Left Side Lower A-pillar              |
| 6-Left Front Door on Centerline    | 15-Left Side Middle A-pillar             |
| 7-Right Rear Occupant Compartment  | 16-Left Side Front Seat Track at H-point |
| 8-Left Front Door Mid Rear         | 17-Left Rear Seat Track at H-point       |
| 9-Left Front Door Upper Centerline | 18-Vehicle Center of Gravity             |

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 RIGHT SIDE SILL AT FRONT SEAT	3295 mm	680 mm	-400 mm				
LONGITUDINAL <sup>1</sup>				28.2 g	@ 251.8 ms	97.6 g	@ 19.4 ms
LATERAL				26.7 g	@ 6.6 ms	2.0 g	@ 281.0 ms
VERTICAL				5.0 g	@ 72.1 ms	12.4 g	@ 7.5 ms
RESULTANT <sup>1</sup>				98.5 g	@ 19.4 ms		
2 RIGHT SIDE SILL AT REAR SEAT	2405 mm	680 mm	-408 mm				
LONGITUDINAL				3.8 g	@ 59.8 ms	6.5 g	@ 9.8 ms
LATERAL				32.4 g	@ 6.8 ms	2.1 g	@ 141.4 ms
VERTICAL				5.9 g	@ 139.4 ms	11.3 g	@ 12.6 ms
RESULTANT				33.4 g	@ 6.9 ms		
3 REAR FLOORPAN ABOVE AXLE	1460 mm	0 mm	-570 mm				
LONGITUDINAL				2.0 g	@ 110.9 ms	6.9 g	@ 16.2 ms
LATERAL				20.9 g	@ 33.7 ms	2.3 g	@ 84.2 ms
VERTICAL				6.8 g	@ 44.1 ms	6.0 g	@ 56.6 ms
RESULTANT				21.5 g	@ 33.7 ms		
4 LEFT SIDE SILL AT REAR SEAT	2295 mm	-680 mm	-399 mm				
LATERAL				38.1 g	@ 6.2 ms	46.9 g	@ 12.5 ms

4-22

030924-1

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924 No. LOCATION	X	Y	Z	POSITIVE DIRECTION			NEGATIVE DIRECTION		
5 LEFT SIDE SILL AT FRONT SEAT LATERAL <sup>1</sup>	3280 mm	-680 mm	-413 mm	130.0 g	@	7.0 ms	1584.6 g	@	19.5 ms
7 RIGHT REAR OCCUPANT COMPARTMENT LATERAL	2260 mm	650 mm	-430 mm	32.8 g	@	6.8 ms	2.2 g	@	140.6 ms
12 LEFT LOWER B-POST LATERAL	2628 mm	-750 mm	-665 mm	143.6 g	@	5.9 ms	78.3 g	@	18.0 ms
13 LEFT MIDDLE B-POST LATERAL	2620 mm	-750 mm	-1027 mm	114.2 g	@	7.9 ms	47.3 g	@	20.7 ms
14 LEFT LOWER A-POST LATERAL	3730 mm	-730 mm	-511 mm	40.0 g	@	2.2 ms	76.6 g	@	19.9 ms
15 LEFT MIDDLE A-POST LATERAL	3685 mm	-730 mm	-829 mm	57.0 g	@	4.4 ms	8.8 g	@	21.2 ms
16 LEFT FRONT SEAT TRACK LATERAL	2945 mm	-600 mm	-470 mm	82.3 g	@	17.5 ms	65.1 g	@	22.3 ms
17 LEFT REAR SEAT TRACK LATERAL	2015 mm	-594 mm	-369 mm	35.8 g	@	7.0 ms	29.5 g	@	20.6 ms

4-23

030924-1

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
18 VEHICLE CENTER OF GRAVITY	3300 mm	40 mm	-415 mm		
LONGITUDINAL				3.2 g @ 59.2 ms	8.4 g @ 12.0 ms
LATERAL				28.1 g @ 6.5 ms	1.9 g @ 281.4 ms
VERTICAL				17.9 g @ 17.5 ms	9.5 g @ 54.8 ms
RESULTANT				31.3 g @ 6.4 ms	

REFERENCE: X: + FORWARD FROM REAR BUMPER  
 Y: + RIGHTWARD FROM VEHICLE CENTERLINE  
 Z: + DOWNWARD FROM GROUND LEVEL

For acceleration data sign convention see Report Sign Convention in Appendix D.

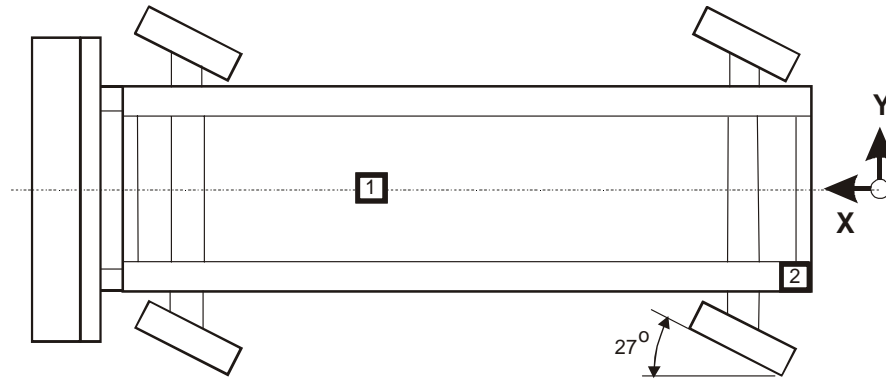
<sup>1</sup> See DATA ACQUISITION EXPLANATIONS on page 2-3

Data Sheet 14

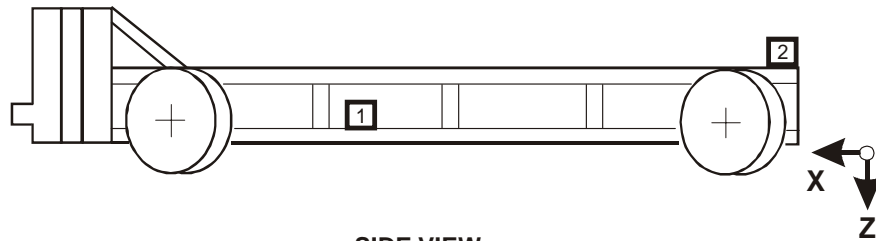
MDB Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



**TOP VIEW**



**SIDE VIEW**

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				5.1	98.2	23.2	35.4
	Lateral Y				4.2	61.6	7.1	21.4
	Vertical Z				5.6	59.5	6.3	22.4
	Resultant R				23.7	35.4		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.9	119.4	25.4	35.9
	Lateral Y				2.5	14.9	2.7	58.7

\*Reference: X = Rear Bumper (+ Forward)  
 Y = Vehicle Centerline (+ To Right)  
 Z = Ground Level (+ Down)

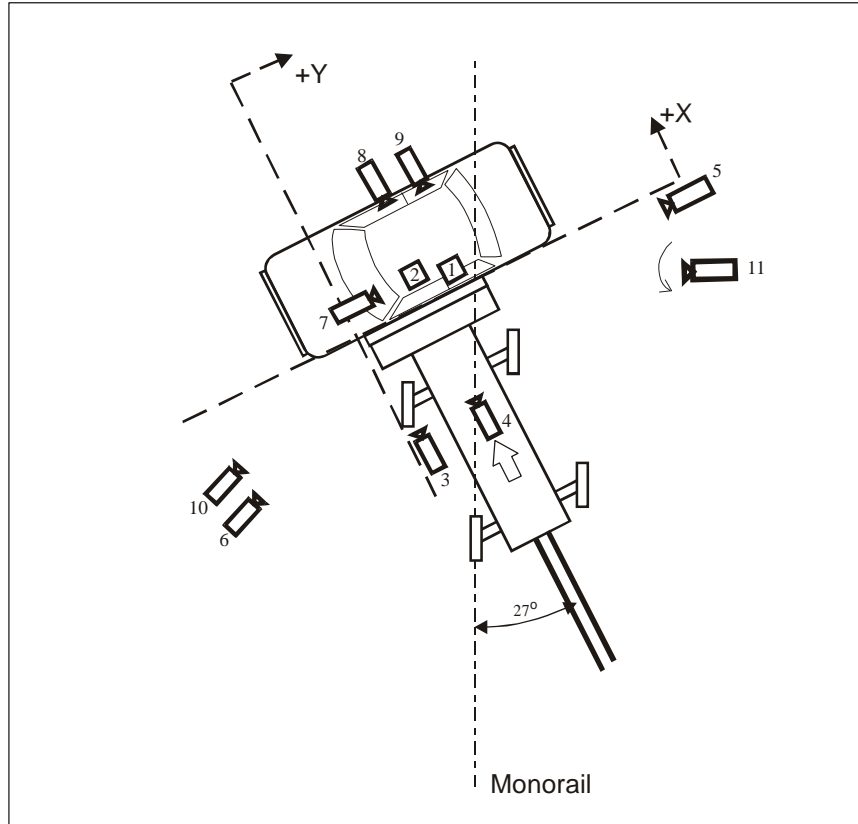
All measurements accurate to within  $\pm 3$  mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Impact Area

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	8.5	350
2	Overhead tight	370	1800	-5750	-85.5	17	955
3	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
4	Onboard MDB center	-2480	830	-1353	-5.2	25	997
5	Right side of MDB	-670	10550	-1180	0.7	13	1000
6	Left side of MDB	3100	-4250	-1030	1.4	13	870
7	Onboard vehicle front	540	-460	-1450	9.7	13	680
8	Onboard side front door	-1770	770	-1220	0.8	8	N/A <sup>1</sup>
9	Onboard side rear door	-1770	1670	-1270	-2.3	8	N/A <sup>1</sup>
10	Digital overall event	2950	-4500	-953	1.5	13	1000
11	Real-time Panning-Video	N/A	N/A	N/A	N/A	Zoom	30

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level

<sup>1</sup> Camera ran too slow to time.

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C45101

Test Date: 09/24/03

Vehicle Year/Make/Model/Body Style: 2004 Lexus RX330 MPV

\*\*\*\*\*

Test Vehicle Impact Type :

- Frontal (48.28 km/h)
- Oblique (48.28 km/h) with \_\_\_\_° barrier face first contacting the (driver/passenger) side
- Rear Moving Barrier (48.28 km/h)
- Lateral Moving Barrier (32.19 km/h)
- Side Impact Moving Deformable Barrier (62.0 km/h) contacting the Driver's side side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

None

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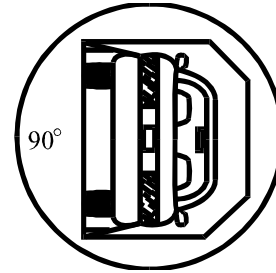
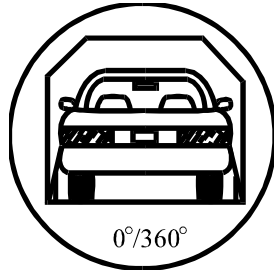
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>  1  </u> minutes	<u>  30  </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>  30  </u> seconds
Next whole minute interval	<u>  7  </u> minutes	

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

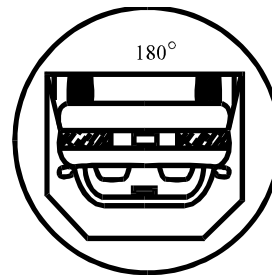
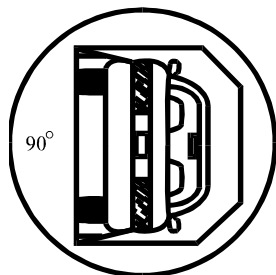
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>  1  </u> minutes	<u>  30  </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>  30  </u> seconds
Next whole minute interval	<u>  7  </u> minutes	

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

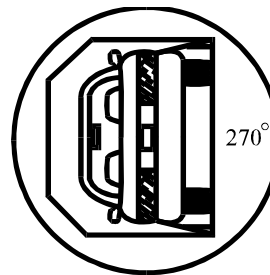
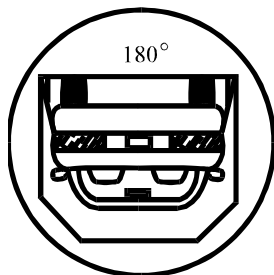
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>  1  </u> minutes	<u>  30  </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>  30  </u> seconds
Next whole minute interval	<u>  7  </u> minutes	

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

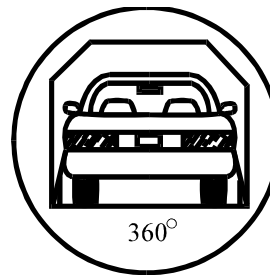
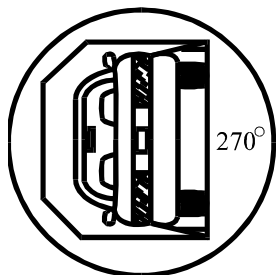
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>  1  </u> minutes	<u>  30  </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>  30  </u> seconds
Next whole minute interval	<u>  7  </u> minutes	

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

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<sup>1</sup> The test vehicle is incorrectly labeled as C45600 in the photos. The correct NHTSA number for this vehicle is C45101.

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Figure A-1 Pre-Test Front View of Test Vehicle

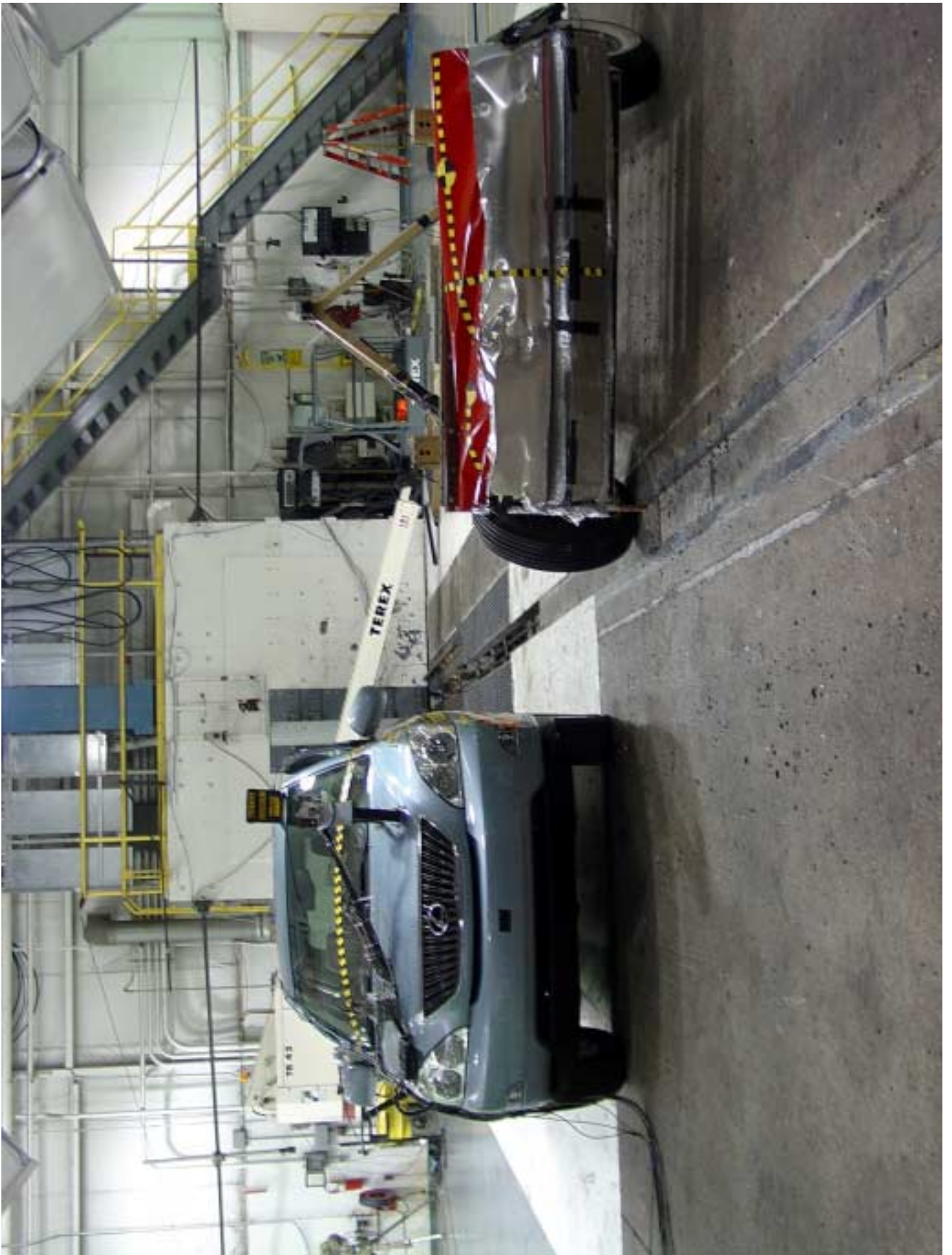


Figure A-2 Post-Test Front View of Test Vehicle



Figure A-3 Pre-Test Impacted Side View of Test Vehicle



Figure A-4 Post-Test Impacted Side View of Test Vehicle



Figure A-5 Pre-Test Rear View of Test Vehicle

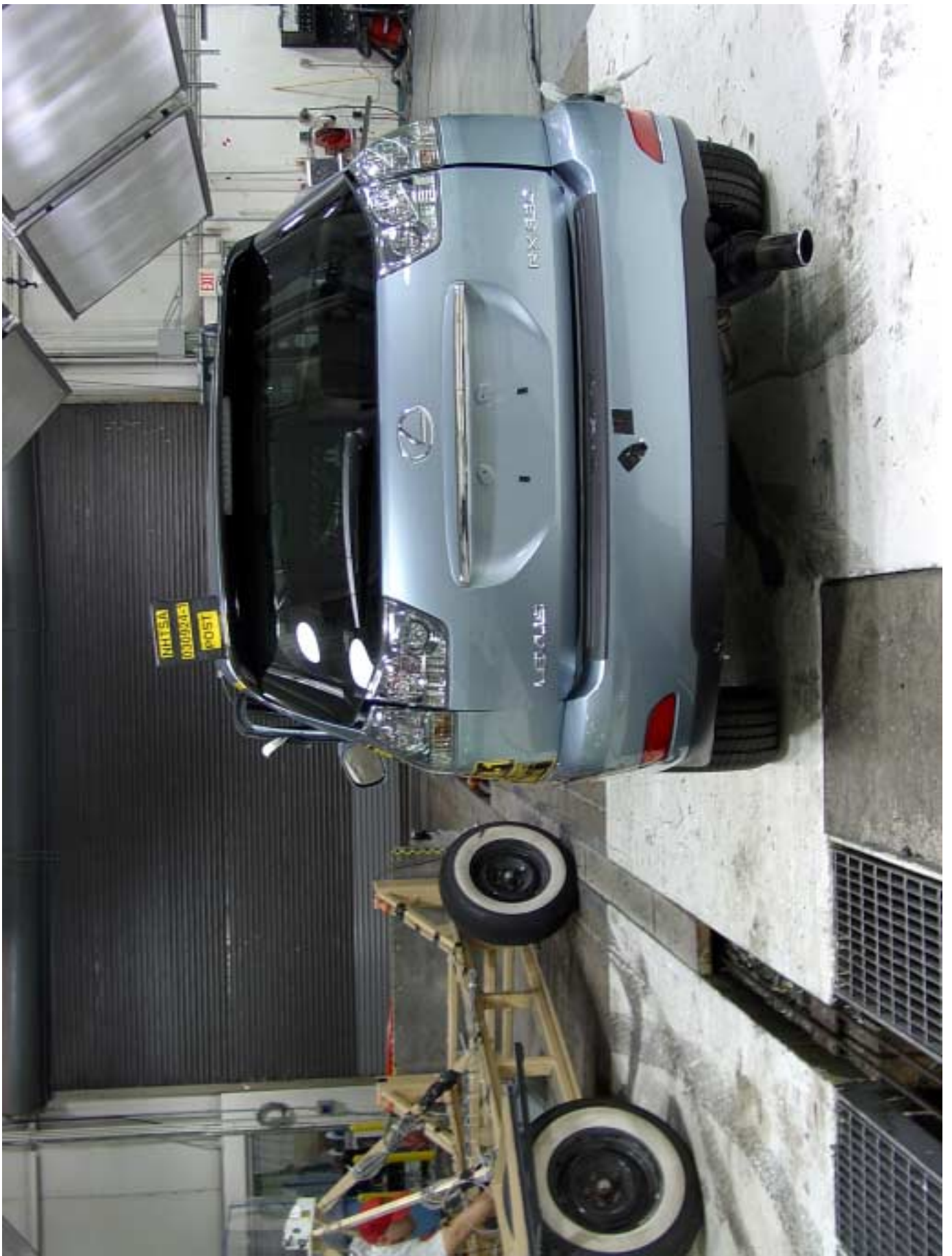


Figure A-6 Post-Test Rear View of Test Vehicle



Figure A-7 Pre-Test Right Rear View of Test Vehicle



Figure A-8 Post-Test Right Rear View of Test Vehicle



Figure A-9 Pre-Test Impacted Side Angled Door View



Figure A-10 Post-Test Impacted Side Angled Door View



Figure A-11 Pre-Test Frontal View of Impactor Face



Figure A-12 Post-Test Frontal View of Impactor Face



Figure A-13 Pre-Test Left Side View of Impactor Face



Figure A-14 Post-Test Left Side View of Impactor Face

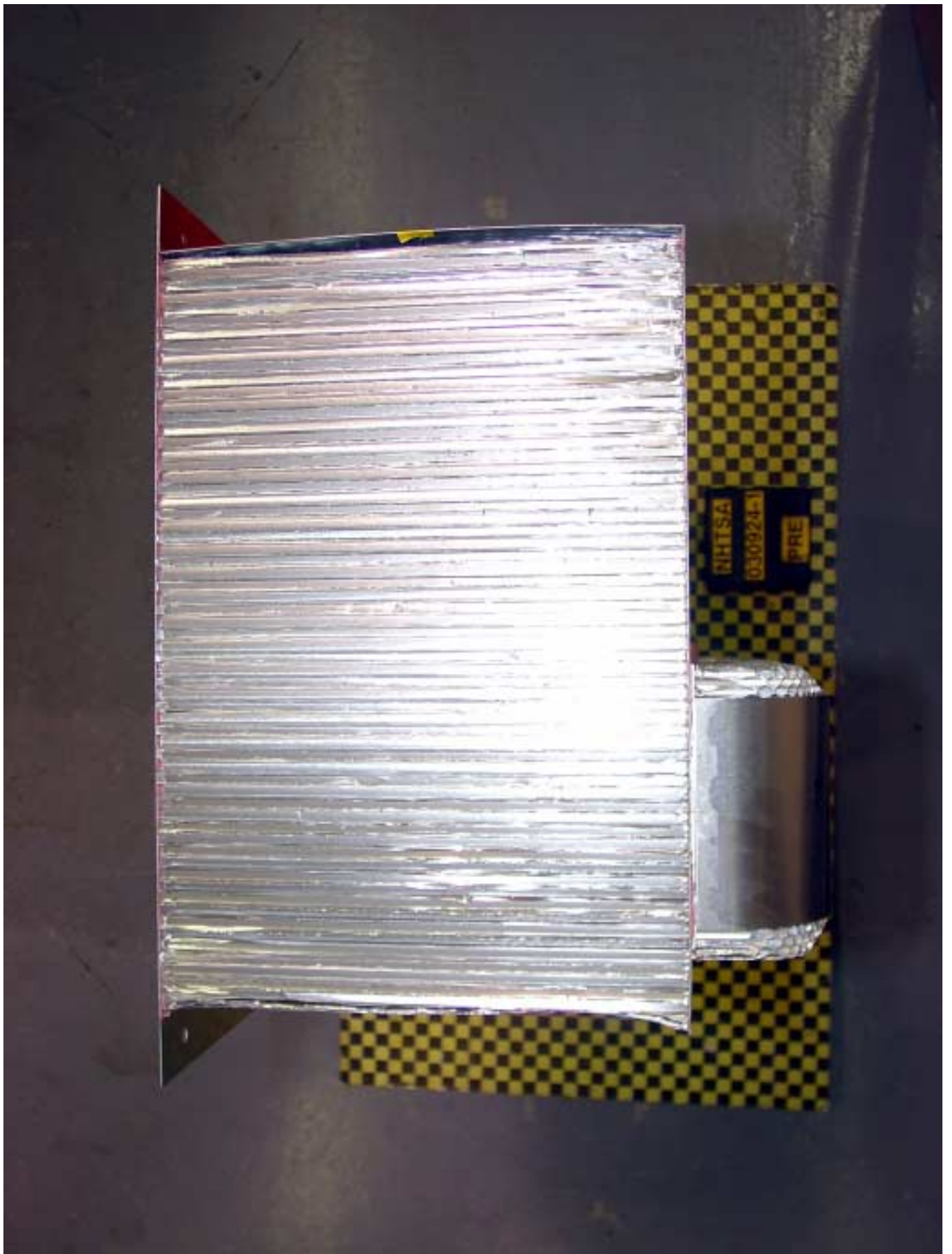


Figure A-15 Pre-Test Right Side View of Impactor Face



Figure A-16 Post-Test Right Side View of Impactor Face

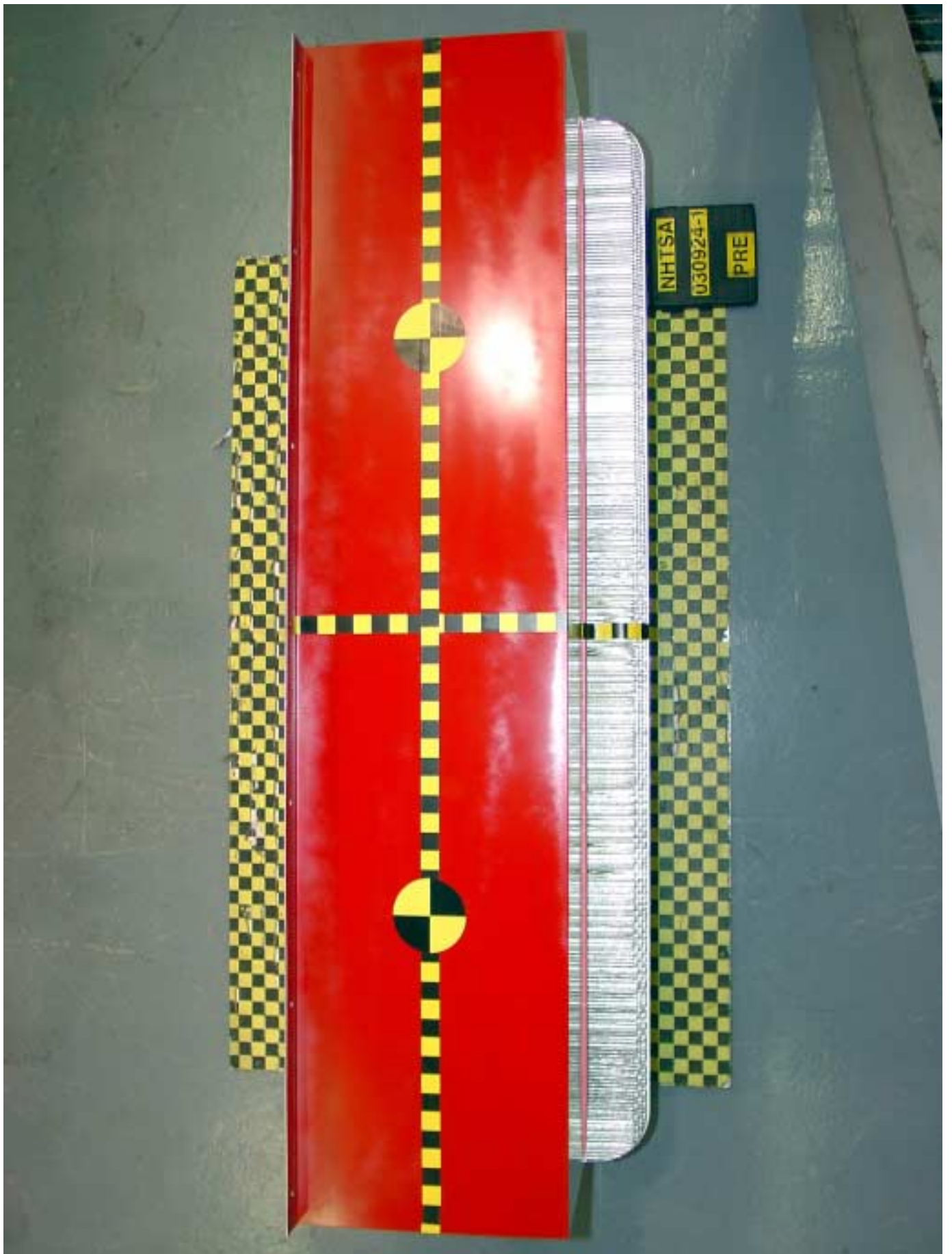


Figure A-17 Pre-Test Top View of Impactor Face



Figure A-18 Post-Test Top View of Impactor Face



Figure A-19 Pre-Test View of MDB Showing Contact Switches in Place

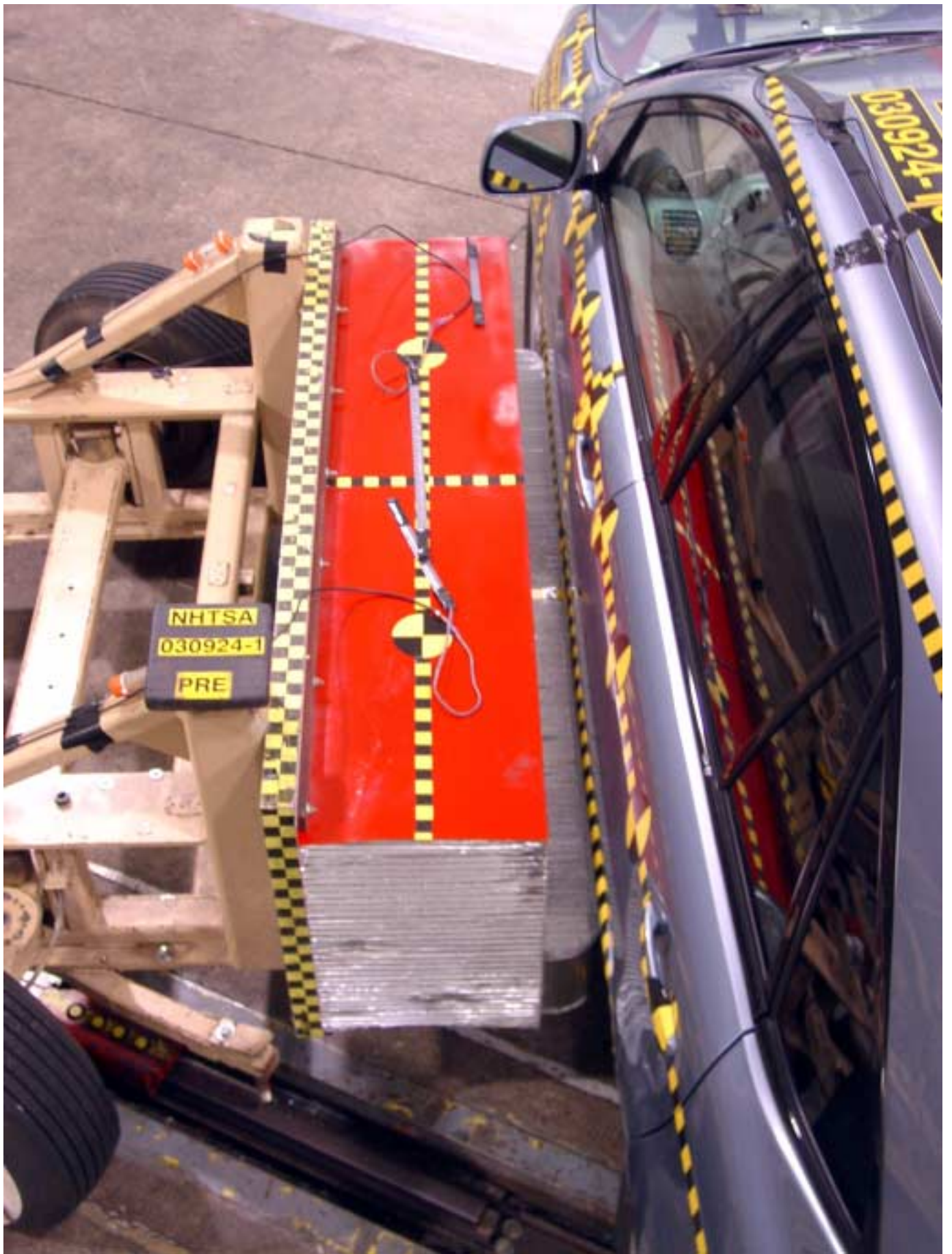


Figure A-20 Pre-Test Overhead View of MDB Aligned with Vehicle

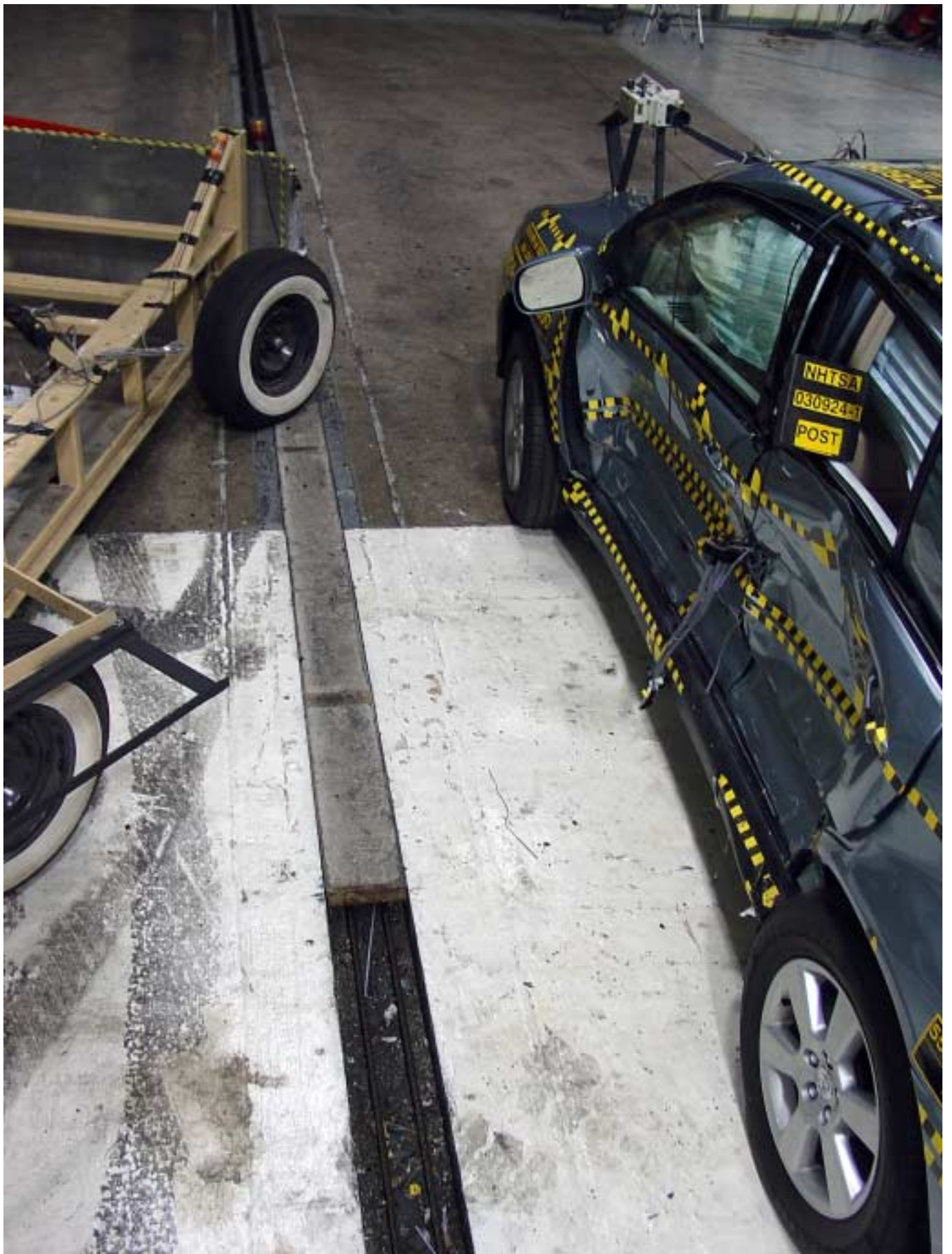


Figure A-21 Post-Test Overhead View of MDB and Vehicle



Figure A-22 Pre-Test Right Occupant Compartment View of Front SID HIII



Figure A-23 Post-Test Right Occupant Compartment View of Front SID HIII

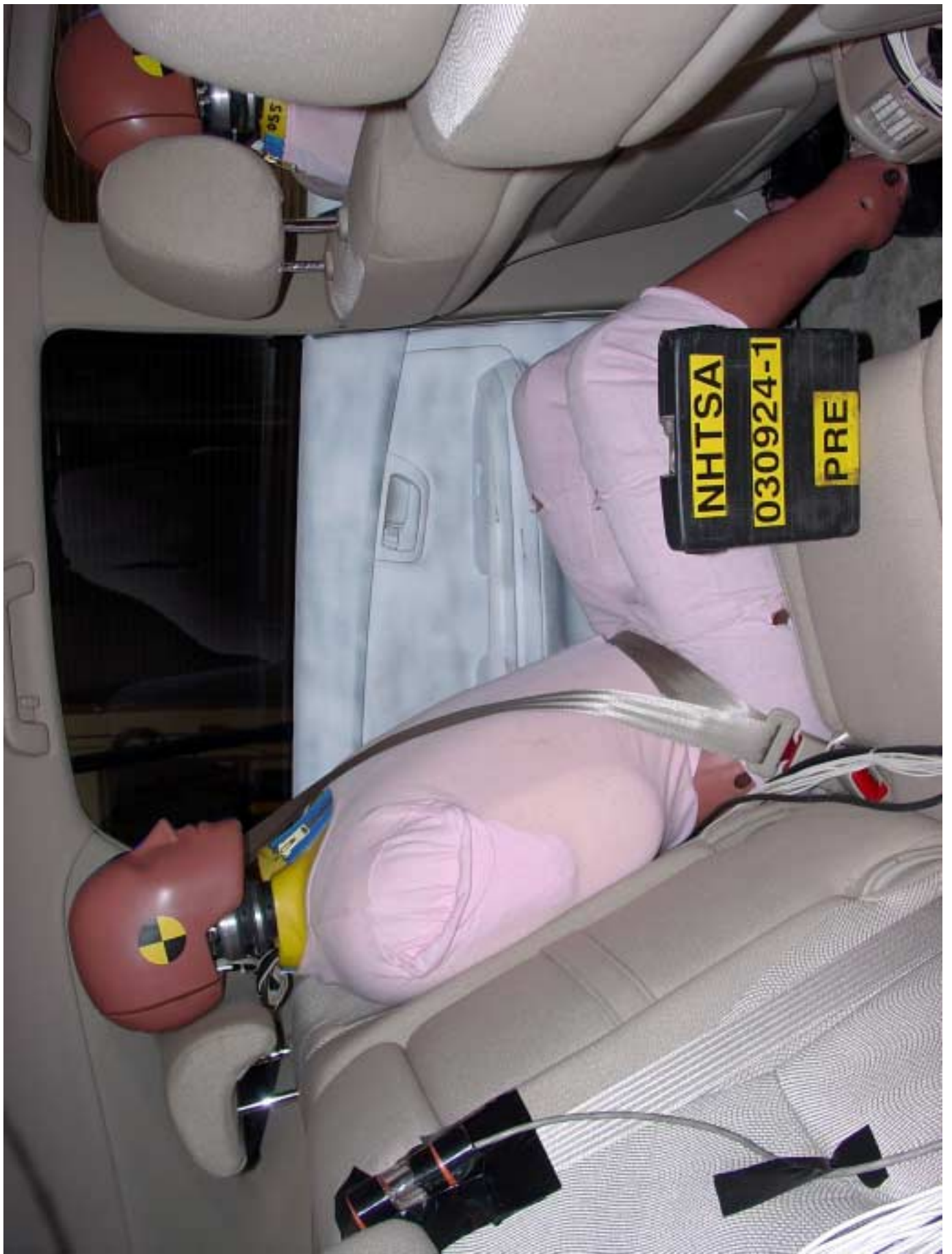


Figure A-24 Pre-Test Right Occupant Compartment View of Rear SID HIII

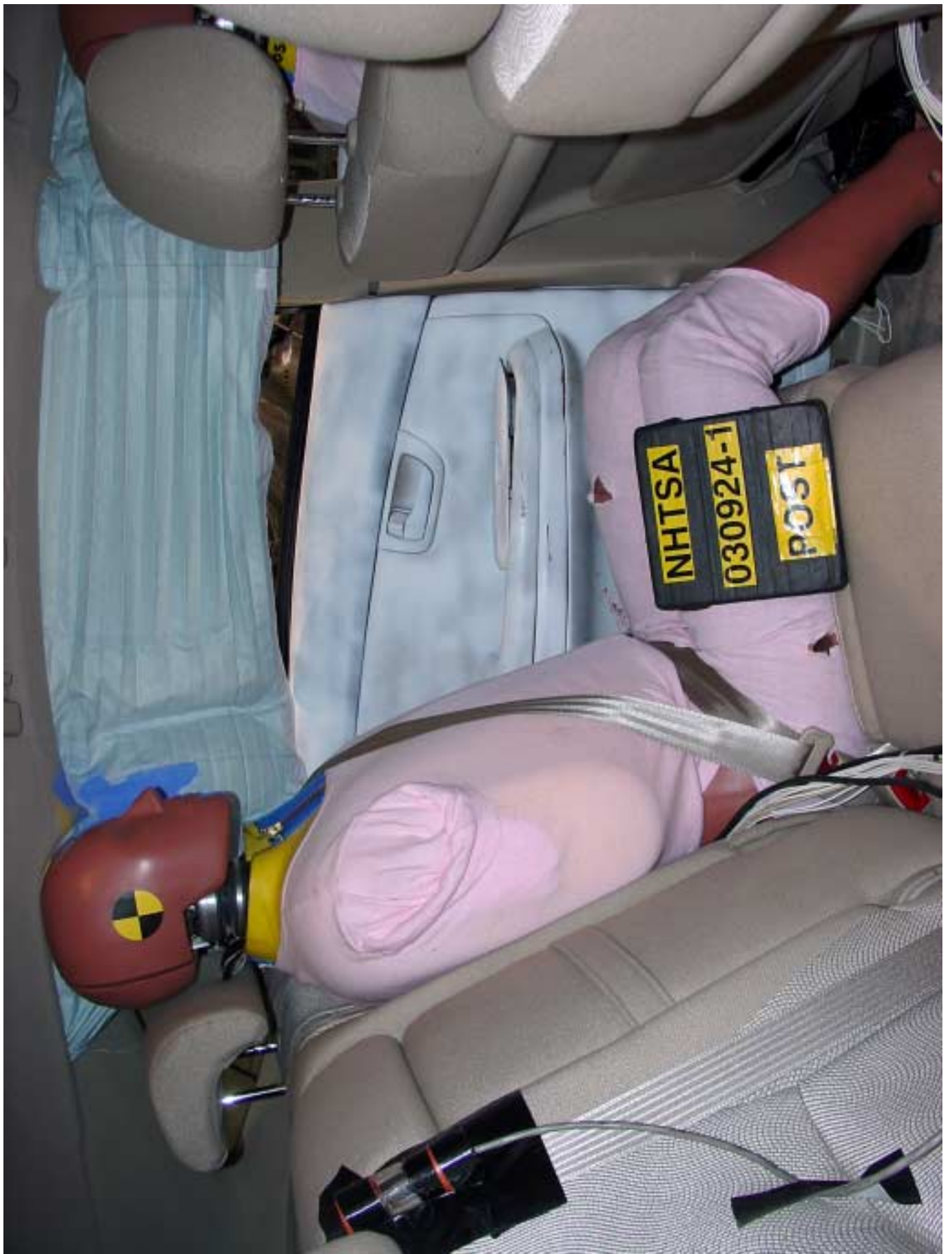


Figure A-25 Post-Test Right Occupant Compartment View of Rear SID III



Figure A-26 Pre-Test Left View of Front SID HIII



Figure A-27 Post-Test Left View of Front SID HIII



Figure A-28 Pre-Test Left View of Front SID HIII and Belt Position

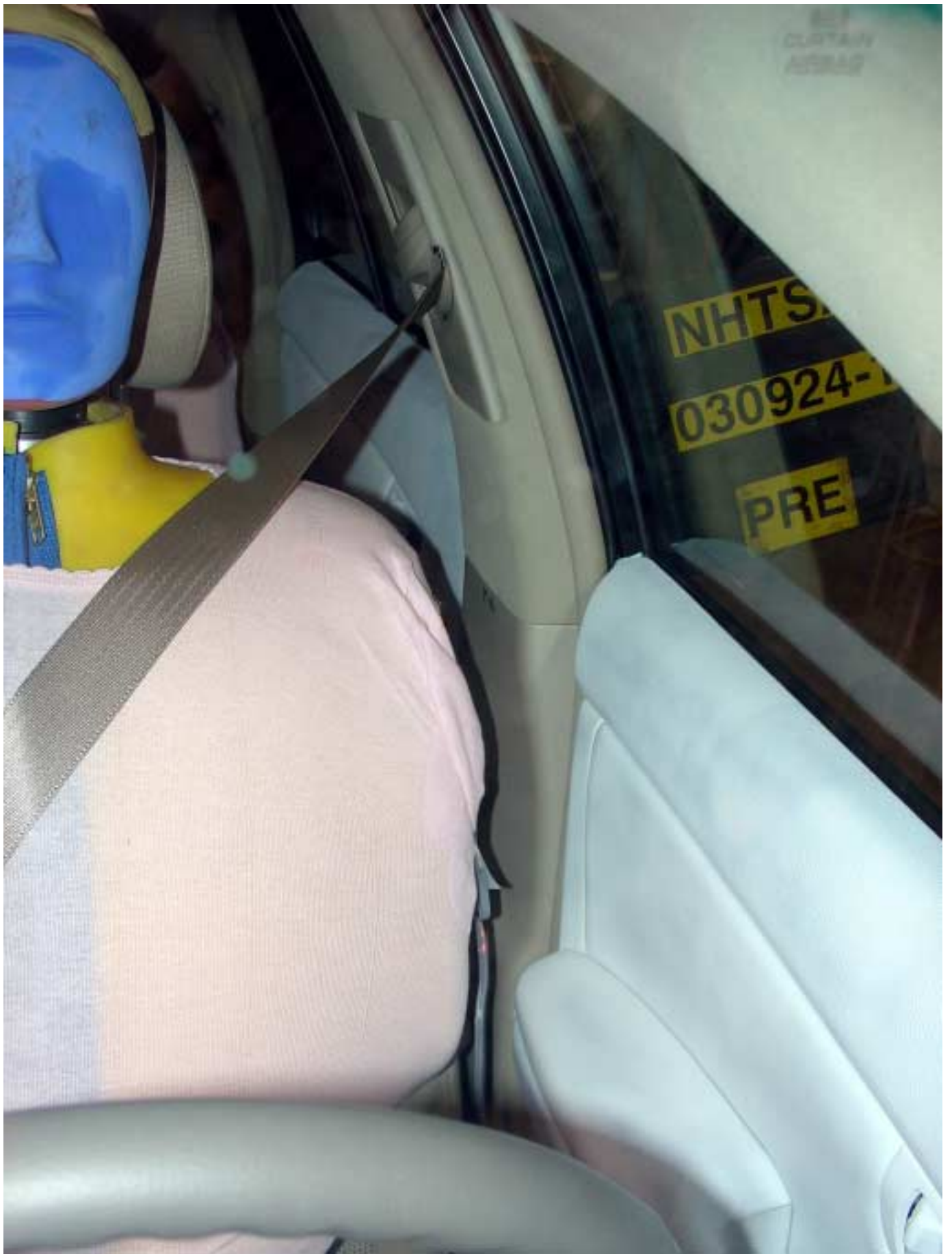


Figure A-29 Pre-Test Front View of Front SID HIII and Door Clearance



Figure A-30 Post-Test Front View of Front SID HIII and Door Clearance



Figure A-31 Pre-Test Left View of Rear SID HIII



Figure A-32 Post-Test Left View of Rear SID HIII

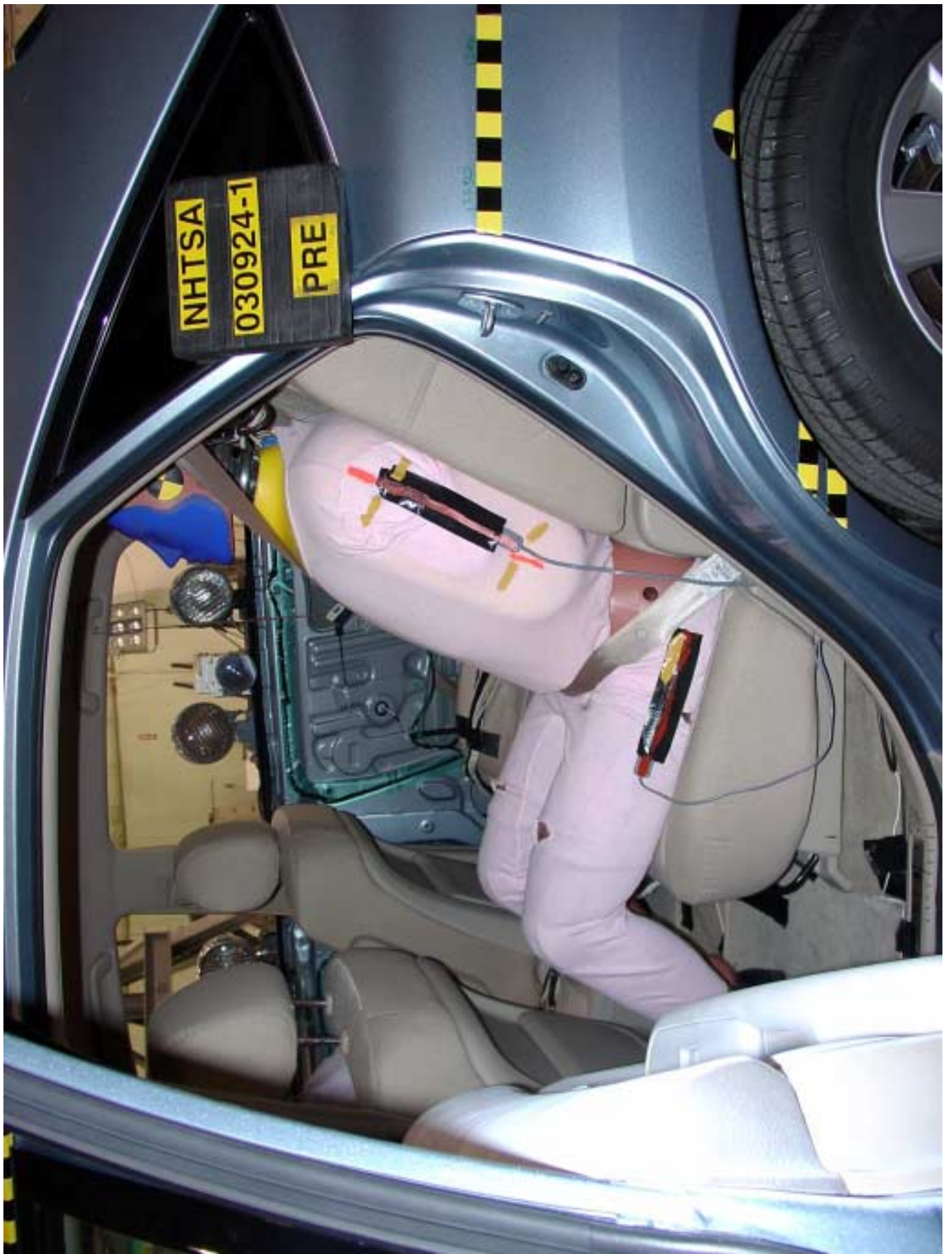


Figure A-33 Pre-Test Left View of Rear SID HIII and Belt Position



Figure A-34 Post-Test View of Rear SID HIII and Door Clearance



Figure A-35 Pre-Test Interior of Front Door

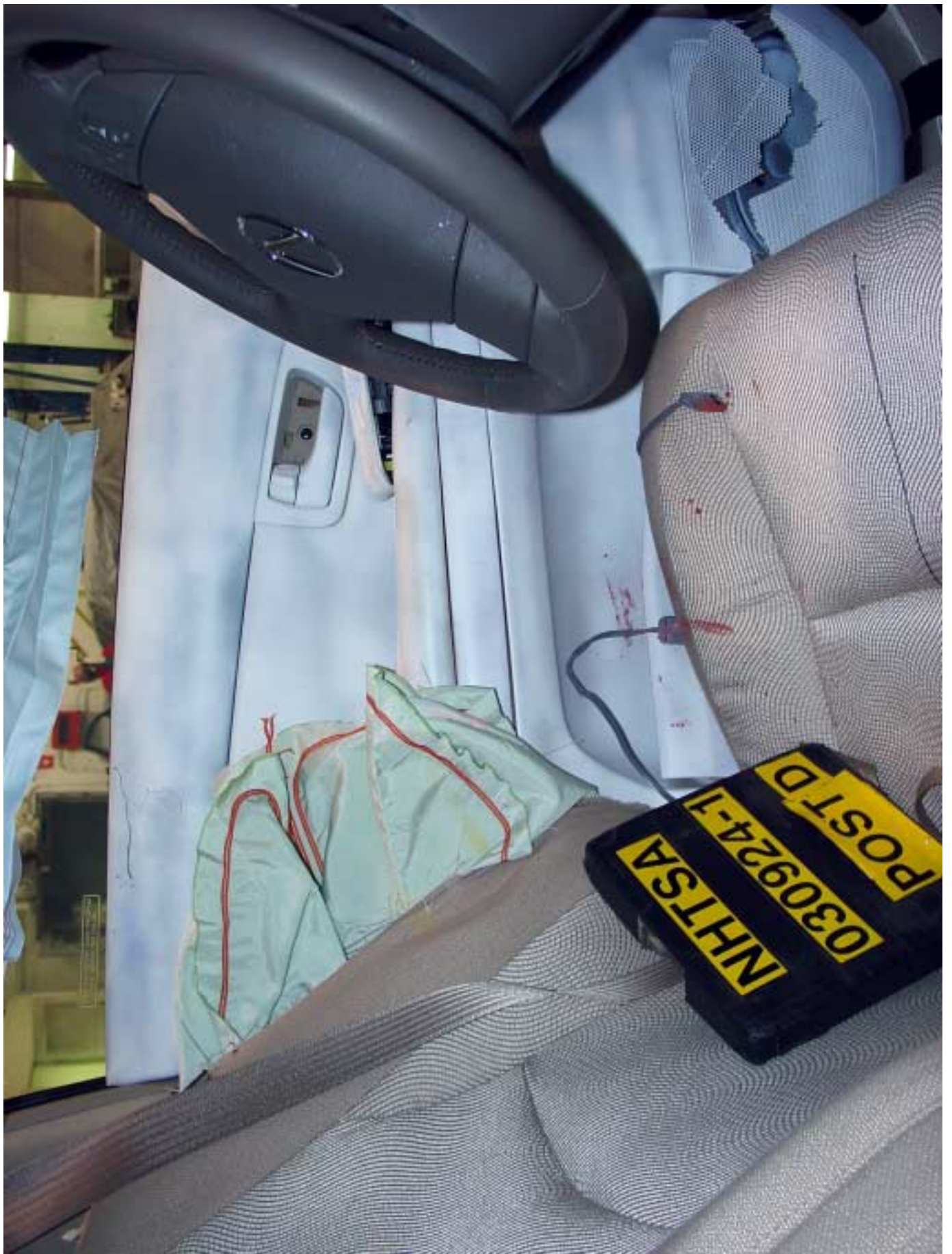


Figure A-36 Post-Test Interior of Front Door Showing SID HIII Impact Locations



Figure A-37 Post-Test Front SID HIII Contact - View 1



Figure A-38 Post-Test Front SID HIII Contact - View 2



Figure A-39 Pre-Test Interior of Rear Panel

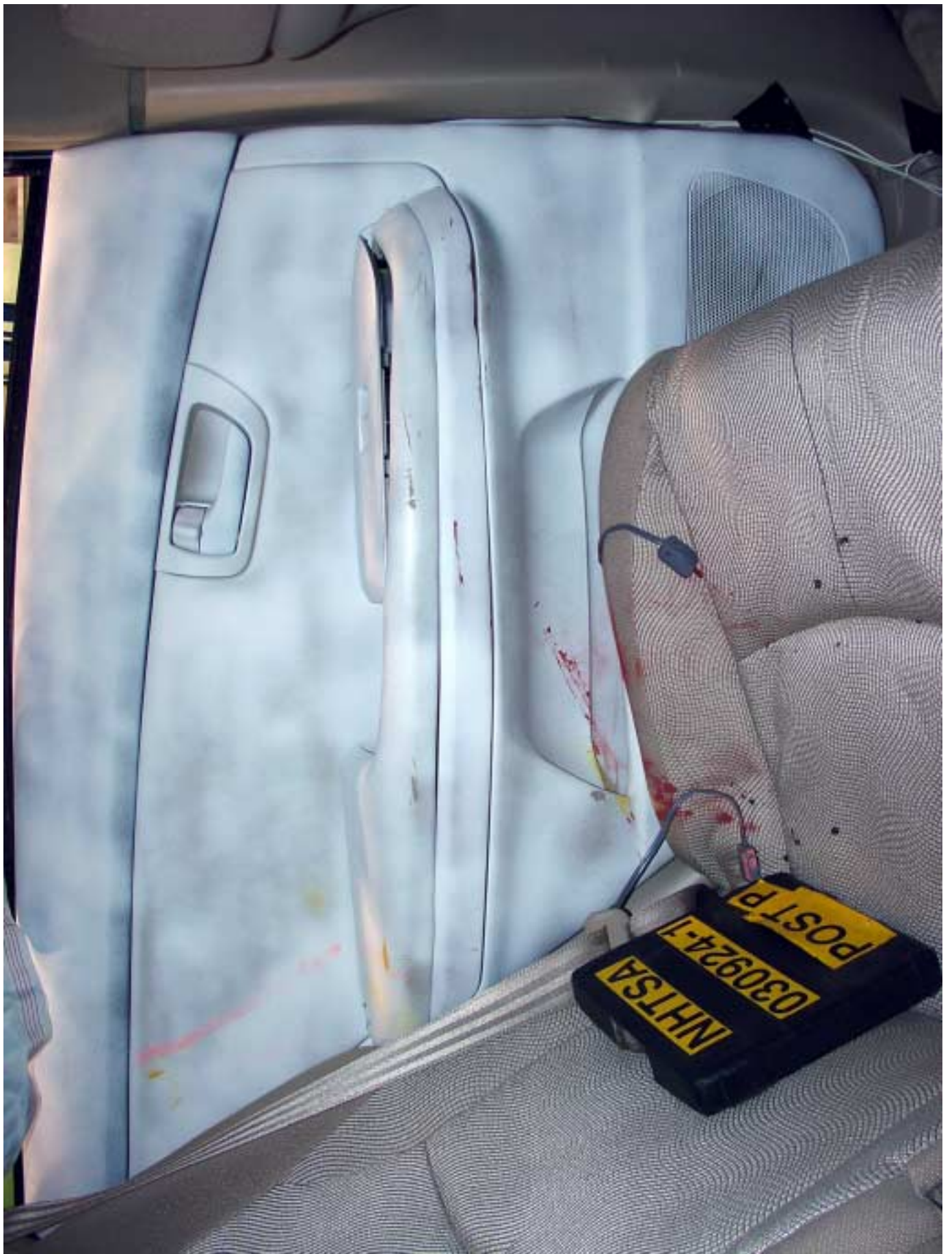


Figure A-40 Post-Test Interior of Rear Panel Showing SID HIII Impact Locations



Figure A-41 Post-Test Rear SID HIII Contact View



Figure A-42 Pre-Test Left Side View of MDB With Impactor Face in Position



Figure A-43 Pre-Test Primary Impact Point View



Figure A-44 Post-Test Primary Impact Point View



Figure A-45 Pre-Test Secondary Impact Point View

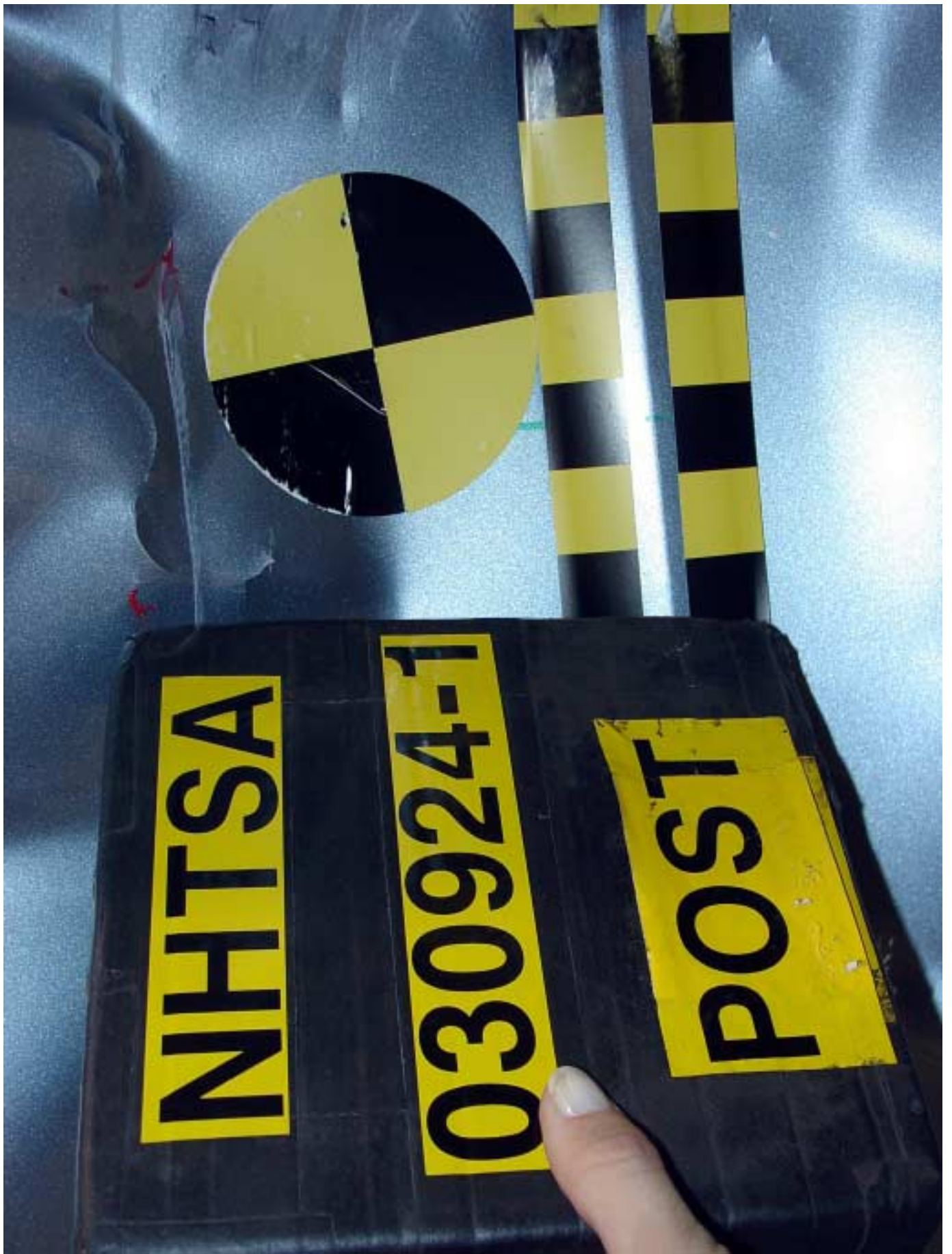


Figure A-46 Post-Test Secondary Impact Point View

MFD. BY: TOYOTA MOTOR CORPORATION  
 GVWR: 2380KG (5245LB)  
 GAWR: FRT. 1300KG (2865LB) WITH 225/65R17 TIRES.  
 RR. 17X6 1/2JJ RIMS, AT 210KPA (30PSI) COLD. TIRES.  
 1300KG (2865LB) WITH 225/65R17 TIRES.  
 17X6 1/2JJ RIMS, AT 210KPA (30PSI) COLD. TIRES.  
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
 VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON  
 THE DATE OF MANUFACTURE SHOWN ABOVE.  
 JTJGA31U940011659 MPV

7

GRAVE  
A  
AIRE  
N



C/TR: 8R6/FA00  
 A/TM: -01A/U151E  
 MCU33L-AWAGKA  
 MADE IN JAPAN  
 825

J

06/03

Figure A-47 Vehicle Certification Label View

SRS  
DO NOT  
OBSERVE  
SEE  
COUS  
NE F  
OBSERVE  
PRO  
POU  
SRS  
VOM  
DEN  
DIE  
BESCH  
SIEH

TIRE-LOADING INFORMATION	
<p>•CHARGE MAXIMALE DU VEHICULE 420 kg (925 LIVRES)</p> <p>•PERSONNES AVANT 2 ARRIERE 3 TOTAL 5</p> <p>•DIMENSION DES PNEUS 225/65R17 101S P235/55R18 99V</p> <p>•PRESSION DE PNEUS (kPa(LB/PO<sup>2</sup>)) AVANT 210(30) ARRIERE 210(30) POUR DE PLUS AMPLES DETAILS, VOIR LE MANUEL DU PROPRIETAIRE</p> <p><b>48110</b></p>	<p>•VEHICLE CAPACITY WEIGHT 420 kg (925 lbs)</p> <p>•OCCUPANTS FRT.2 RR.3 TOTAL 5</p> <p>•TIRE SIZE 225/65R17 101S P235/55R18 99V</p> <p>•COLD TIRE PRESSURE (kPa(psi)) UP TO VEHICLE CAPACITY WEIGHT FRT.210(30) RR.210(30)</p> <p>SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION</p> <p><b>2 Q</b></p>

Figure A-48 Vehicle Recommended Tire Pressure Label View



Figure A-49 Pre-Test Vehicle Ballast View



Figure A-50 Impact Event



Figure A-51 Pre-Test Fuel Cap



Figure A-52 Post-Test Fuel Cap



Figure A-53 FMVSS 301 Rollover View at 90°

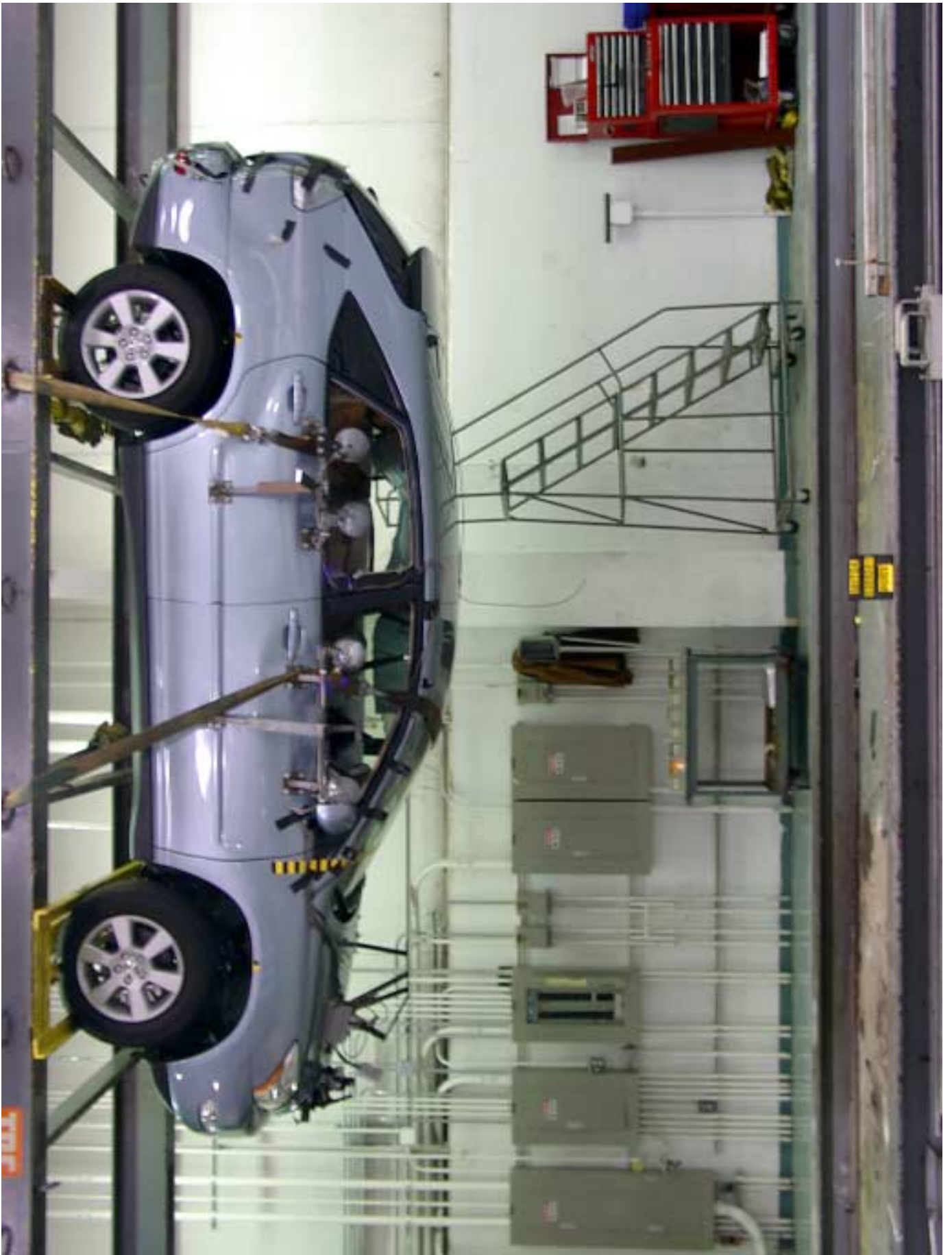


Figure A-54 FMVSS 301 Rollover View at 180°



Figure A-55 FMVSS 301 Rollover View at 270°



Figure A-56 FMVSS 301 Rollover View at 360°

## Appendix B

### Data Plots

Table of Data Plots

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Head Resultant Redundant Acceleration	B-17
9	Driver Neck X-Axis Shear Force	B-18
10	Driver Neck Y-Axis Shear Force	B-19
11	Driver Neck Z-Axis Axial Force	B-20
12	Driver Neck Moment about X Axis	B-21
13	Driver Neck Moment about Y Axis	B-22
14	Driver Neck Moment about Z Axis	B-23
15	Driver Neck Occipital Condyle Moment about X Axis	B-24
16	Driver Upper Rib Y-Axis Acceleration	B-25
17	Driver Upper Rib Y-Axis Velocity	B-26
18	Driver Lower Rib Y-Axis Acceleration	B-27
19	Driver Lower Rib Y-Axis Velocity	B-28
20	Driver Lower Spine Y-Axis Acceleration	B-29
21	Driver Lower Spine Y-Axis Velocity	B-30
22	Driver Pelvis Y-Axis Acceleration	B-31
23	Driver Pelvis Y-Axis Velocity	B-32
24	Left Rear Passenger Head X-Axis Acceleration	B-33

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
25	Left Rear Passenger Head X-Axis Velocity	B-34
26	Left Rear Passenger Head Y-Axis Acceleration	B-35
27	Left Rear Passenger Head Y-Axis Velocity	B-36
28	Left Rear Passenger Head Z-Axis Acceleration	B-37
29	Left Rear Passenger Head Z-Axis Velocity	B-38
30	Left Rear Passenger Head Resultant Acceleration	B-39
31	Left Rear Passenger Head Resultant Redundant Acceleration	B-40
32	Left Rear Passenger Neck X-Axis Shear Force	B-41
33	Left Rear Passenger Neck Y-Axis Shear Force	B-42
34	Left Rear Passenger Neck Z-Axis Axial Force	B-43
35	Left Rear Passenger Neck Moment about X Axis	B-44
36	Left Rear Passenger Neck Moment about Y Axis	B-45
37	Left Rear Passenger Neck Moment about Z Axis	B-46
38	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-47
39	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Upper Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Rib Y-Axis Velocity	B-51
43	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-52
44	Left Rear Passenger Lower Spine Y-Axis Velocity	B-53
45	Left Rear Passenger Pelvis Y-Axis Acceleration	B-54
46	Left Rear Passenger Pelvis Y-Axis Velocity	B-55

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots  
Acceleration Data - Filter Class 1000 - Redundant  
Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
47	Driver Head X-Axis Redundant Acceleration	B-57
48	Driver Head X-Axis Redundant Velocity	B-58
49	Driver Head Y-Axis Redundant Acceleration	B-59
50	Driver Head Y-Axis Redundant Velocity	B-60
51	Driver Head Z-Axis Redundant Acceleration	B-61
52	Driver Head Z-Axis Redundant Velocity	B-62
53	Driver Upper Rib Y-Axis Redundant Acceleration	B-63
54	Driver Upper Rib Y-Axis Redundant Velocity	B-64
55	Driver Lower Rib Y-Axis Redundant Acceleration	B-65
56	Driver Lower Rib Y-Axis Redundant Velocity	B-66
57	Driver Lower Spine Y-Axis Redundant Acceleration	B-67
58	Driver Lower Spine Y-Axis Redundant Velocity	B-68
59	Driver Pelvis Y-Axis Redundant Acceleration	B-69
60	Driver Pelvis Y-Axis Redundant Velocity	B-70
61	Driver Shoulder Contact Switch	B-71
62	Driver Pelvis Contact Switch	B-72
63	Left Rear Passenger Head X-Axis Redundant Acceleration	B-73
64	Left Rear Passenger Head X-Axis Redundant Velocity	B-74
65	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-75
66	Left Rear Passenger Head Y-Axis Redundant Velocity	B-76
67	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-77
68	Left Rear Passenger Head Z-Axis Redundant Velocity	B-78
69	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-79
70	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-80
71	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-81
72	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-82
73	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-83
74	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-84
75	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-85
76	Left Rear Passenger Pelvis Y-Axis Redundant Velocity	B-86
77	Left Rear Passenger Shoulder Contact Switch	B-87
78	Left Rear Passenger Pelvis Contact Switch	B-88

Table of Data Plots (Continued)  
 Test Vehicle Instrumentation Plots  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
79	Right Side Sill at Front Seat X-Axis Acceleration	B-90
80	Right Side Sill at Front Seat X-Axis Velocity	B-91
81	Right Side Sill at Front Seat Y-Axis Acceleration	B-92
82	Right Side Sill at Front Seat Y-Axis Velocity	B-93
83	Right Side Sill at Front Seat Z-Axis Acceleration	B-94
84	Right Side Sill at Front Seat Z-Axis Velocity	B-95
85	Right Side Sill at Front Seat Resultant Acceleration	B-96
86	Right Side Sill at Rear Seat X-Axis Acceleration	B-97
87	Right Side Sill at Rear Seat X-Axis Velocity	B-98
88	Right Side Sill at Rear Seat Y-Axis Acceleration	B-99
89	Right Side Sill at Rear Seat Y-Axis Velocity	B-100
90	Right Side Sill at Rear Seat Z-Axis Acceleration	B-101
91	Right Side Sill at Rear Seat Z-Axis Velocity	B-102
92	Right Side Sill at Rear Seat Resultant Acceleration	B-103
93	Rear Floorpan Above Axle X-Axis Acceleration	B-104
94	Rear Floorpan Above Axle X-Axis Velocity	B-105
95	Rear Floorpan Above Axle Y-Axis Acceleration	B-106
96	Rear Floorpan Above Axle Y-Axis Velocity	B-107
97	Rear Floorpan Above Axle Z-Axis Acceleration	B-108
98	Rear Floorpan Above Axle Z-Axis Velocity	B-109
99	Rear Floorpan Above Axle Resultant Acceleration	B-110
100	Left Side Sill at Front Seat Y-Axis Acceleration	B-111
101	Left Side Sill at Front Seat Y-Axis Velocity	B-112
102	Left Side Sill at Front Seat Y-Axis Displacement	B-113

Table of Data Plots (Continued)  
 Test Vehicle Instrumentation Plots (Continued)  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
103	Left Side Sill at Rear Seat Y-Axis Acceleration	B-114
104	Left Side Sill at Rear Seat Y-Axis Velocity	B-115
105	Left Side Sill at Rear Seat Y-Axis Displacement	B-116
106	Right Rear Occupant Compartment Y-Axis Acceleration	B-117
107	Right Rear Occupant Compartment Y-Axis Velocity	B-118
108	Right Rear Occupant Compartment Y-Axis Displacement	B-119
109	Left Lower A-Post Y-Axis Acceleration	B-120
110	Left Lower A-Post Y-Axis Velocity	B-121
111	Left Middle A-Post Y-Axis Acceleration	B-122
112	Left Middle A-Post Y-Axis Velocity	B-123
113	Left Lower B-Post Y-Axis Acceleration	B-124
114	Left Lower B-Post Y-Axis Velocity	B-125
115	Left Middle B-Post Y-Axis Acceleration	B-126
116	Left Middle B-Post Y-Axis Velocity	B-127
117	Left Front Seat Track Y-Axis Acceleration	B-128
118	Left Front Seat Track Y-Axis Velocity	B-129
119	Left Rear Seat Track Y-Axis Acceleration	B-130
120	Left Rear Seat Track Y-Axis Velocity	B-131
121	Vehicle Center of Gravity X-Axis Acceleration	B-132
122	Vehicle Center of Gravity X-Axis Velocity	B-133
123	Vehicle Center of Gravity Y-Axis Acceleration	B-134
124	Vehicle Center of Gravity Y-Axis Velocity	B-135
125	Vehicle Center of Gravity Z-Axis Acceleration	B-136
126	Vehicle Center of Gravity Z-Axis Velocity	B-137
127	Vehicle Center of Gravity Resultant Acceleration	B-138

Table of Data Plots (Continued)  
MDB Instrumentation Plots  
Acceleration Data - Filter Class 60  
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
128	MDB Center of Gravity X-Axis Acceleration	B-140
129	MDB Center of Gravity X-Axis Velocity	B-141
130	MDB Center of Gravity Y-Axis Acceleration	B-142
131	MDB Center of Gravity Y-Axis Velocity	B-143
132	MDB Center of Gravity Z-Axis Acceleration	B-144
133	MDB Center of Gravity Z-Axis Velocity	B-145
134	MDB Center of Gravity Resultant Acceleration	B-146
135	MDB Left Rear X-Axis Acceleration	B-147
136	MDB Left Rear X-Axis Velocity	B-148
137	MDB Left Rear Y-Axis Acceleration	B-149
138	MDB Left Rear Y-Axis Velocity	B-150
139	MDB Right Side Contact Switch	B-151
140	MDB Left Side Contact Switch	B-152

Table of Data Plots (Continued)  
 Driver and Passenger Dummy Instrumentation Plots  
 Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
141	Driver Upper Rib Y-Axis Acceleration	B-154
142	Driver Lower Rib Y-Axis Acceleration	B-155
143	Driver Lower Spine Y-Axis Acceleration	B-156
144	Driver Pelvis Y-Axis Acceleration	B-157
145	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-158
146	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-159
147	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-160
148	Left Rear Passenger Pelvis Y-Axis Acceleration	B-161
149	Driver Upper Rib Y-Axis Redundant Acceleration	B-162
150	Driver Lower Rib Y-Axis Redundant Acceleration	B-163
151	Driver Lower Spine Y-Axis Redundant Acceleration	B-164
152	Driver Pelvis Y-Axis Redundant Acceleration	B-165
153	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-166
154	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-167
155	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-168
156	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-169

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

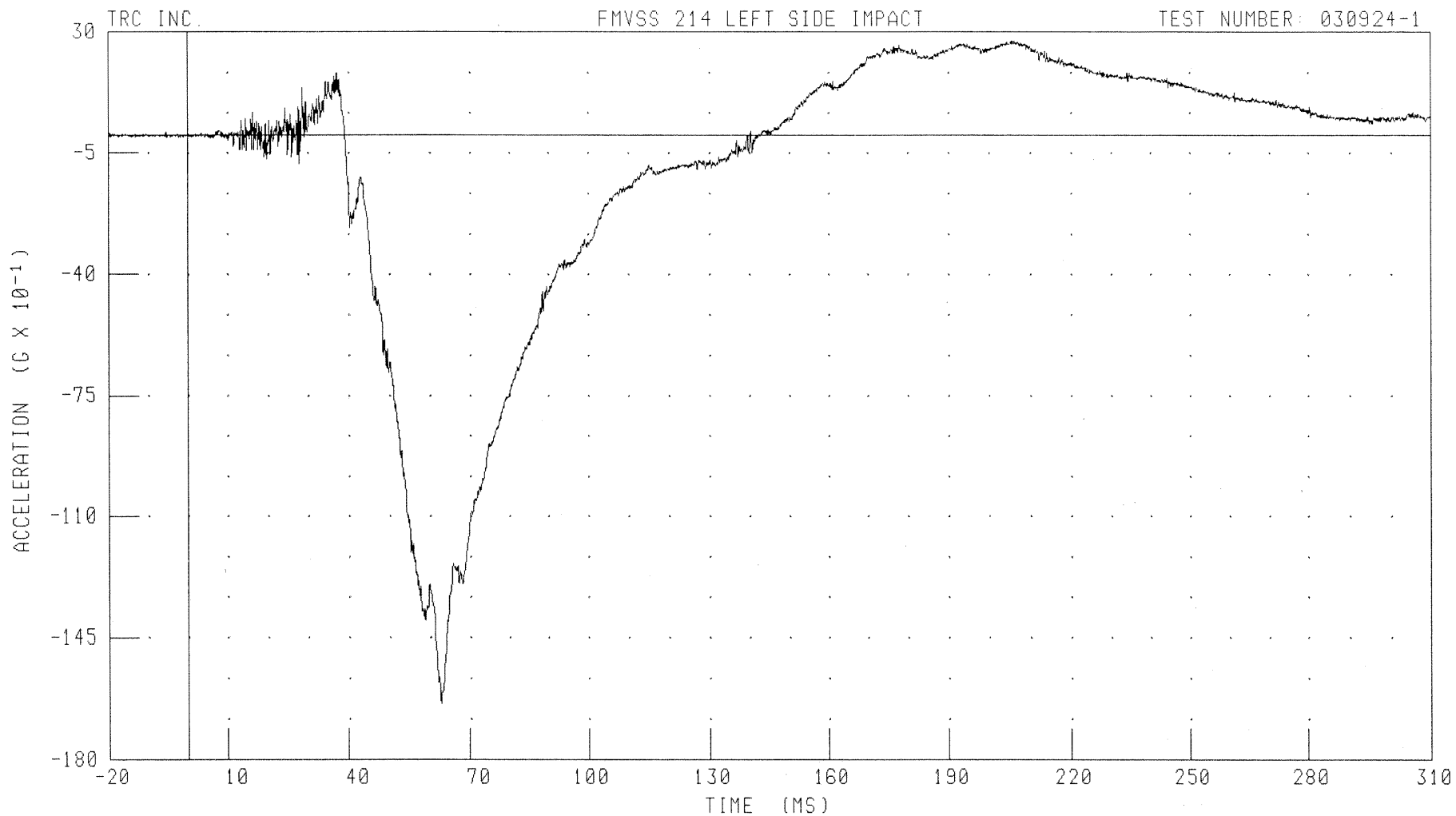
Moment Data - Filter Class 600

Contact Data - Filter Class 1000

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXG1 FILTER: CH. CLASS 1000

PEAK DATA: 2.74 G @ 205.60 MS; -16.41 G @ 62.64 MS

B-10

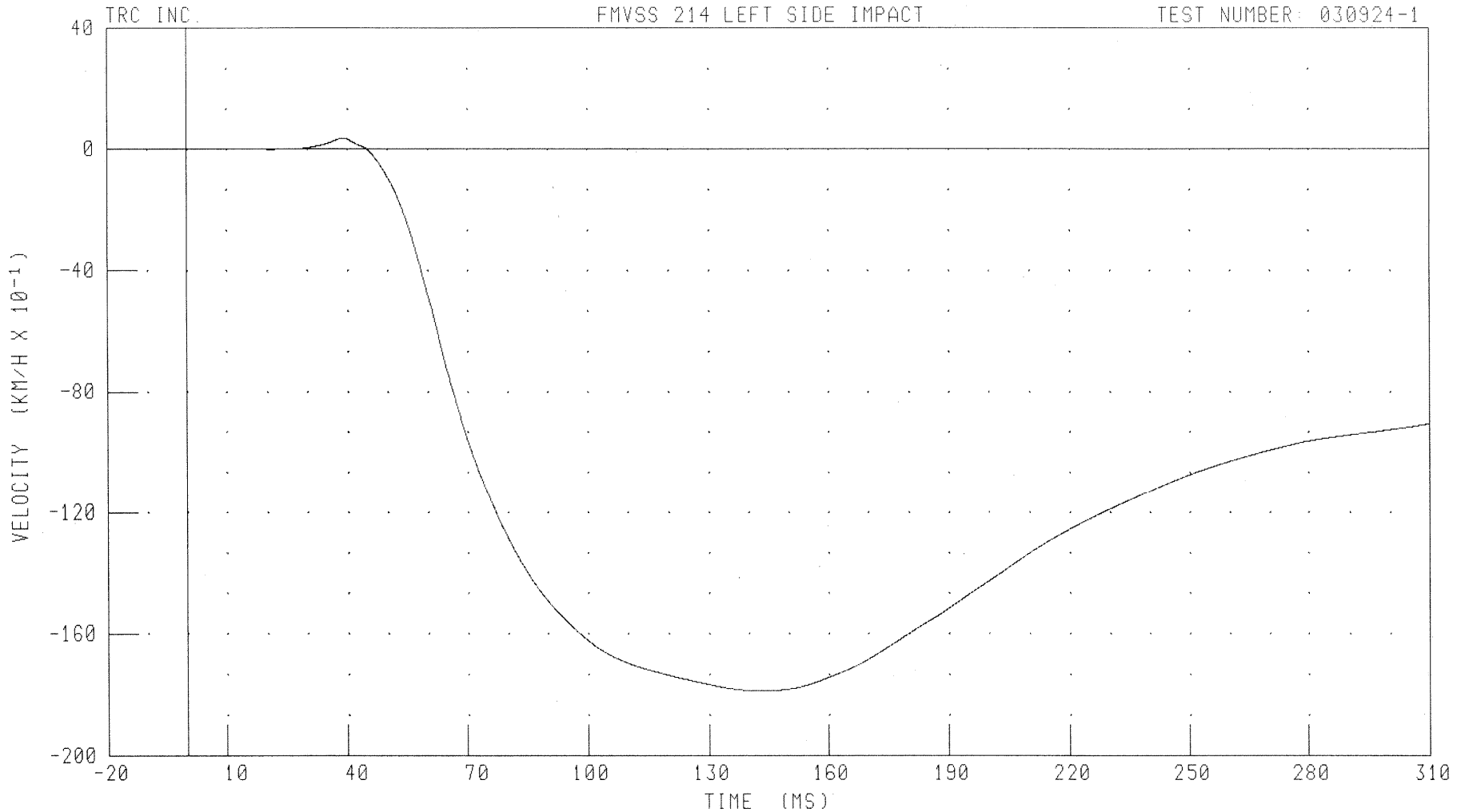
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXV1 FILTER: CH. CLASS 100

PEAK DATA: 0.36 KM/H @ 39.12 MS; -17.88 KM/H @ 142.48 MS

B-11

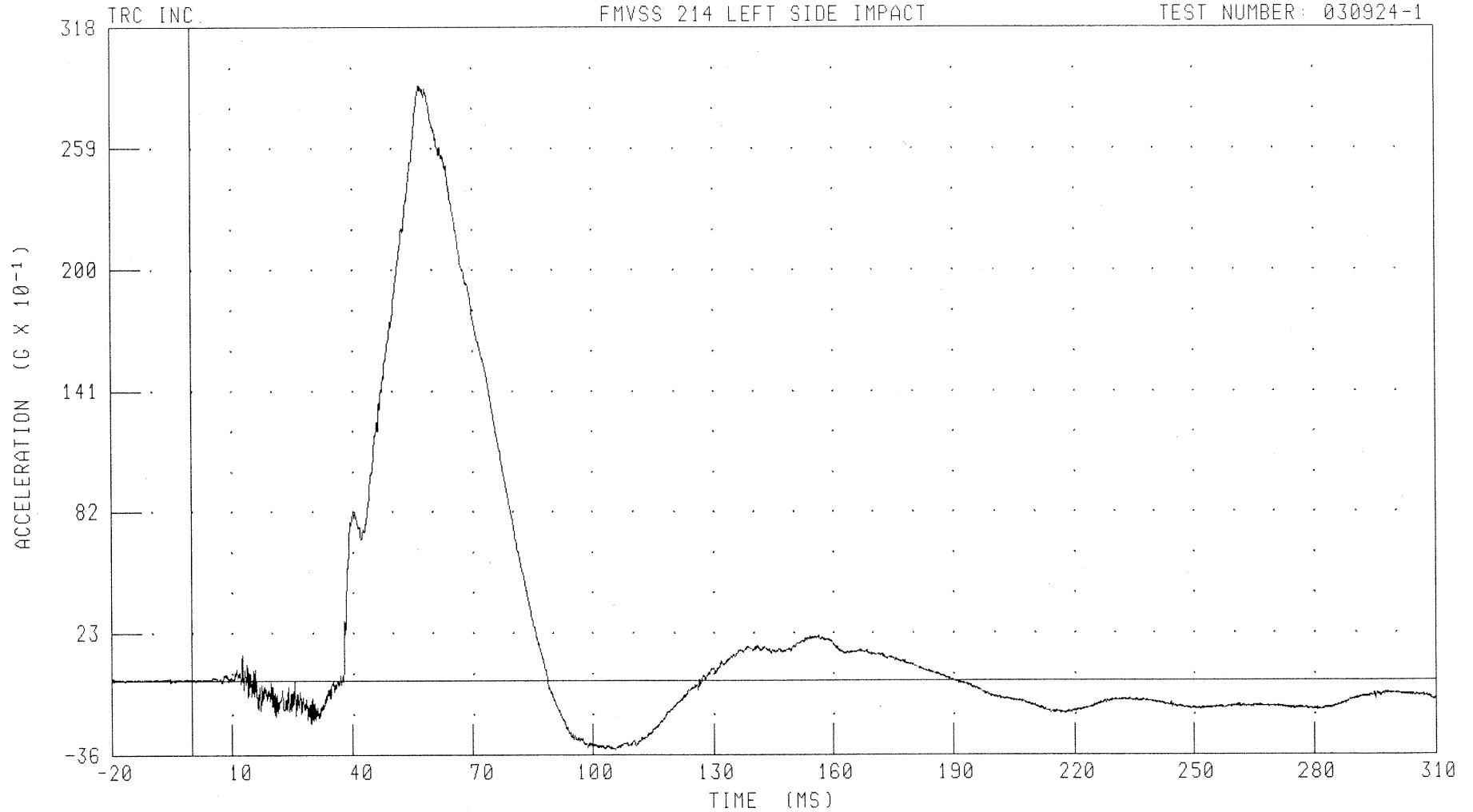
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 28.99 G @ 56.96 MS; -3.35 G @ 105.60 MS

B-12

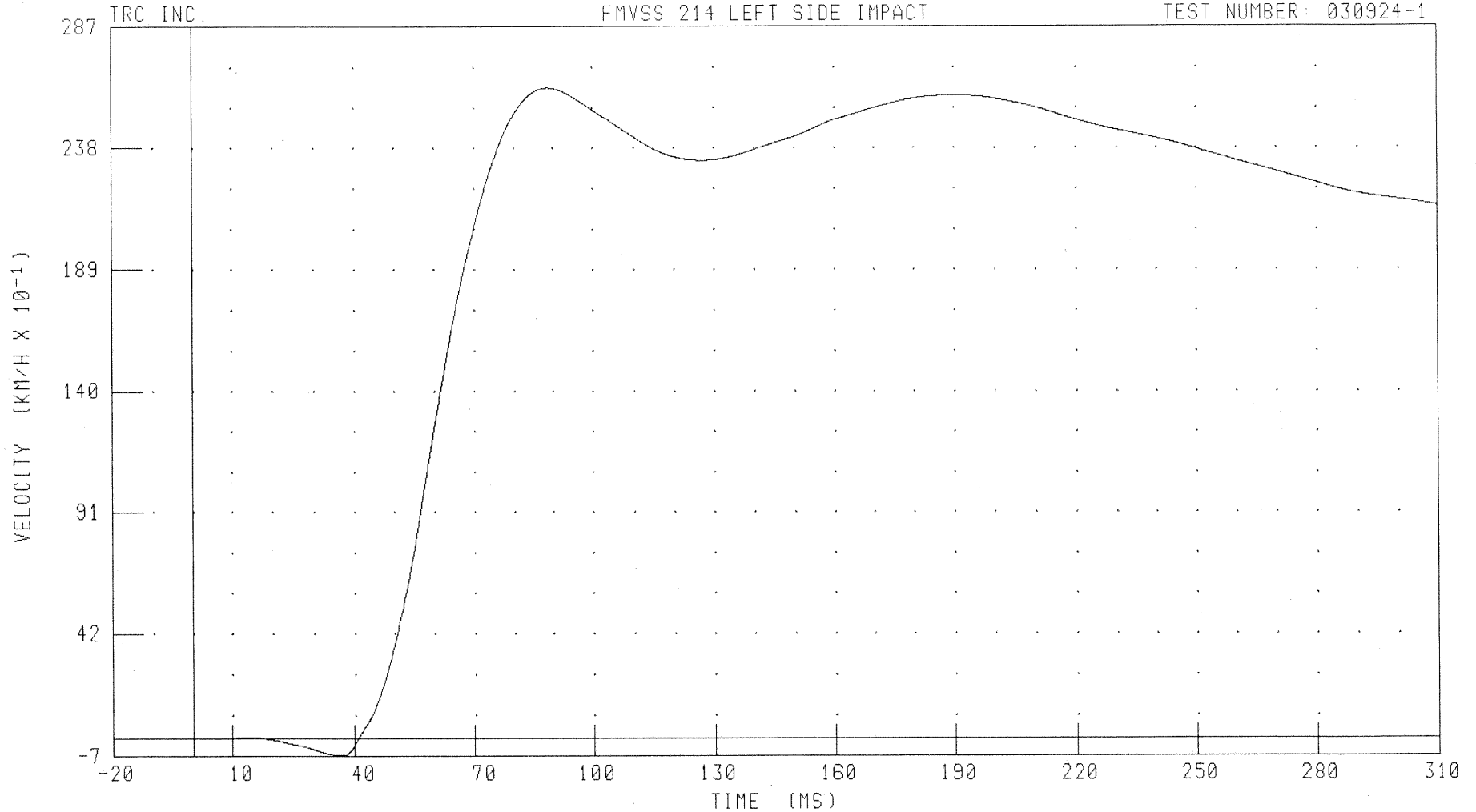
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYV1 FILTER: CH. CLASS 180

PEAK DATA: 26.24 KM/H @ 88.72 MS; -0.67 KM/H @ 37.12 MS

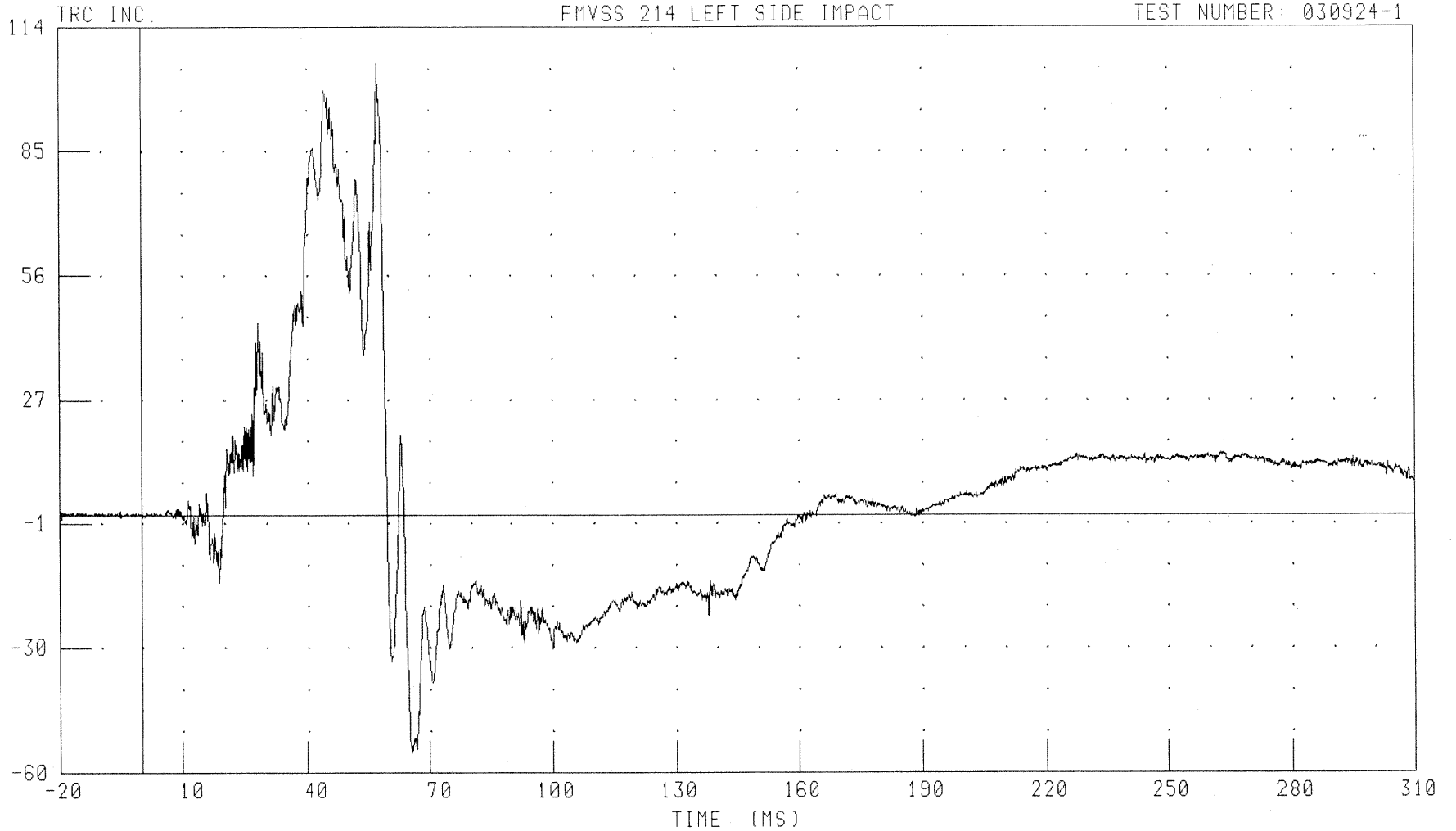
B-13

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZG1

FILTER: CH. CLASS 1000

PEAK DATA: 10.57 G @ 57.44 MS; -5.53 G @ 65.68 MS

B-14

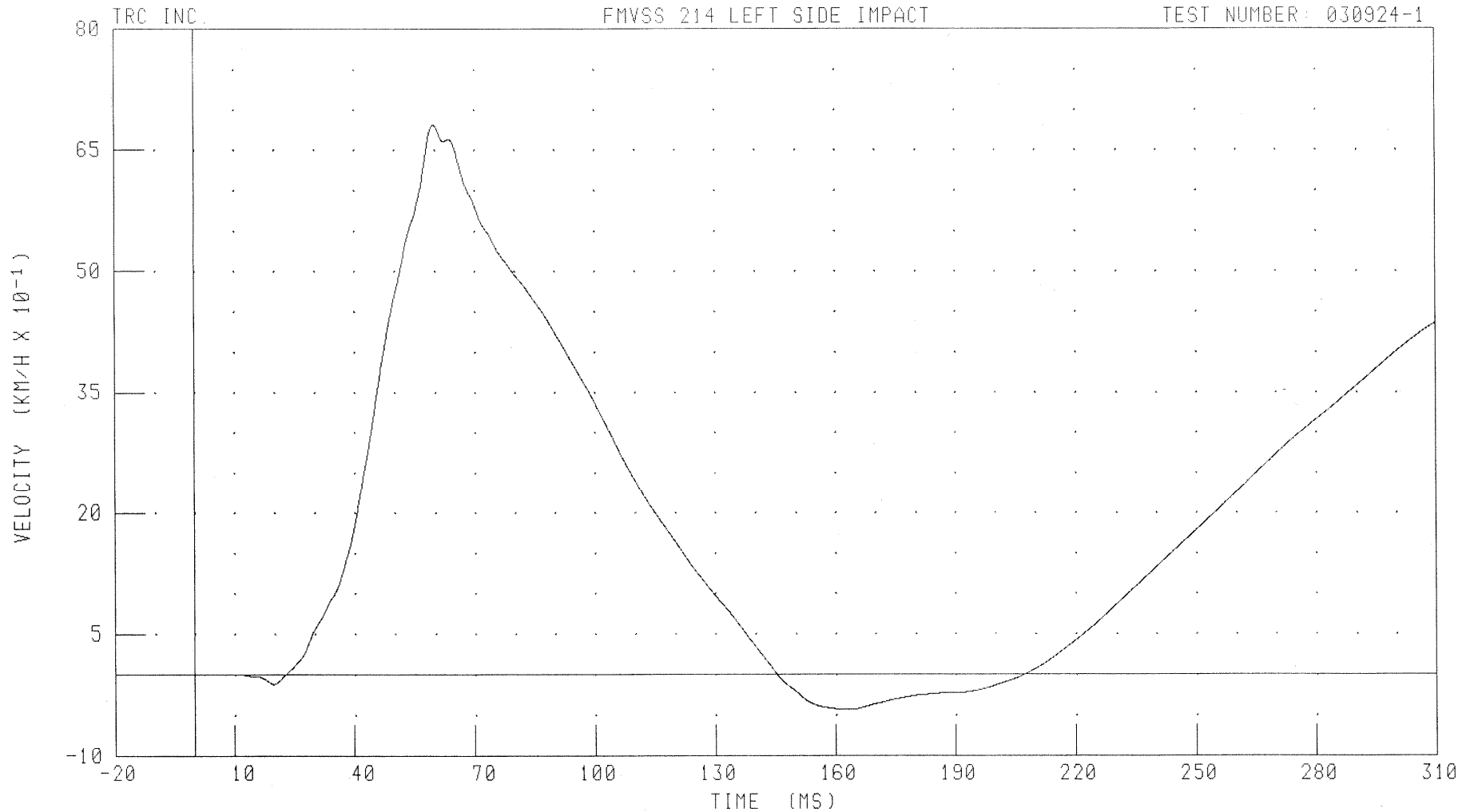
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZV1

FILTER: CH. CLASS 180

PEAK DATA: 6.81 KM/H @ 59.76 MS; -0.43 KM/H @ 164.00 MS

B-15

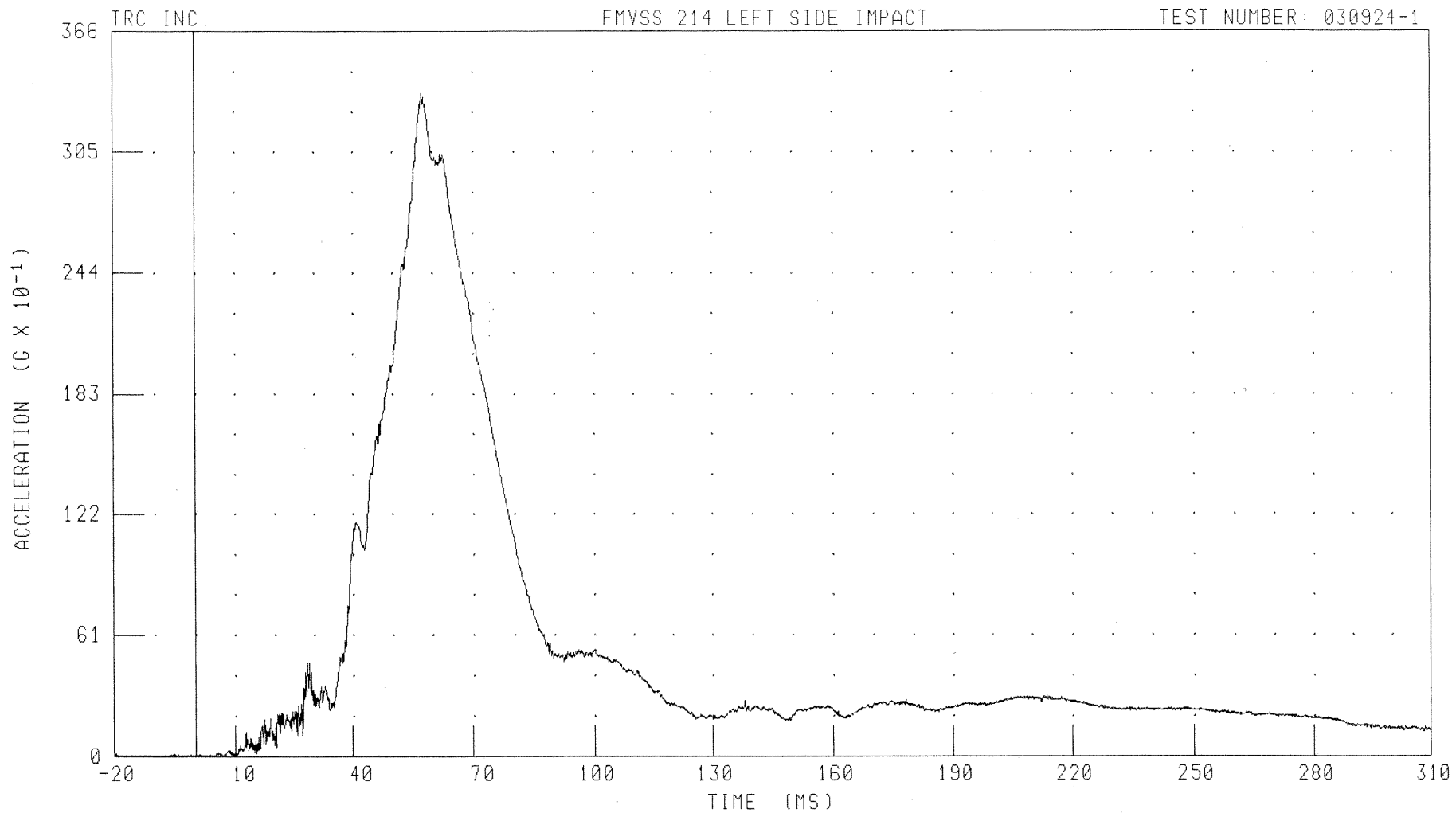
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDRG1 FILTER: CH. CLASS 1000

PEAK DATA: 33.50 G @ 57.44 MS; 0.01 G @ -17.36 MS

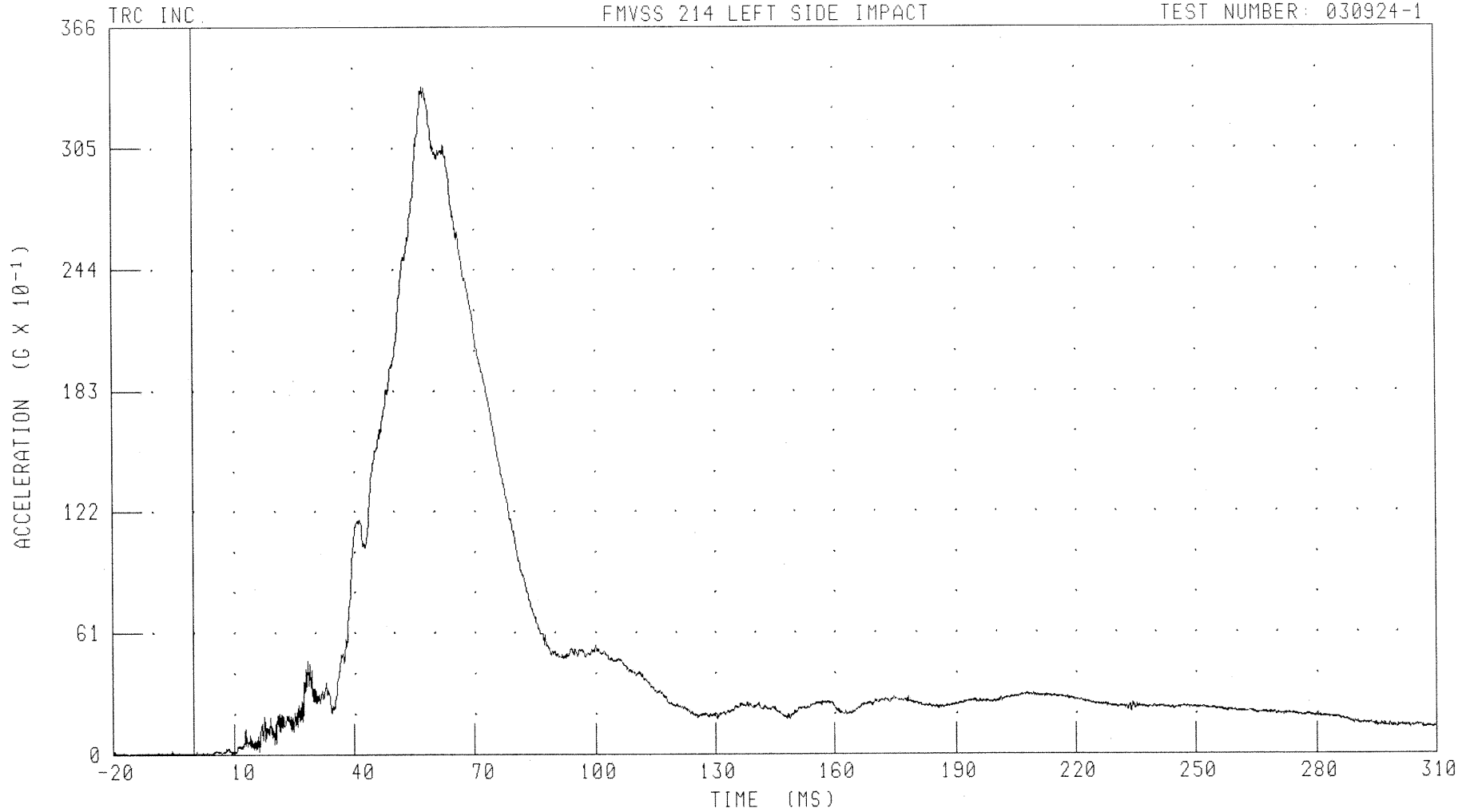
B-16

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD RESULTANT REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDRR1 FILTER: CH CLASS 1000

PEAK DATA: 33.61 G @ 57.44 MS; 0.01 G @ -18.80 MS

B-17

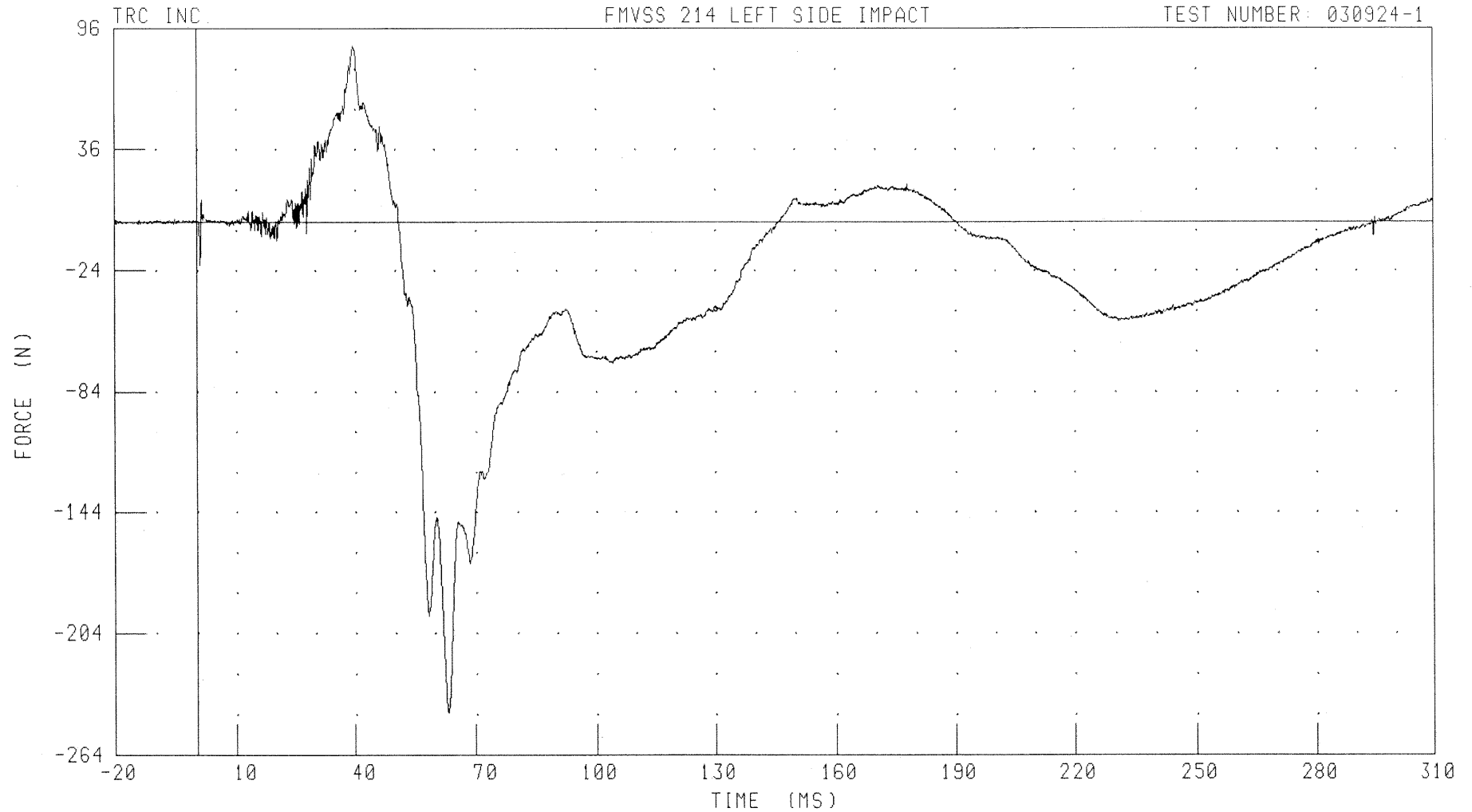
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



B-18

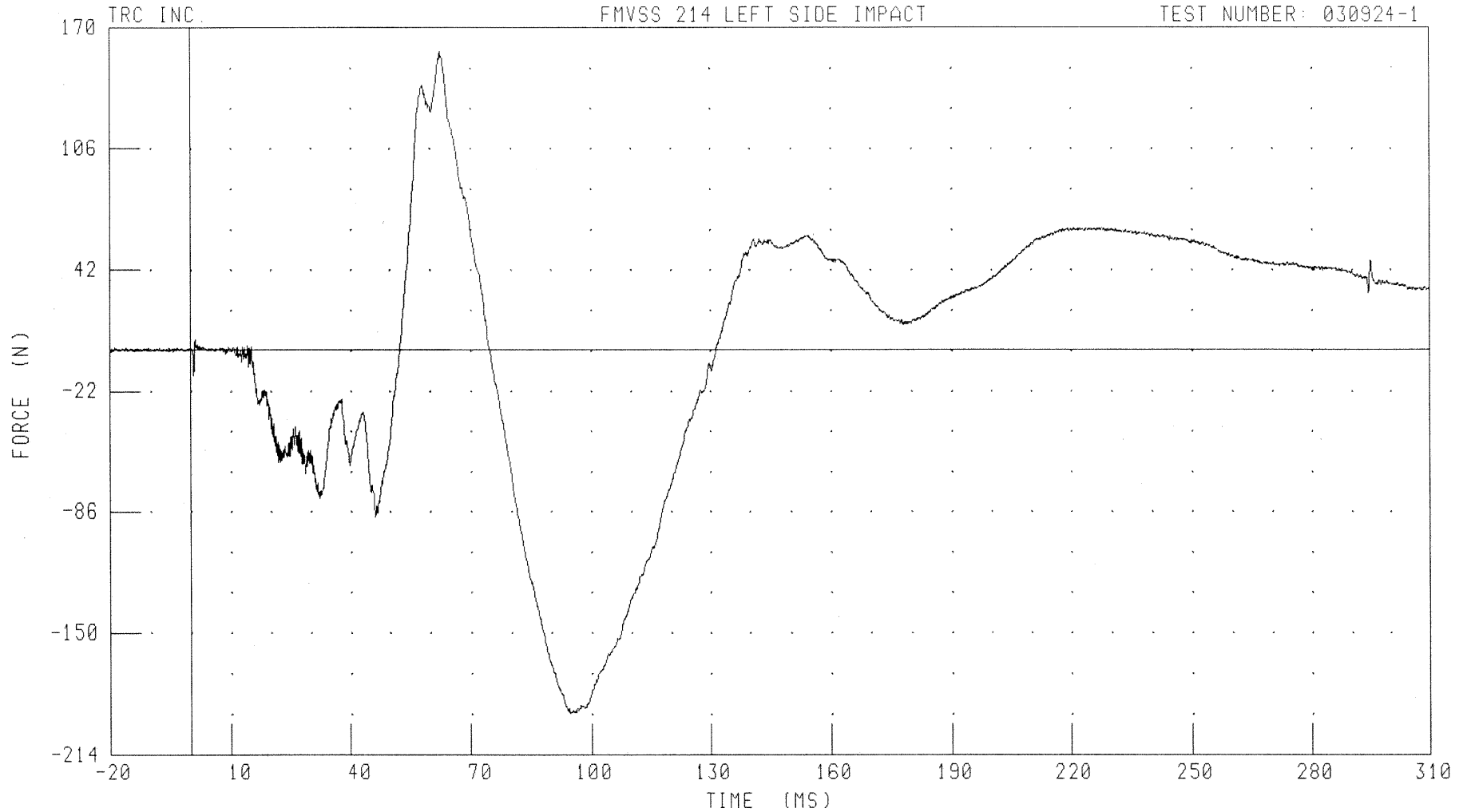
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK Y-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKYF1

FILTER: CH. CLASS 1000

PEAK DATA: 157.79 N @ 62.64 MS; -192.54 N @ 94.72 MS

B-19

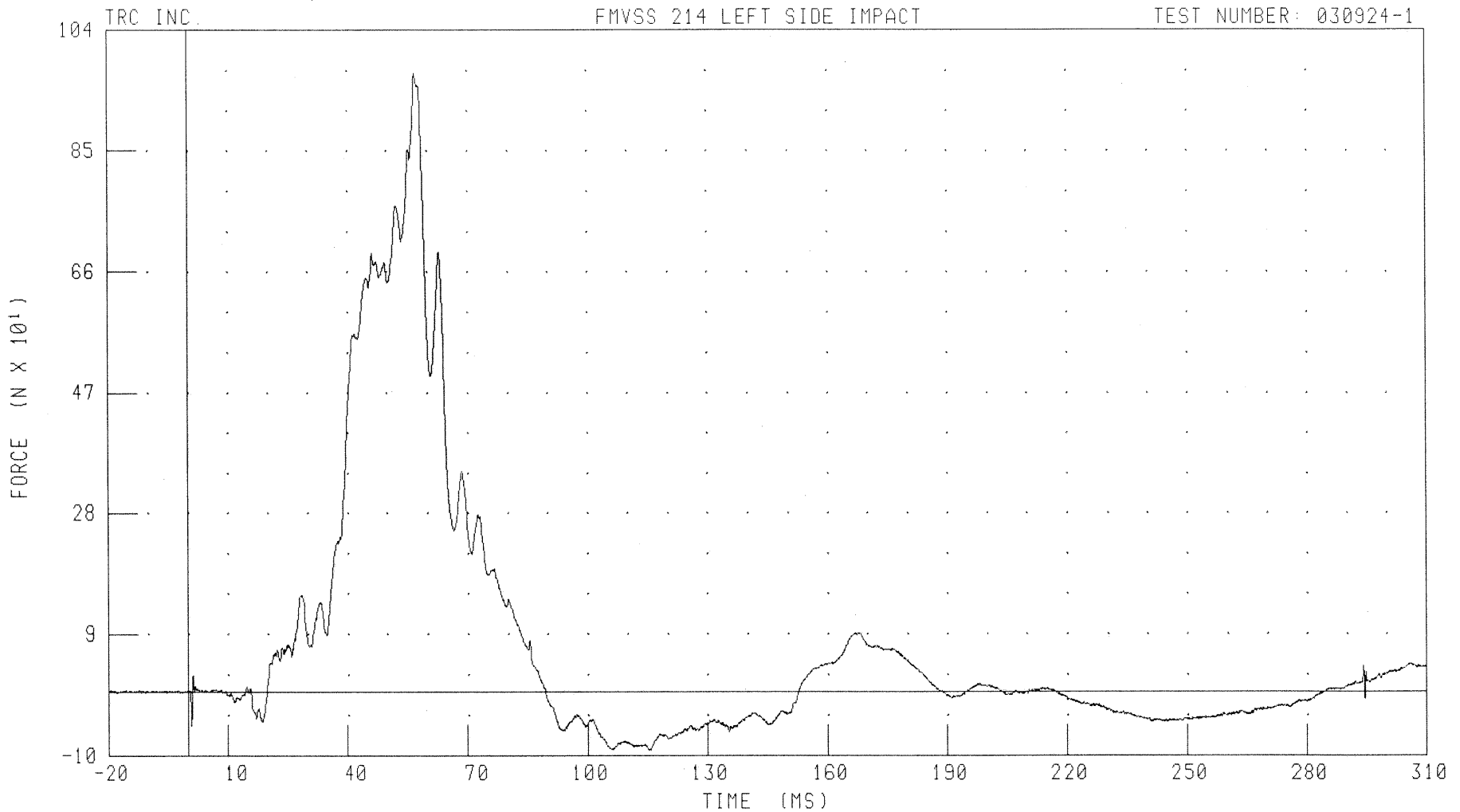
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 973.46 N @ 57.20 MS; -91.71 N @ 115.36 MS

B-20

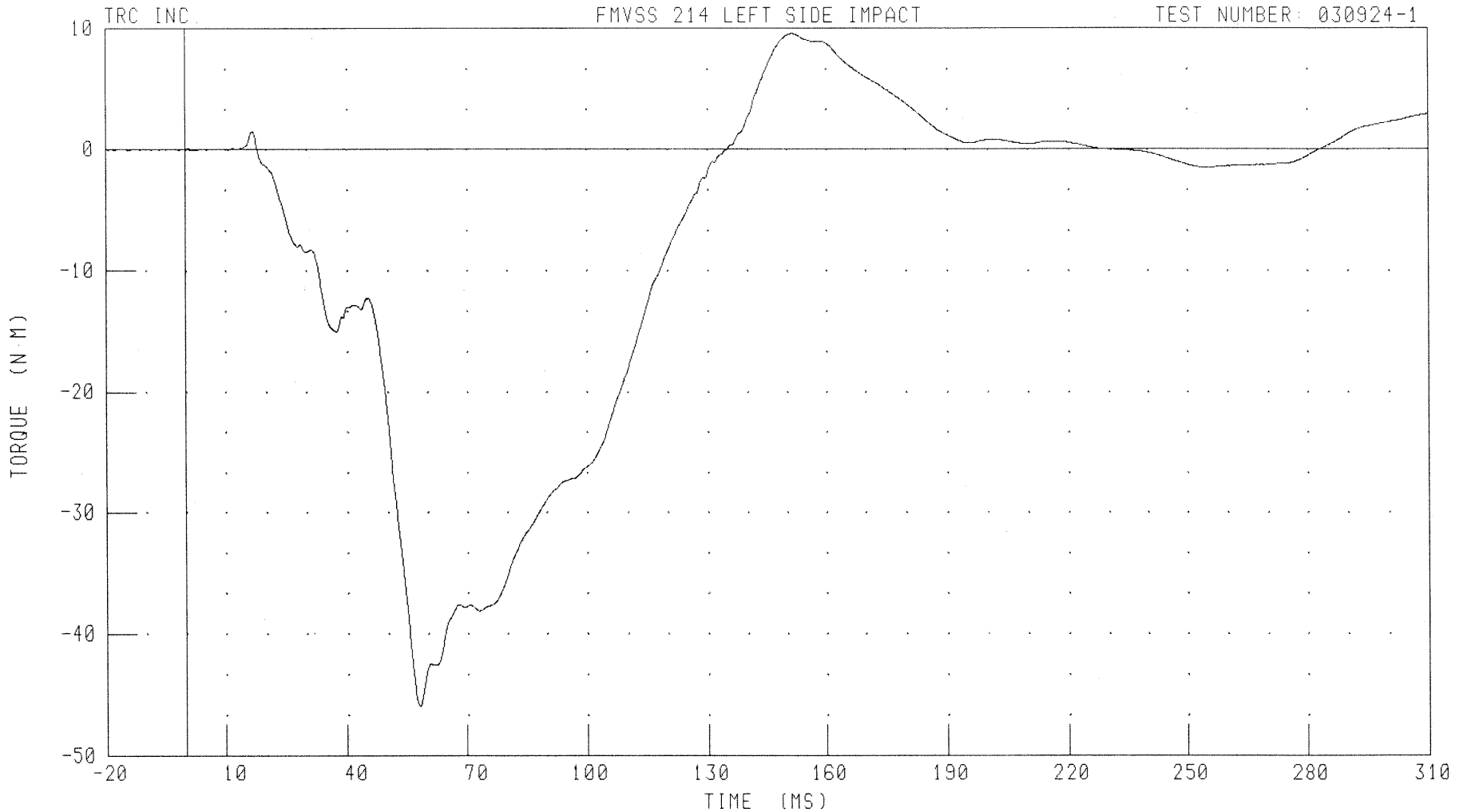
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKXM1

FILTER: CH. CLASS 600

PEAK DATA: 9.57 N·M @ 151.60 MS; -45.94 N·M @ 57.92 MS

B-21

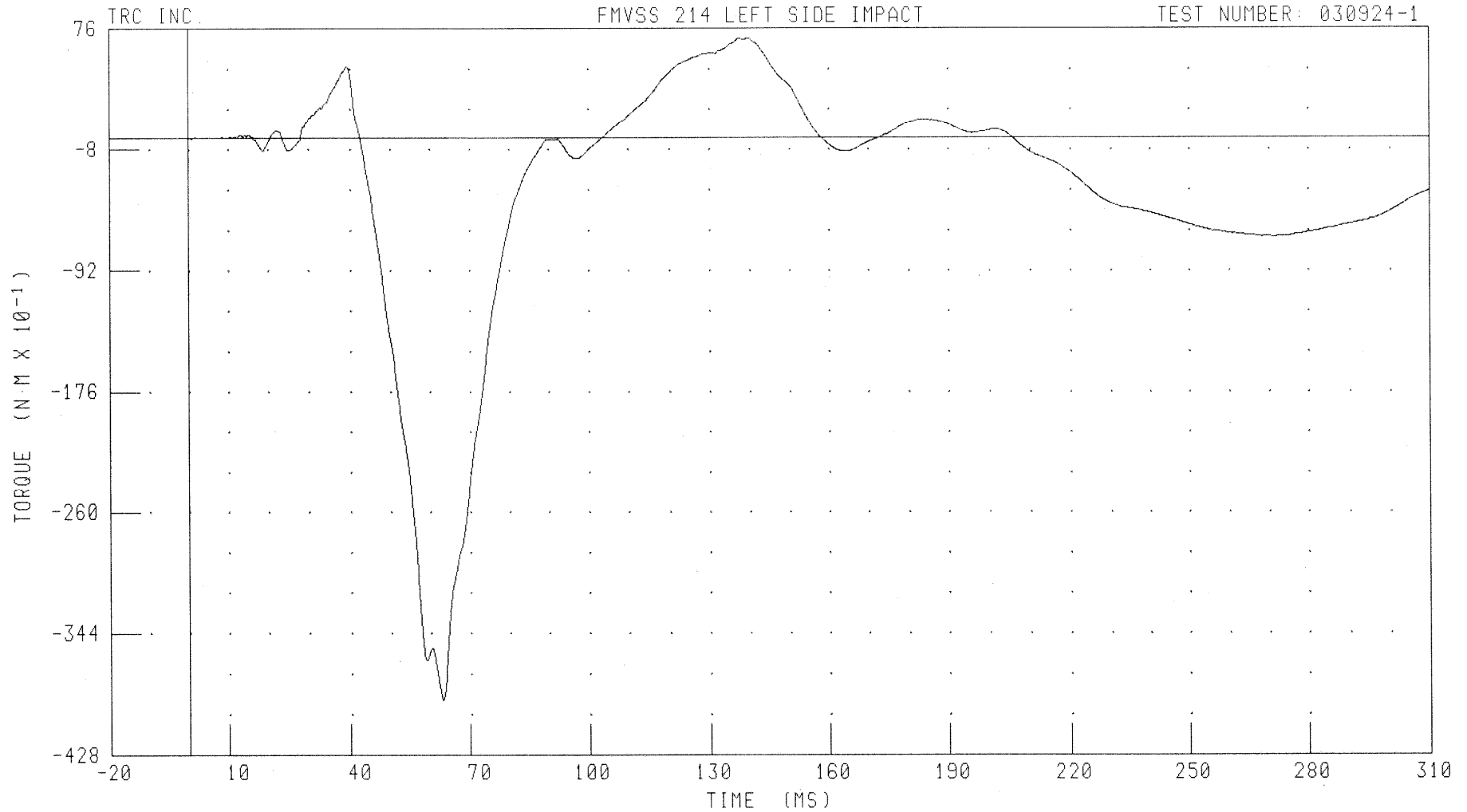
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK MOMENT ABOUT Y AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKYM1

FILTER: CH. CLASS 600

PEAK DATA: 6.92 N·M @ 139.60 MS; -39.00 N·M @ 63.12 MS

B-22

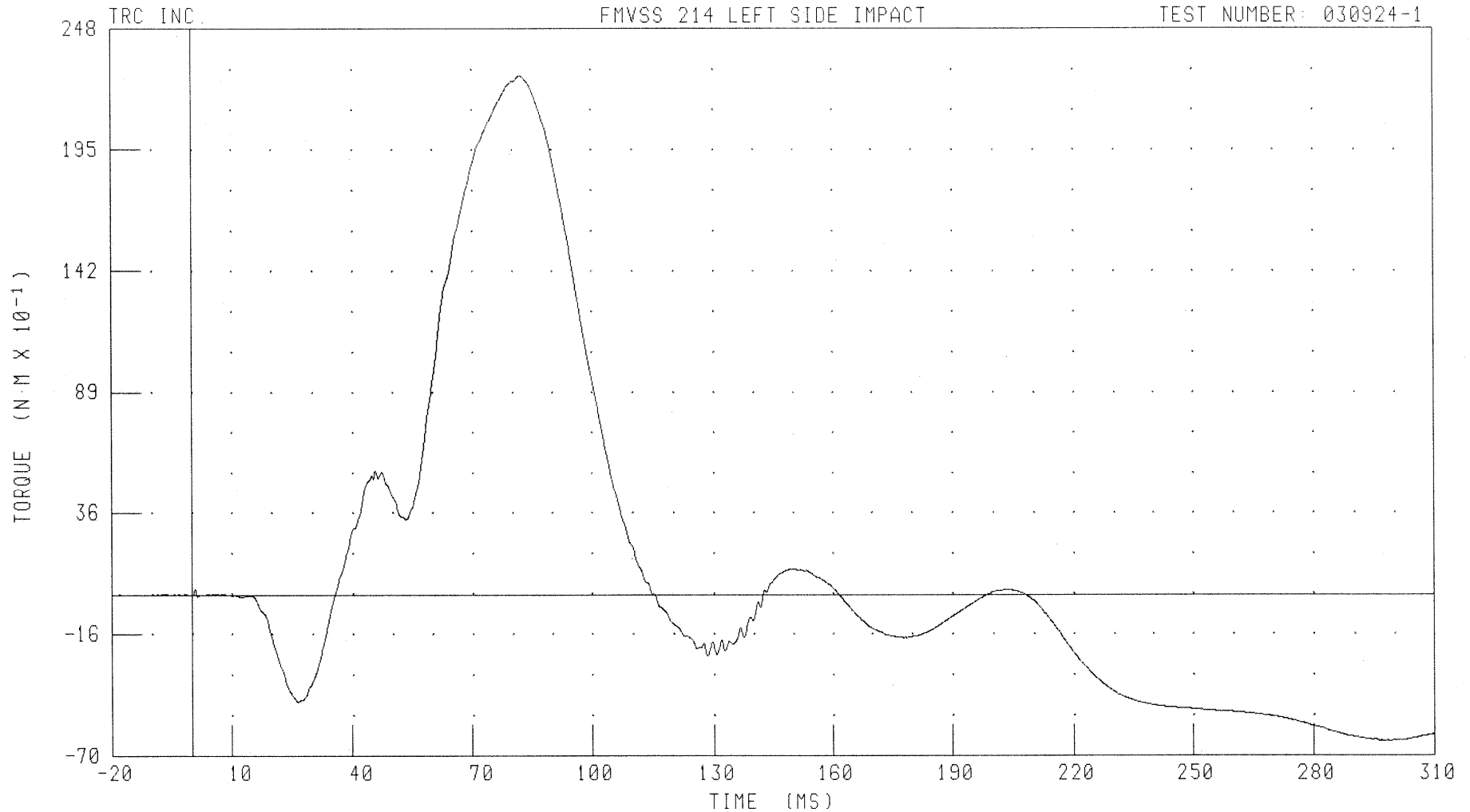
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKZM1

FILTER: CH. CLASS 600

PEAK DATA: 22.74 N·M @ 82.24 MS, -6.38 N·M @ 297.28 MS

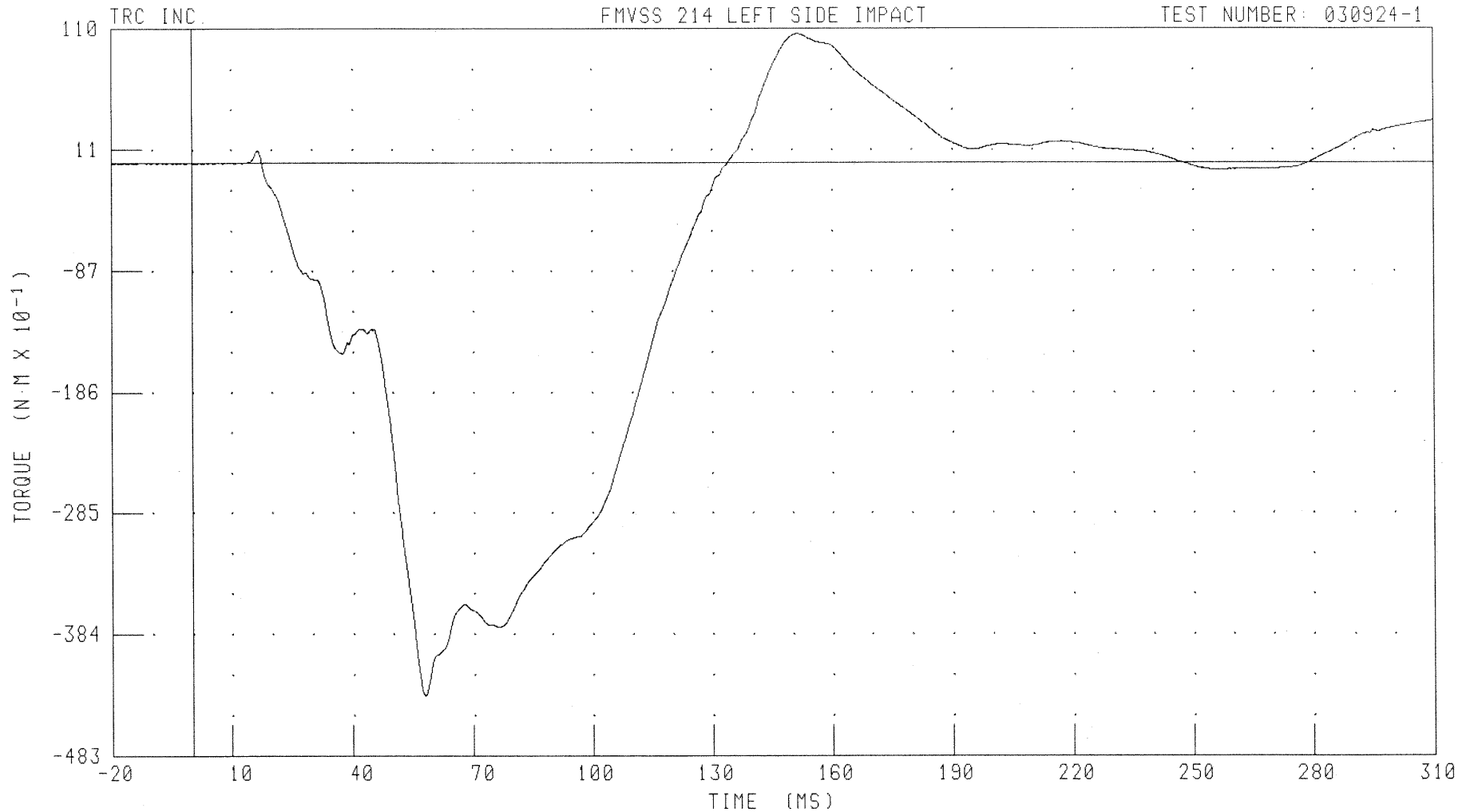
B-23

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NK0XM1

FILTER: CH. CLASS 600

PEAK DATA: 10.59 N·M @ 151.68 MS; -43.51 N·M @ 57.84 MS

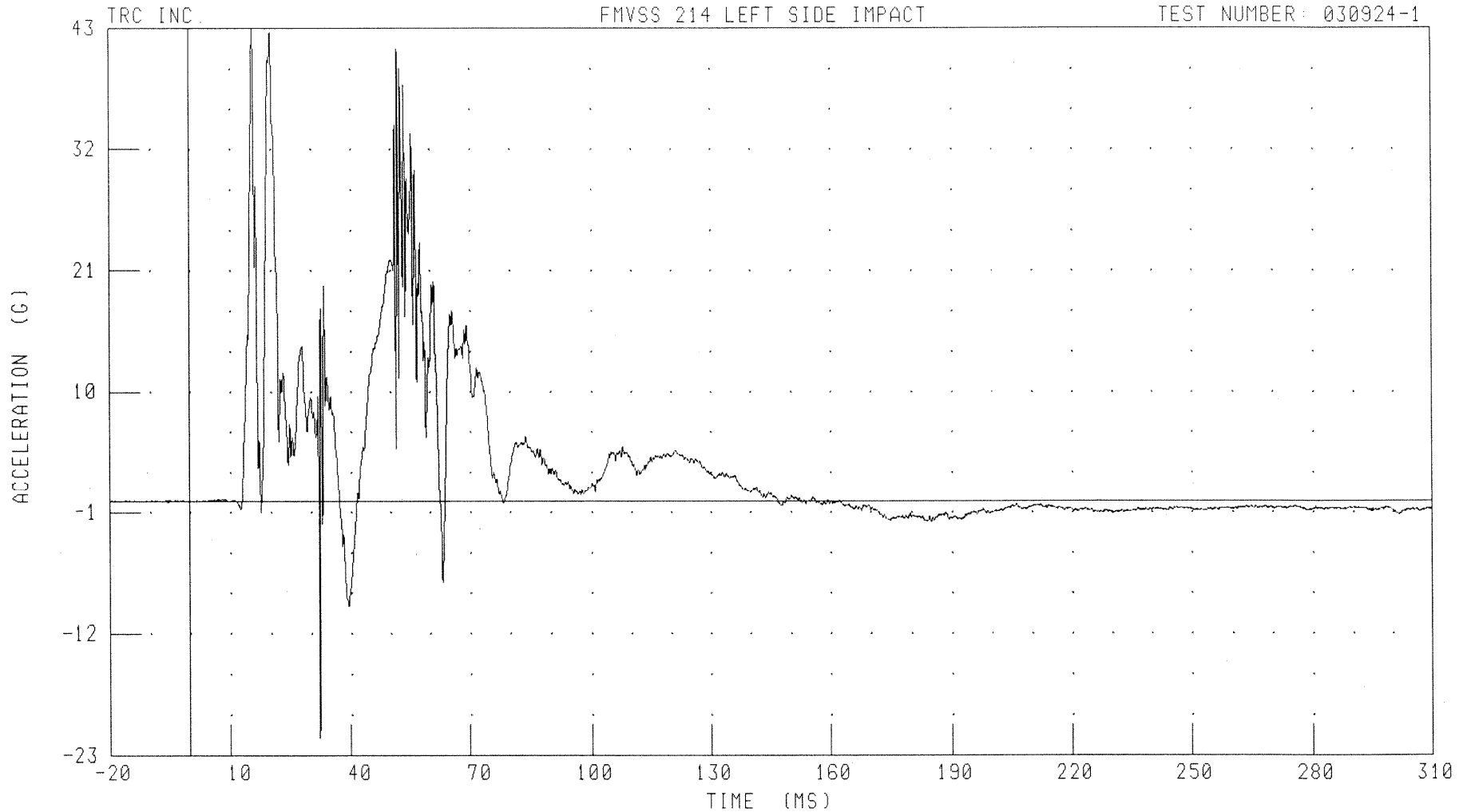
B-24

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYG1

FILTER: CH. CLASS 1000

PEAK DATA: 42.88 G @ 15.52 MS; -21.42 G @ 32.08 MS

B-25

030924-1

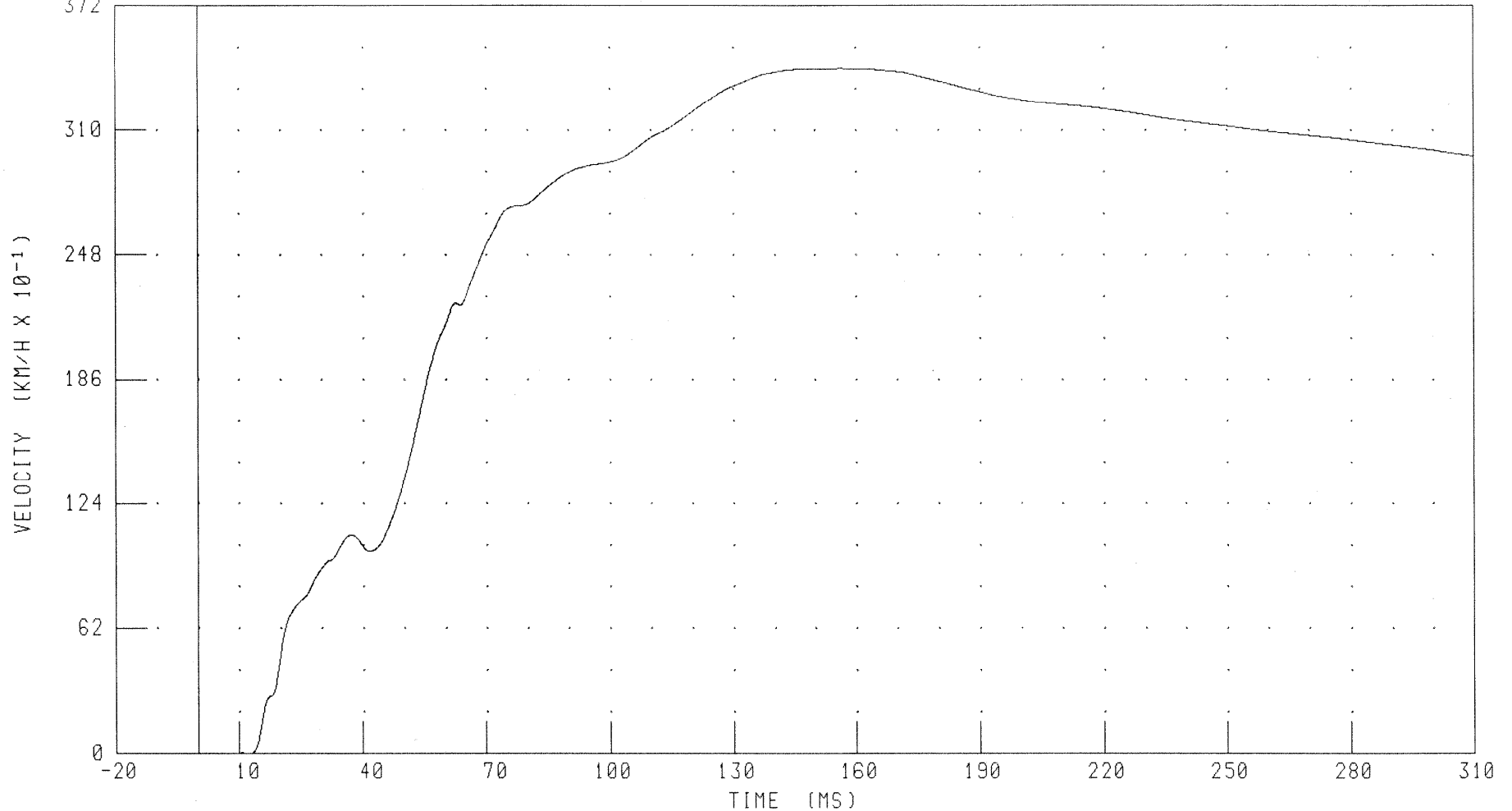
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER UPPER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

TRC INC.



CHANNEL: LURYV1 FILTER: CH. CLASS 180

PEAK DATA: 34.09 KM/H @ 156.48 MS; 0.00 KM/H @ 0.00 MS

B-26

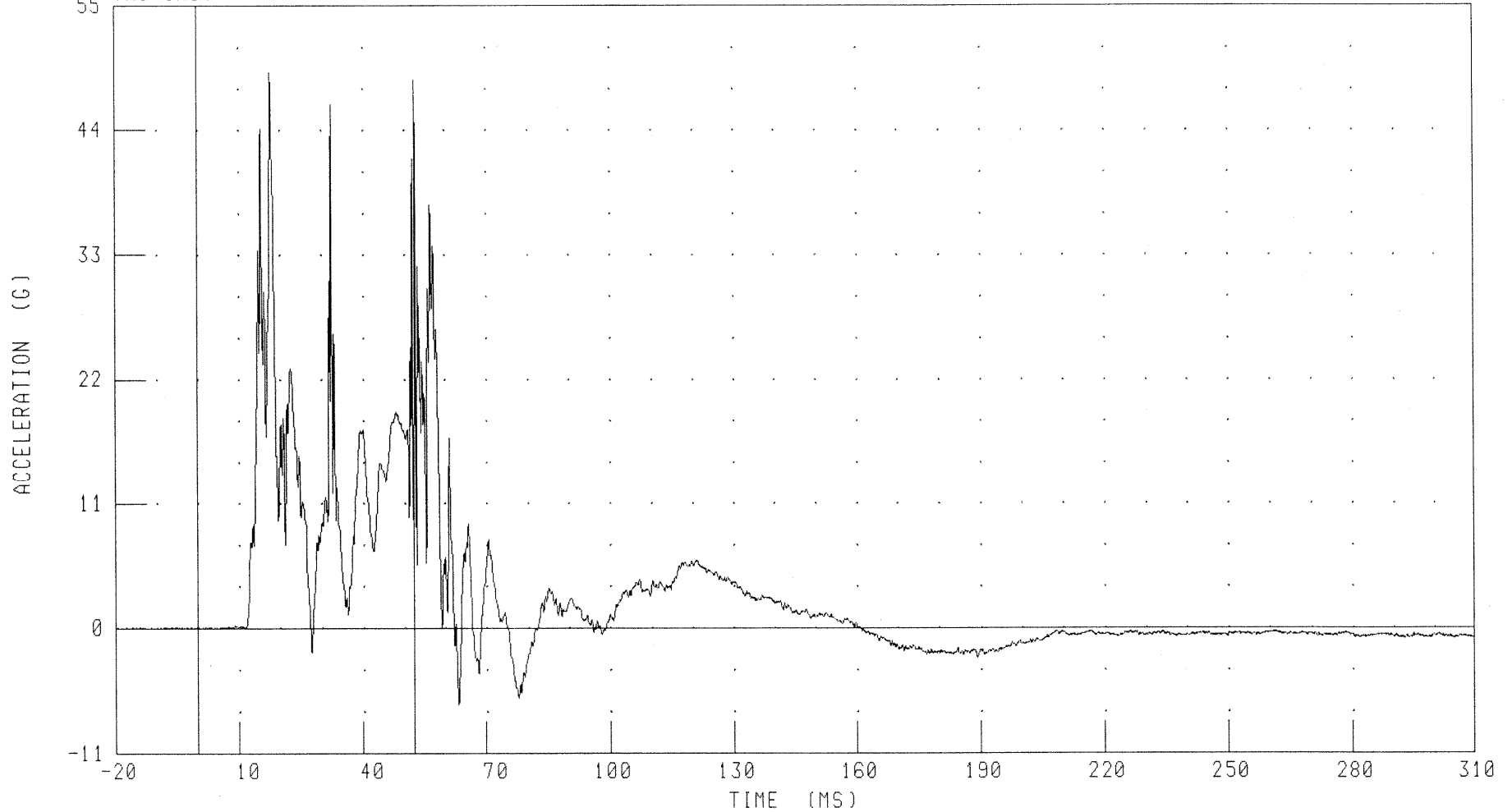
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER RIB Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYG1

FILTER: CH. CLASS 1000

PEAK DATA: 49.15 G @ 17.92 MS; -10.91 G @ 52.32 MS

B-27

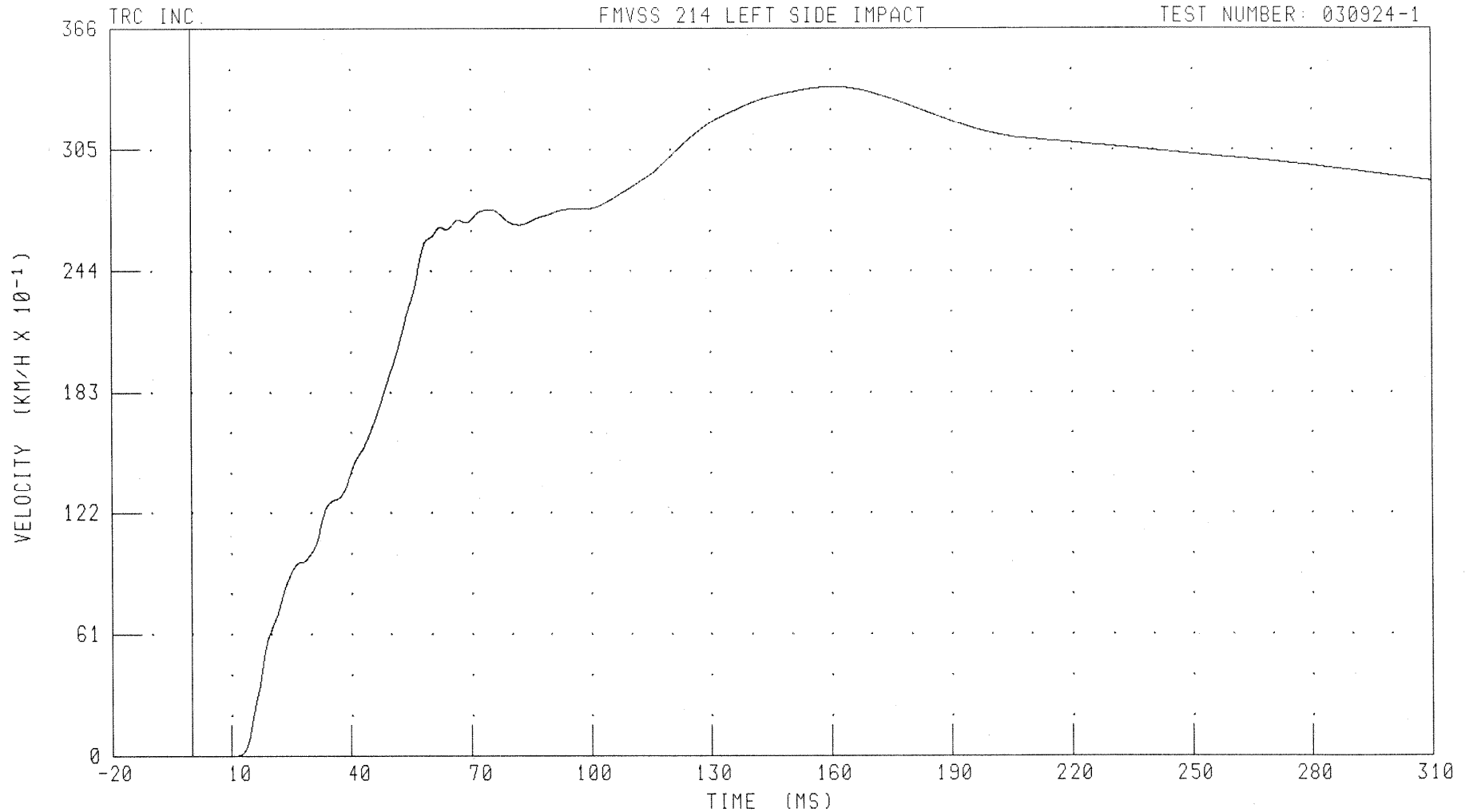
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYV1

FILTER: CH. CLASS 180

PEAK DATA: 33.69 KM/H @ 160.80 MS; 0.00 KM/H @ 0.00 MS

B-28

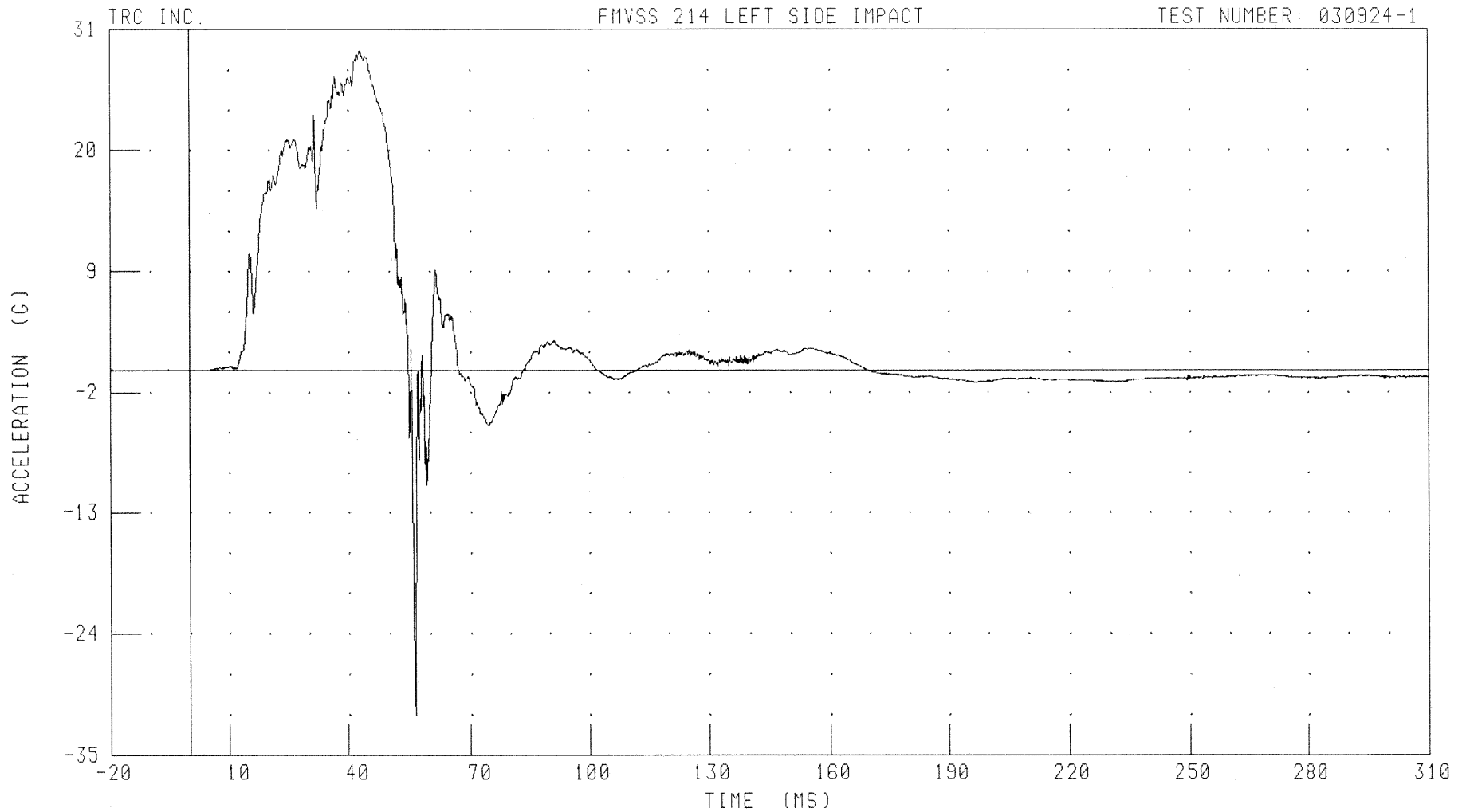
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YG1

FILTER: CH. CLASS 1000

PEAK DATA: 29.08 G @ 43.28 MS; -31.37 G @ 56.32 MS

B-29

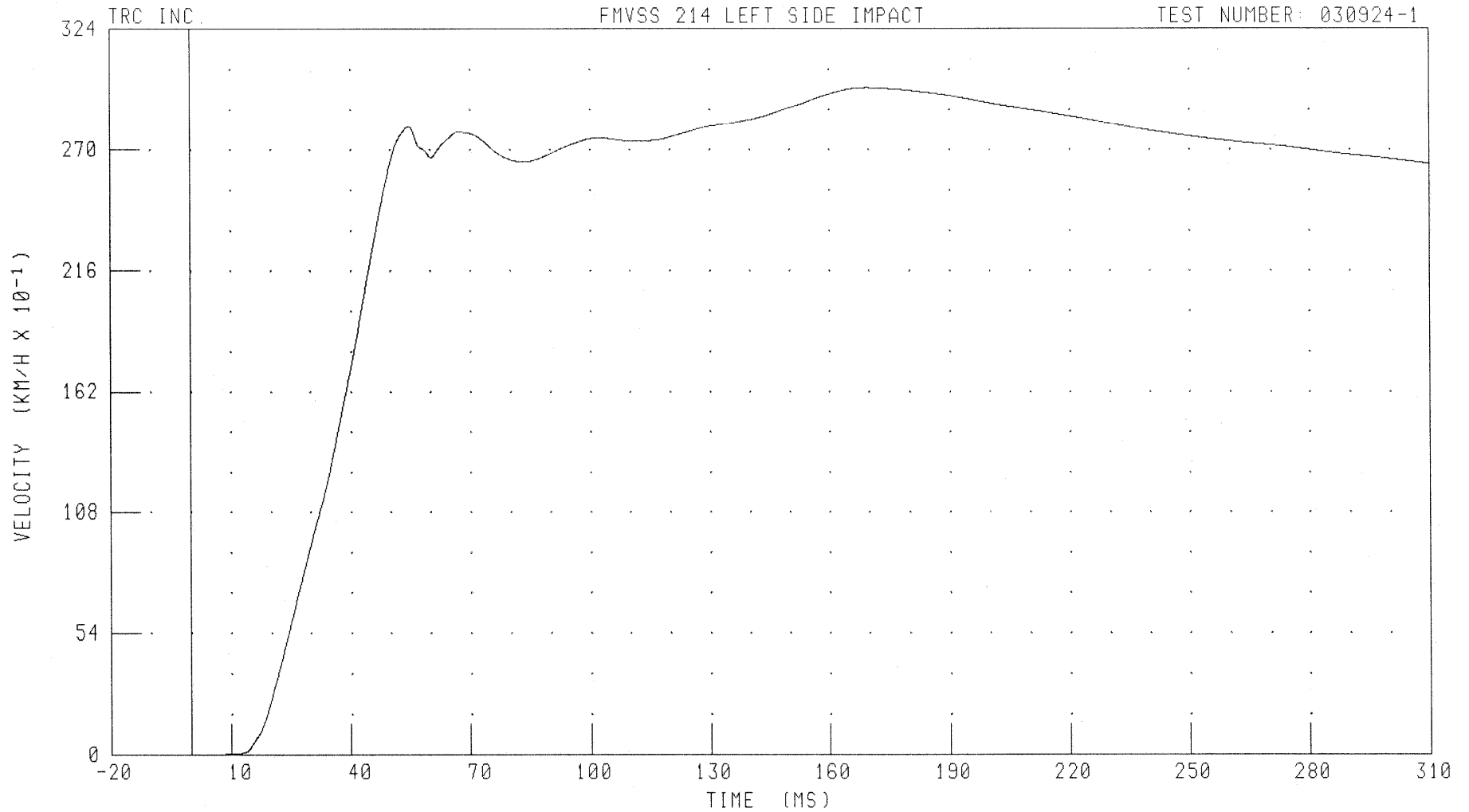
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YV1

FILTER: CH. CLASS 180

PEAK DATA: 29.78 KM/H @ 169.68 MS; 0.00 KM/H @ 0.00 MS

B-30

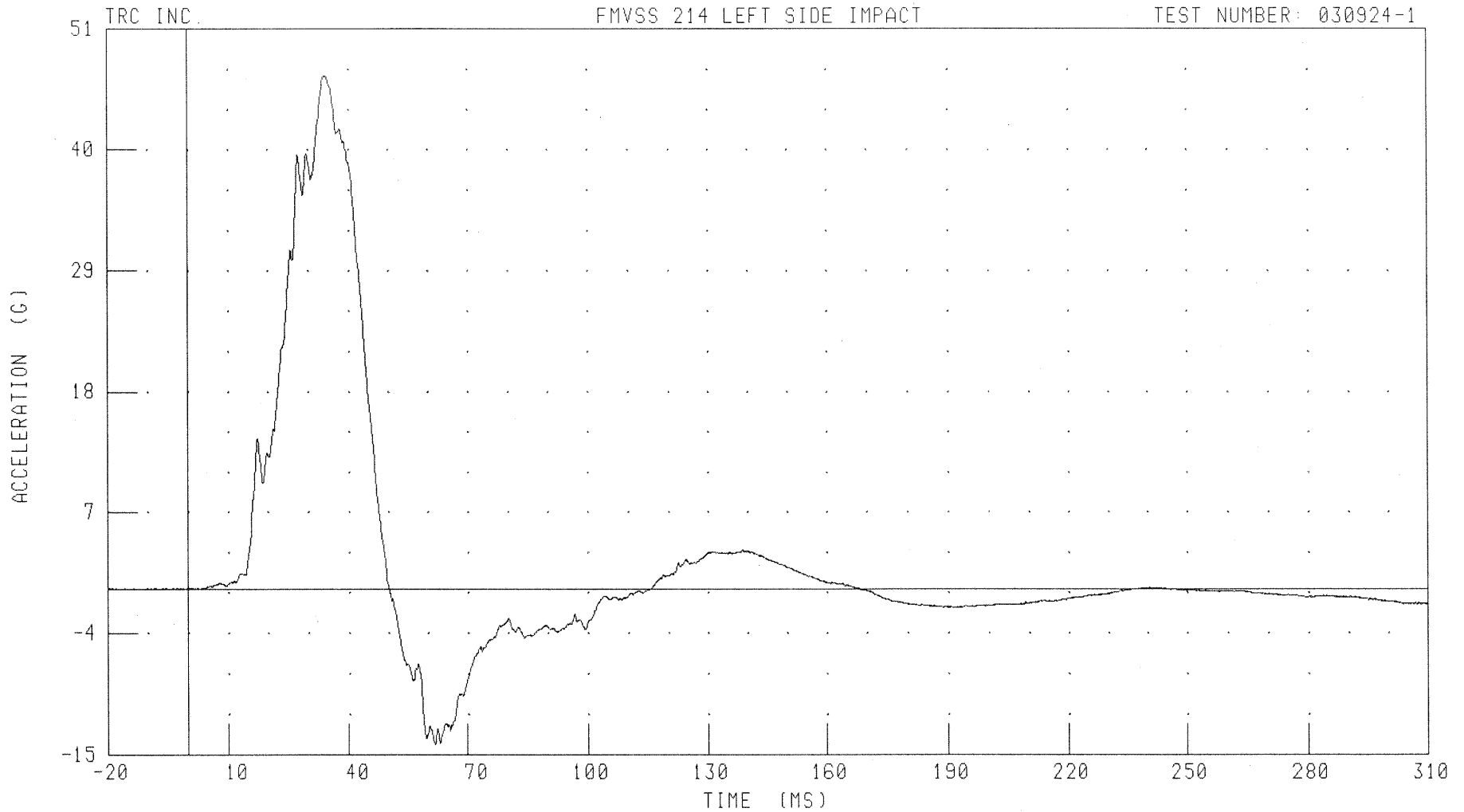
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYG1 FILTER: CH. CLASS 1000

PEAK DATA: 46.75 G @ 34.56 MS, -14.12 G @ 61.84 MS

B-31

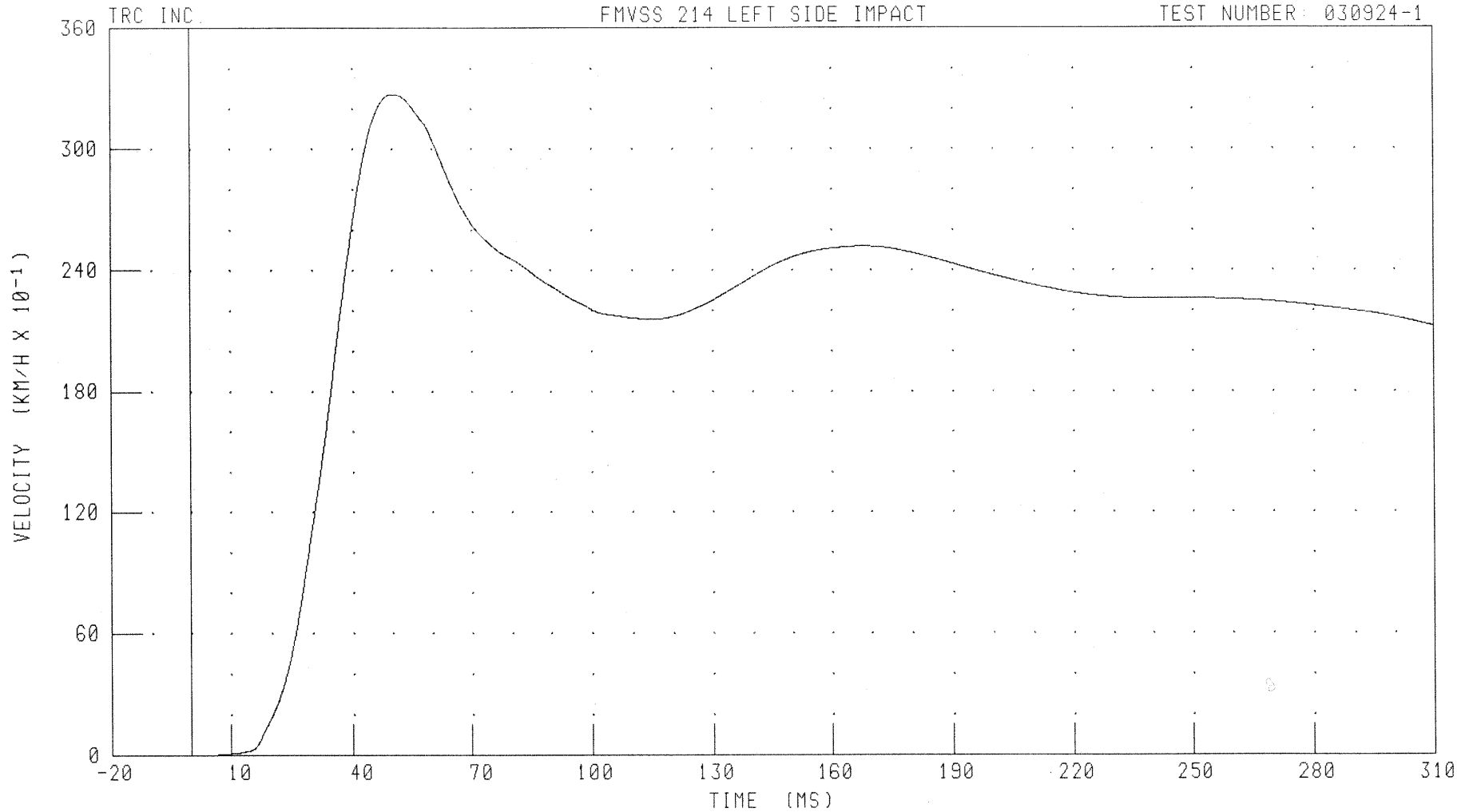
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYV1

FILTER: CH. CLASS 180

PEAK DATA: 327.3 KM/H @ 50.24 MS; 0.00 KM/H @ 0.00 MS

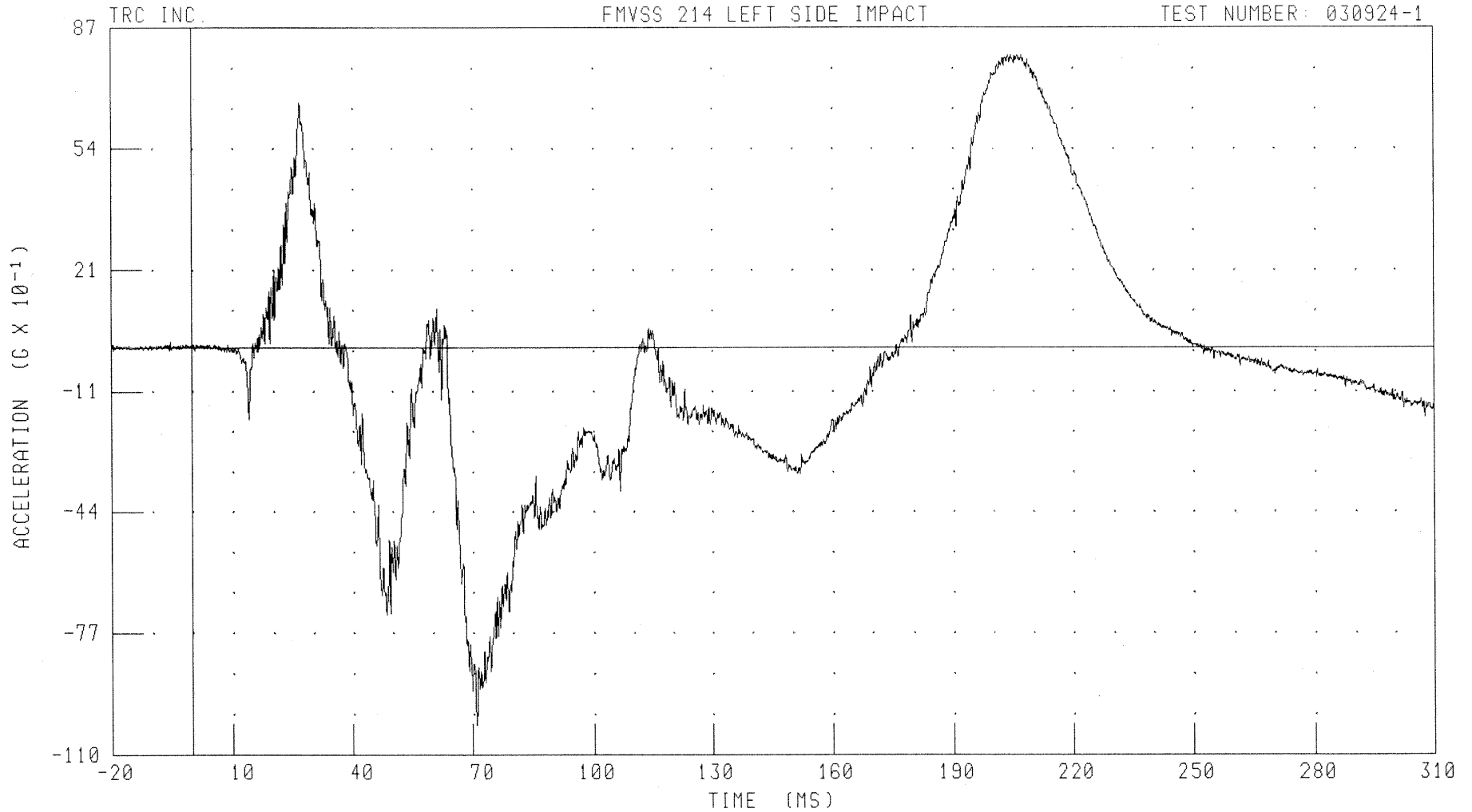
B-32

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXC4

FILTER: CH. CLASS 1000

PEAK DATA: 7.95 G @ 203.92 MS; -10.28 G @ 70.88 MS

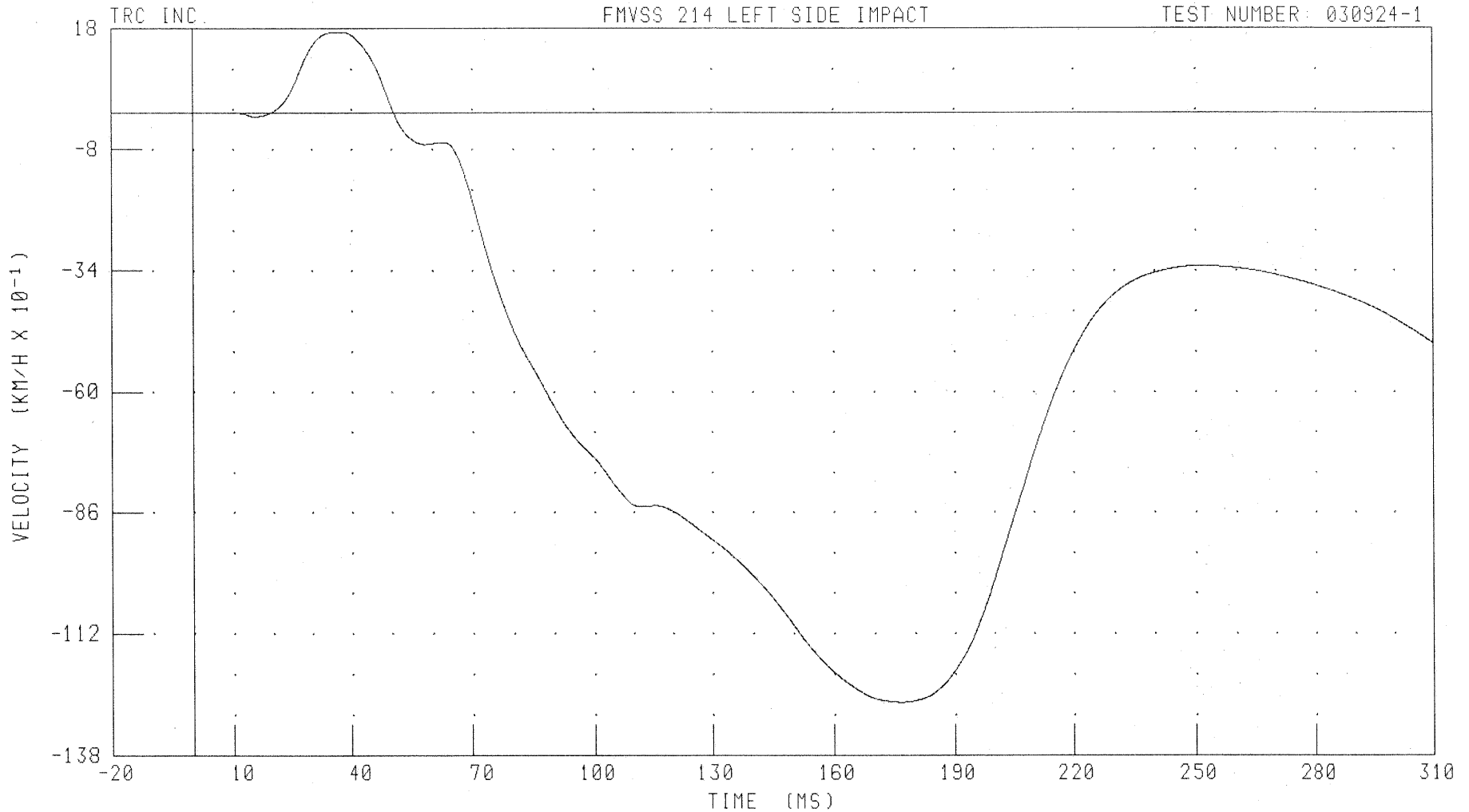
B-33

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXV4

FILTER: CH. CLASS 180

PEAK DATA: 1.73 KM/H @ 36.56 MS; -12.67 KM/H @ 176.72 MS

B-34

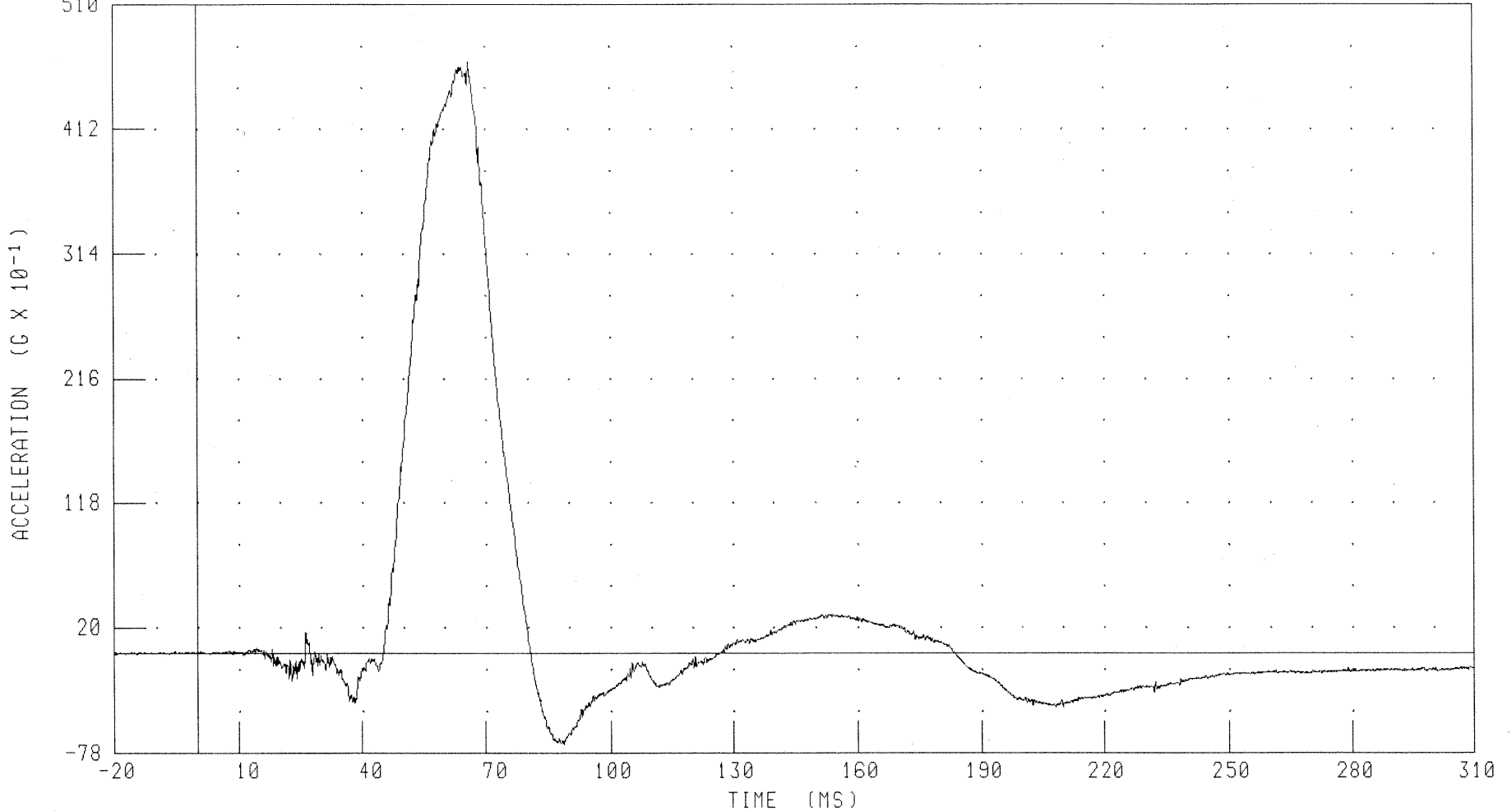
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYG4

FILTER: CH. CLASS 1000

PEAK DATA: 46.52 G @ 66.08 MS; -7.13 G @ 88.56 MS

B-35

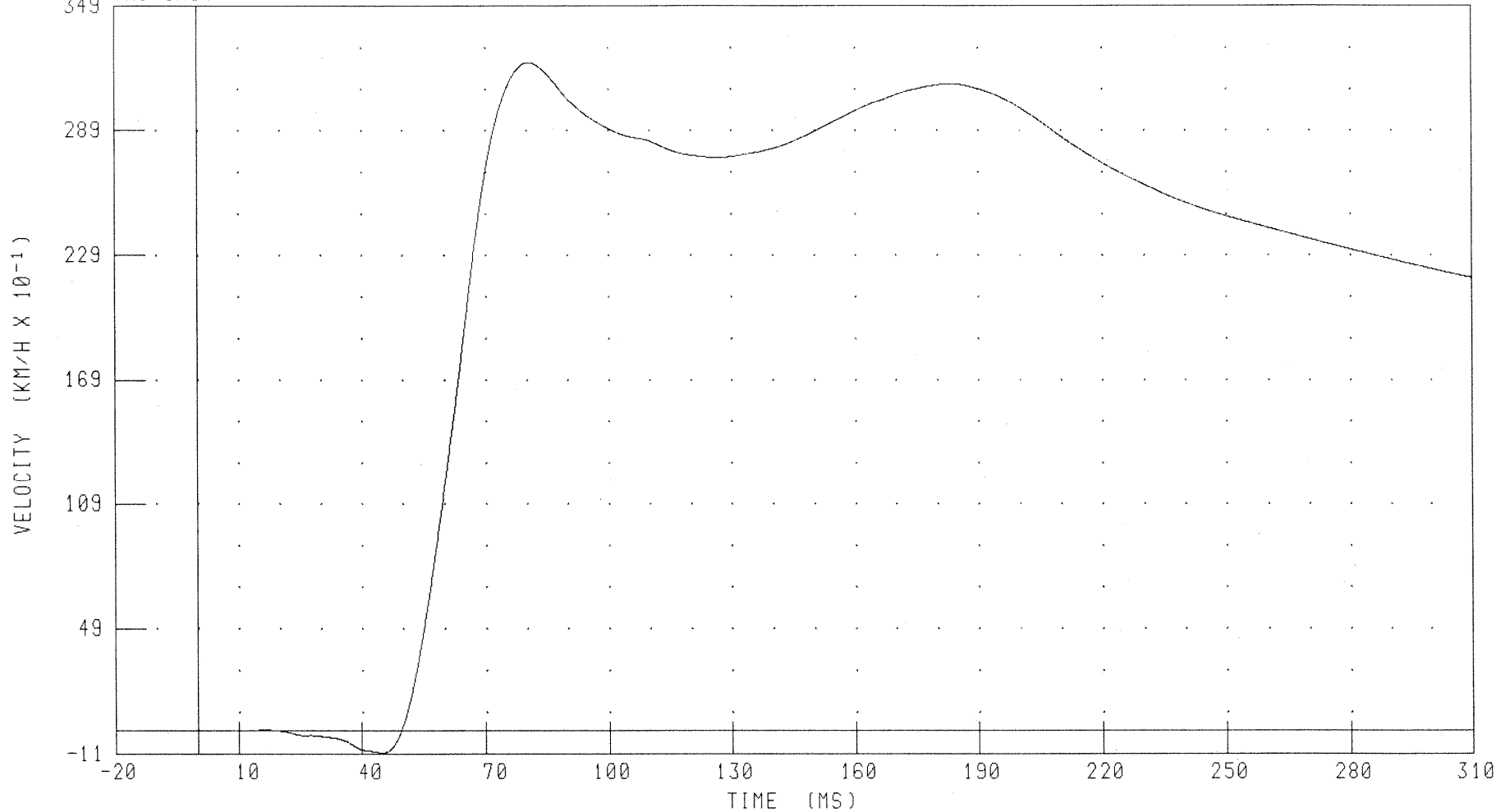
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYV4

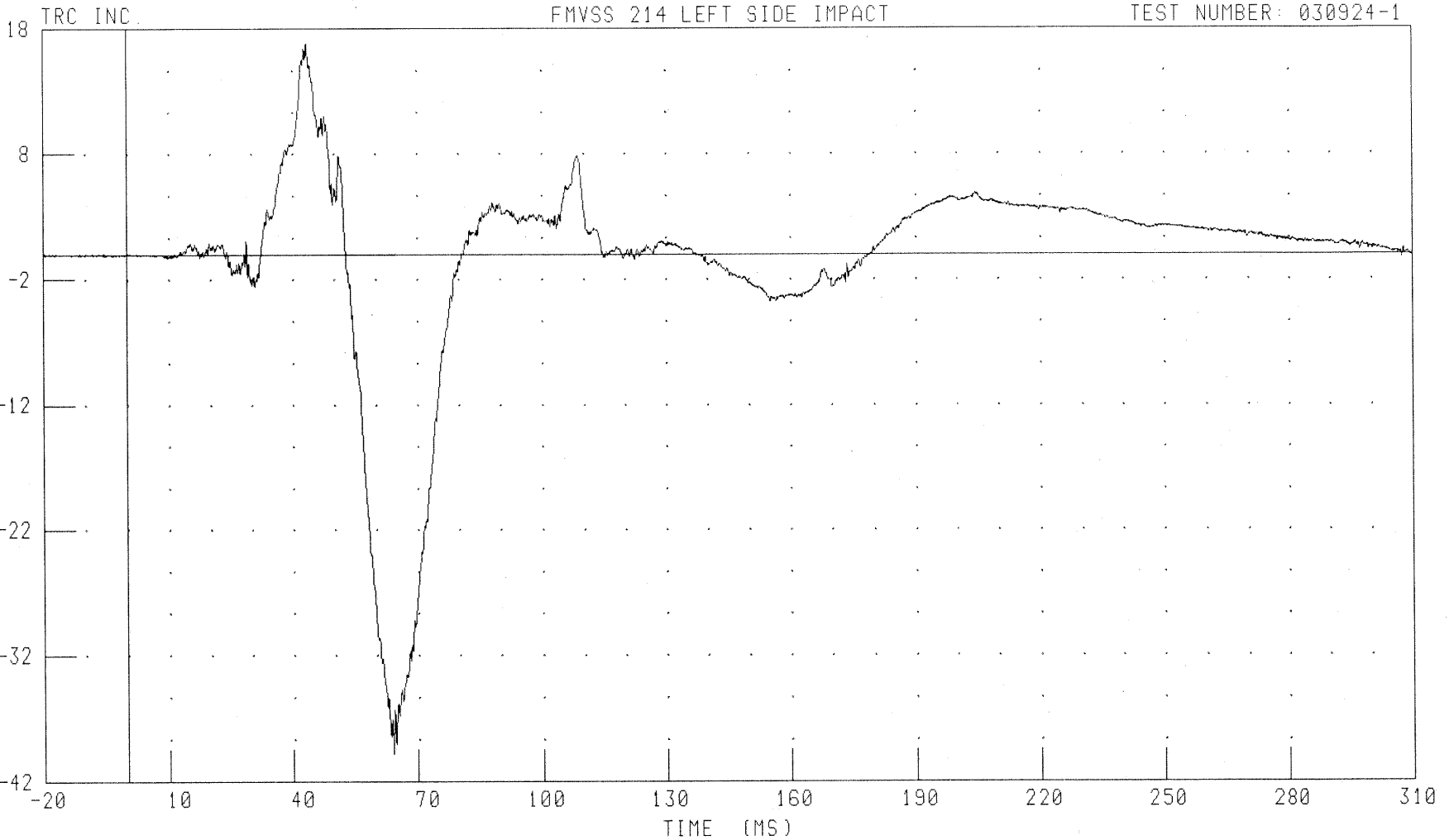
FILTER: CH. CLASS 180

PEAK DATA: 32.19 KM/H @ 80.64 MS; -1.05 KM/H @ 45.04 MS

B-36

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION



CHANNEL: HEDZG4

FILTER: CH. CLASS 1000

PEAK DATA: 16.84 G @ 43.60 MS; -39.77 G @ 64.08 MS

B-37

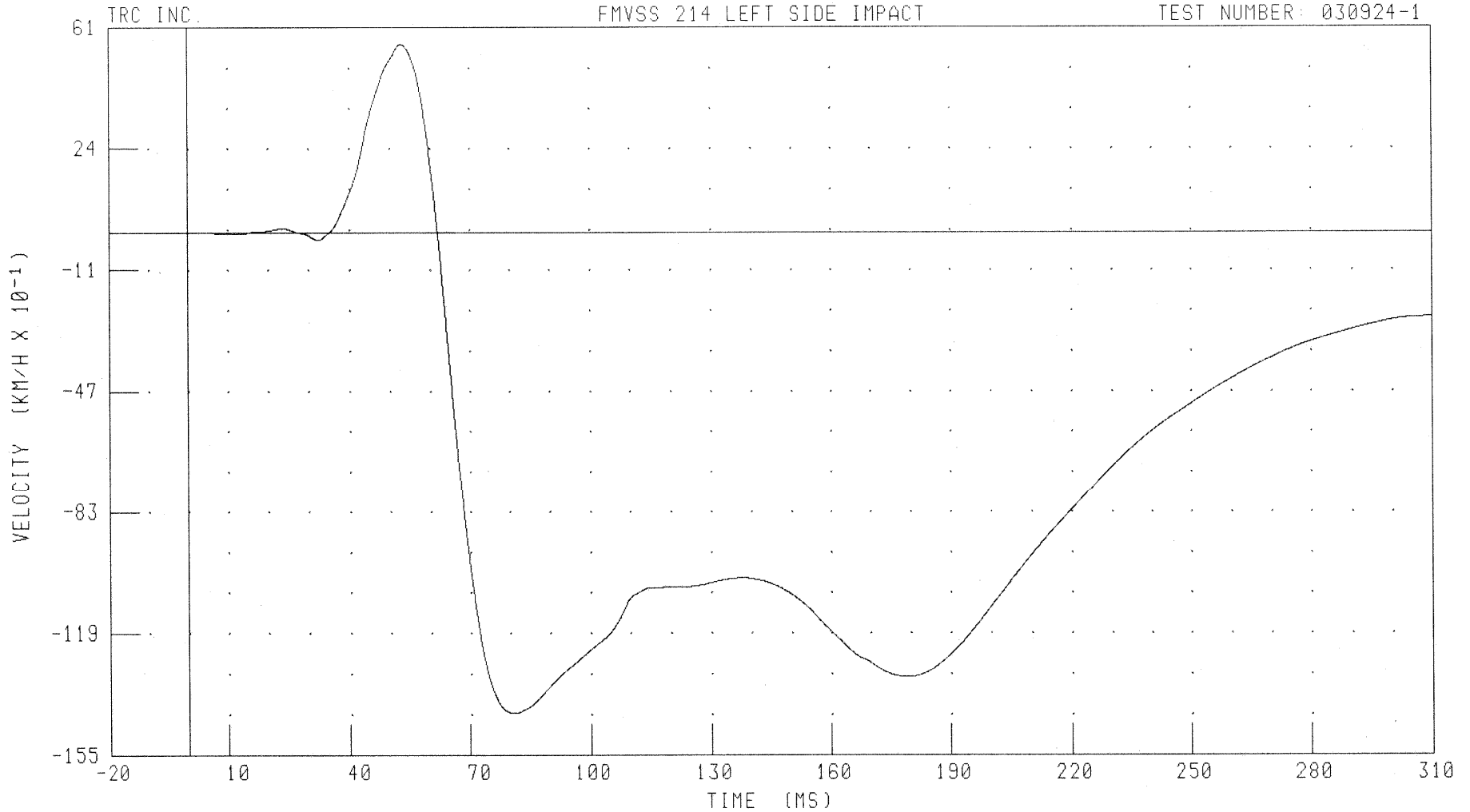
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZV4

FILTER: CH. CLASS 180

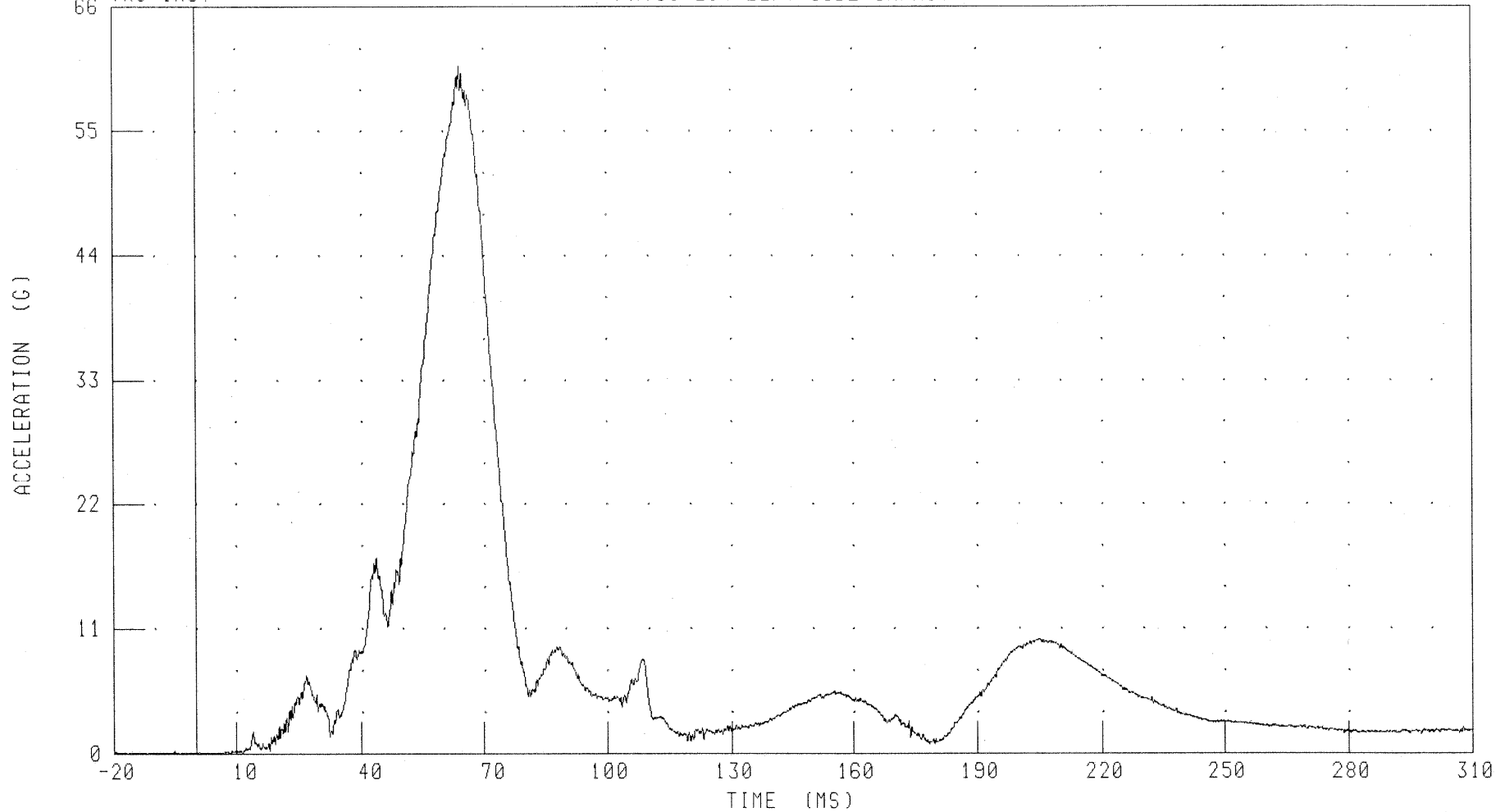
PEAK DATA: 5.60 KM/H @ 52.96 MS; -14.26 KM/H @ 81.04 MS

B-38

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL: HEDRG4 FILTER: CH. CLASS 1000 PEAK DATA: 60.82 G @ 64.00 MS; 0.02 G @ -18.96 MS

B-39

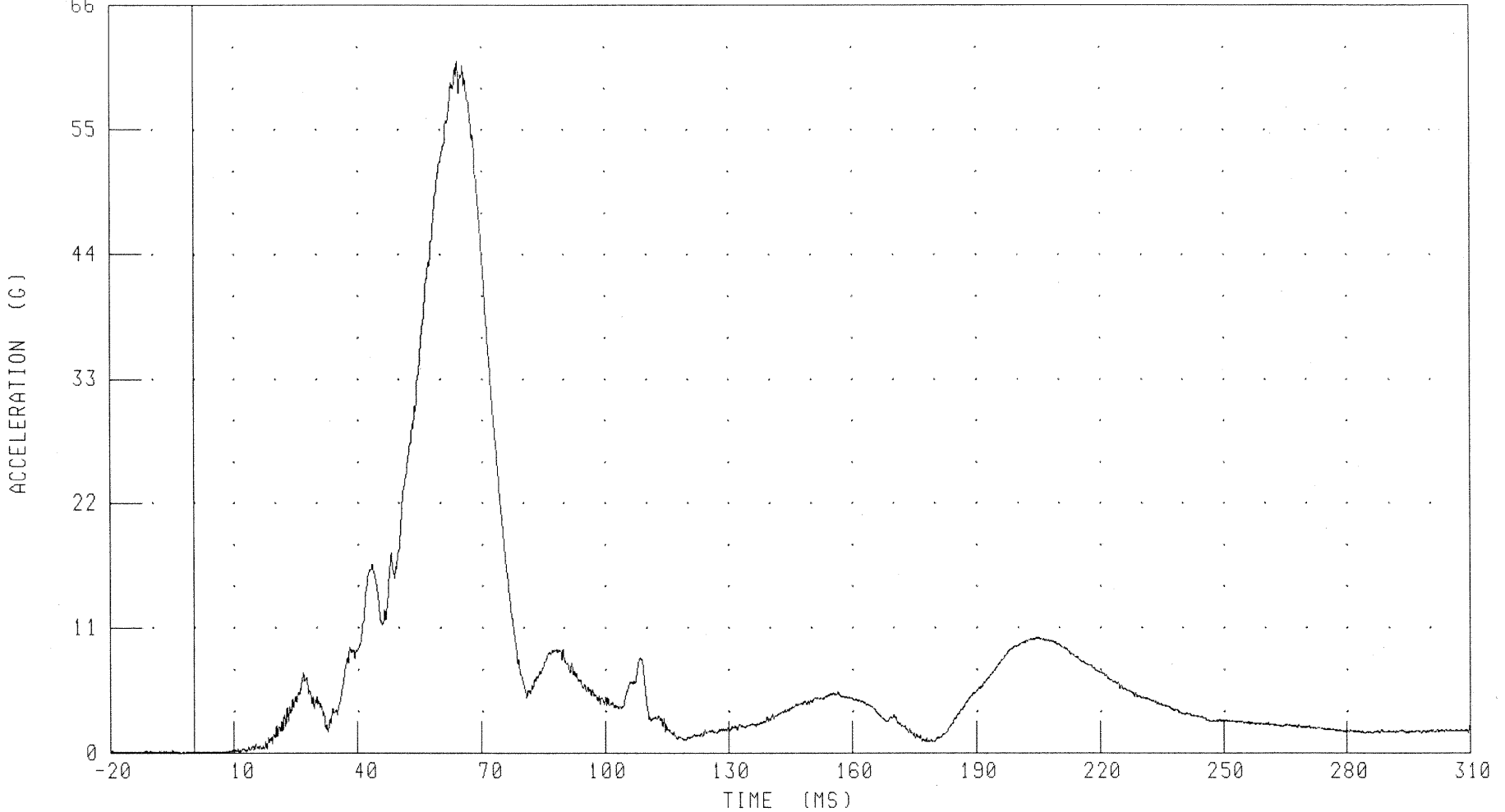
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD RESULTANT REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDRR4 FILTER: CH. CLASS 1000

PEAK DATA: 61.10 G @ 64.32 MS; 0.01 G @ -18.80 MS

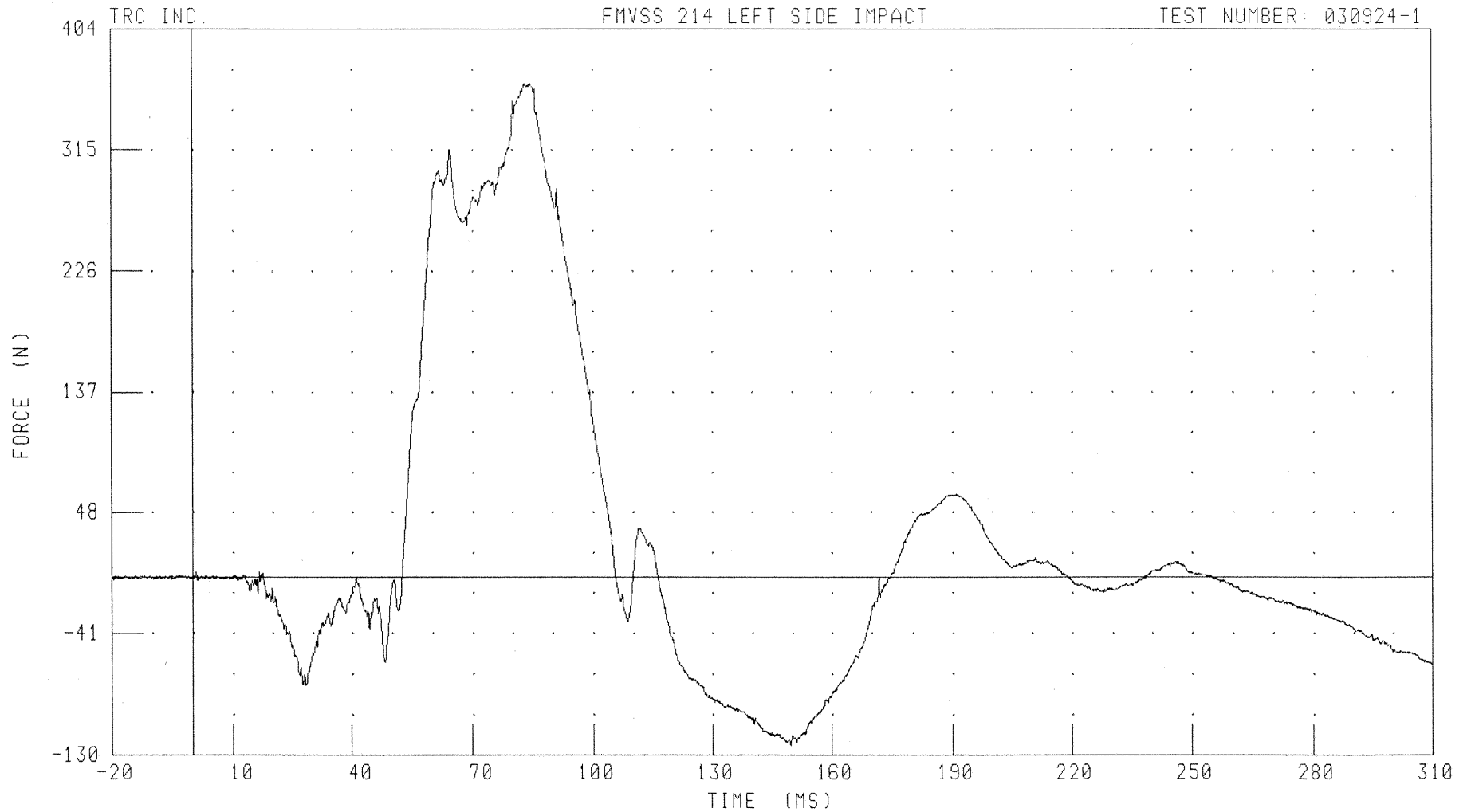
B-40

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKXF4 FILTER: CH. CLASS 1000

PEAK DATA: 364.30 N @ 83.28 MS; -123.06 N @ 149.52 MS

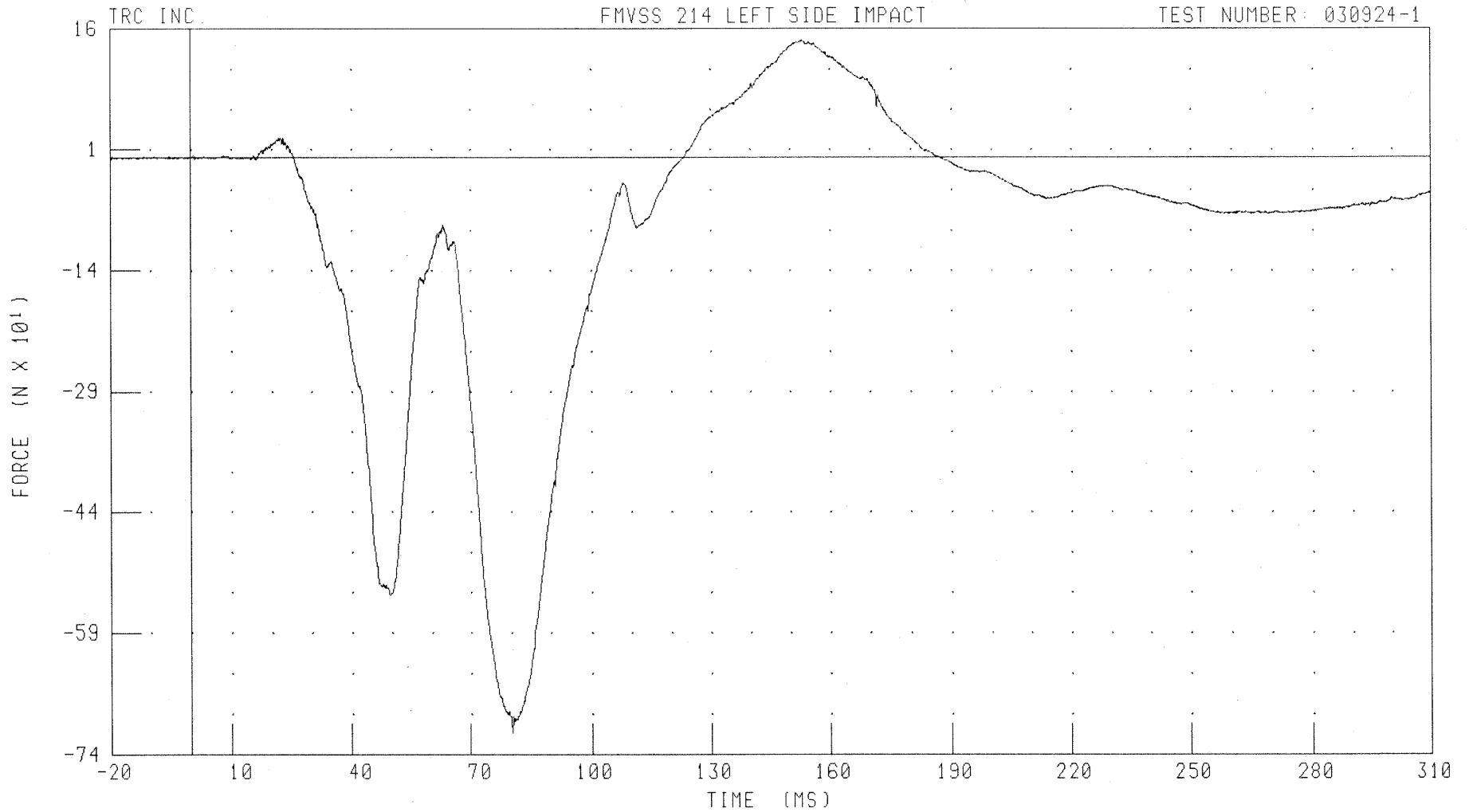
B-41

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKYF4

FILTER: CH. CLASS 1000

PEAK DATA: 145.86 N @ 153.28 MS; -713.74 N @ 80.32 MS

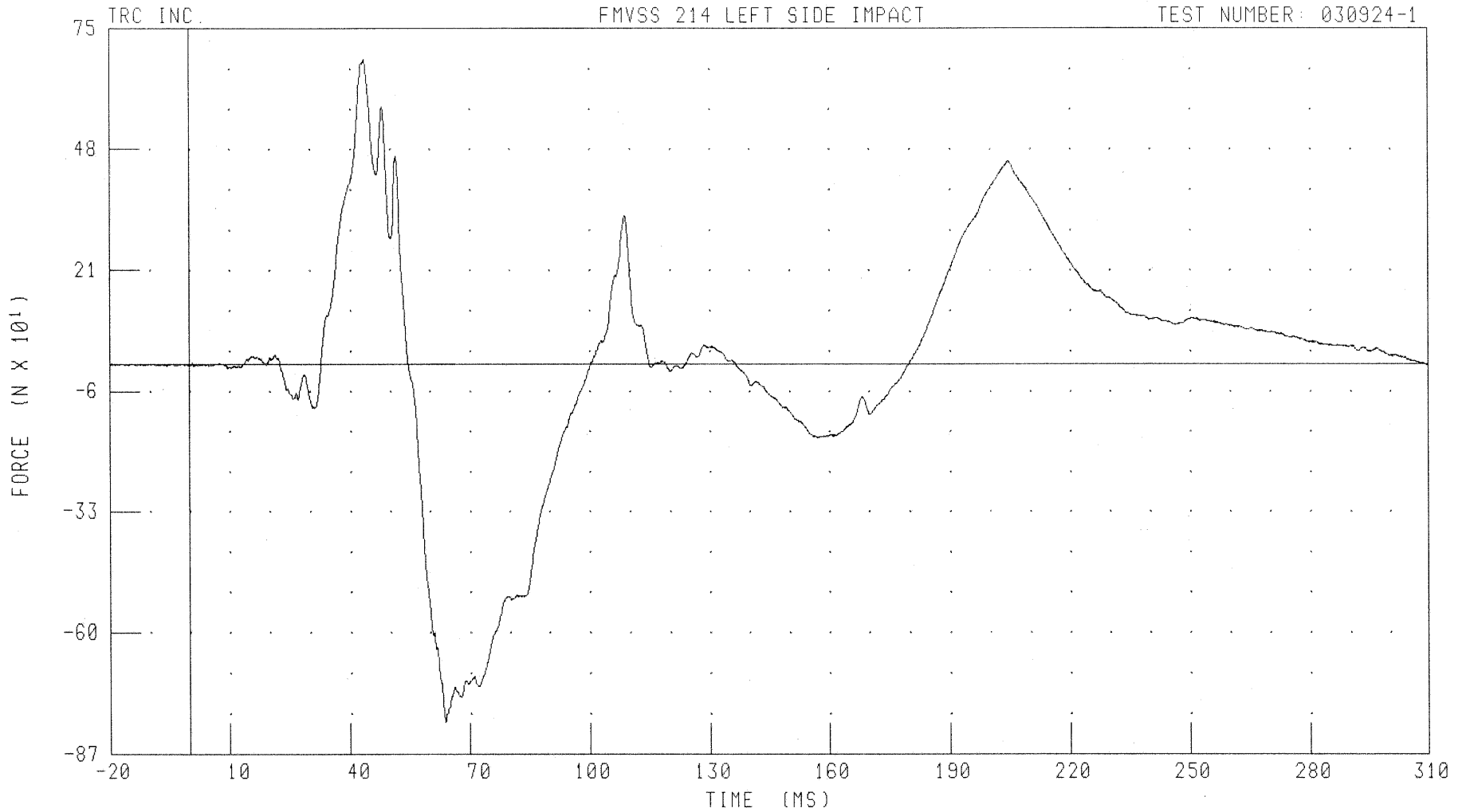
B-42

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKZF4 FILTER: CH. CLASS 1000

PEAK DATA: 682.37 N @ 43.68 MS; -798.45 N @ 63.84 MS

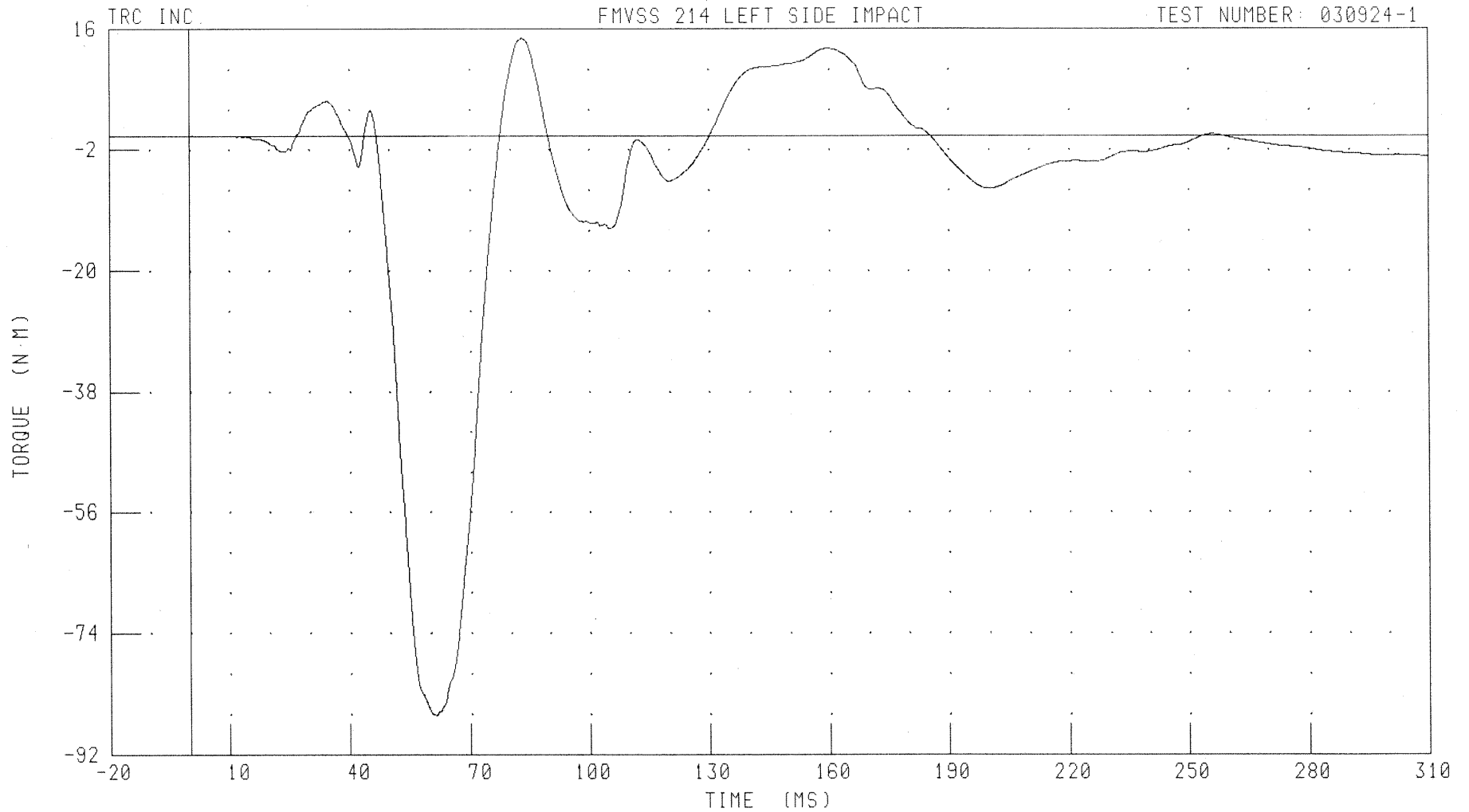
B-43

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKX4 FILTER: CH. CLASS 600

PEAK DATA: 14.63 N·M @ 83.28 MS; -86.26 N·M @ 61.36 MS

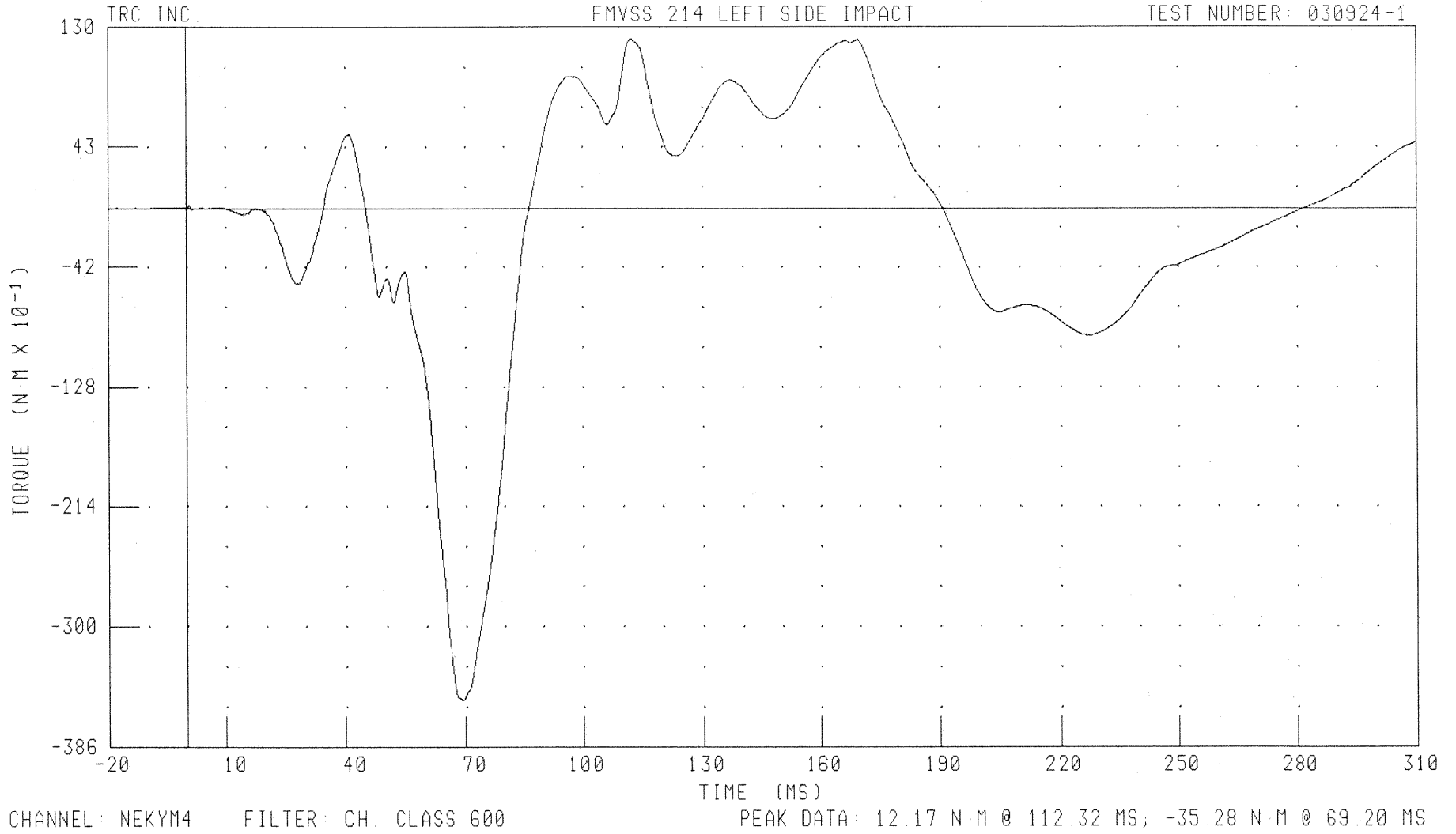
B-44

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NEKYM4

FILTER: CH. CLASS 600

PEAK DATA: 12.17 N.M @ 112.32 MS; -35.28 N.M @ 69.20 MS

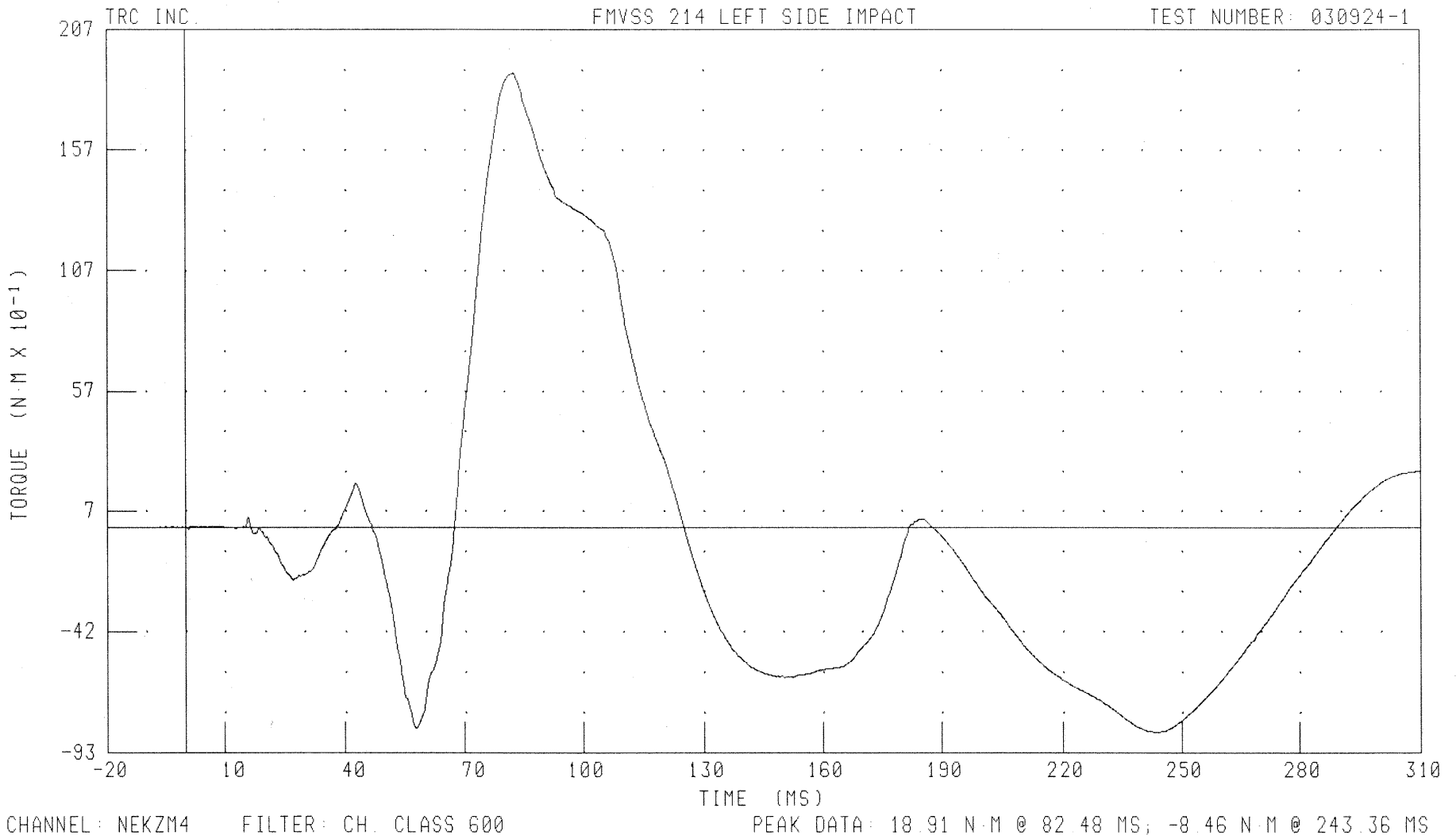
B-45

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



B-46

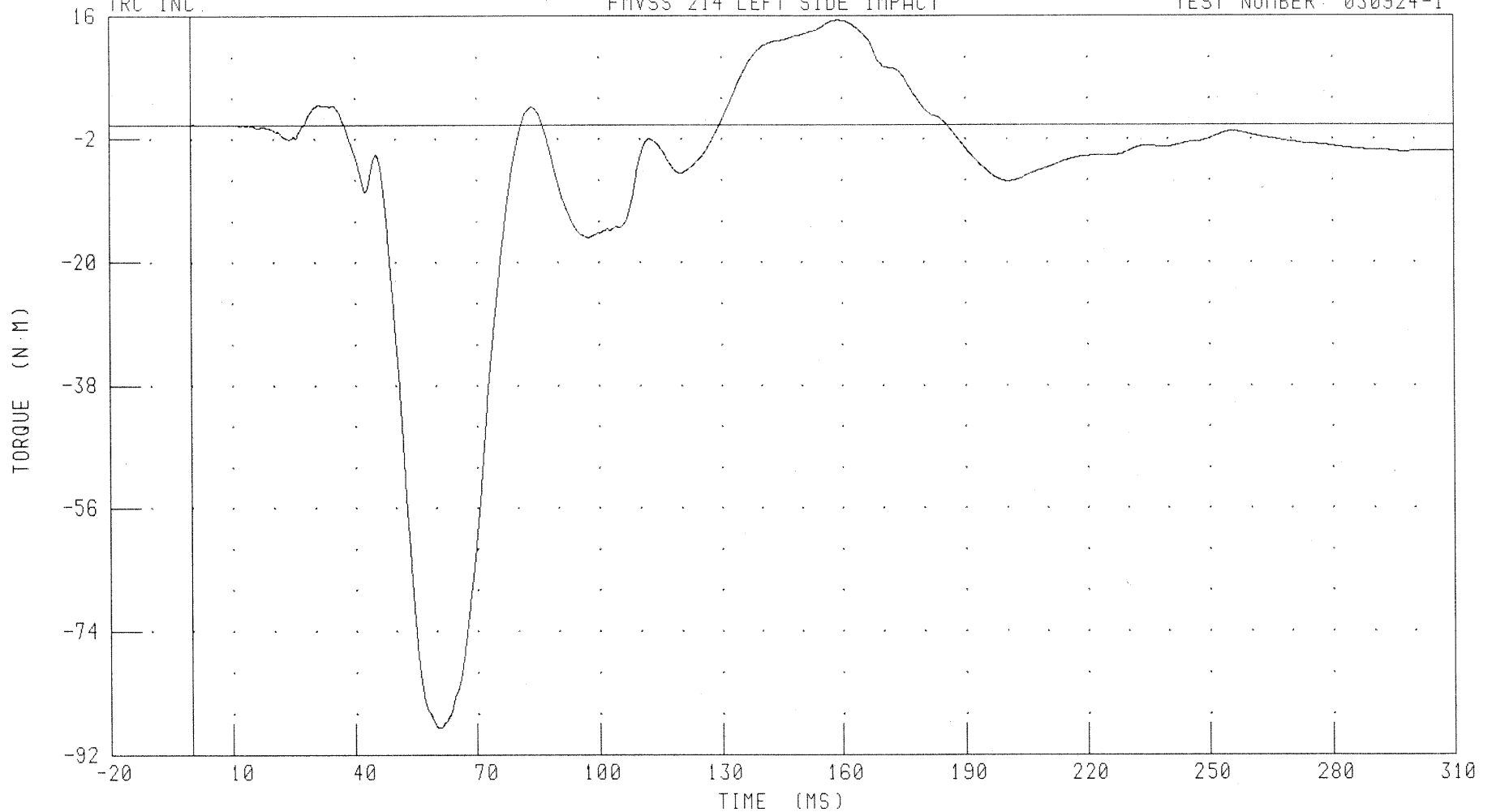
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: NK0XM4 FILTER: CH. CLASS 600

PEAK DATA: 15.39 N·M @ 159.20 MS; -88.10 N·M @ 60.56 MS

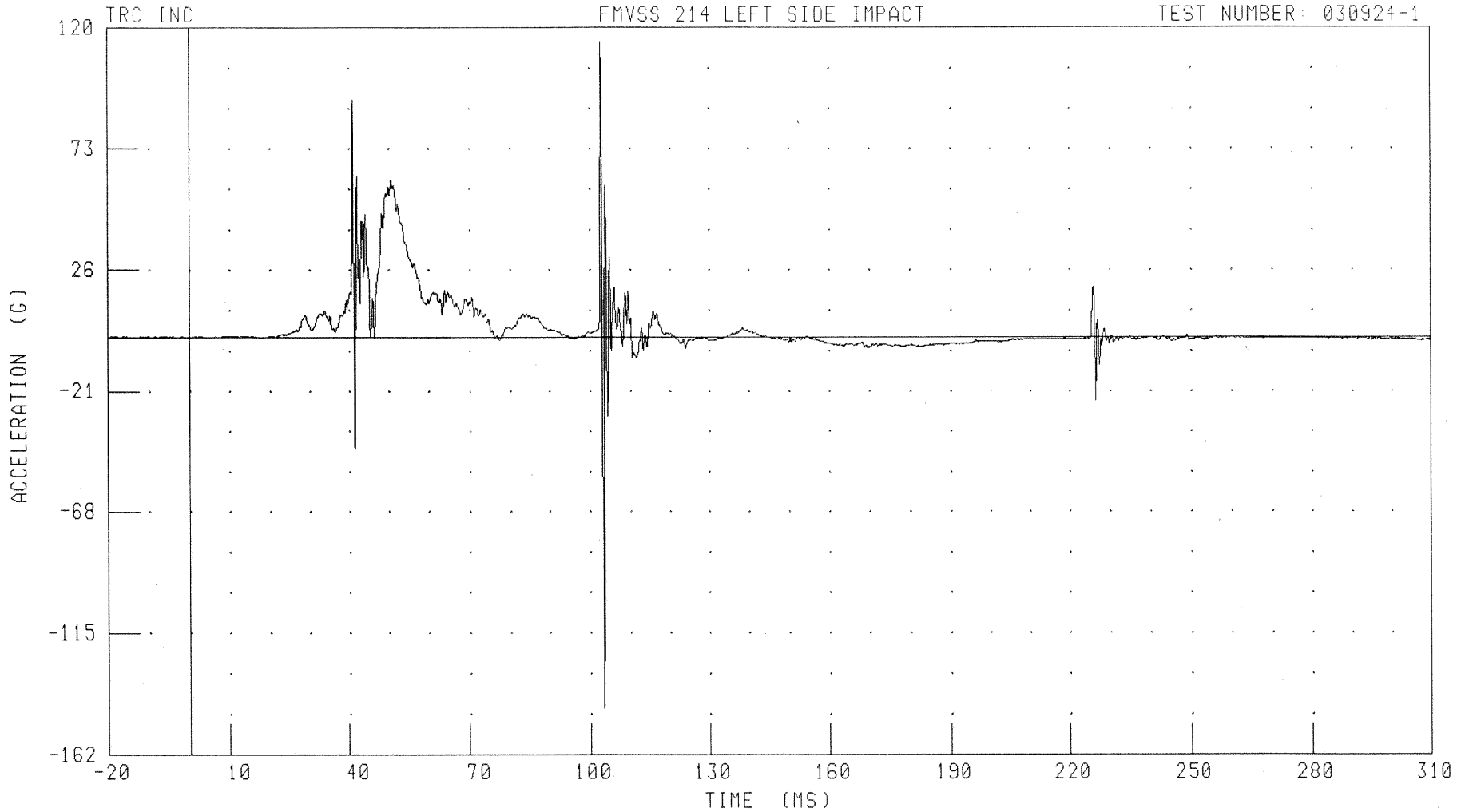
B-47

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYG4

FILTER: CH. CLASS 1000

PEAK DATA: 114.70 G @ 102.96 MS; -144.15 G @ 103.52 MS

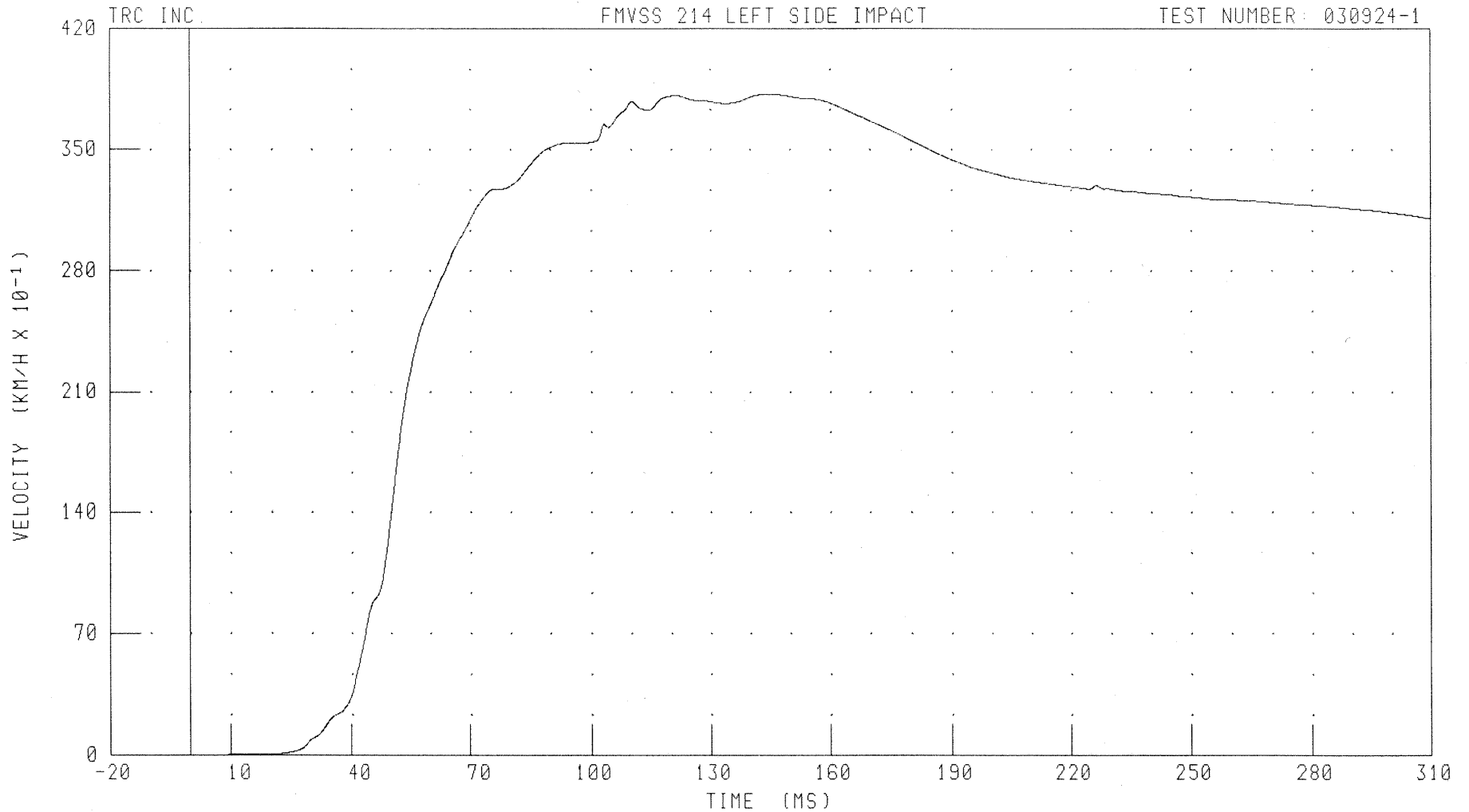
B-48

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYV4

FILTER: CH. CLASS 180

PEAK DATA: 38.24 KM/H @ 144.88 MS; 0.00 KM/H @ 0.00 MS

B-49

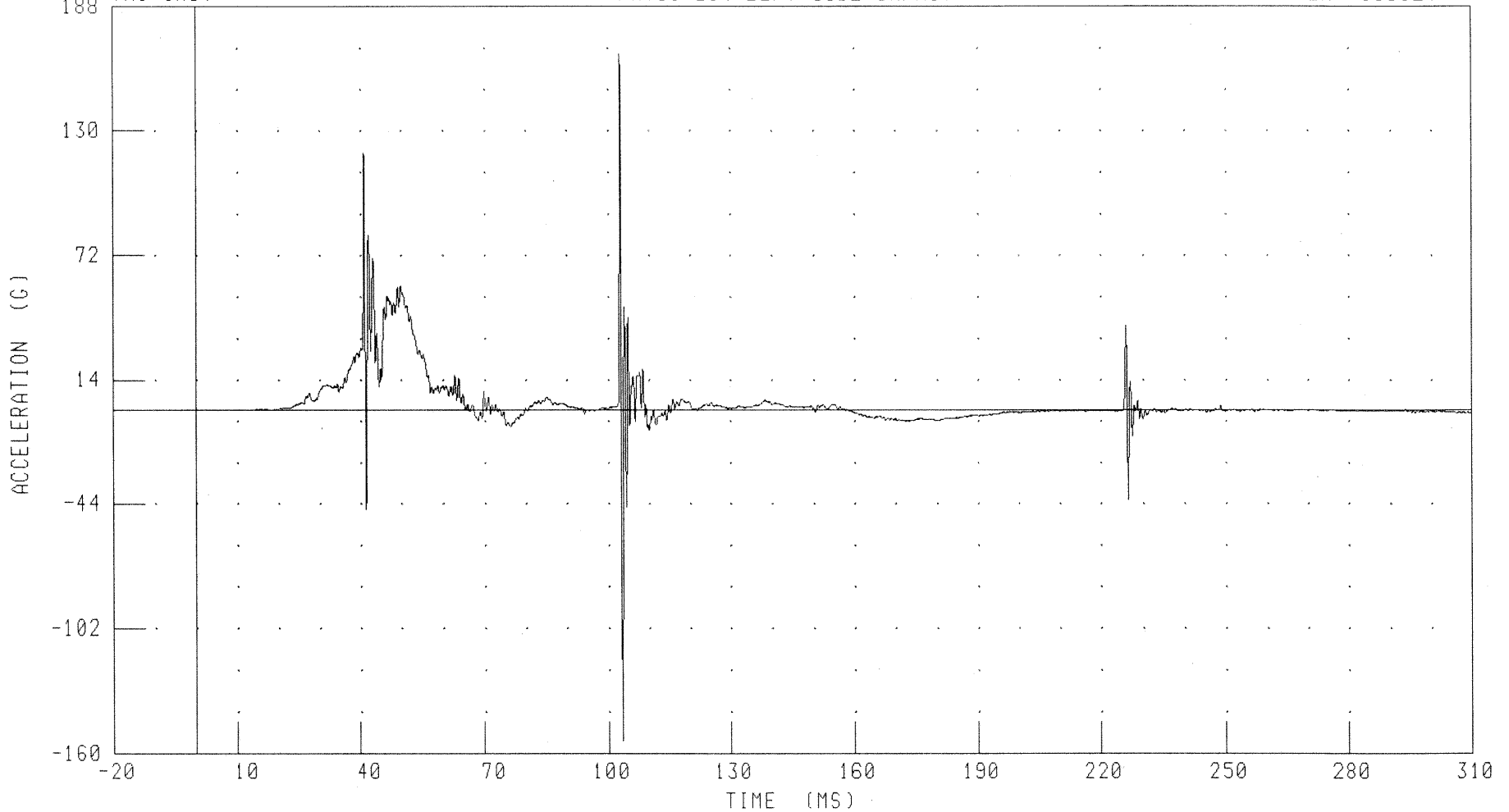
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYG4 FILTER: CH. CLASS 1000

PEAK DATA: 165.92 G @ 102.96 MS; -154.17 G @ 103.44 MS

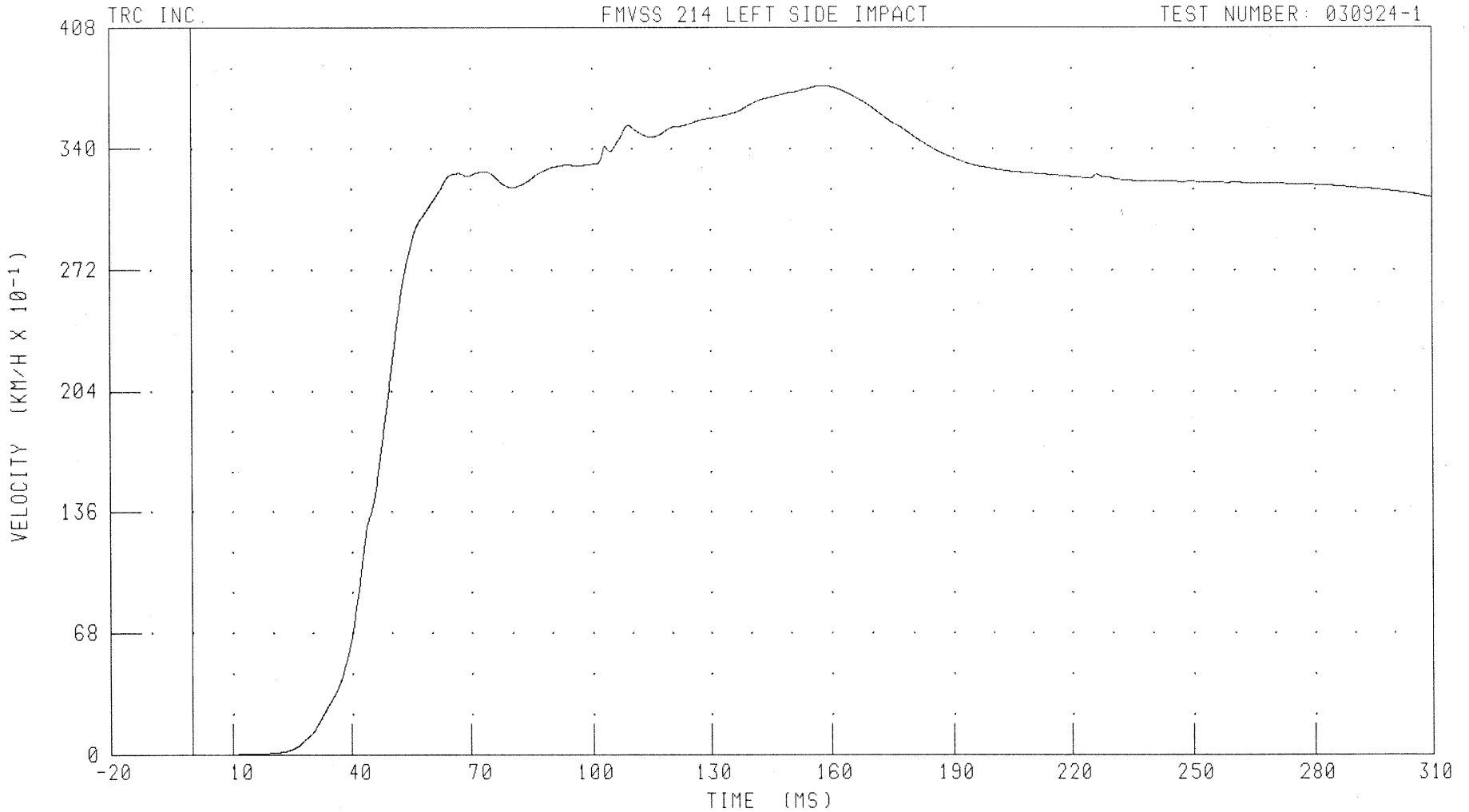
B-50

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYV4

FILTER: CH. CLASS 180

PEAK DATA: 37.54 KM/H @ 158.16 MS; 0.00 KM/H @ 0.00 MS

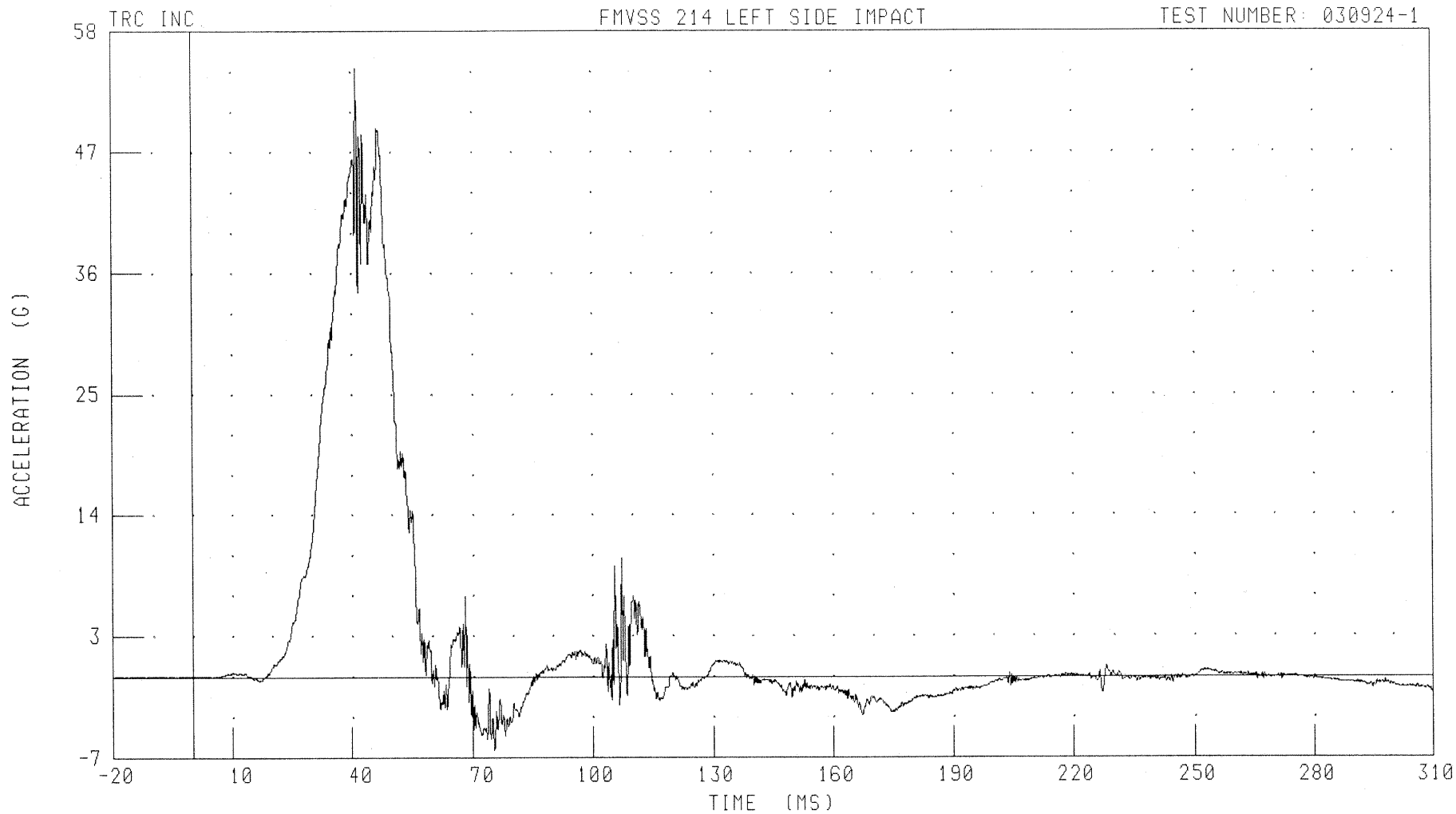
B-51

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YG4 FILTER: CH. CLASS 1000

PEAK DATA: 55.36 G @ 41.44 MS; -6.69 G @ 75.28 MS

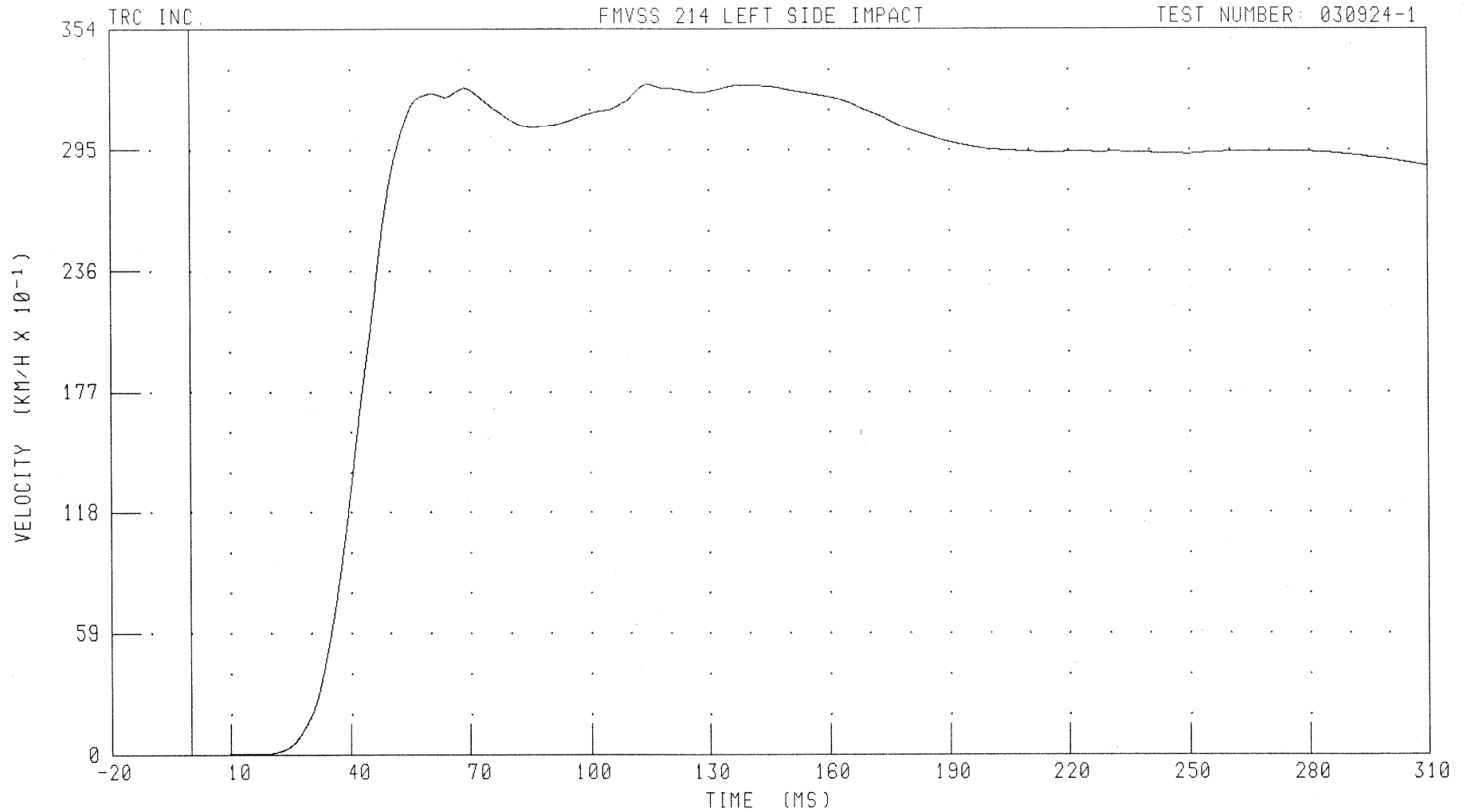
B-52

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YV4

FILTER: CH. CLASS 180

PEAK DATA: 32.71 KM/H @ 114.88 MS; 0.00 KM/H @ 0.00 MS

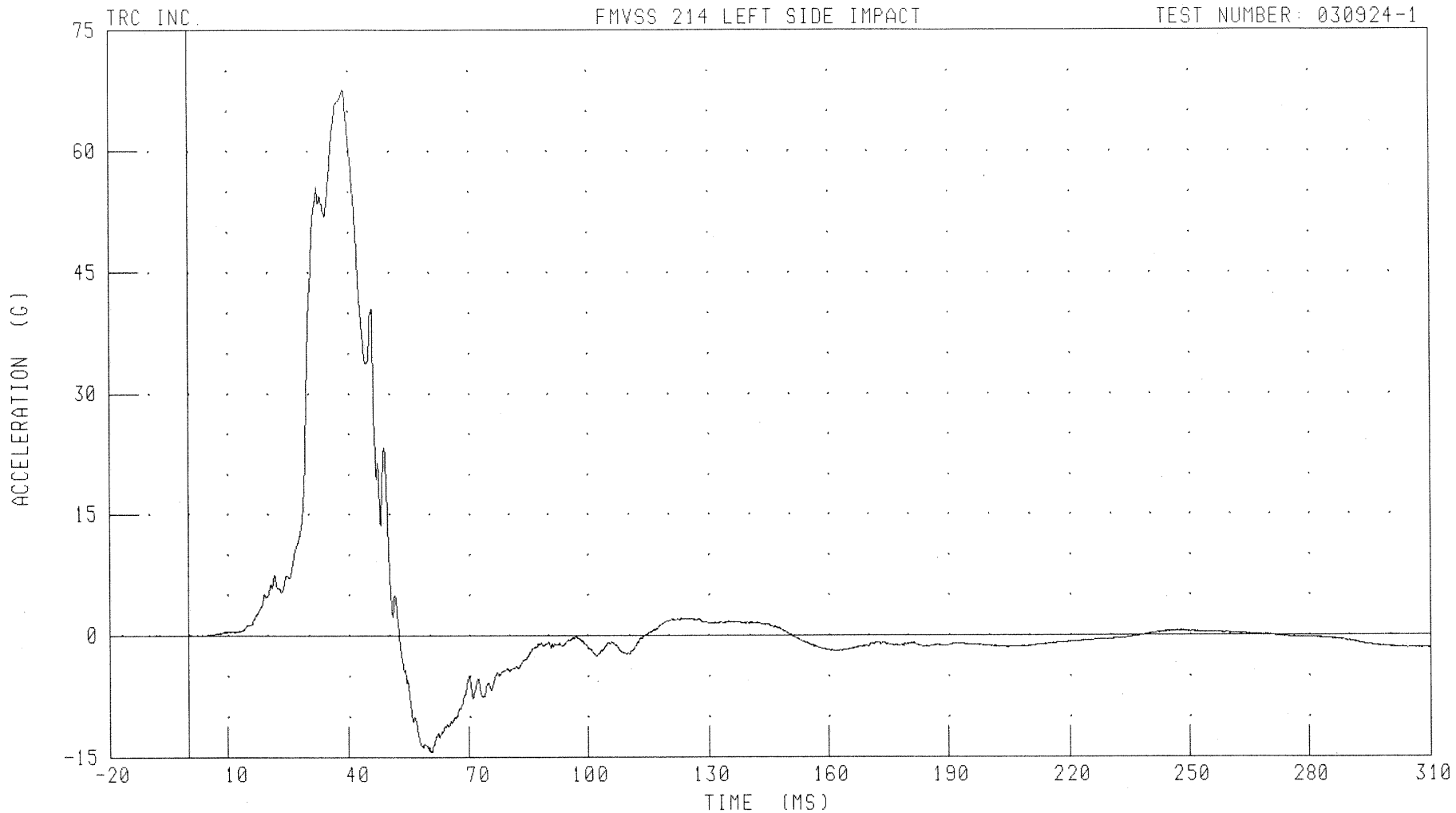
B-53

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYG4 FILTER: CH. CLASS 1000

PEAK DATA: 67.64 G @ 38.96 MS; -14.38 G @ 60.56 MS

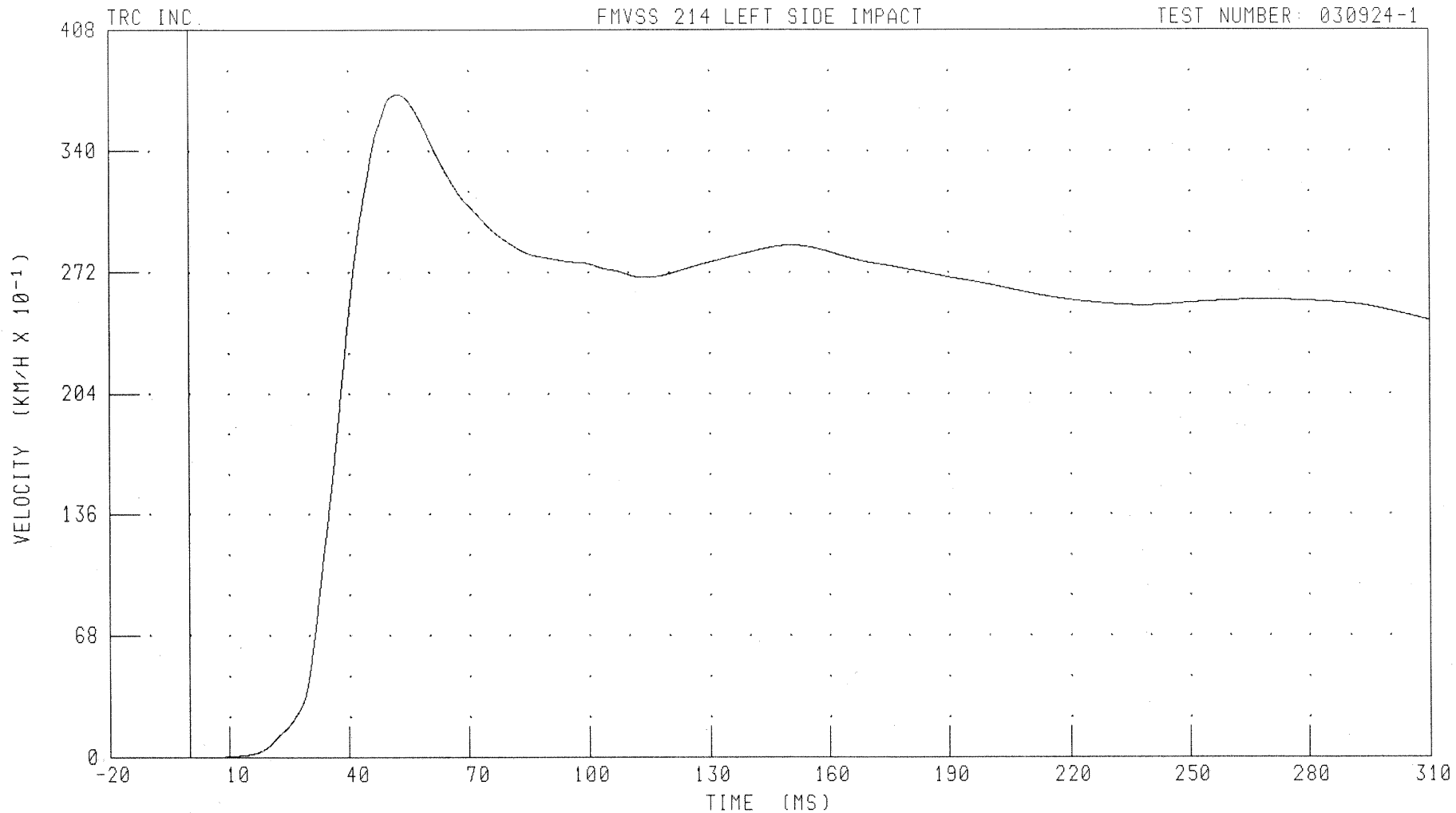
B-54

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYV4 FILTER: CH. CLASS 180

PEAK DATA: 37 21 KM/H @ 52.40 MS; 0.00 KM/H @ 0.00 MS

B-55

030924-1

Driver and Passenger Dummy Instrumentation Plots

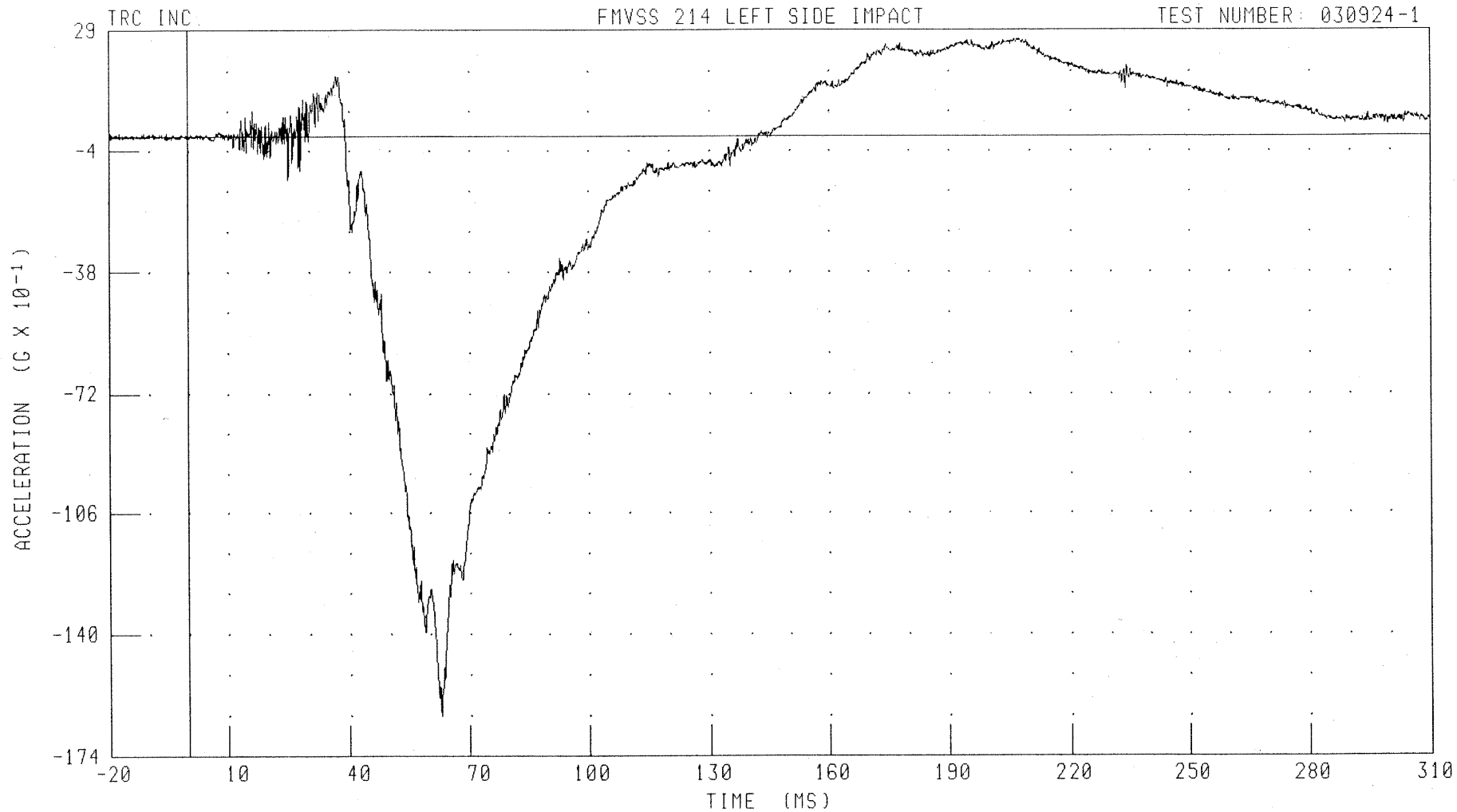
Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD X-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXR1

FILTER: CH. CLASS 1000

PEAK DATA: 2.76 G @ 206.56 MS; -16.27 G @ 62.64 MS

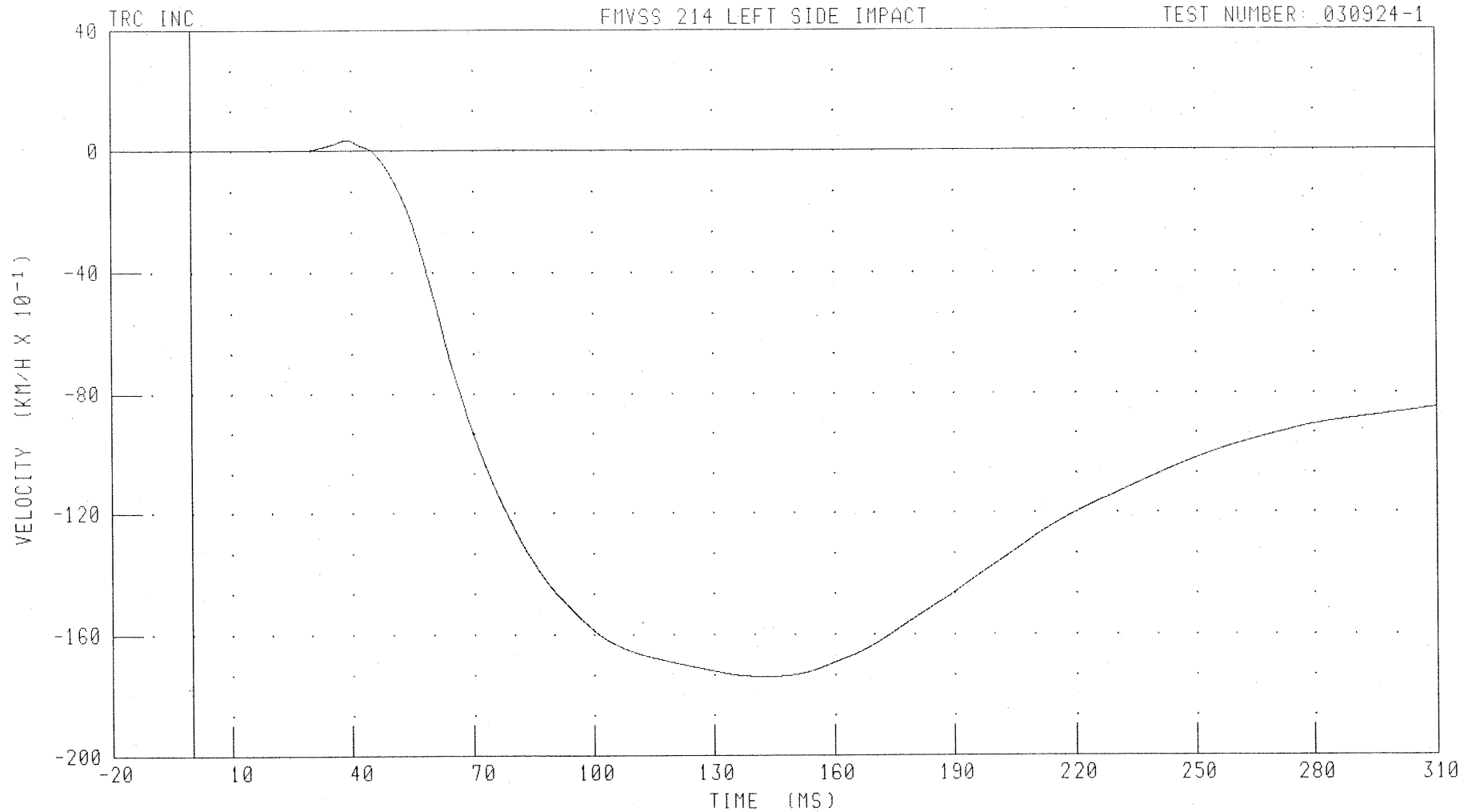
B-57

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD X-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXVI

FILTER: CH. CLASS 180

PEAK DATA: 0.36 KM/H @ 39.12 MS; -17.40 KM/H @ 142.32 MS

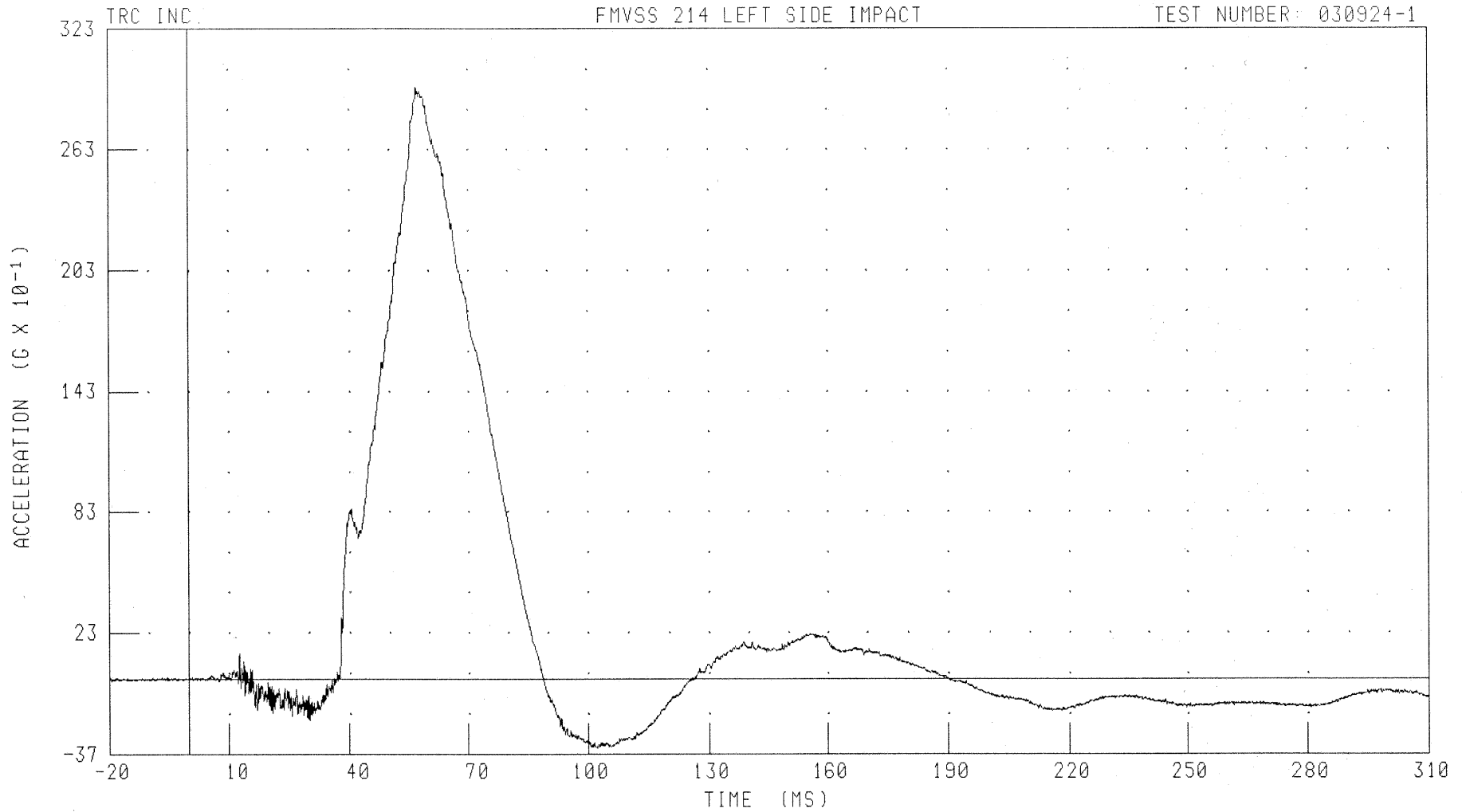
B-58

030924-1

55/28 KPH, 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYR1 FILTER: CH. CLASS 1000

PEAK DATA: 29.43 G @ 57.04 MS; -3.43 G @ 102.16 MS

B-59

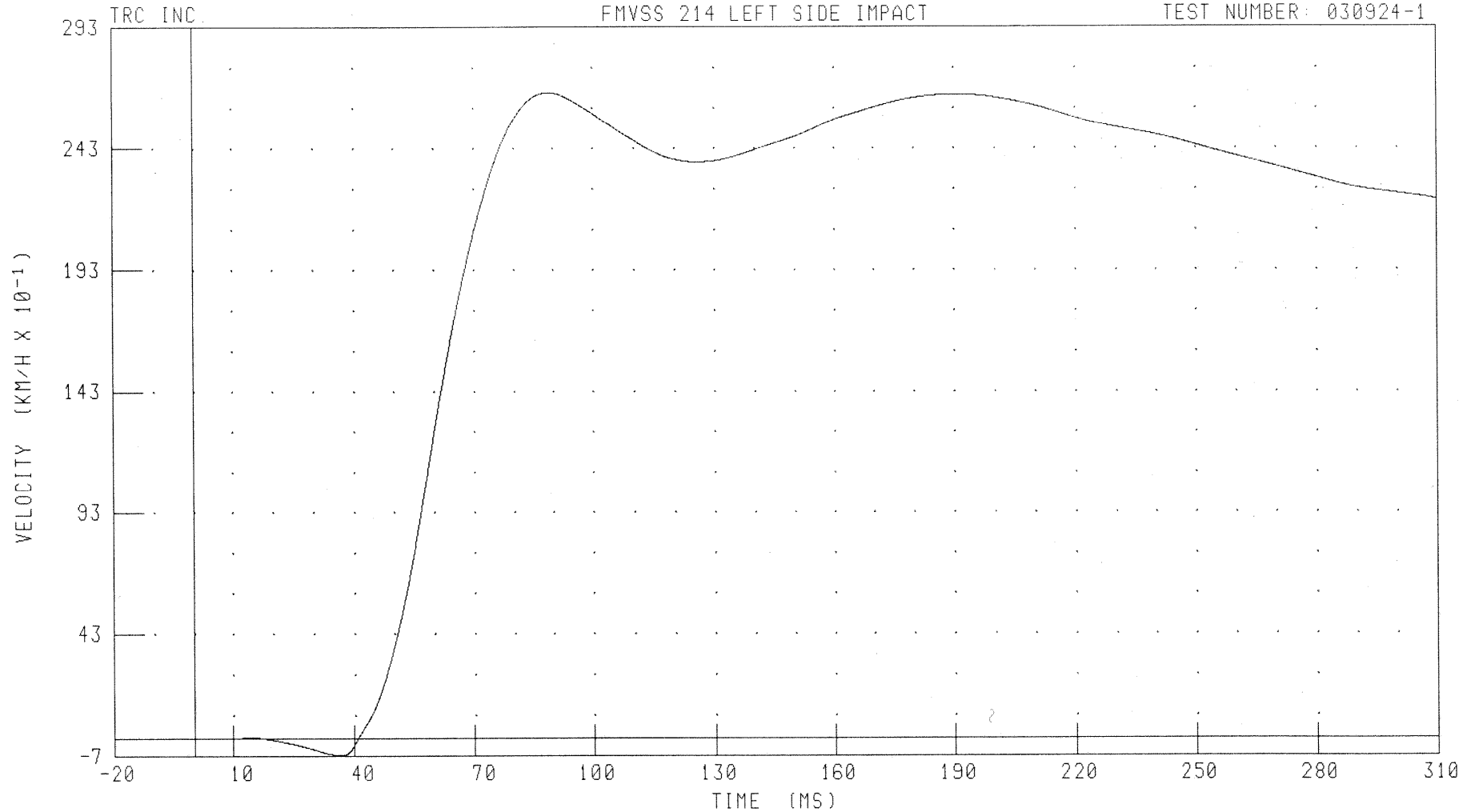
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYVI FILTER: CH. CLASS 180

PEAK DATA: 26.62 KM/H @ 88.88 MS, -0.67 KM/H @ 36.96 MS

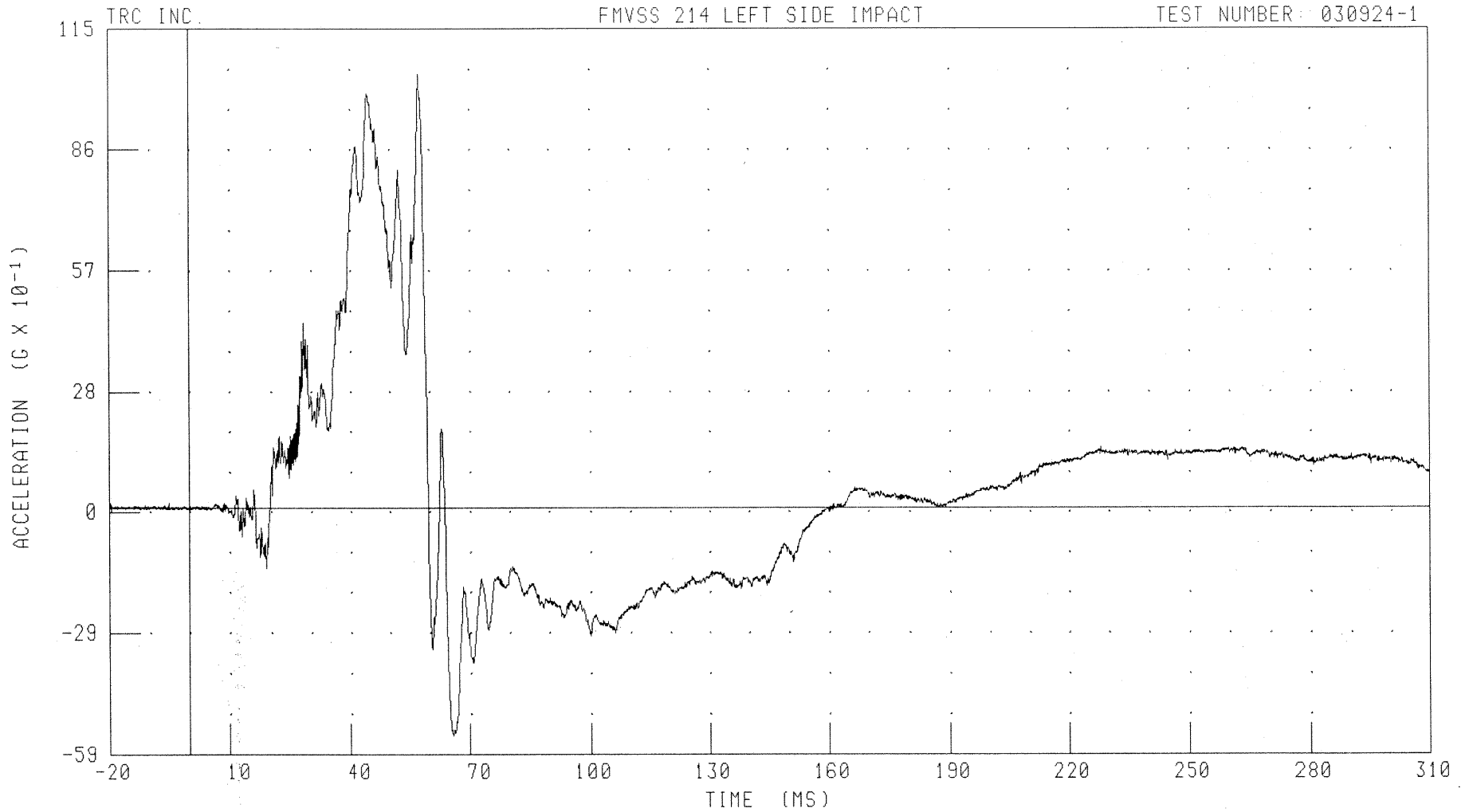
B-60

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZR1 FILTER: CH. CLASS 1000

PEAK DATA: 10.42 G @ 57.44 MS; -5.45 G @ 65.76 MS

B-61

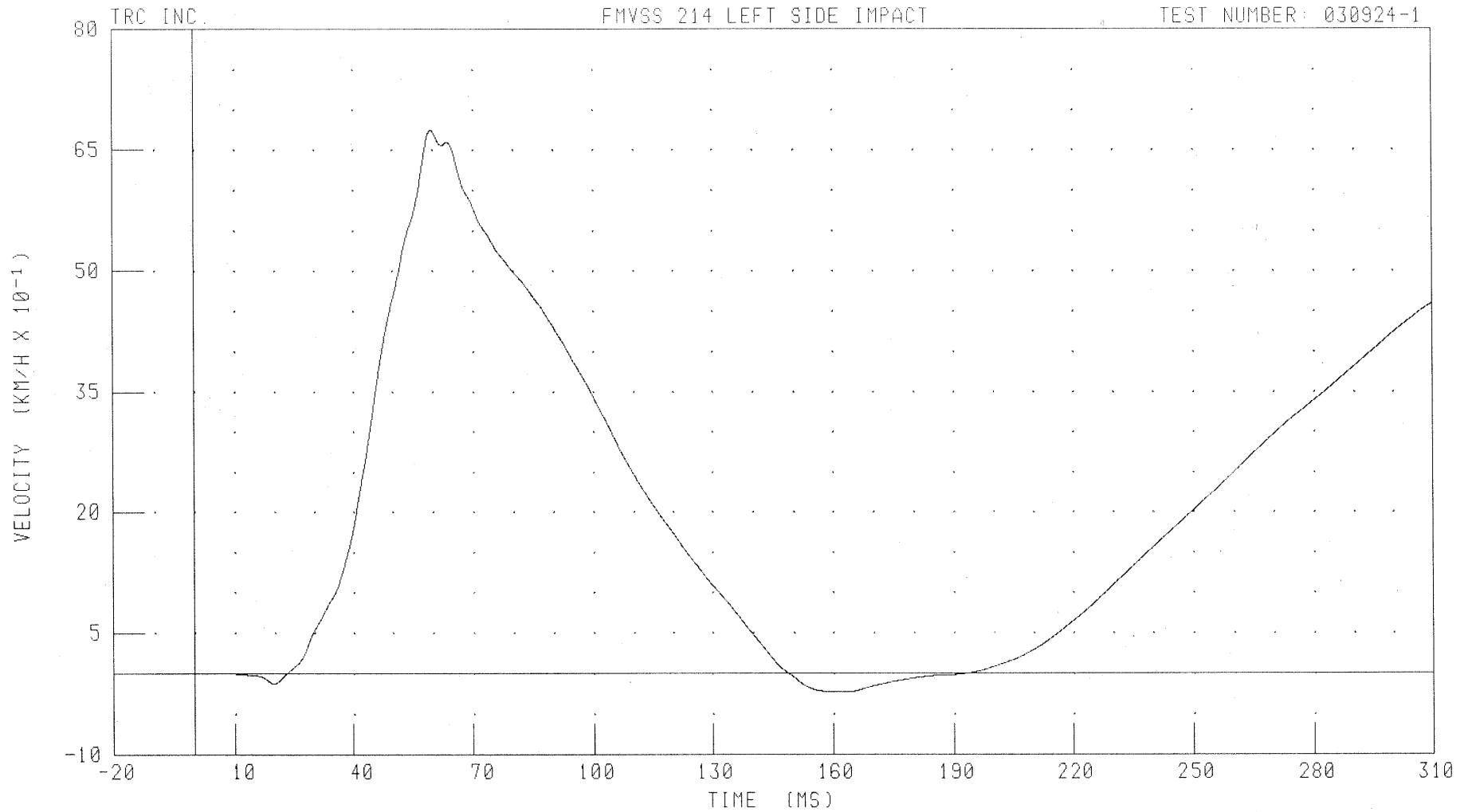
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Z-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZVI FILTER: CH. CLASS 100

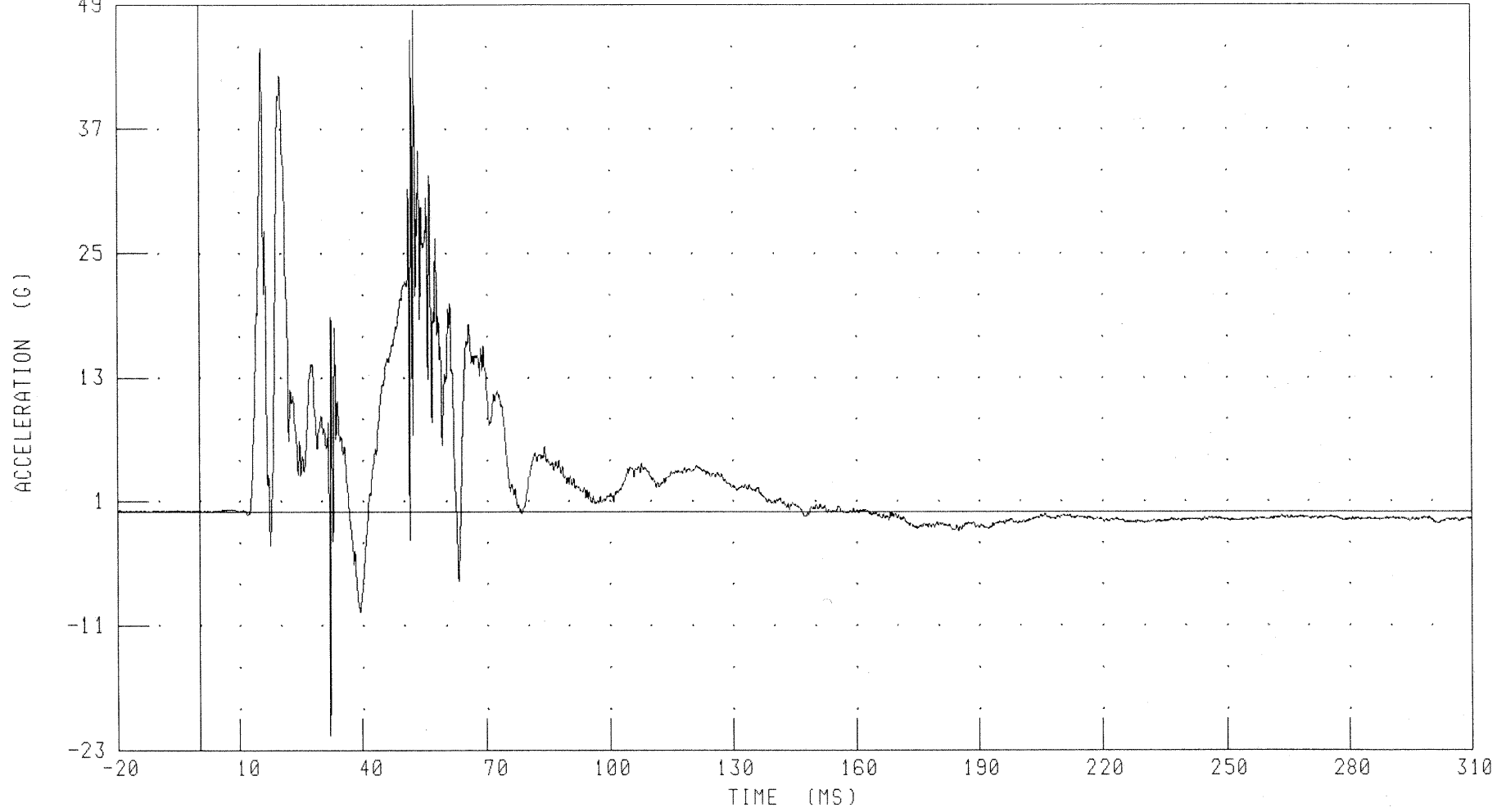
PEAK DATA: 6.75 KM/H @ 59.68 MS, -0.23 KM/H @ 161.52 MS

B-62

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL: LURYR1 FILTER: CH. CLASS 1000 PEAK DATA: 48.54 G @ 52.64 MS; -21.54 G @ 32.08 MS

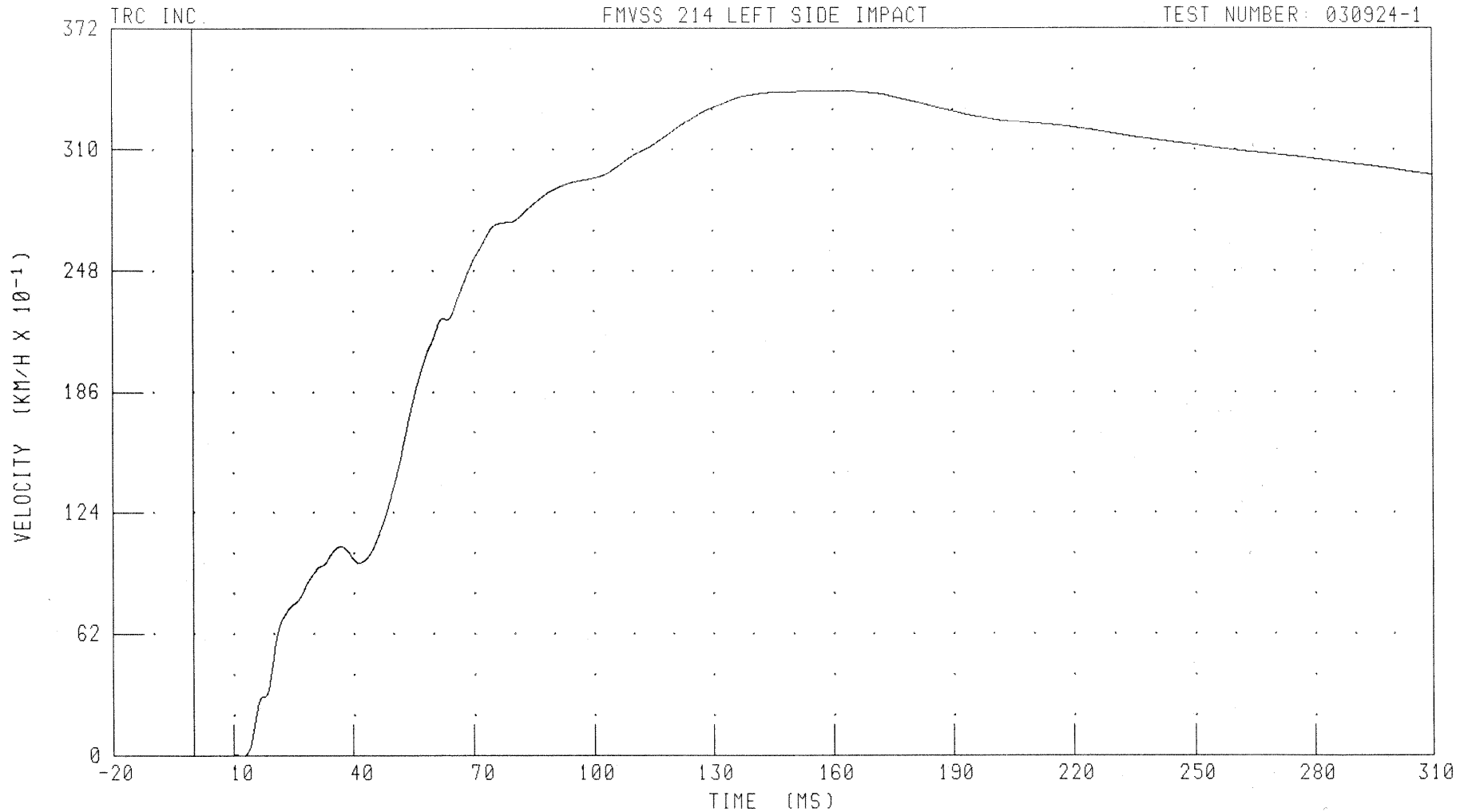
B-63

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER UPPER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYVI FILTER: CH. CLASS 180

PEAK DATA: 34.01 KM/H @ 162.64 MS; 0.00 KM/H @ 0.00 MS

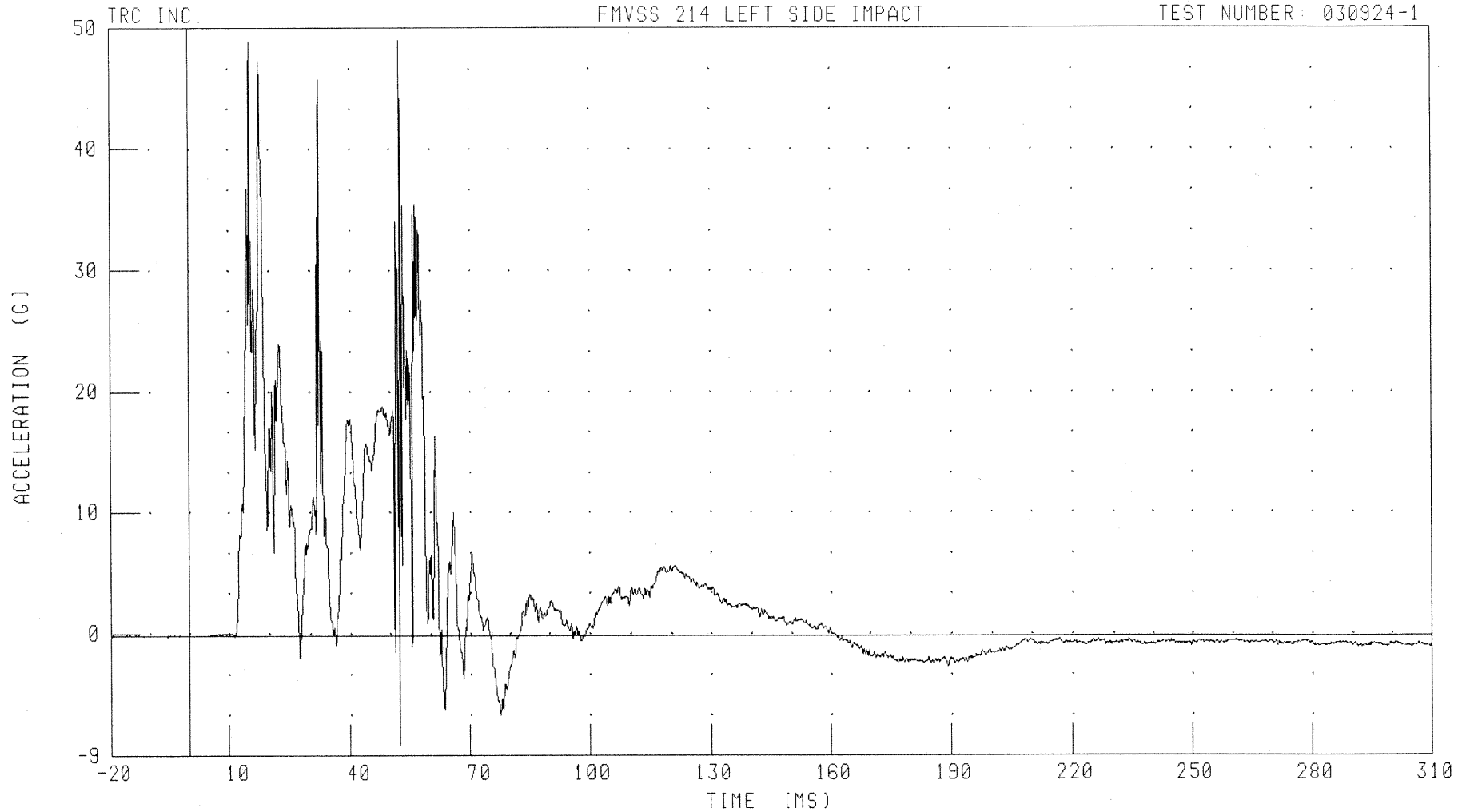
B-64

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYR1

FILTER: CH. CLASS 1000

PEAK DATA: 49.24 G @ 52.72 MS, -8.94 G @ 52.32 MS

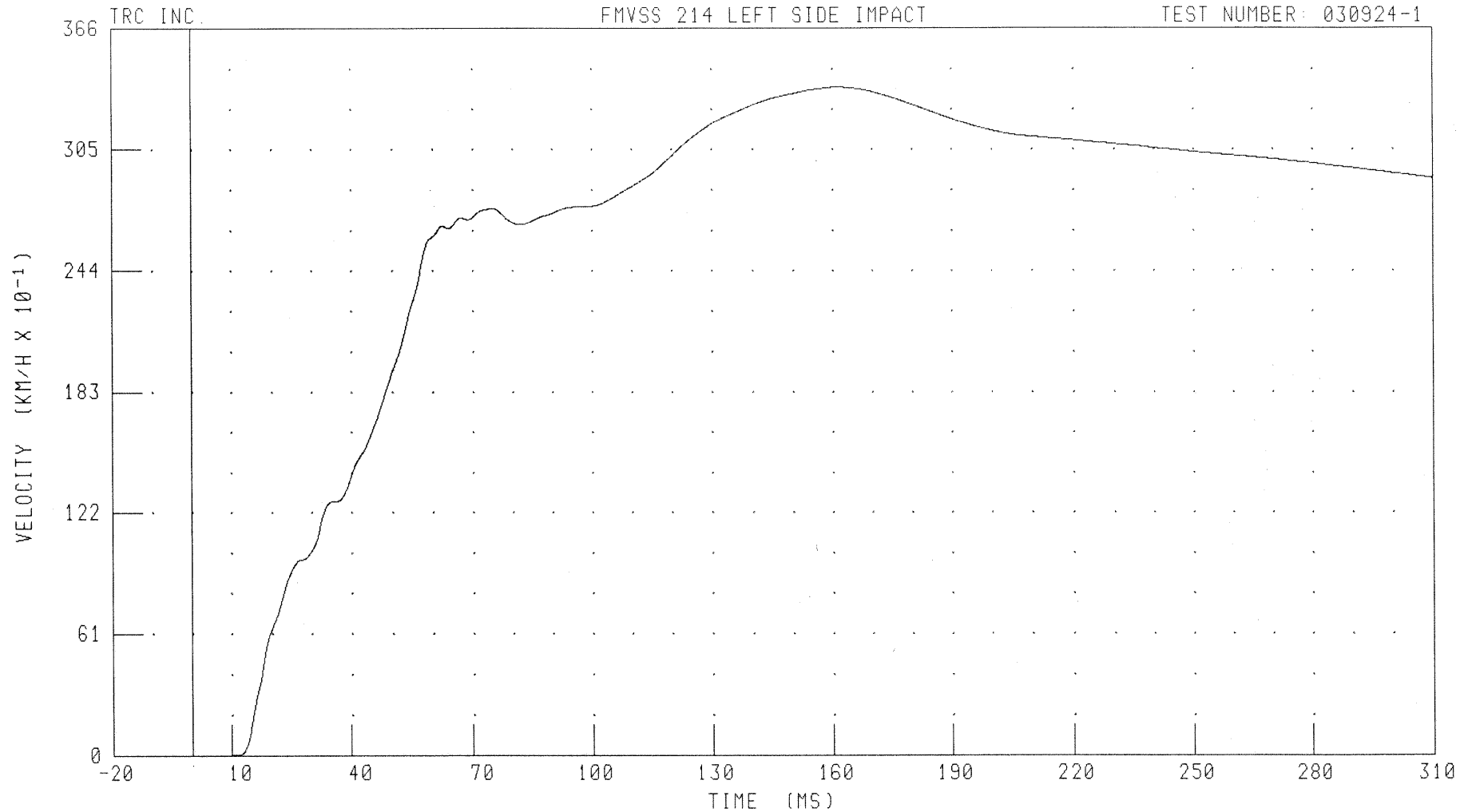
B-65

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYVI

FILTER: CH. CLASS 180

PEAK DATA: 33.65 KM/H @ 161.36 MS; 0.00 KM/H @ 0.00 MS

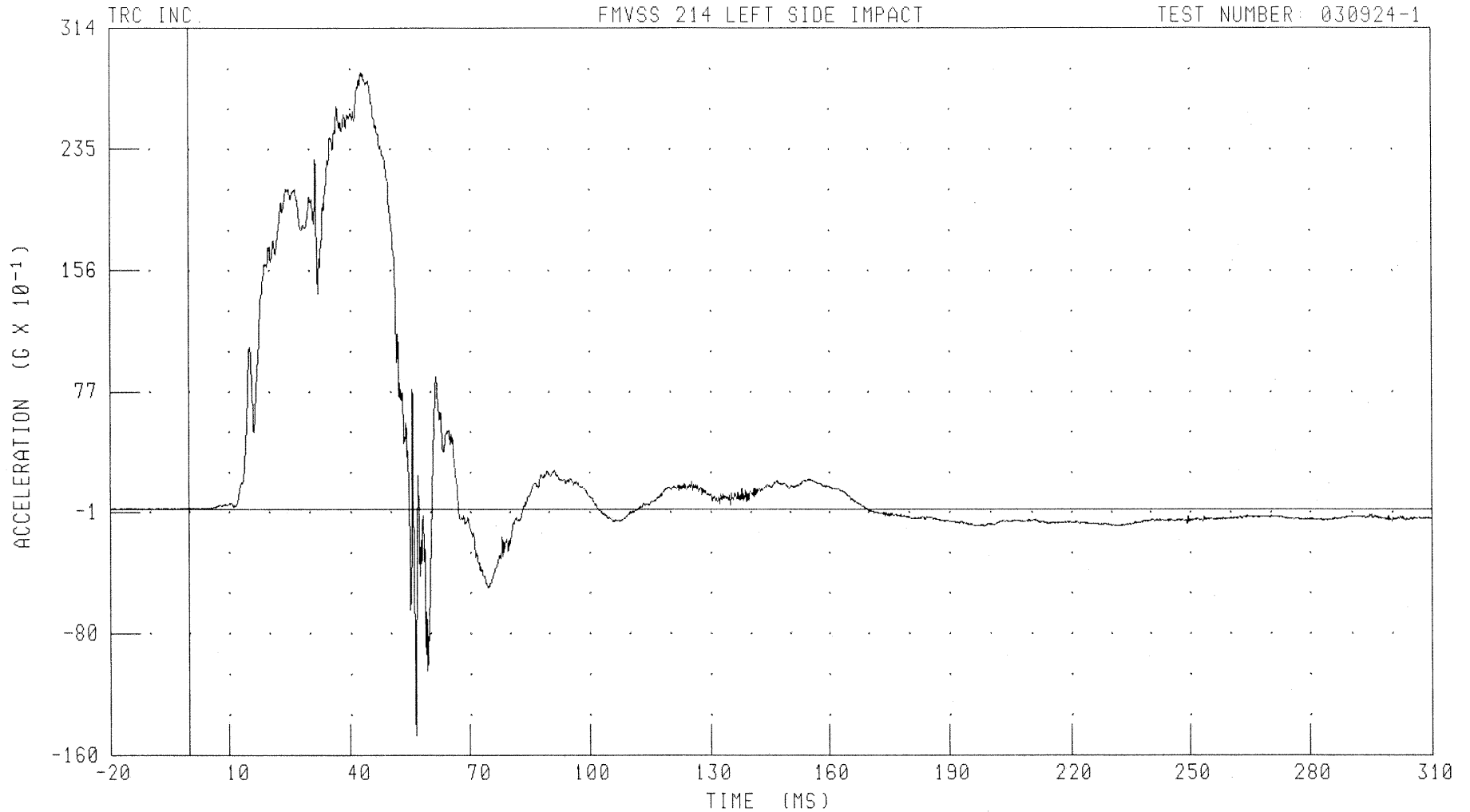
B-66

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YR1

FILTER: CH. CLASS 1000

PEAK DATA: 28.57 G @ 42.88 MS; -14.76 G @ 56.32 MS

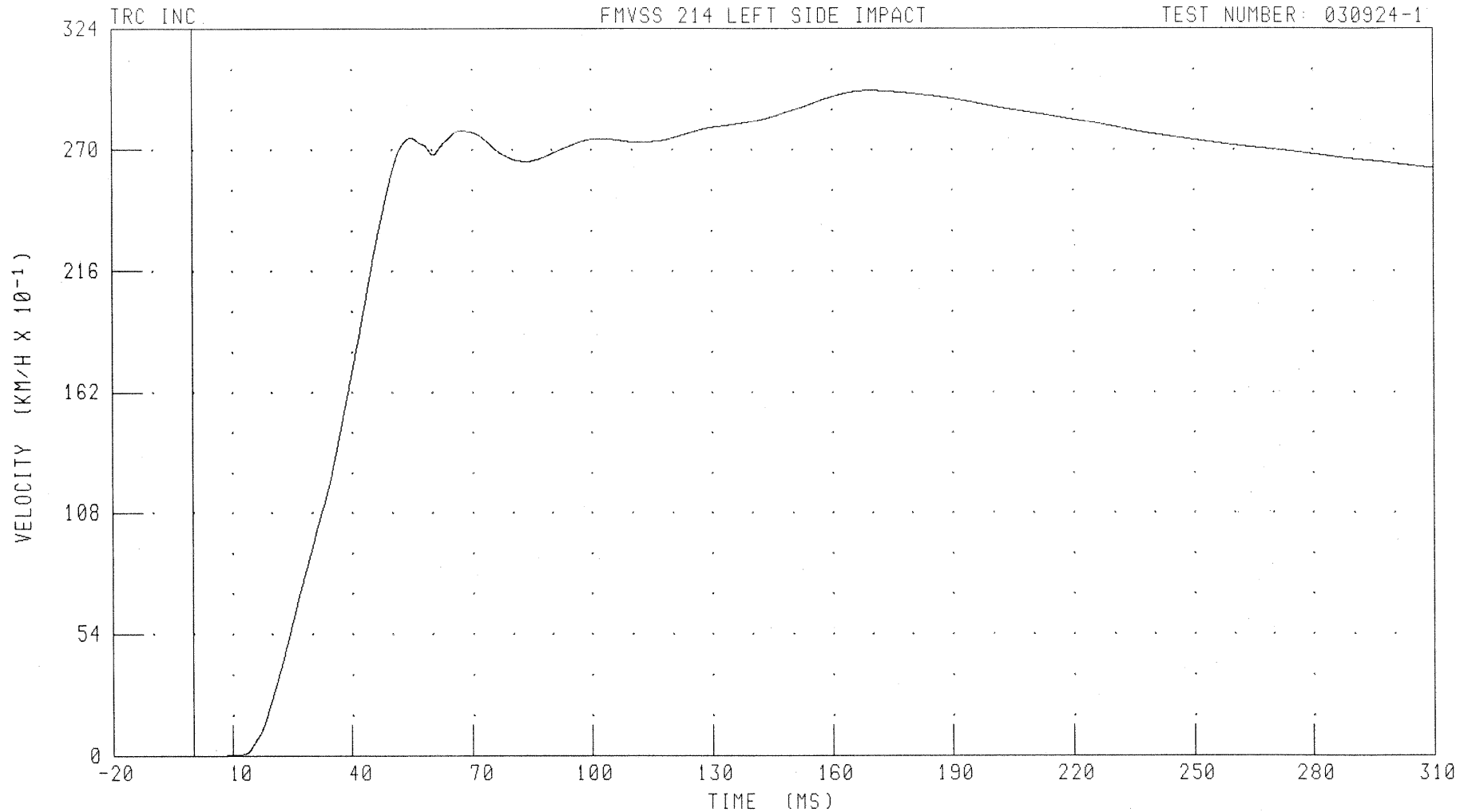
B-67

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YVI FILTER: CH. CLASS 180

PEAK DATA: 29.65 KM/H @ 169.60 MS; 0.00 KM/H @ 0.00 MS

B-68

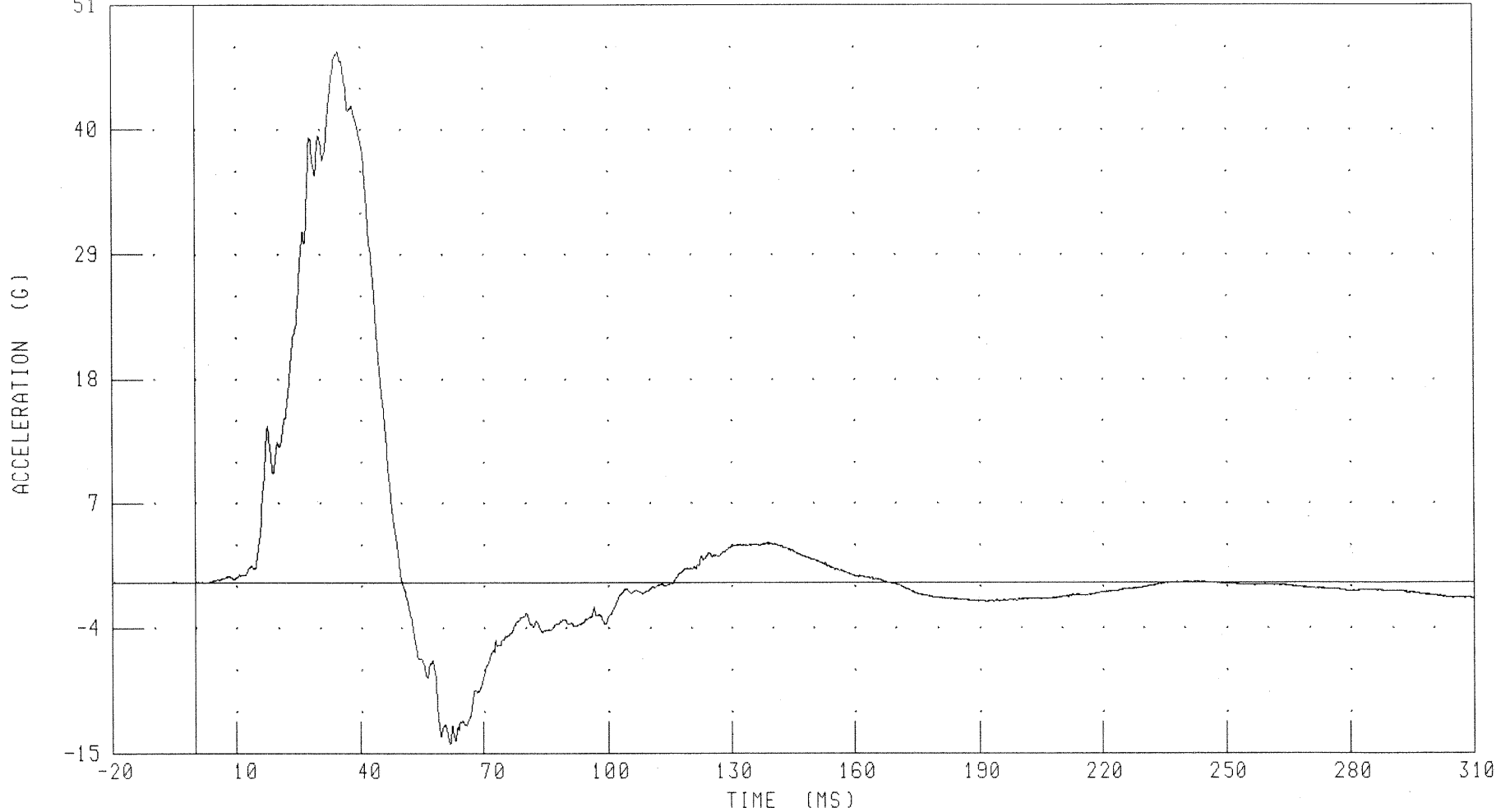
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

51 TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYR1

FILTER: CH. CLASS 1000

PEAK DATA: 46.88 G @ 34.64 MS; -14.17 G @ 61.84 MS

B-69

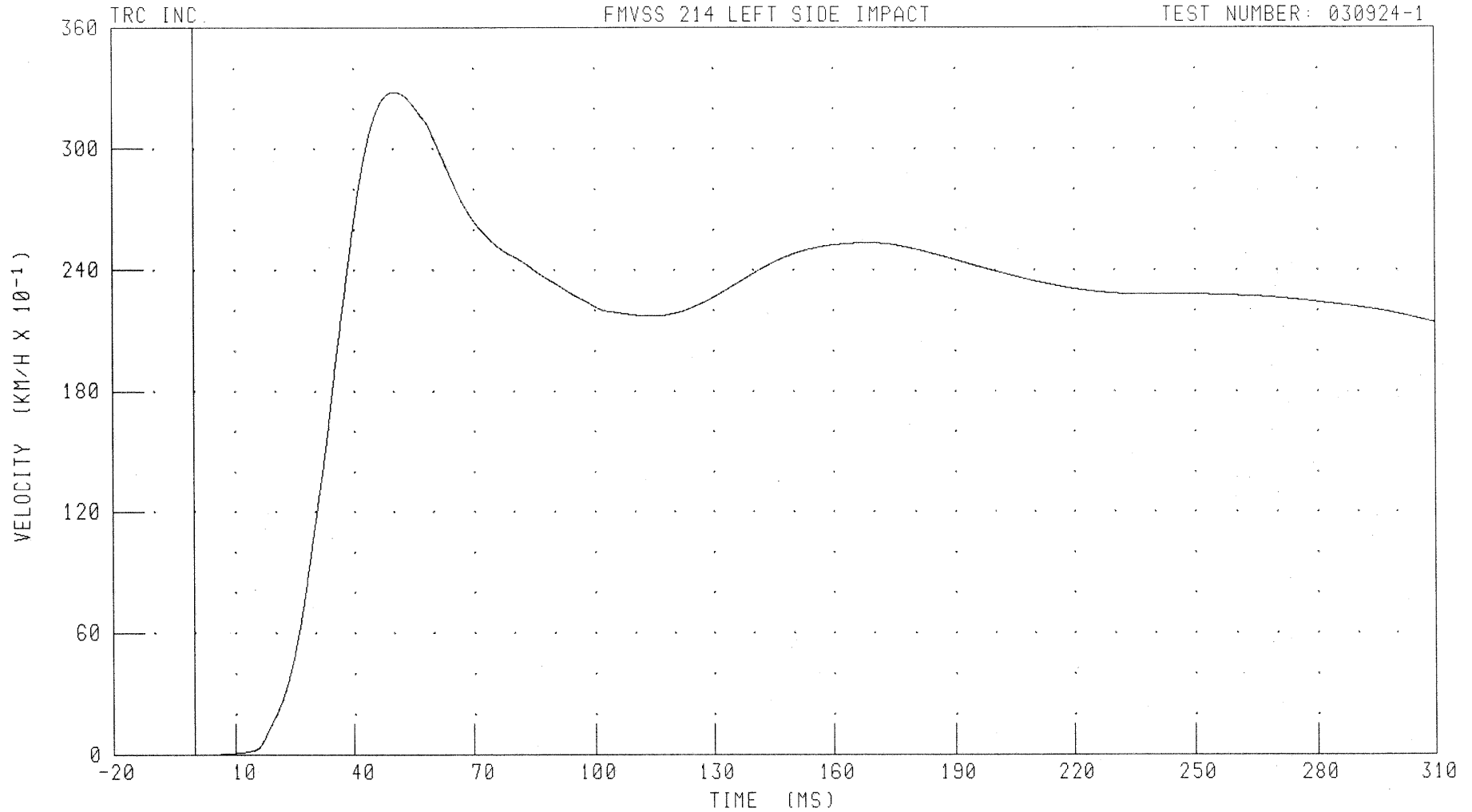
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYVI

FILTER: CH. CLASS 180

PEAK DATA: 32.83 KM/H @ 50.32 MS; 0.00 KM/H @ 0.00 MS

B-70

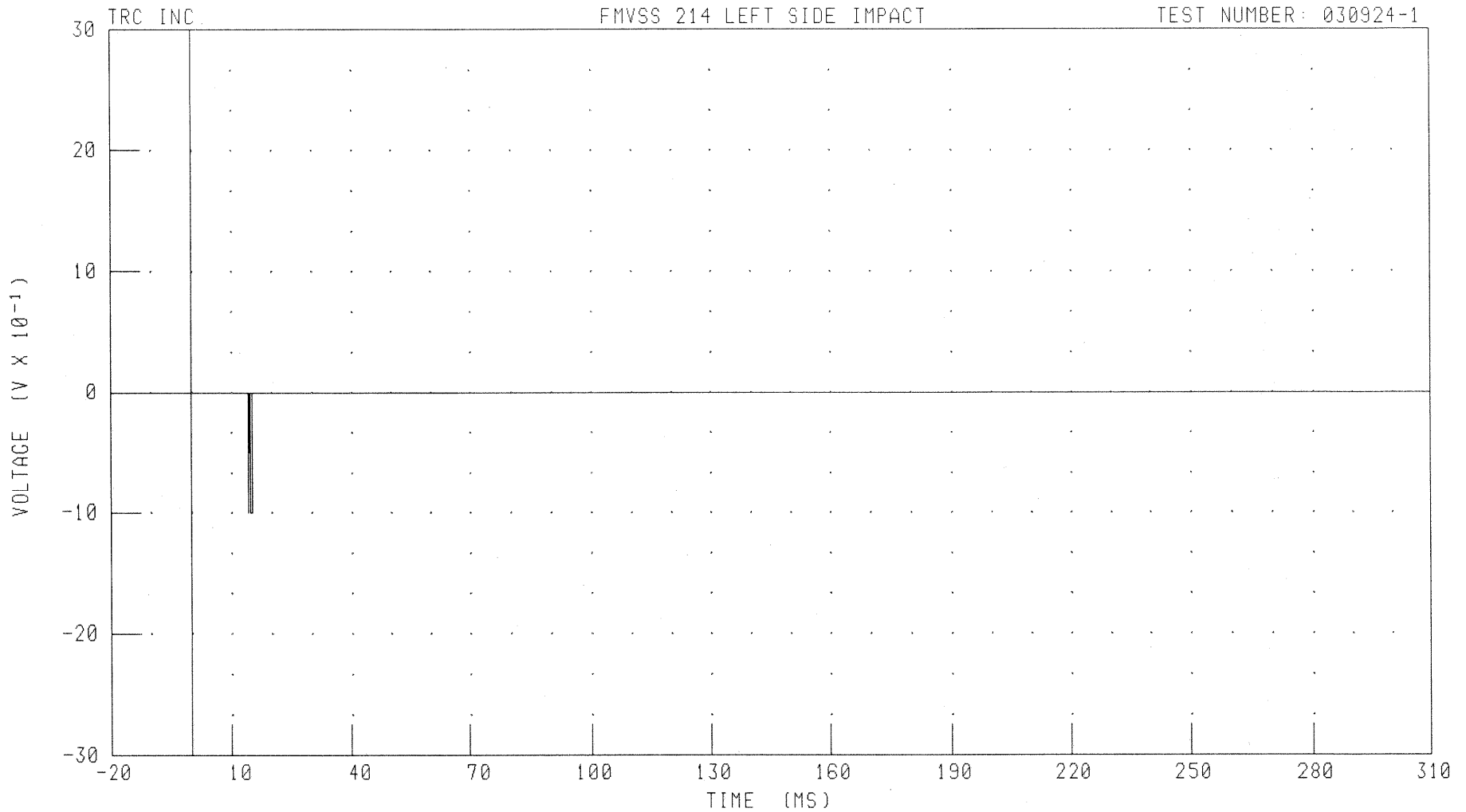
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER SHOULDER CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: SHLET1

FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 14.24 MS

B-71

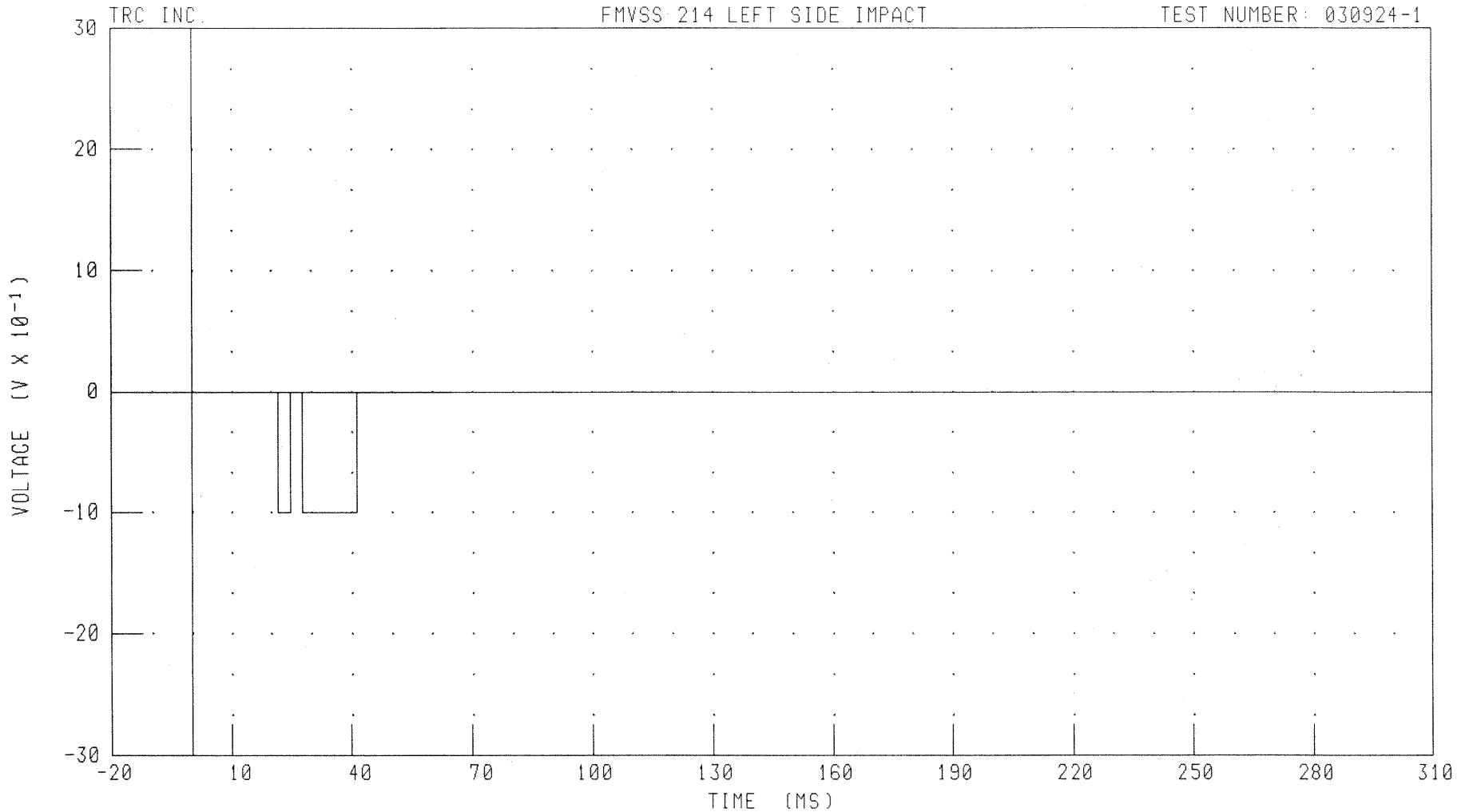
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVET1

FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 21.92 MS

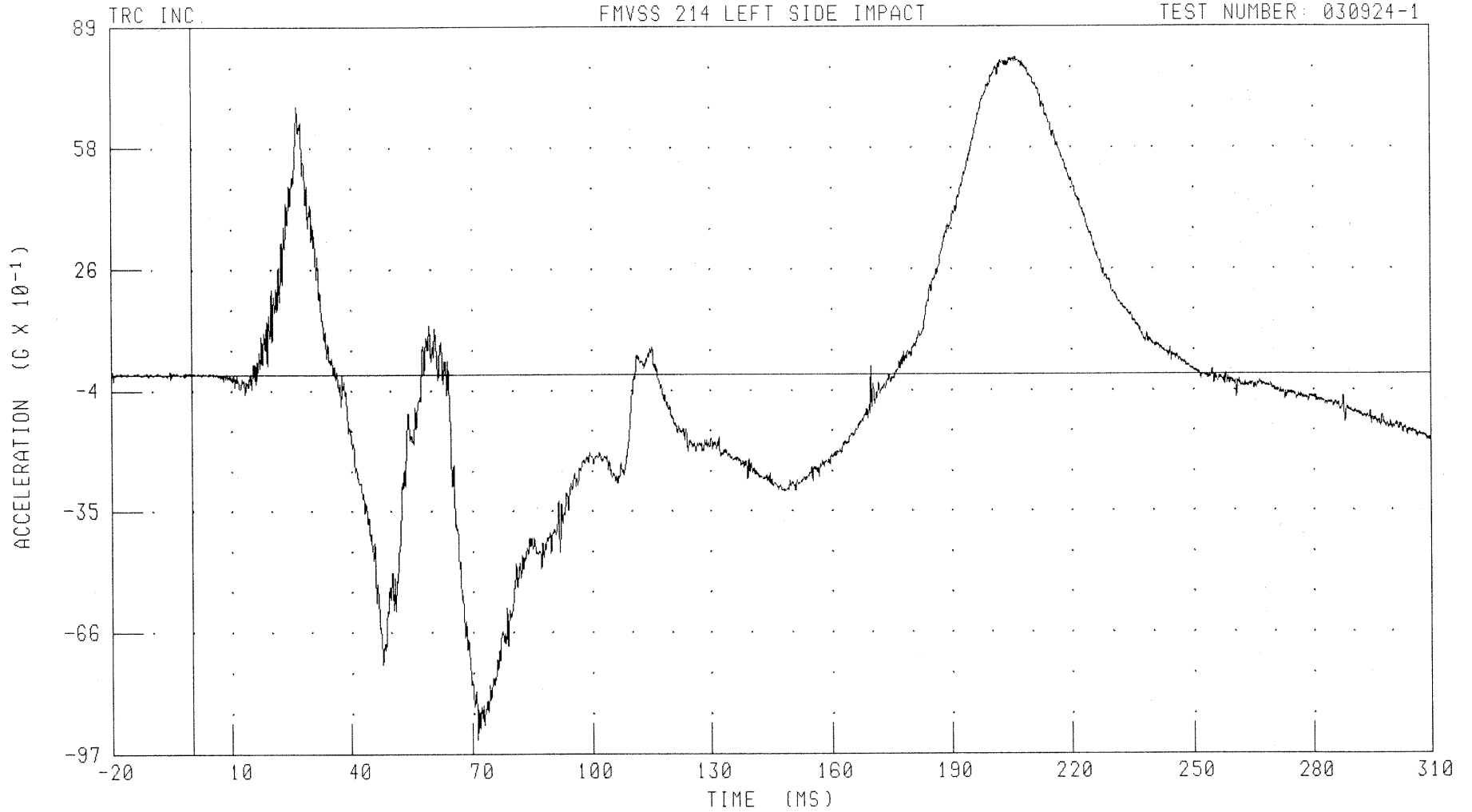
B-72

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXR4

FILTER: CH. CLASS 1000

PEAK DATA: 8.12 G @ 206.16 MS; -9.33 G @ 71.20 MS

B-73

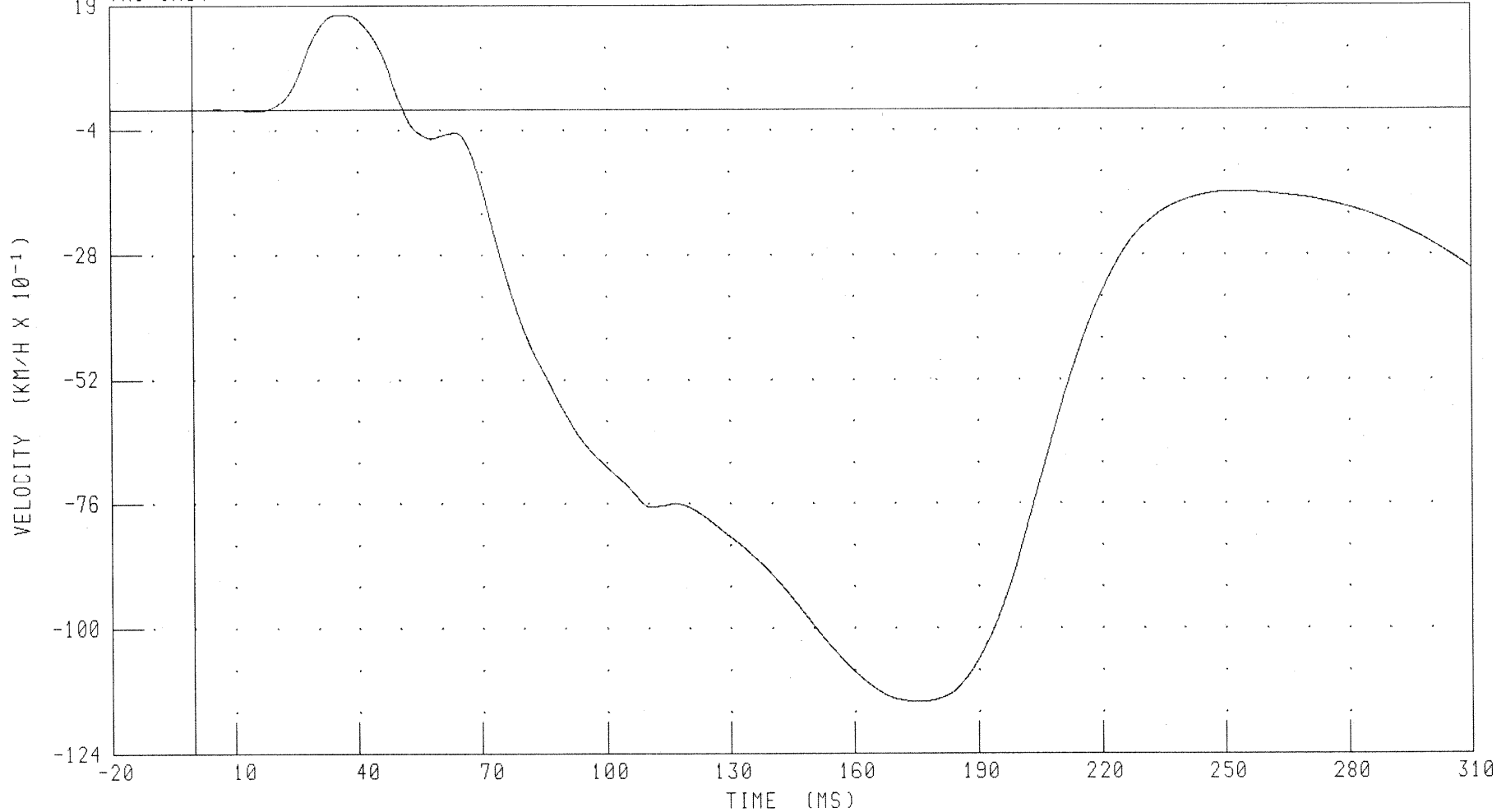
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDXVJ

FILTER: CH. CLASS 180

PEAK DATA: 1.83 KM/H @ 36.32 MS; -11.42 KM/H @ 175.92 MS

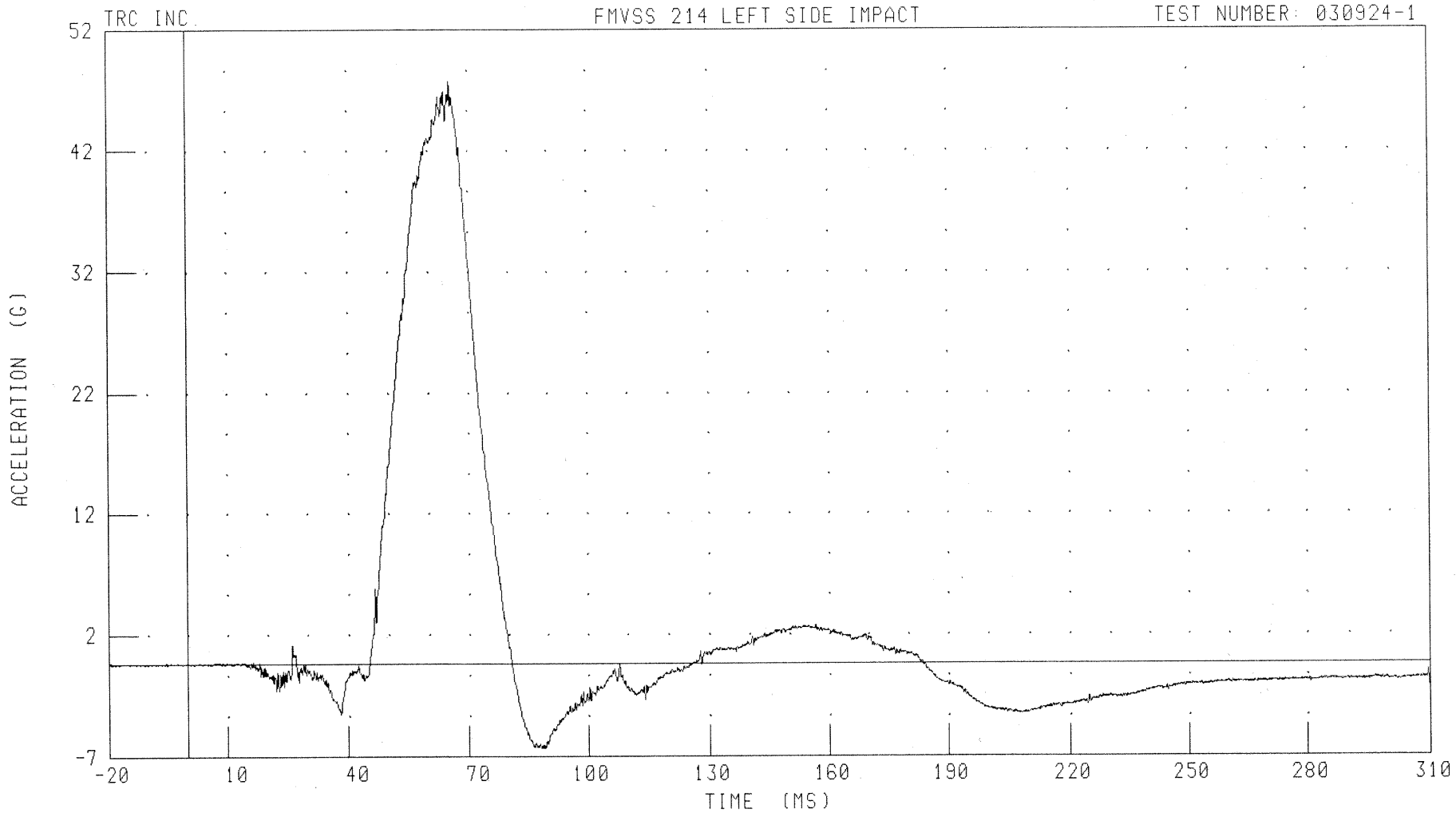
B-74

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYR4 FILTER: CH. CLASS 1000

PEAK DATA: 48.21 G @ 65.68 MS; -6.95 G @ 88.16 MS

B-75

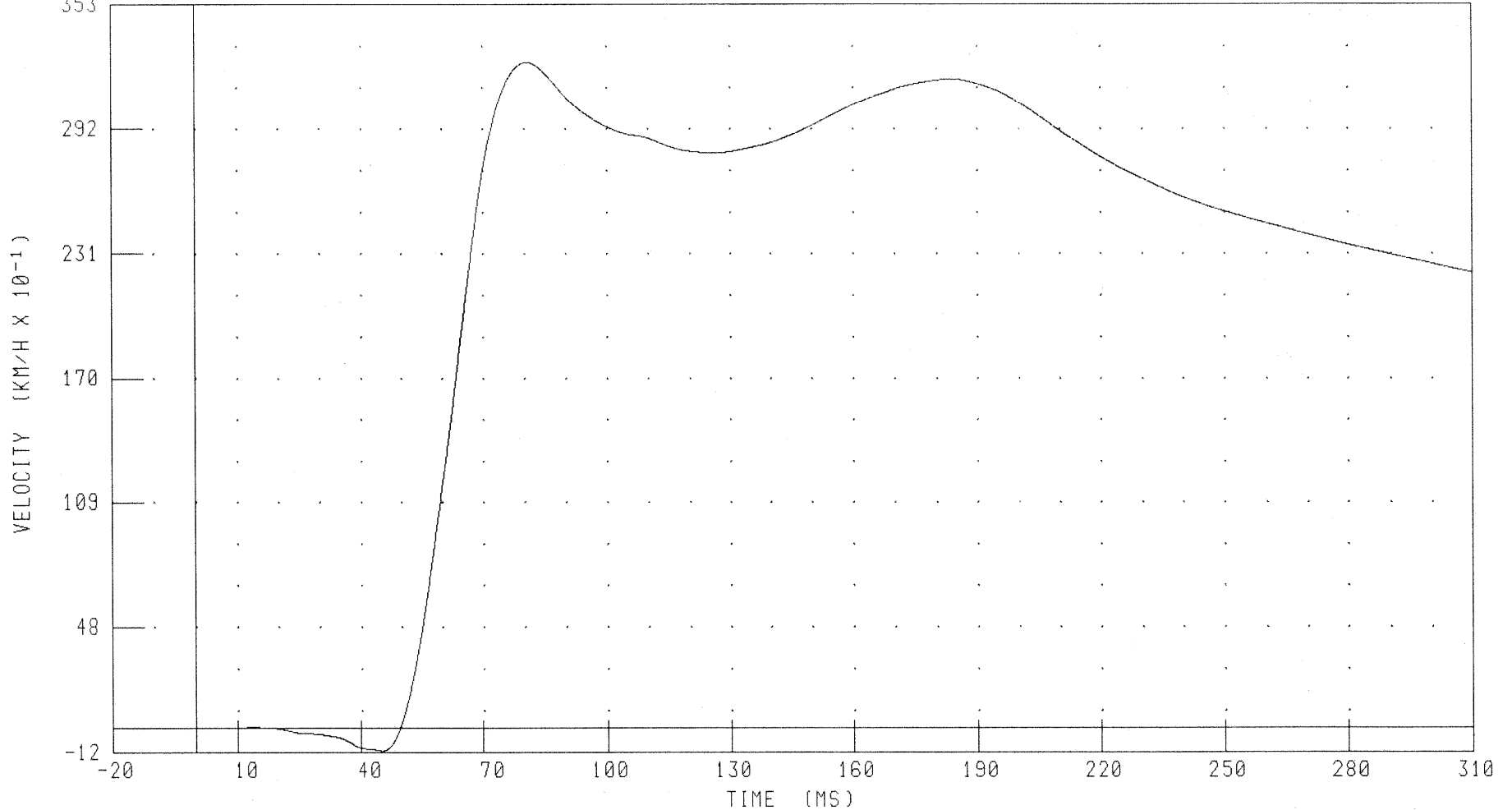
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDYVJ

FILTER: CH. CLASS 100

PEAK DATA: 32.58 KM/H @ 80.80 MS; -1.13 KM/H @ 45.12 MS

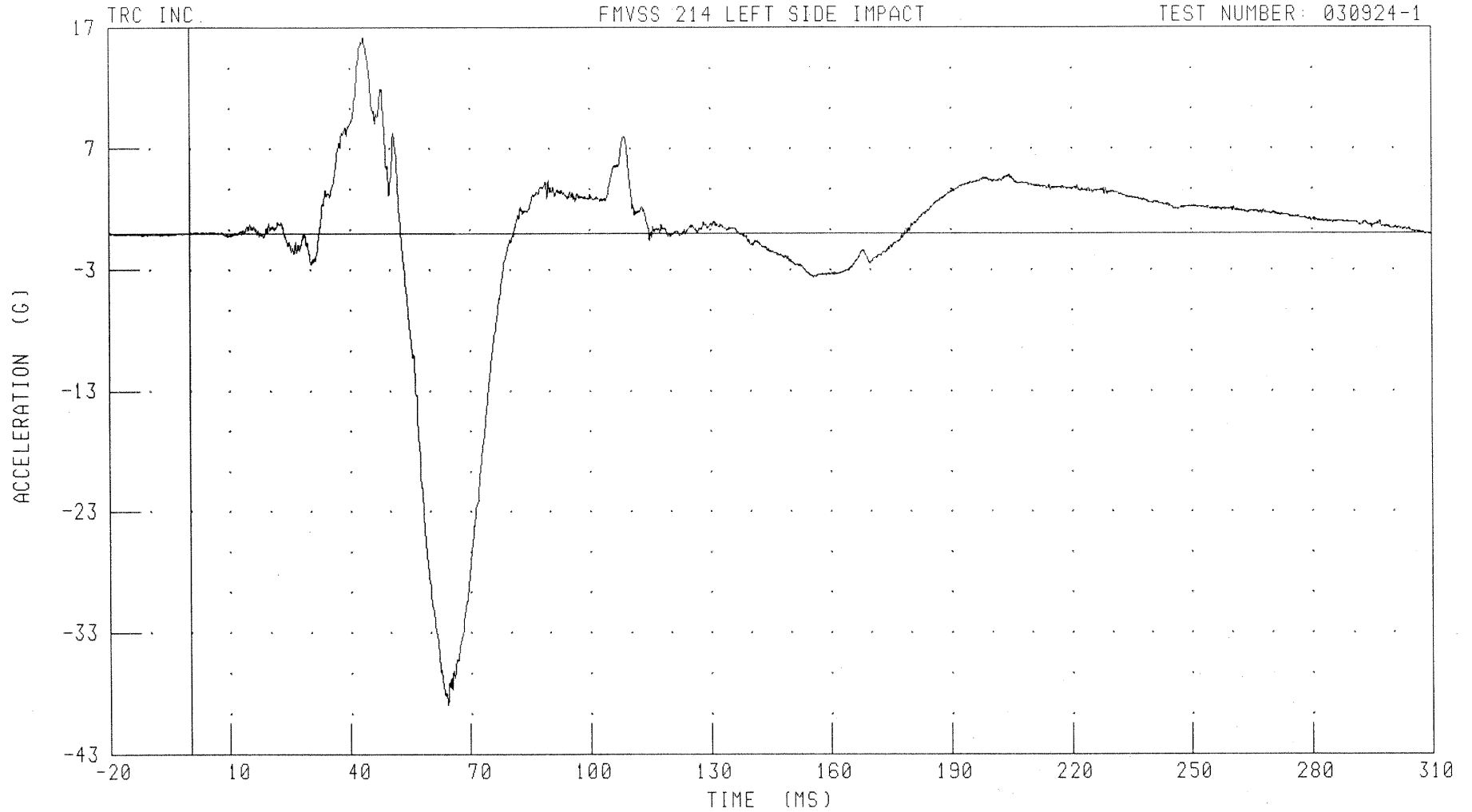
B-76

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZR4 FILTER: CH. CLASS 1000

PEAK DATA: 16.17 G @ 43.60 MS; -38.91 G @ 64.40 MS

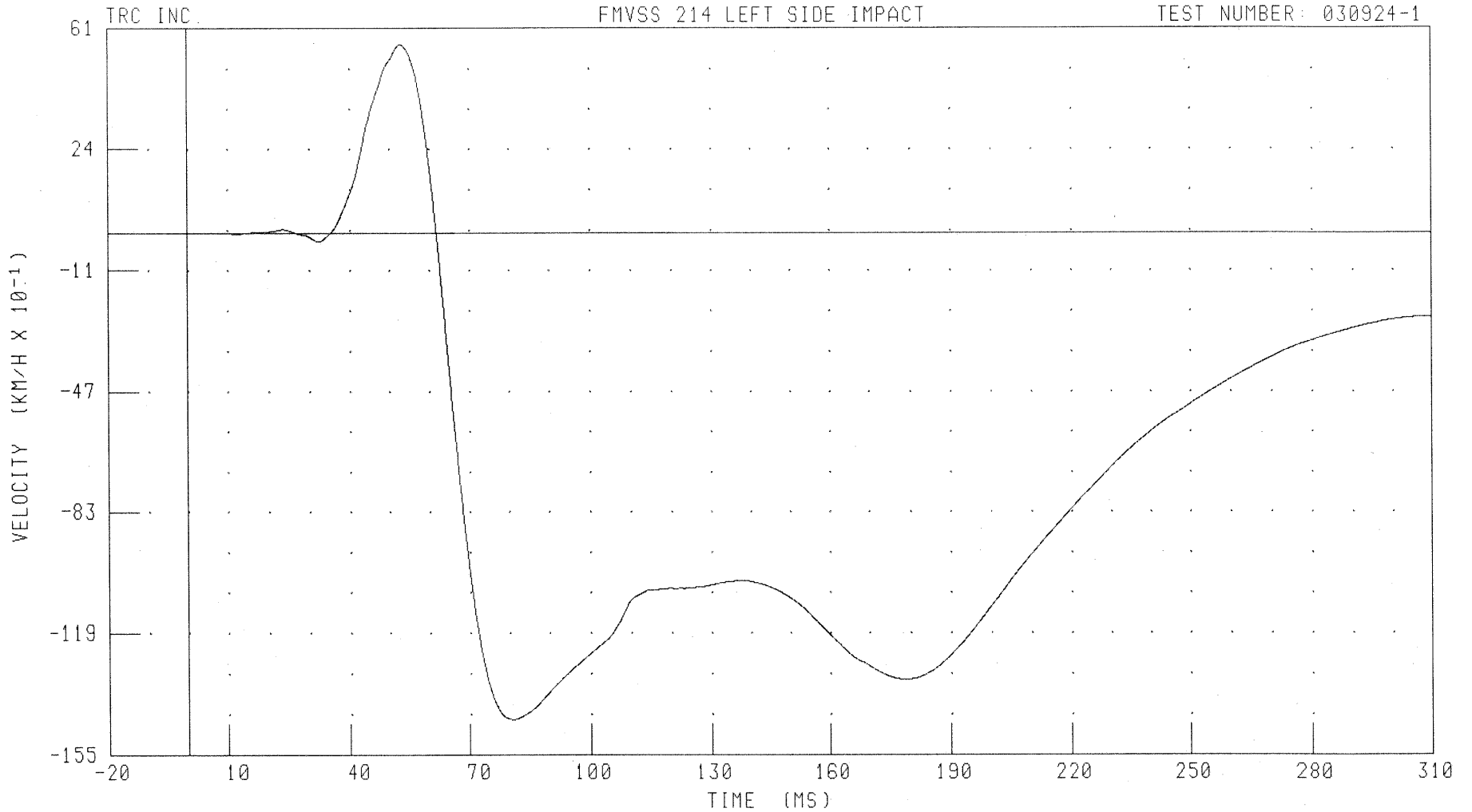
B-77

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: HEDZVJ FILTER: CH. CLASS 180

PEAK DATA: 5.62 KM/H @ 52.96 MS; -14.46 KM/H @ 80.96 MS

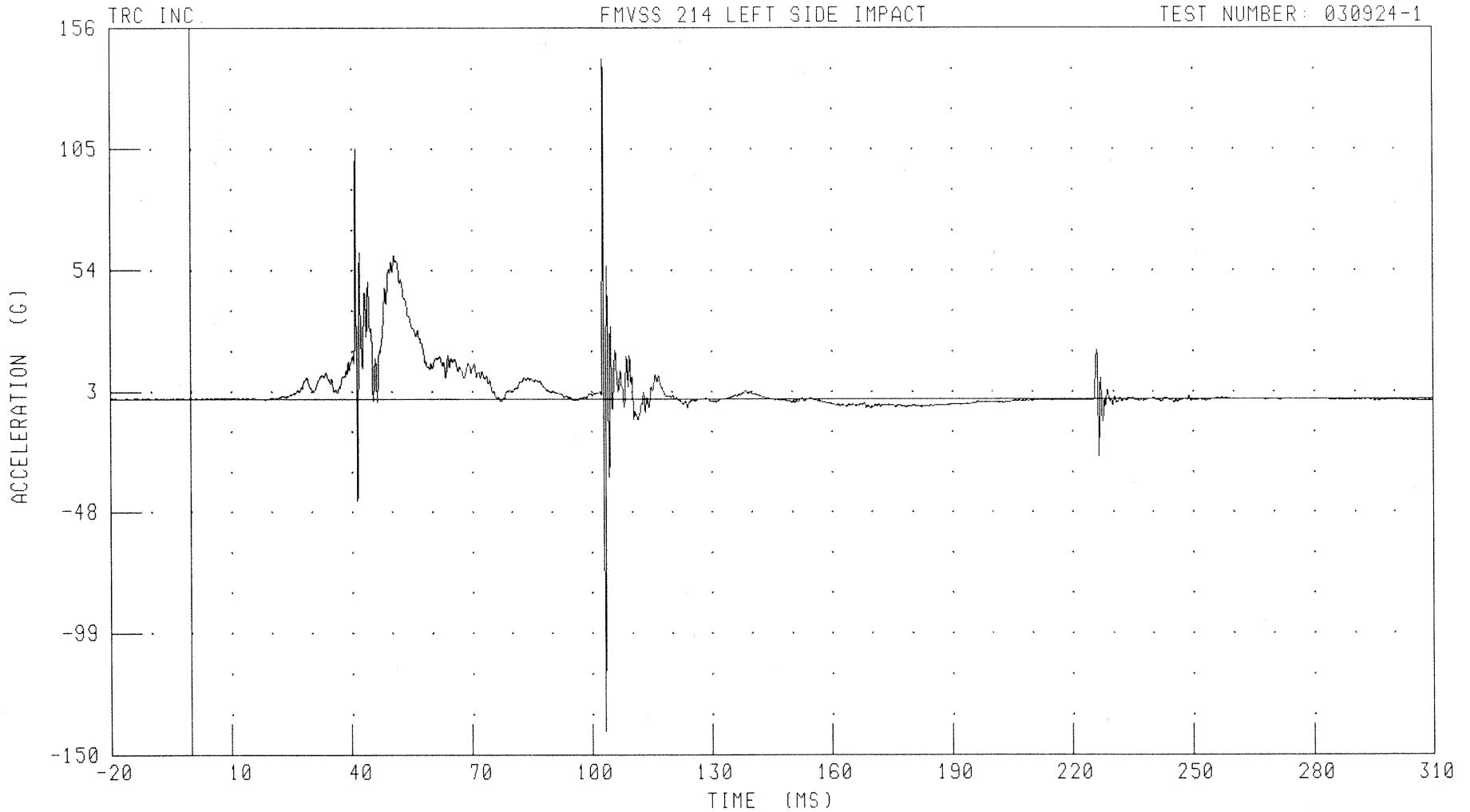
B-78

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYR4 FILTER: CH. CLASS 1000

PEAK DATA: 143.25 G @ 102.96 MS; -140.07 G @ 103.44 MS

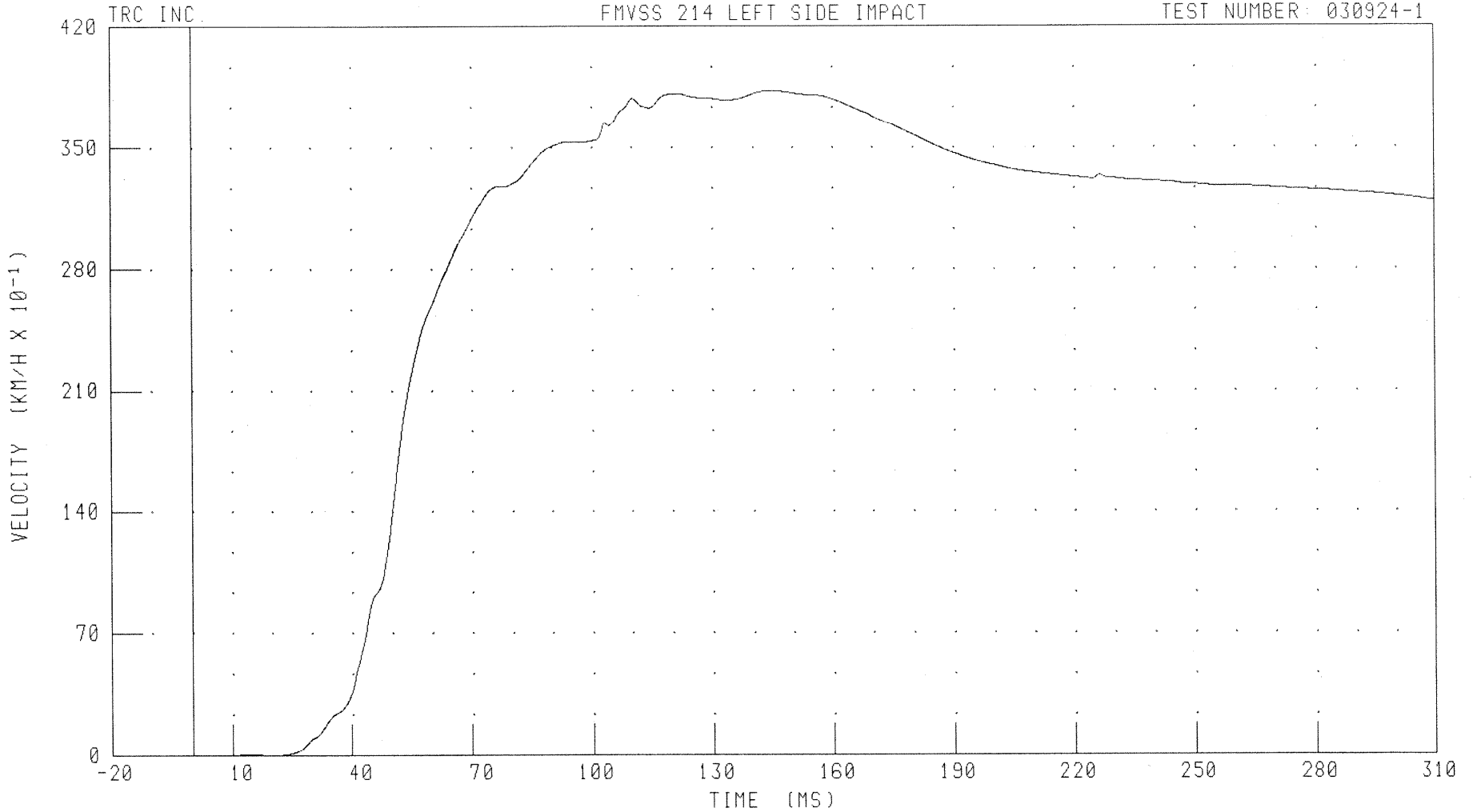
B-79

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYVJ

FILTER: CH. CLASS 180

PEAK DATA: 38.29 KM/H @ 144.72 MS; 0.00 KM/H @ 0.00 MS

B-80

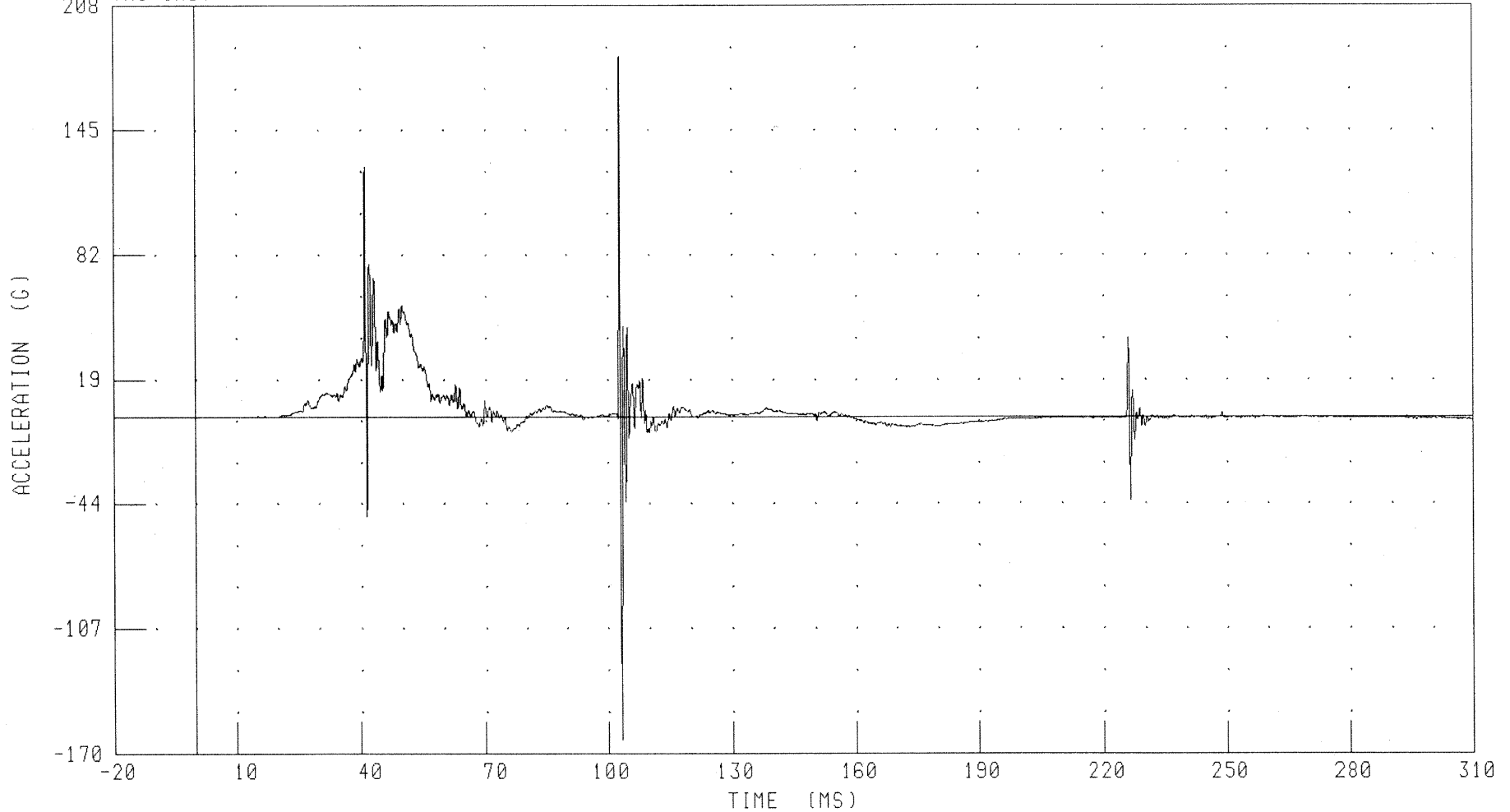
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYR4 FILTER: CH. CLASS 1000

PEAK DATA: 182.76 G @ 103.04 MS; -162.98 G @ 103.44 MS

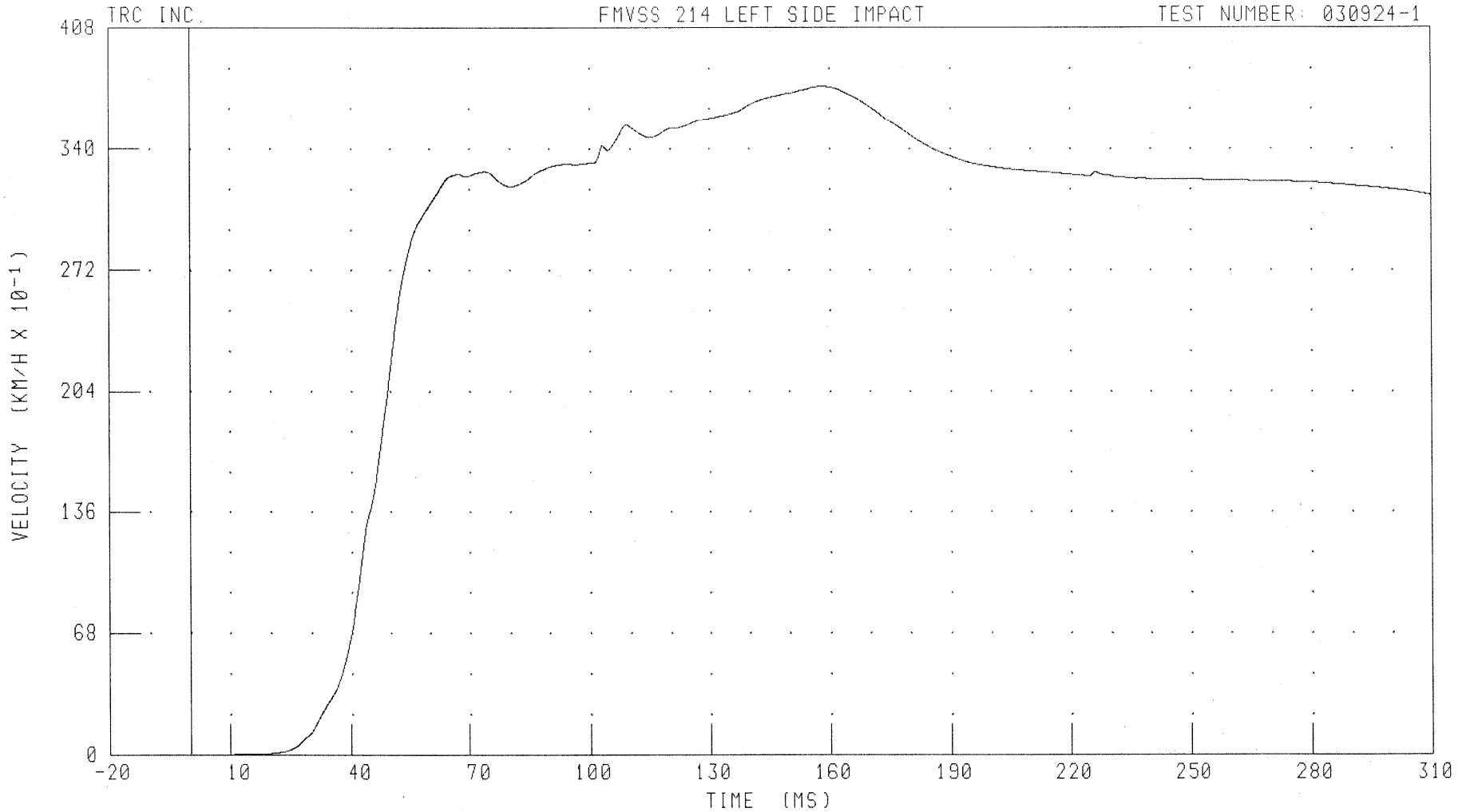
B-81

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYVJ

FILTER: CH. CLASS 180

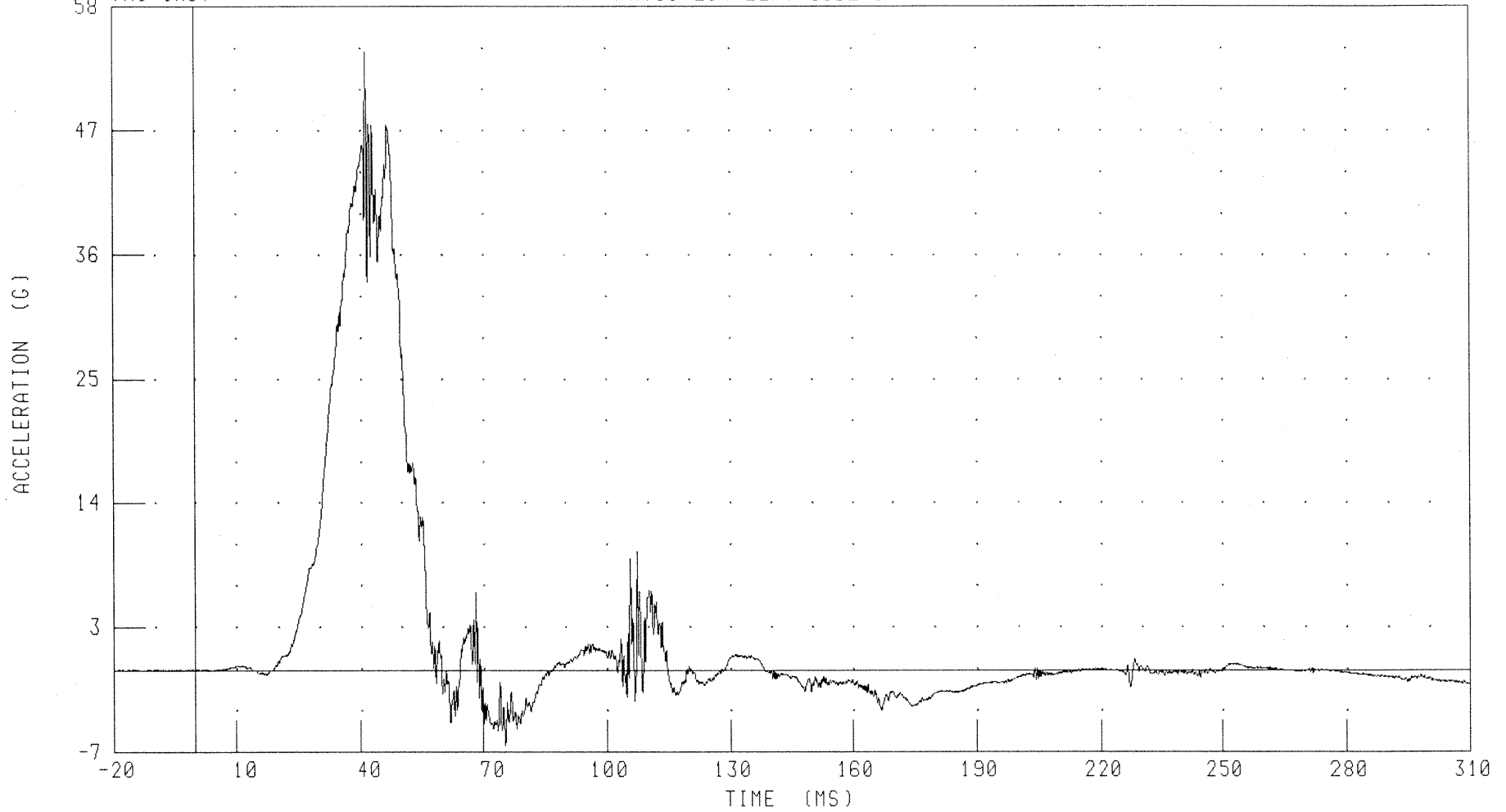
PEAK DATA: 37.51 KM/H @ 158.40 MS; 0.00 KM/H @ 0.00 MS

B-82

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL: T12YR4 FILTER: CH. CLASS 1000 PEAK DATA: 54.83 G @ 41.44 MS; -6.63 G @ 75.28 MS

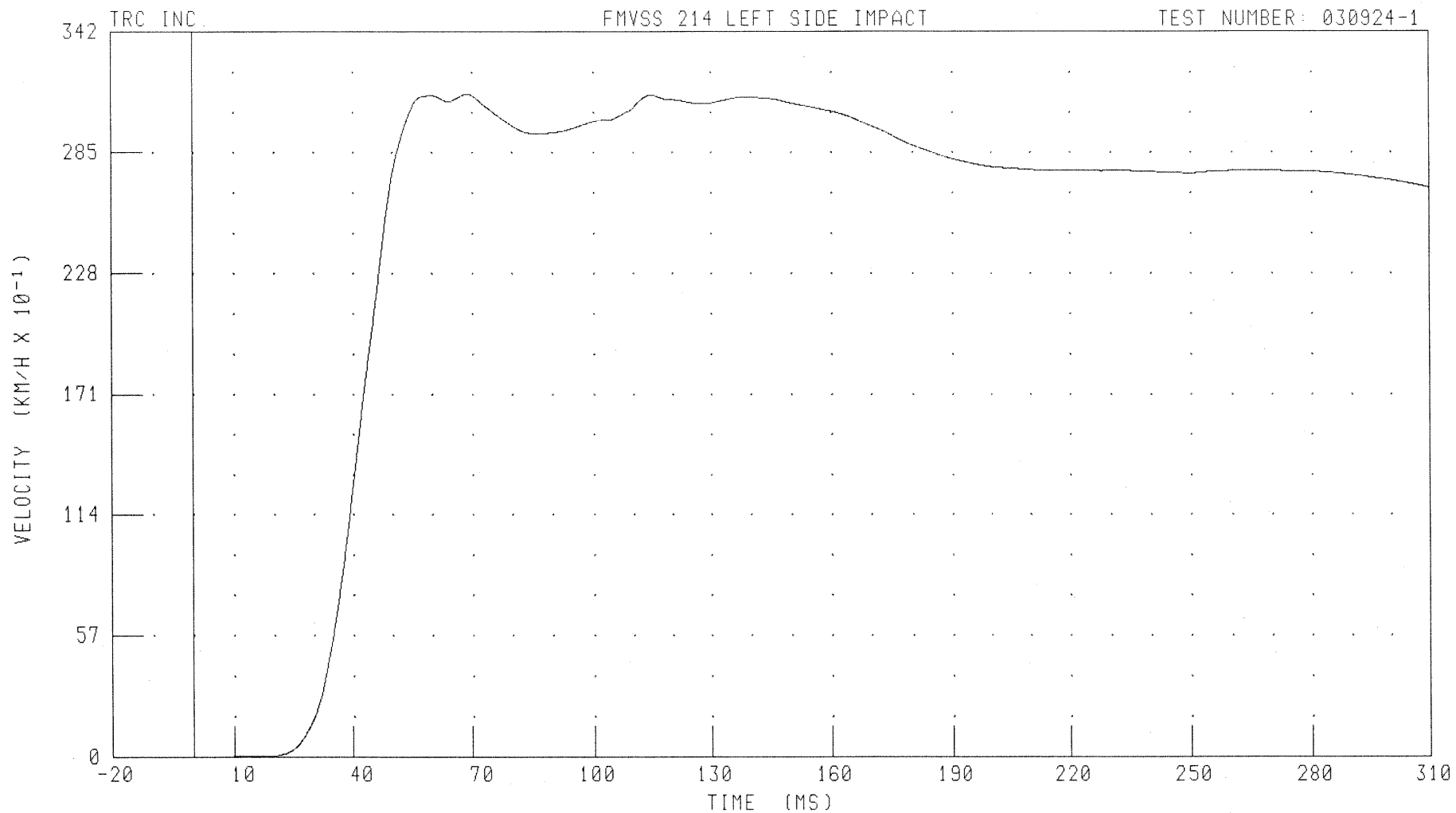
B-83

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YVJ FILTER: CH. CLASS 180

PEAK DATA: 31.29 KM/H @ 68.96 MS; 0.00 KM/H @ 0.00 MS

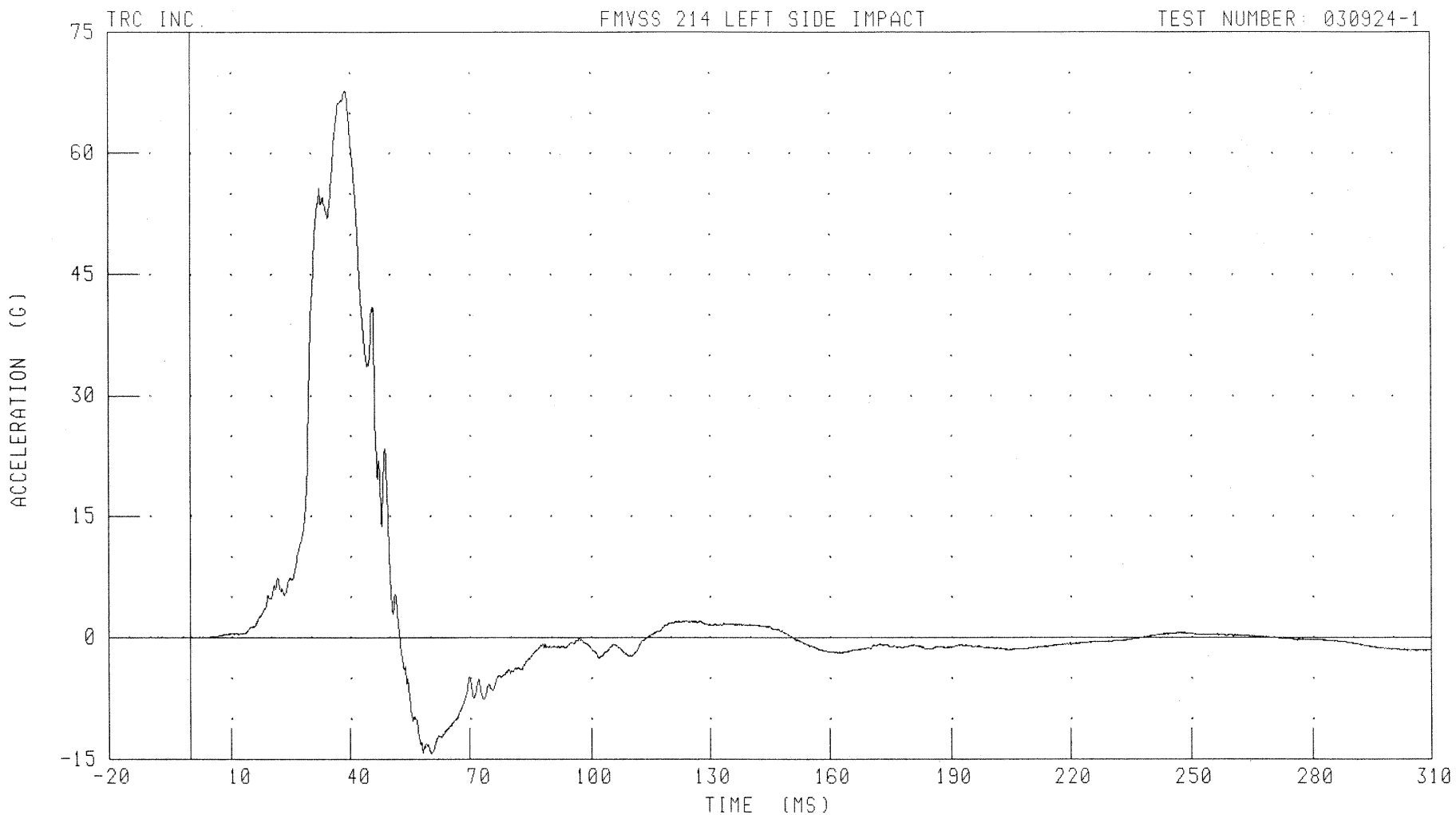
B-84

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYR4 FILTER: CH. CLASS 1000

PEAK DATA: 67.75 G @ 38.96 MS; -14.35 G @ 60.16 MS

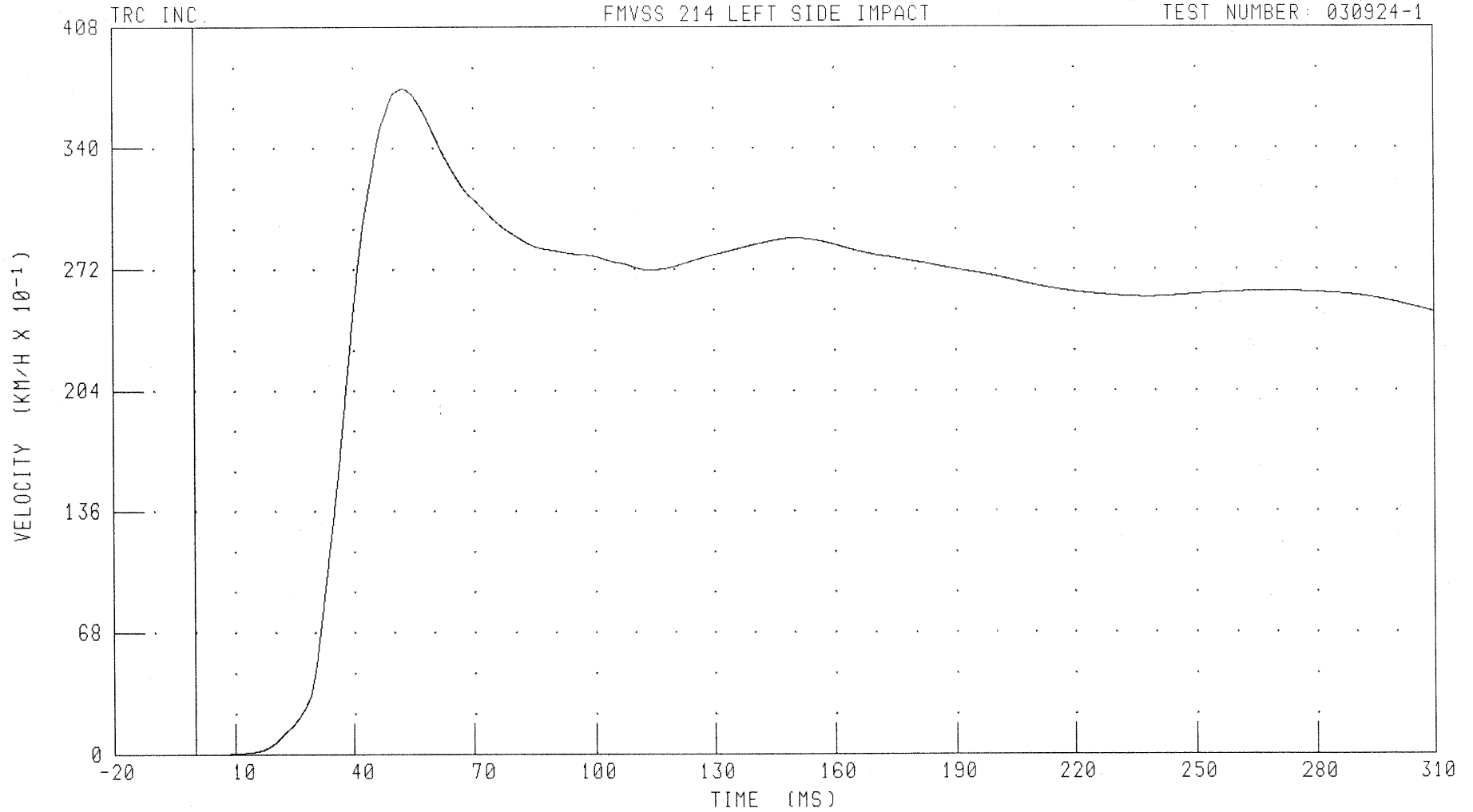
B-85

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYVJ

FILTER: CH. CLASS 180

PEAK DATA: 373.5 KM/H @ 52.56 MS; 0.00 KM/H @ 0.00 MS

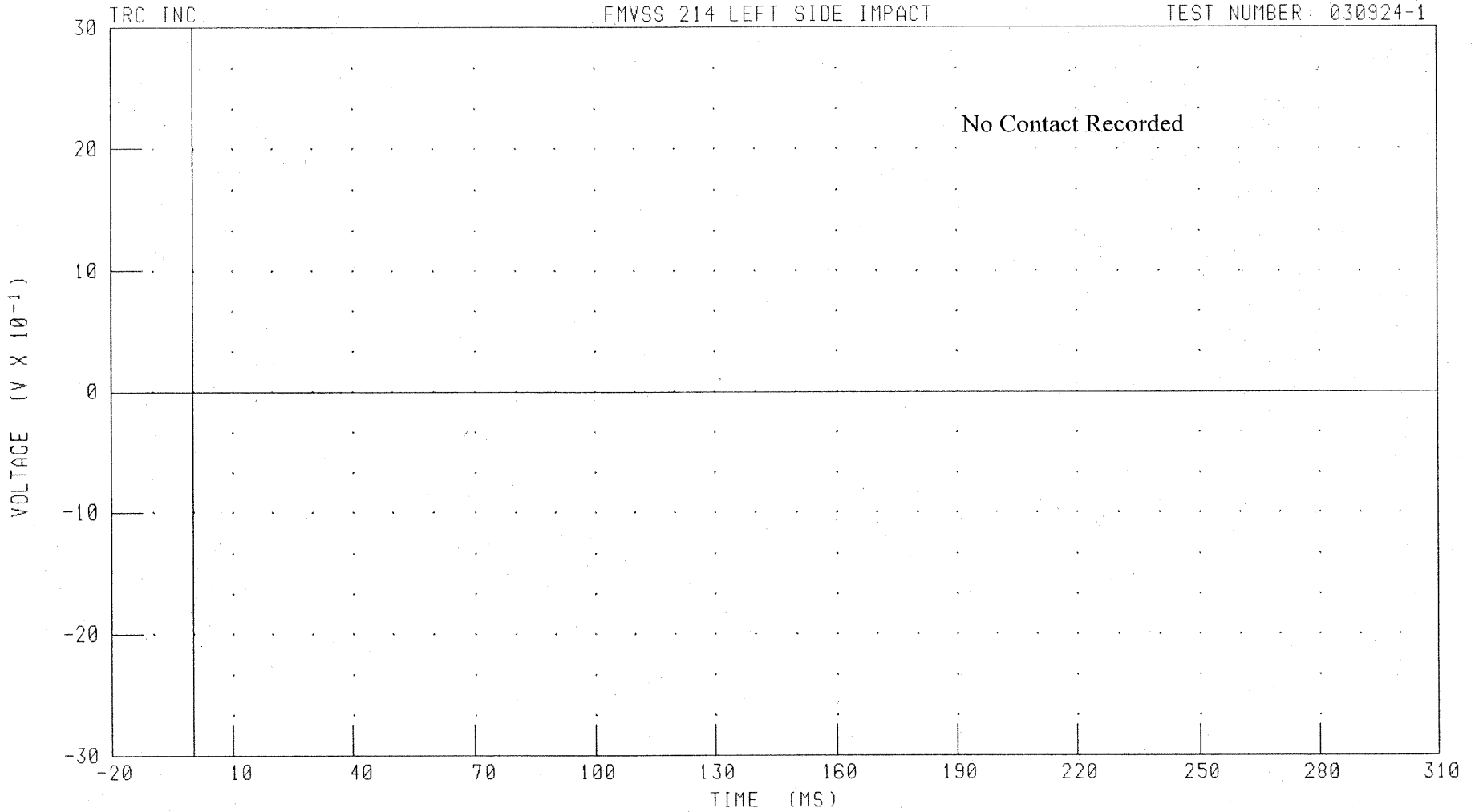
B-86

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER SHOULDER CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: SHLET4 FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; 0.00 V @ -20.00 MS

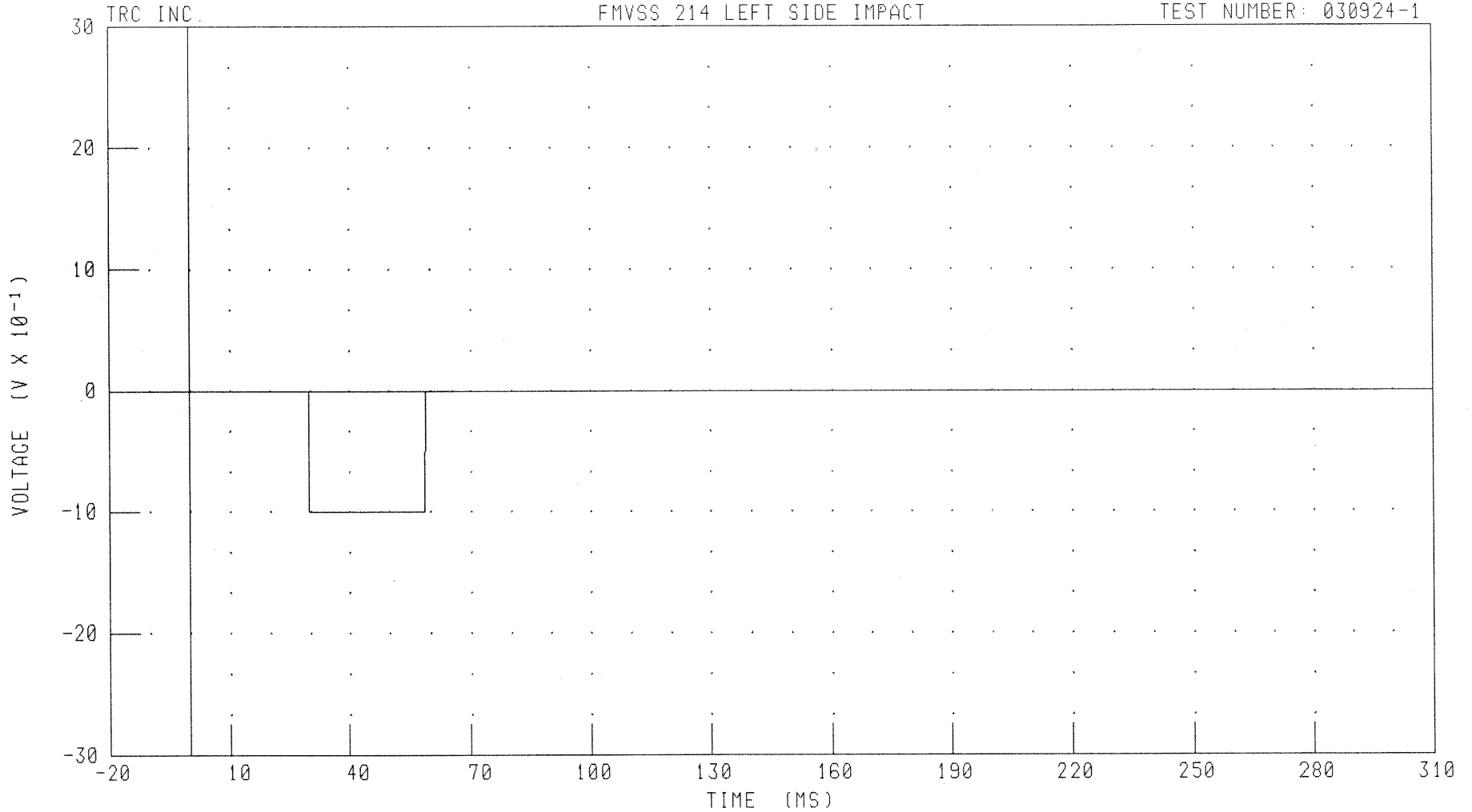
B-87

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER PELVIS CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVET4 FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 29.76 MS

B-88

030924-1

Test Vehicle Instrumentation Plots

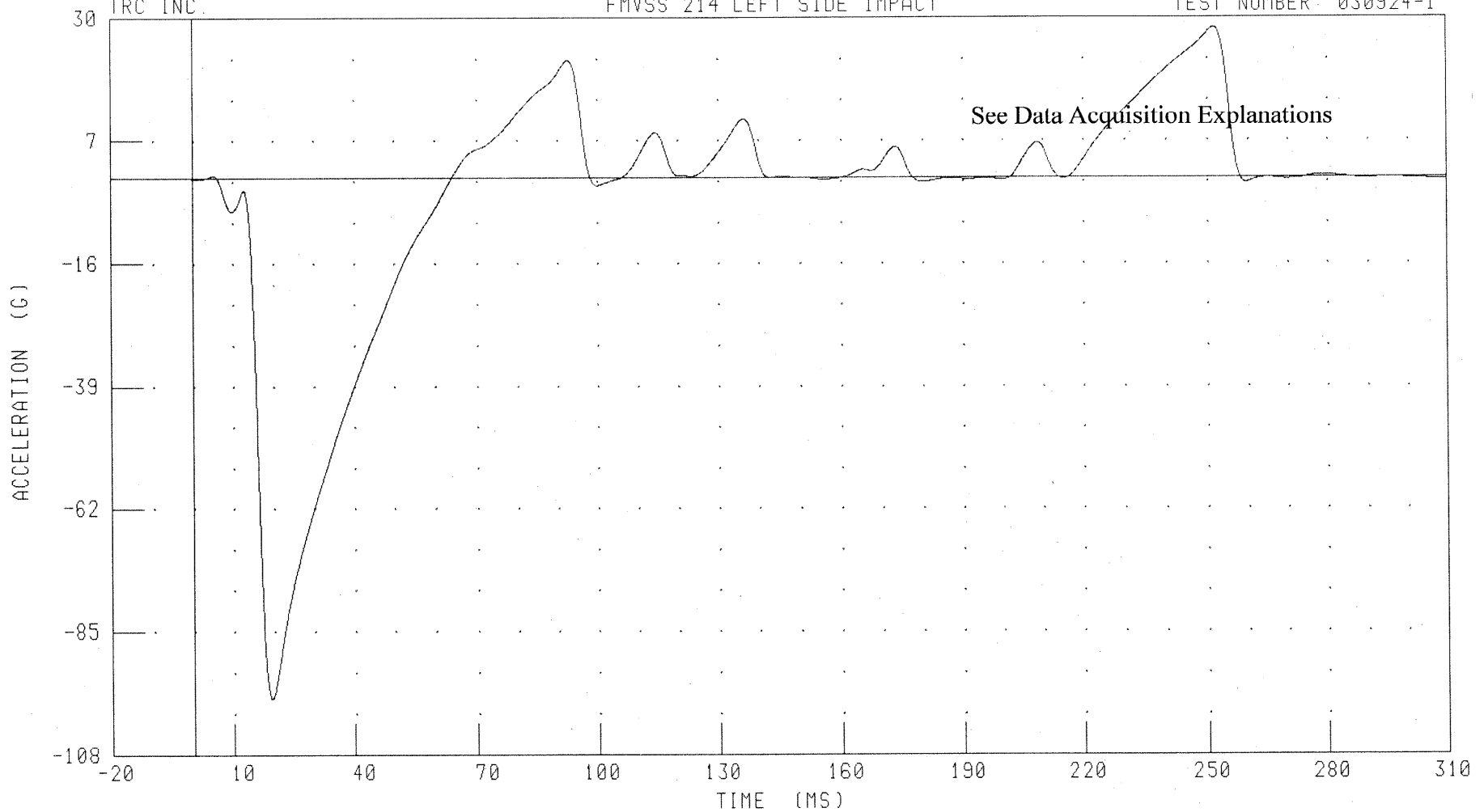
Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RFSXG1

FILTER: CH. CLASS 60

PEAK DATA: 28.15 G @ 251.76 MS; -97.57 G @ 19.44 MS

B-90

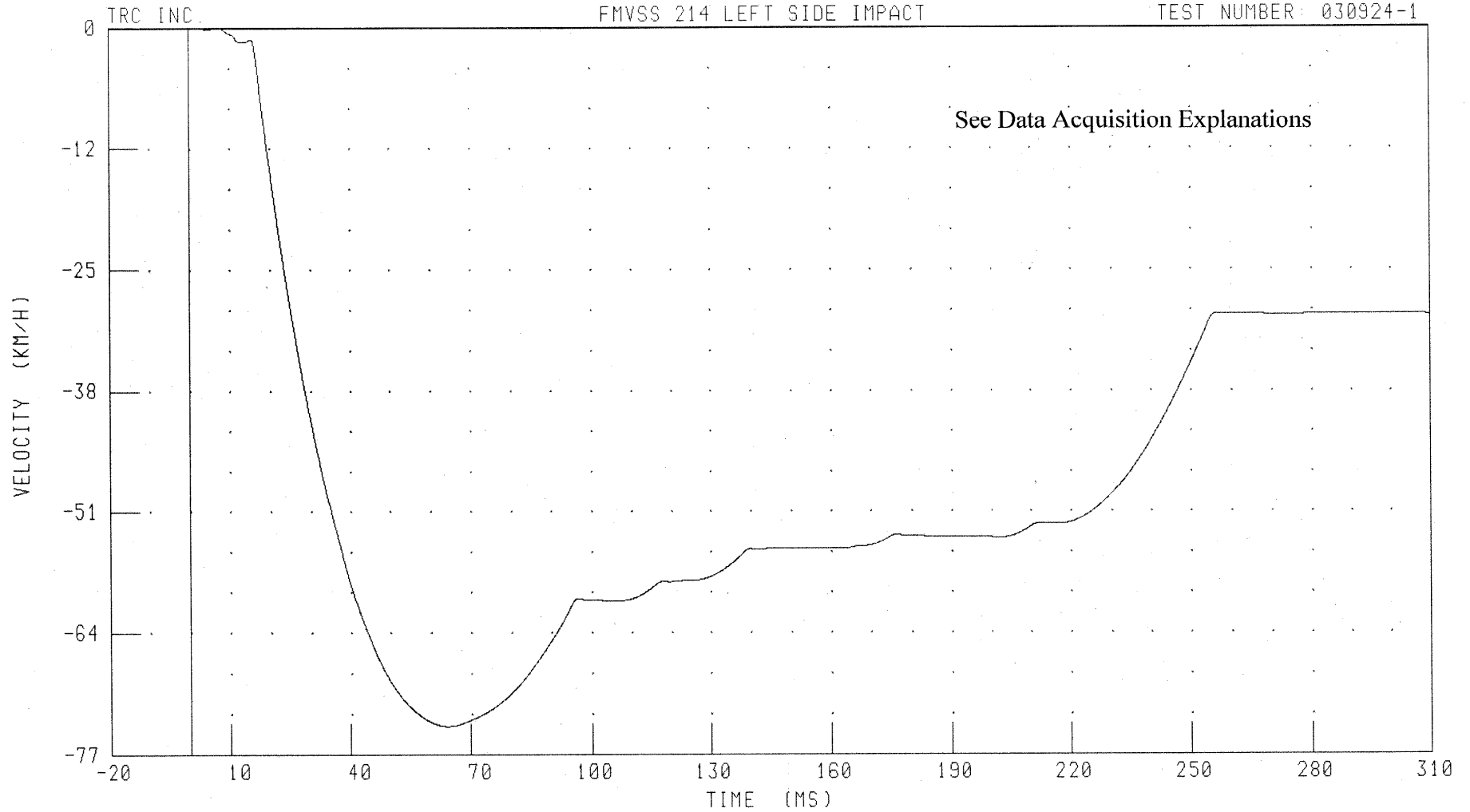
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

See Data Acquisition Explanations



CHANNEL: RFSXV1 FILTER: CH. CLASS 180

PEAK DATA: 0.11 KM/H @ 7.28 MS; -74.89 KM/H @ 64.08 MS

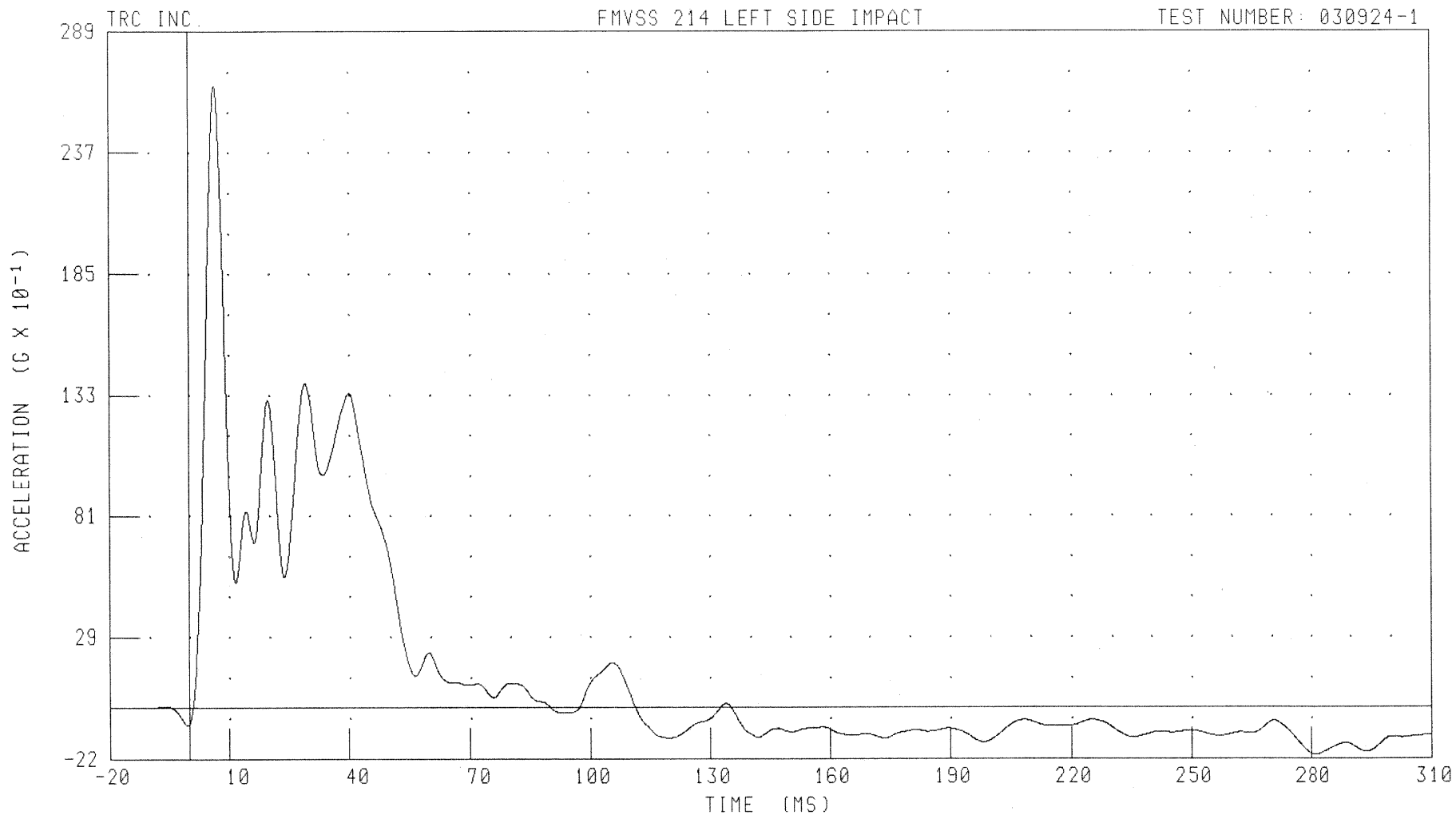
B-91

030924-1

55/28 KPH, 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 26.69 G @ 6.56 MS; -2.04 G @ 281.04 MS

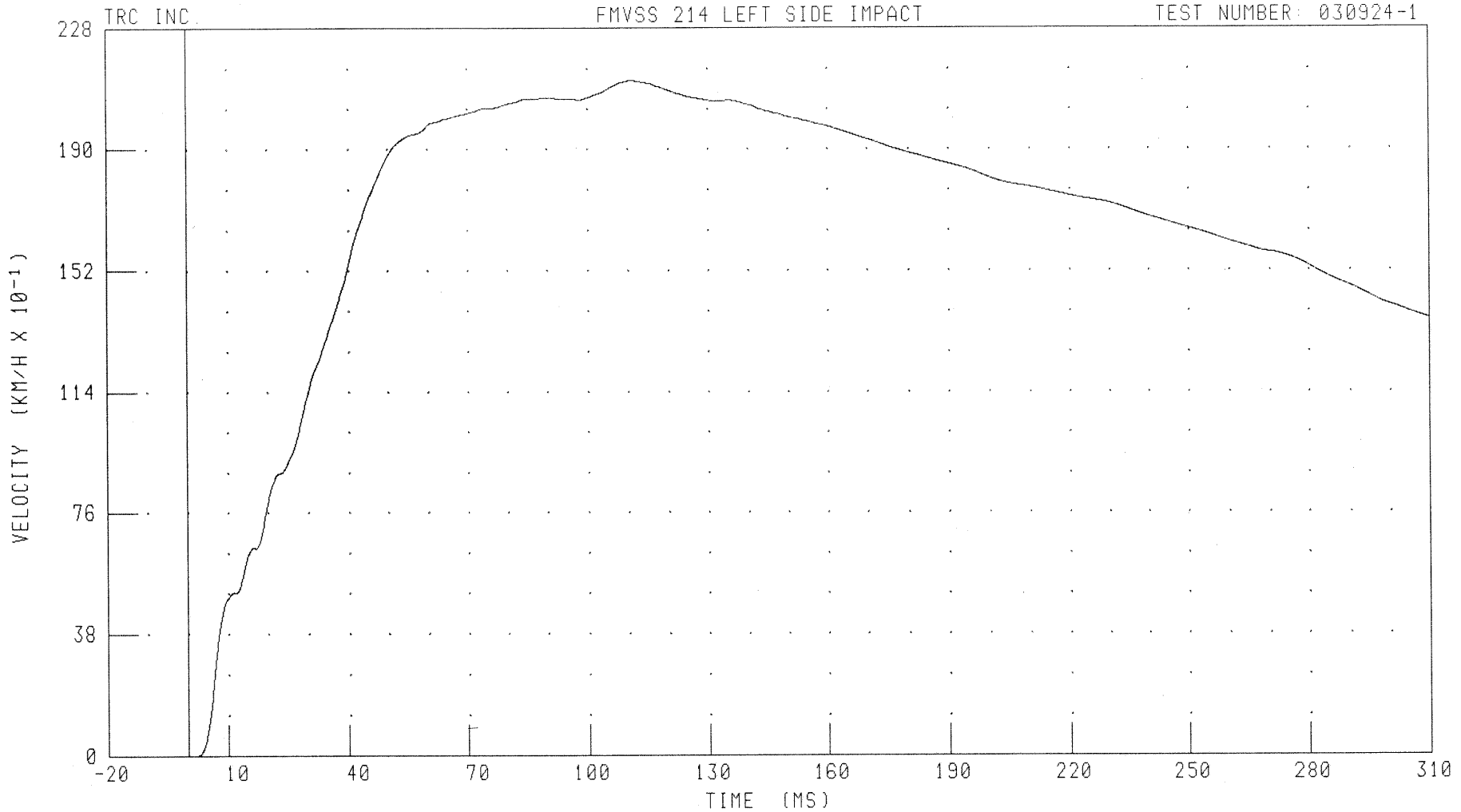
B-92

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RFSYV1 FILTER: CH. CLASS 180

PEAK DATA: 21.16 KM/H @ 110.88 MS; 0.00 KM/H @ 1.76 MS

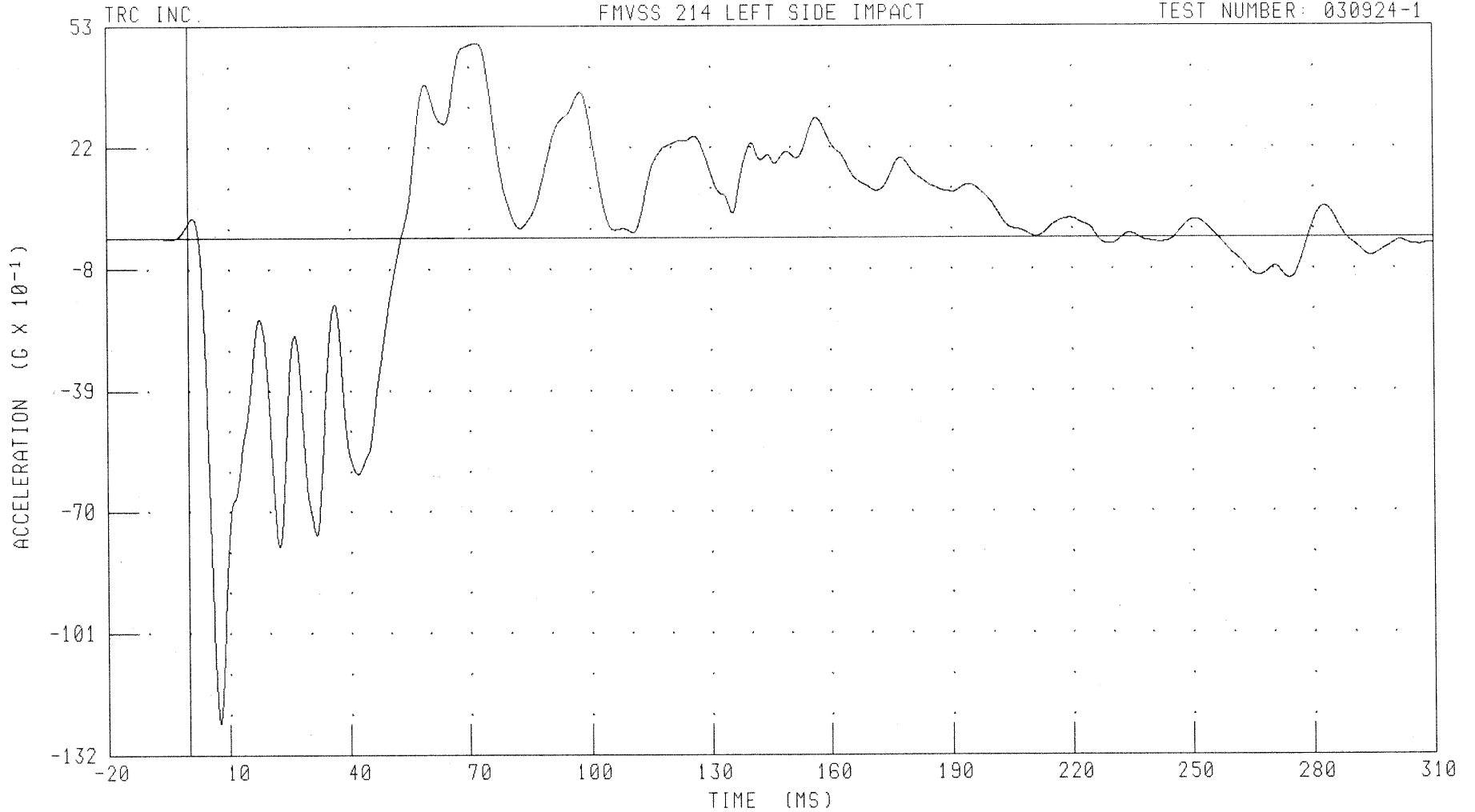
B-93

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RFSZG1

FILTER: CH. CLASS 60

PEAK DATA: 4.95 G @ 72.08 MS; -12.40 G @ 7.52 MS

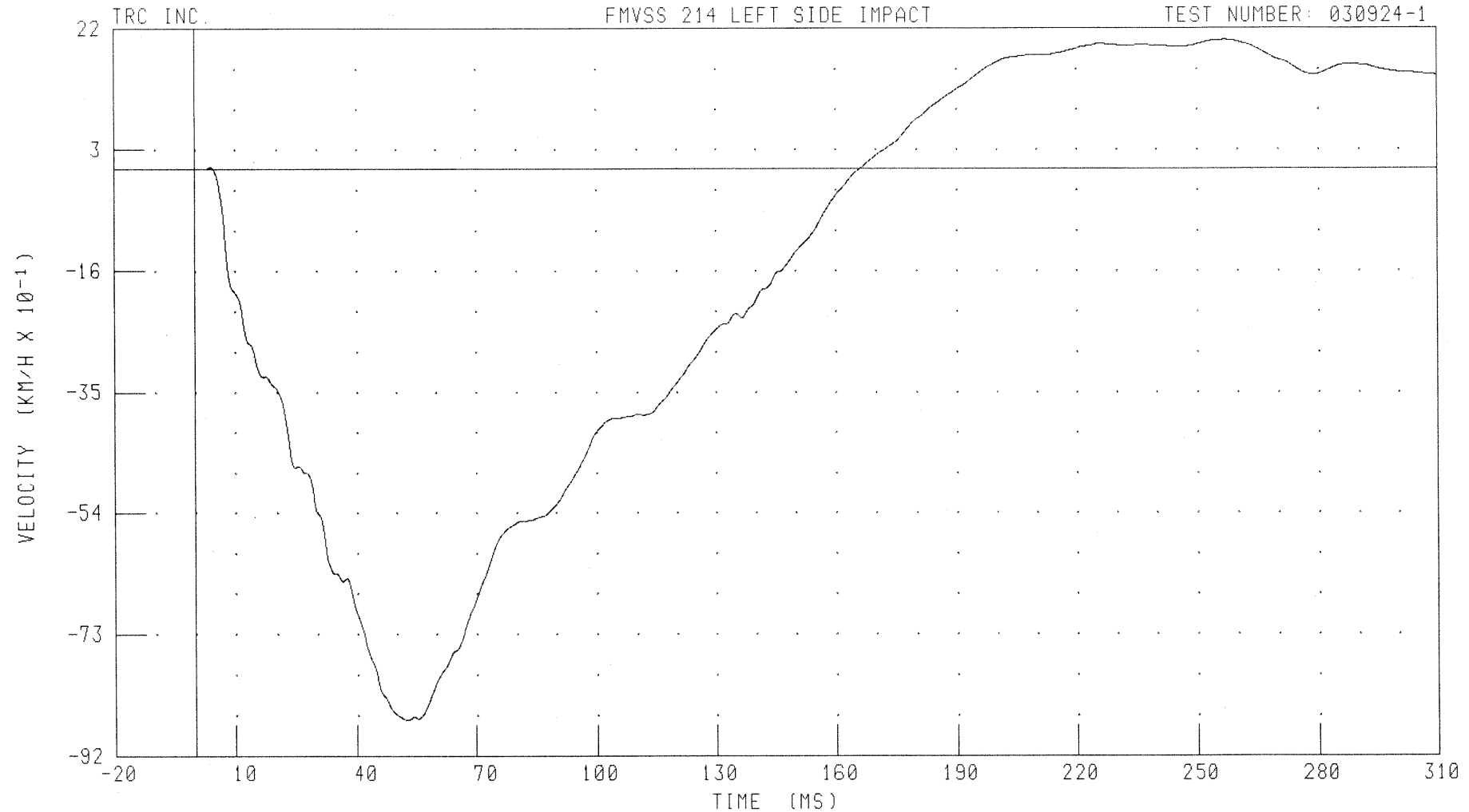
B-94

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RFSZV1 FILTER: CH. CLASS 180

PEAK DATA: 2.02 KM/H @ 257.12 MS, -8.64 KM/H @ 52.56 MS

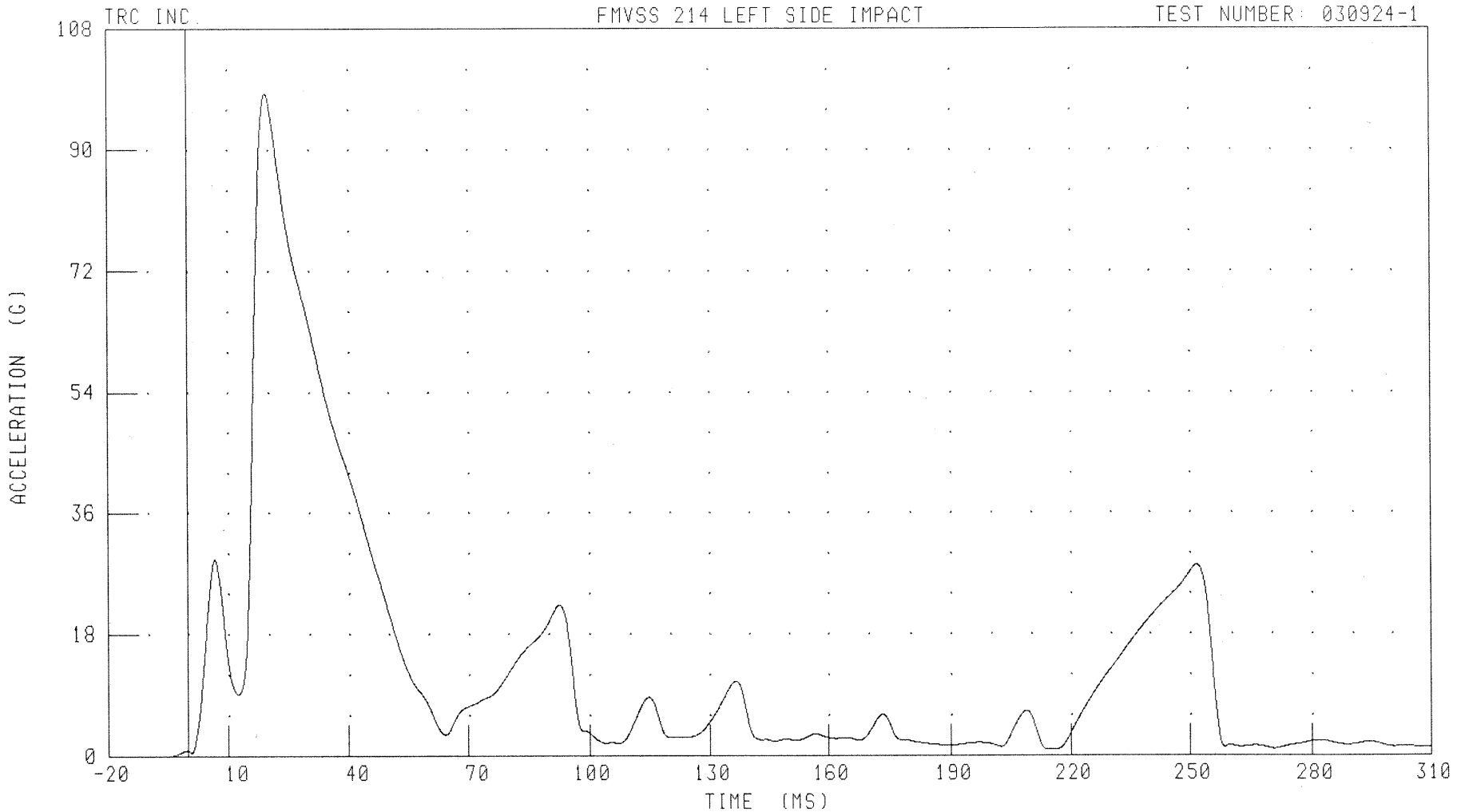
B-95

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RFSRG1

FILTER: CH. CLASS 60

PEAK DATA: 98.50 G @ 19.44 MS; 0.00 G @ -9.52 MS

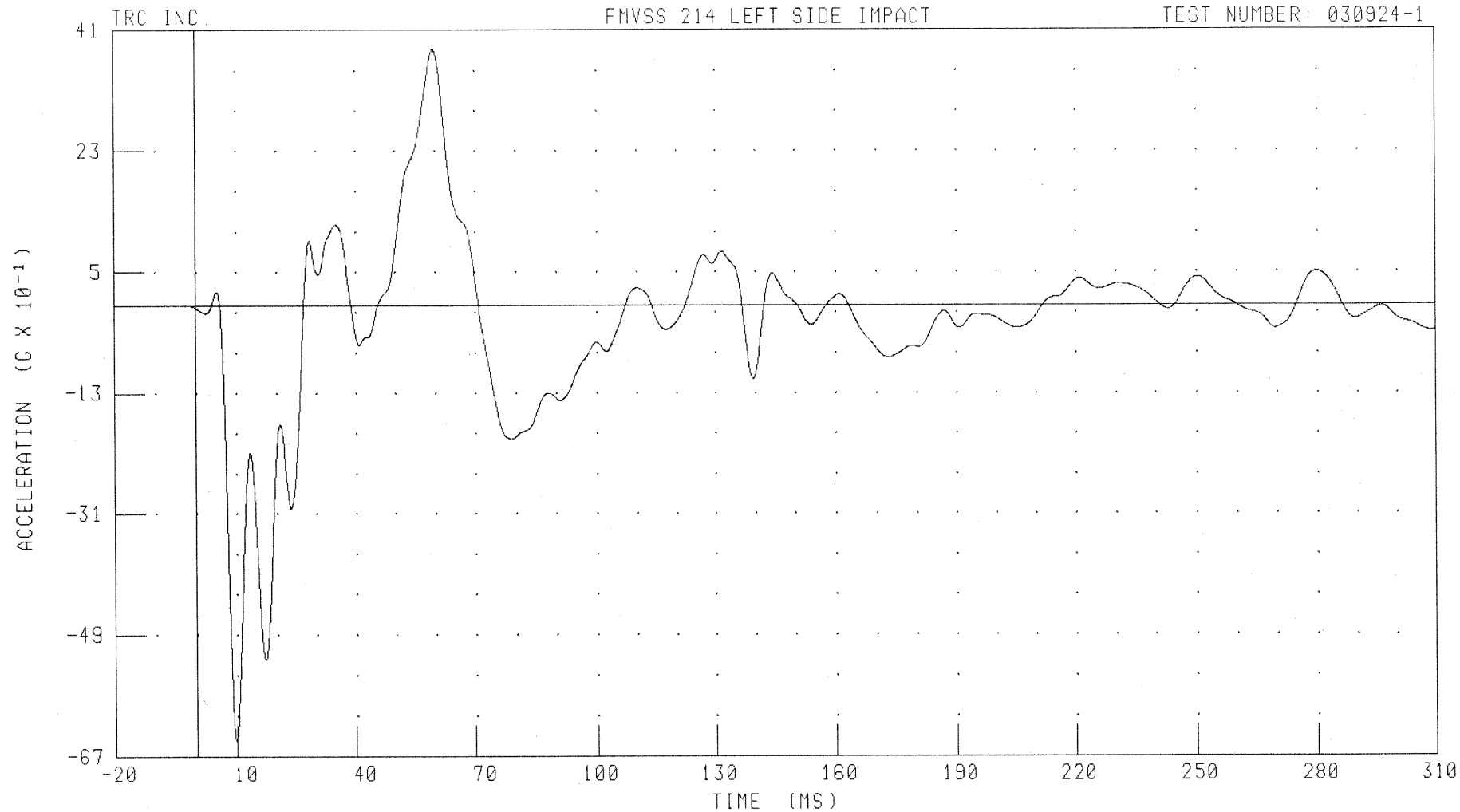
B-96

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSXG1 FILTER: CH. CLASS 60

PEAK DATA: 3.82 G @ 59.76 MS; -6.47 G @ 9.76 MS

B-97

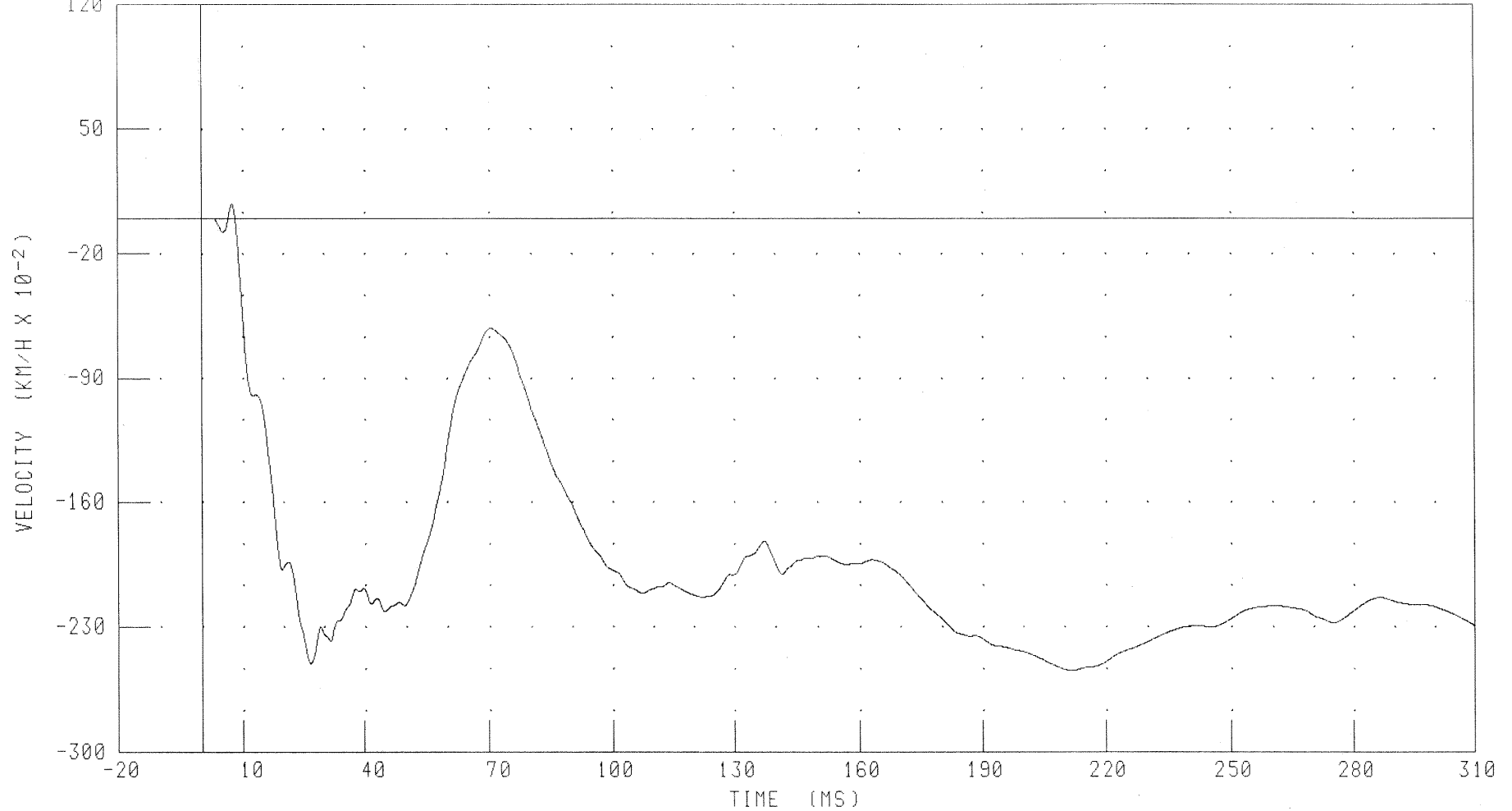
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSXV1

FILTER: CH. CLASS 180

PEAK DATA: 0.08 KM/H @ 7.44 MS; -2.54 KM/H @ 211.92 MS

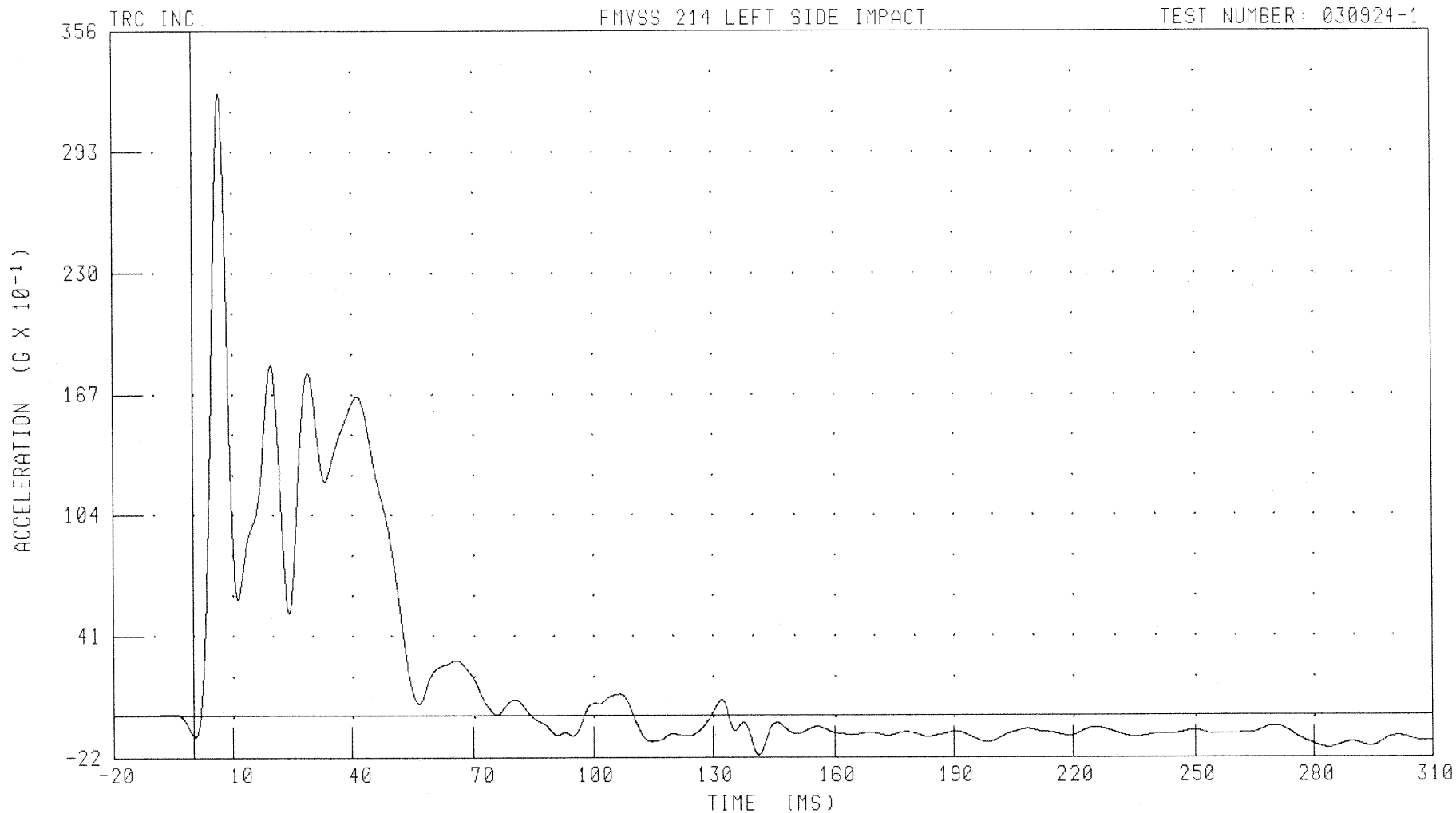
B-98

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSYG1

FILTER: CH. CLASS 60

PEAK DATA: 32.38 G @ 6.80 MS, -2.08 G @ 141.36 MS

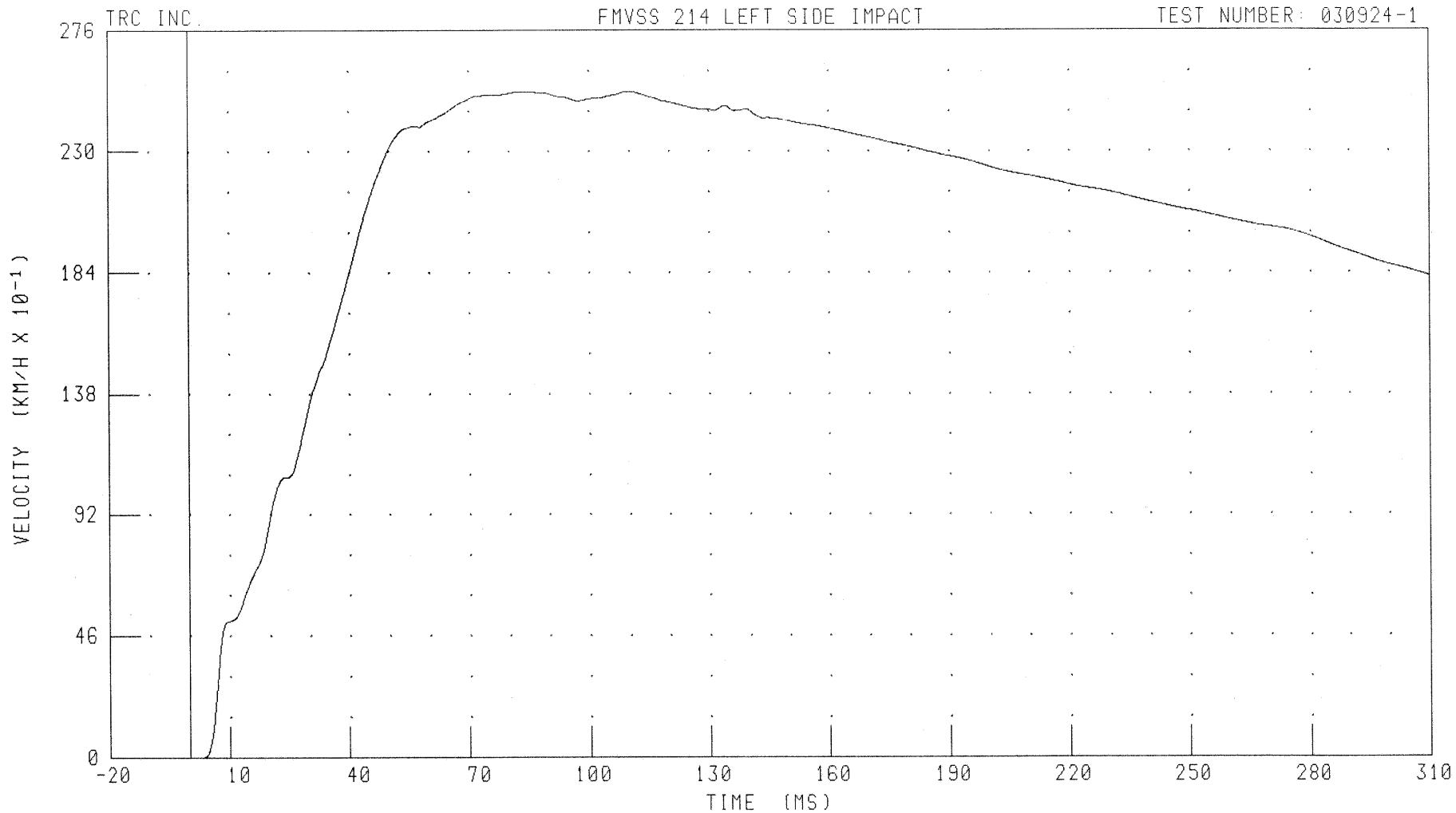
B-99

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSYV1 FILTER: CH. CLASS 180

PEAK DATA: 25.29 KM/H @ 82.88 MS; 0.00 KM/H @ 0.00 MS

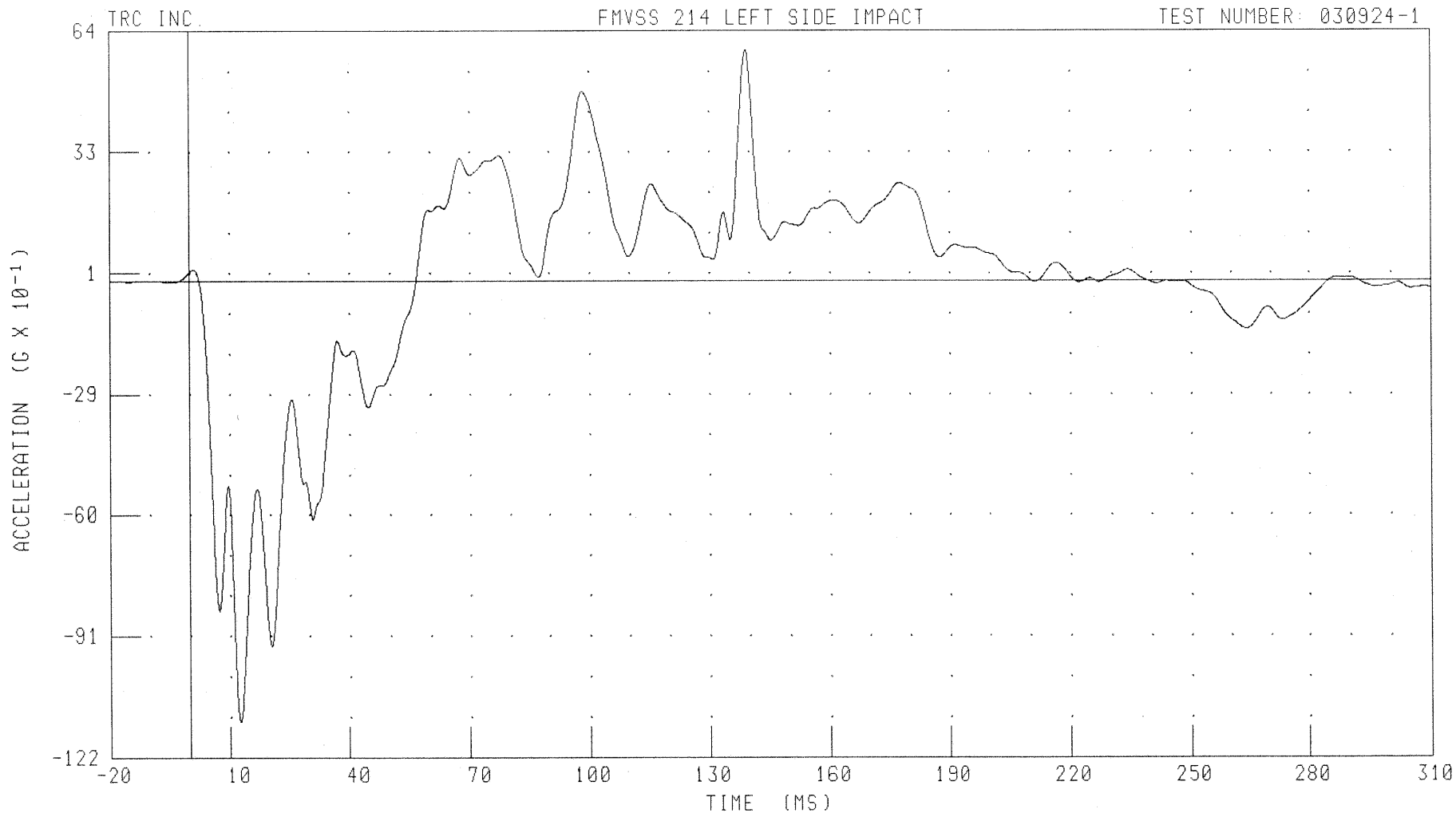
B-100

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSZG1

FILTER: CH. CLASS 60

PEAK DATA: 5.90 G @ 139.36 MS; -11.29 G @ 12.56 MS

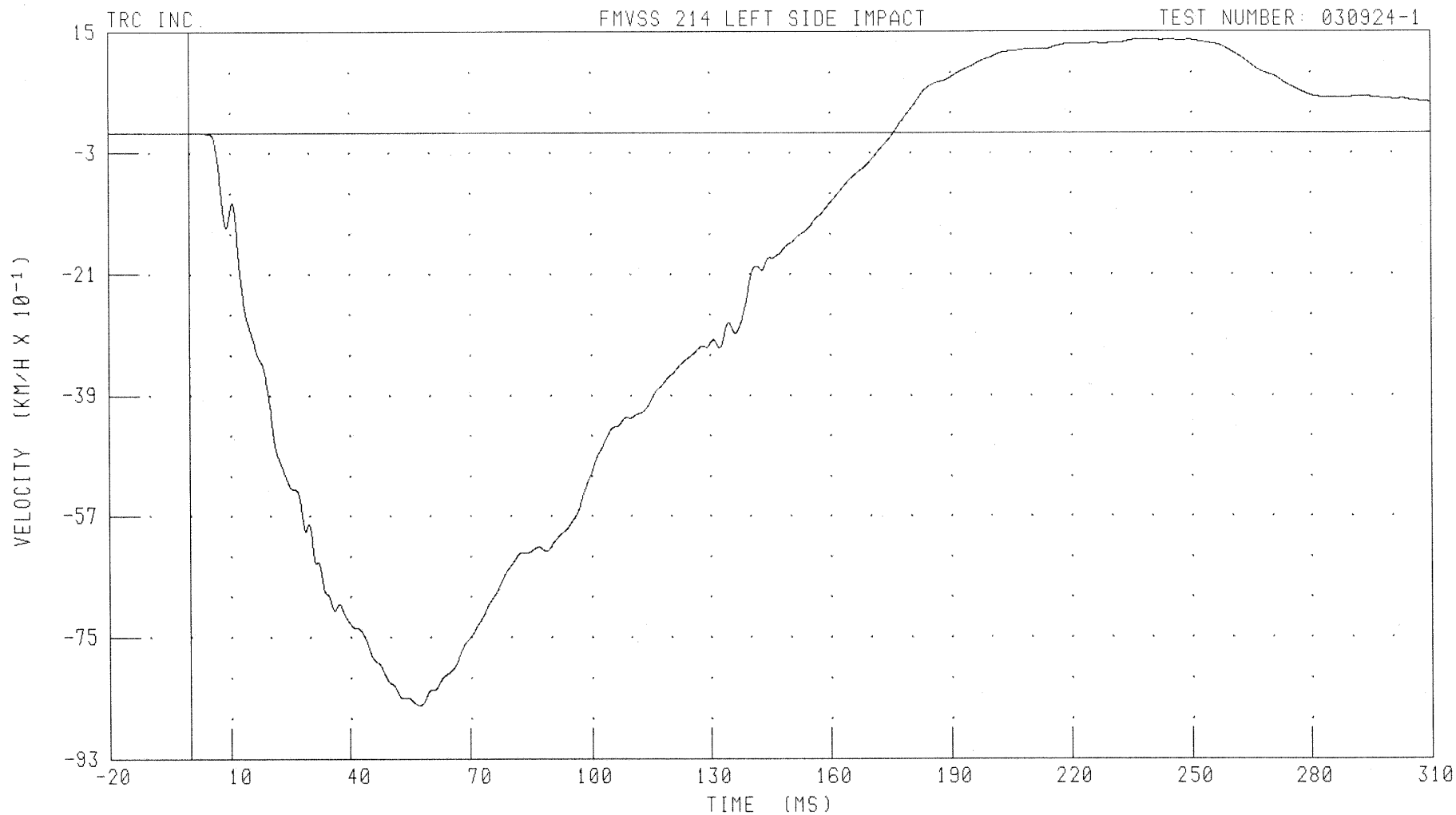
B-101

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSZV1 FILTER: CH. CLASS 180

PEAK DATA: 1.39 KM/H @ 240.16 MS; -8.51 KM/H @ 57.20 MS

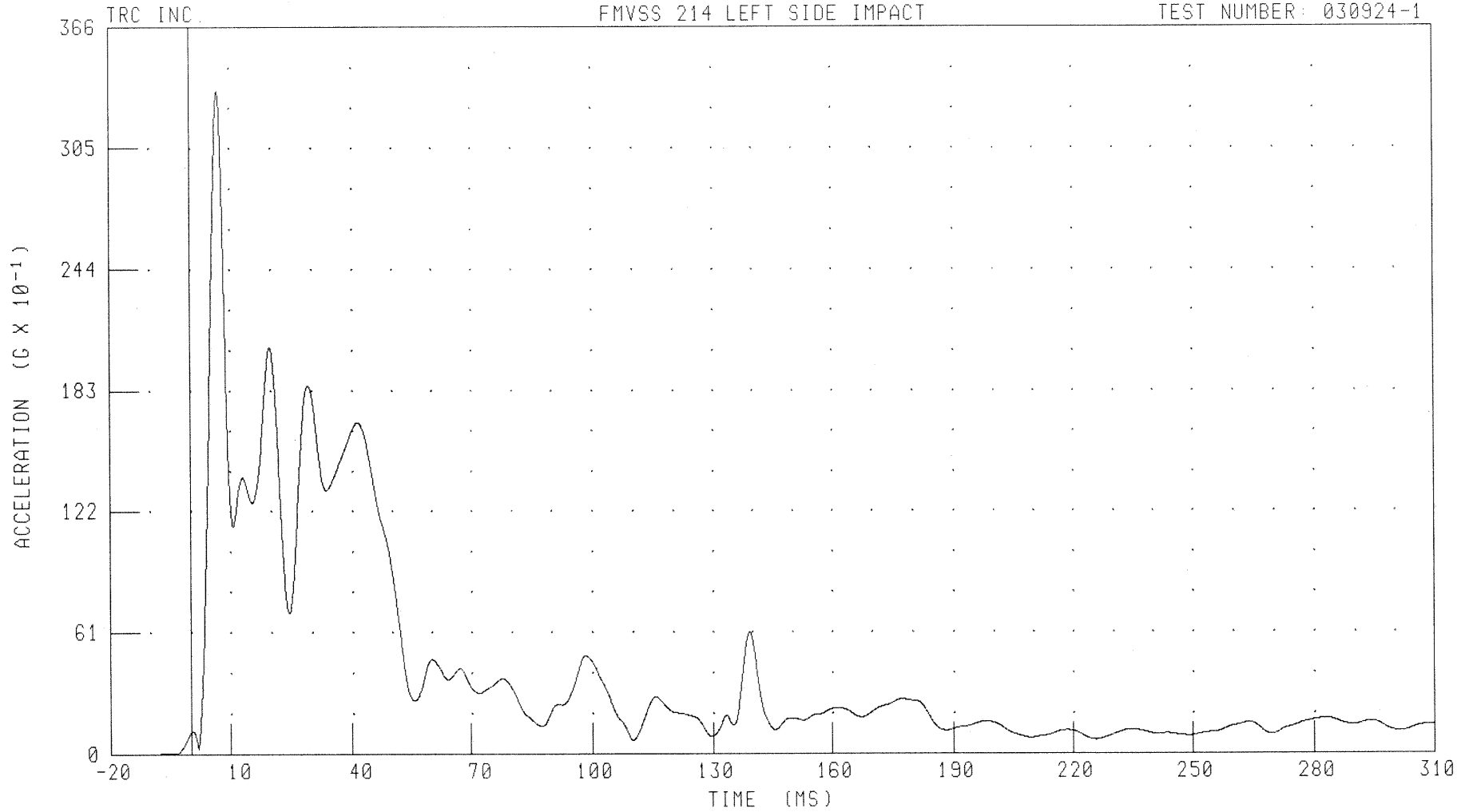
B-102

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRSRG1

FILTER: CH. CLASS 60

PEAK DATA: 33.39 G @ 6.88 MS; 0.00 G @ -9.84 MS

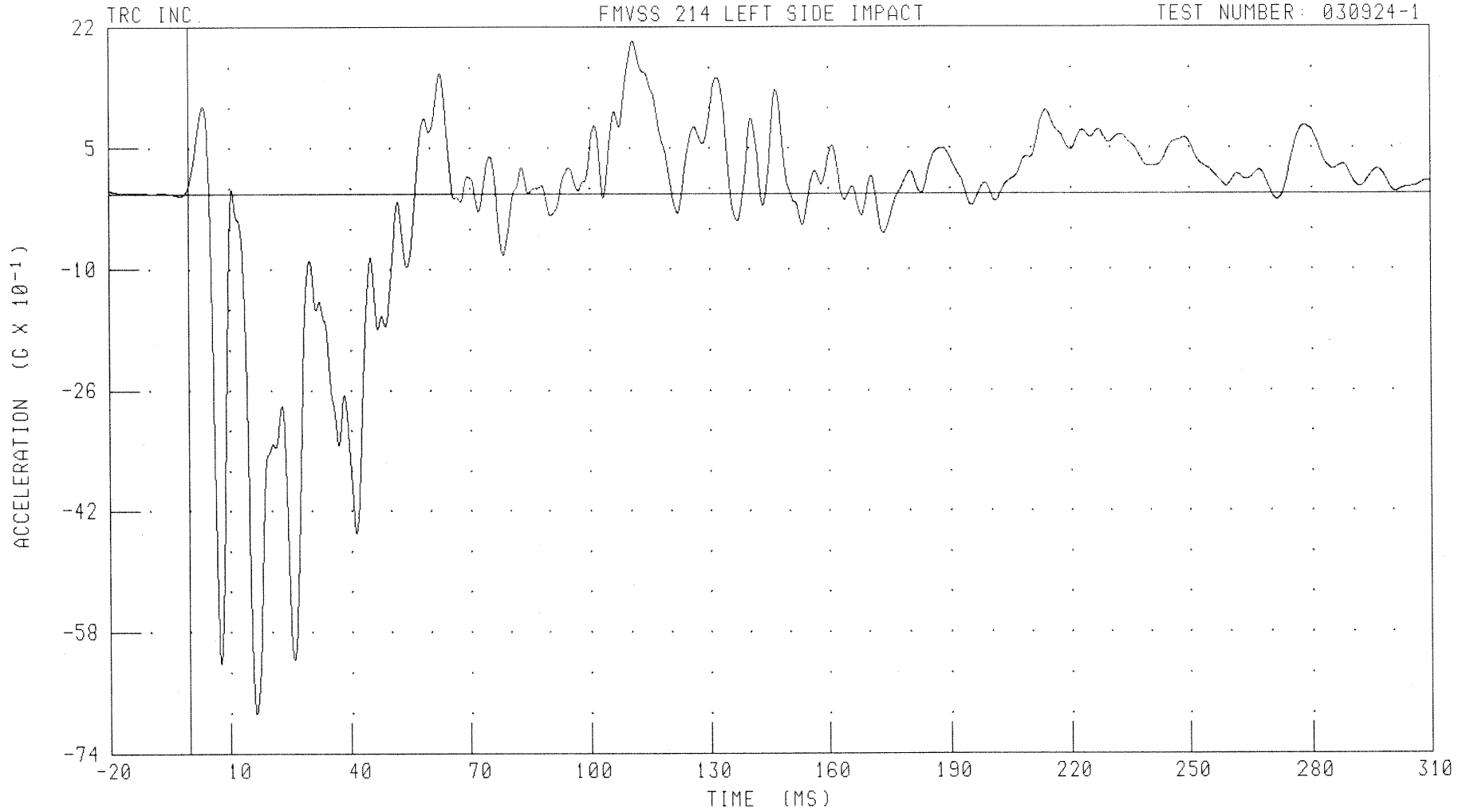
B-103

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKXC1

FILTER: CH. CLASS 60

PEAK DATA: 2.02 G @ 110.88 MS; -6.88 G @ 16.24 MS

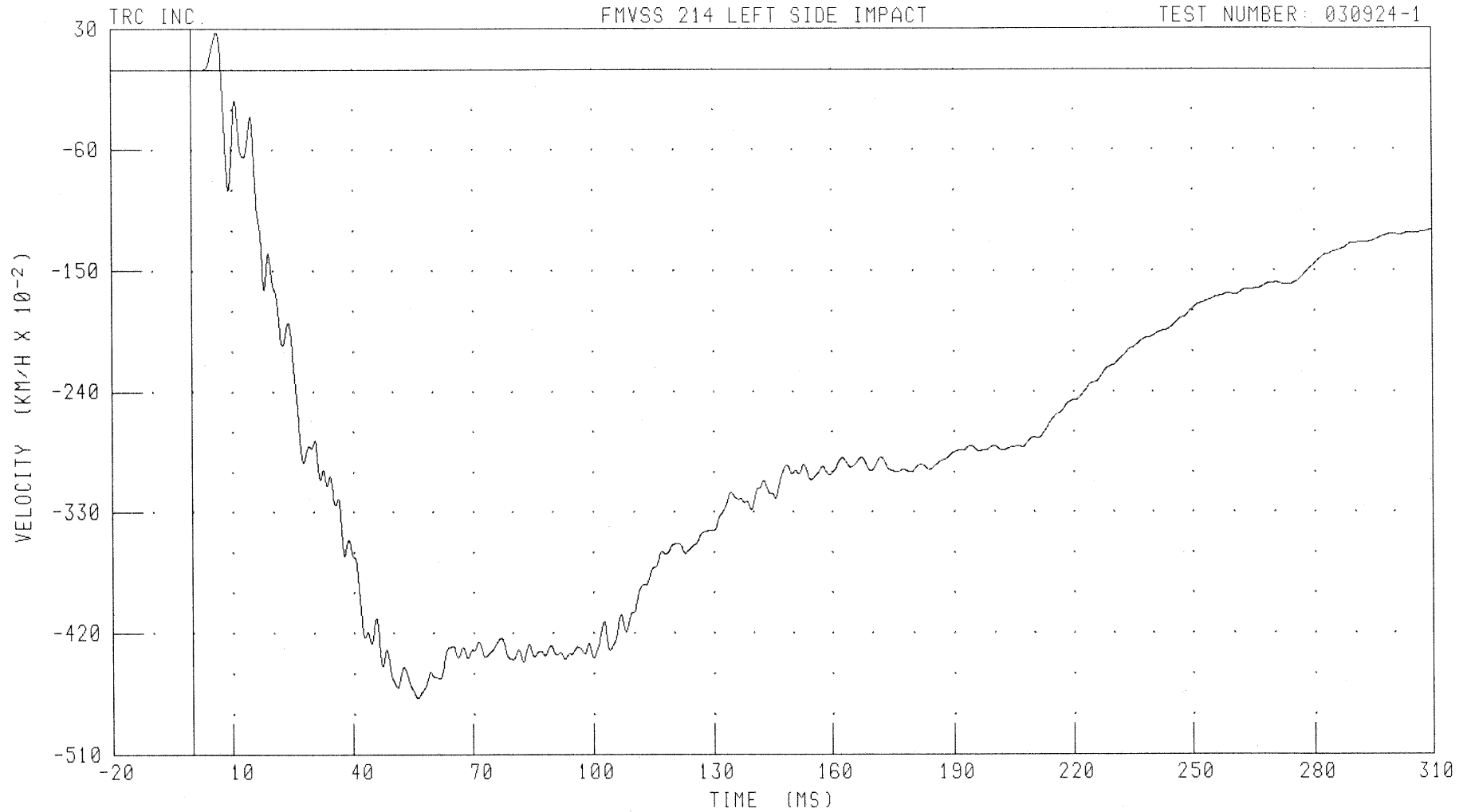
B-104

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKXV1 FILTER: CH. CLASS 180

PEAK DATA: 0.27 KM/H @ 6.48 MS; -4.68 KM/H @ 56.16 MS

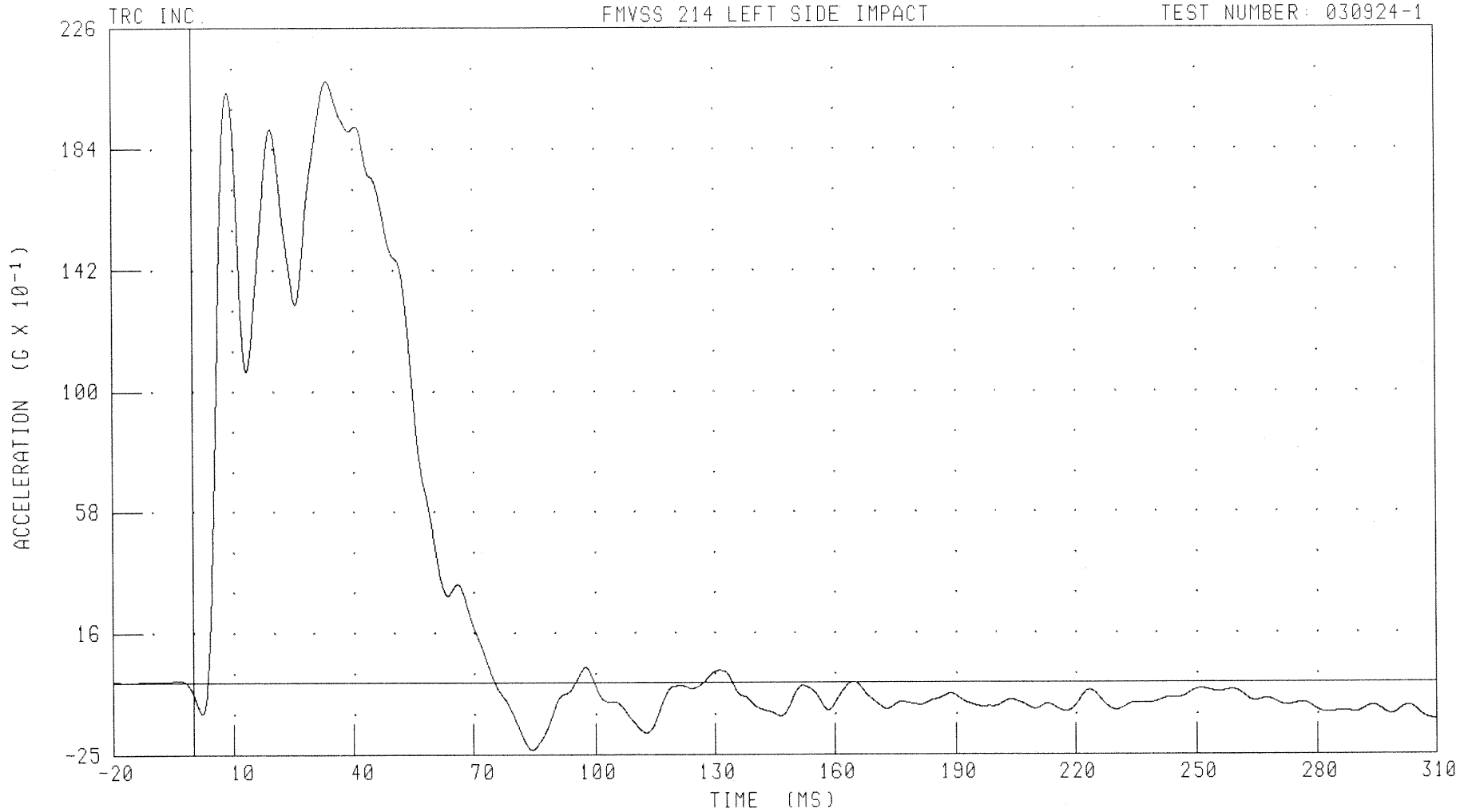
B-105

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKYG1

FILTER: CH. CLASS 60

PEAK DATA: 20.87 G @ 33.68 MS; -2.34 G @ 84.24 MS

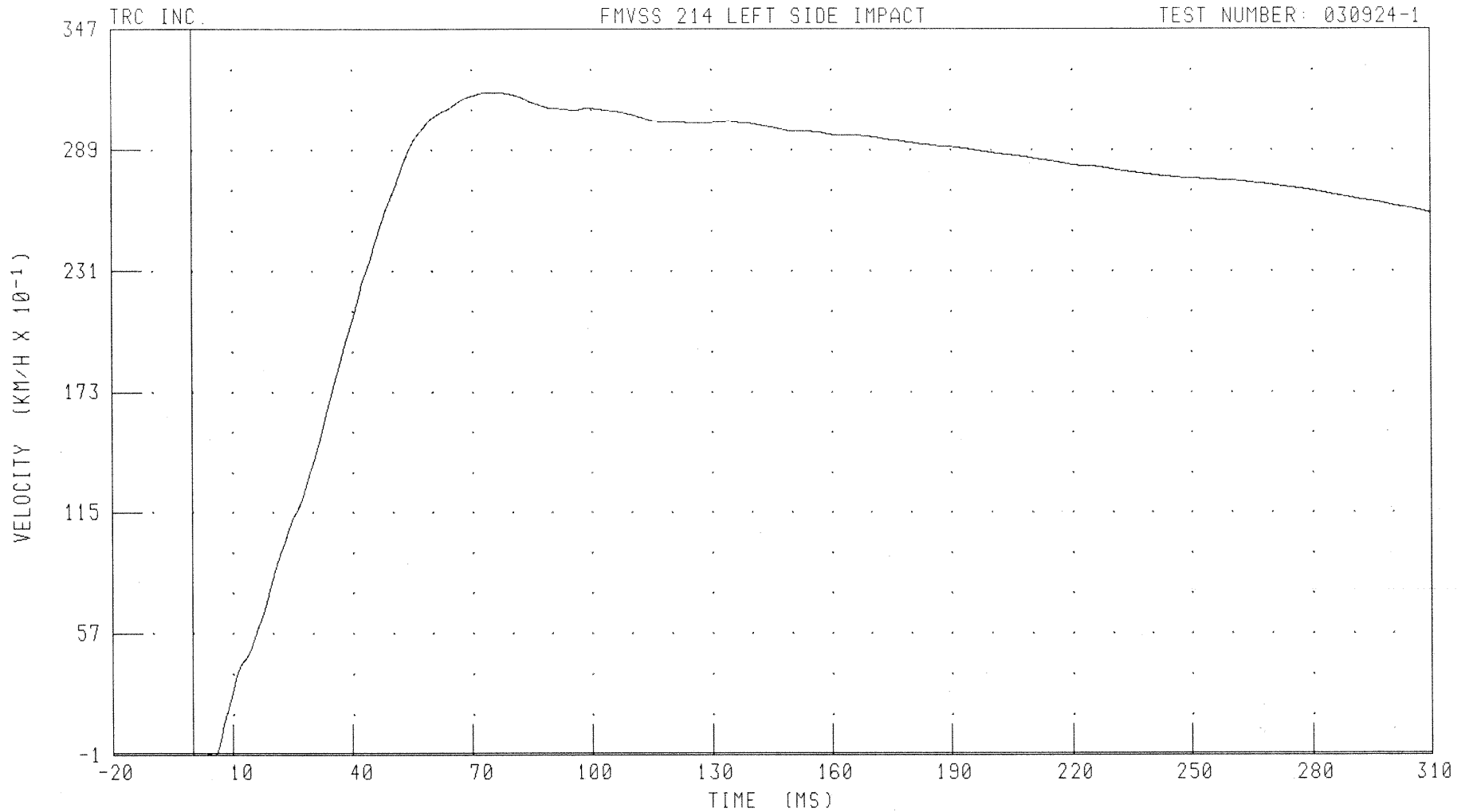
B-106

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKYV1 FILTER: CH. CLASS 180

PEAK DATA: 31.69 KM/H @ 75.04 MS; -0.13 KM/H @ 5.04 MS

B-107

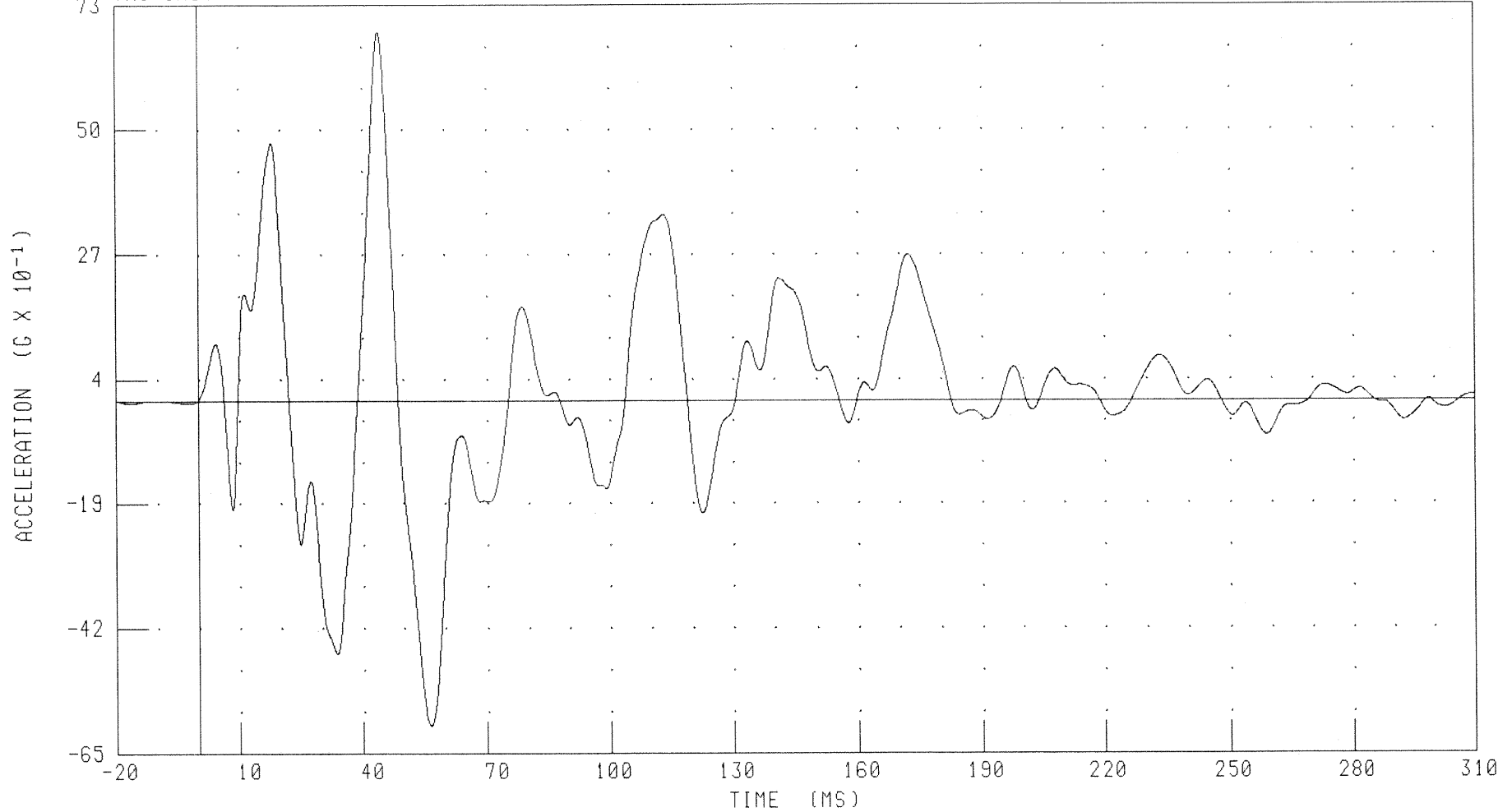
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE Z-AXIS ACCELERATION

TRC, INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKZG1 FILTER: CH. CLASS 60

PEAK DATA: 6.81 G @ 44.08 MS; -5.99 G @ 56.56 MS

B-108

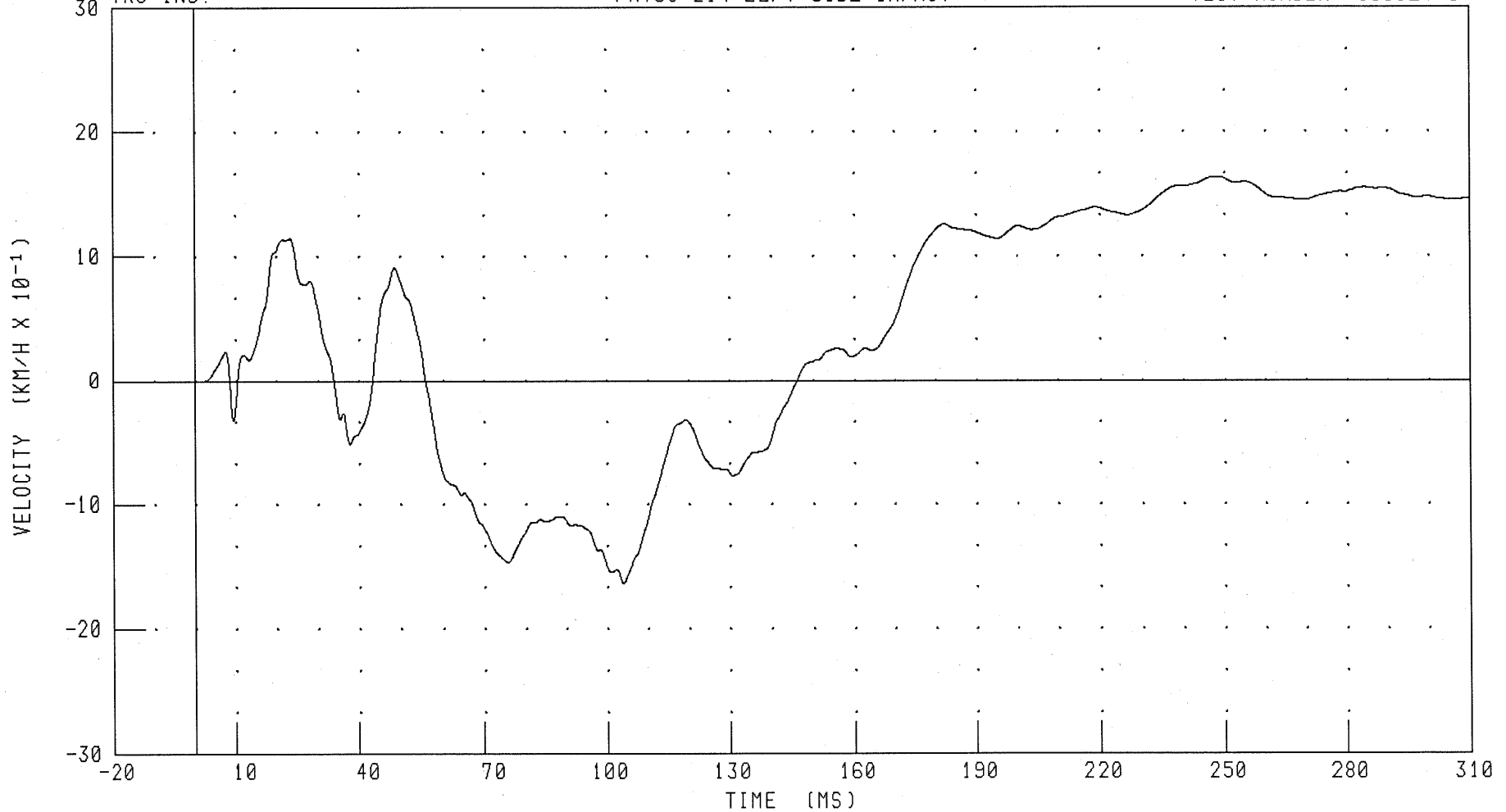
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKZV1 FILTER: CH. CLASS 180

PEAK DATA: 1.63 KM/H @ 247.68 MS; -1.64 KM/H @ 104.08 MS

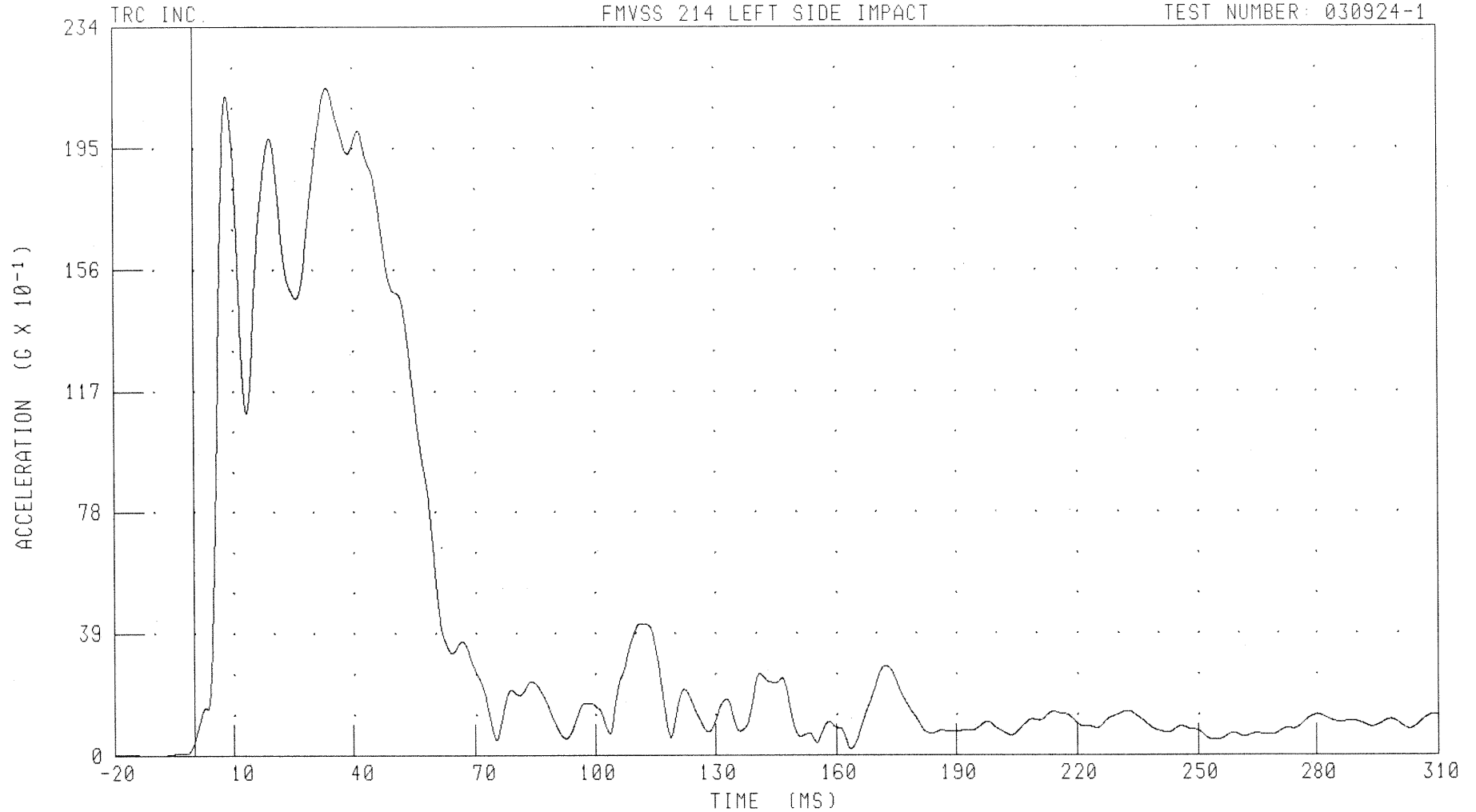
B-109

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKRG1

FILTER: CH. CLASS 60

PEAK DATA: 21.45 G @ 33.68 MS; 0.01 G @ -7.92 MS

B-110

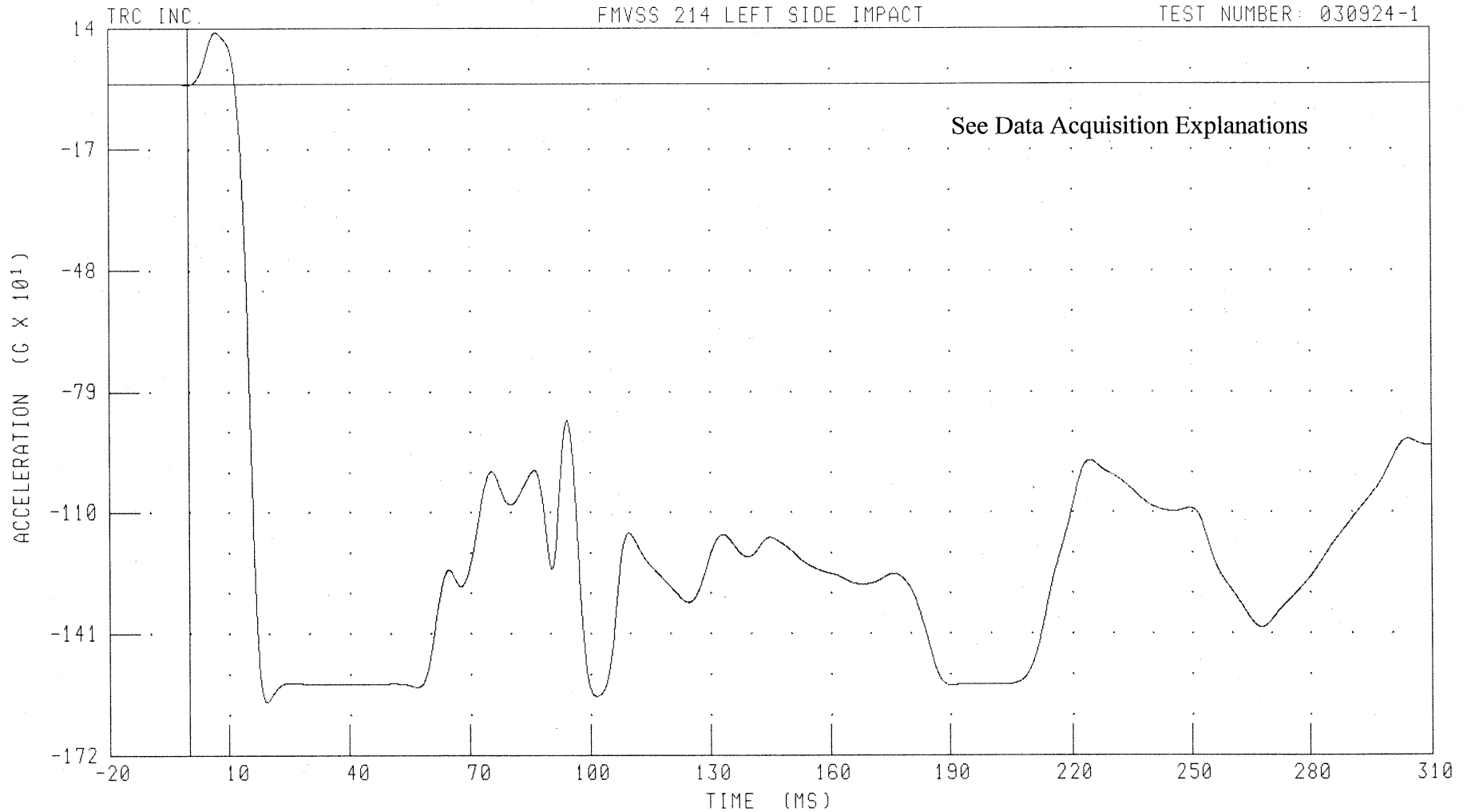
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

See Data Acquisition Explanations



CHANNEL: LFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 129.95 G @ 7.04 MS; -1584.64 G @ 19.52 MS

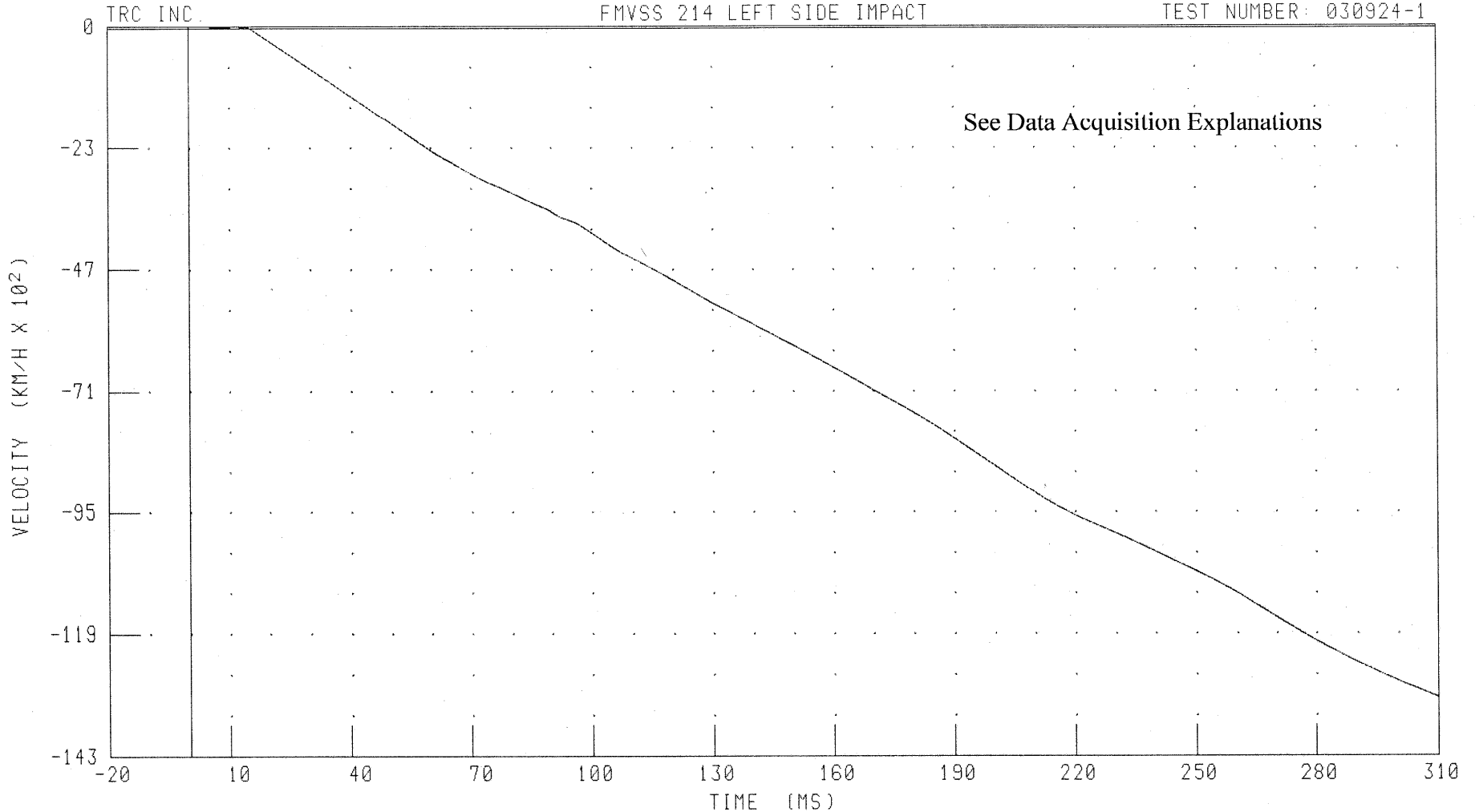
B-111

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LFSYV1

FILTER: CH. CLASS 180

PEAK DATA: 26.57 KM/H @ 11.84 MS; -13235.29 KM/H @ 310.00 MS

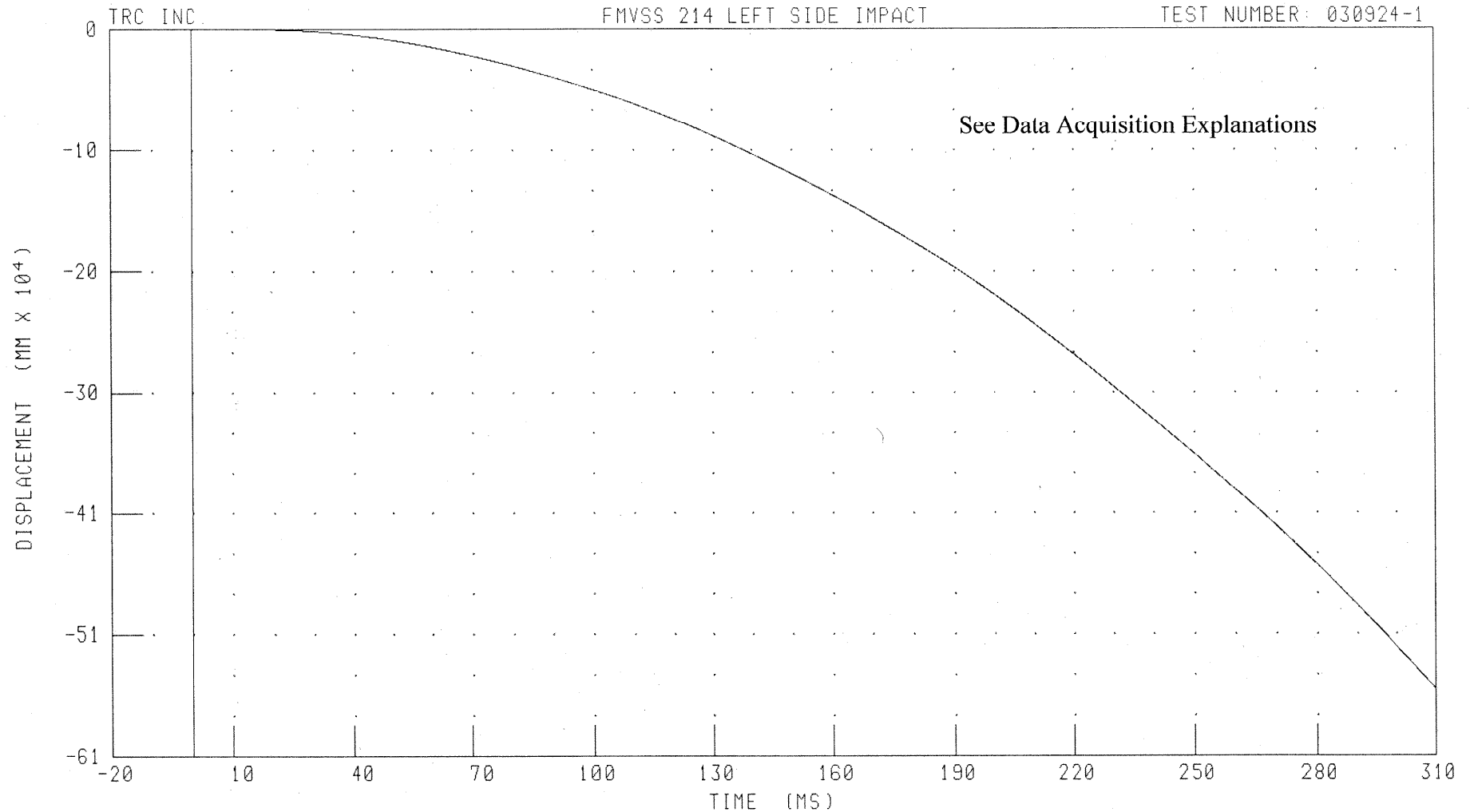
B-112

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LFSYD1 FILTER: CH. CLASS 180

TIME (MS)

PEAK DATA: 51.04 MM @ 15.36 MS, -562532.44 MM @ 310.00 MS

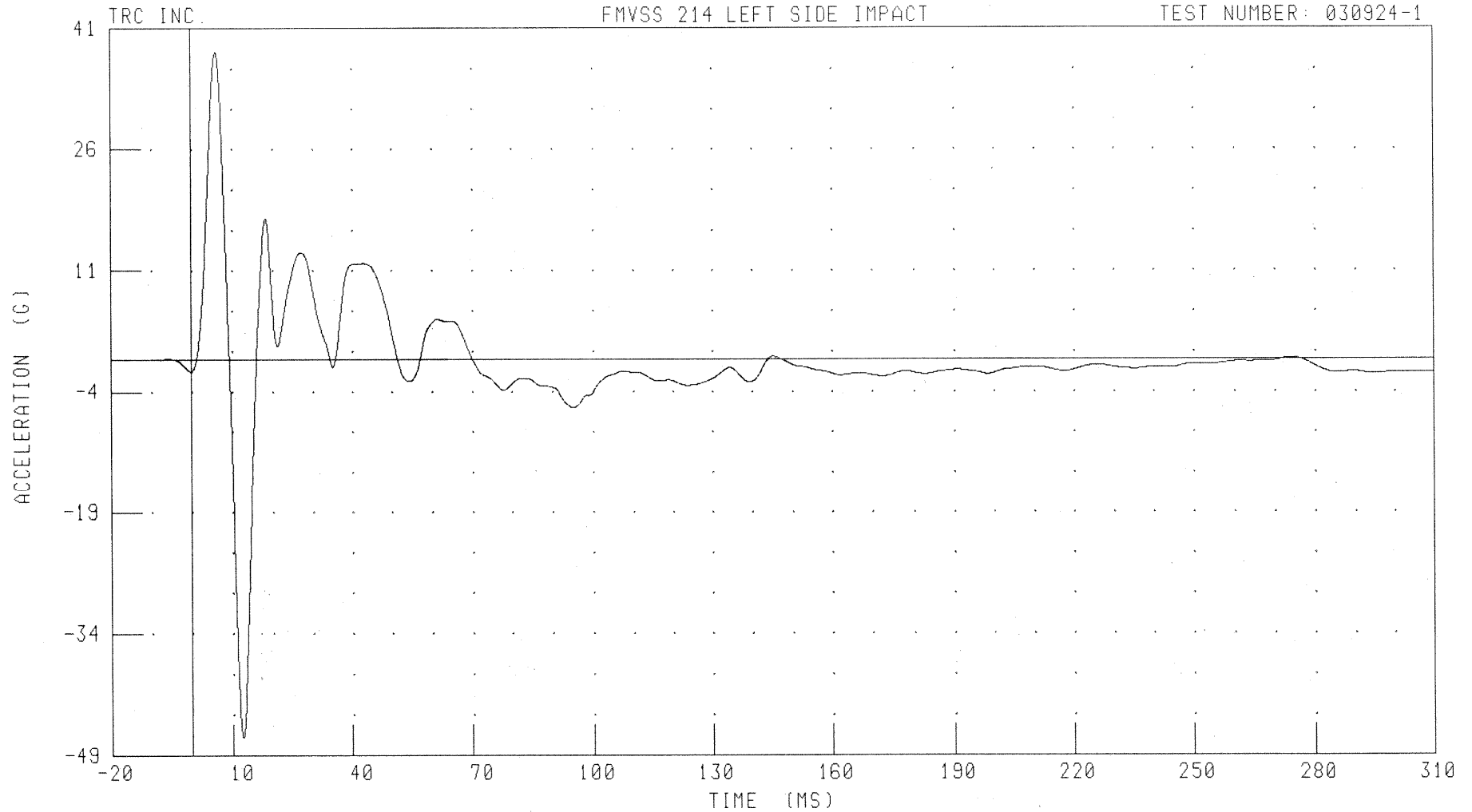
B-113

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRSYG1

FILTER: CH. CLASS 60

PEAK DATA: 38.11 G @ 6.16 MS; -46.90 G @ 12.48 MS

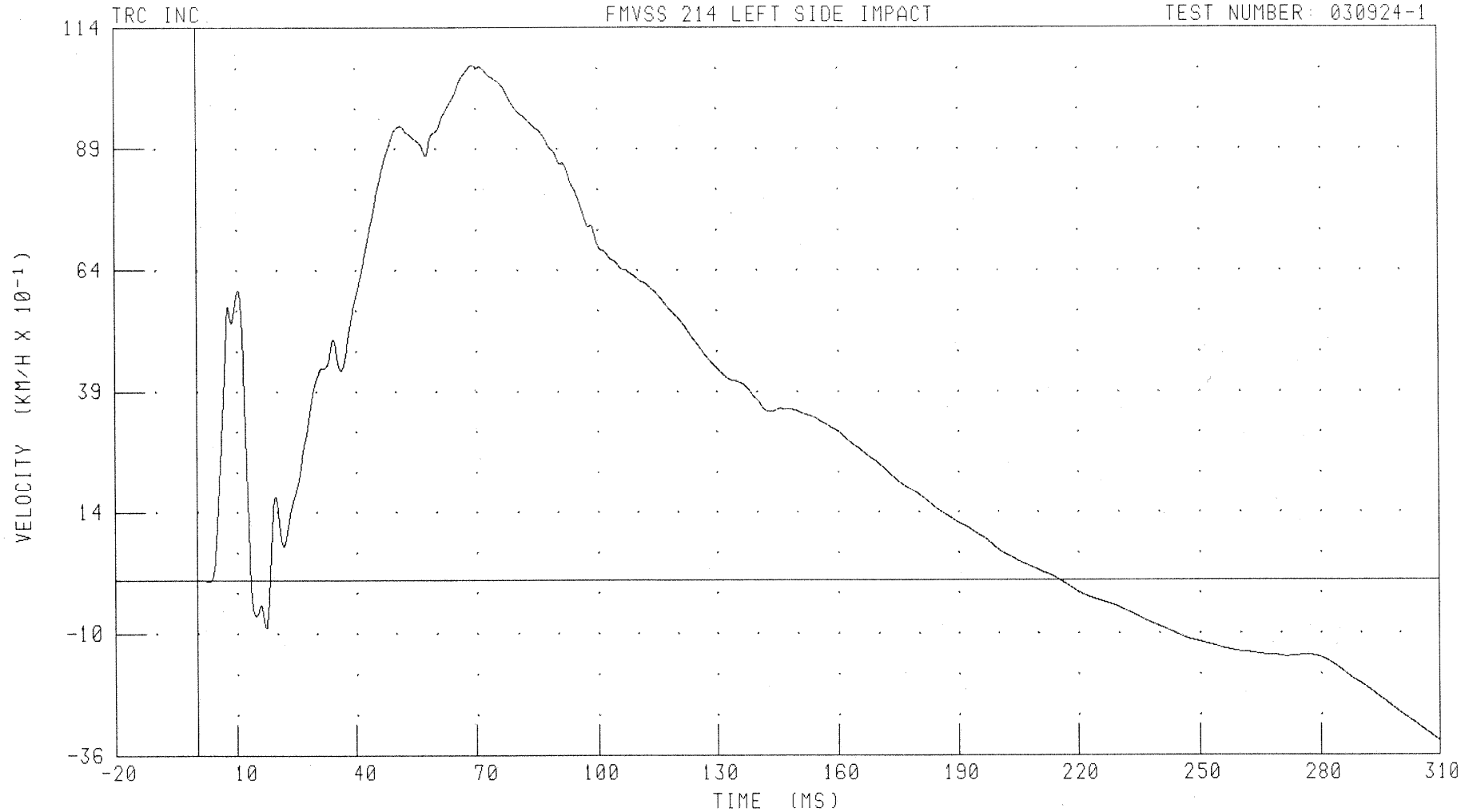
B-114

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRSYV1

FILTER: CH. CLASS 180

PEAK DATA: 10.62 KM/H @ 69.28 MS; -3.32 KM/H @ 310.00 MS

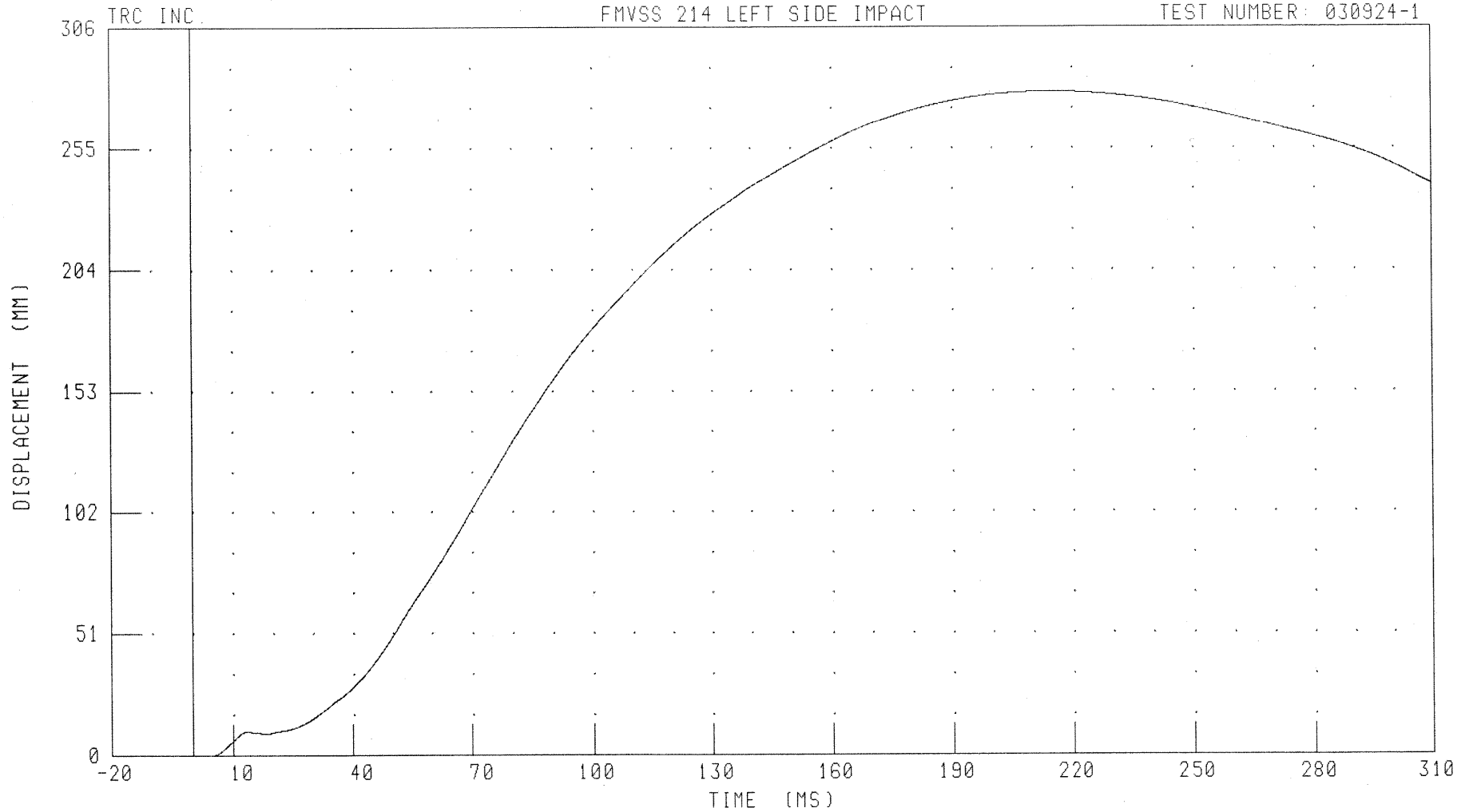
B-115

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRSYD1

FILTER: CH. CLASS 180

PEAK DATA: 278.91 MM @ 215.36 MS; -0.01 MM @ 3.60 MS

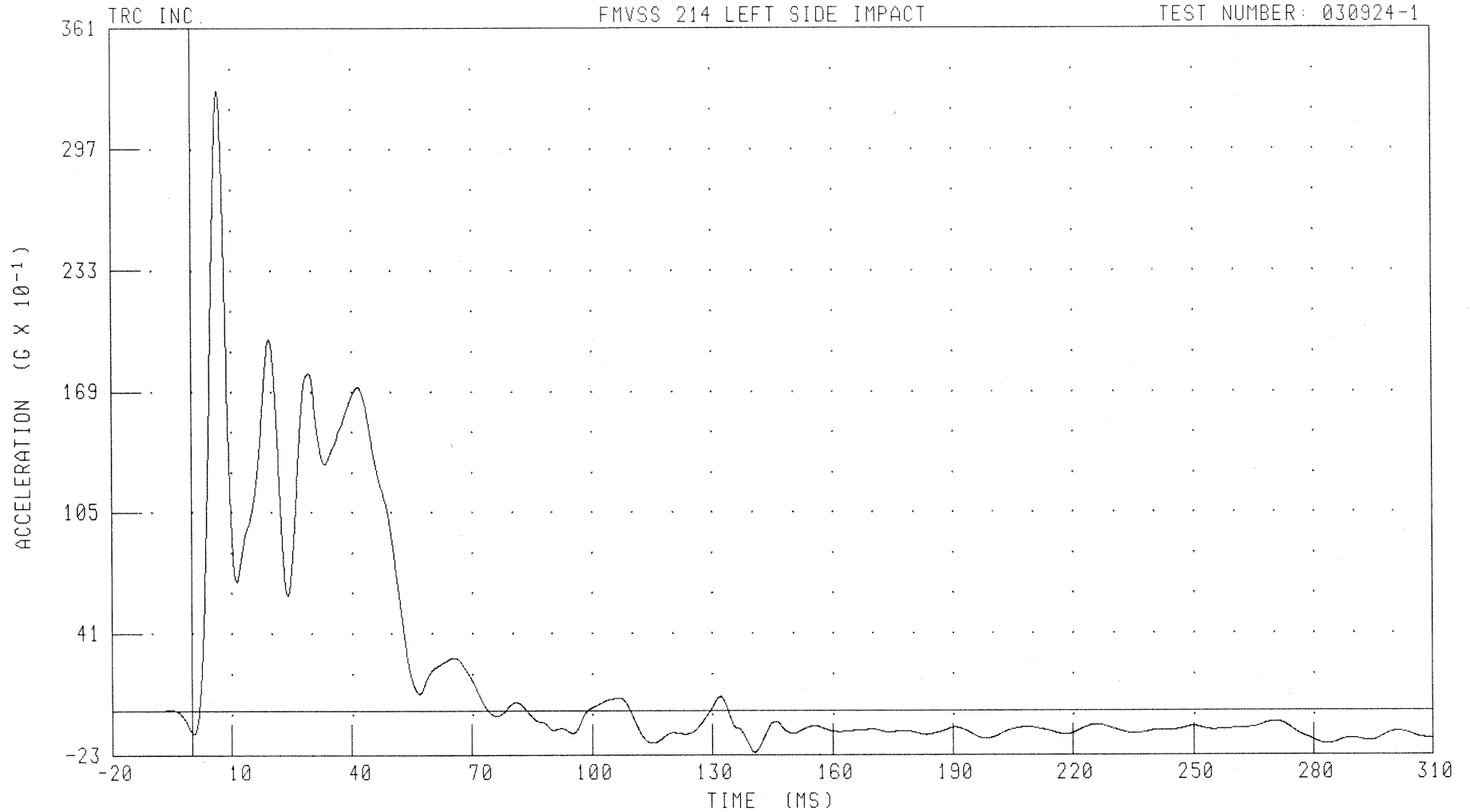
B-116

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRTYG1

FILTER: CH. CLASS 60

PEAK DATA: 32.80 G @ 6.80 MS; -2.17 G @ 140.56 MS

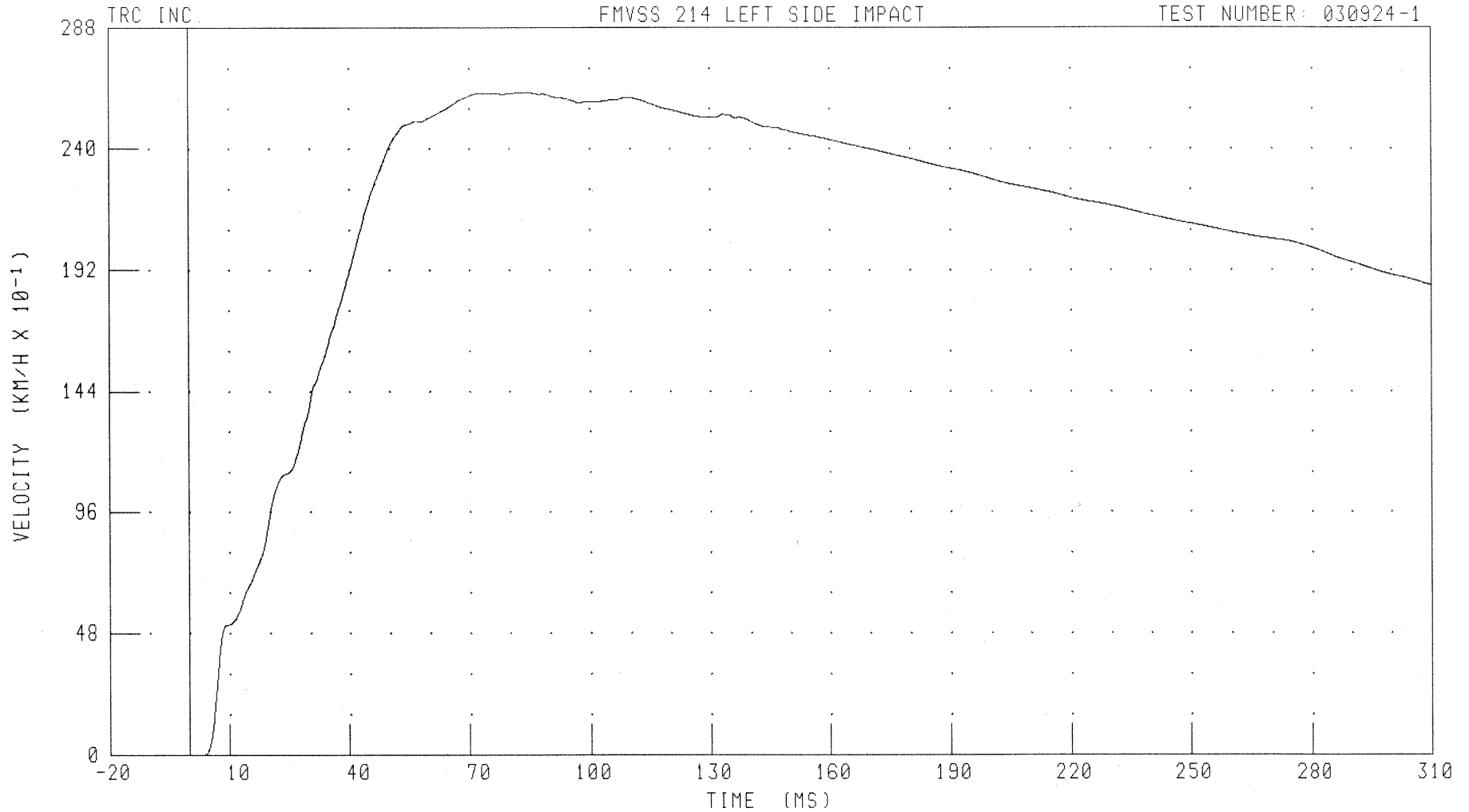
B-117

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRTYV1

FILTER: CH. CLASS 180

PEAK DATA: 26.26 KM/H @ 83.04 MS; 0.00 KM/H @ 3.28 MS

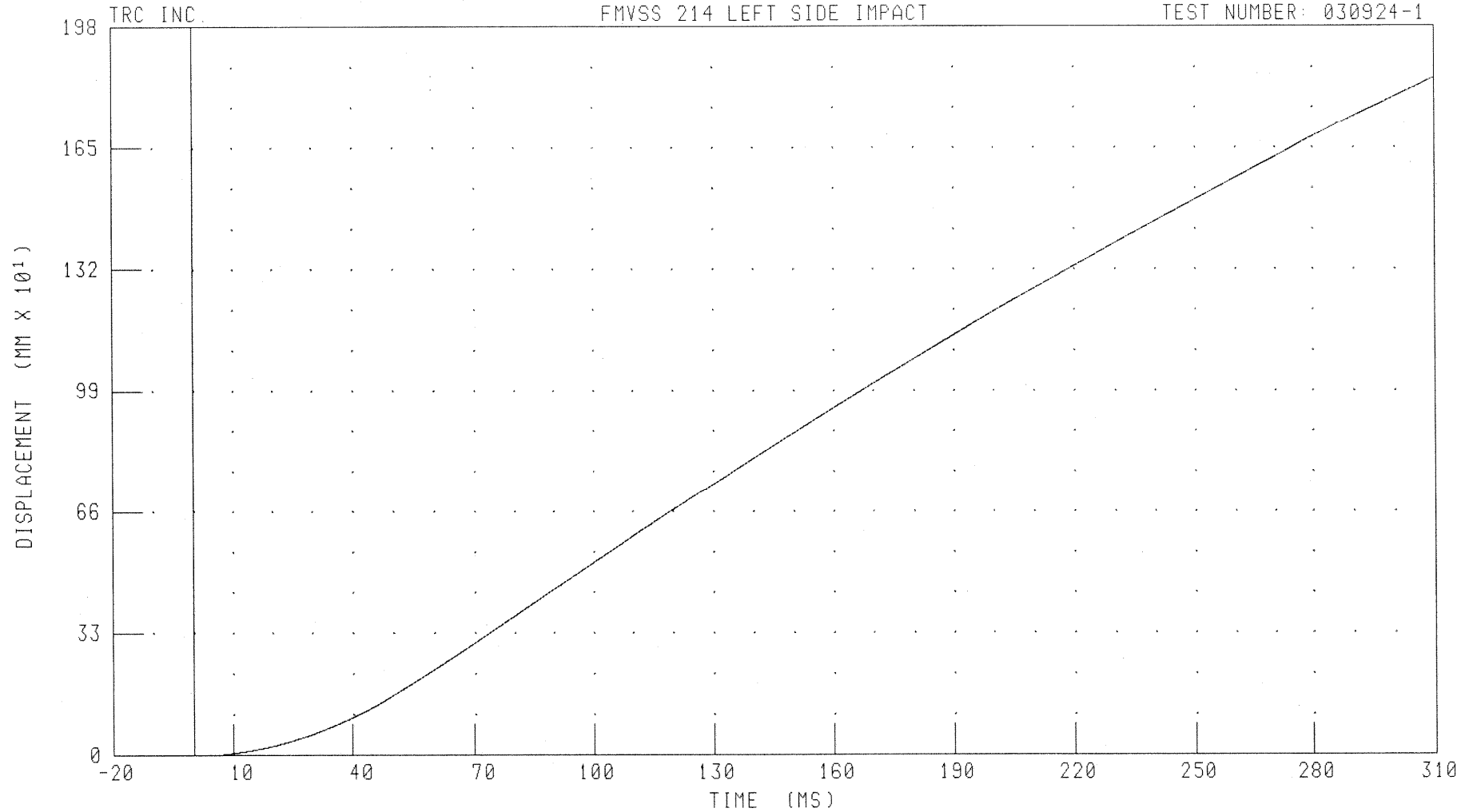
B-118

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RRTYD1

FILTER: CH. CLASS 180

PEAK DATA: 1840.52 MM @ 310.00 MS; 0.00 MM @ 0.00 MS

B-119

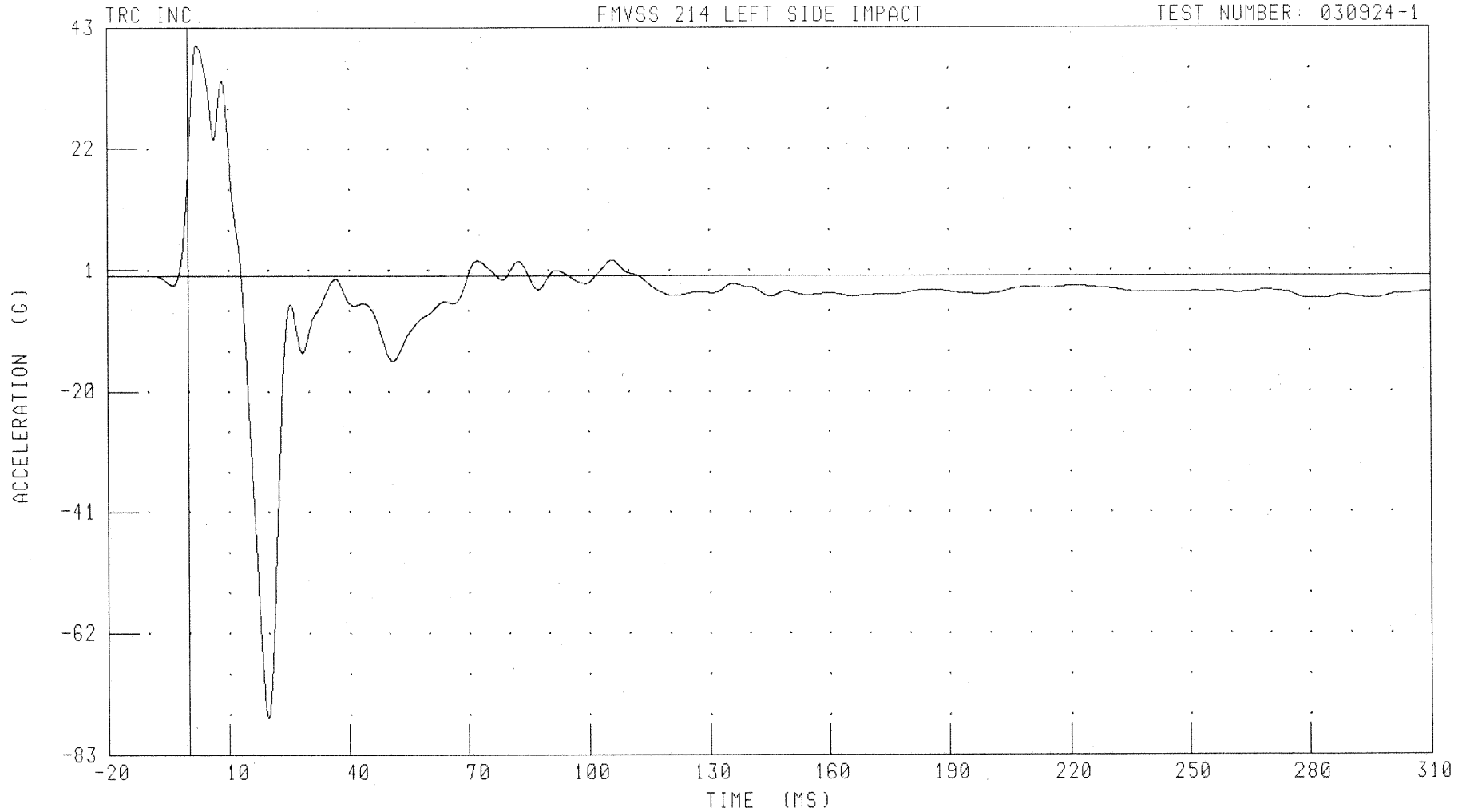
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT LOWER A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLAG1 FILTER: CH CLASS 60

PEAK DATA: 39.99 G @ 2.24 MS; -76.55 G @ 19.92 MS

B-120

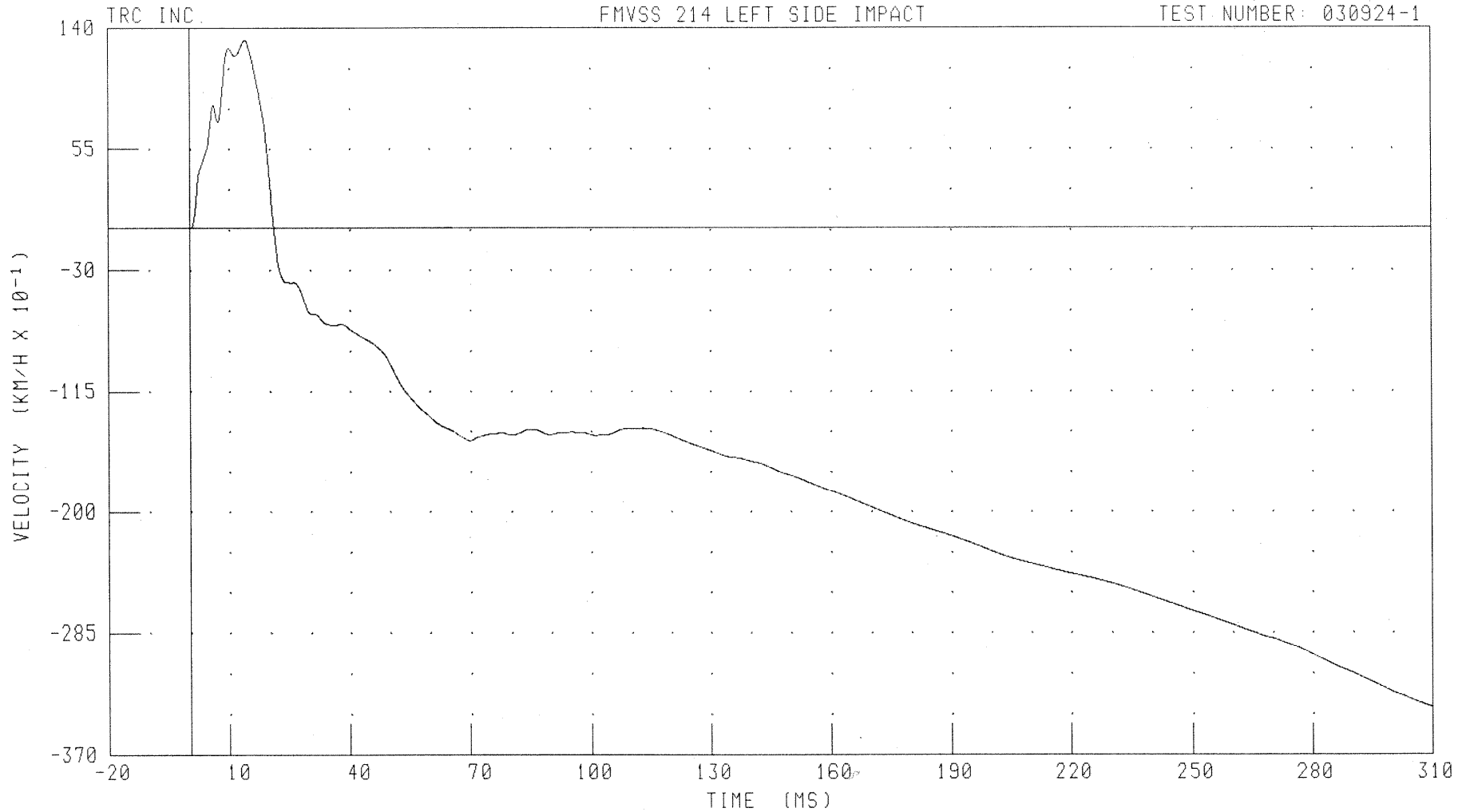
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT LOWER A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLAYV1

FILTER: CH. CLASS 180

TIME (MS)

PEAK DATA: 13 17 KM/H @ 14.00 MS; -33.72 KM/H @ 310.00 MS

B-121

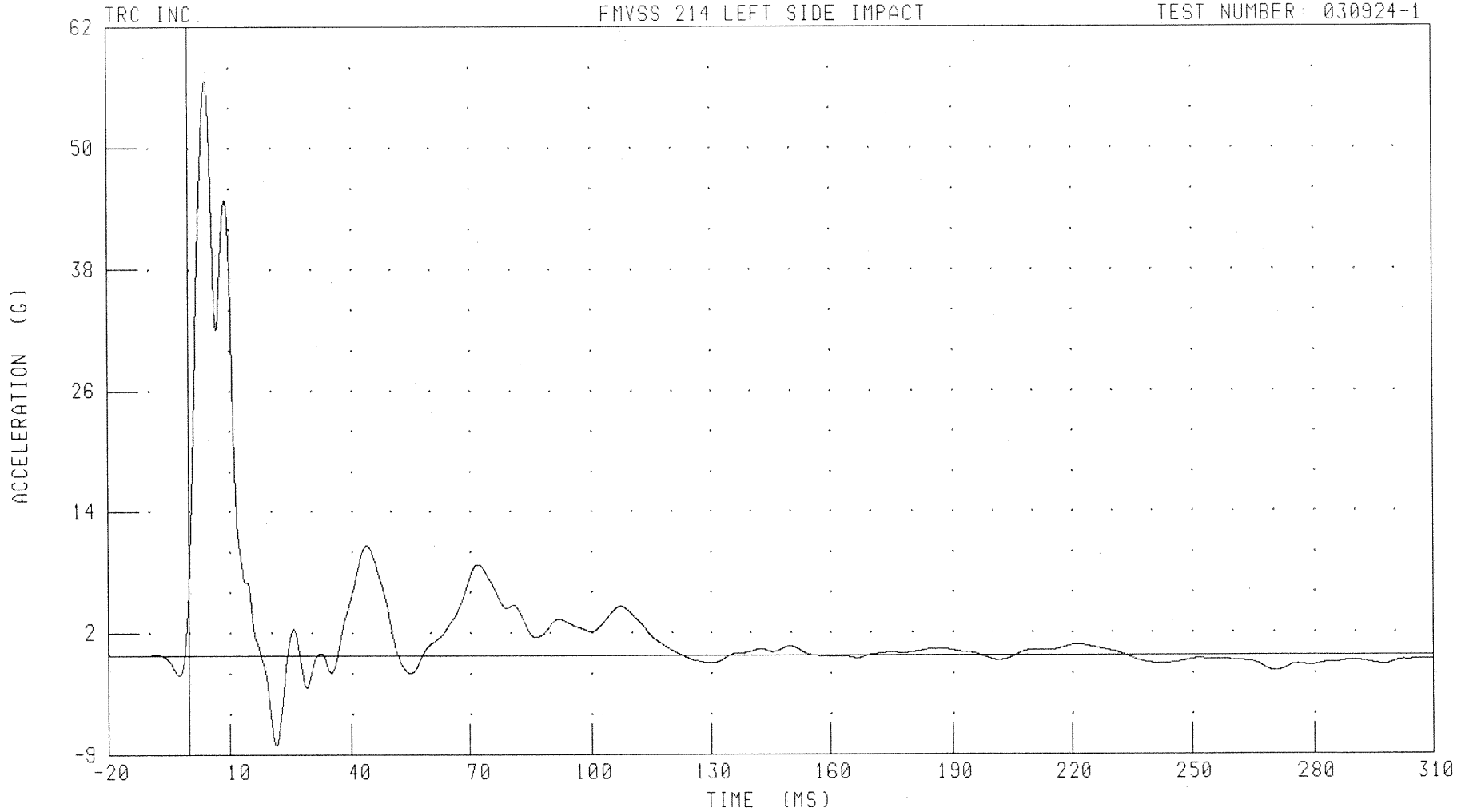
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT MIDDLE A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LMAYG1

FILTER: CH. CLASS 60

PEAK DATA: 57.05 G @ 4.40 MS; -8.83 G @ 21.20 MS

B-122

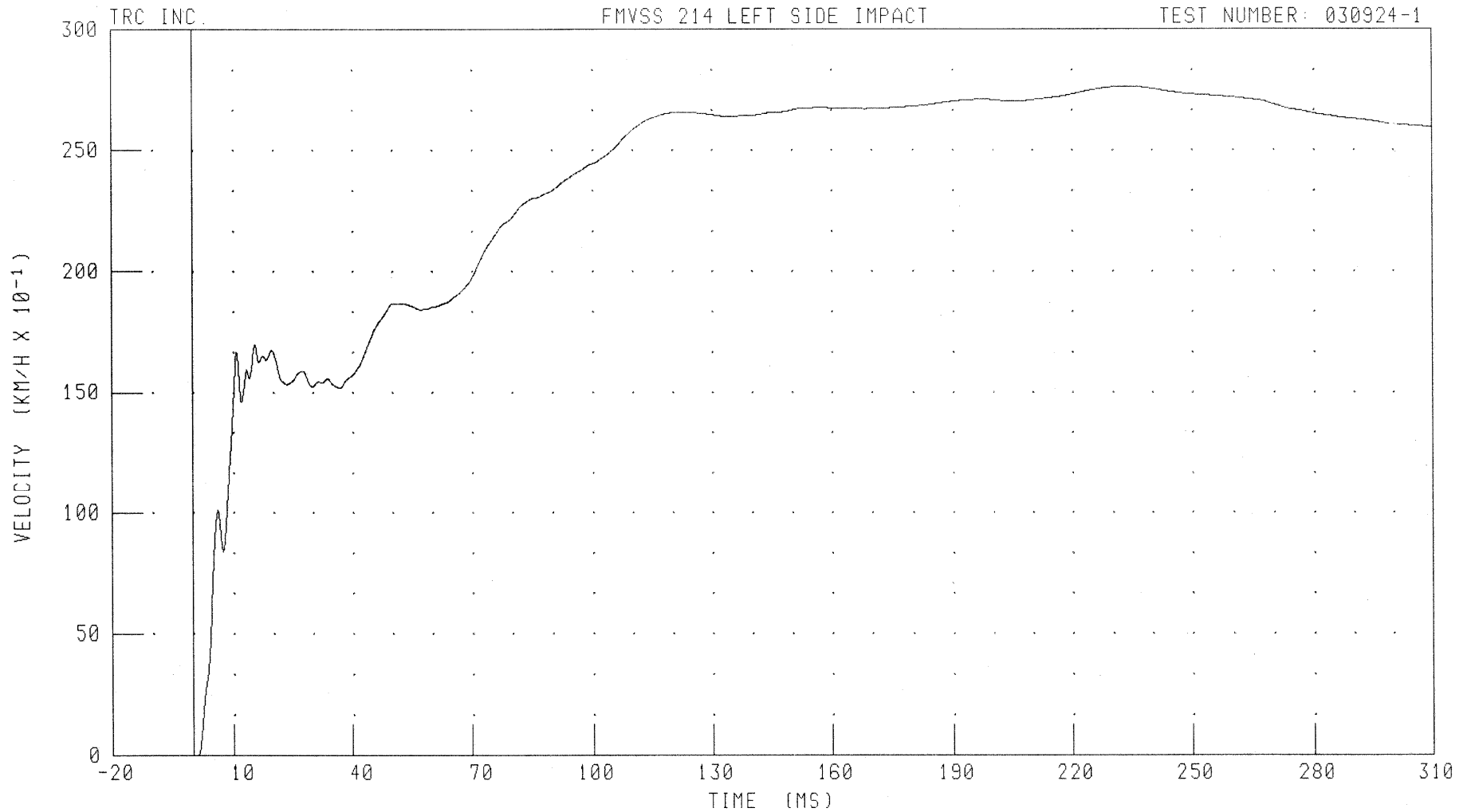
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT MIDDLE A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LMAYV1

FILTER: CH. CLASS 180

PEAK DATA: 27 66 KM/H @ 234.00 MS; -0.06 KM/H @ 0.88 MS

B-123

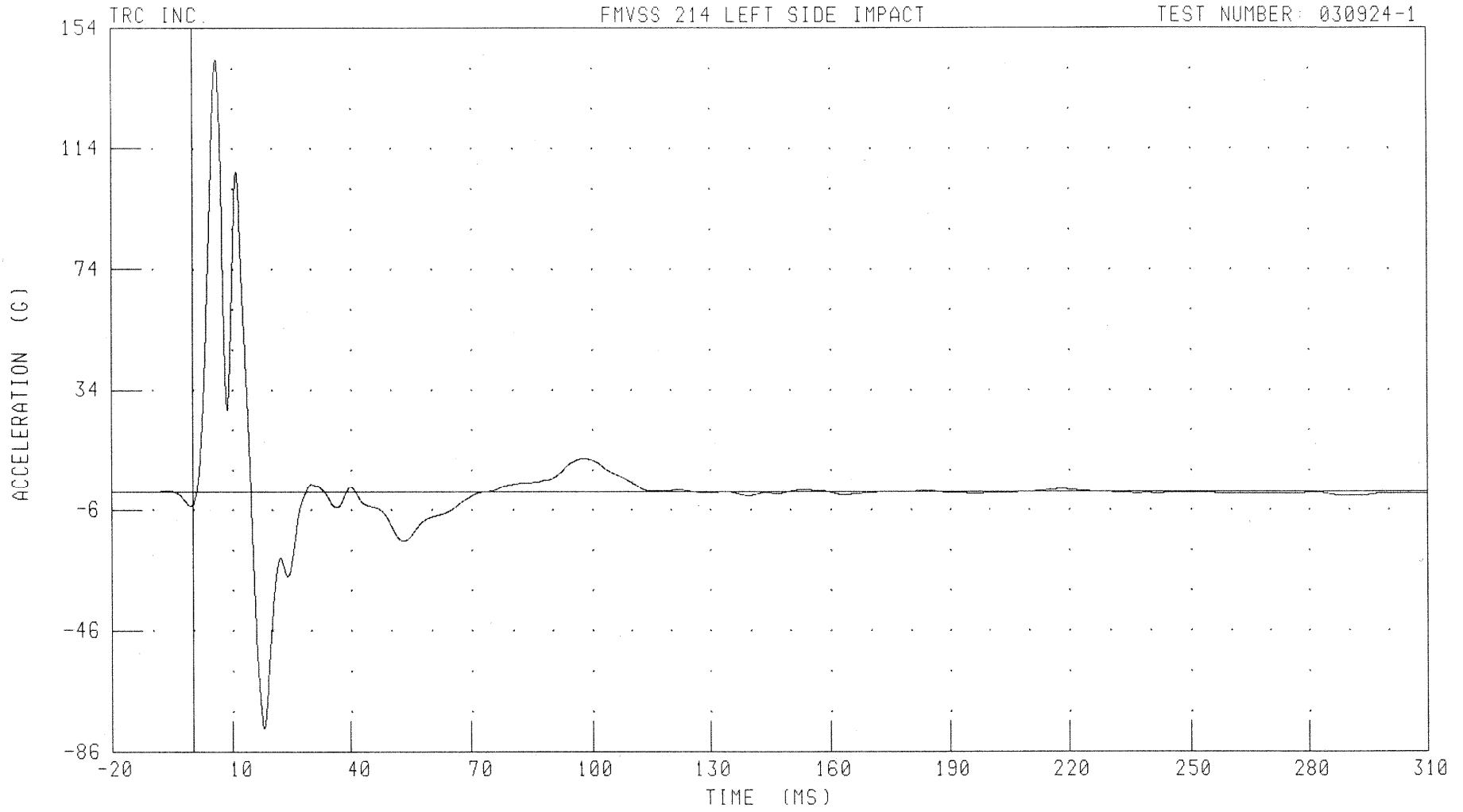
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT LOWER B-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLBYG1 FILTER: CH. CLASS 60

PEAK DATA: 143.64 G @ 5.92 MS; -78.34 G @ 18.00 MS

B-124

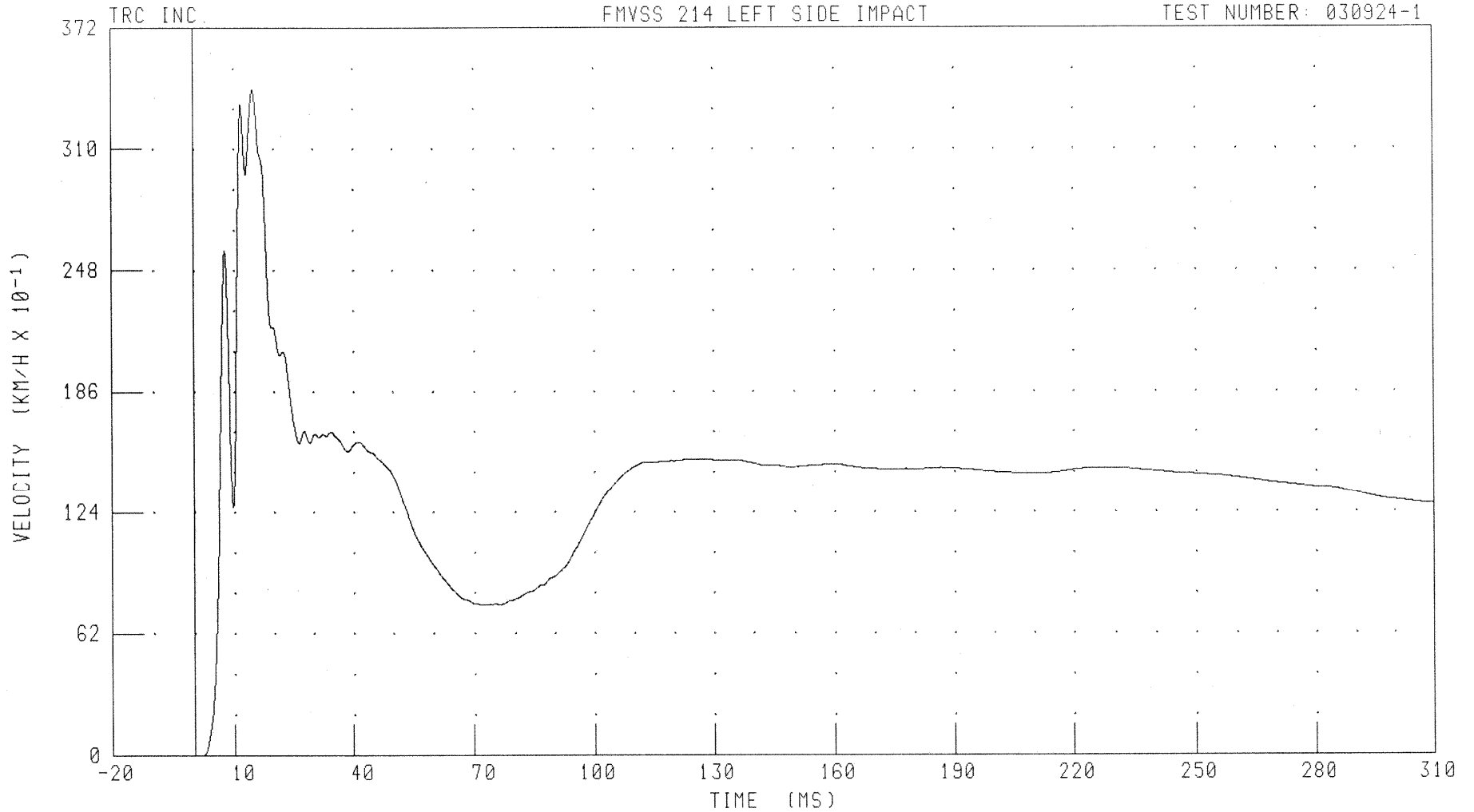
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT LOWER B-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLBYV1 FILTER: CH. CLASS 180

PEAK DATA: 34.06 KM/H @ 14.88 MS; -0.01 KM/H @ 1.84 MS

B-125

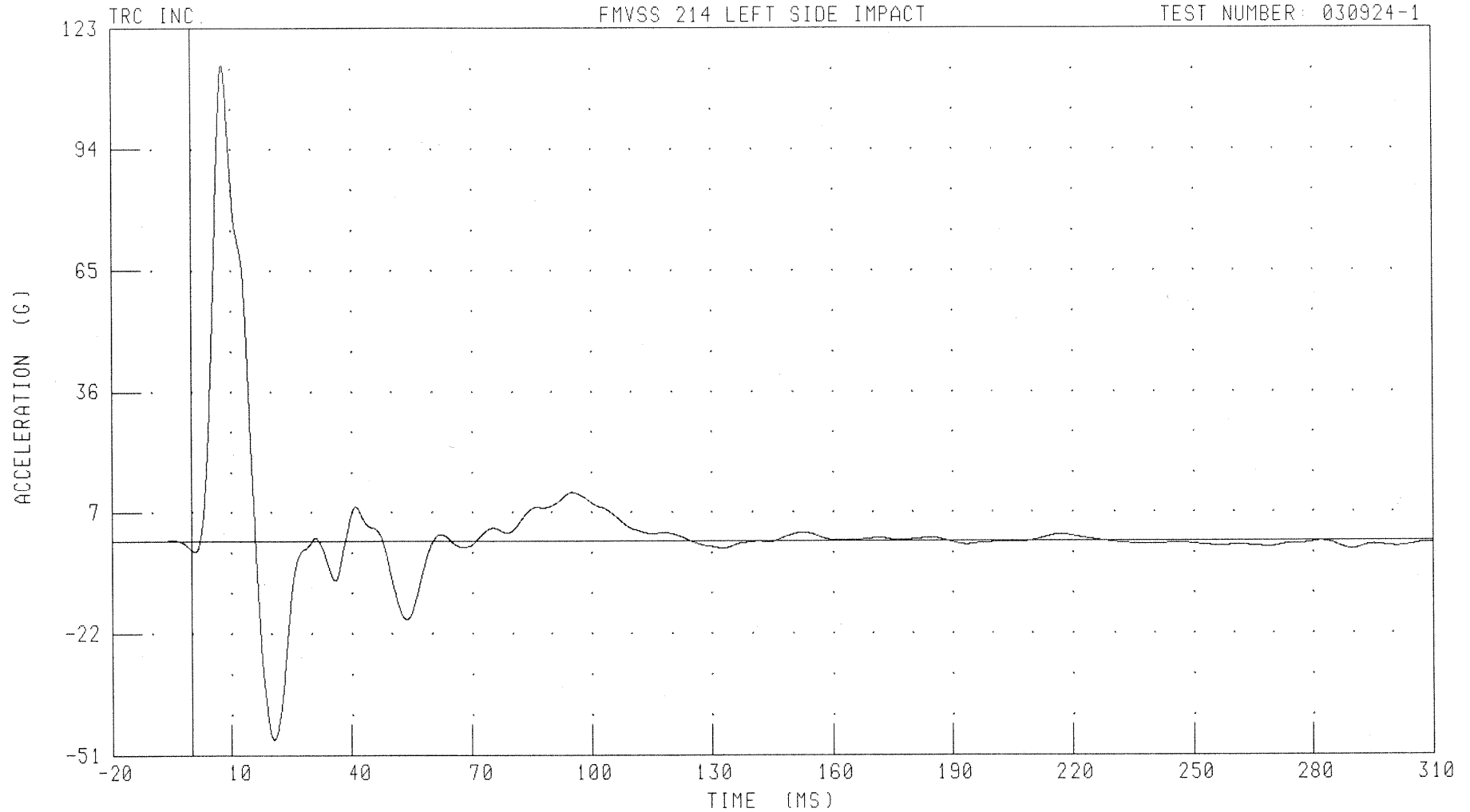
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT MIDDLE B-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LMBYG1

FILTER: CH. CLASS 60

PEAK DATA: 114.21 G @ 7.92 MS; -47.27 G @ 20.72 MS

B-126

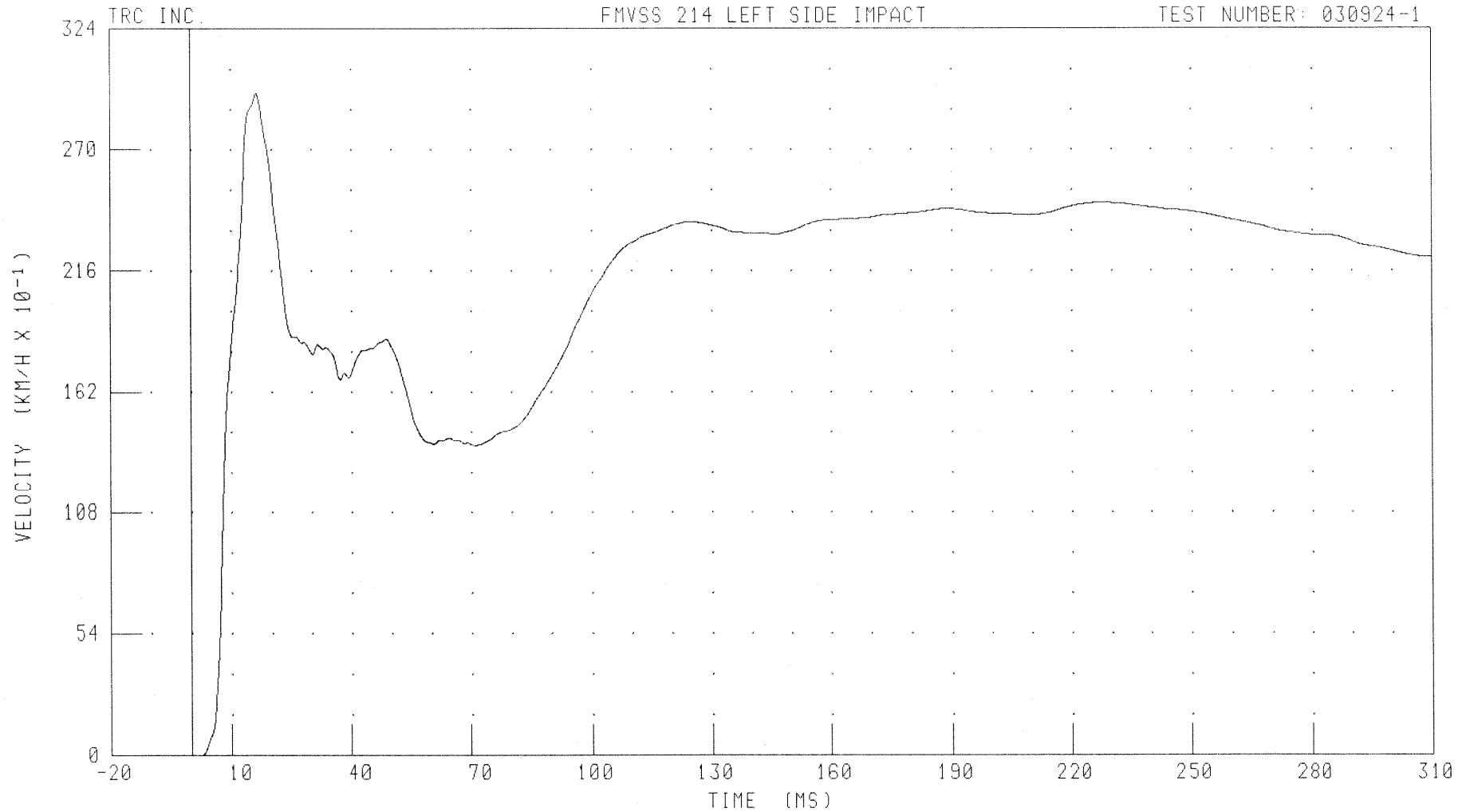
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT MIDDLE B-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LMBYV1

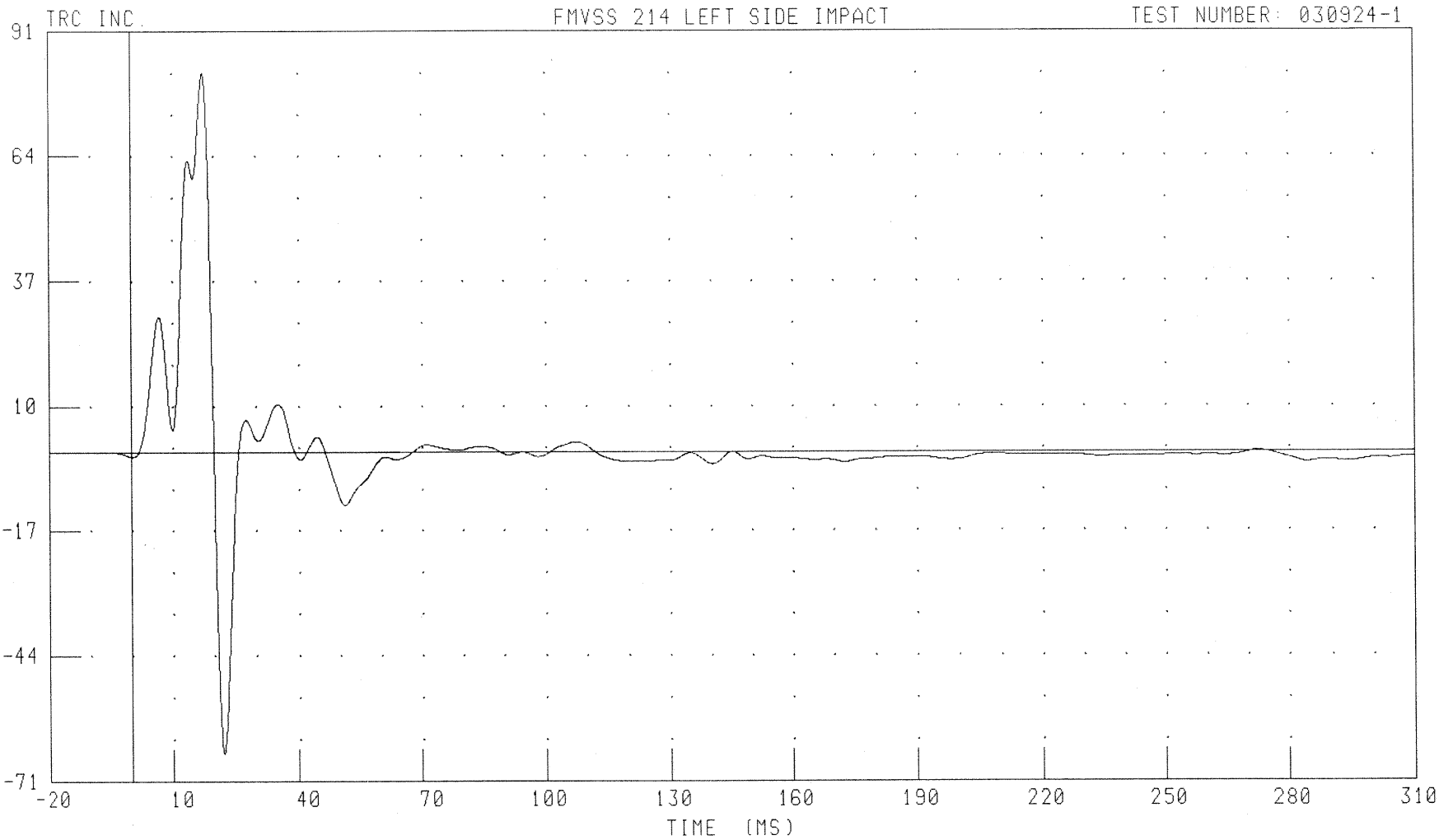
FILTER: CH. CLASS 180

PEAK DATA: 29.53 KM/H @ 16.40 MS, 0.00 KM/H @ 0.00 MS

B-127

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION



CHANNEL: LFTYG1 FILTER: CH. CLASS 60

PEAK DATA: 82.25 G @ 17.52 MS; -65.06 G @ 22.32 MS

B-128

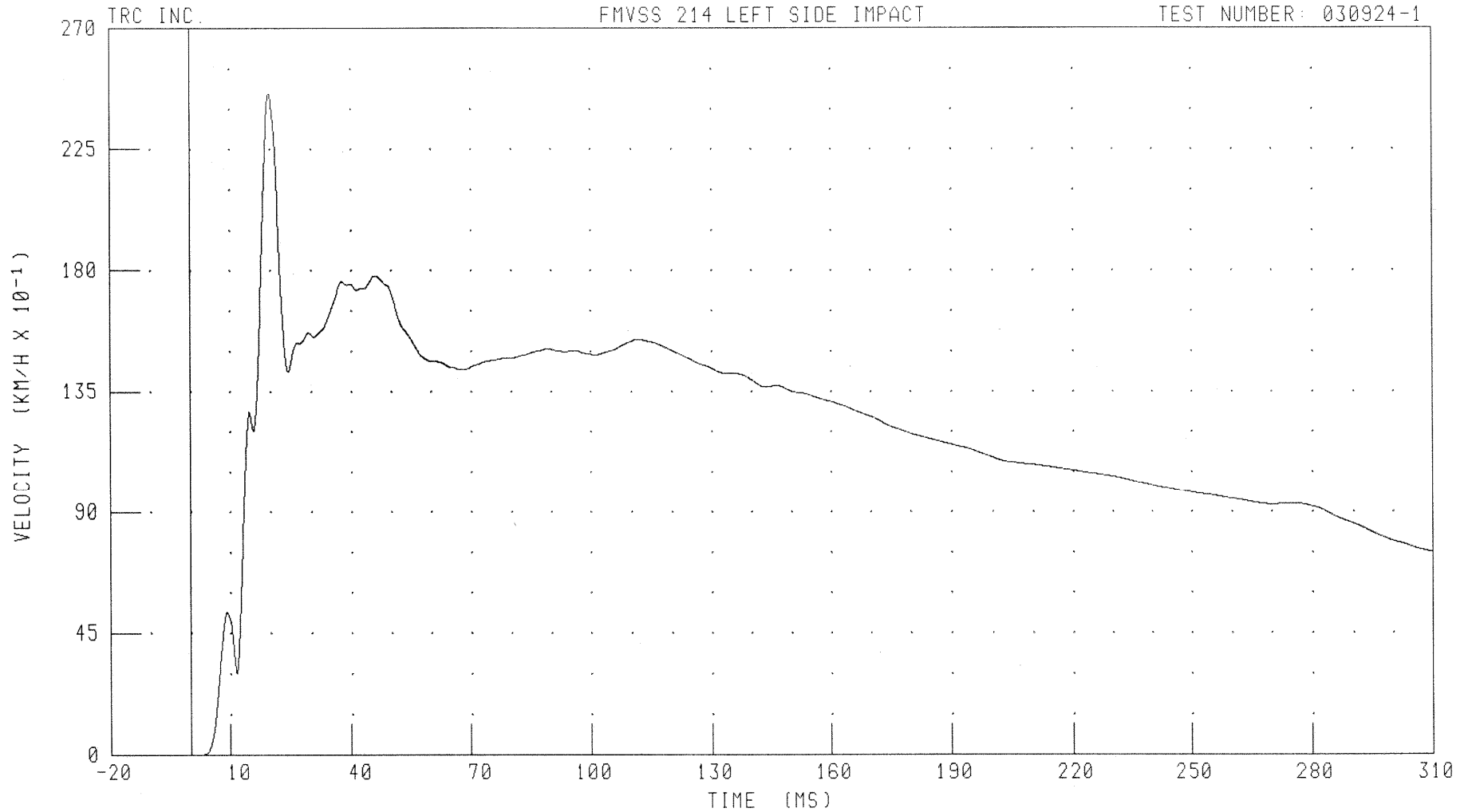
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT FRONT SEAT TRACK Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LFTYV1

FILTER: CH. CLASS 180

PEAK DATA: 24.59 KM/H @ 19.84 MS; 0.00 KM/H @ 0.00 MS

B-129

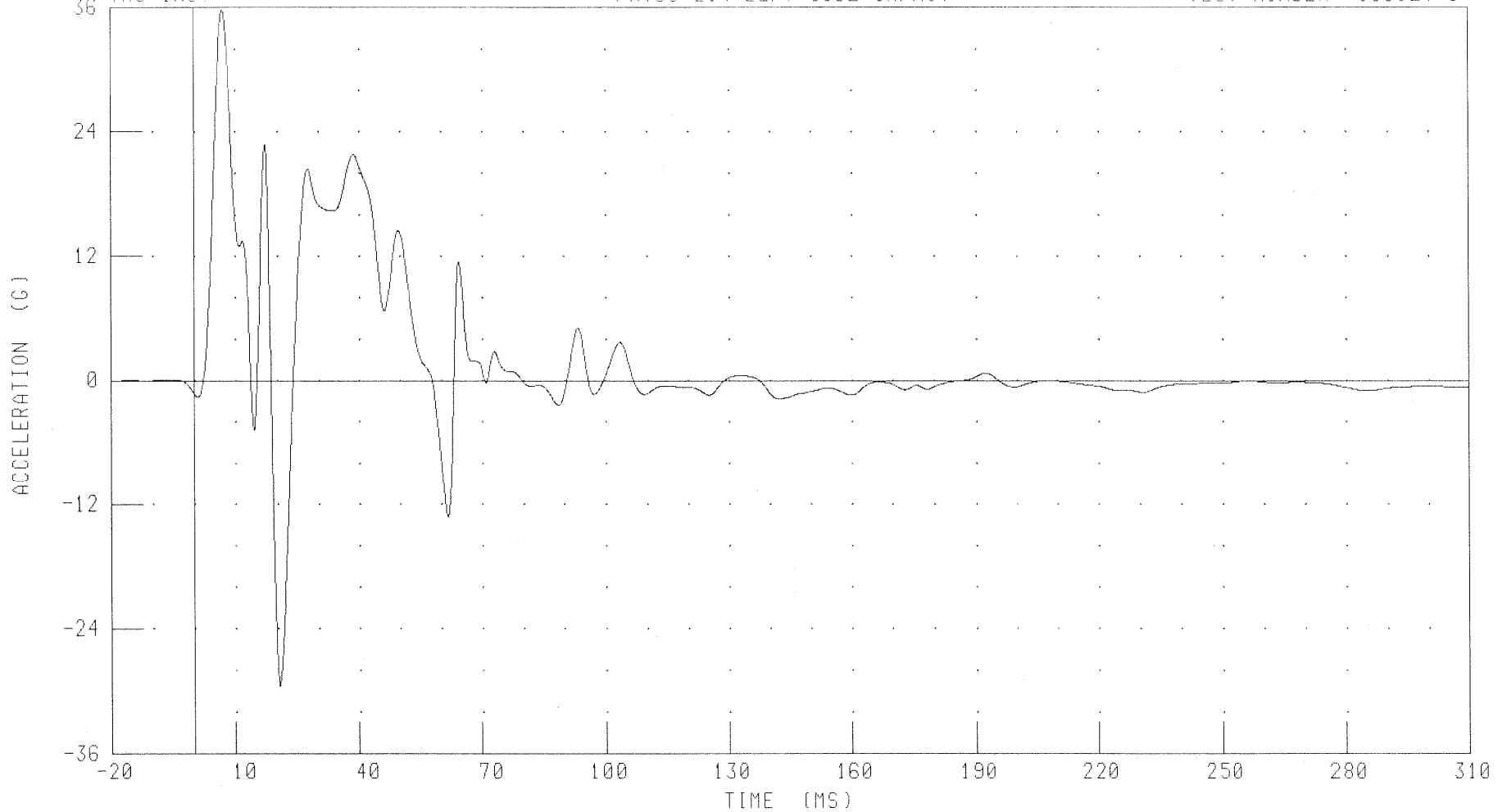
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR SEAT TRACK Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRTYG1

FILTER: CH. CLASS 60

PEAK DATA: 35.77 G @ 7.04 MS; -29.49 G @ 20.56 MS

B-130

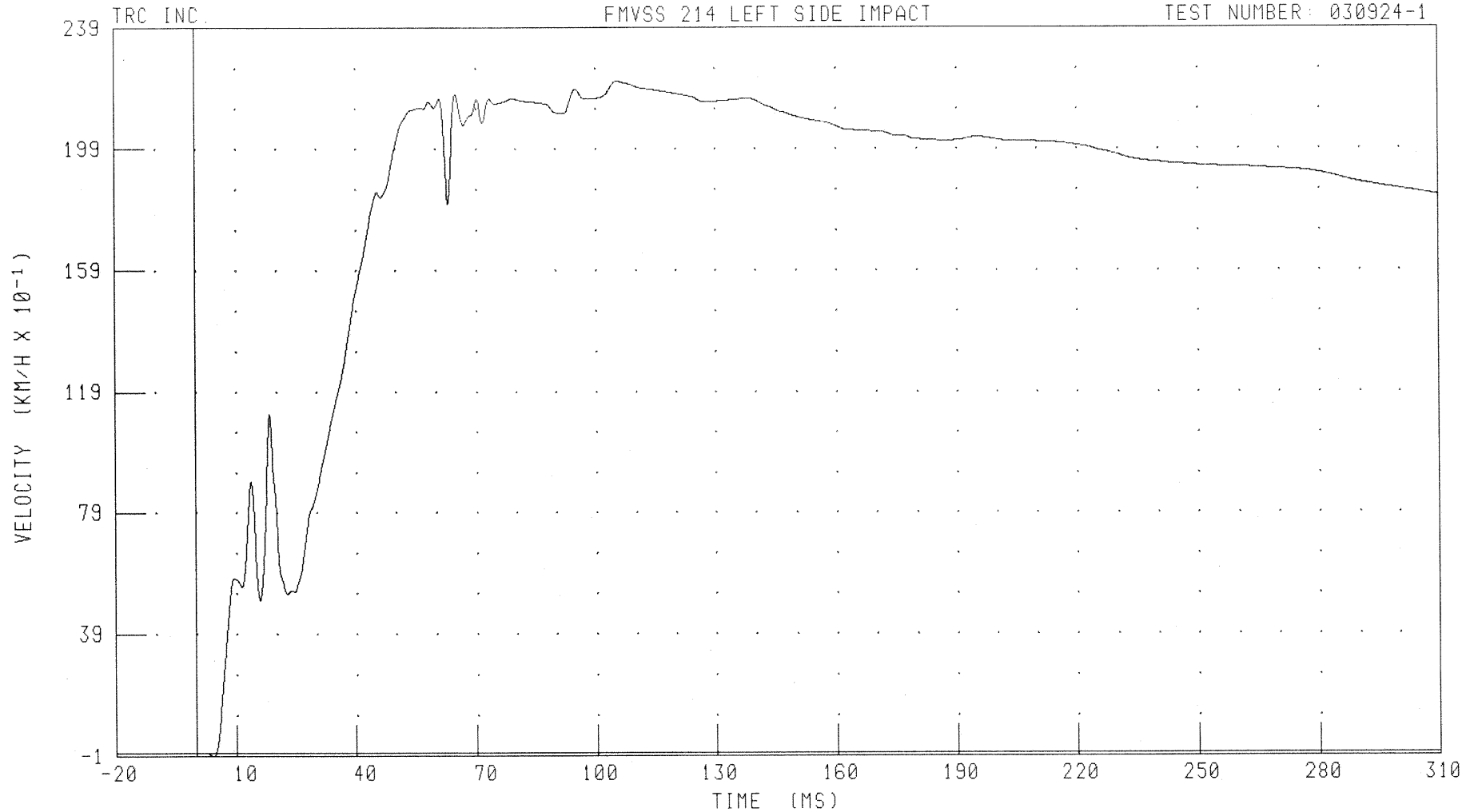
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR SEAT TRACK Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRTYV1

FILTER: CH. CLASS 180

PEAK DATA: 22.15 KM/H @ 105.52 MS; -0.12 KM/H @ 4.24 MS

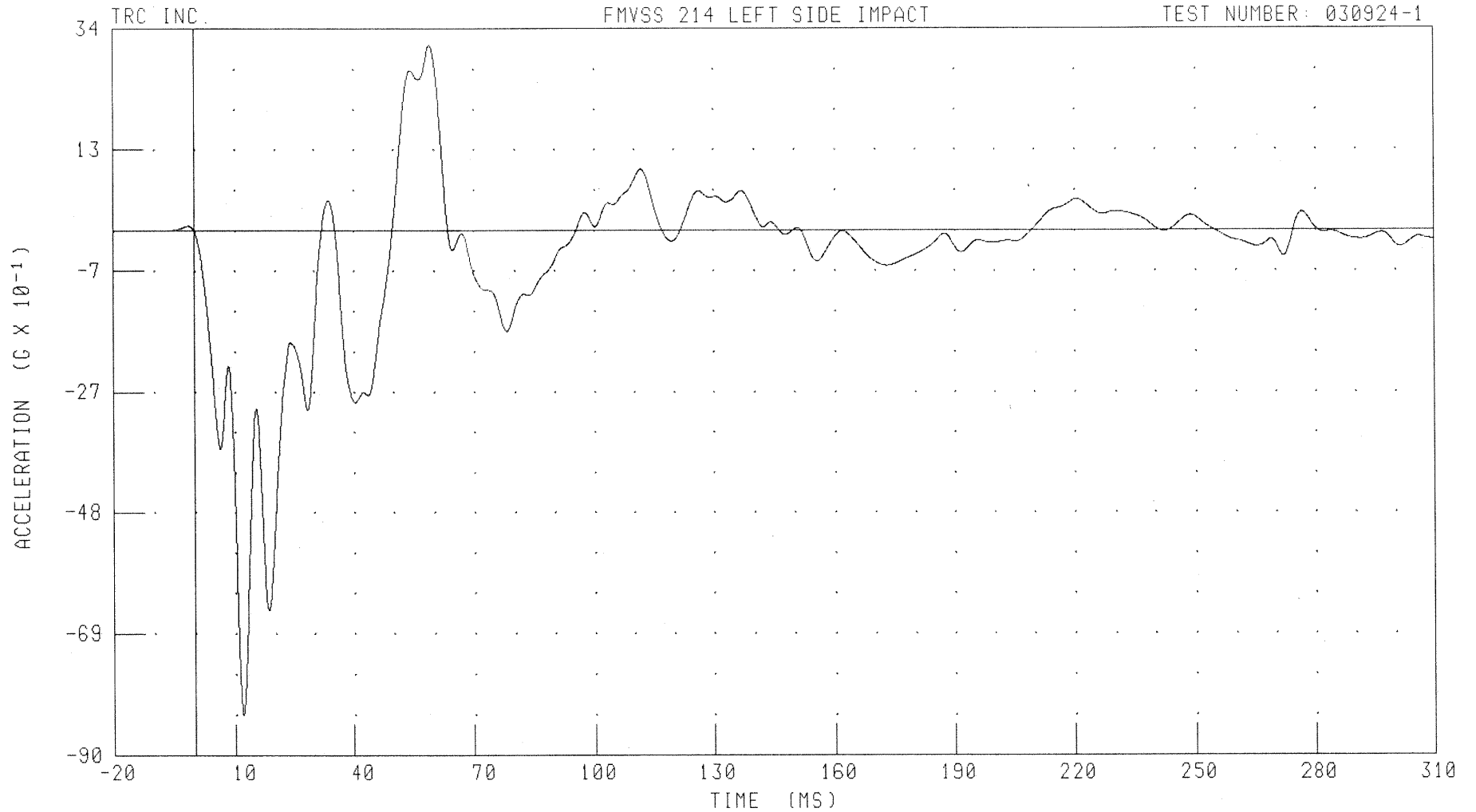
B-131

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: VCGXG1 FILTER: CH CLASS 60

PEAK DATA: 3.21 G @ 59.20 MS; -8.41 G @ 12.00 MS

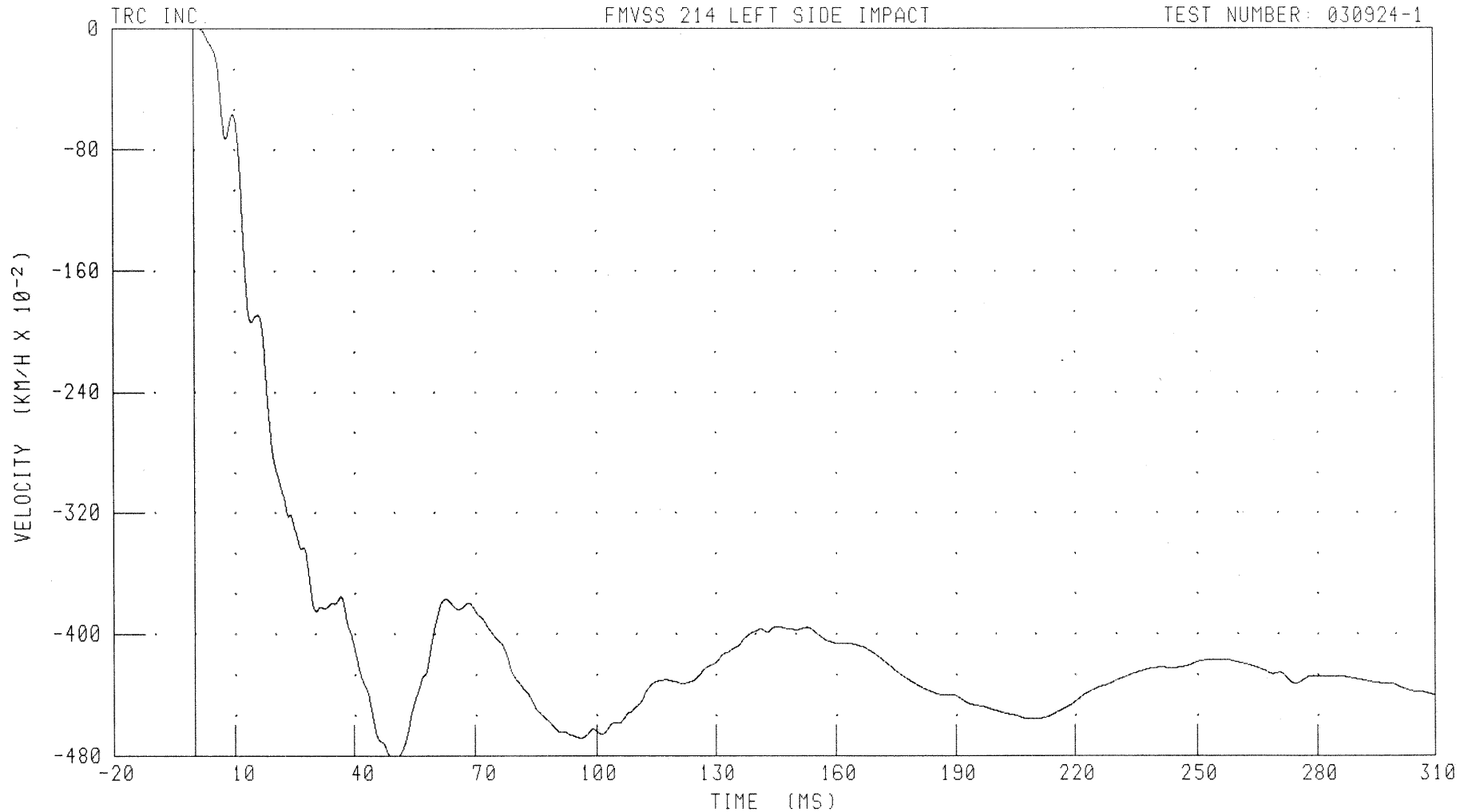
B-132

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: VCGXV1

FILTER: CH. CLASS 180

PEAK DATA: 0.00 KM/H @ 1.28 MS; -4.82 KM/H @ 50.64 MS

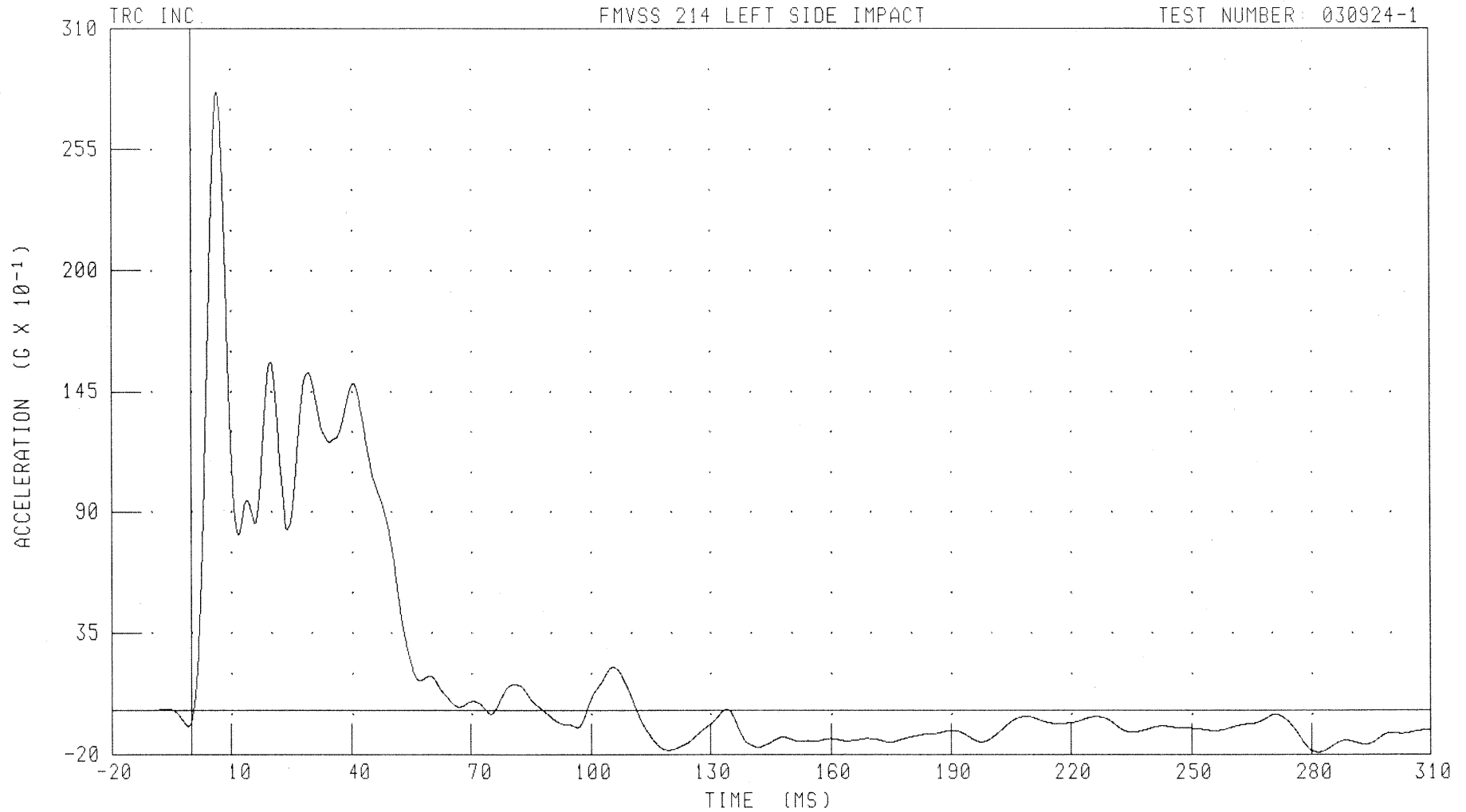
B-133

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: VCCYG1

FILTER: CH. CLASS 60

PEAK DATA: 28.12 G @ 6.48 MS; -1.90 G @ 281.44 MS

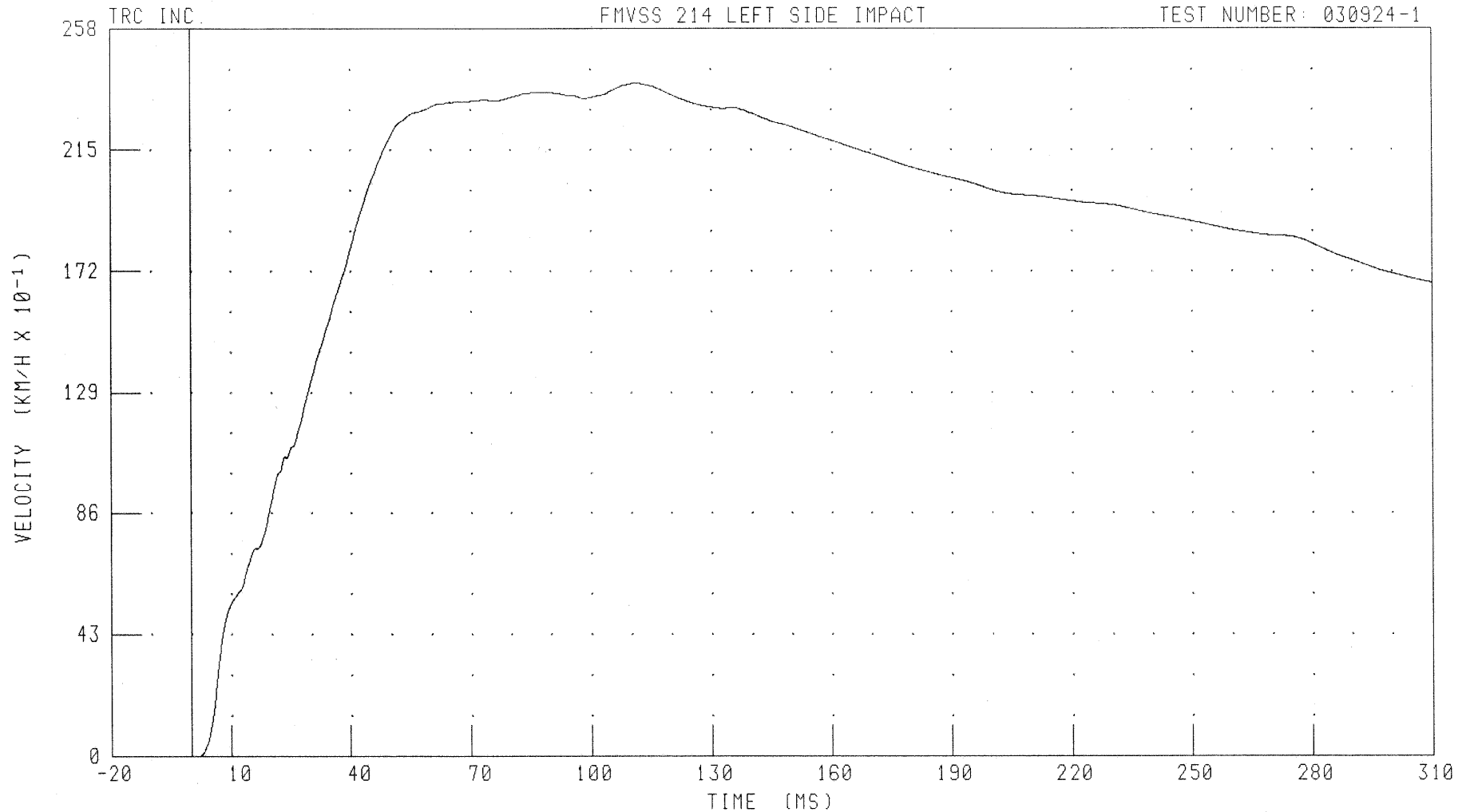
B-134

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: VCGYV1

FILTER: CH. CLASS 180

PEAK DATA: 23.87 KM/H @ 111.12 MS; 0.00 KM/H @ 1.52 MS

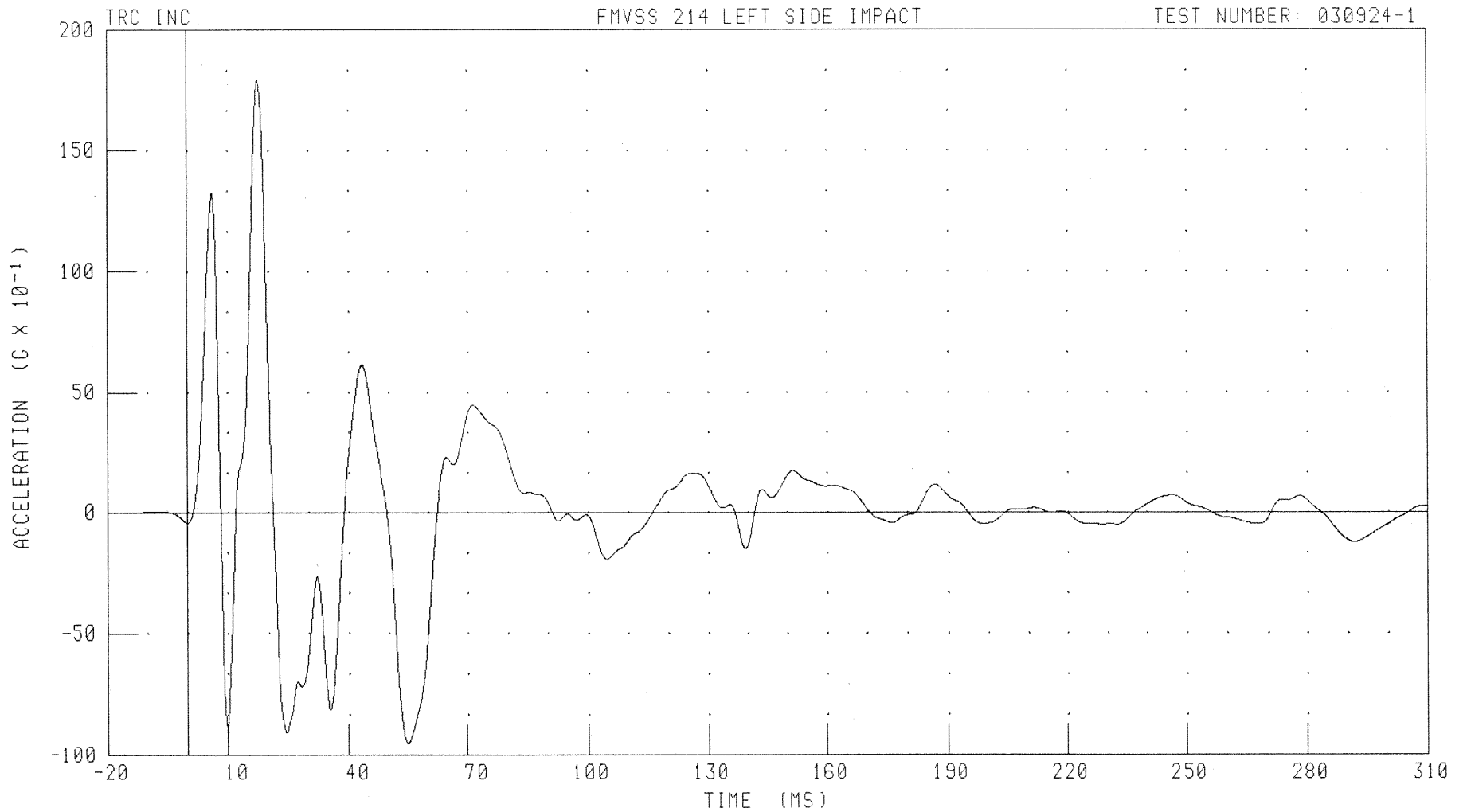
B-135

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: VCGZG1

FILTER: CH. CLASS 60

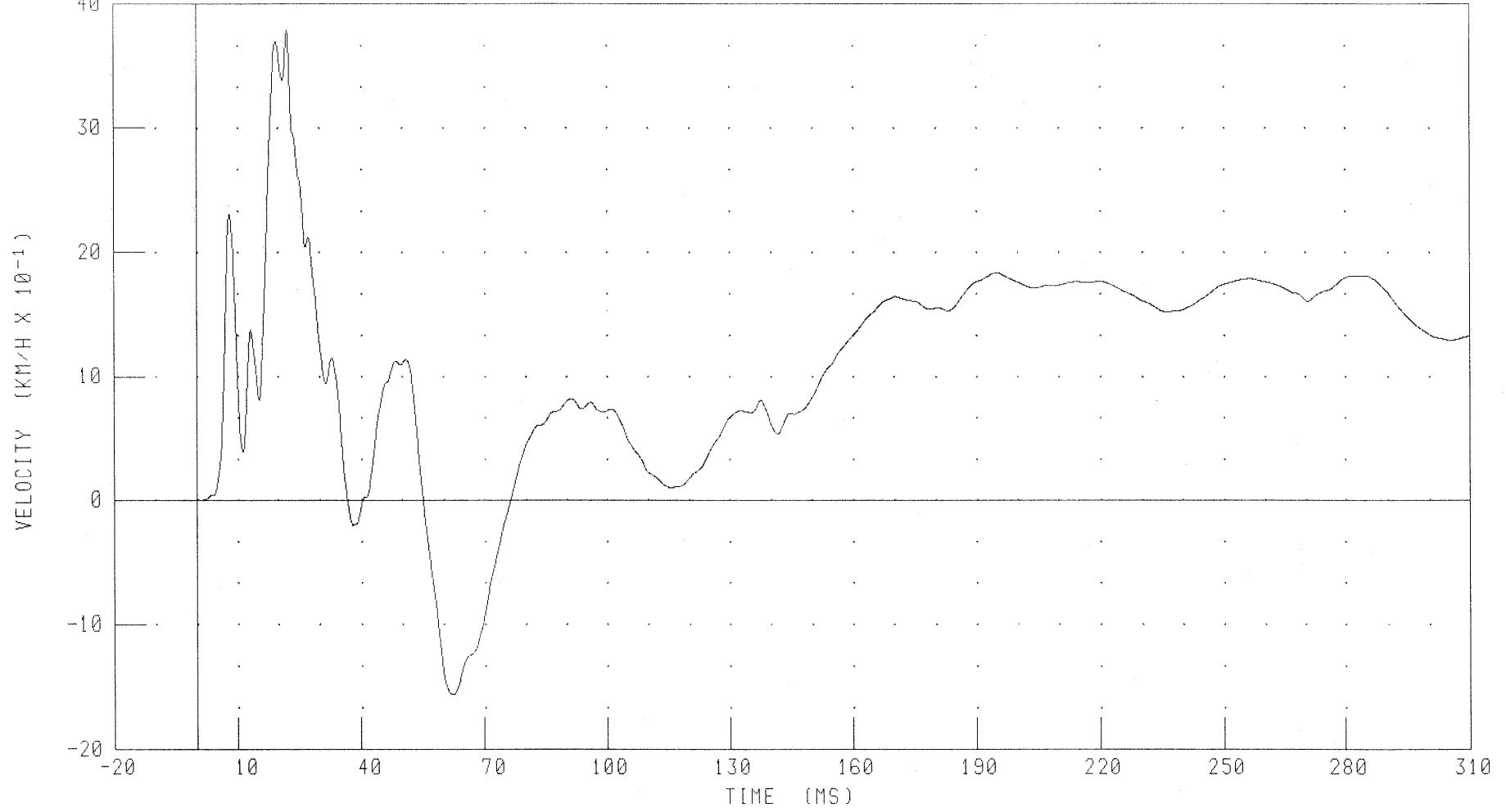
PEAK DATA: 17.95 G @ 17.52 MS; -9.53 G @ 54.80 MS

B-136

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL: VCGZV1 FILTER: CH. CLASS 180 PEAK DATA: 3.79 KM/H @ 22.40 MS; -1.56 KM/H @ 62.40 MS

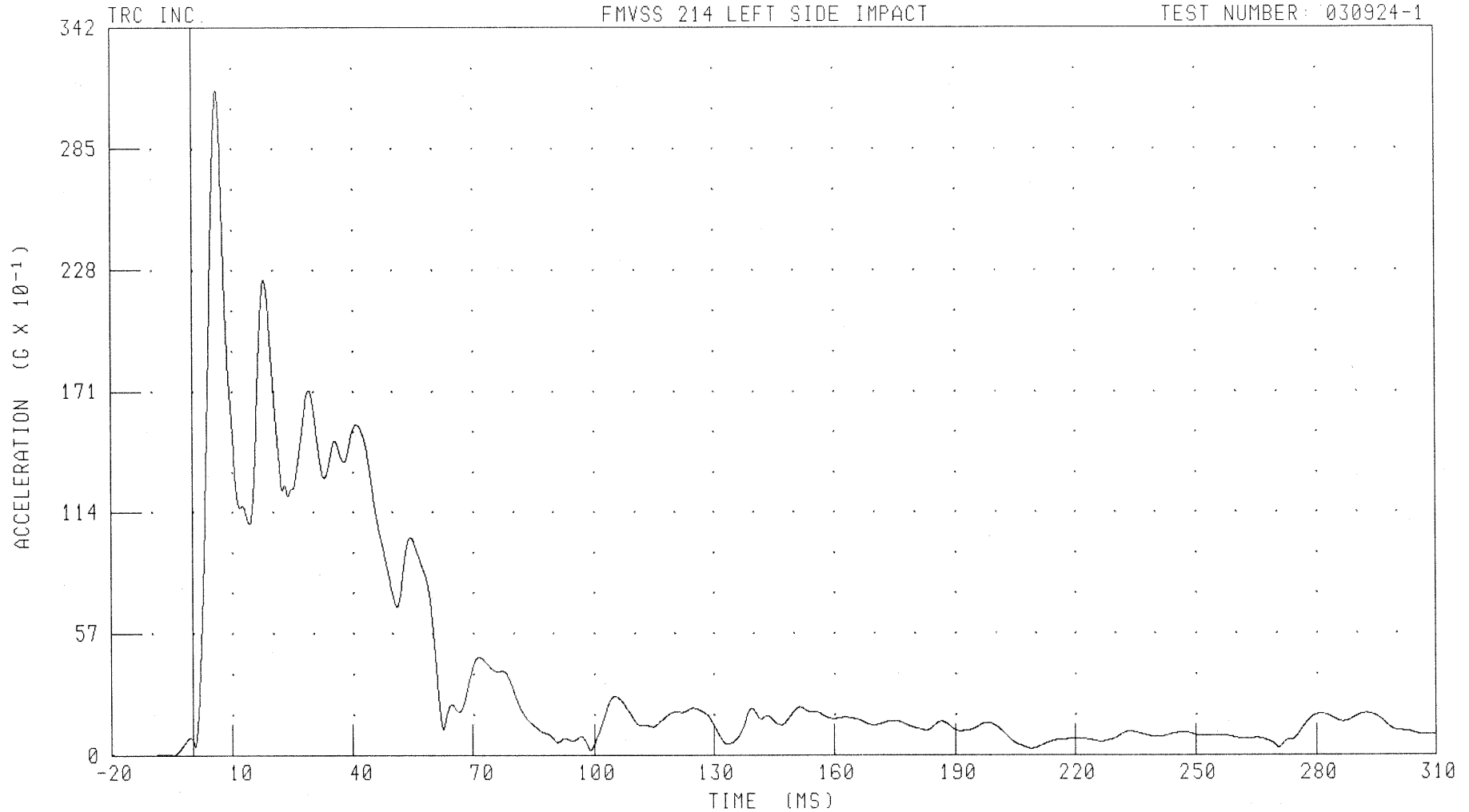
B-137

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: VCGRG1

FILTER: CH. CLASS 60

PEAK DATA: 31.26 G @ 6.40 MS; 0.00 G @ -11.84 MS

B-138

030924-1

MDB Instrumentation Plots

Acceleration Data - Filter Class 60

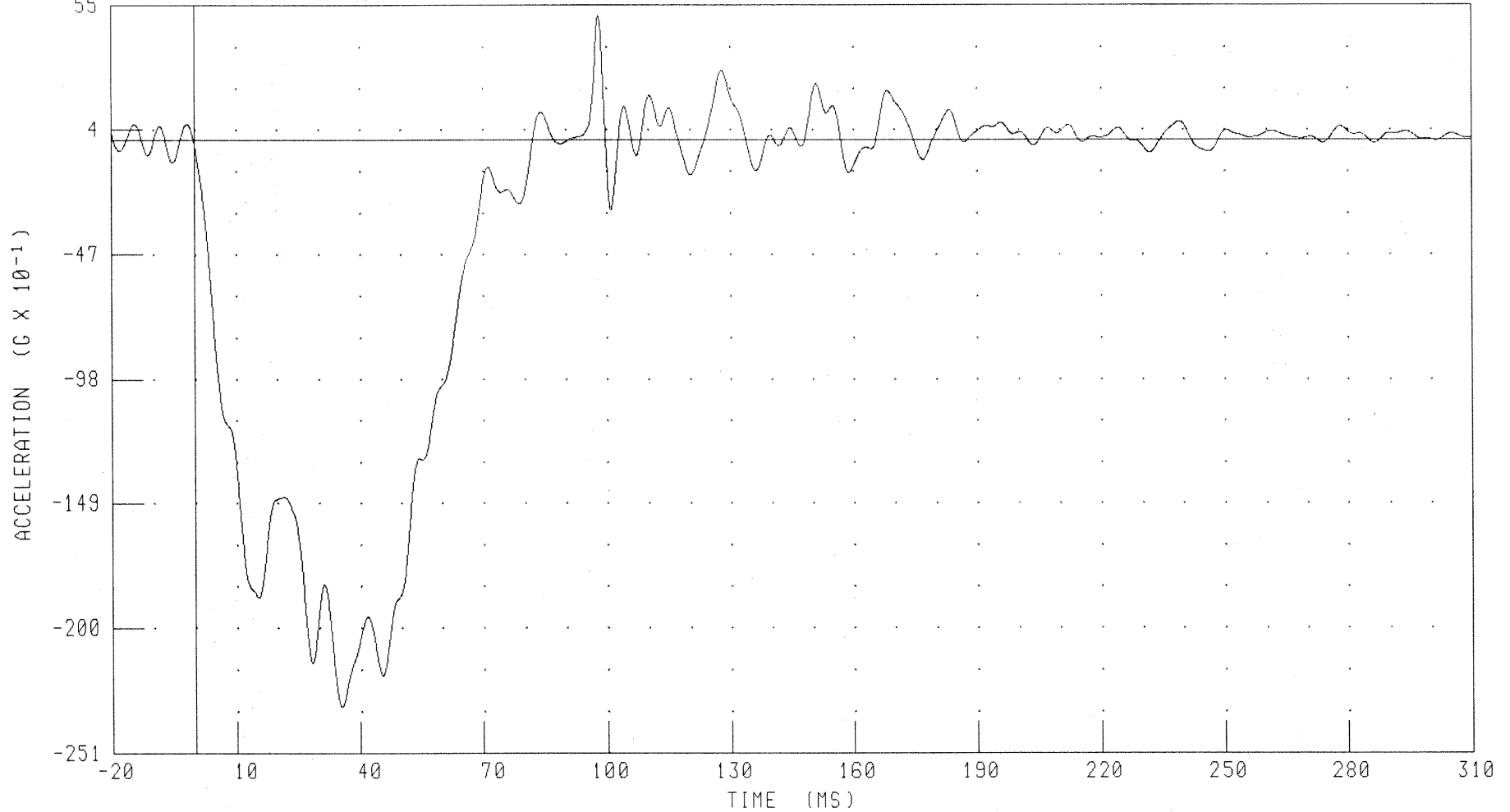
Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY X-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGXG1

FILTER: CH. CLASS 60

PEAK DATA: 5.07 G @ 98.16 MS; -23.23 G @ 35.44 MS

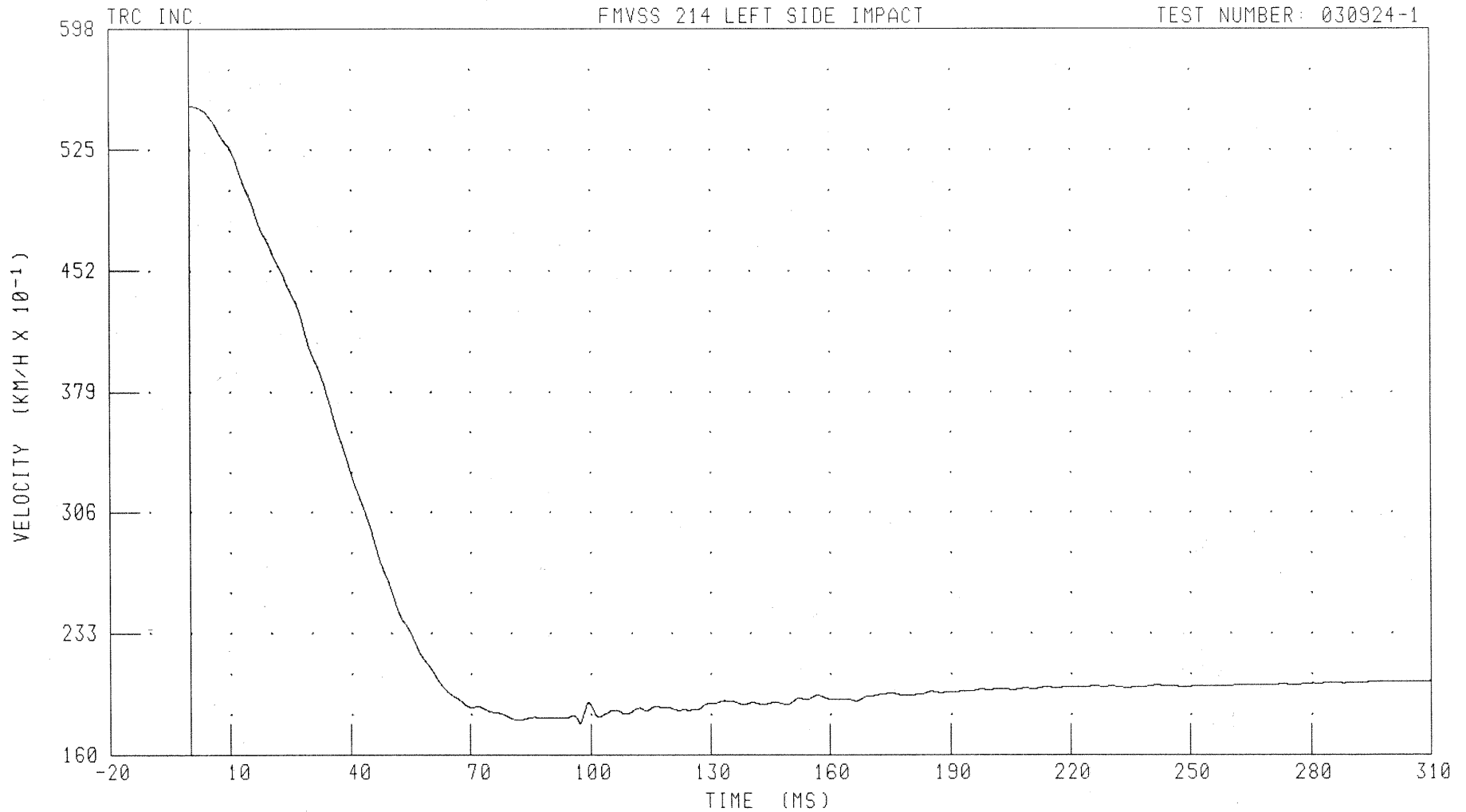
B-140

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGXV1

FILTER: CH. CLASS 180

PEAK DATA: 55.20 KM/H @ 0.00 MS, 17.85 KM/H @ 97.36 MS

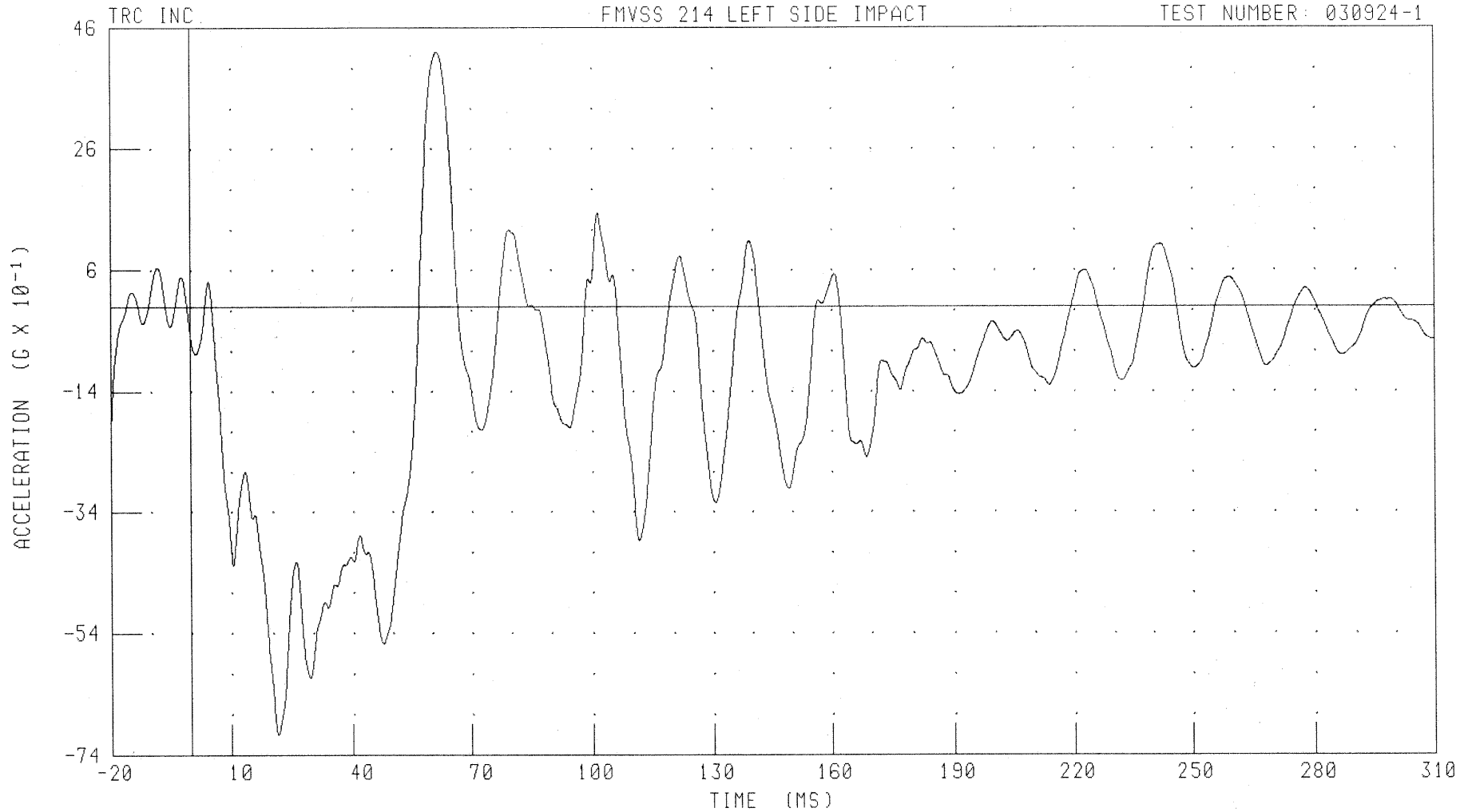
B-141

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGYG1

FILTER: CH. CLASS 60

PEAK DATA: 4.20 G @ 61.60 MS; -7.07 G @ 21.36 MS

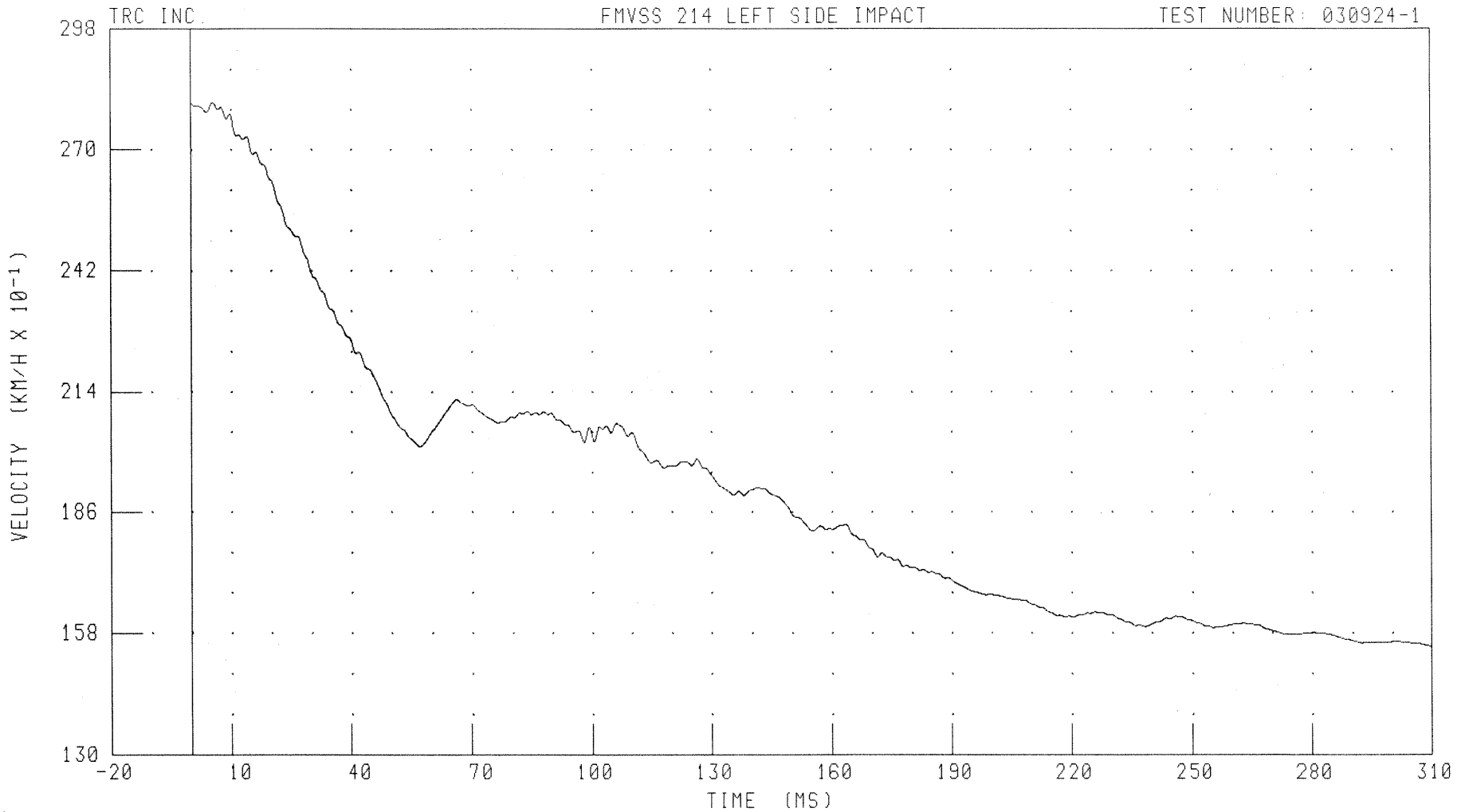
B-142

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGYV1

FILTER: CH. CLASS 180

PEAK DATA: 28.10 KM/H @ 5.44 MS; 15.48 KM/H @ 310.00 MS

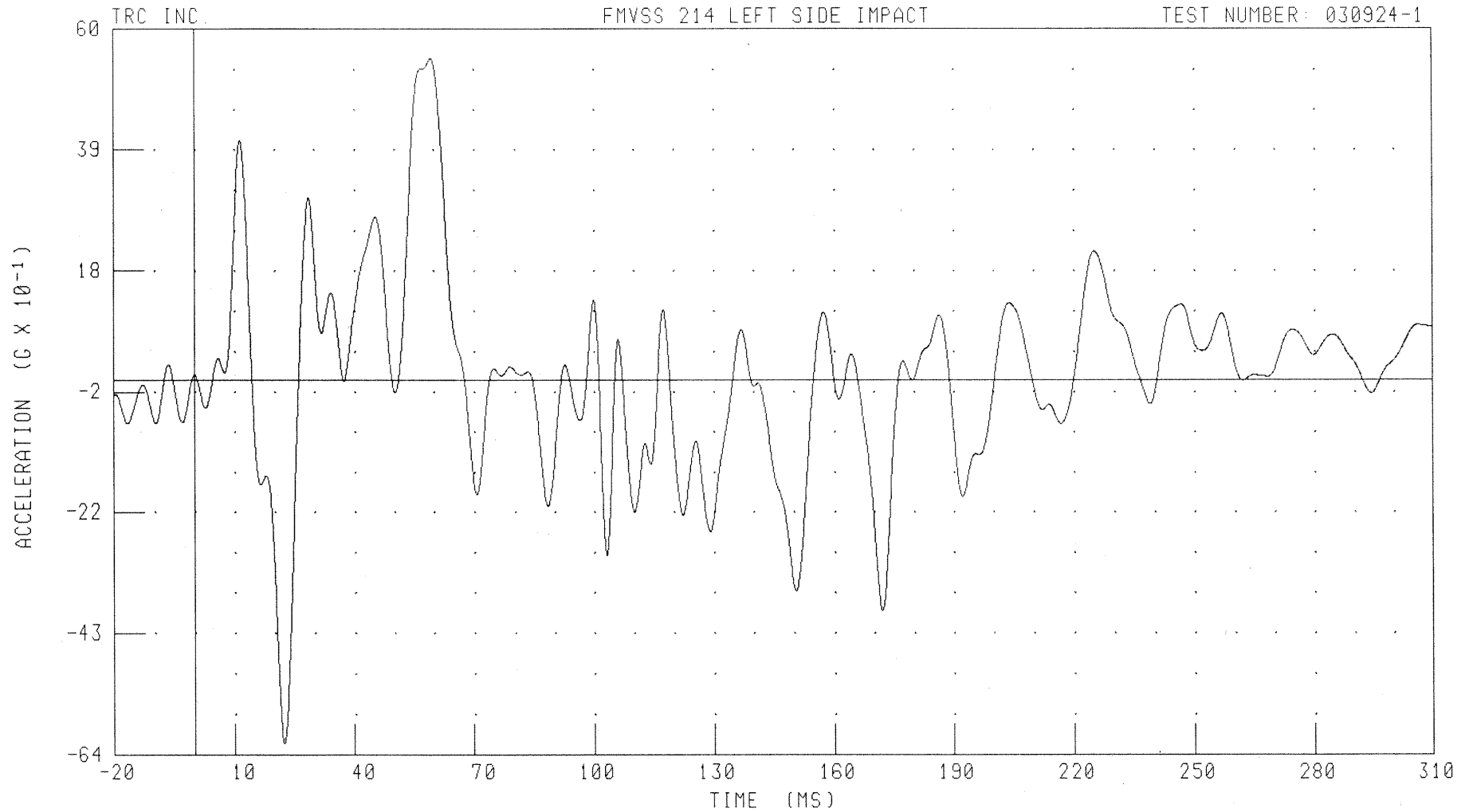
B-143

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGZG1

FILTER: CH. CLASS 60

PEAK DATA: 5.59 G @ 59.52 MS; -6.31 G @ 22.40 MS

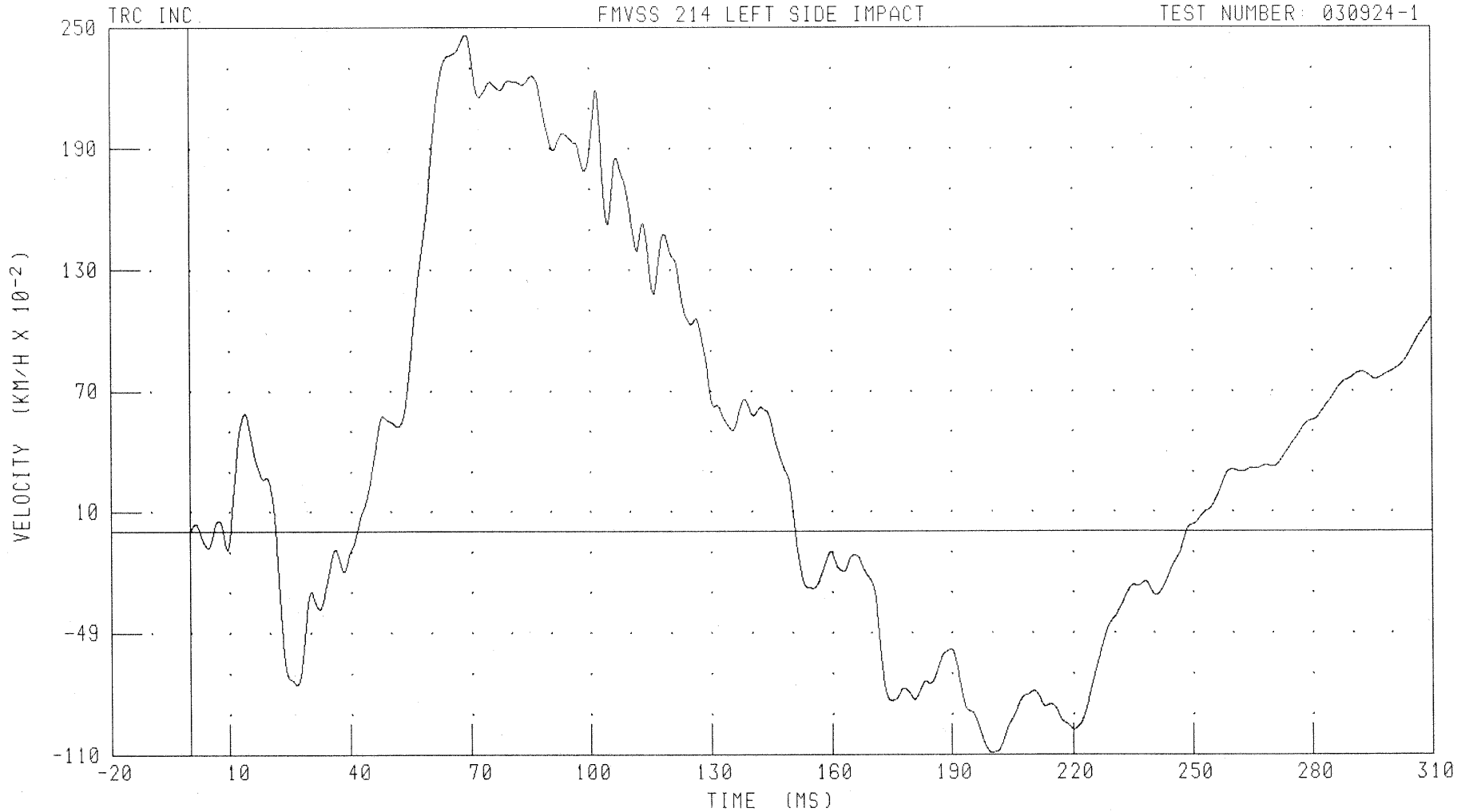
B-144

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGZV1 FILTER: CH. CLASS 180

PEAK DATA: 2.46 KM/H @ 68.96 MS; -1.09 KM/H @ 199.92 MS

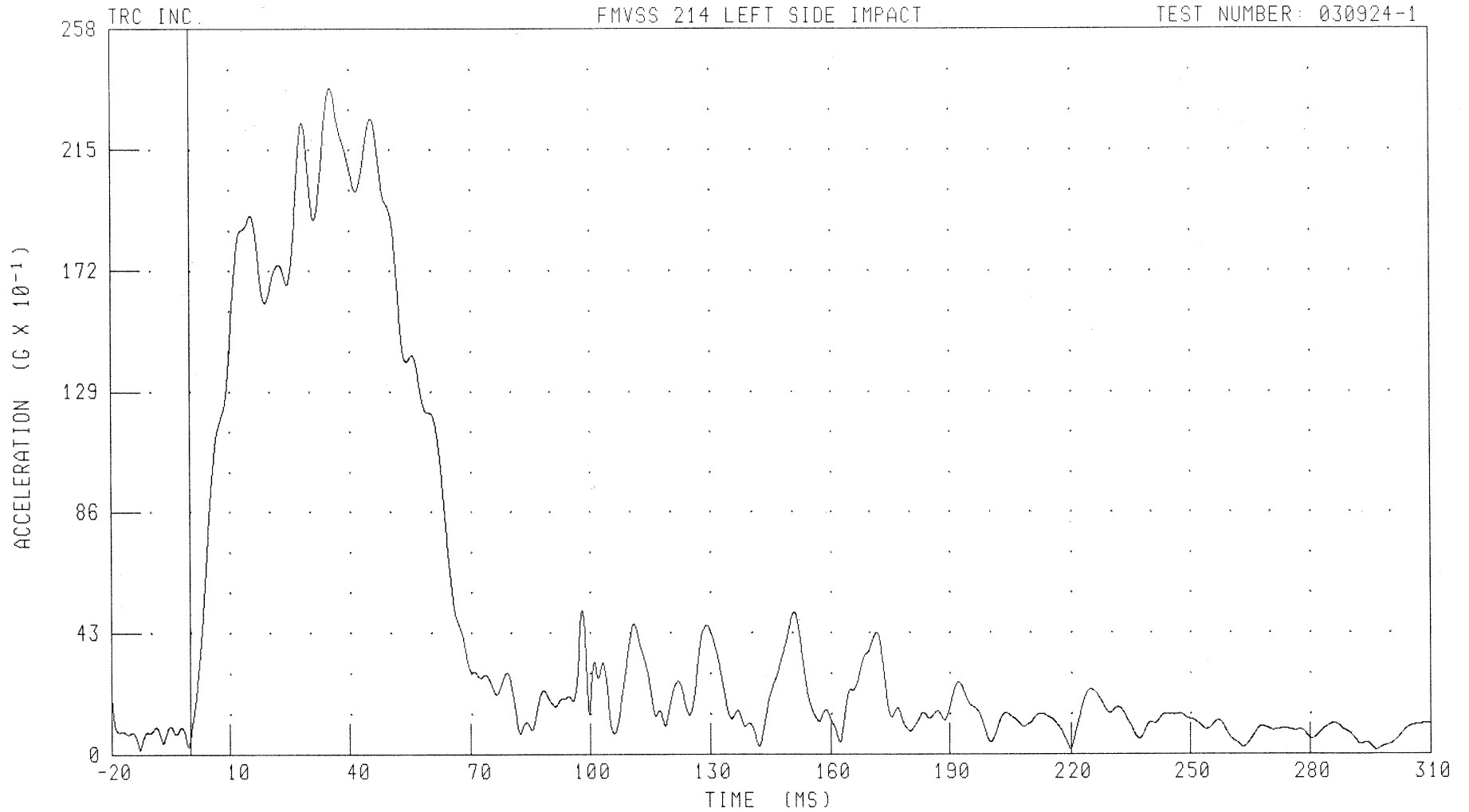
B-145

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
MDB CENTER OF GRAVITY RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: BCGRG1

FILTER: CH. CLASS 60

PEAK DATA: 23.71 G @ 35.36 MS; 0.14 G @ -12.88 MS

B-146

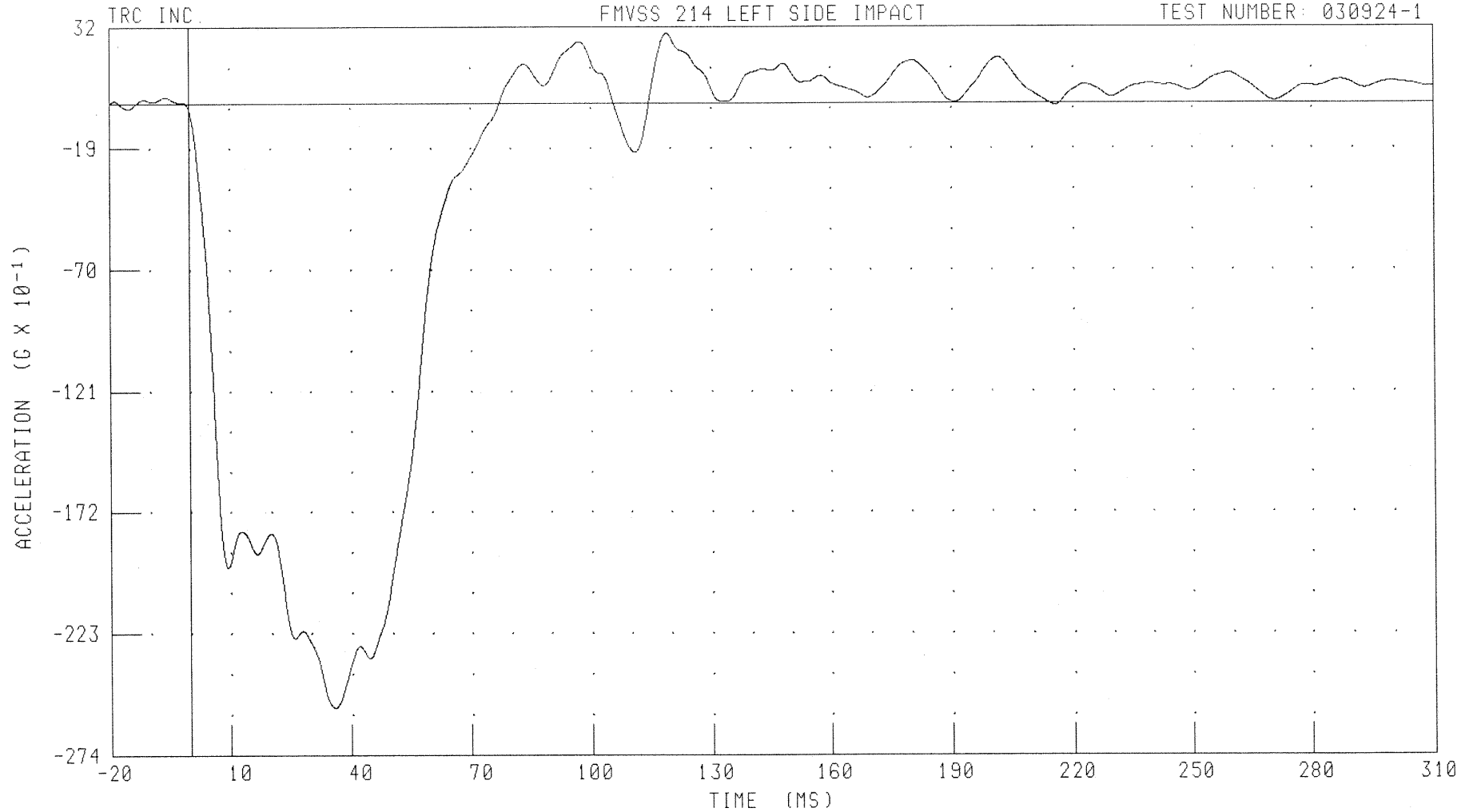
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MDB LEFT REAR X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRRXG1

FILTER: CH. CLASS 60

PEAK DATA: 2.94 G @ 119.36 MS, -25.41 G @ 35.92 MS

B-147

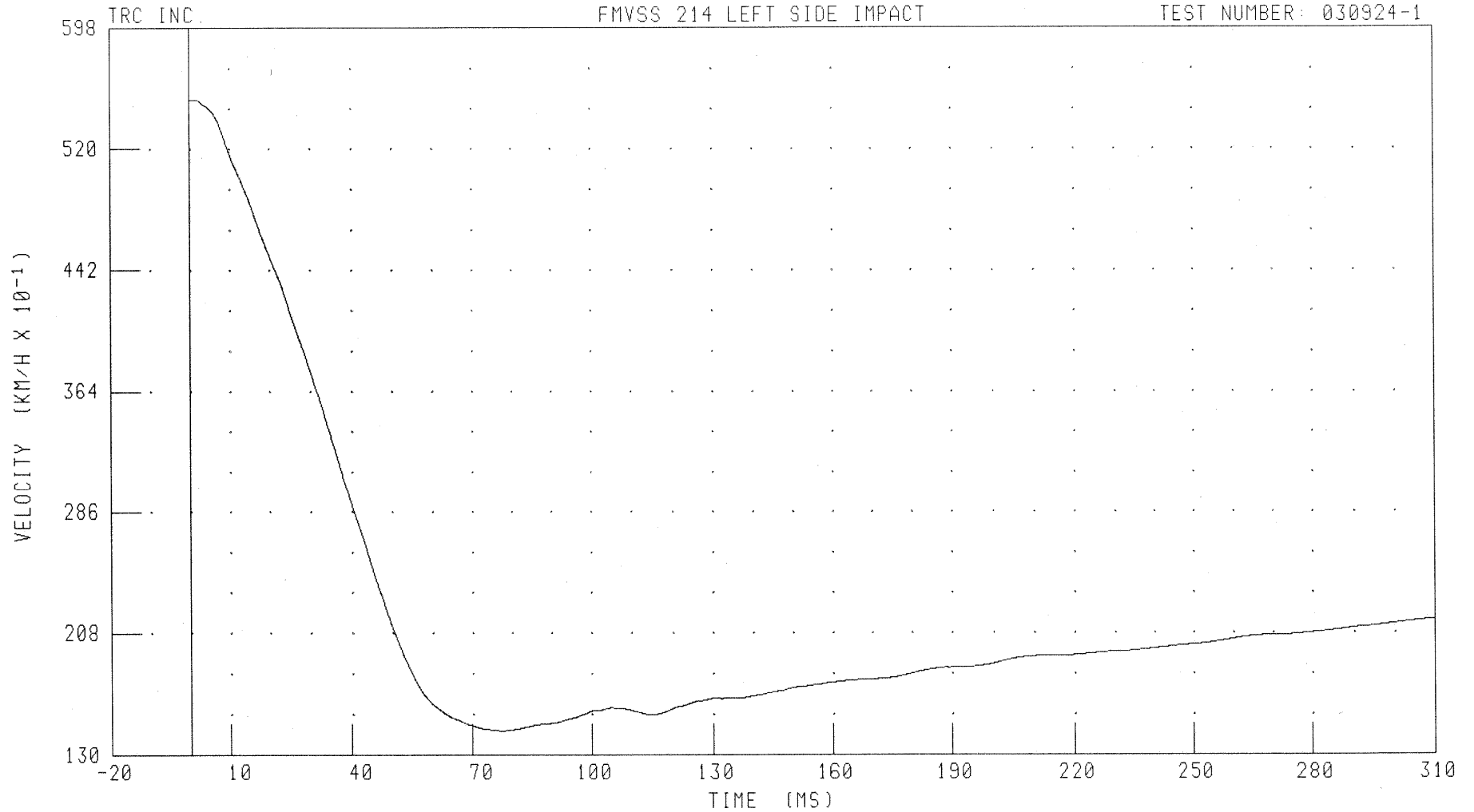
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MDB LEFT REAR X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRRXV1 FILTER: CH. CLASS 180

PEAK DATA: 55.22 KM/H @ 1.36 MS; 14.52 KM/H @ 77.52 MS

B-148

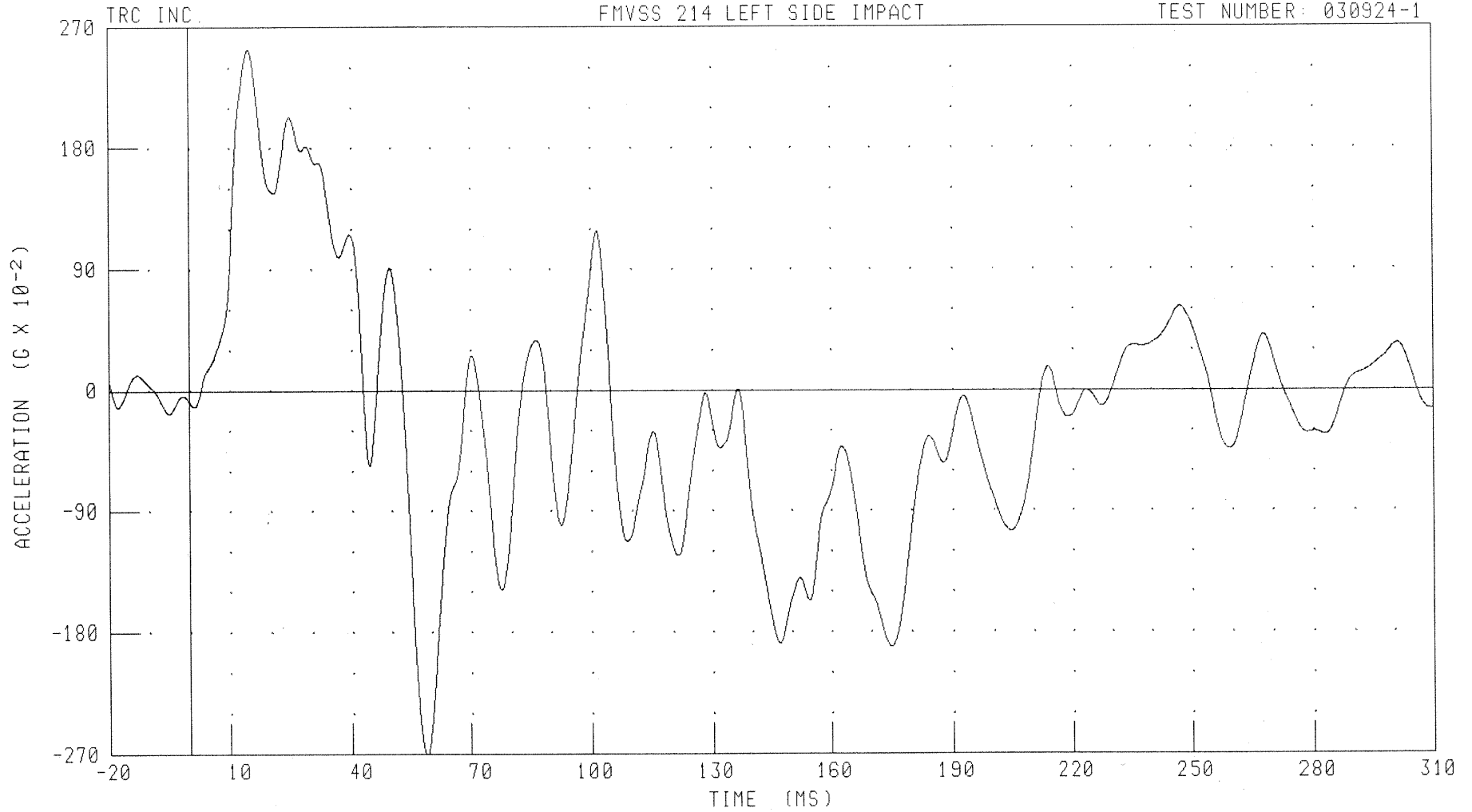
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MOB LEFT REAR Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRRYG1

FILTER: CH. CLASS 60

PEAK DATA: 2.53 G @ 14.88 MS; -2.71 G @ 58.72 MS

B-149

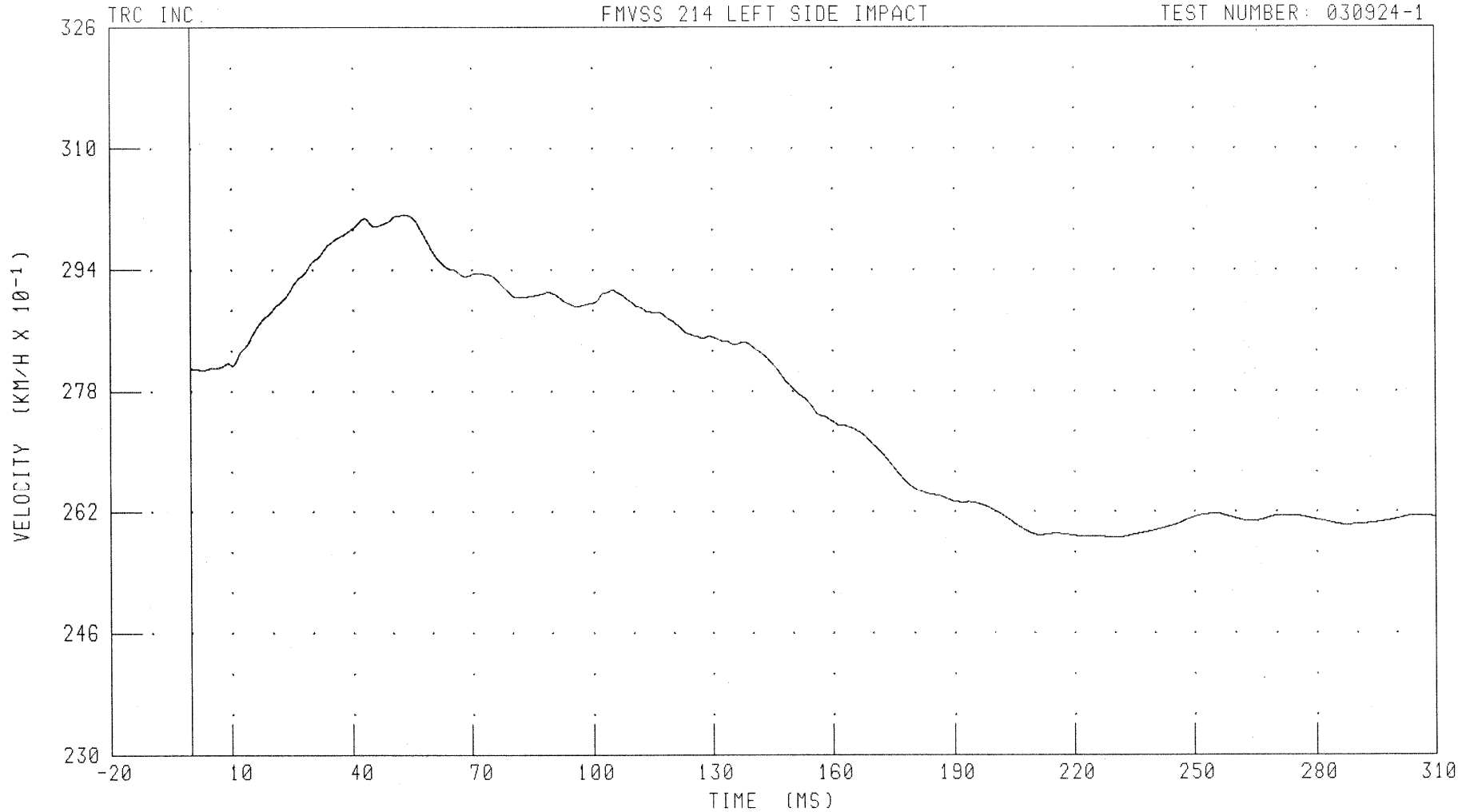
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MOB LEFT REAR Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRRYV1

FILTER: CH. CLASS 180

PEAK DATA: 30.13 KM/H @ 53.28 MS; 25.85 KM/H @ 230.16 MS

B-150

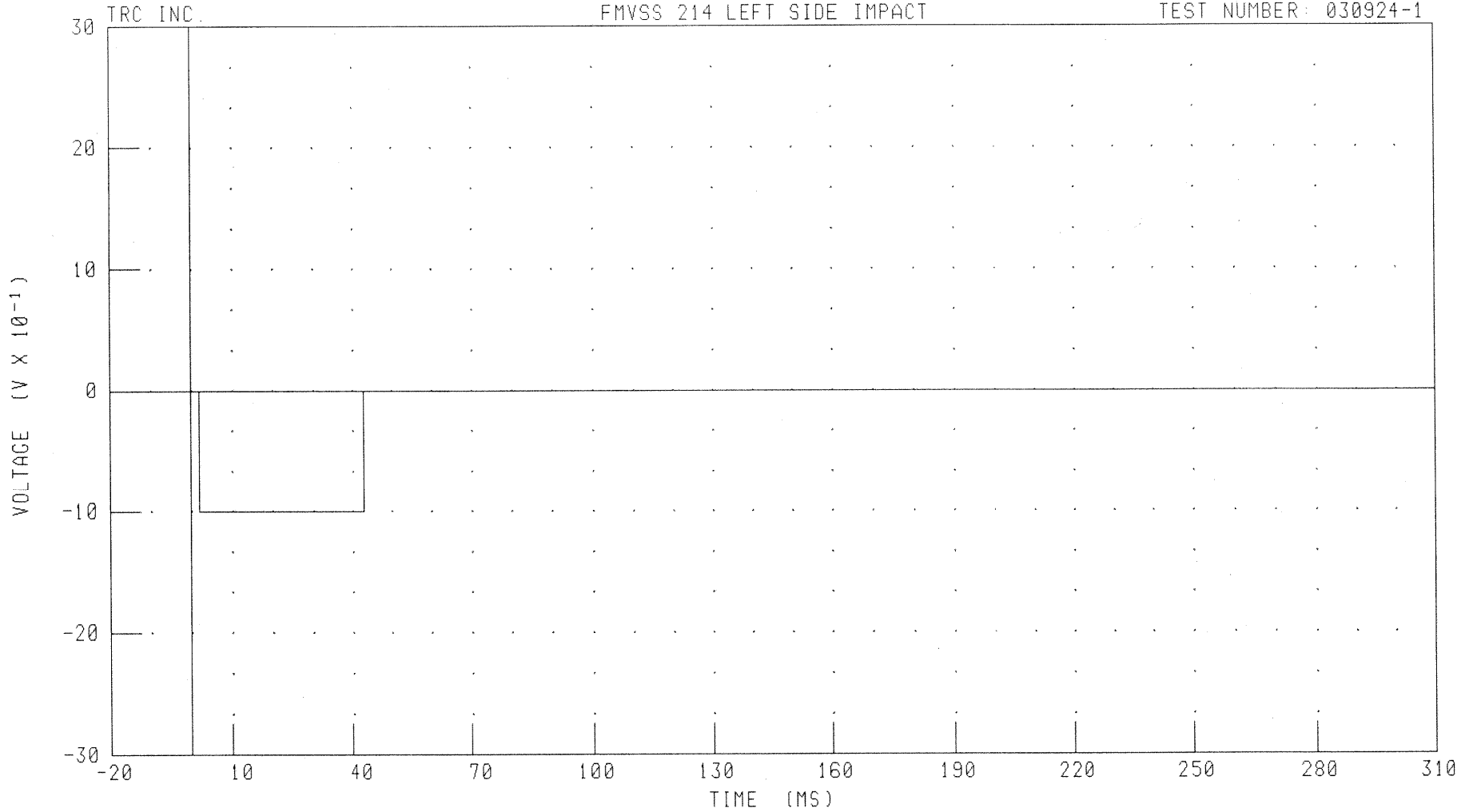
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MDB RIGHT SIDE CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: MDBR1

FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 2.16 MS

B-151

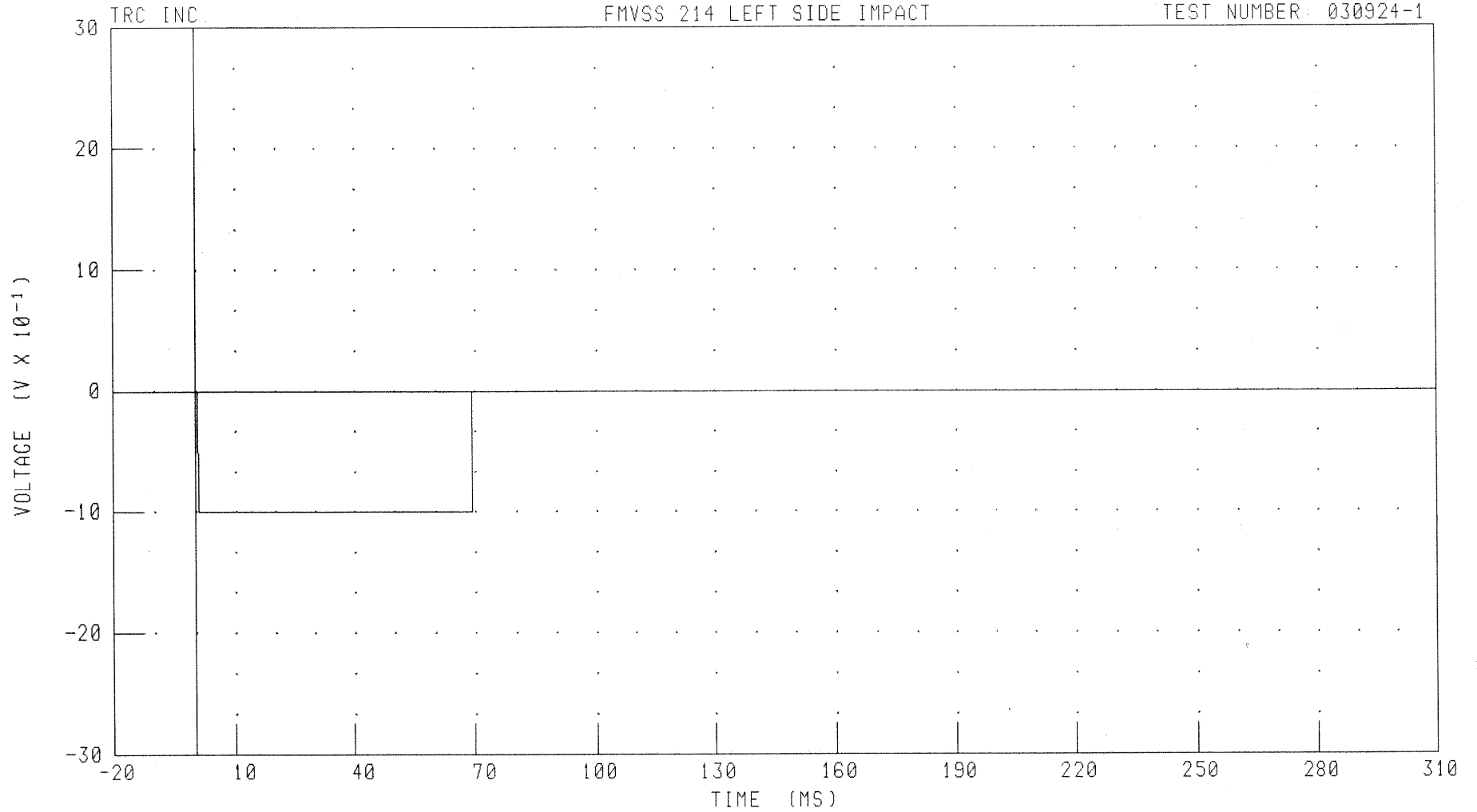
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MDB LEFT SIDE CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: MDBL1

FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 0.72 MS

B-152

030924-1

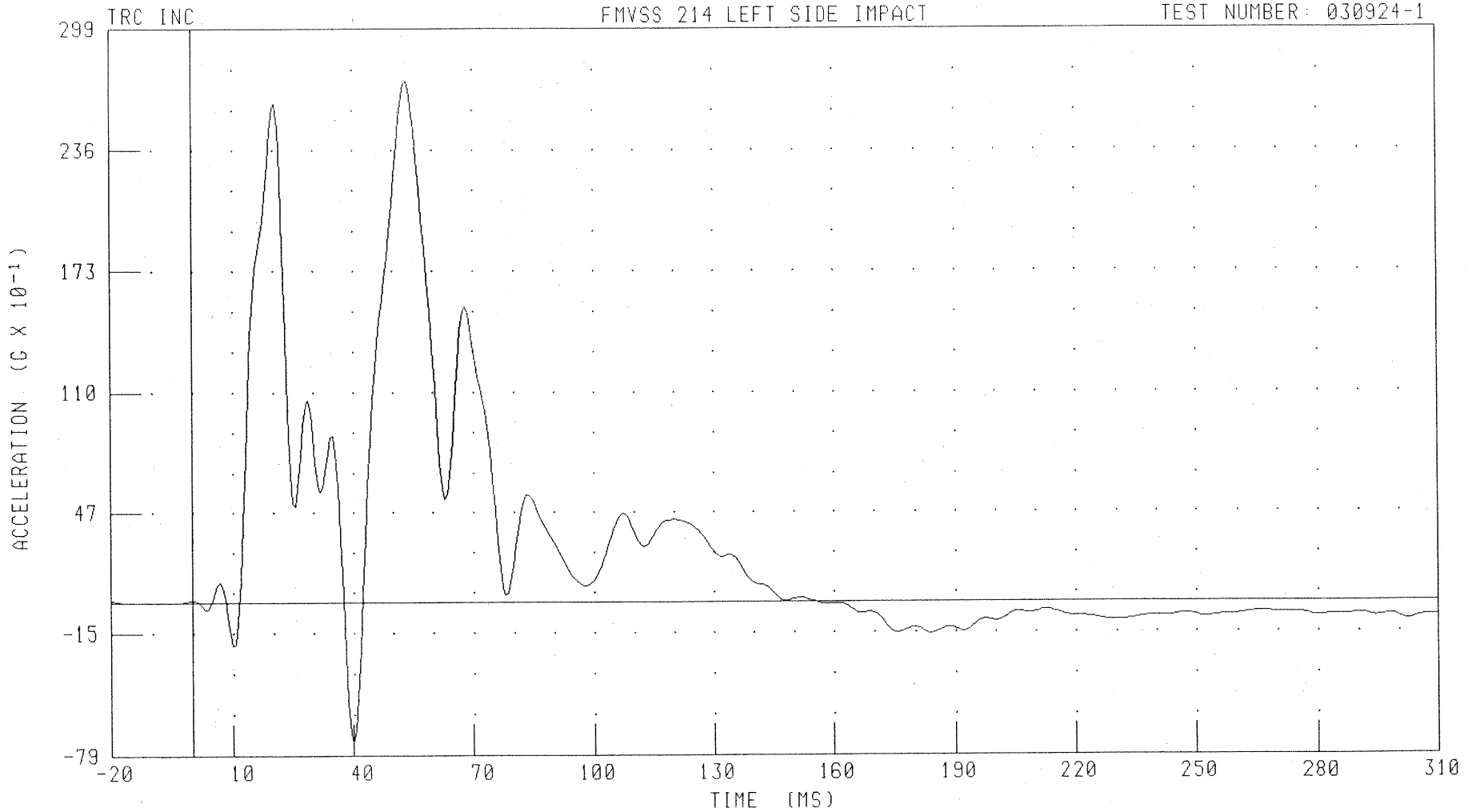
Driver and Passenger Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYG1 FILTER: FIR 100

PEAK DATA: 27.24 G @ 53.75 MS; -7.27 G @ 40.00 MS

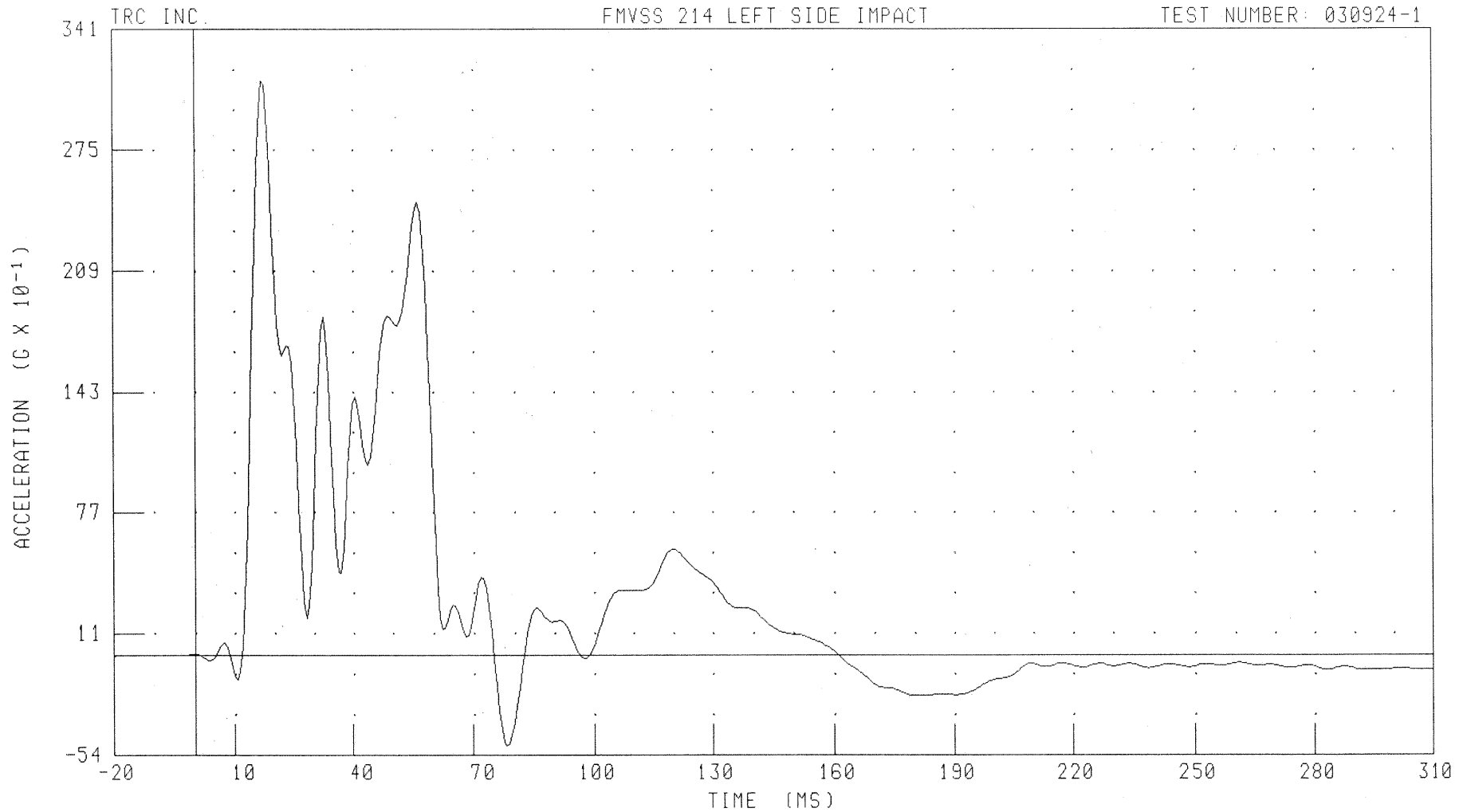
B-154

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYG1 FILTER: FIR 100

PEAK DATA: 31.44 G @ 16.87 MS; -4.93 G @ 78.13 MS

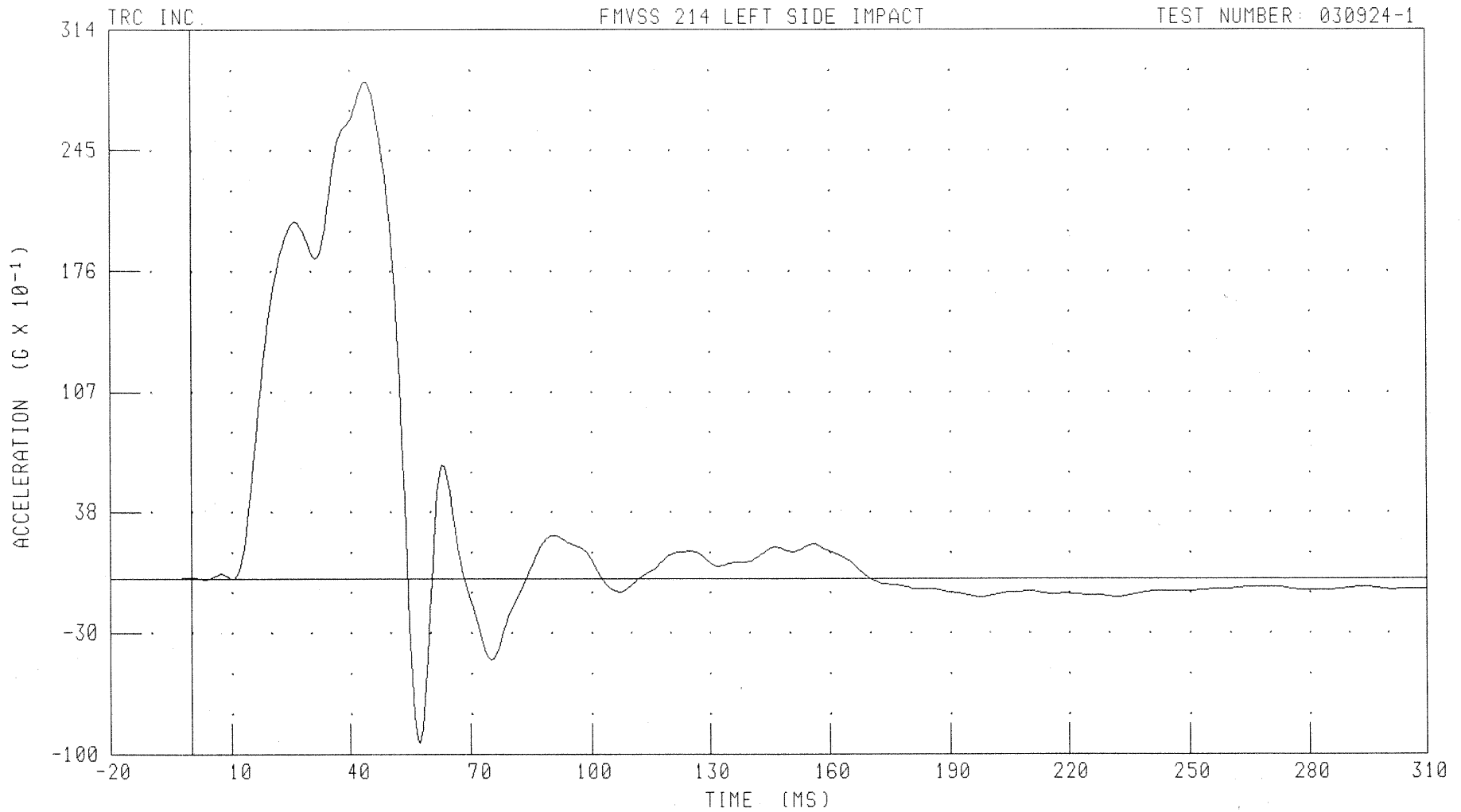
B-155

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YC1 FILTER: FIR 100

PEAK DATA: 28.44 G @ 43.75 MS; -9.34 G @ 57.50 MS

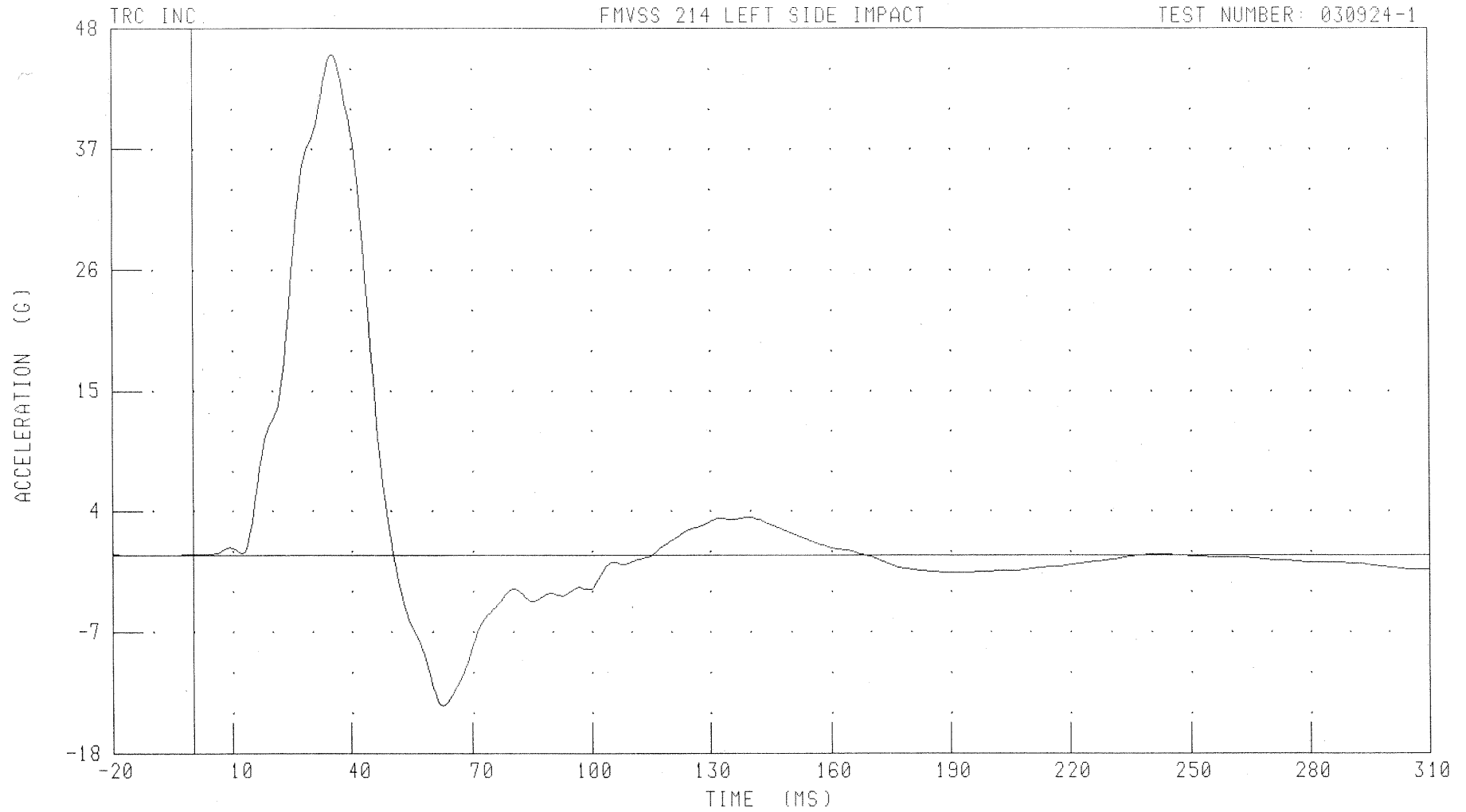
B-156

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYG1 FILTER: FIR 100

PEAK DATA: 45.62 G @ 35.00 MS; -13.69 G @ 62.50 MS

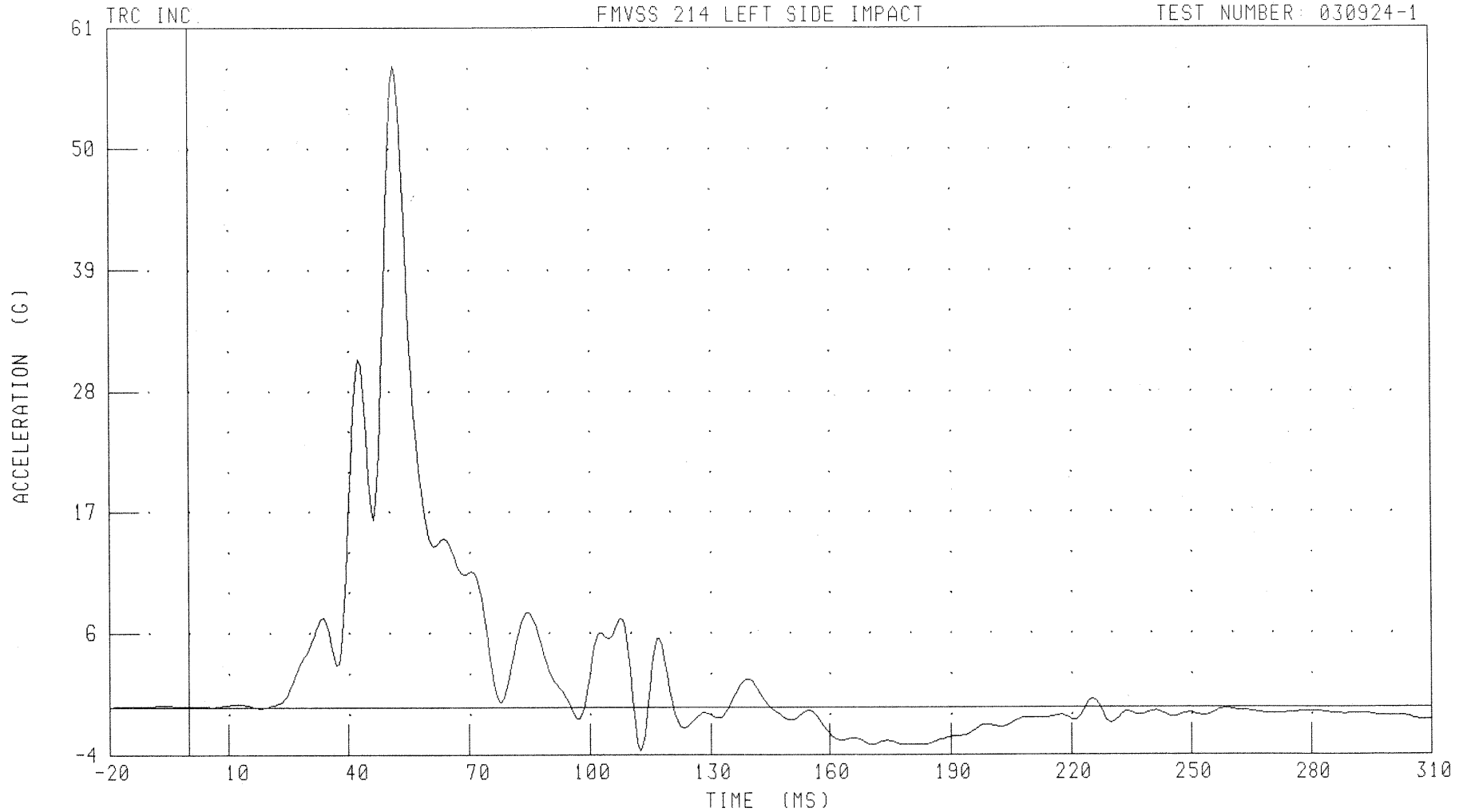
B-157

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYG4 FILTER: FIR 100

PEAK DATA: 58.24 G @ 51.25 MS; -3.97 G @ 112.50 MS

B-158

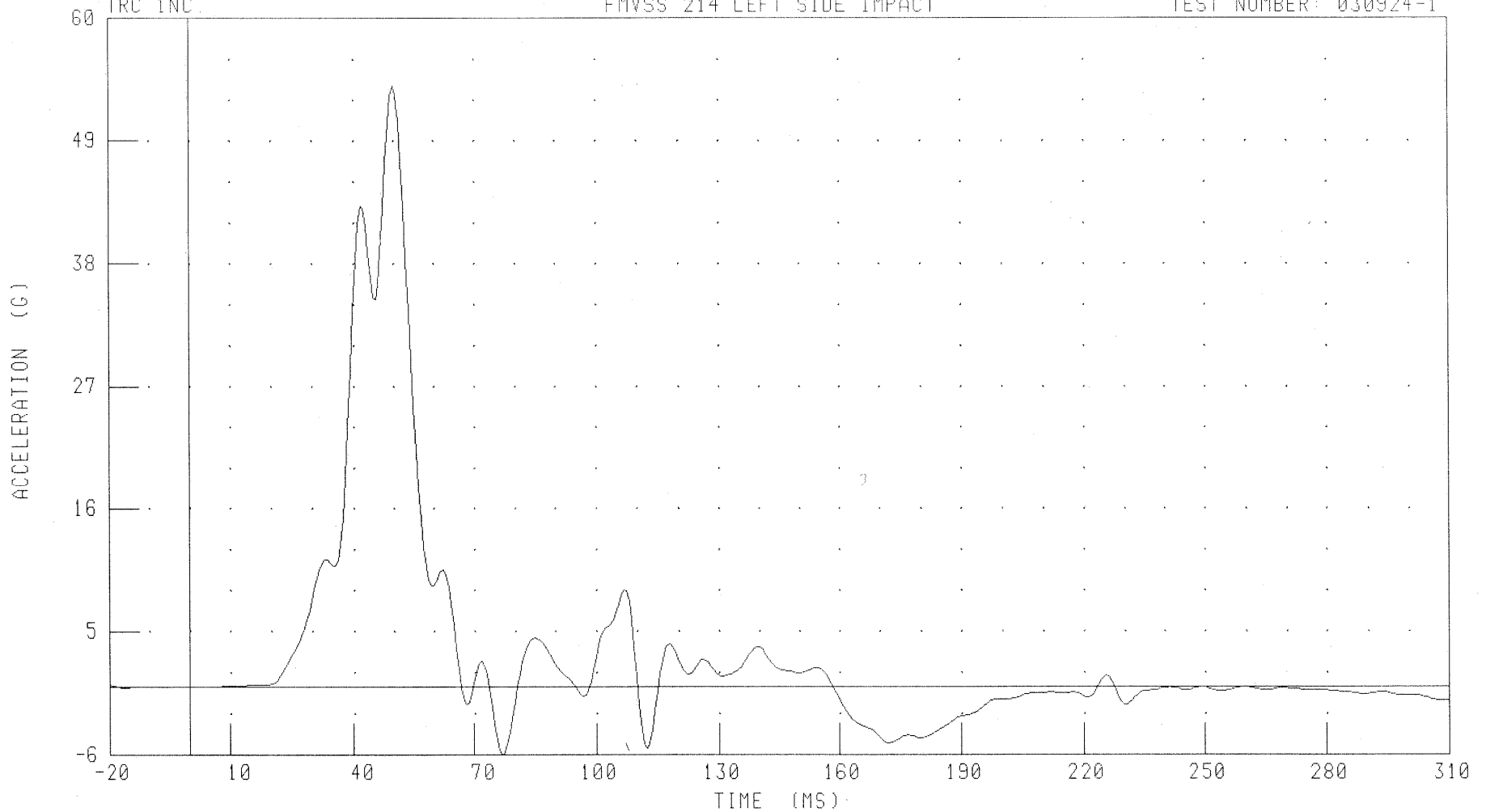
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYG4 FILTER: FIR 100

PEAK DATA: 53.94 G @ 50.00 MS; -5.99 G @ 76.88 MS

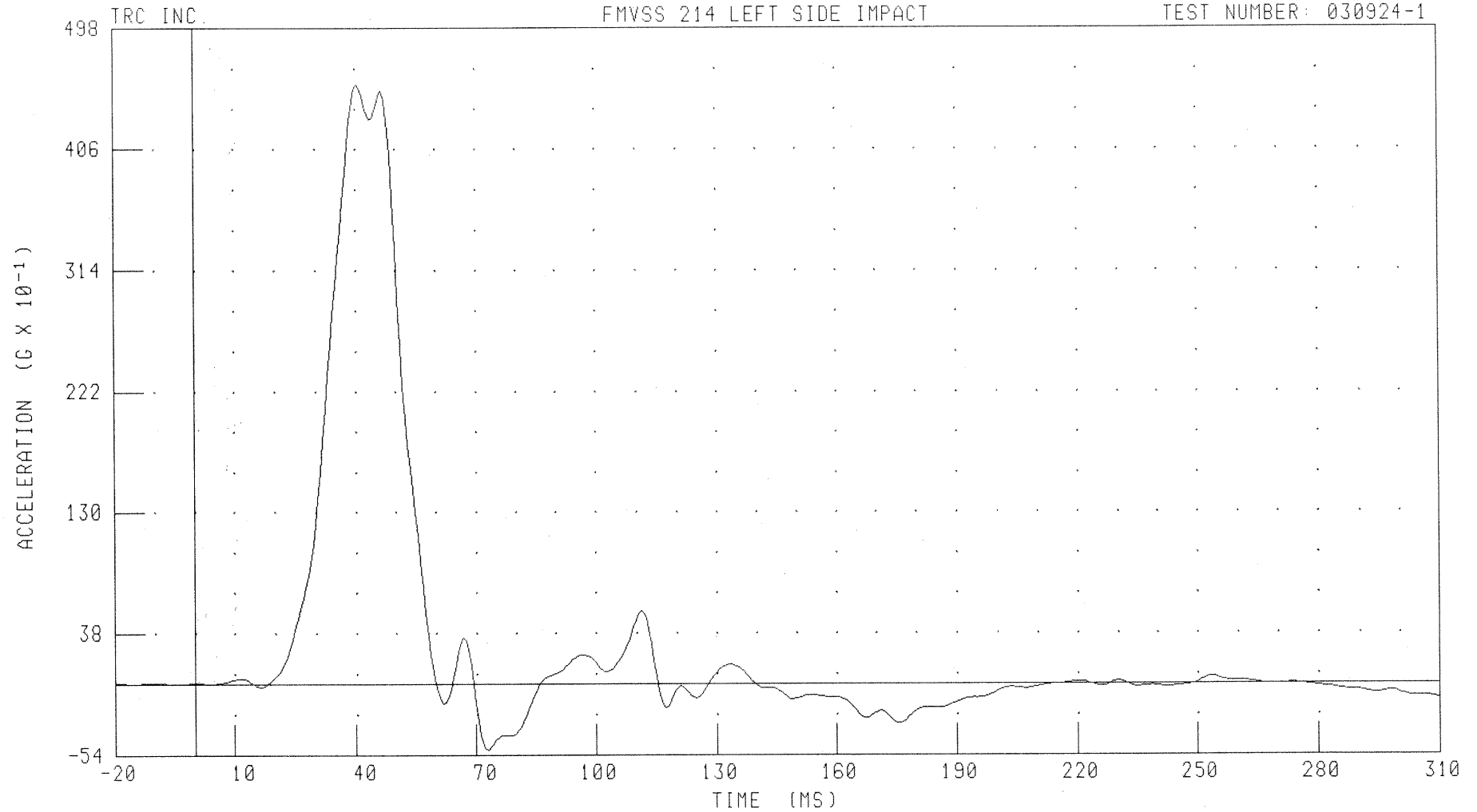
B-159

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YG4 FILTER: FIR 100

PEAK DATA: 45.53 G @ 40.63 MS, -4.98 G @ 73.13 MS

B-160

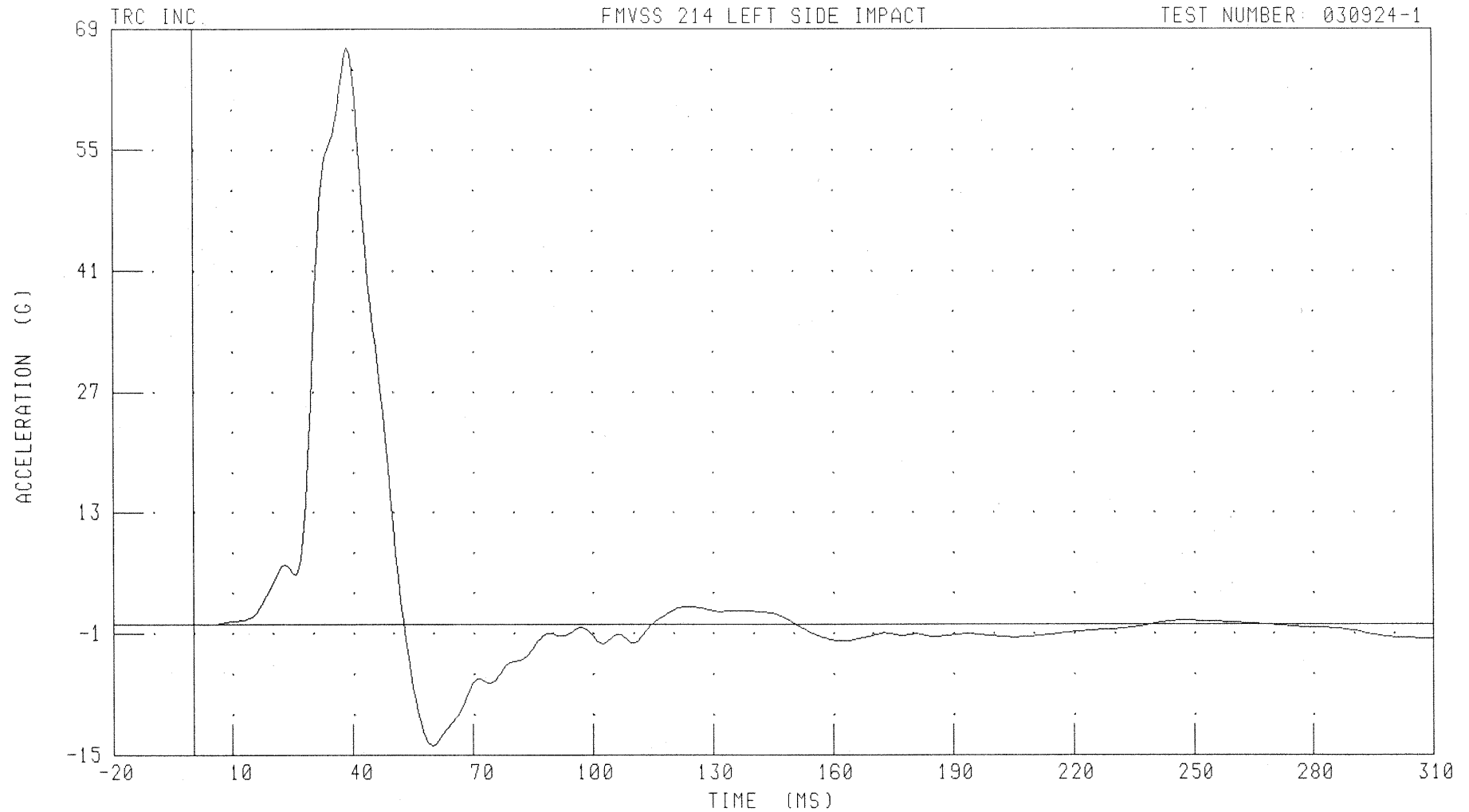
030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYG4 FILTER: FIR 100

PEAK DATA: 66.87 G @ 38.75 MS; -13.91 G @ 60.00 MS

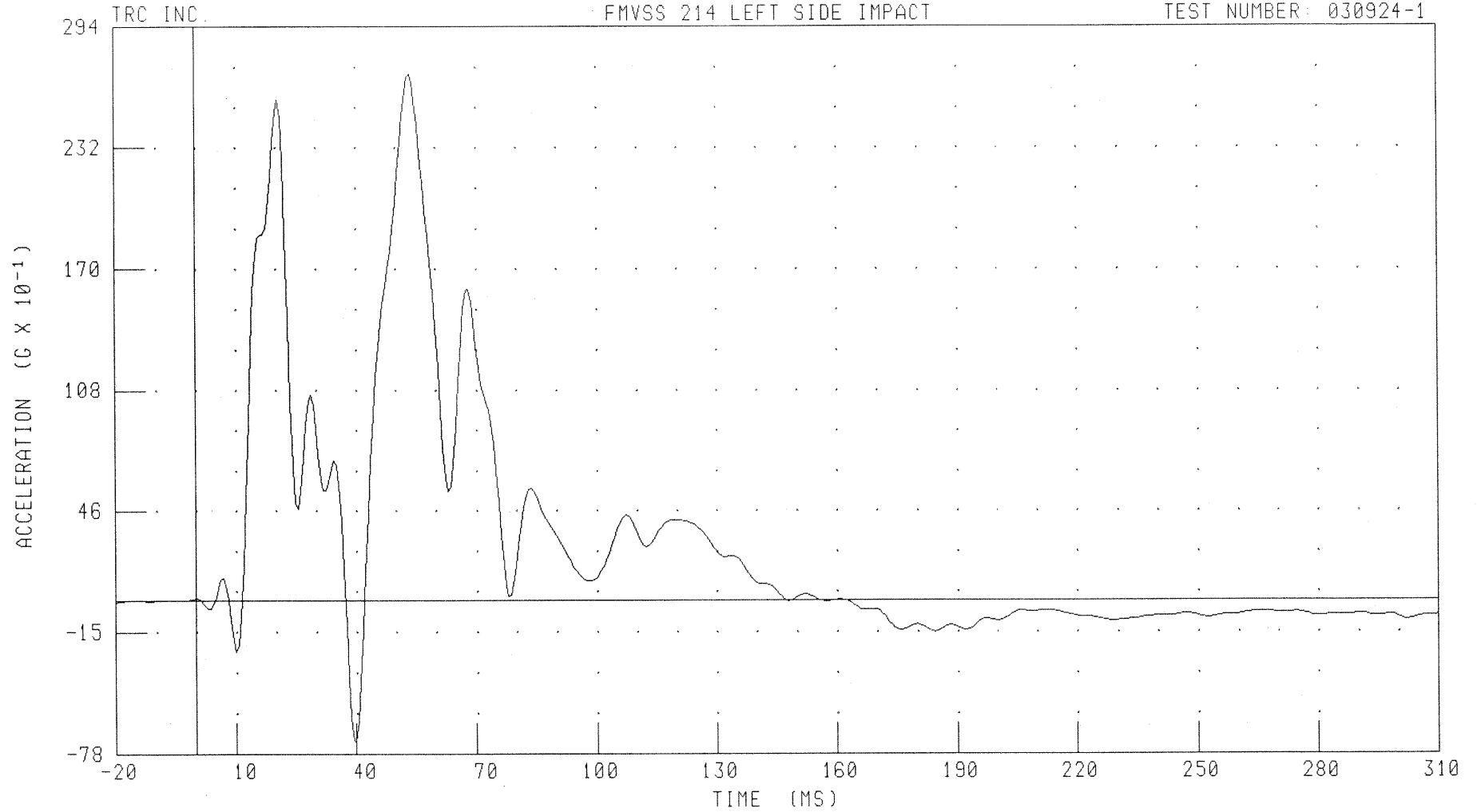
B-161

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYR1 FILTER: FIR 100

PEAK DATA: 27.00 G @ 53.75 MS; -7.16 G @ 40.00 MS

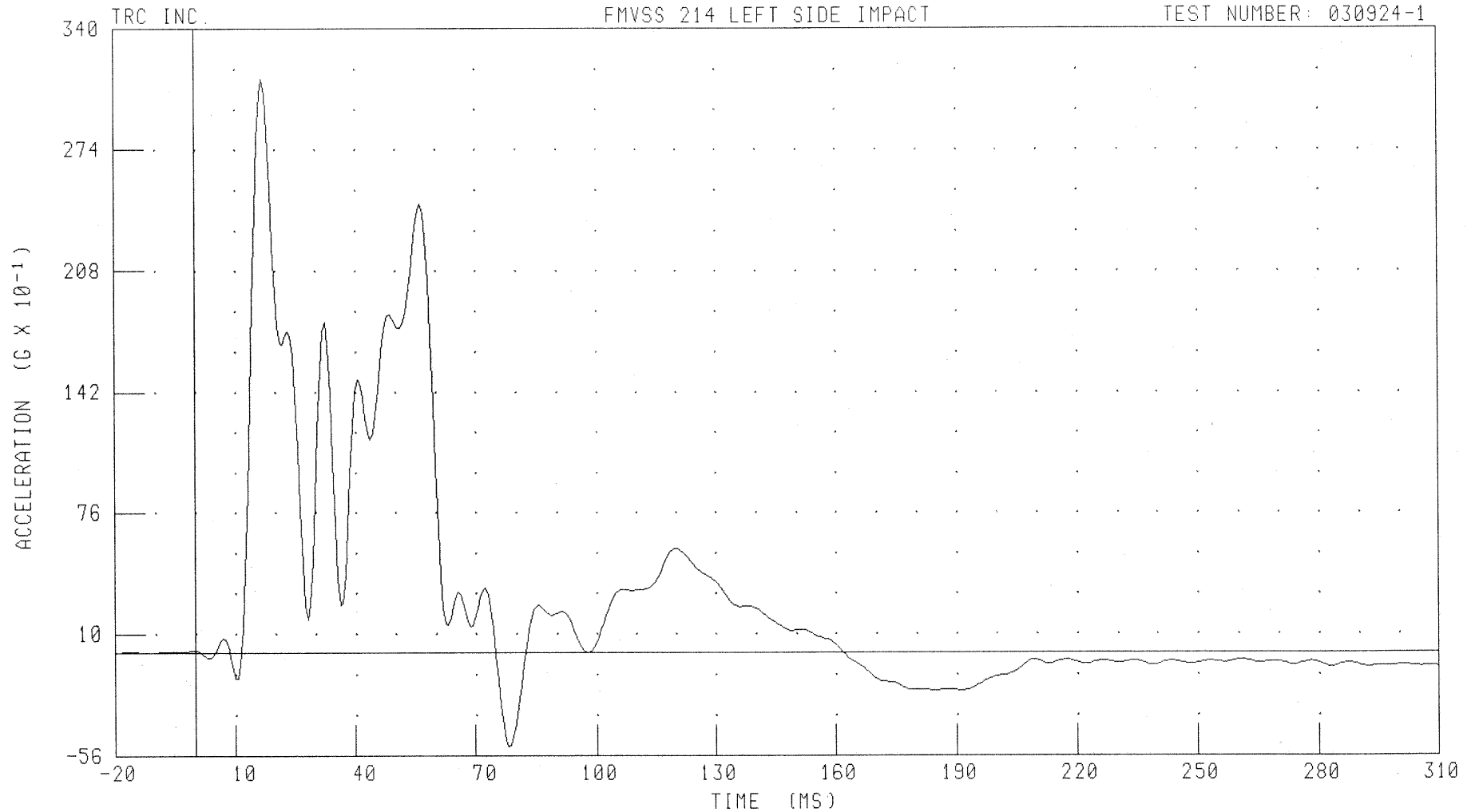
B-162

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LLRYR1 FILTER: FIR 100

PEAK DATA: 31.30 G @ 16.87 MS, -5.12 G @ 78.13 MS

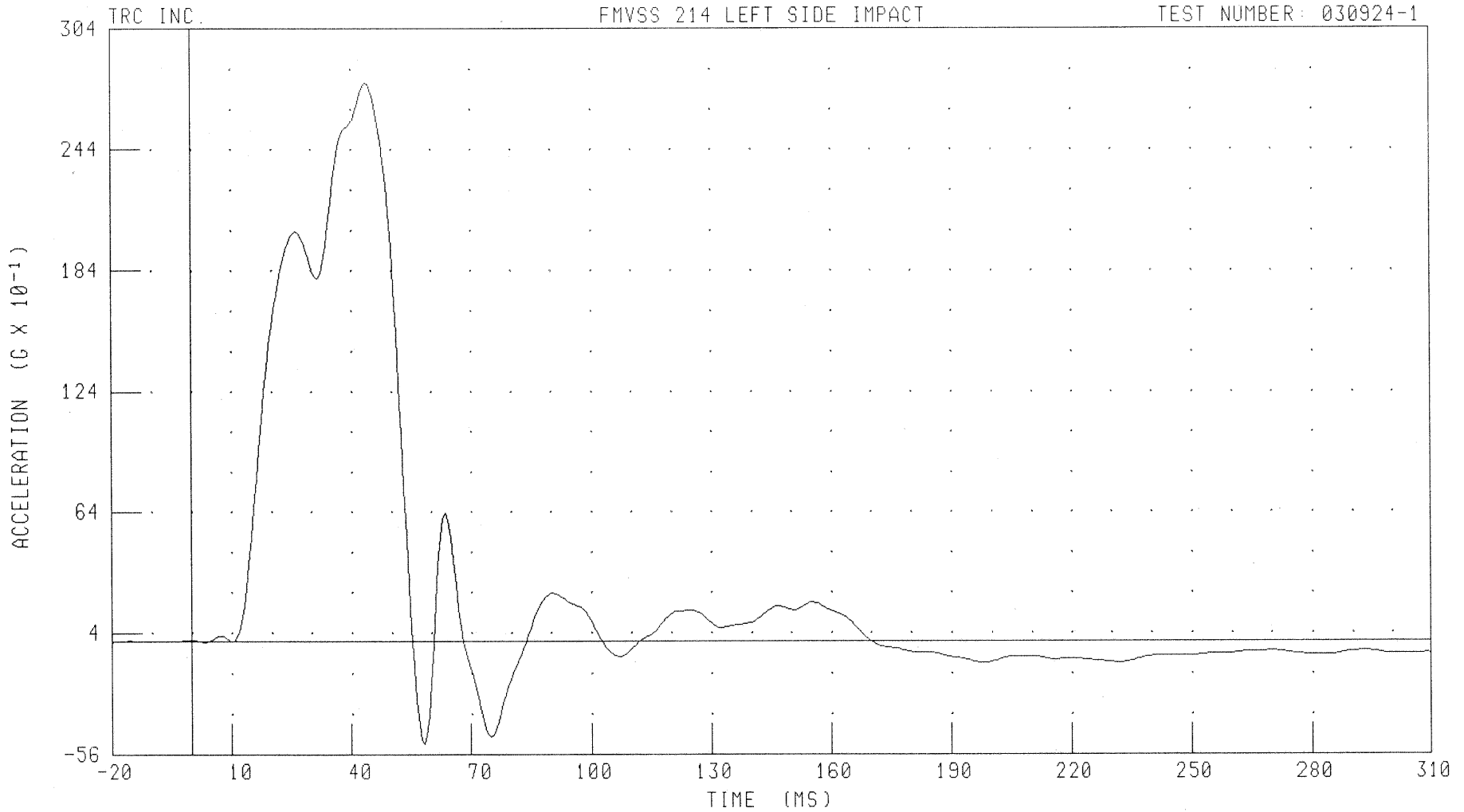
B-163

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YR1

FILTER: FIR 100

PEAK DATA: 27.71 G @ 43.75 MS, -5.12 G @ 58.13 MS

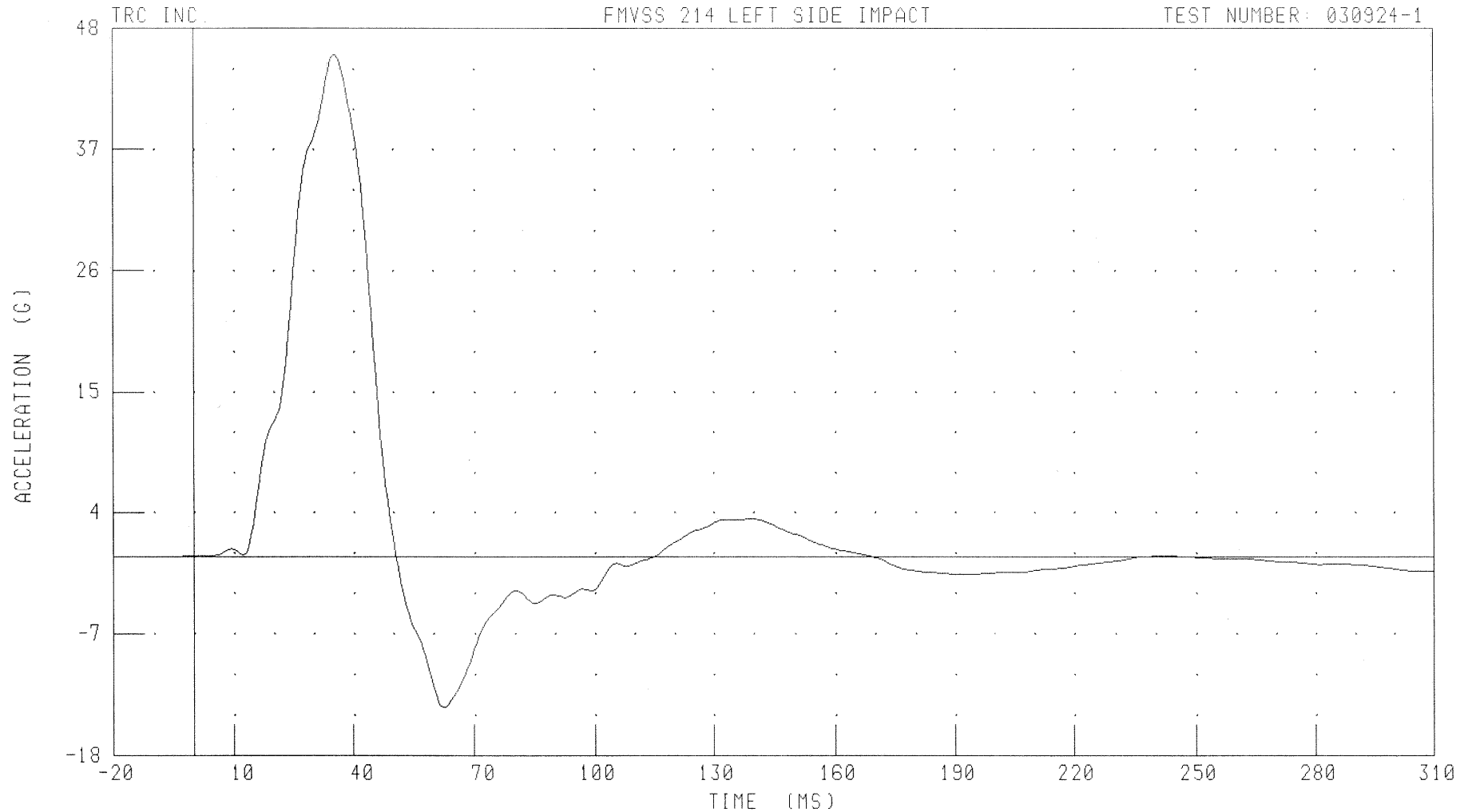
B-164

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: PEVYR1 FILTER: FIR 100

PEAK DATA: 45.63 G @ 35.00 MS; -13.67 G @ 62.50 MS

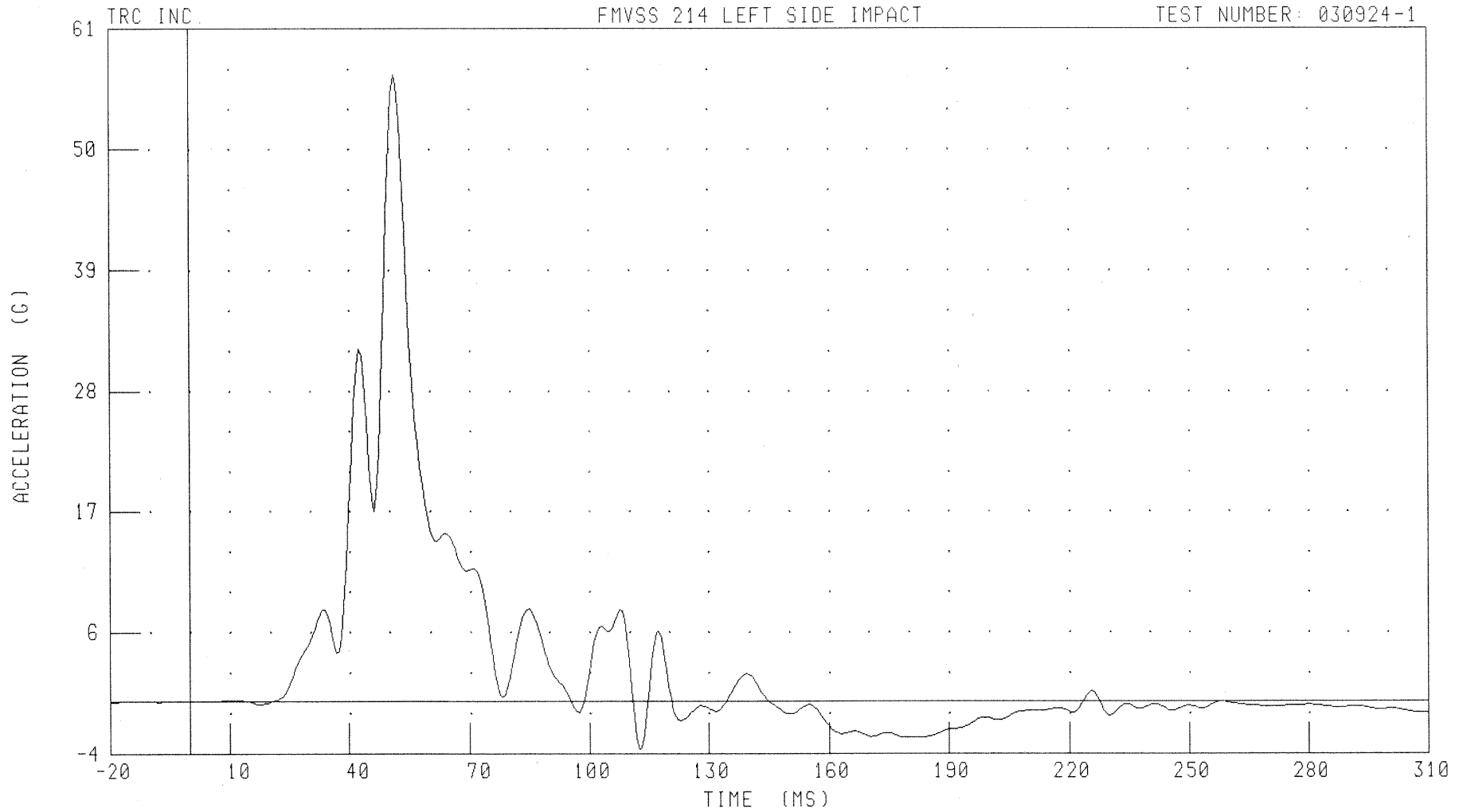
B-165

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LURYR4

FILTER: FIR 100

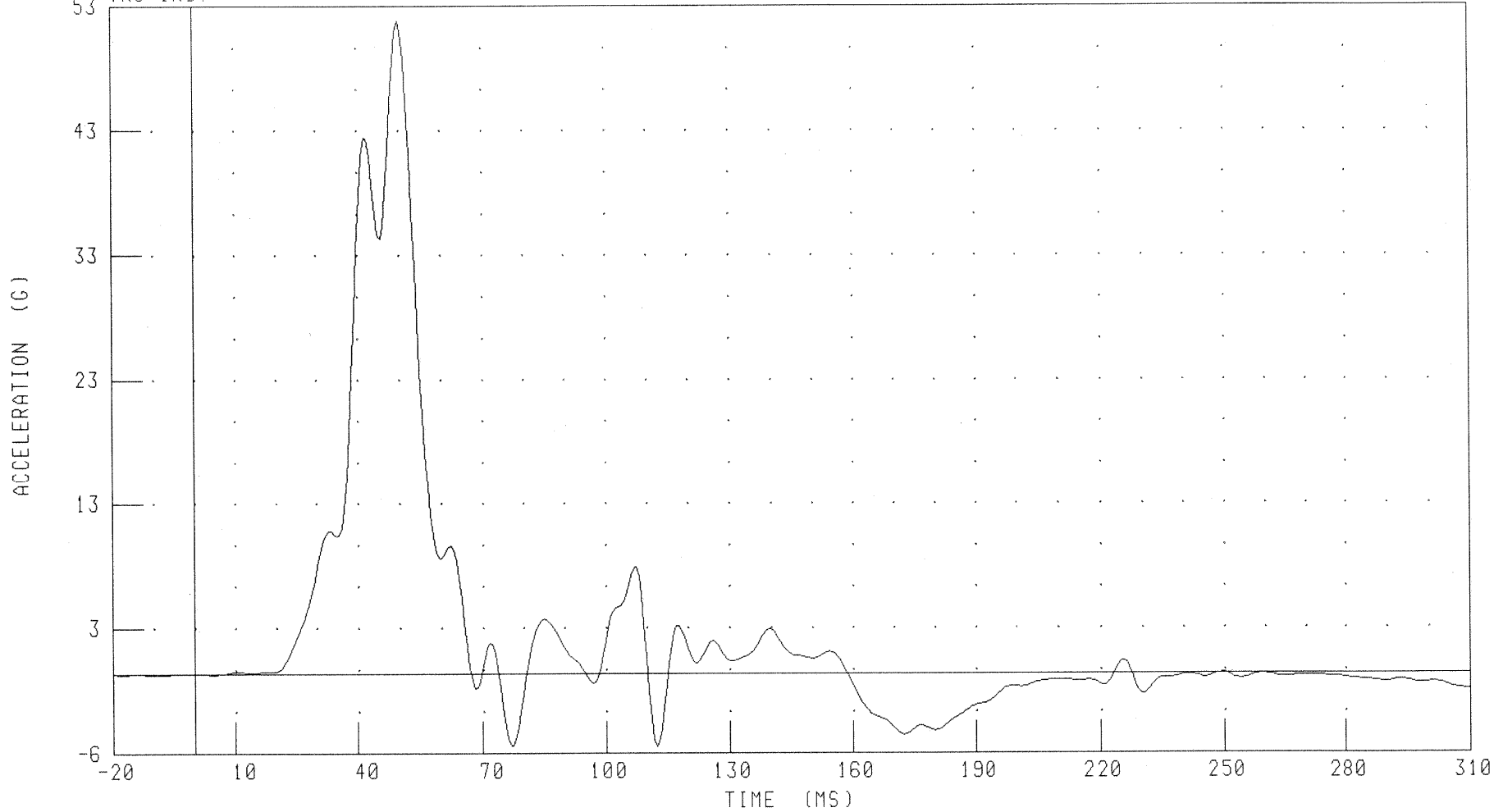
PEAK DATA: 57.13 G @ 51.25 MS; -4.30 G @ 112.50 MS

B-166

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL: LLRYR4 FILTER: FIR 100

PEAK DATA: 52.50 G @ 50.00 MS; -5.78 G @ 112.50 MS

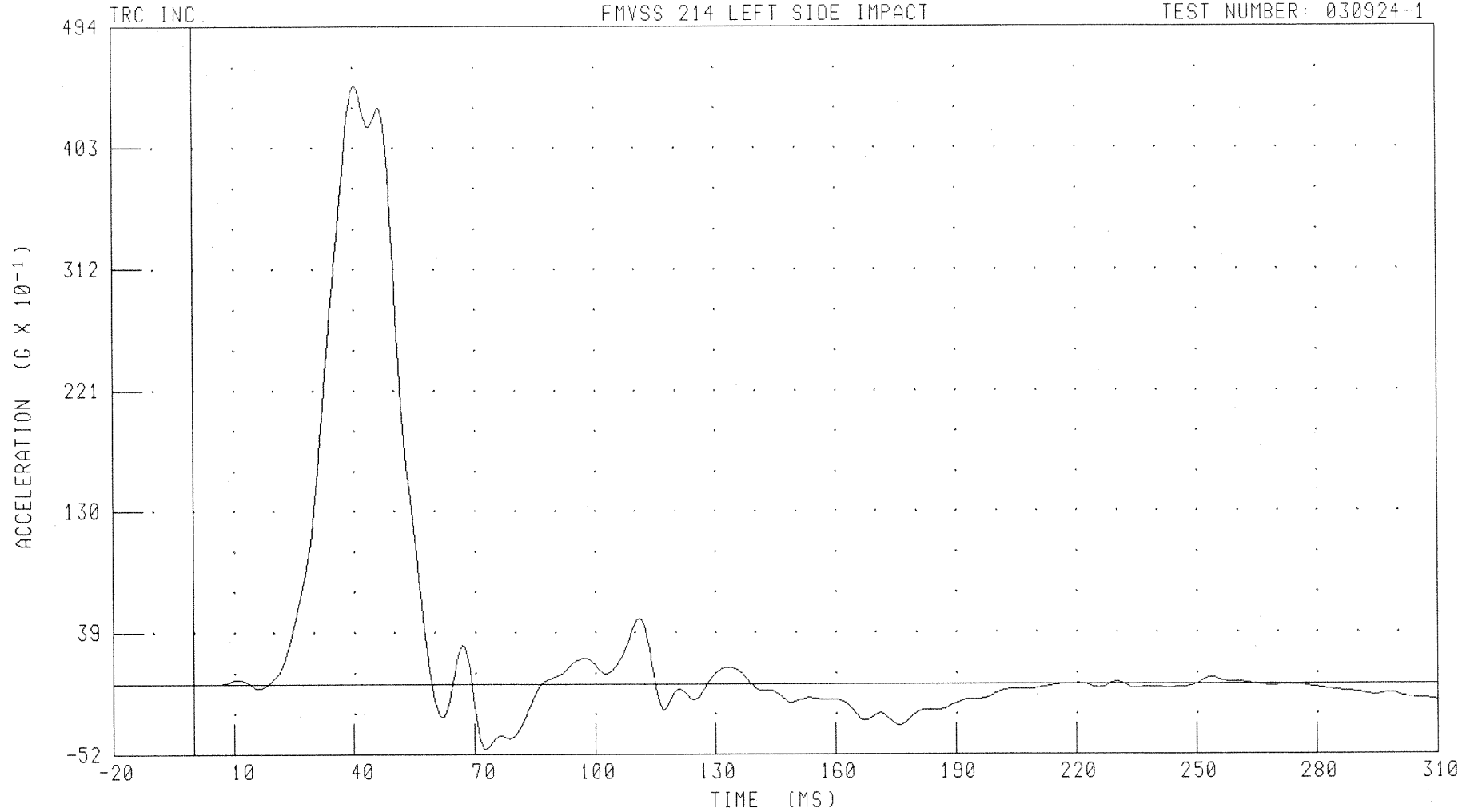
B-167

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: T12YR4

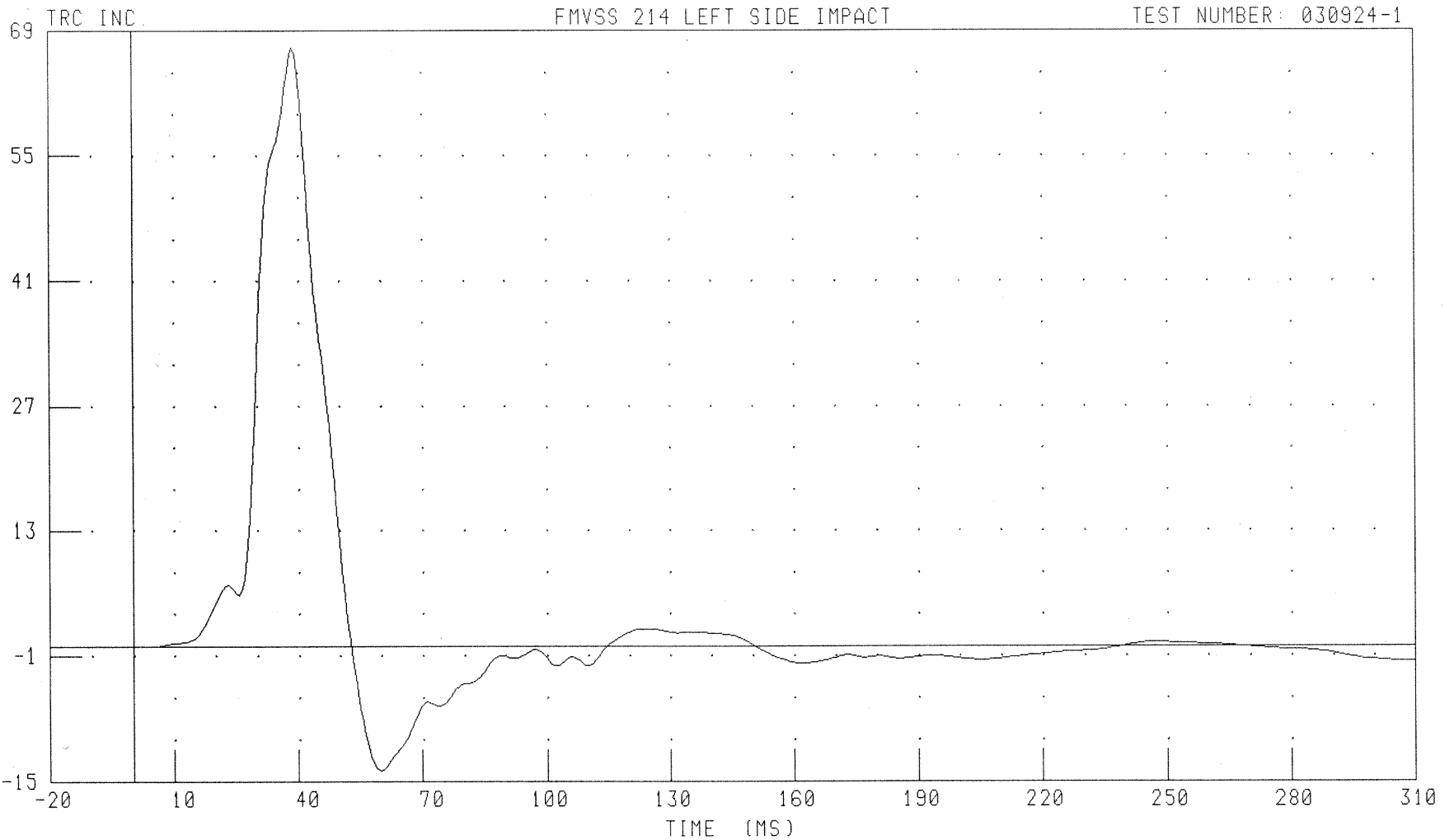
FILTER: FIR 100

PEAK DATA: 45.03 G @ 40.63 MS; -4.79 G @ 72.50 MS

B-168

030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330  
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION



CHANNEL: PEVYR4 FILTER: FIR 100

PEAK DATA: 67.08 G @ 38.75 MS; -13.79 G @ 60.00 MS

B-169

030924-1

Appendix C

SID HIII Configuration and Performance Verification Data

Summary  
 SID HIII Pre-Test and Post-Test Calibration  
 Configured For Left Side Impact

Date: 09/24/03 TRC Inc. Test Number: S/N055 & S/N906  
 Laboratory Technician: Jack Willeke

Test Parameter	Specification	SID HIII 055		SID HIII 906	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	N/A <sup>1</sup>	909	901	904
RH - Rib Height (mm)	502-520	N/A <sup>1</sup>	511	511	506
HP - Hip Pivot Height (mm)	99 ref	N/A <sup>1</sup>	99.1	99.1	99.1
RD - Rib from Back Line (mm)	229-241	N/A <sup>1</sup>	223 <sup>2</sup>	229	229
KH - Knee Pivot from Back Line (mm)	511-526	N/A <sup>1</sup>	525	513	525
KV - Knee Pivot to Floor (mm)	490-505	N/A <sup>1</sup>	492	496	491
HW - Hip Width (mm)	356-391	N/A <sup>1</sup>	366	370	384
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.1	21.7	21.1	21.1
Relative Humidity (%)	10-70	41.0	31.0	54.0	31.0
Probe Speed (m/s)	4.27-4.33	4.29	4.31	4.26	4.32
Upper Rib (g's)	37-46	40.9	38.3	37.5	42.6
Lower Rib (g's)	37-46	39.8	37.2	37.8	43.3
Lower Spine (g's)	15-22	19.3	17.0	16.1	19.7
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.1	21.1	21.1	21.1
Relative Humidity (%)	10-70	40.0	22.0	55.0	31.0
Probe Speed (m/s)	4.27-4.33	4.27	4.31	4.28	4.31
Pelvis (g's)	40-60	44.2	44.6	52.6	45.8

<sup>1</sup> Pre-test external dimensions were not collected.

<sup>2</sup> Did not meet specifications post-test.

Calibration Test Results

Pre-Test

SID HIII: 055

Configured for Left Side Impact

External Dimensions:	External dimensions were not taken.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was tested on September 15, 2003 for a previous calibration series.

TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

22-SEP-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. HL05508C 572M SID/HIII SN055 HEAD CAL08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.44 deg. C
RELATIVE HUMIDITY	10 - 70 %	51.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	140.63 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-9.39 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V. F. Watter*

RUN NUMBER: 092703.1859;2

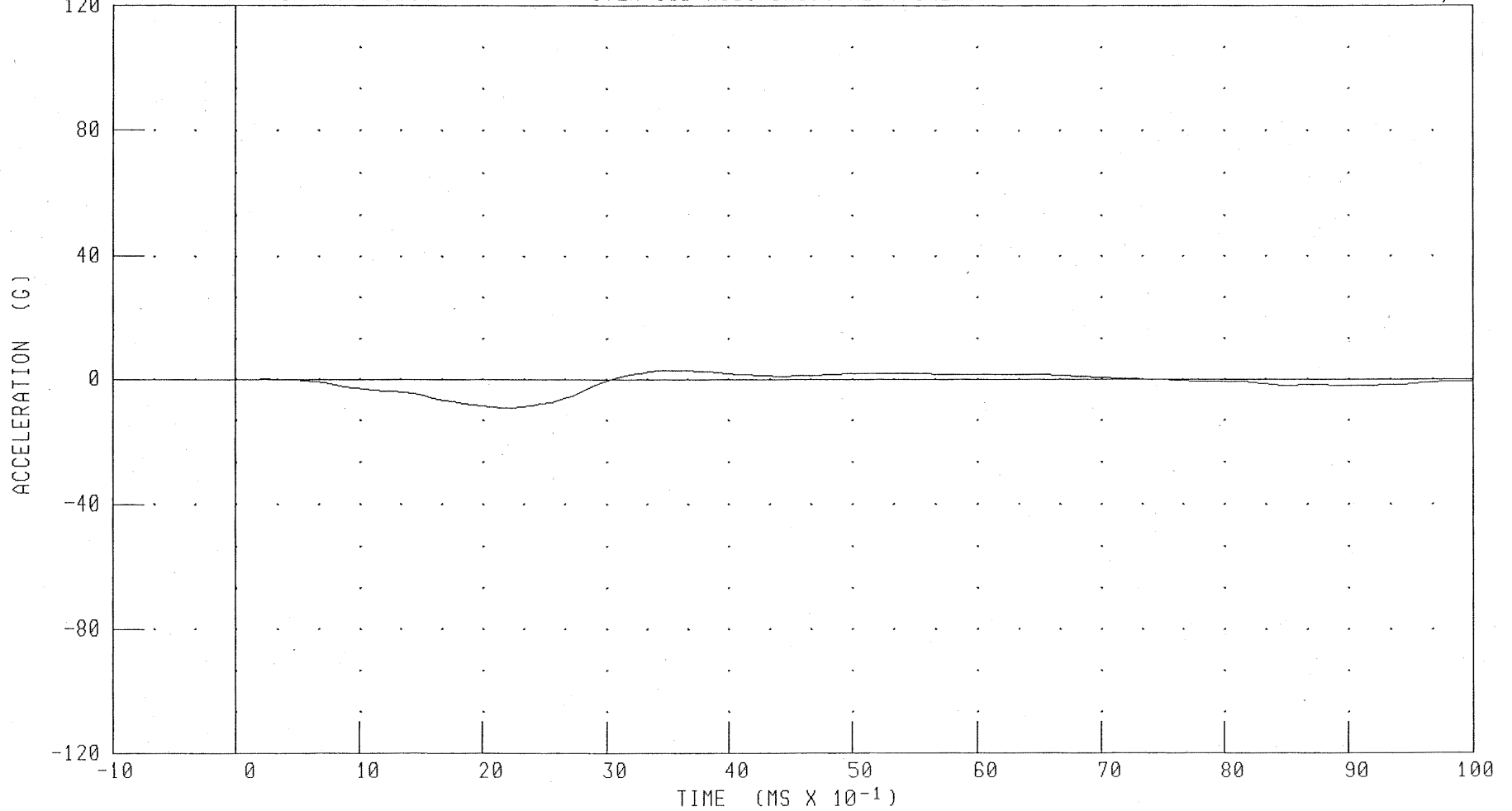
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



CHANNEL: HEDXC FILTER: CH. CLASS 1000

PEAK DATA: 2.90 G @ 3.52 MS; -9.39 G @ 2.16 MS

C-5

030924-1

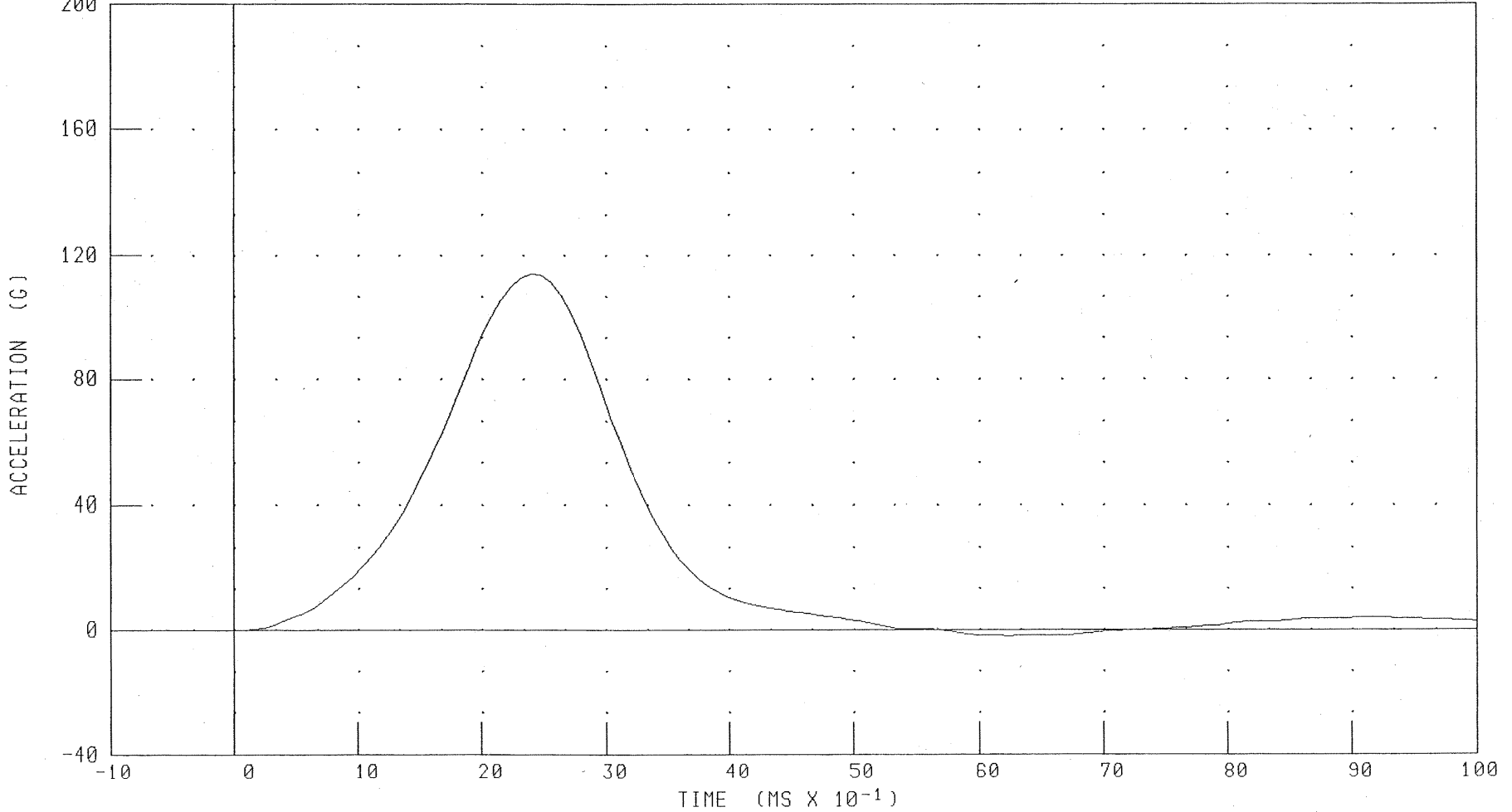
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



C-6

030924-1

CHANNEL: HEDYG

FILTER: CH. CLASS 1000

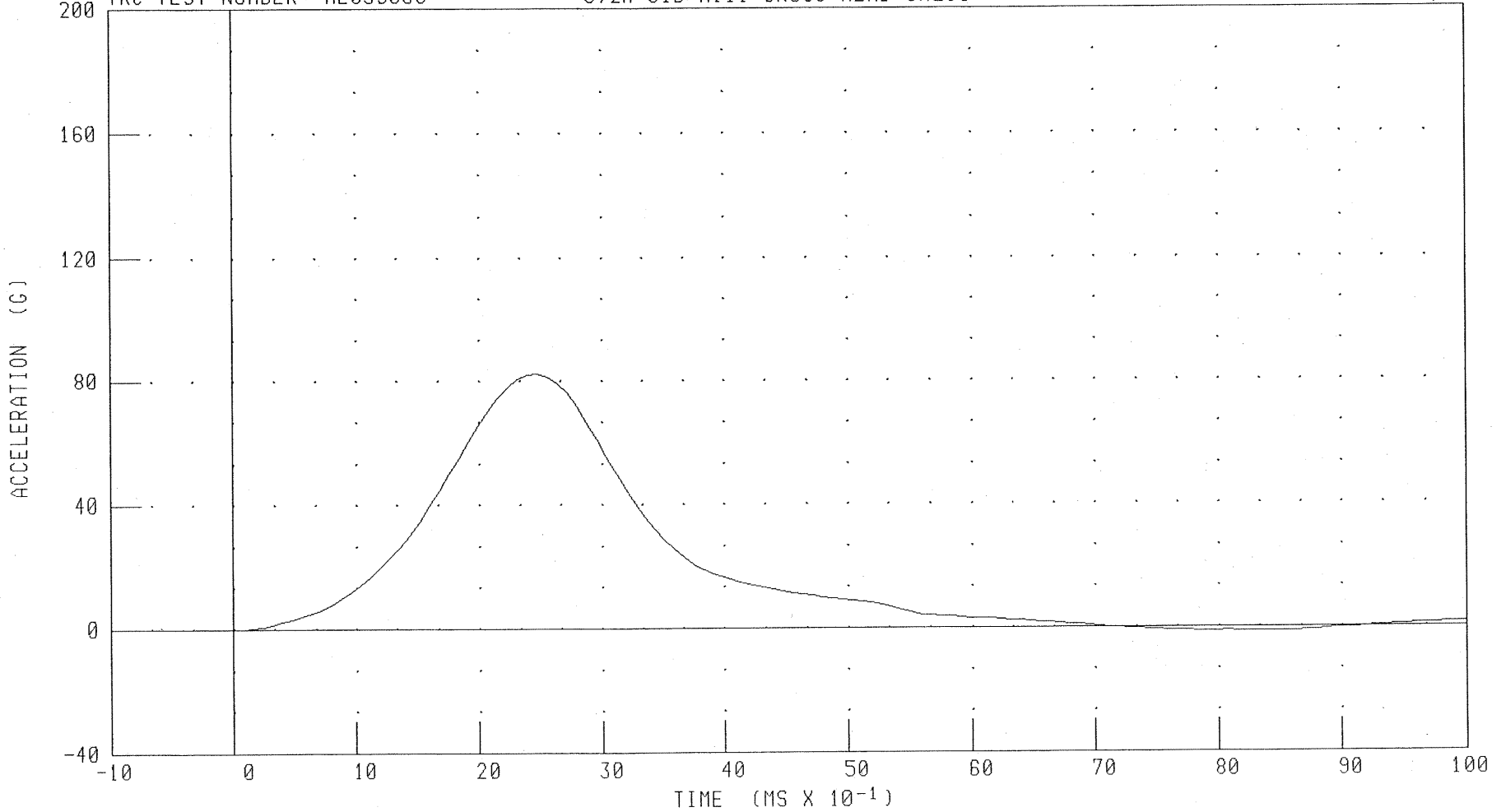
PEAK DATA: 114.03 G @ 2.40 MS; -1.96 G @ 6.24 MS

572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP  
HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 82.06 G @ 2.48 MS; -1.44 G @ 8.32 MS

C-7

030924-1

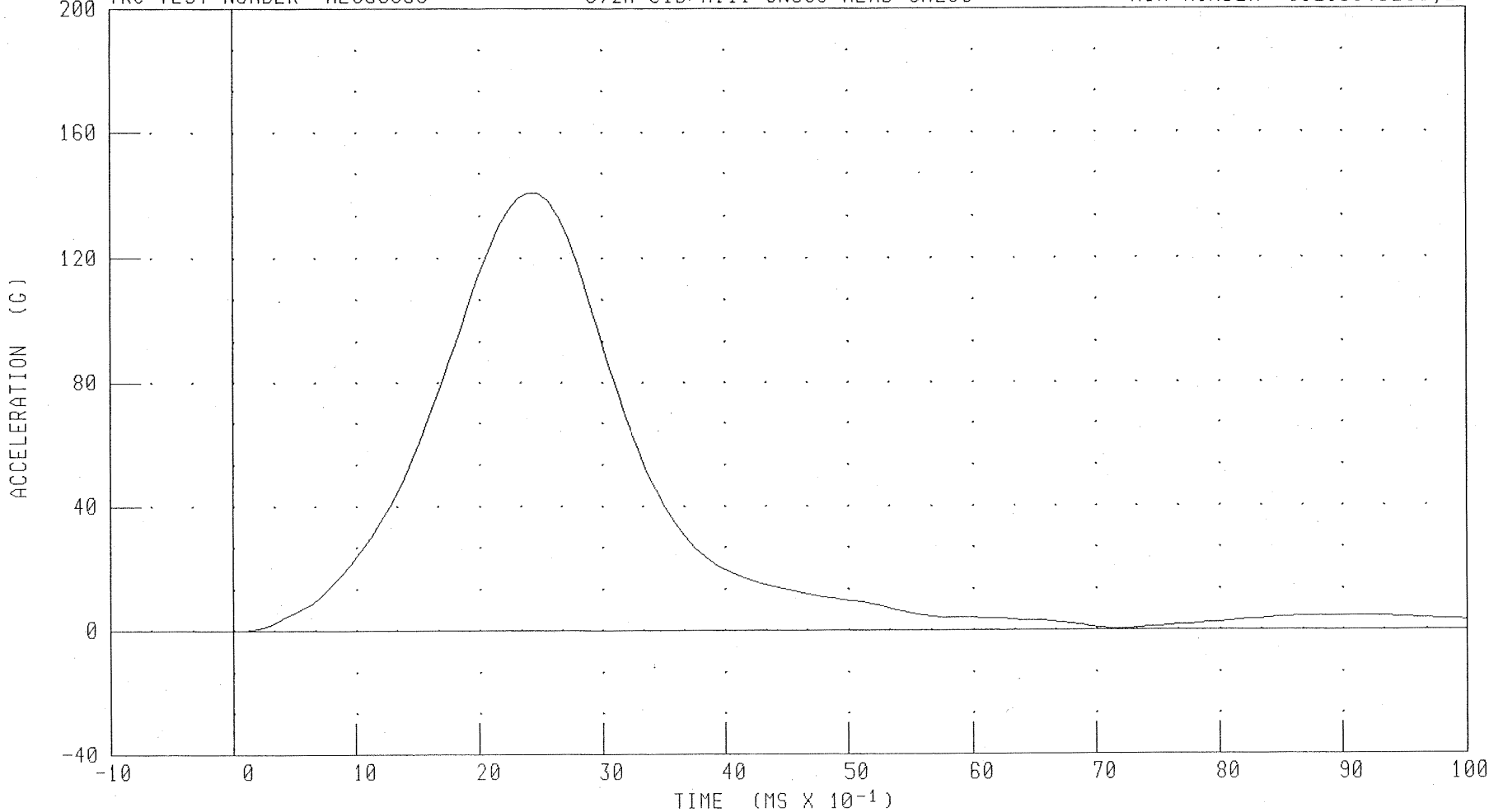
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



C-8

030924-1

CHANNEL: HEDRC

FILTER: CH. CLASS 1000

PEAK DATA: 140.63 G @ 2.40 MS; 0.01 G @ -0.48 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NL05508

572M SID/HIII SN055 NECK CAL08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.39 deg. C
RELATIVE HUMIDITY	10 - 70 %	49.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS   1.96 - 2.55 M/S	2.18 M/S
	20 MS   4.12 - 5.10 M/S	4.53 M/S
	30 MS   5.73 - 7.01 M/S	6.61 M/S
	40 - 70 MS   6.27 - 7.64 M/S	7.12- 7.28 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 DEG.	71.71 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	59.52 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73.0 - 88.0 NM	86.27 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	53.84 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	10.16 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V. J. Watts*

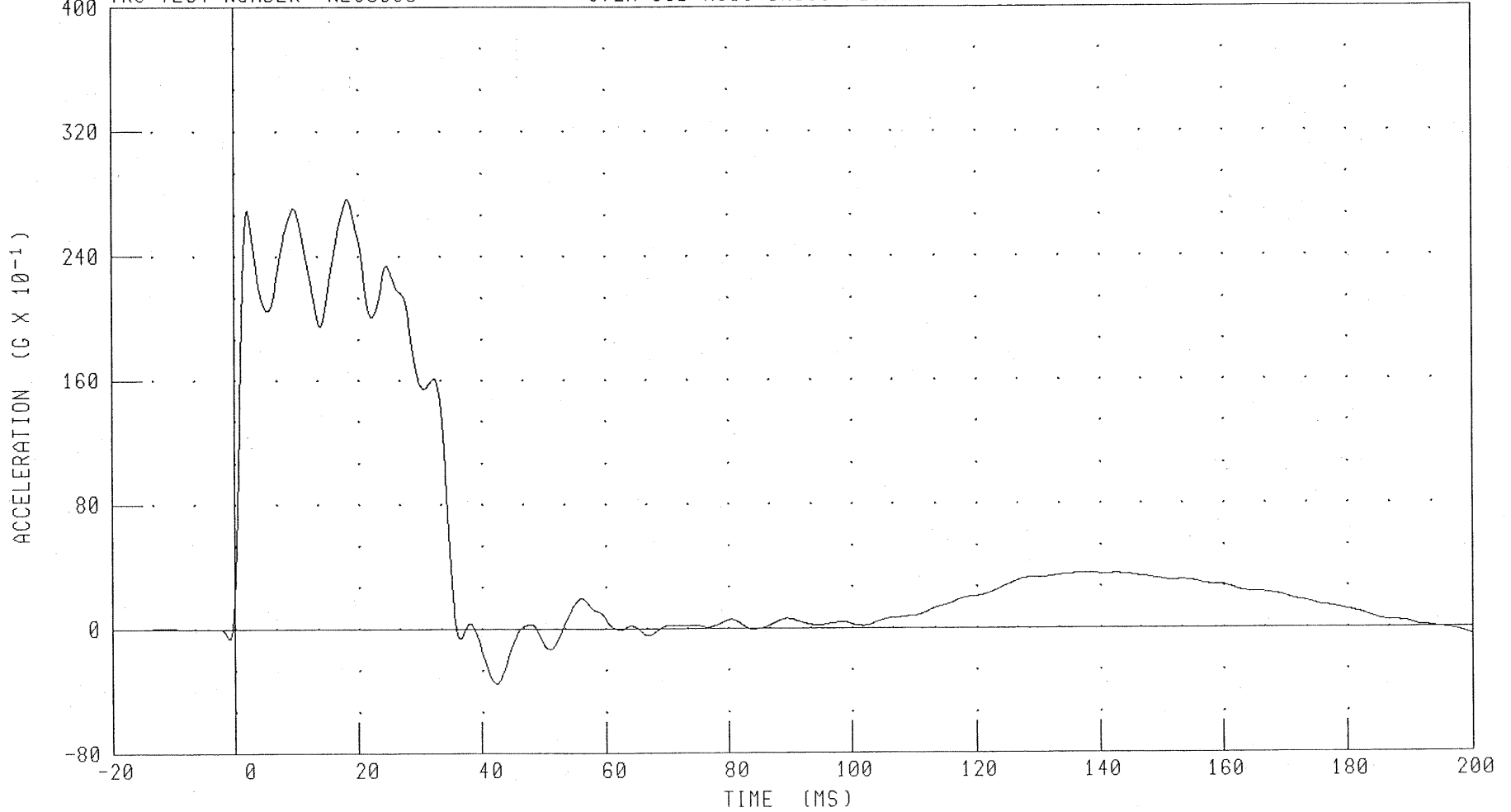
RUN NUMBER: 092703.1903;1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
PENDULUM DECELERATION

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 27.67 G @ 18.40 MS; -3.53 G @ 42.48 MS

C-10

030924-1

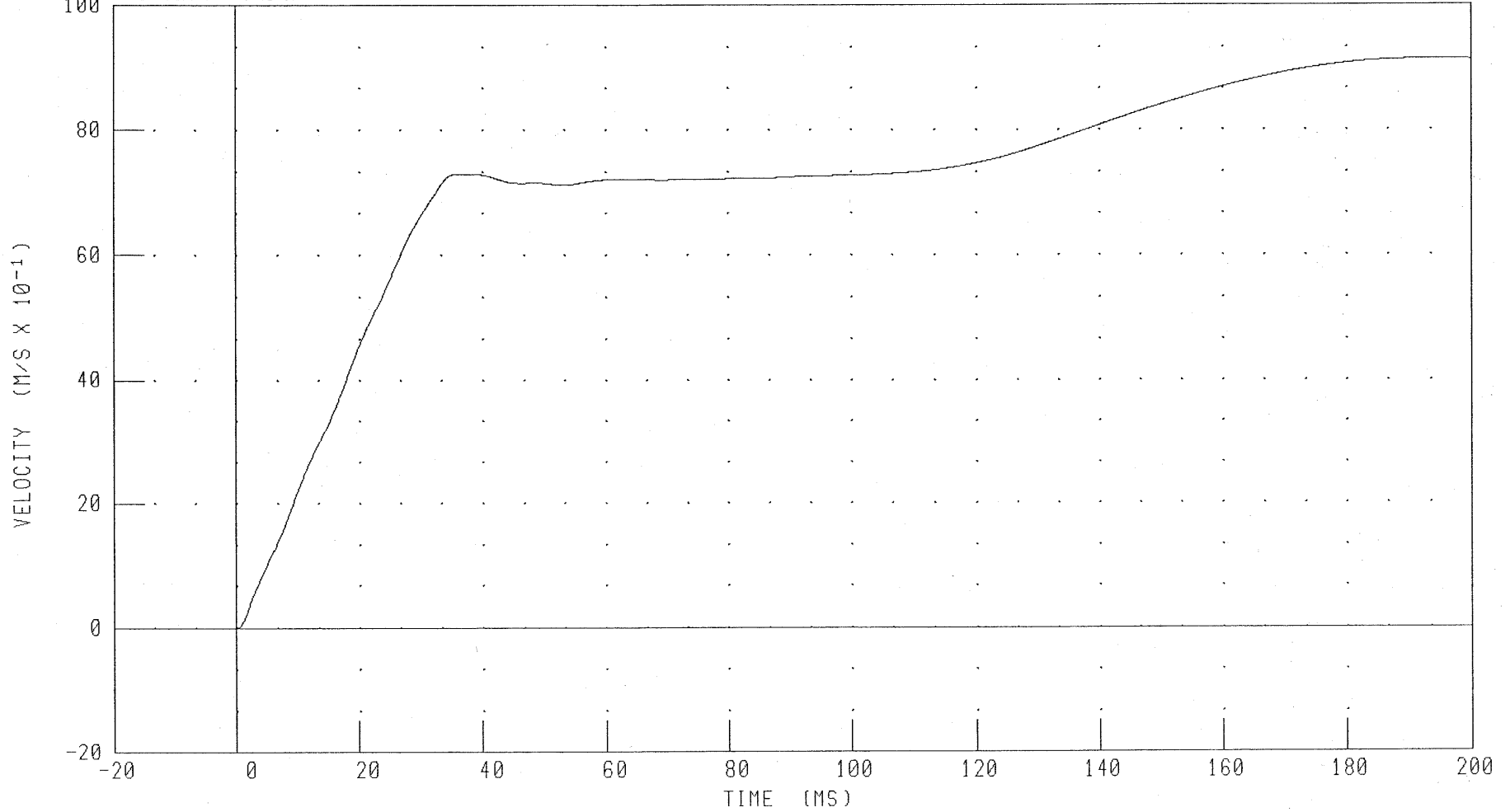
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: PENXVI FILTER: CH. CLASS 180

PEAK DATA: 9.14 M/S @ 194.40 MS; -0.01 M/S @ -0.40 MS

C-11

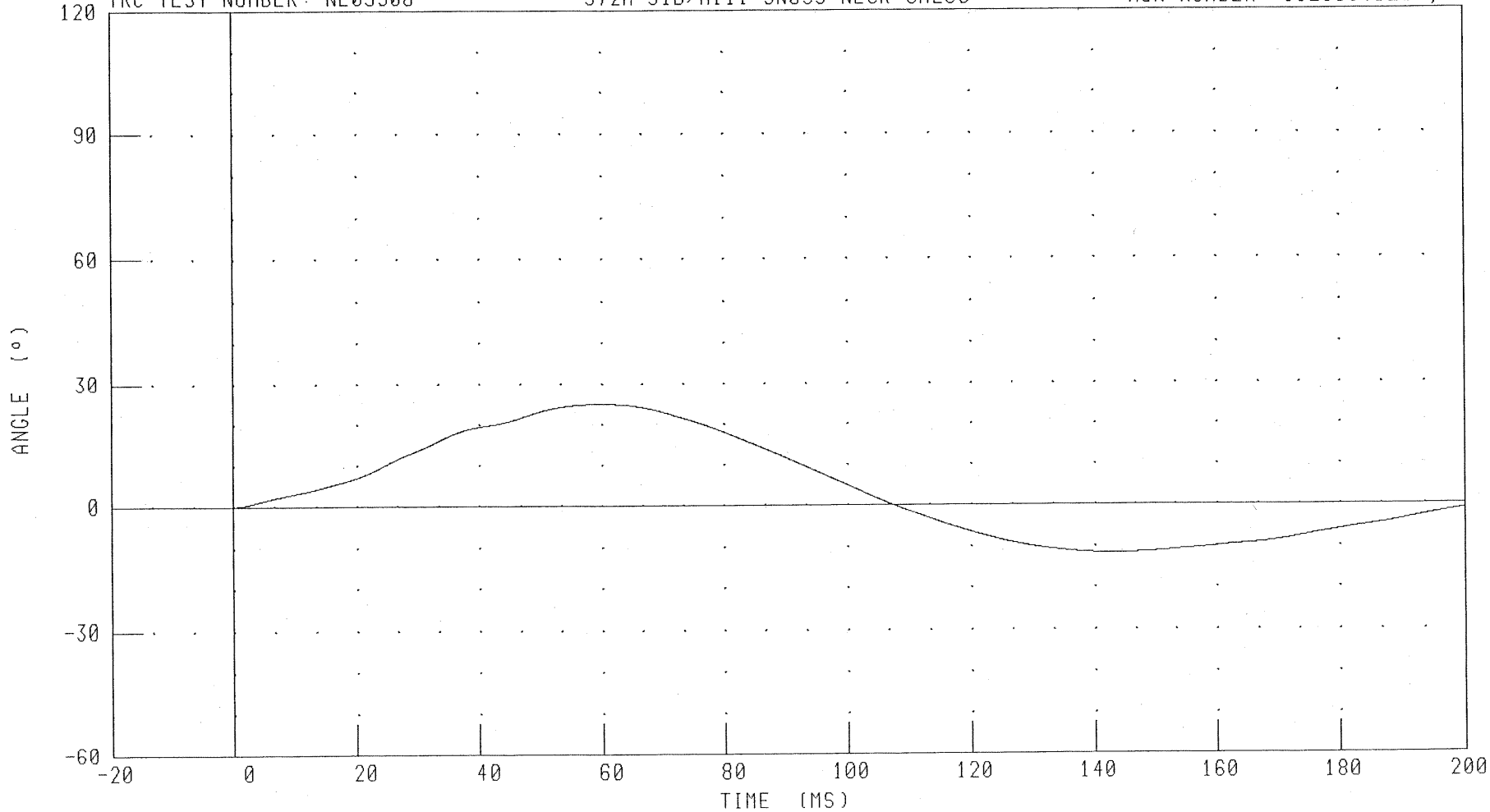
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1219,1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 25.03 ° @ 59.84 MS; -11.72 ° @ 143.52 MS

C-12

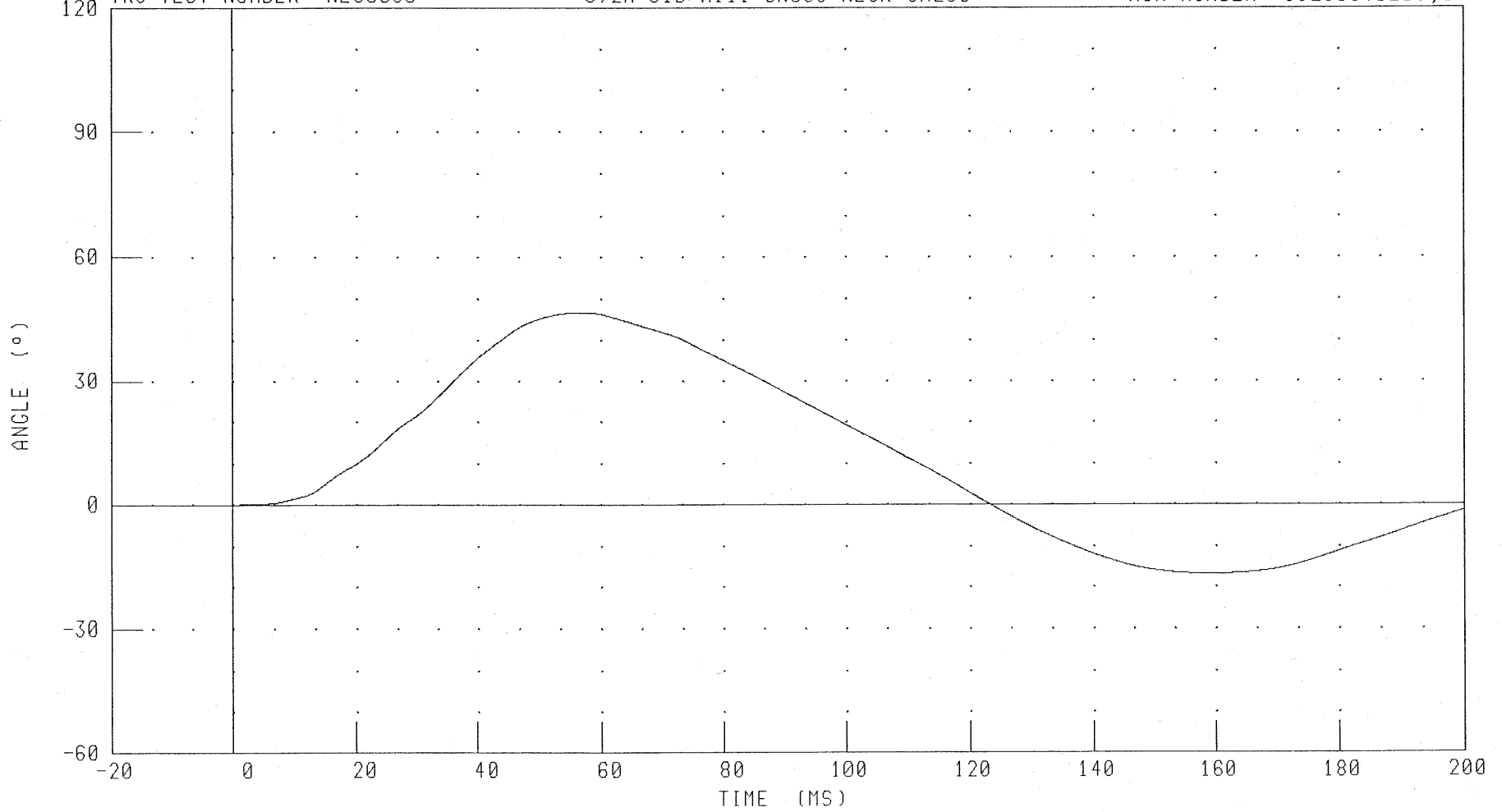
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 46.78 ° @ 57.04 MS; -16.81 ° @ 158.96 MS

C-13

030924-1

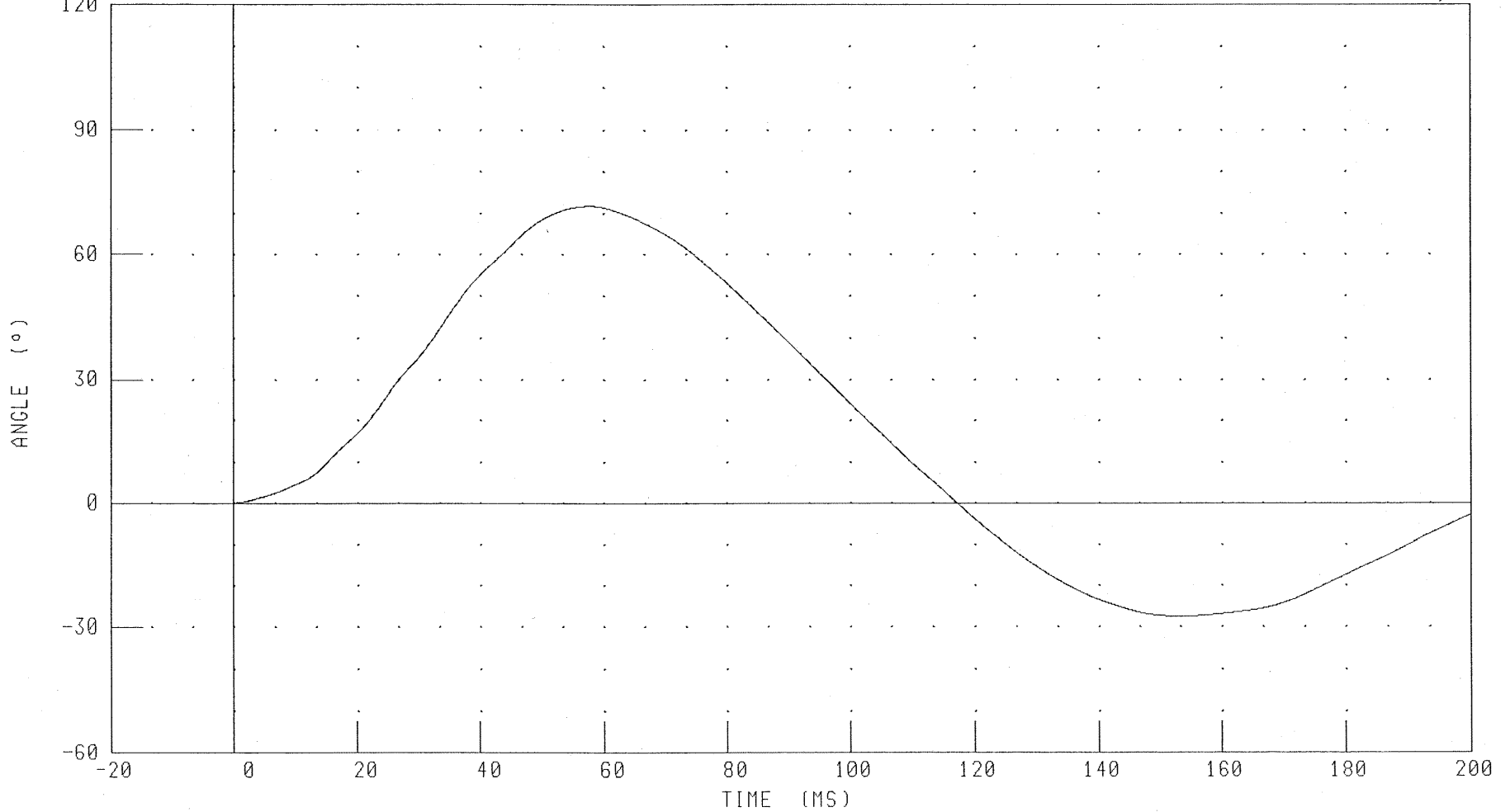
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 71.71 ° @ 57.76 MS, -27.49 ° @ 153.20 MS

C-14

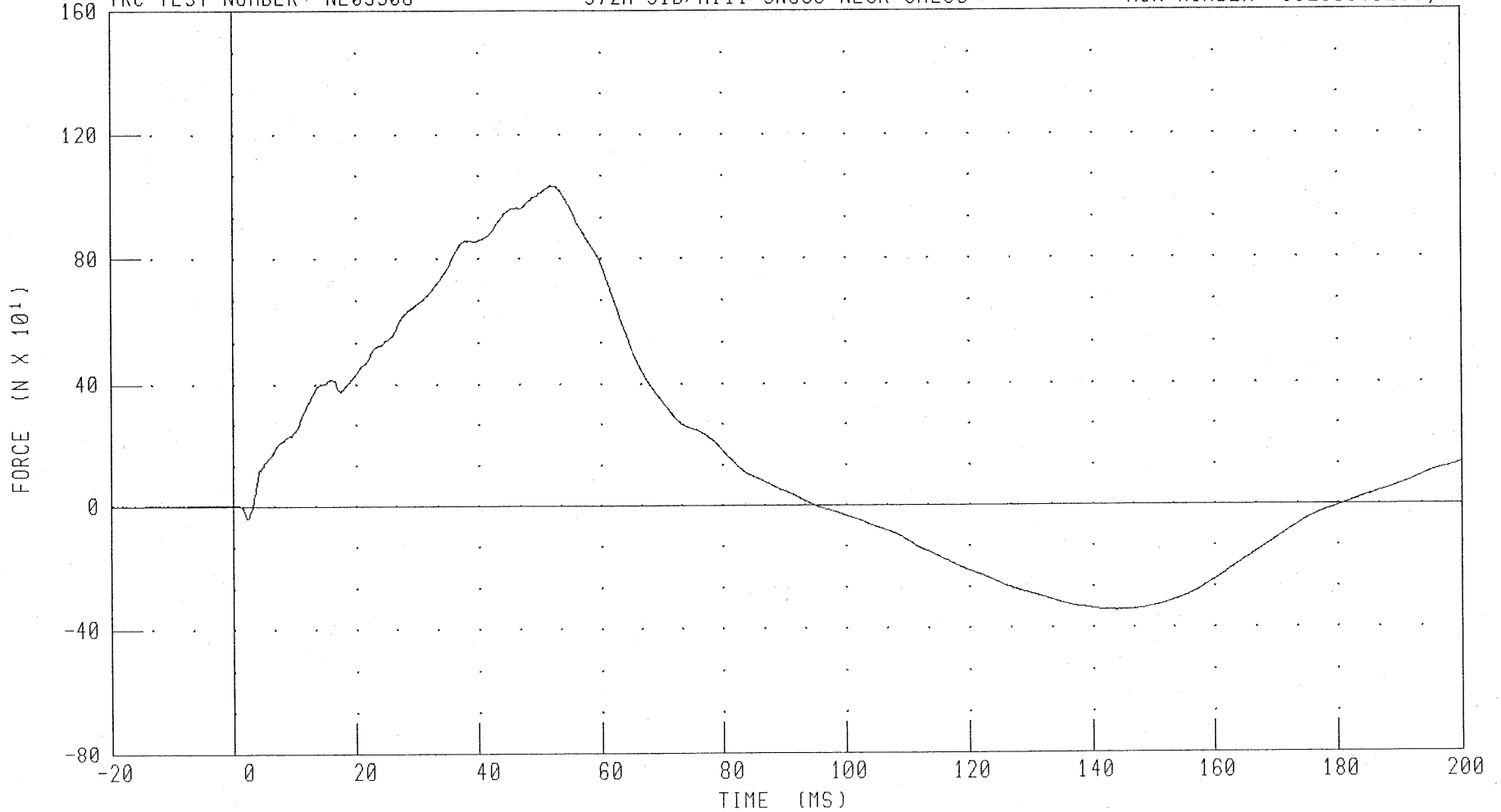
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
NECK FORCE Y AXIS

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 1034.29 N @ 51.84 MS; -346.68 N @ 143.92 MS

C-15

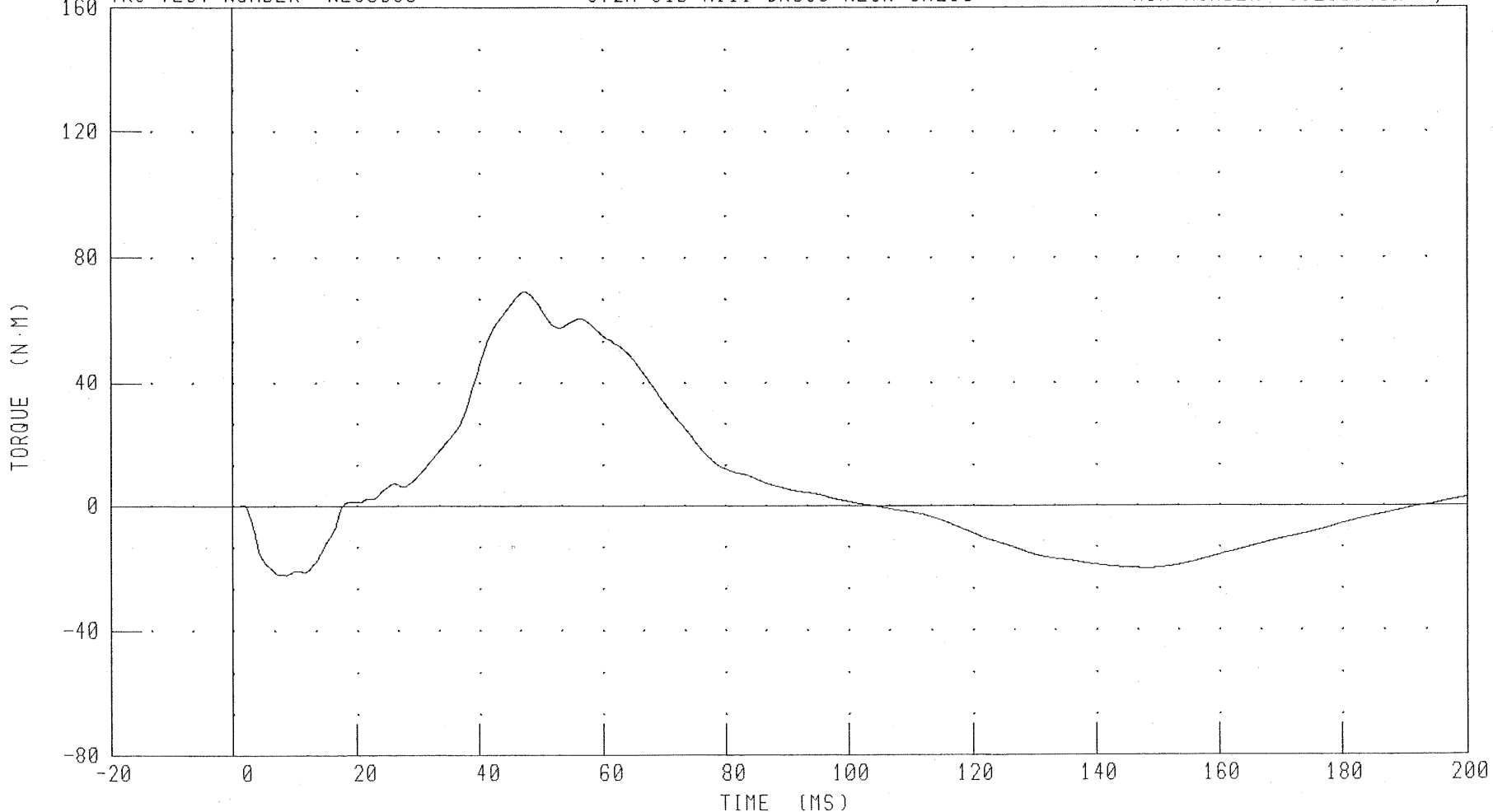
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
NECK MOMENT X AXIS

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: NEKXM FILTER: CH. CLASS 600

PEAK DATA: 69.05 N·M @ 47.44 MS; -22.31 N·M @ 8.64 MS

C-16

030924-1

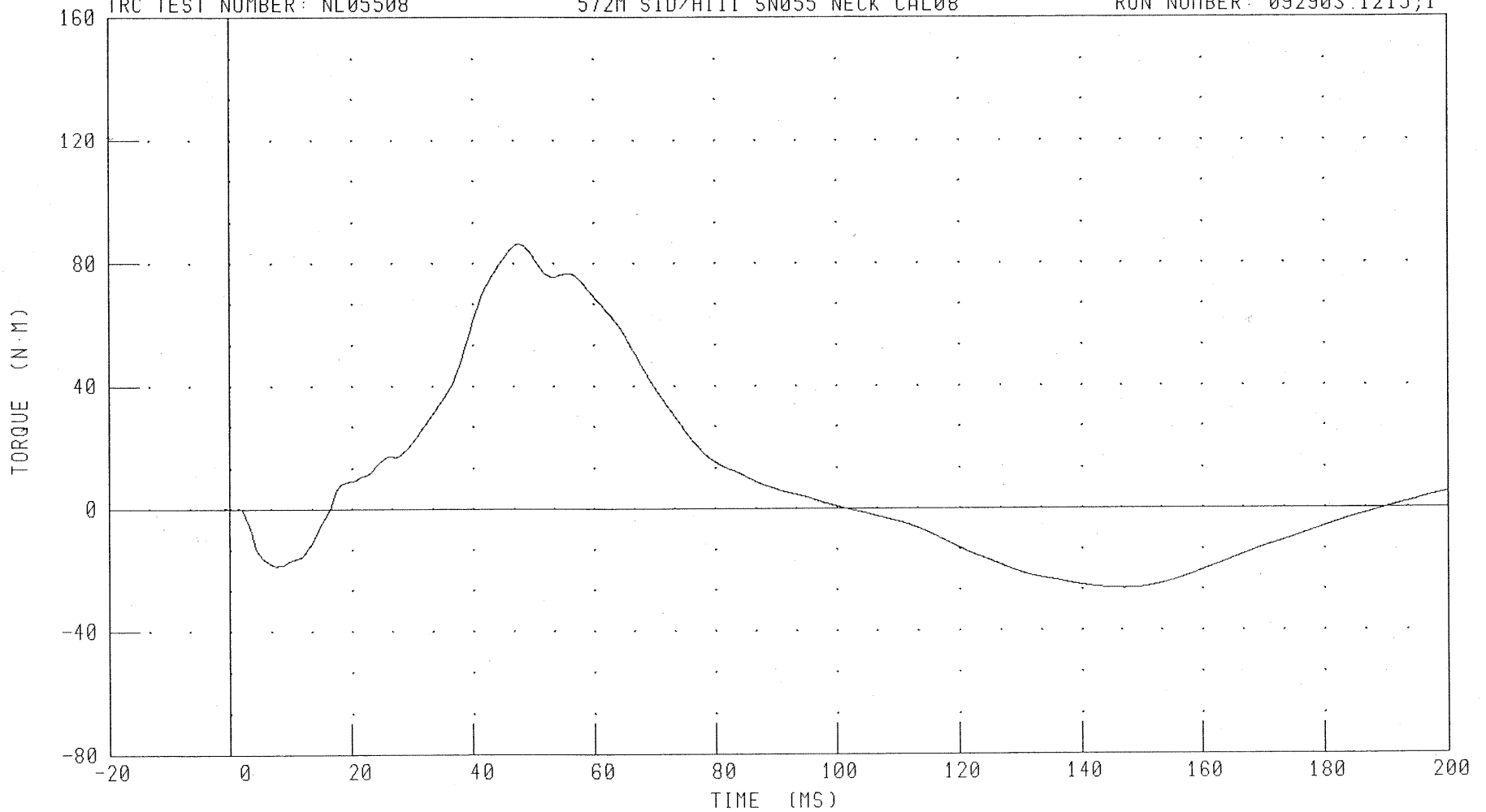
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215,1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 86.27 N·M @ 47.60 MS; -26.38 N·M @ 147.28 MS

C-17

030924-1

TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 23-Sep-03

TRC, INC. TEST NO: LF05508C SID/HIII SN 055 TORSO FLEX CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.2 °C
RELATIVE HUMIDITY	10 – 70 %	51 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	129.0 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	206.8 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	3 °

TEST MEETS SPECIFICATIONS

TECHNICIAN V. Z. Walter

# Transportation Research Center Inc.

572B Abdomen Compression Test

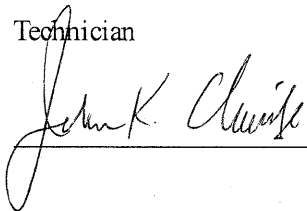
SID HIII Serial No. 055 Calibration No. 08 - 4

Test Date 02/28/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 7.9 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

## Comments:

Technician

  
\_\_\_\_\_

Approved

  
\_\_\_\_\_

09.23.2003 15:52:58 45

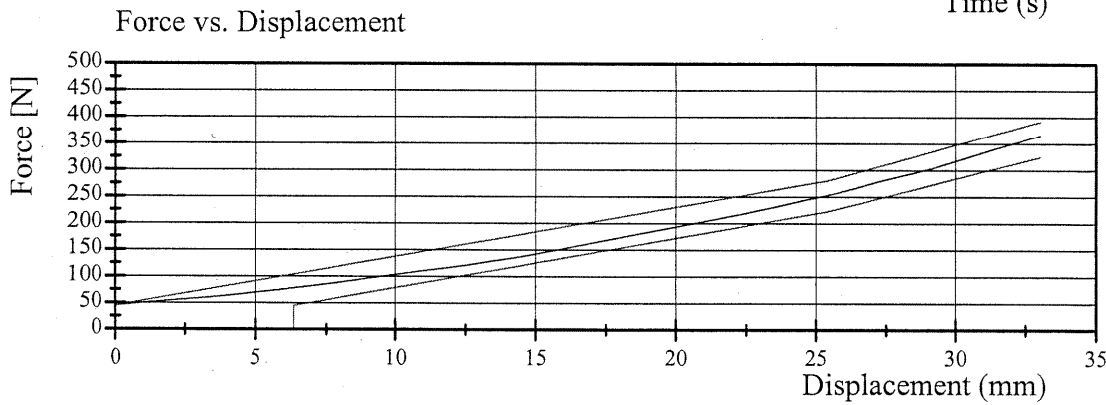
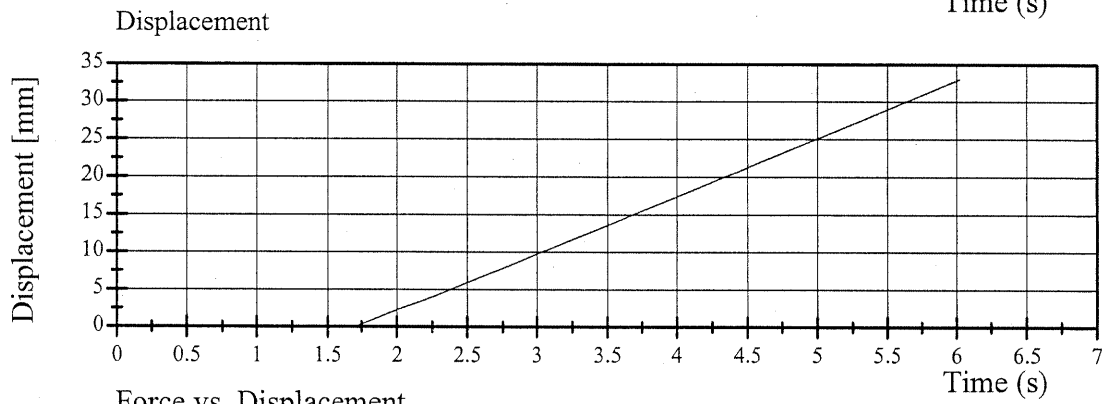
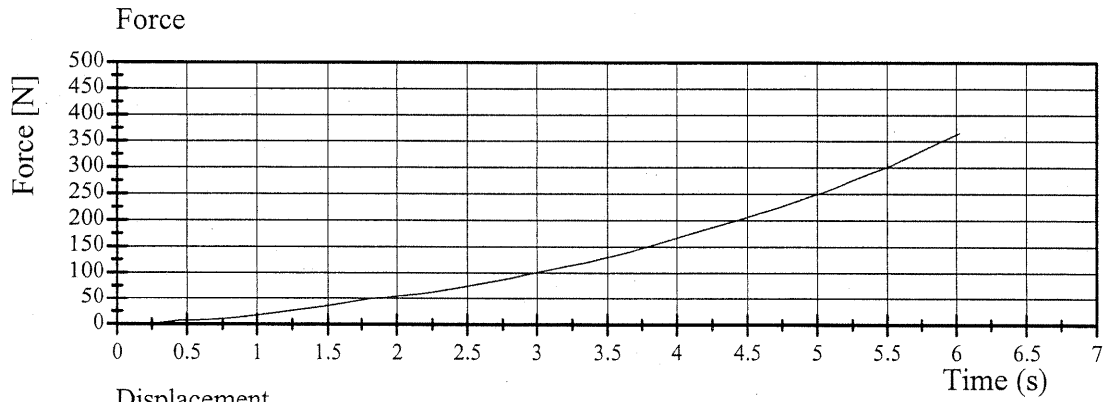


# Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 055 Calibration No. 08 - 4

Test Date 02/28/2003



TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

15-SEP-03

TRC INC.

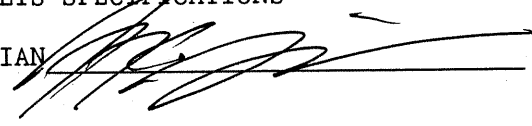
572F SN055 DAMPER TEST CAL07

TEST NUMBERS: DP05507A,DP05507B,DP05507C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	65.0 %
VELOCITY	FORCE	667 - 925 N	806 N
2.74 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.8 MM
VELOCITY	FORCE	1706 - 2072 N	1858 N
4.24 M/S	DISPLACEMENT	31.6 - 37.2 MM	32.8 MM
VELOCITY	FORCE	4116 - 4880 N	4562 N
6.38 M/S	DISPLACEMENT	33.5 - 39.8 MM	36.0 MM

DAMPER SETTING = 6.5

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091503.1426;1

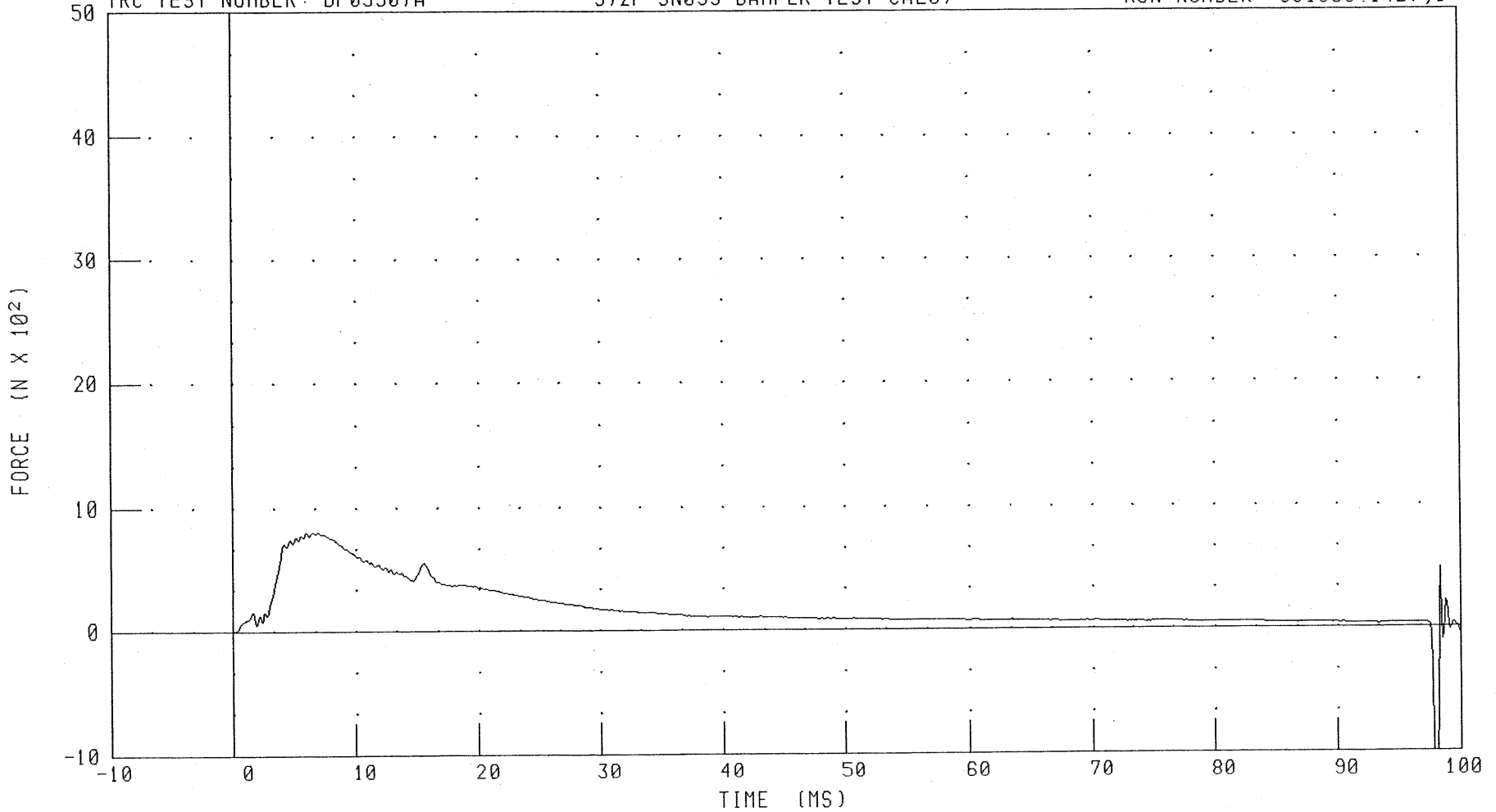
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507A

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 805.97 N @ 6.48 MS; -2638.27 N @ 97.92 MS

C-22

030924-1

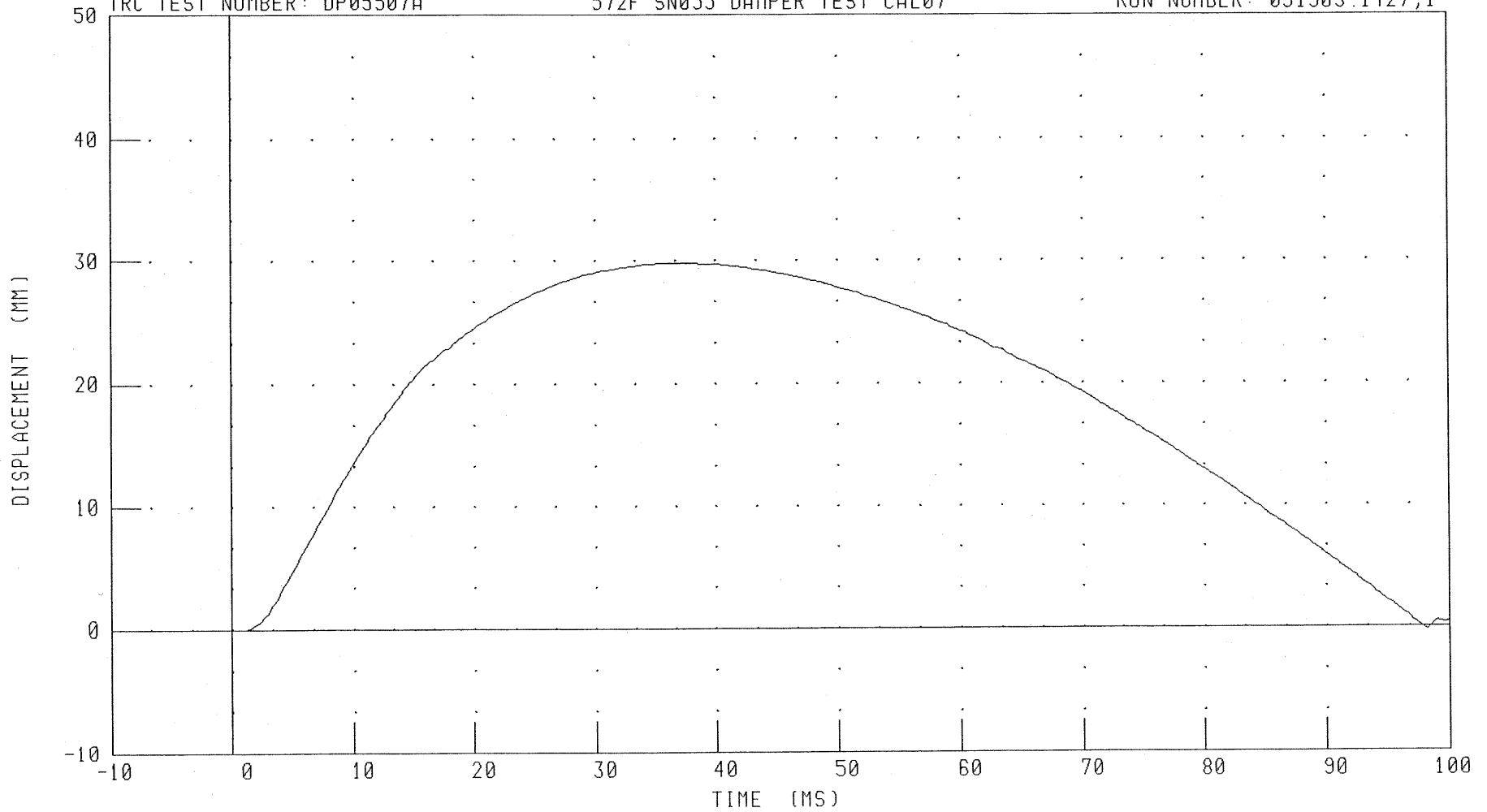
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507A

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 29.76 MM @ 35.92 MS; -0.24 MM @ 98.16 MS

C-23

030924-1

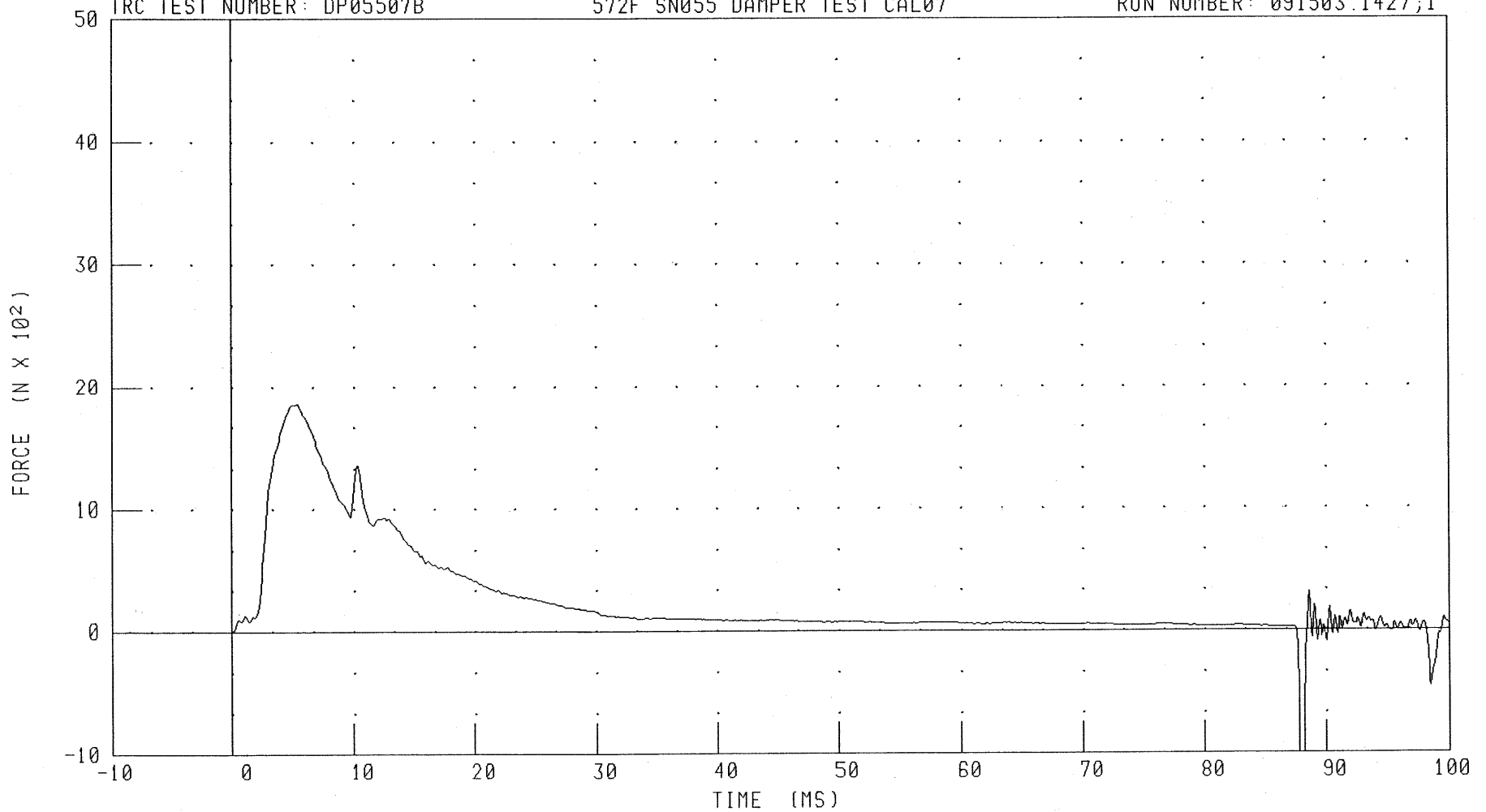
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507B

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 1857.92 N @ 5.36 MS; -2558.33 N @ 88.00 MS

C-24

030924-1

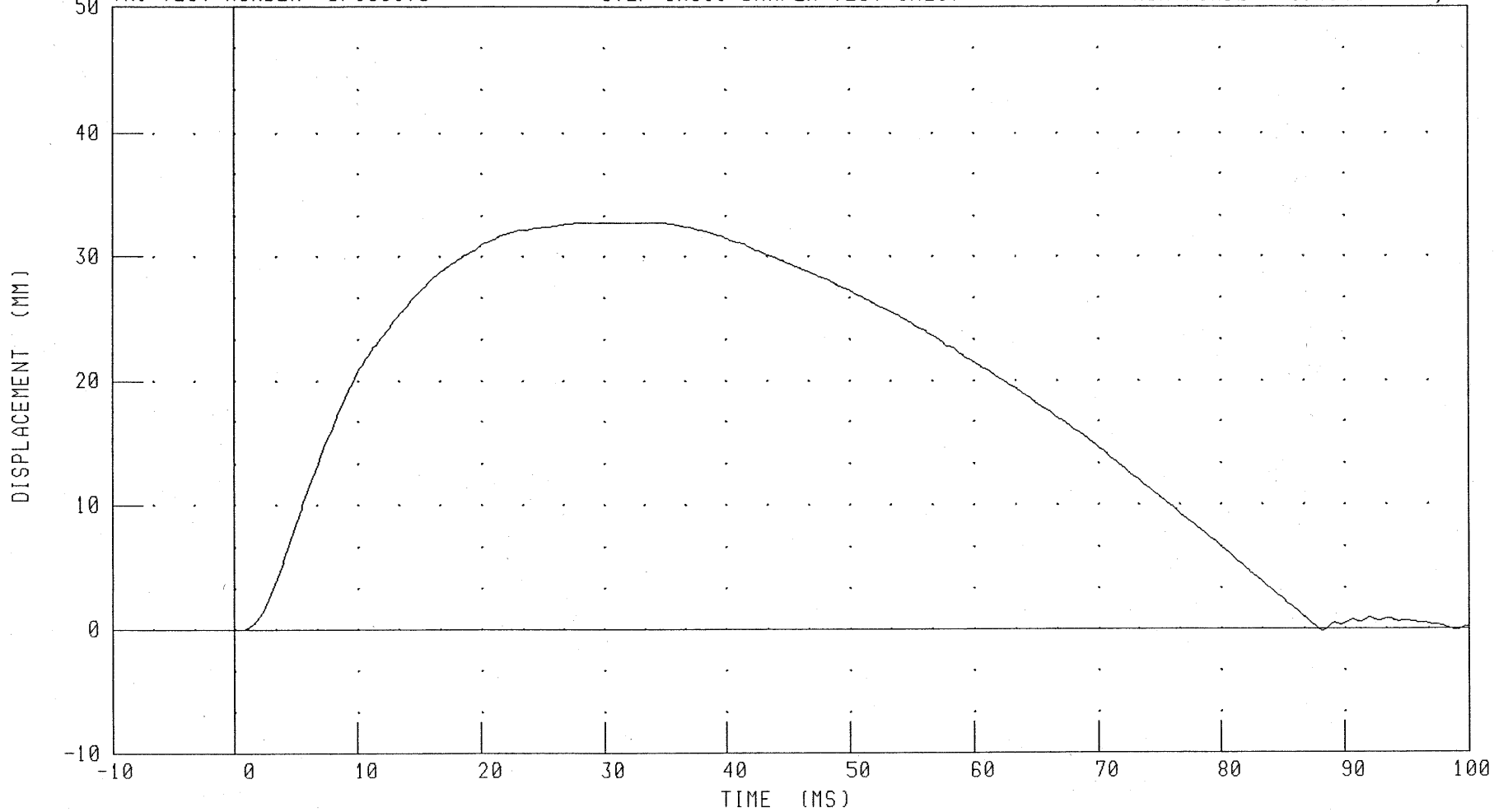
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507B

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 32.77 MM @ 31.20 MS; -0.23 MM @ 88.24 MS

C-25

030924-1

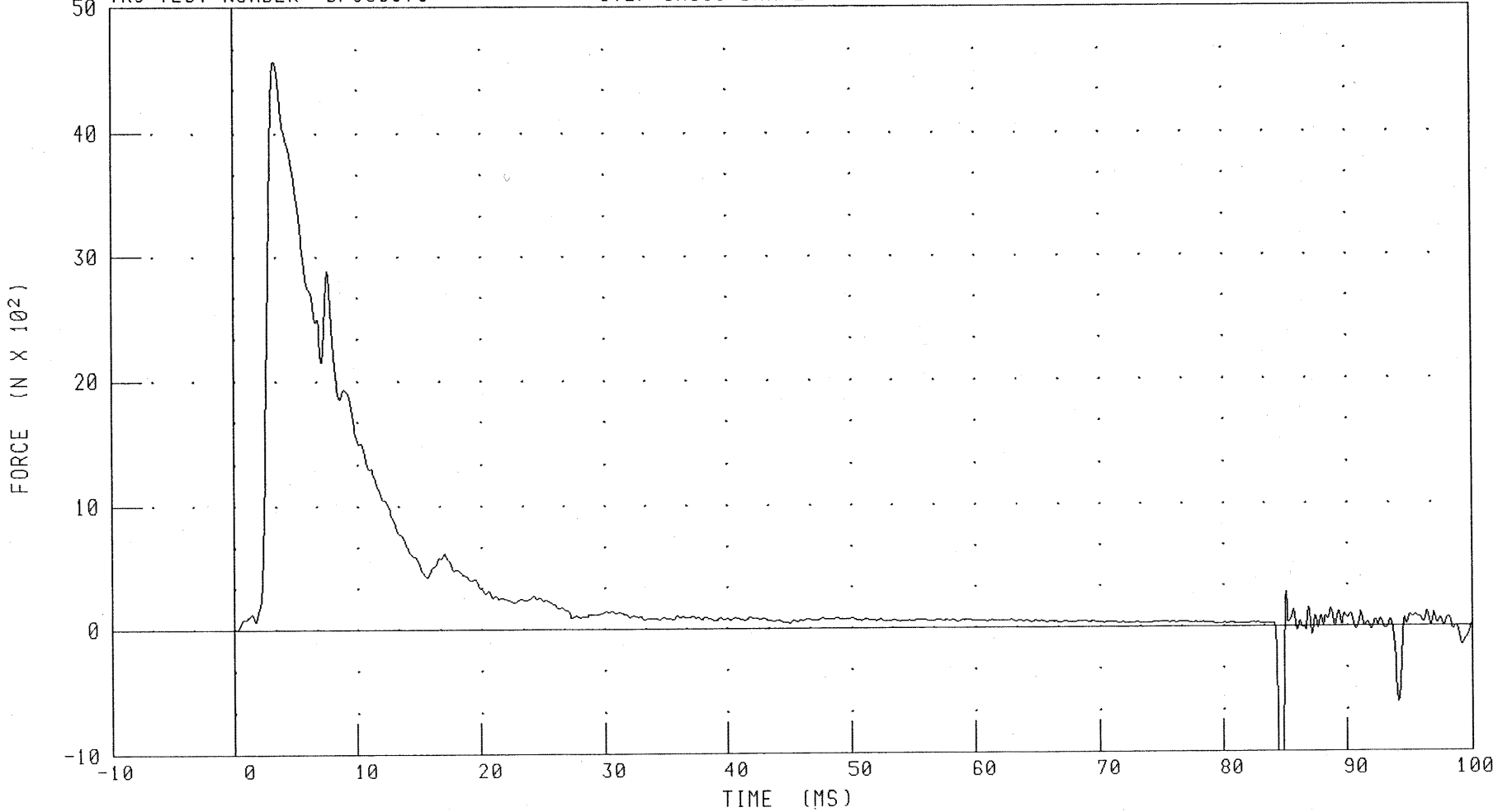
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507C

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 4562.46 N @ 3.28 MS; -2683.85 N @ 84.72 MS

C-26

030924-1

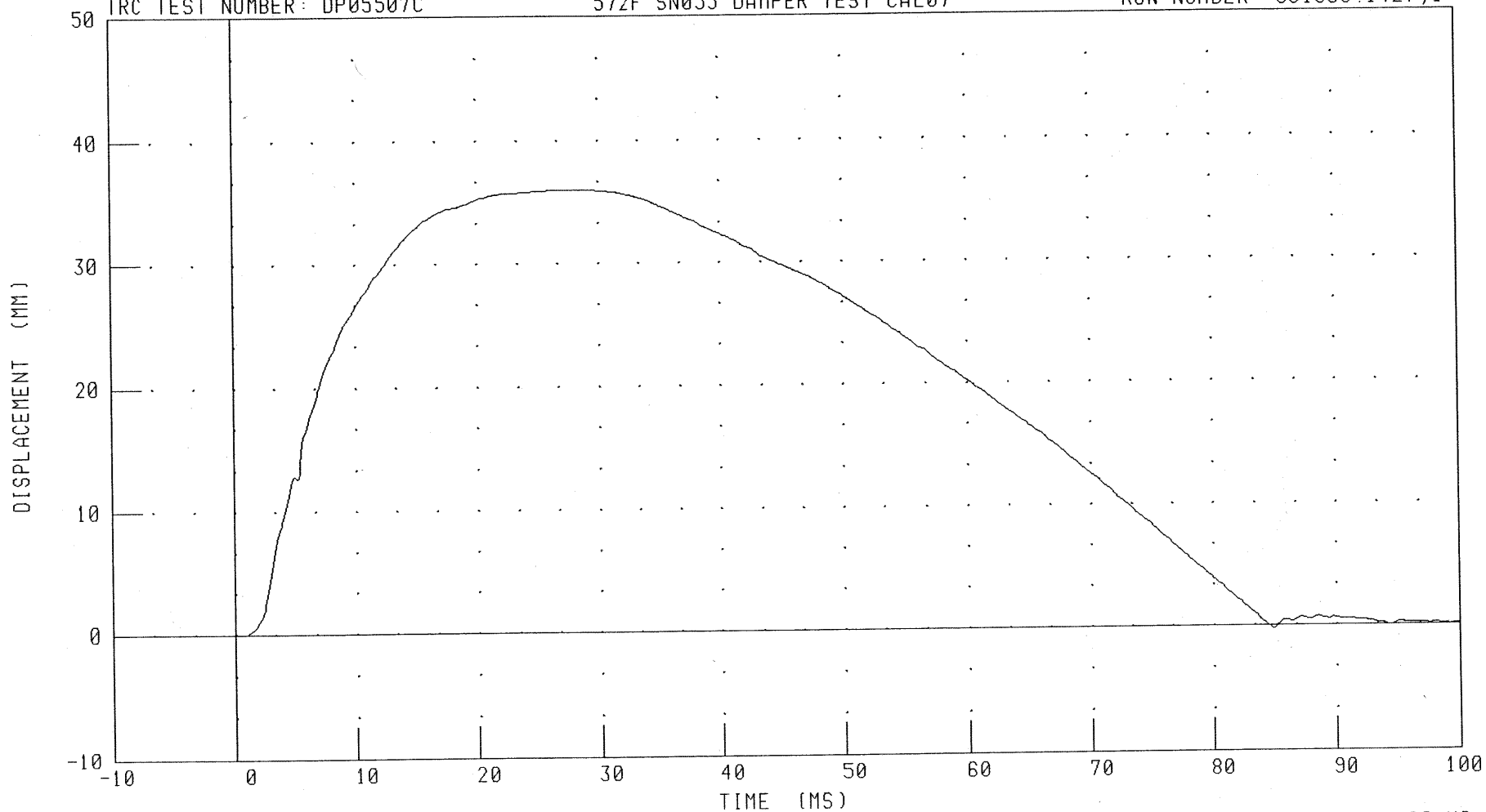
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1

TRC TEST NUMBER: DP05507C



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 35.97 MM @ 27.76 MS; -0.28 MM @ 84.88 MS

C-27

030924-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL05508

SID/H3 SN055 L.THORAX CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	41.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.9 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	39.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.3 G

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V.F. Walter*

RUN NUMBER: 092703.1924;1

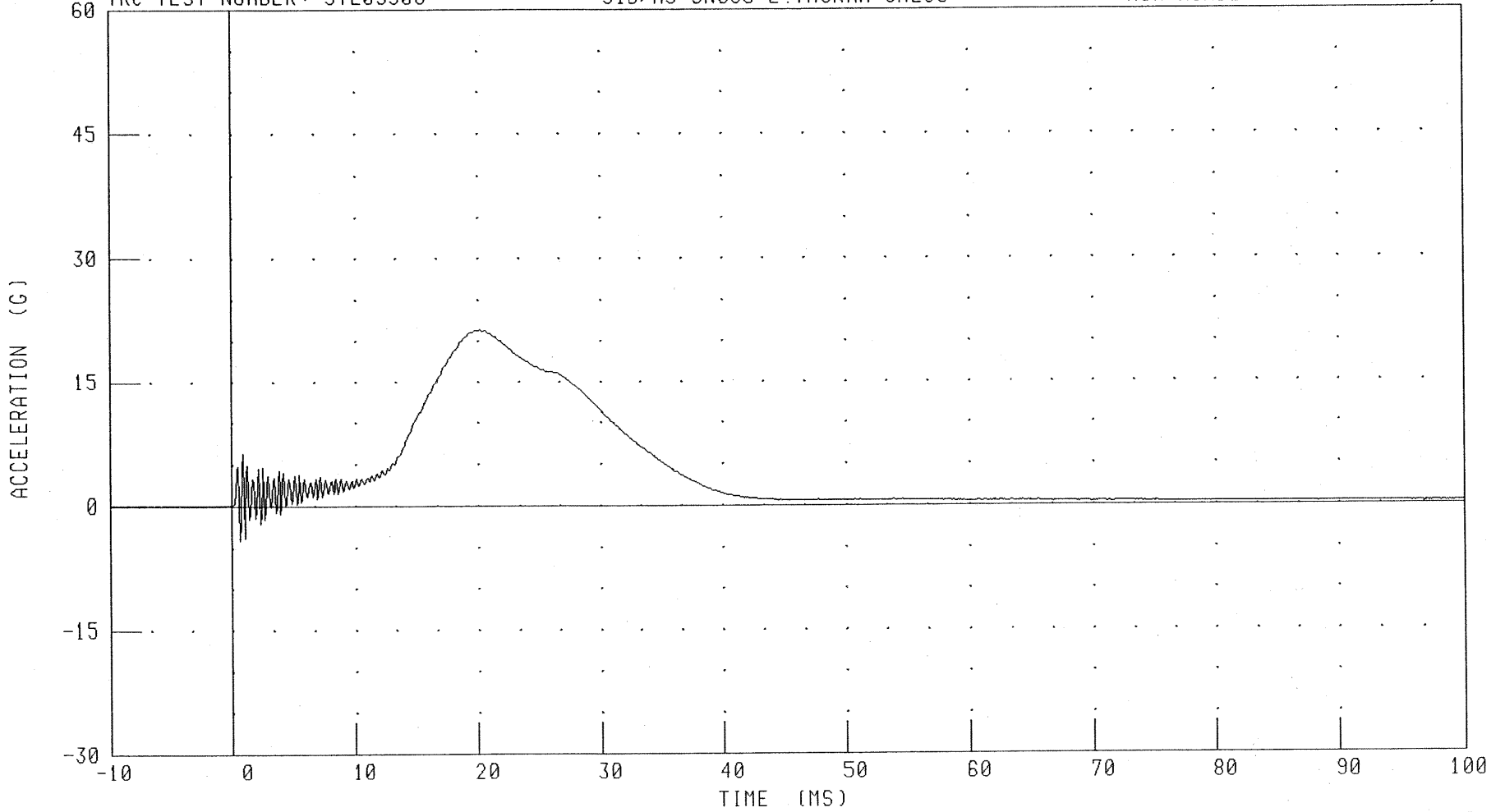
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



CHANNEL: PENXG

FILTER: CH. CLASS 1000

PEAK DATA: 21.40 G @ 20.24 MS; -4.13 G @ 0.64 MS

C-29

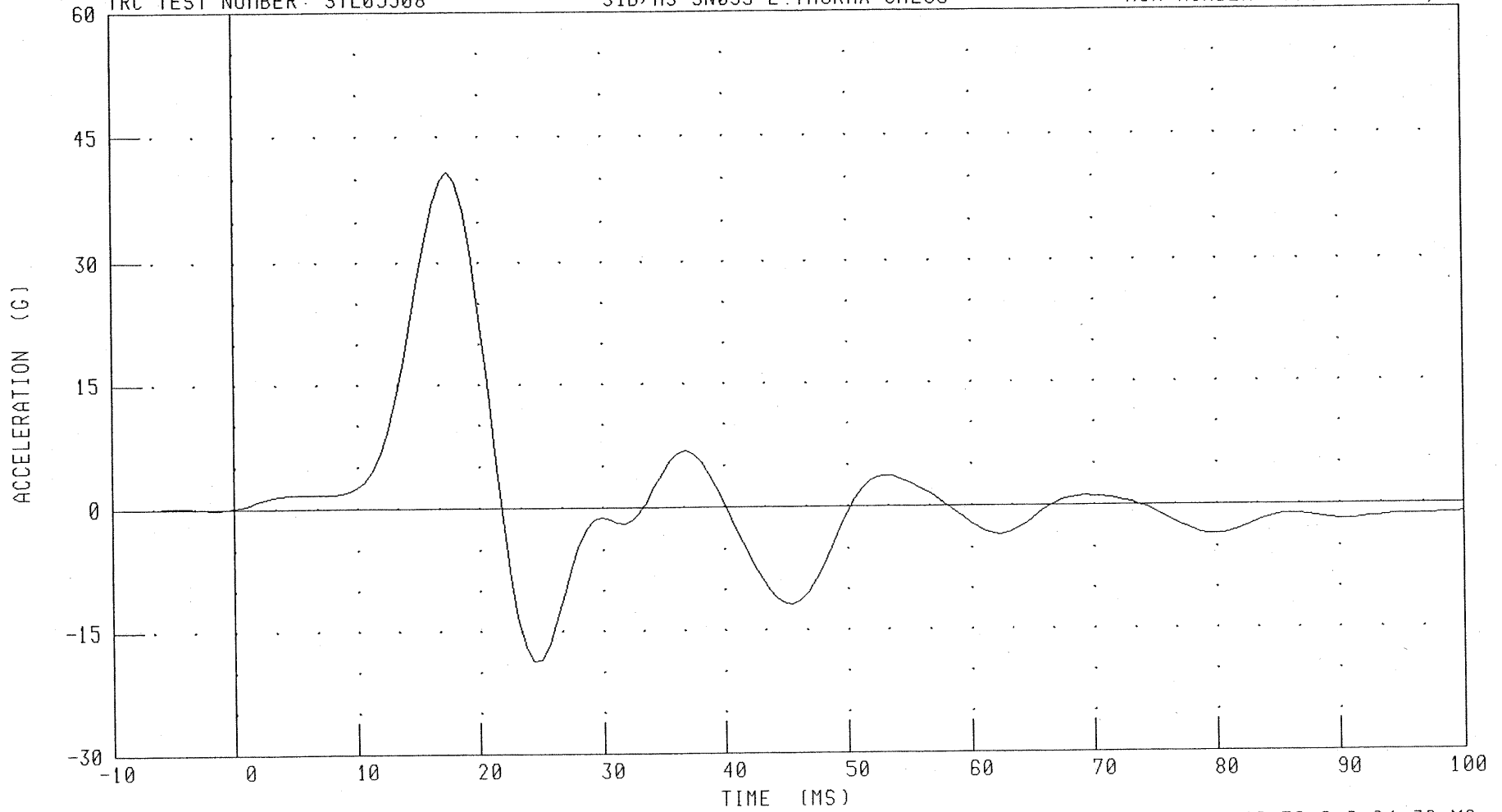
030924-1

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)  
LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



CHANNEL: LURYG FILTER: FIR 100

PEAK DATA: 40.85 G @ 17.50 MS; -18.76 G @ 24.38 MS

C-30

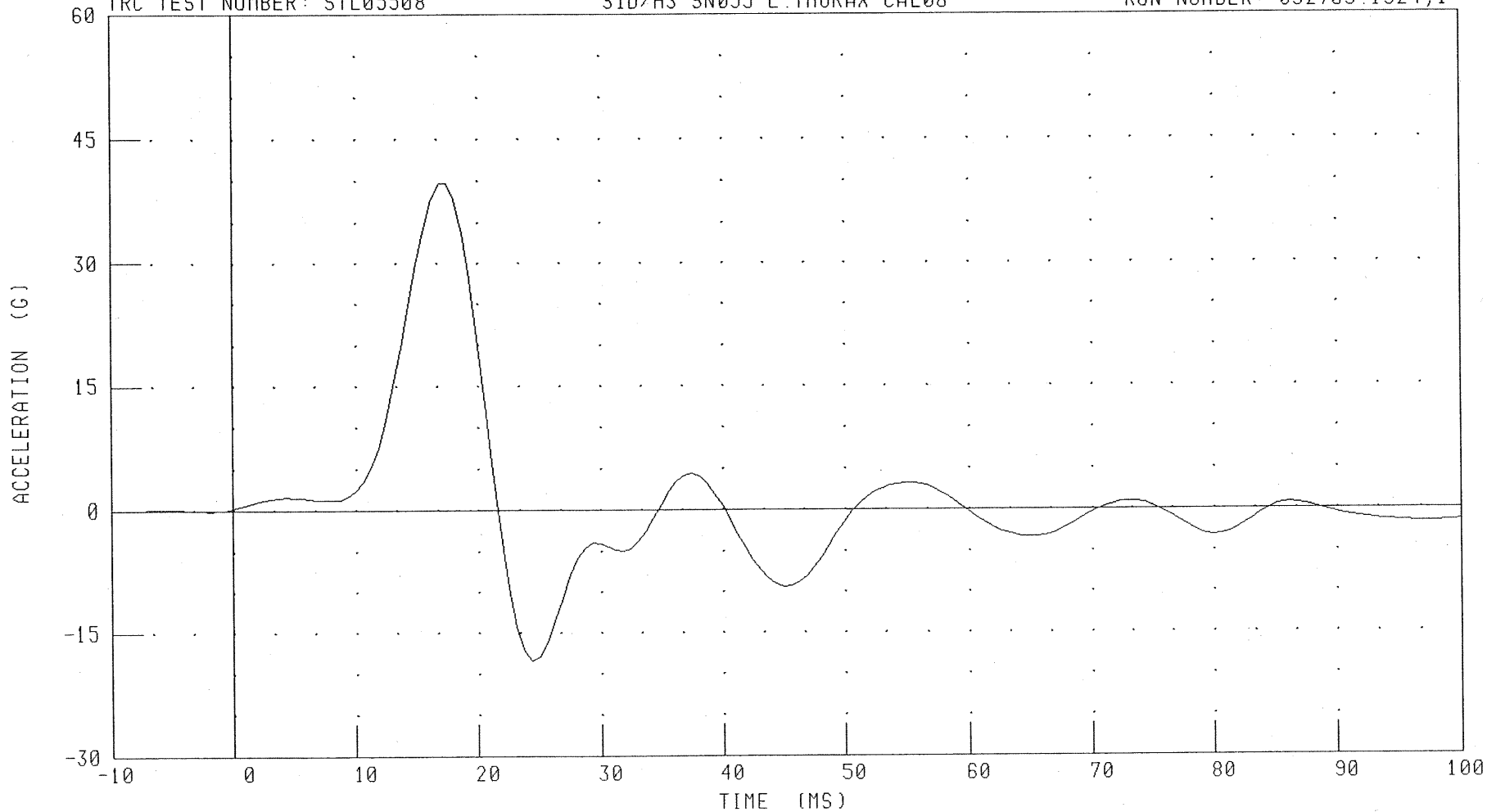
030924-1

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)  
LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 39.75 G @ 17.50 MS; -18.52 G @ 24.38 MS

C-31

030924-1

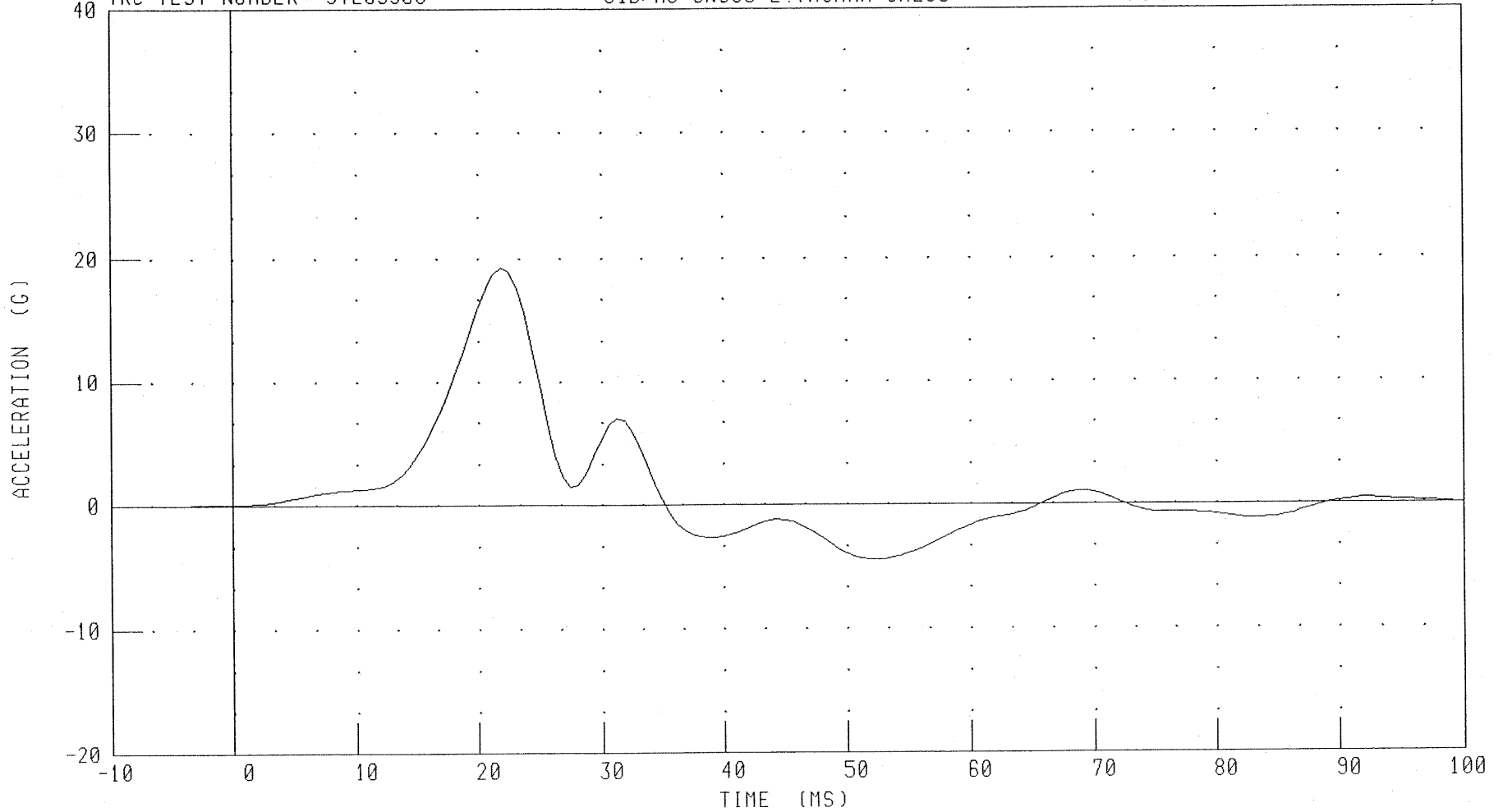
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



CHANNEL: T12YG

FILTER: FIR 100

PEAK DATA: 19.25 G @ 21.88 MS; -4.45 G @ 52.50 MS

C-32

030924-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	40.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.27 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	44.2 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V. J. Walters*

RUN NUMBER: 092703.1916;1

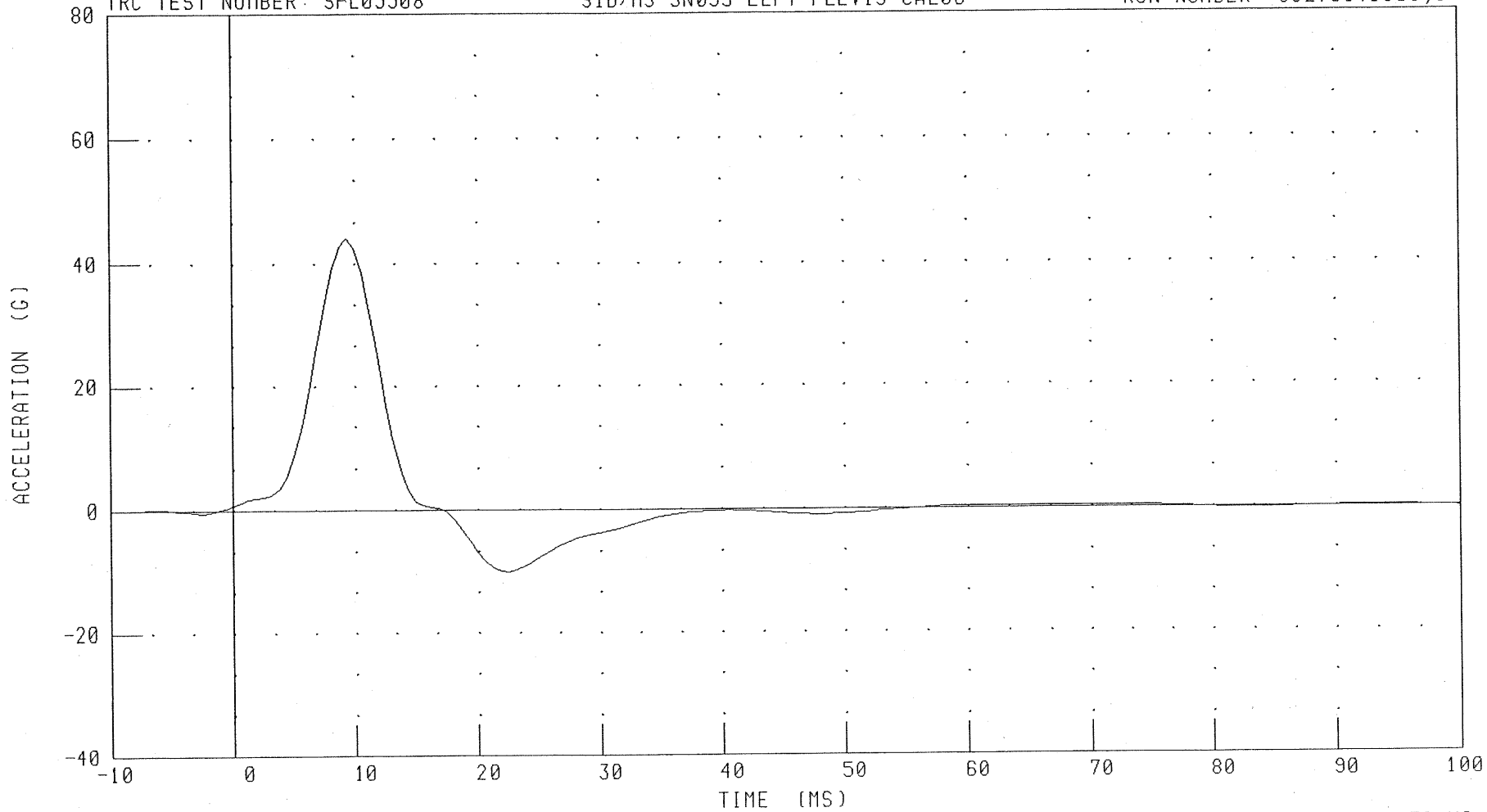
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08

RUN NUMBER: 092703.1916;1



CHANNEL: PEVYC

FILTER: FIR 100

PEAK DATA: 44.17 G @ 9.37 MS; -9.98 G @ 22.50 MS

C-34

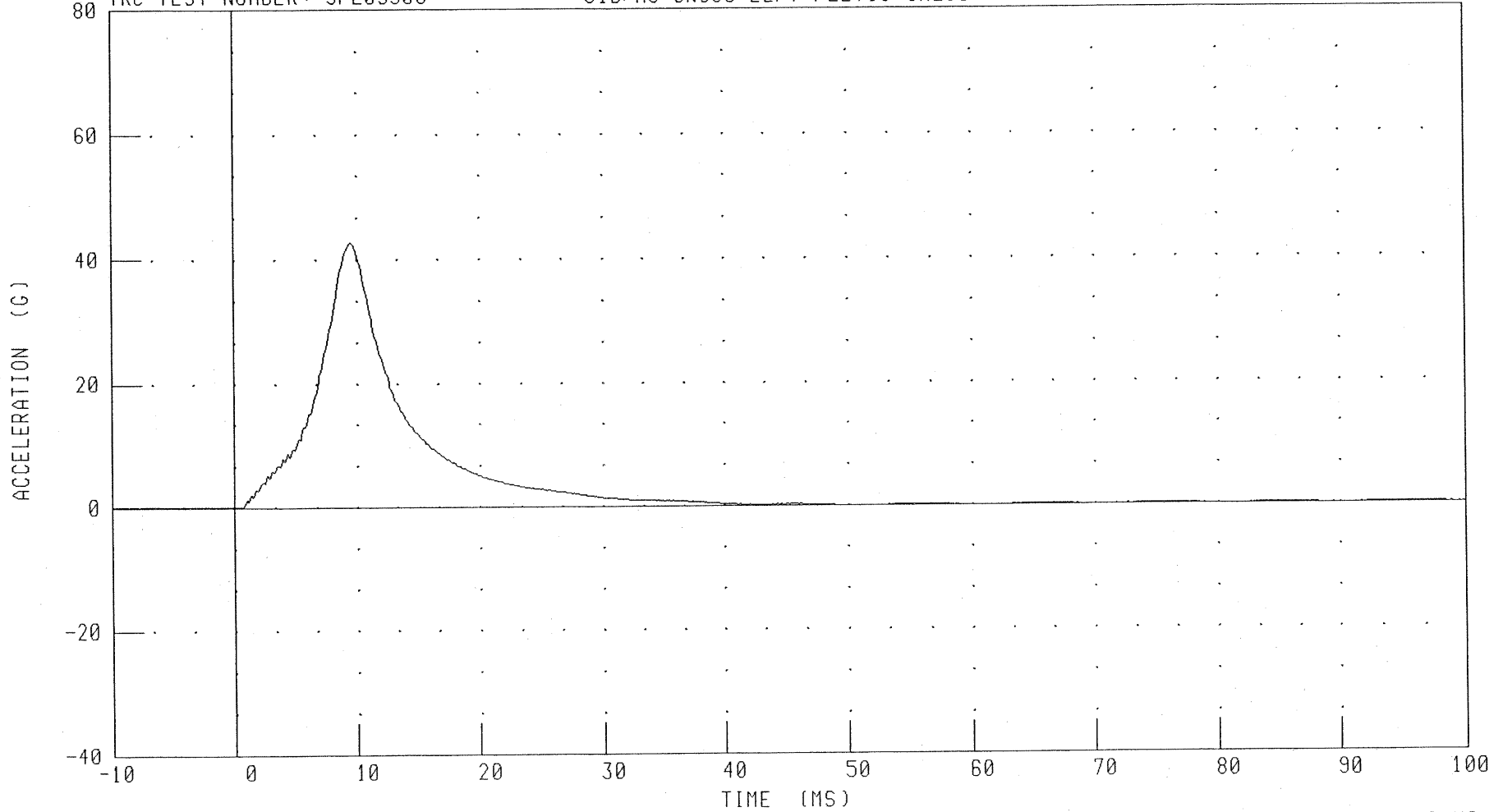
030924-1

PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)  
PENDULUM DECELERATION

TRC TEST NUMBER: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08

RUN NUMBER: 092703.1916;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 42.76 G @ 9.52 MS; -0.10 G @ 51.12 MS

C-35

030924-1

## Calibration Test Results

Pre-Test

SID HIII: 906

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber passed all test requirements.

Transportation Research Center Inc.

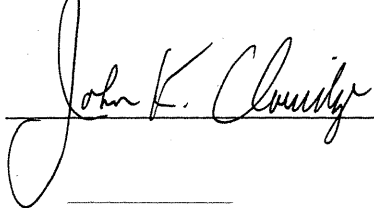
SID/HIII Dummy

External Dimensions

Serial No. 906 Calibration No. 02

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	901 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	511 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	229 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	513 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	496 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	370 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	172 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	173 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	1.0 mm	Yes

Technician

  
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Approved

  
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TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDI III SID DUMMY

12-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL90602

572M SID/HIII SN906 HEAD CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.11 deg. C
RELATIVE HUMIDITY	10 - 70 %	62.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	131.10 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	8.74 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

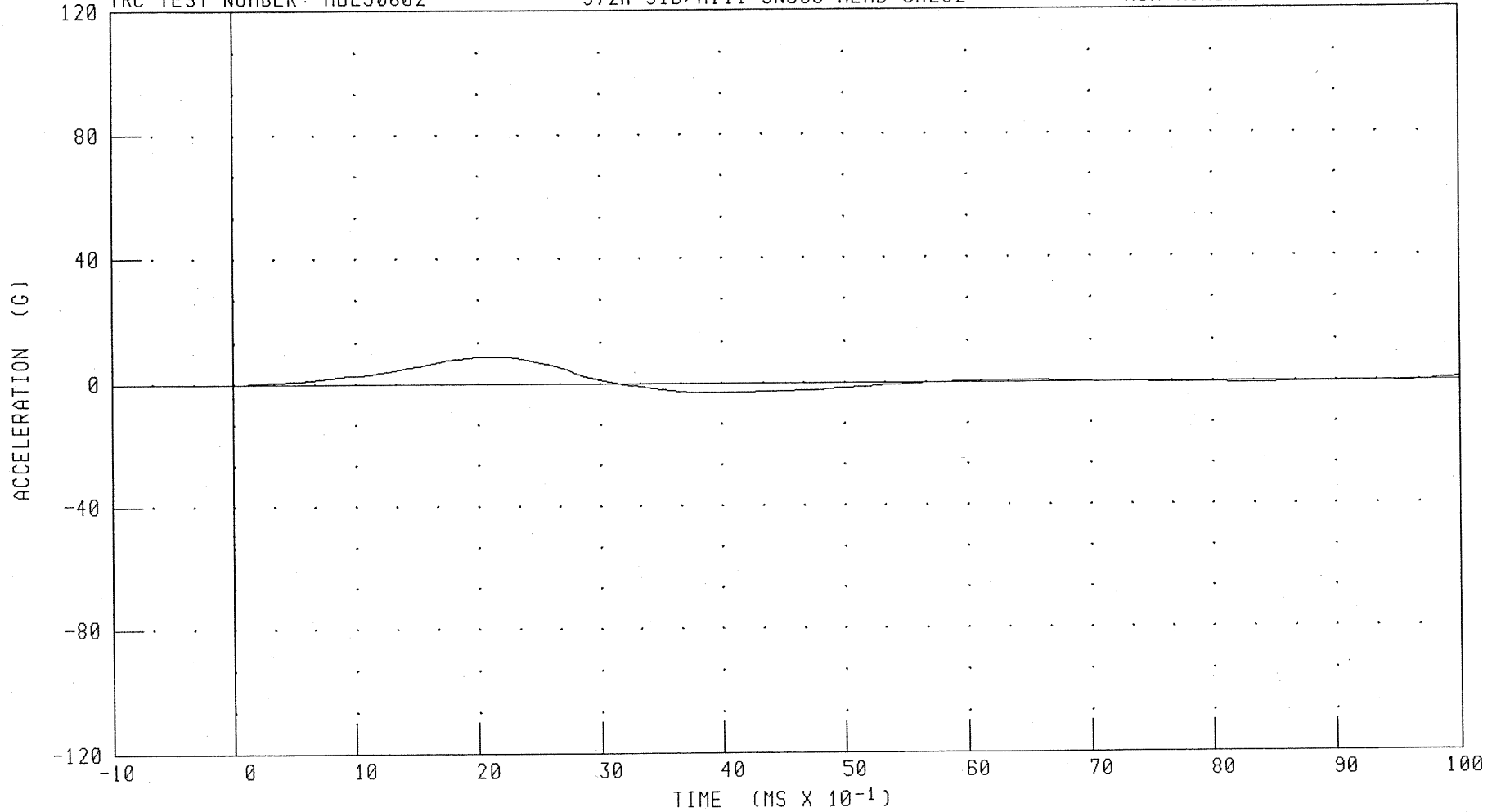
RUN NUMBER: 100203.0721;1

572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP  
HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL90602

572M SID/HIII SN906 HEAD CAL02

RUN NUMBER: 100203.0722;1



CHANNEL: HEDXC

FILTER: CH. CLASS 1000

PEAK DATA: 8.74 G @ 2.16 MS; -3.23 G @ 4.08 MS

C-39

030924-1

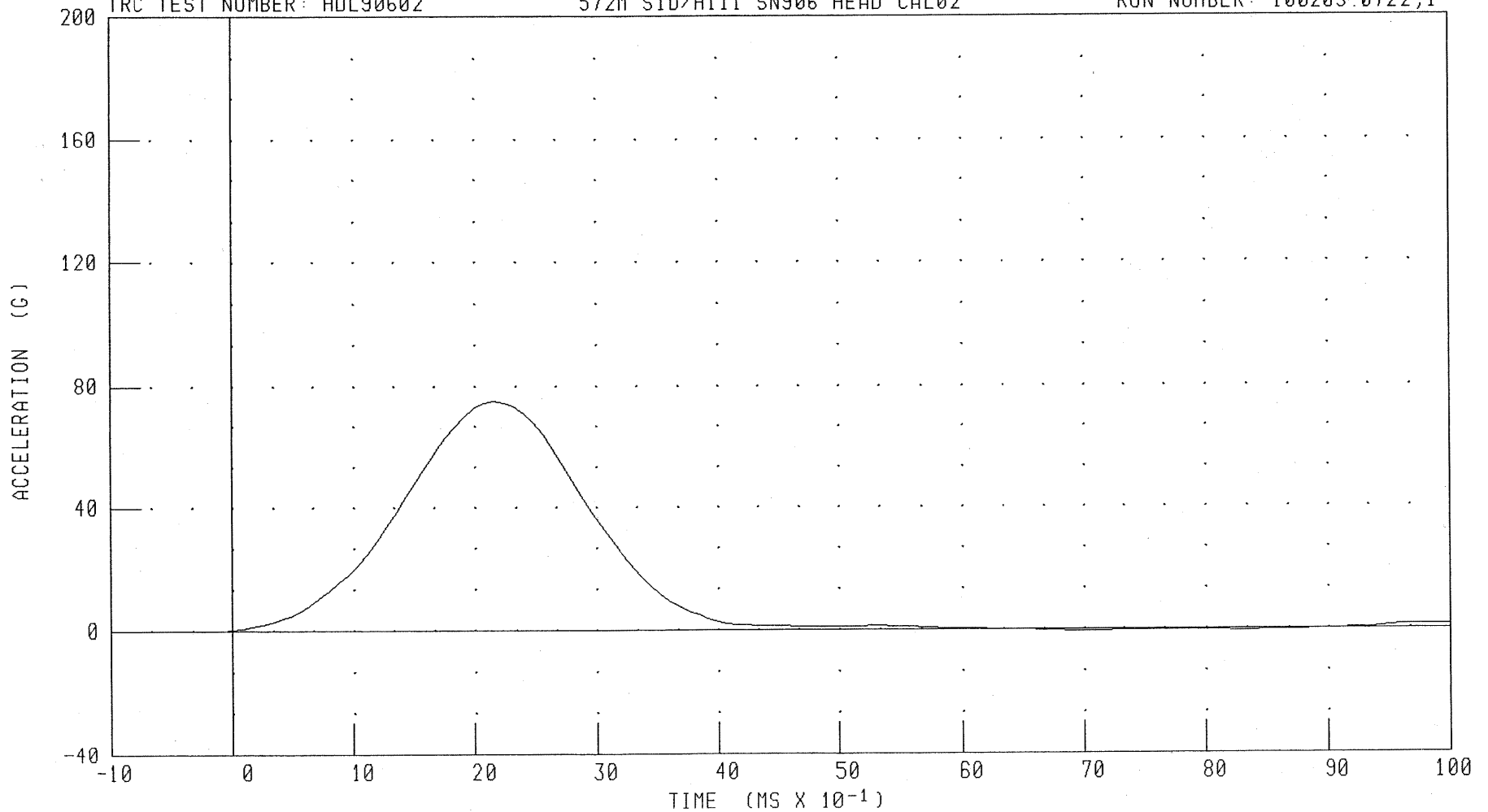
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL90602

572M SID/HIII SN906 HEAD CAL02

RUN NUMBER: 100203.0722;1



CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 74.94 G @ 2.16 MS; -0.73 G @ 7.04 MS

C-40

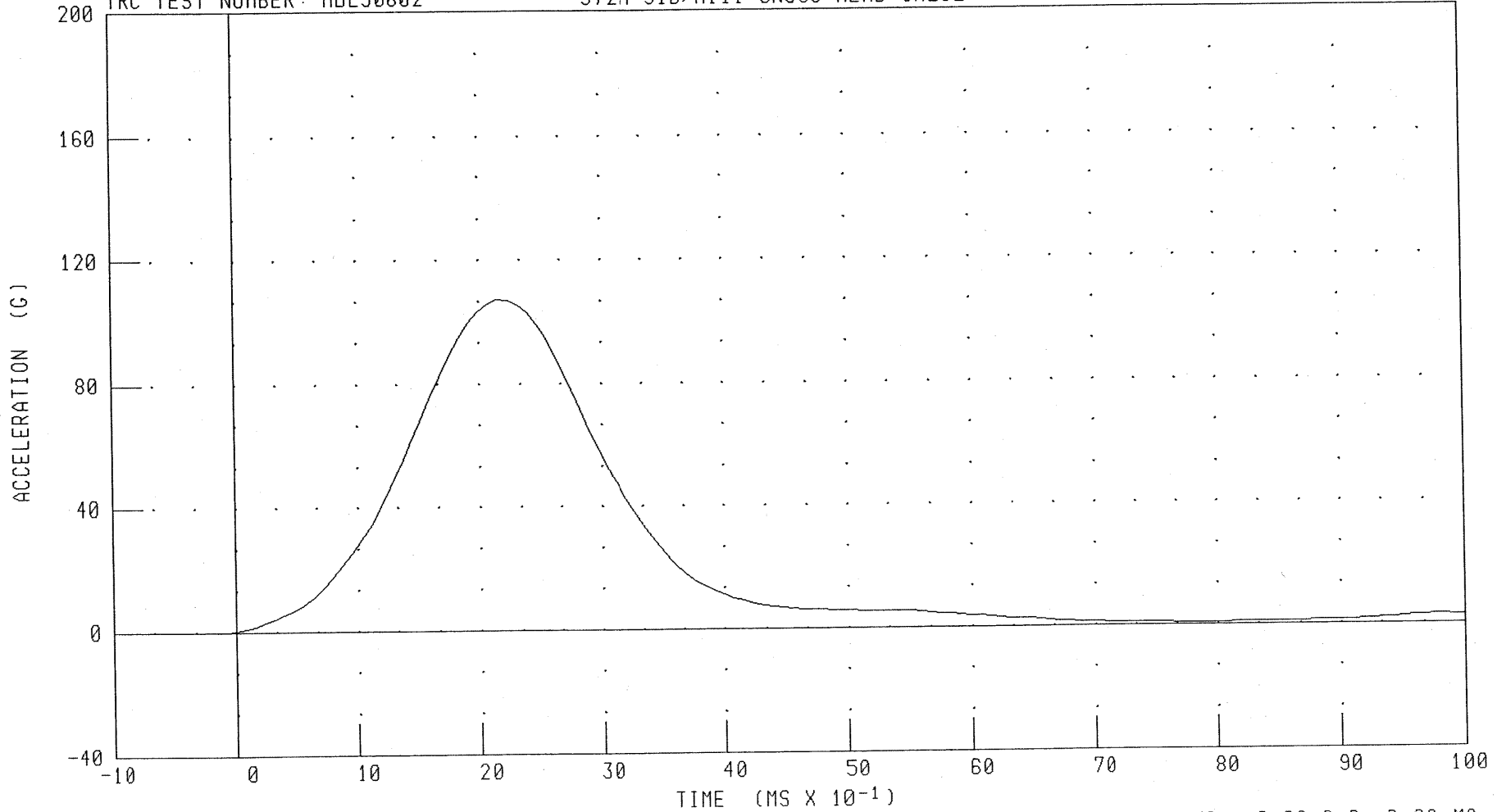
030924-1

572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP  
HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL90602

572M SID/HIII SN906 HEAD CAL02

RUN NUMBER: 100203.0722;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

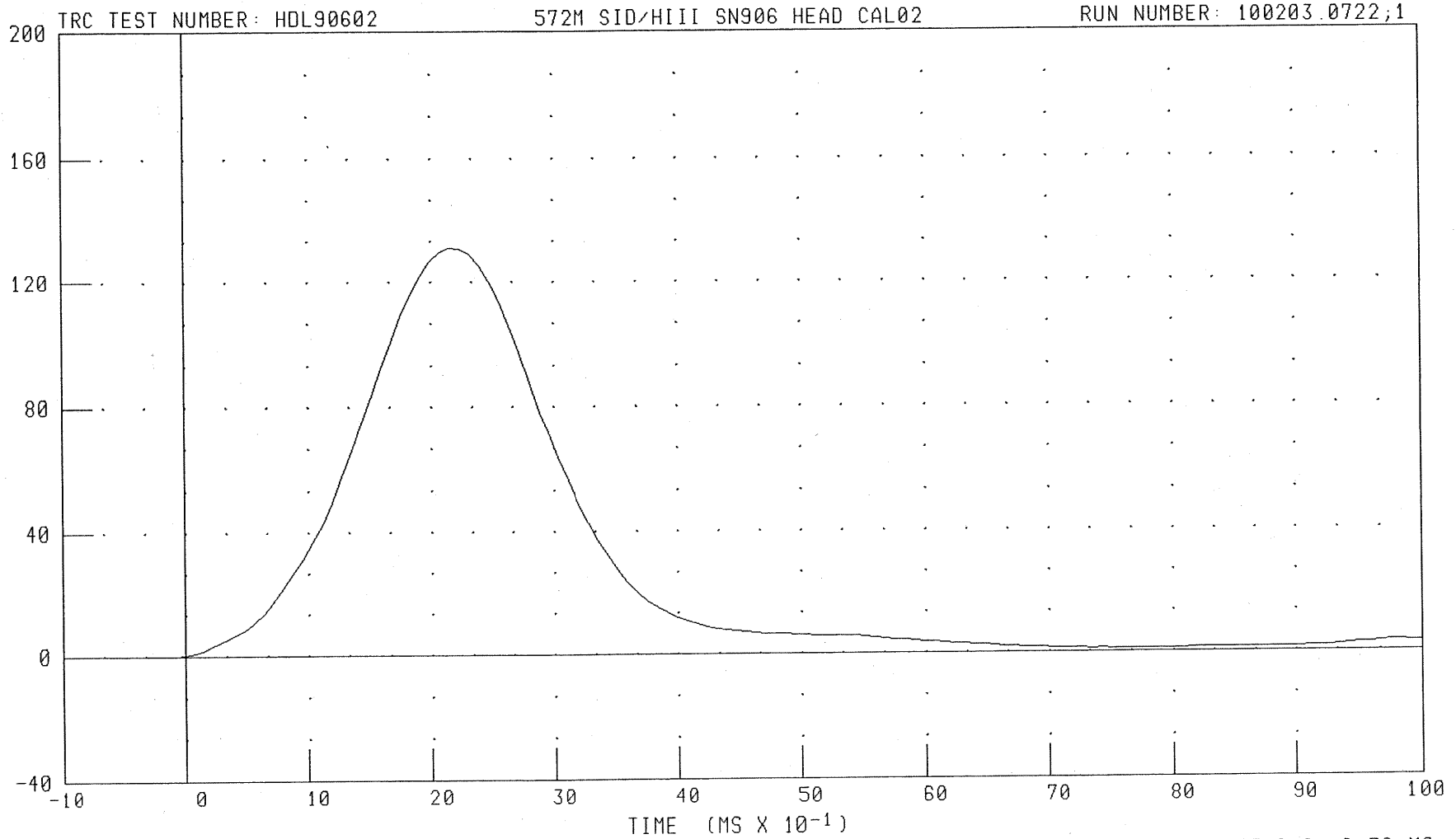
PEAK DATA: 107.22 G @ 2.16 MS; -0.08 G @ -0.96 MS

C-41

030924-1

572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 131.10 G @ 2.16 MS; 0.03 G @ -0.72 MS

C-42

030924-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

11-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NFL90602

572M SID/H3 SN906 NECK CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.11 deg. C
RELATIVE HUMIDITY	10 - 70 %	62.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	6.99 M/S
INTEGRATED VELOCITY	10 MS   1.96 - 2.55 M/S	2.46 M/S
	20 MS   4.12 - 5.10 M/S	4.84 M/S
	30 MS   5.73 - 7.01 M/S	6.70 M/S
	40 - 70 MS   6.27 - 7.64 M/S	7.12- 7.23 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 deg.	68.66 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	61.12 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73 - 88 NM	78.20 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	54.56 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	8.80 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

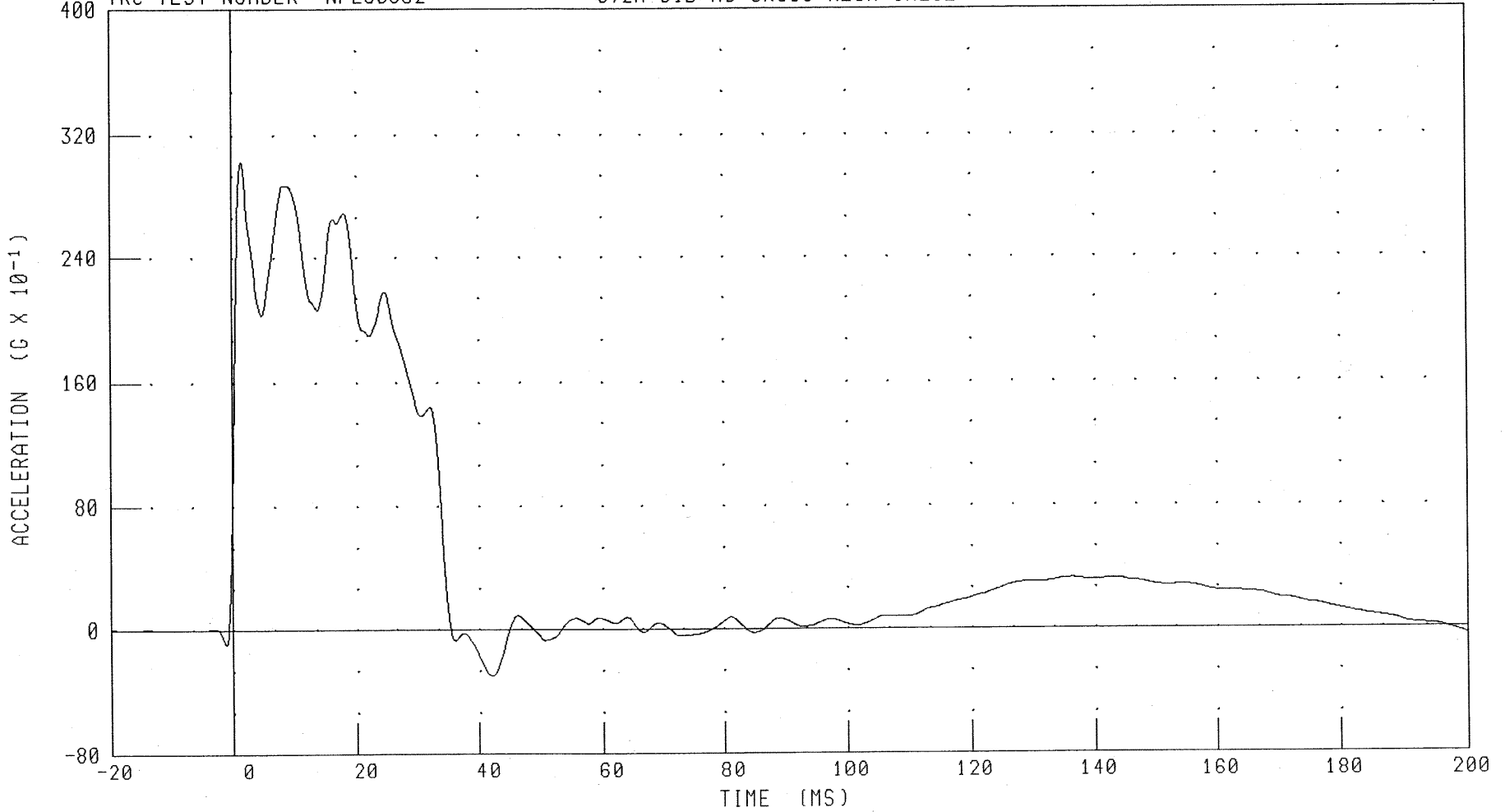
RUN NUMBER: 100203.0721;1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
PENDULUM DECELERATION

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 30.26 G @ 1.52 MS; -2.98 G @ 42.08 MS

C-44

030924-1

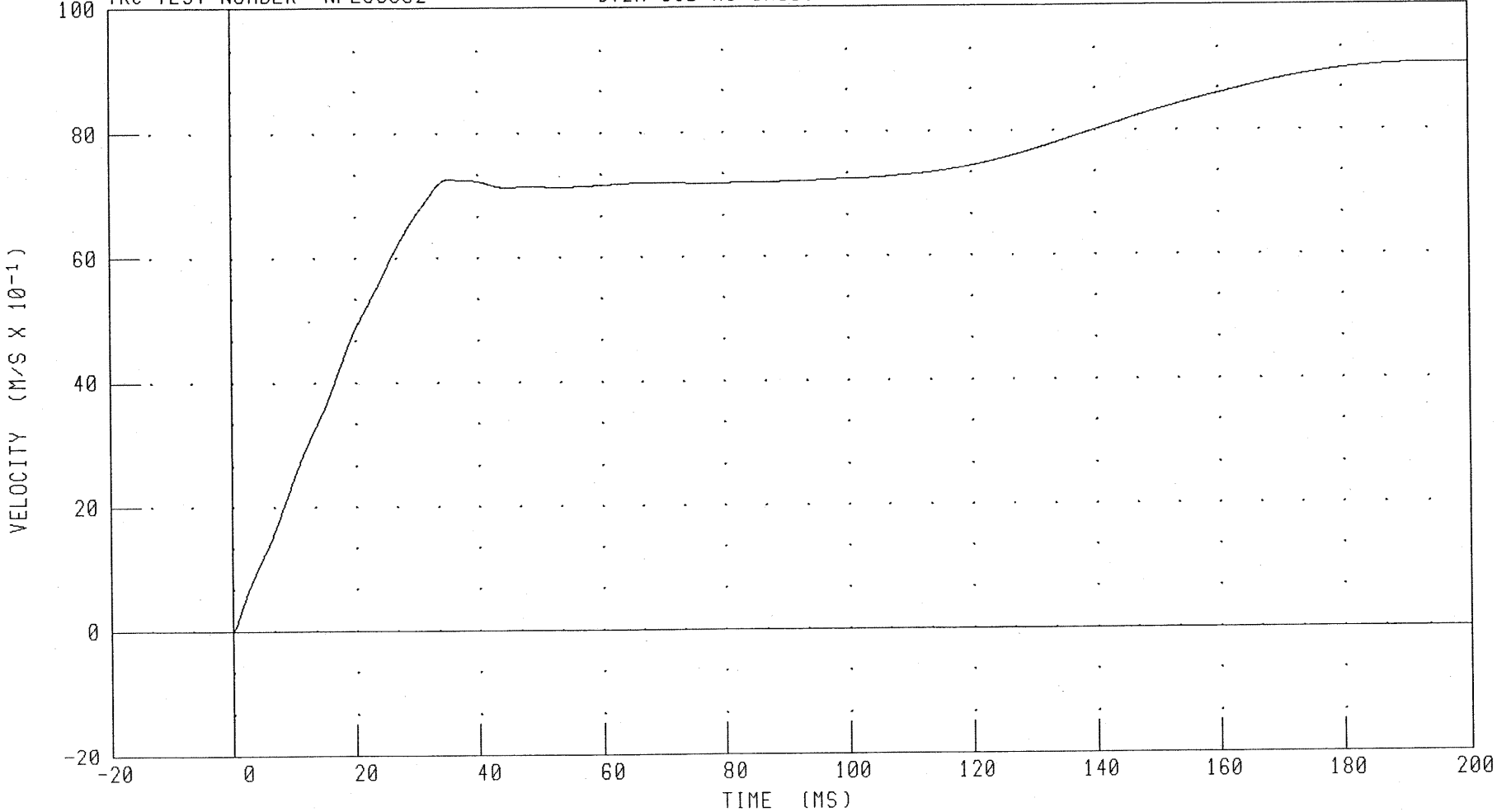
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: PENXVI FILTER: CH. CLASS 100

PEAK DATA: 9.06 M/S @ 196.56 MS; -0.01 M/S @ -0.64 MS

C-45

030924-1

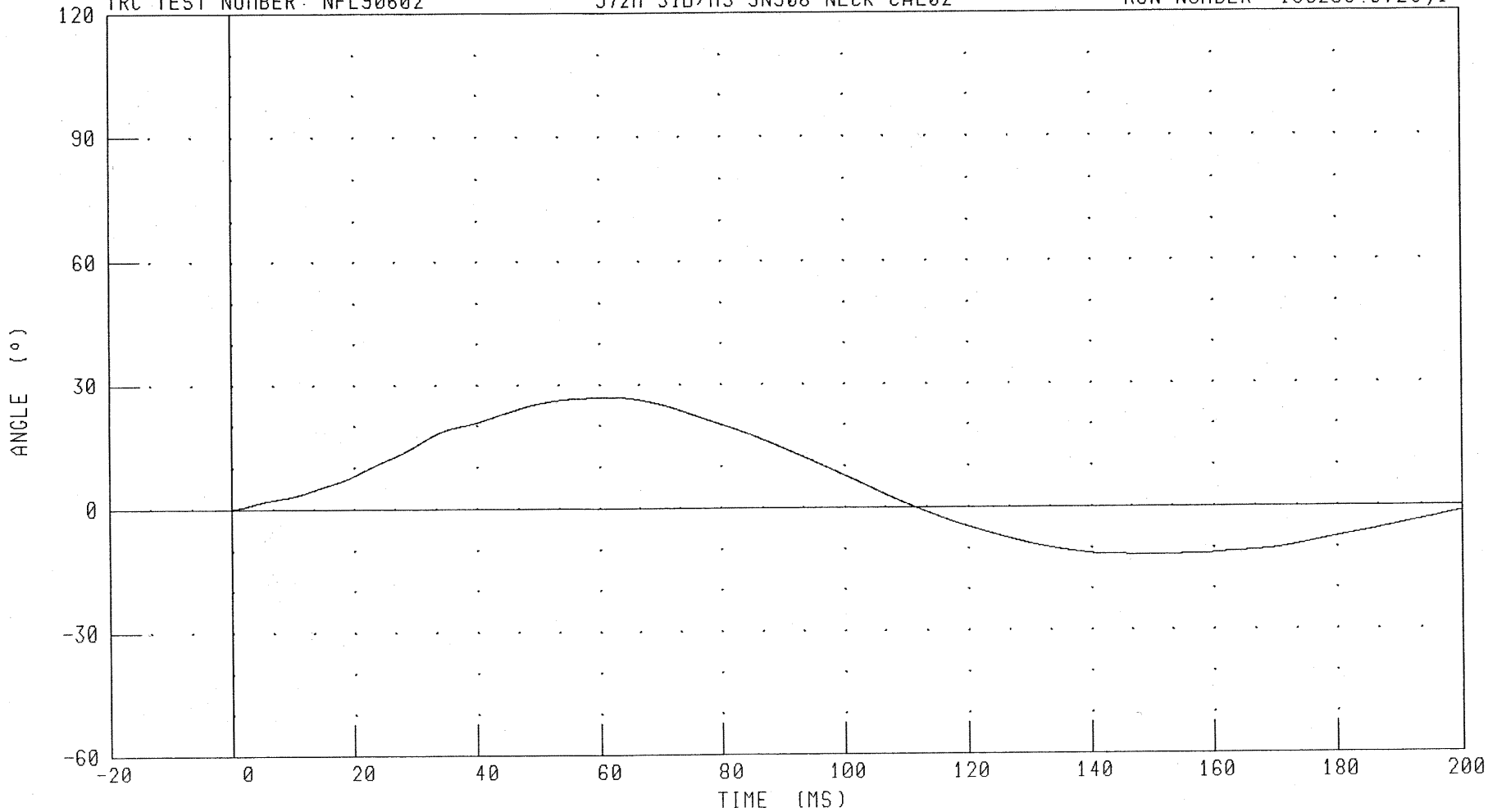
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 26.87 ° @ 61.92 MS; -11.81 ° @ 150.40 MS

C-46

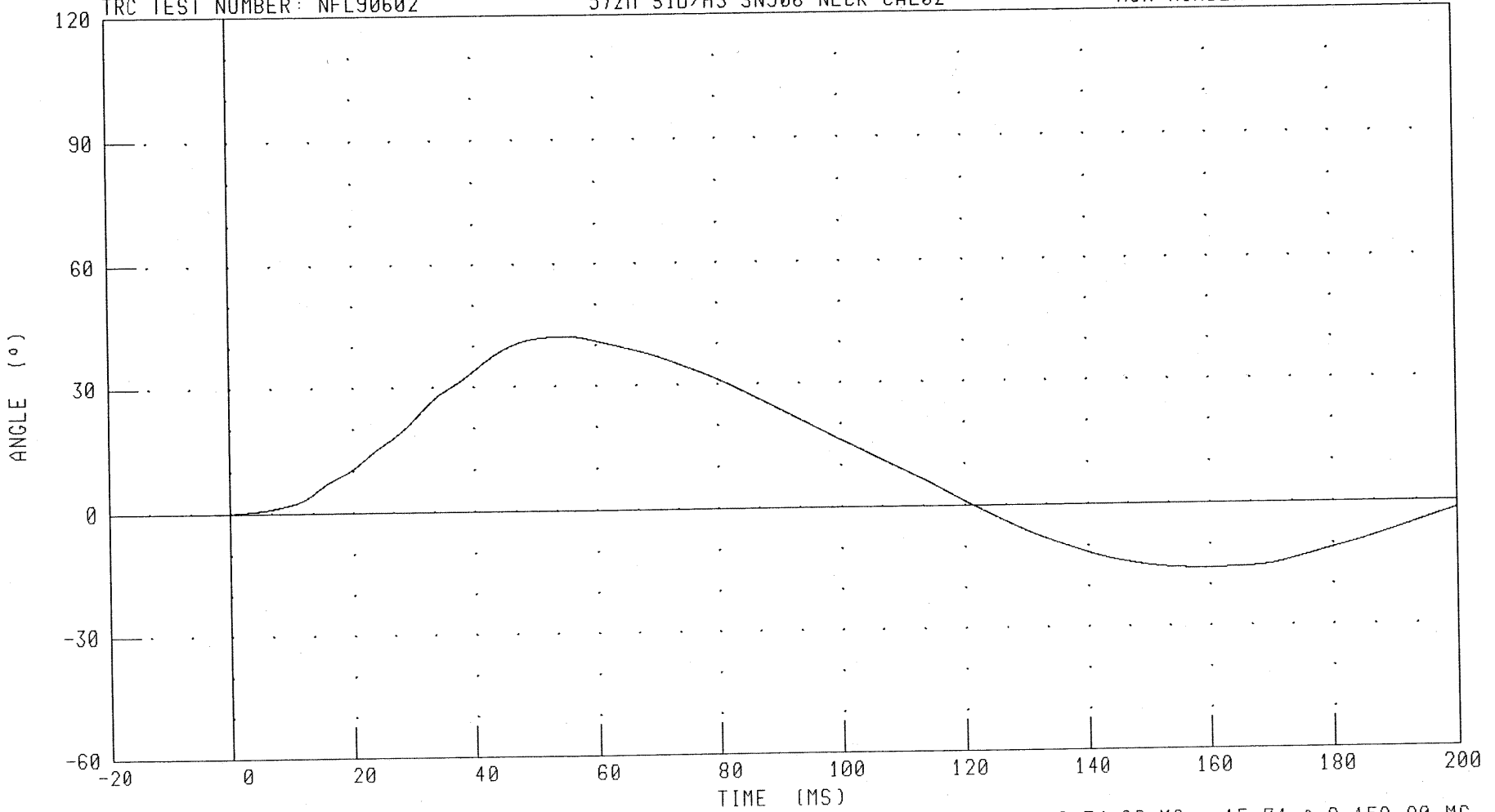
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 42.14 ° @ 54.80 MS; -15.74 ° @ 158.80 MS

C-47

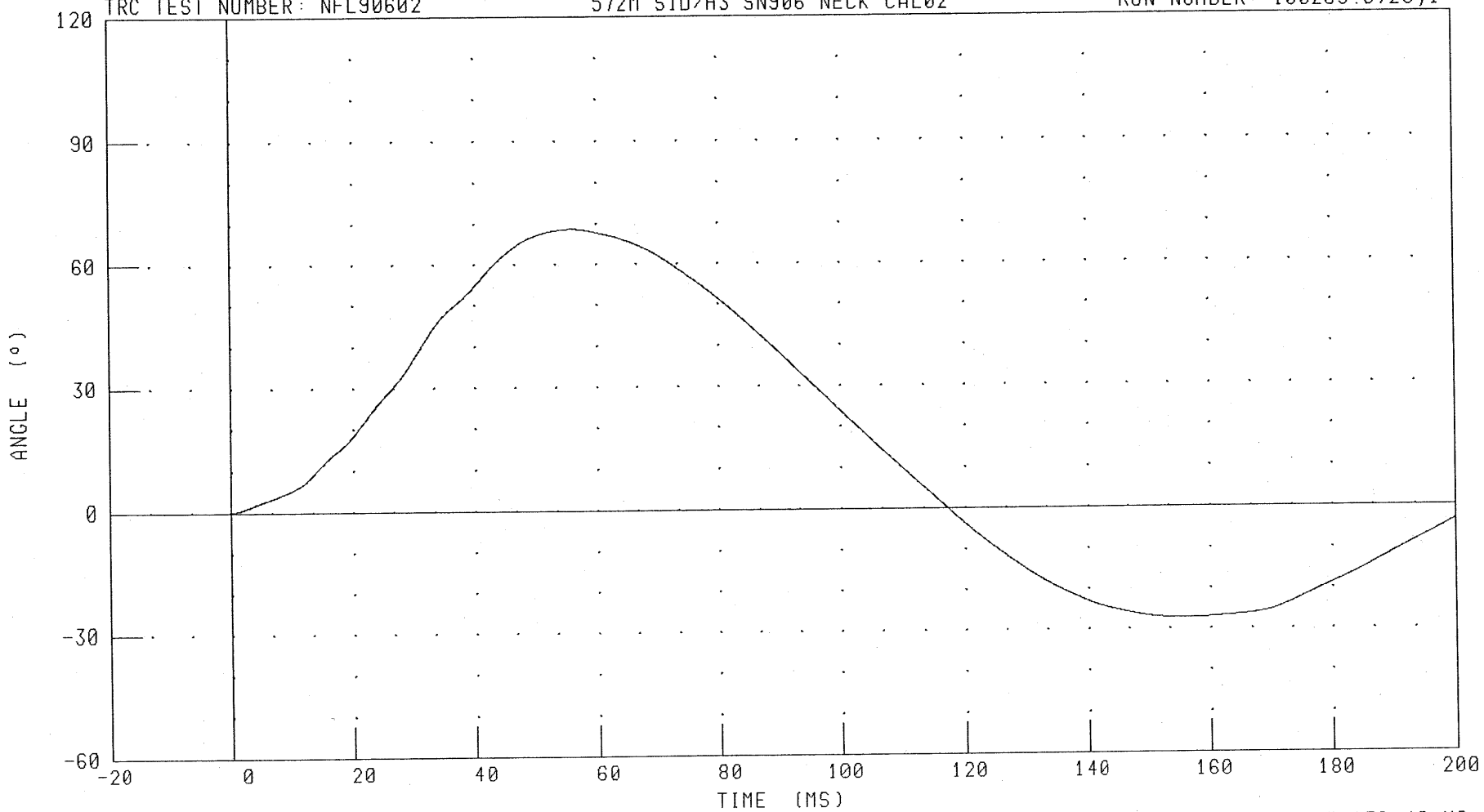
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
TOTAL ROTATION

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 68.66 ° @ 56.16 MS; -27.31 ° @ 156.48 MS

C-48

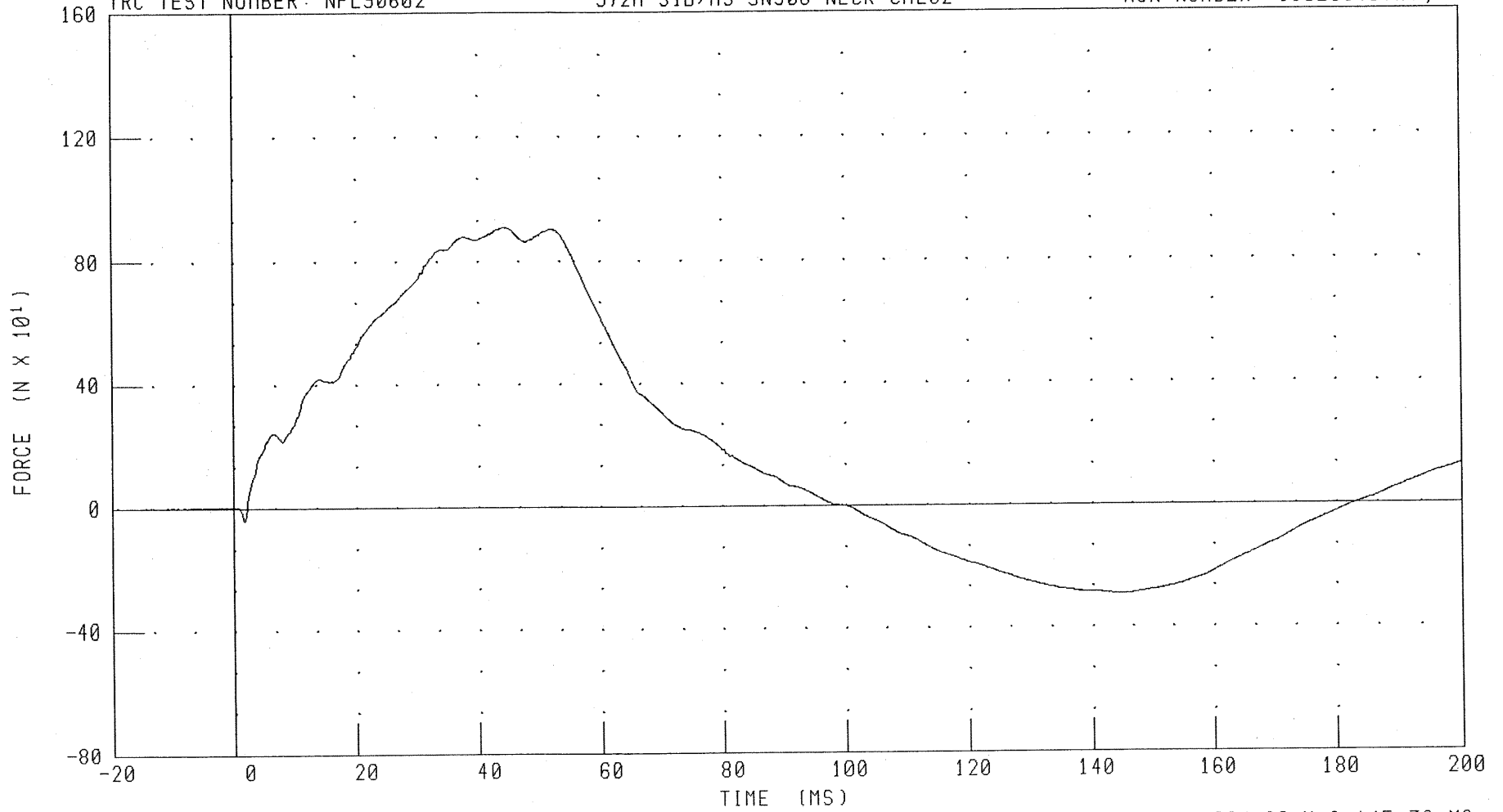
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
NECK FORCE Y AXIS

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: NEKYF FILTER: CH. CLASS 1000

PEAK DATA: 909.75 N @ 44.40 MS; -294.02 N @ 145.36 MS

C-49

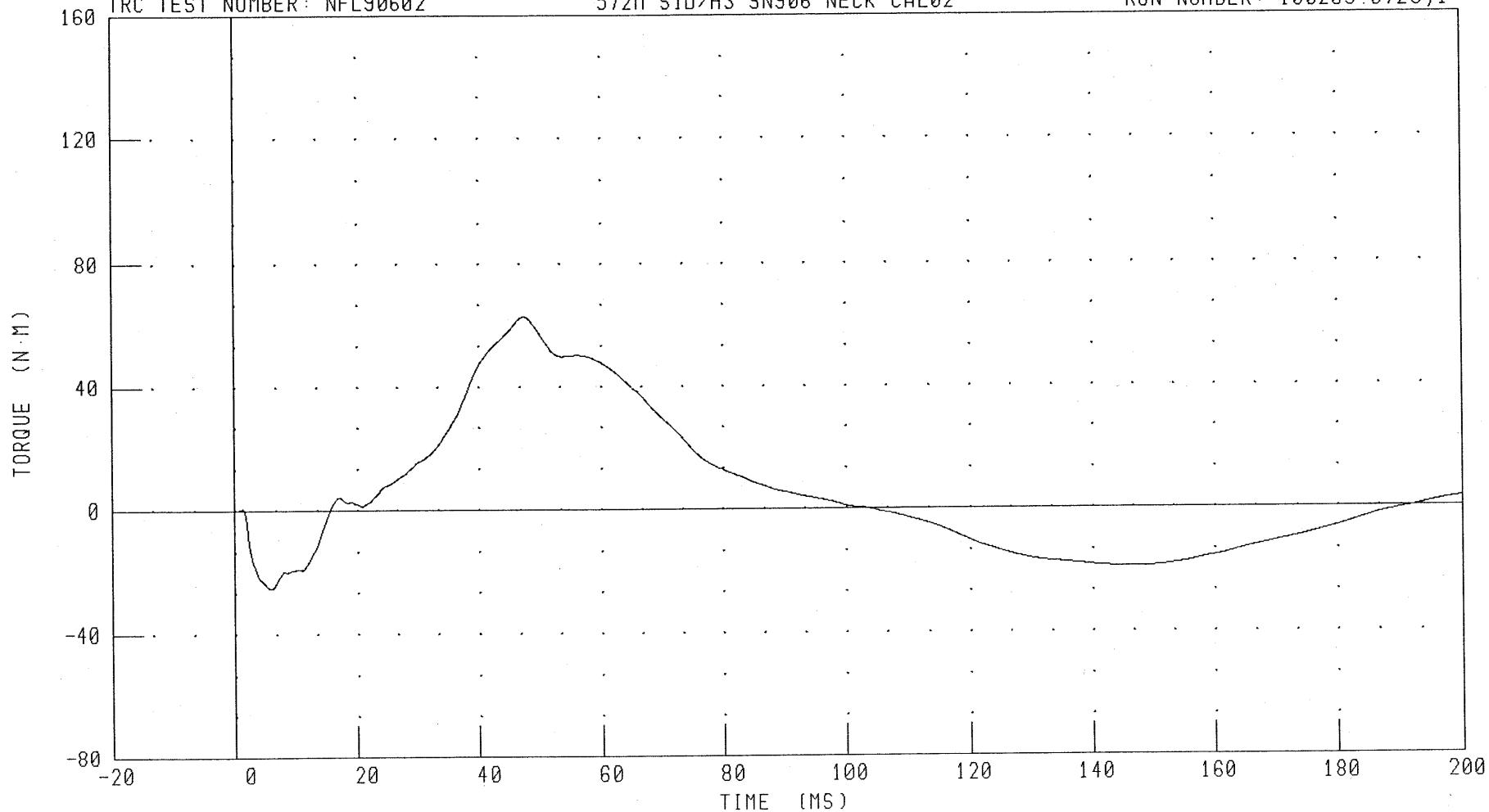
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
NECK MOMENT X AXIS

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723,1



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 62.80 N·M @ 47.44 MS; -25.21 N·M @ 5.92 MS

C-50

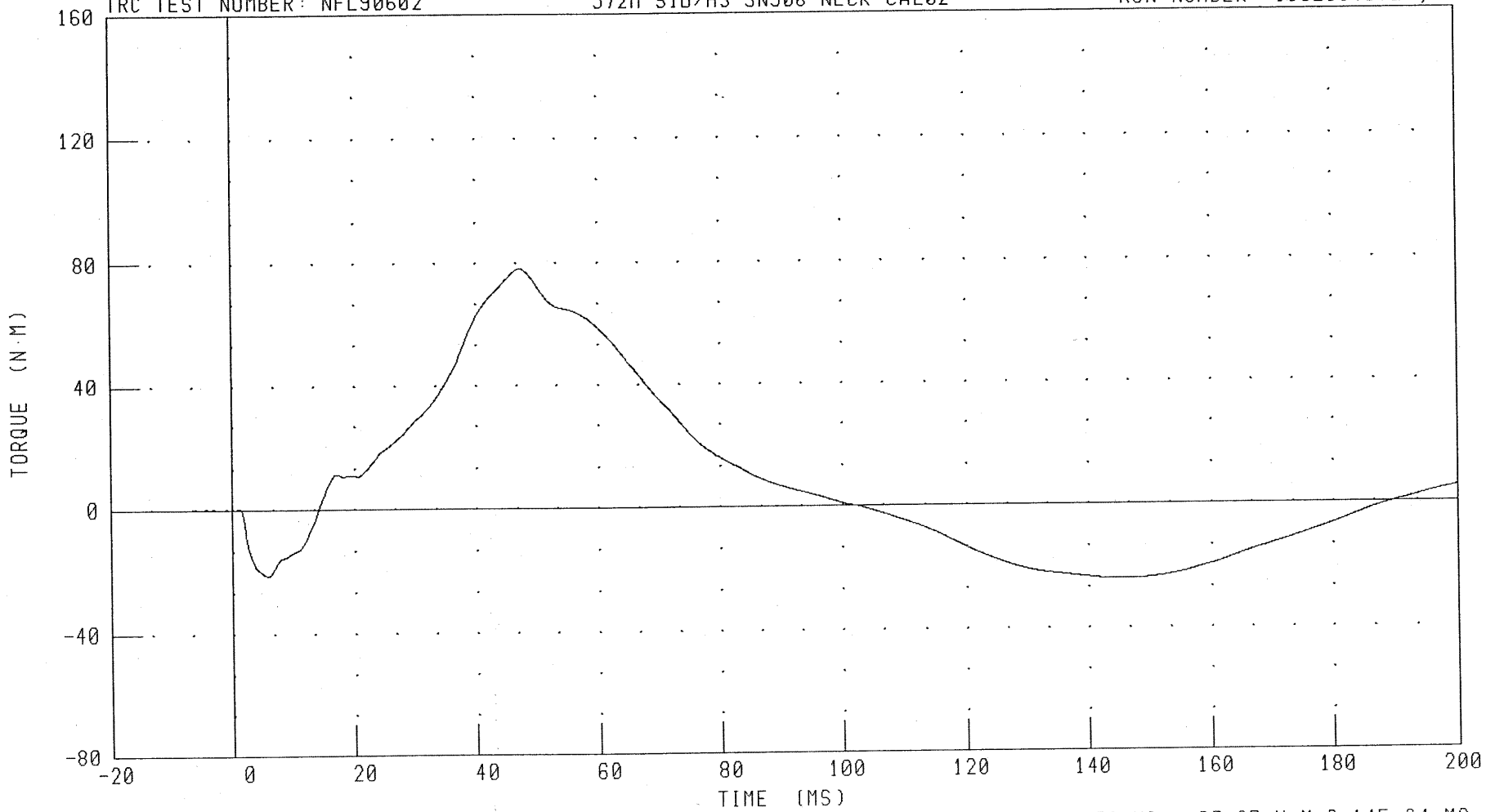
030924-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST  
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL90602

572M SID/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 78.20 N.M @ 47.36 MS; -23.87 N.M @ 145.04 MS

C-51

030924-1

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

12-SEP-03

TRC INC.

572F SN906 DAMPER TEST CAL02

TEST NUMBER: DP90602A, DP90602B, DP90602C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	63.0 %
VELOCITY	FORCE	667 - 925 N	806 N
2.75 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.9 MM
VELOCITY	FORCE	1706 - 2072 N	1929 N
4.24 M/S	DISPLACEMENT	31.6 - 37.2 MM	34.1 MM
VELOCITY	FORCE	3824 - 4542 N	4480 N
6.17 M/S	DISPLACEMENT	33.3 - 39.6 MM	36.3 MM

DAMPER SETTING = 6.0

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V. F. Walter*

RUN NUMBER: 100203.0724;1

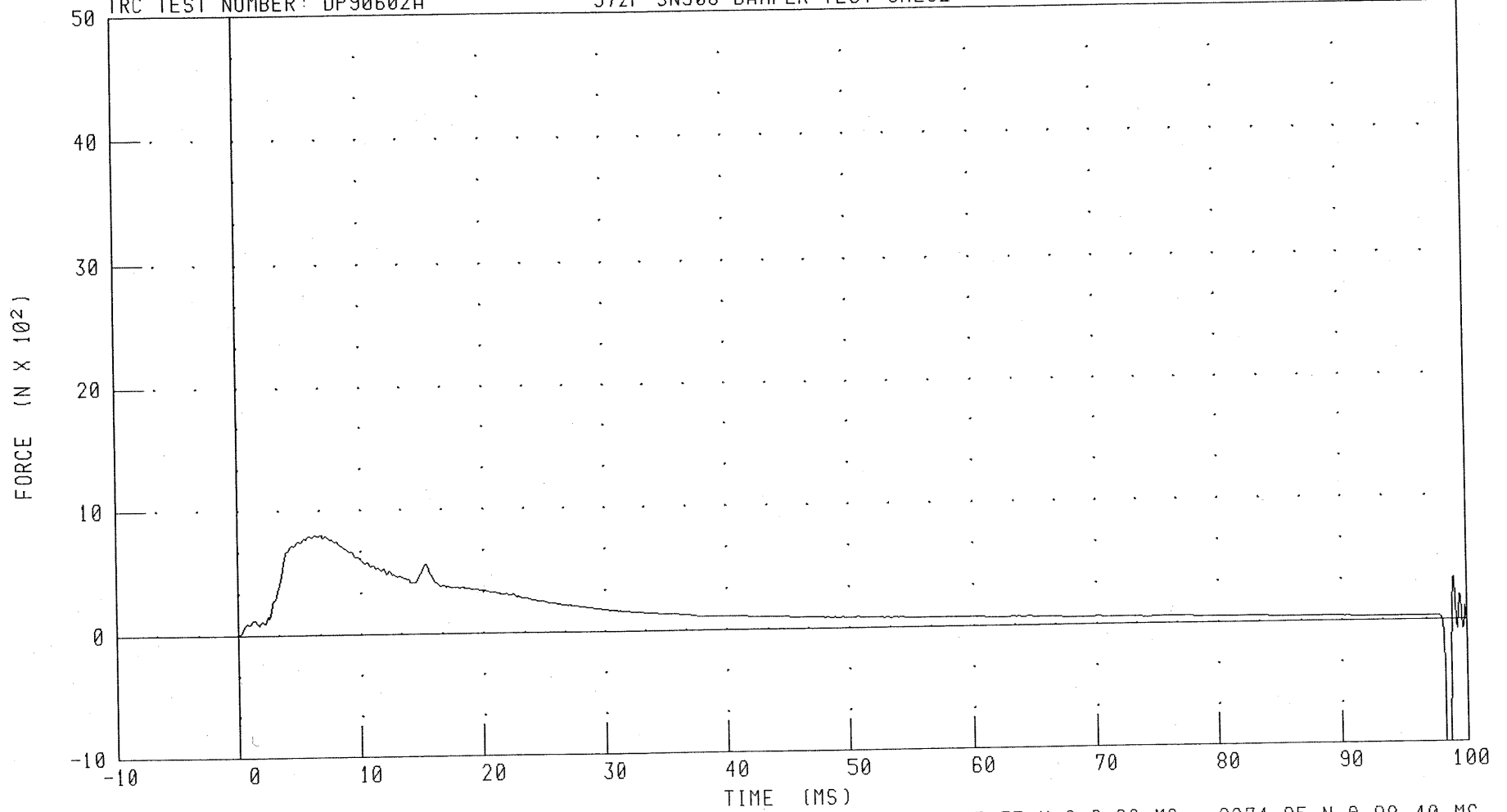
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

RUN NUMBER: 100203.0725;1

TRC TEST NUMBER: DP90602A

572F SN906 DAMPER TEST CAL02



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 805.75 N @ 6.80 MS; -2274.95 N @ 98.40 MS

C-53

030924-1

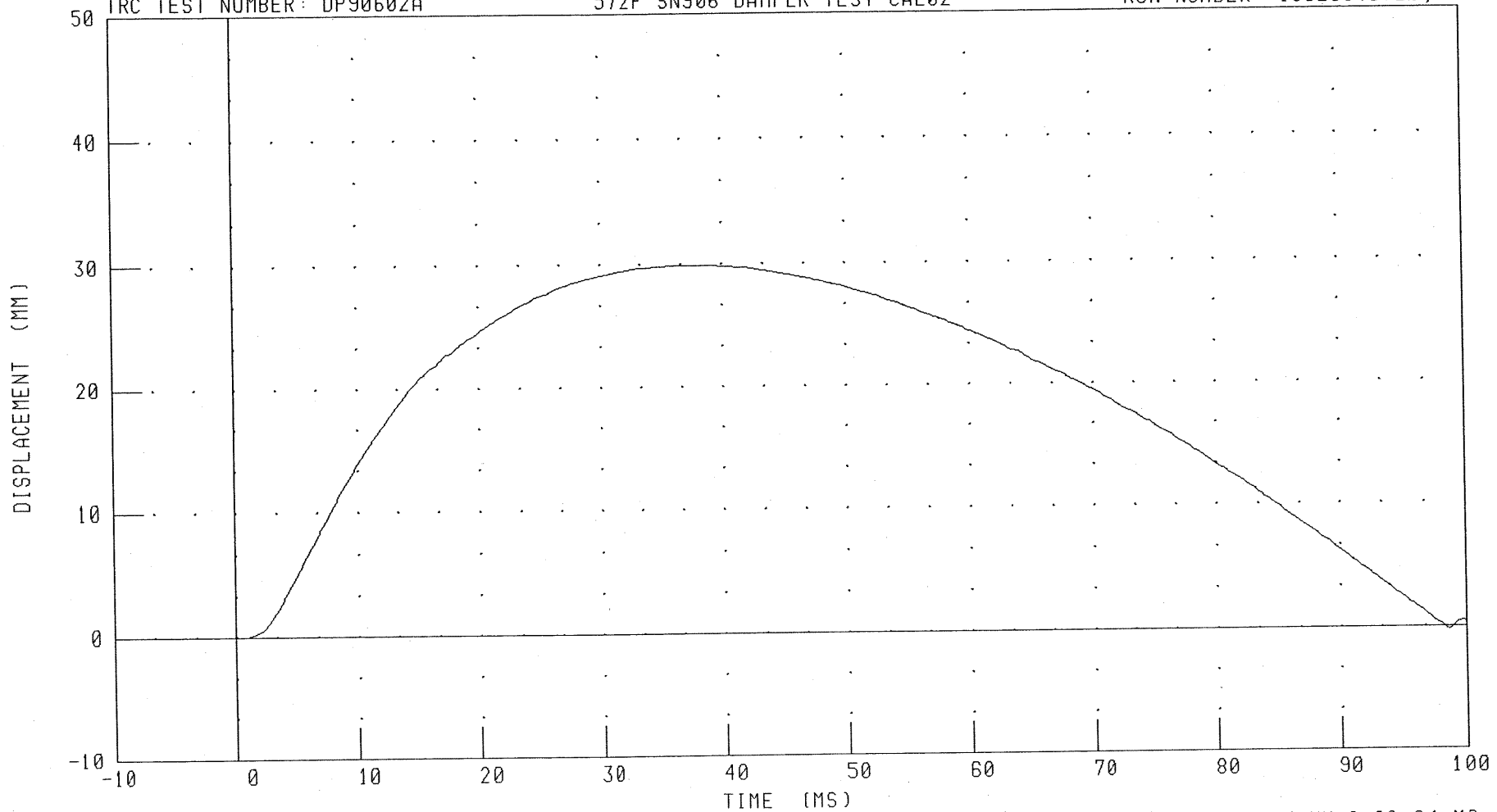
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203.0725;1

TRC TEST NUMBER: DP90602A



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 29.85 MM @ 36.48 MS; -0.23 MM @ 98.64 MS

C-54

030924-1

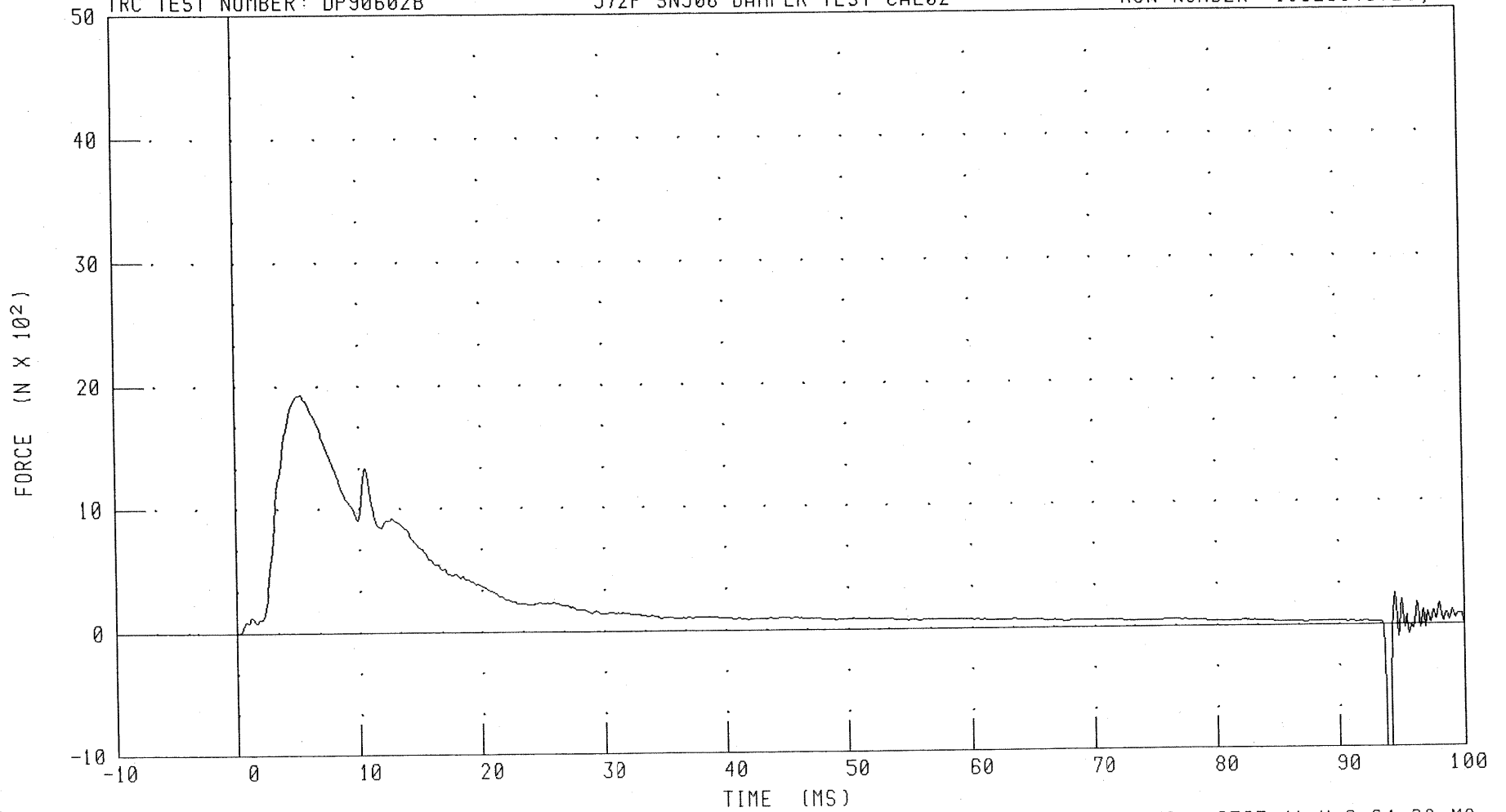
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP90602B

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203.0725;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

TIME (MS)

PEAK DATA: 1928.88 N @ 5.28 MS; -2597.41 N @ 94.00 MS

C-55

030924-1

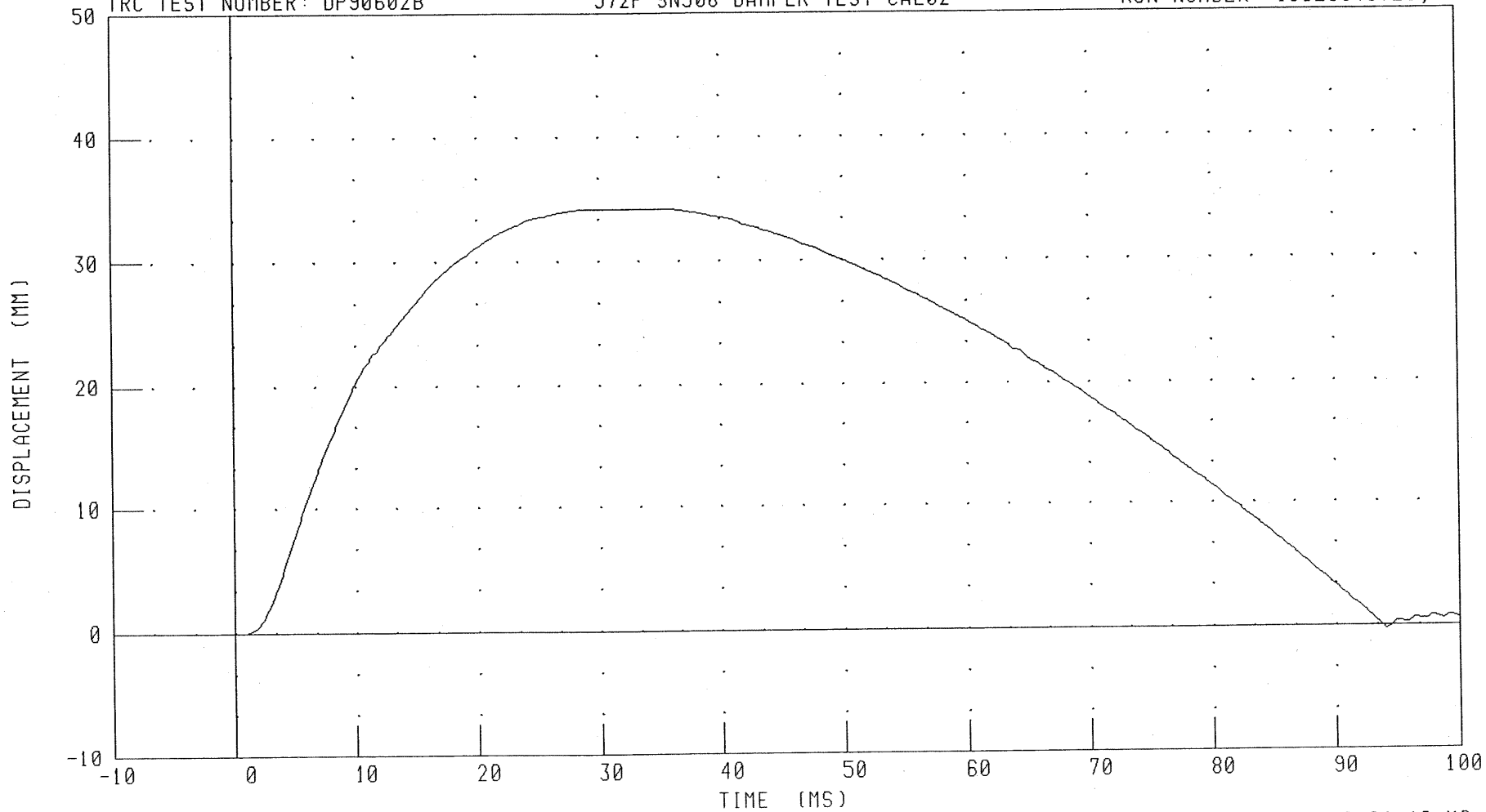
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

RUN NUMBER: 100203.0725;1

TRC TEST NUMBER: DP90602B

572F SN906 DAMPER TEST CAL02



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 34.14 MM @ 31.60 MS; -0.25 MM @ 94.16 MS

C-56

030924-1

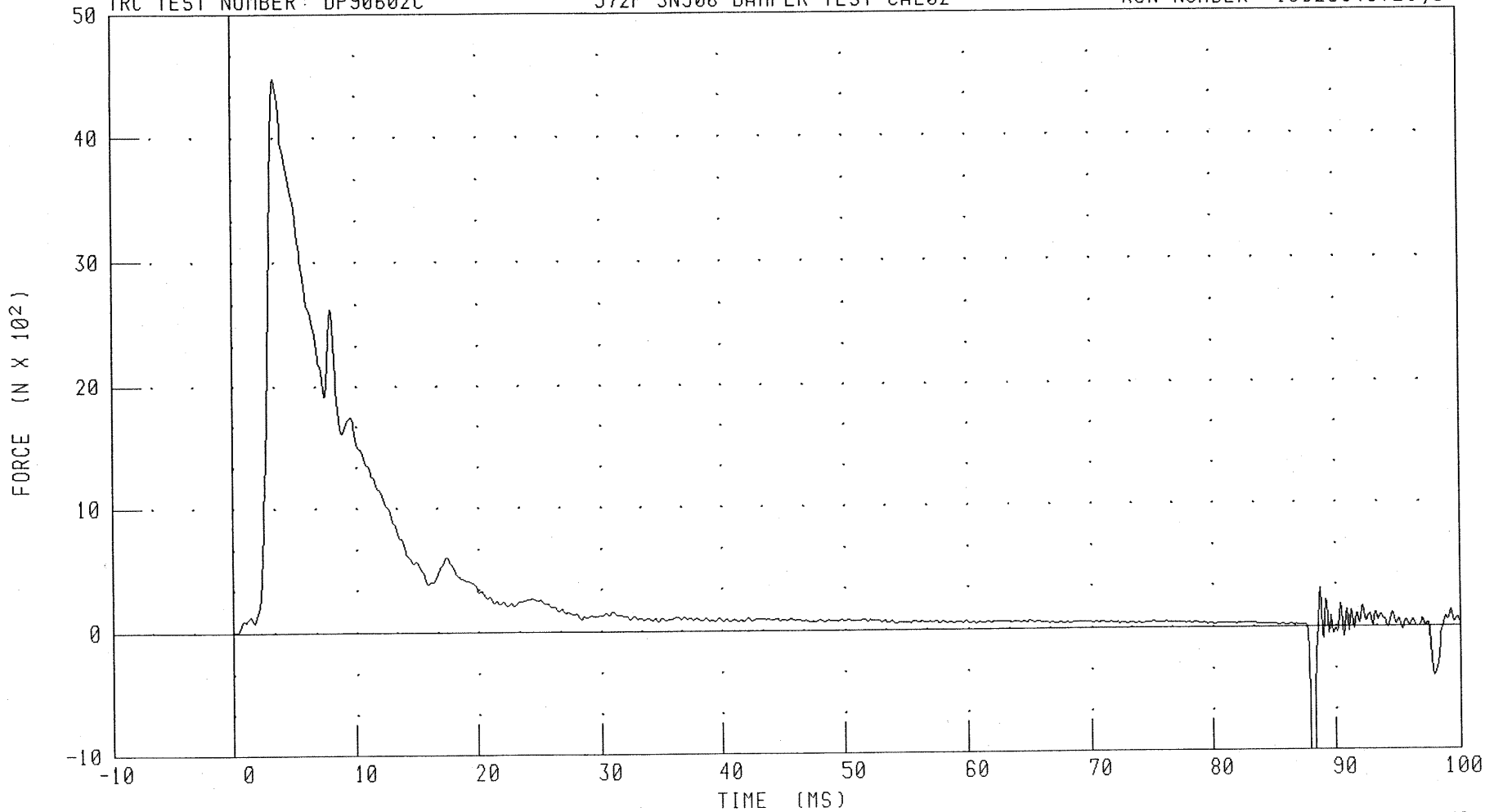
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP90602C

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203.0725;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 4479.55 N @ 3.44 MS; -2512.86 N @ 88.16 MS

C-57

030924-1

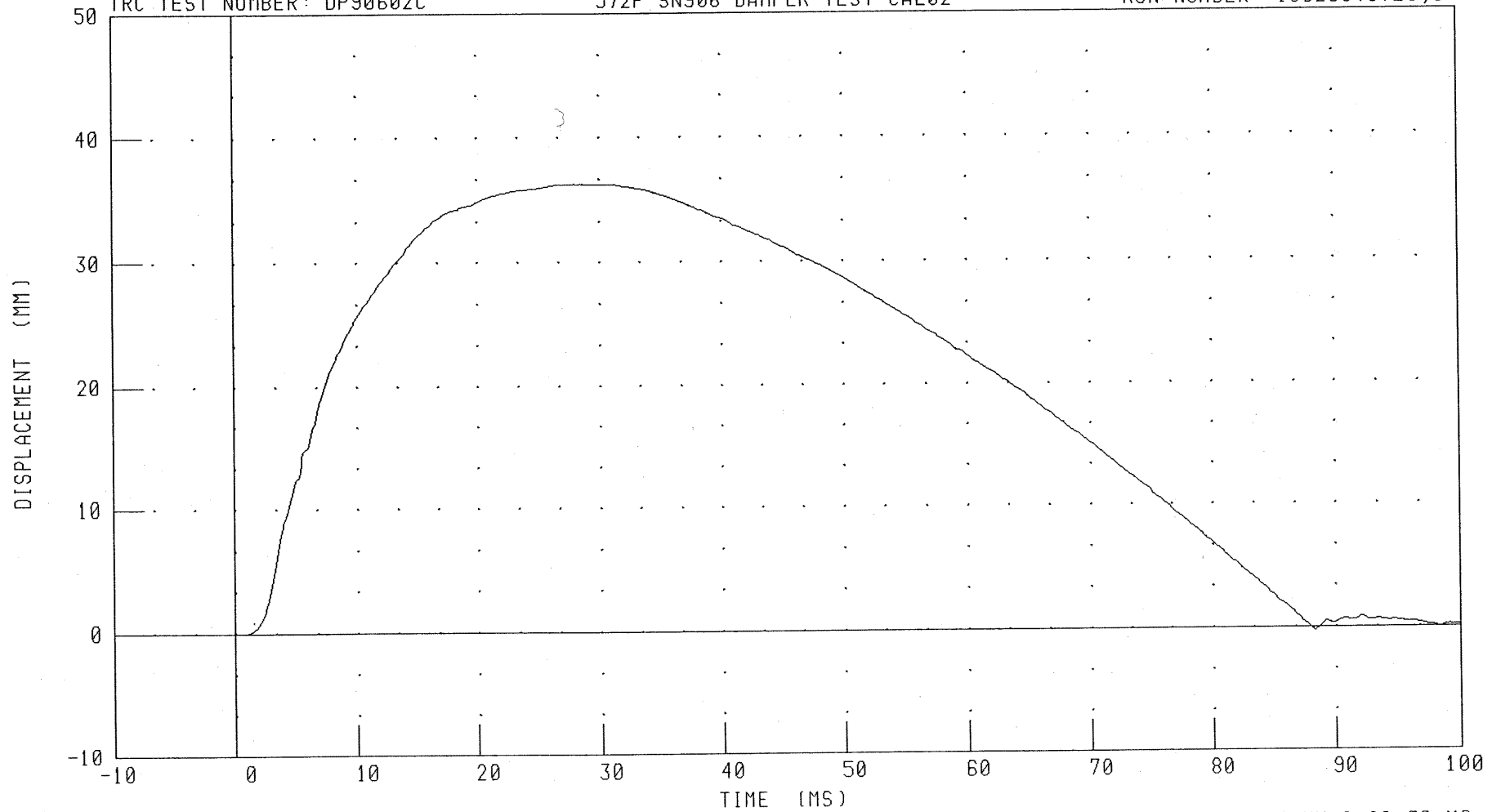
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP90602C

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203.0725;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 36.26 MM @ 28.00 MS; -0.24 MM @ 88.32 MS

C-58

030924-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL90602

SID/HIII SN906 L.THORAX CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	54.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.26 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	37.5 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	37.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	16.1 G

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V.J. Watts*

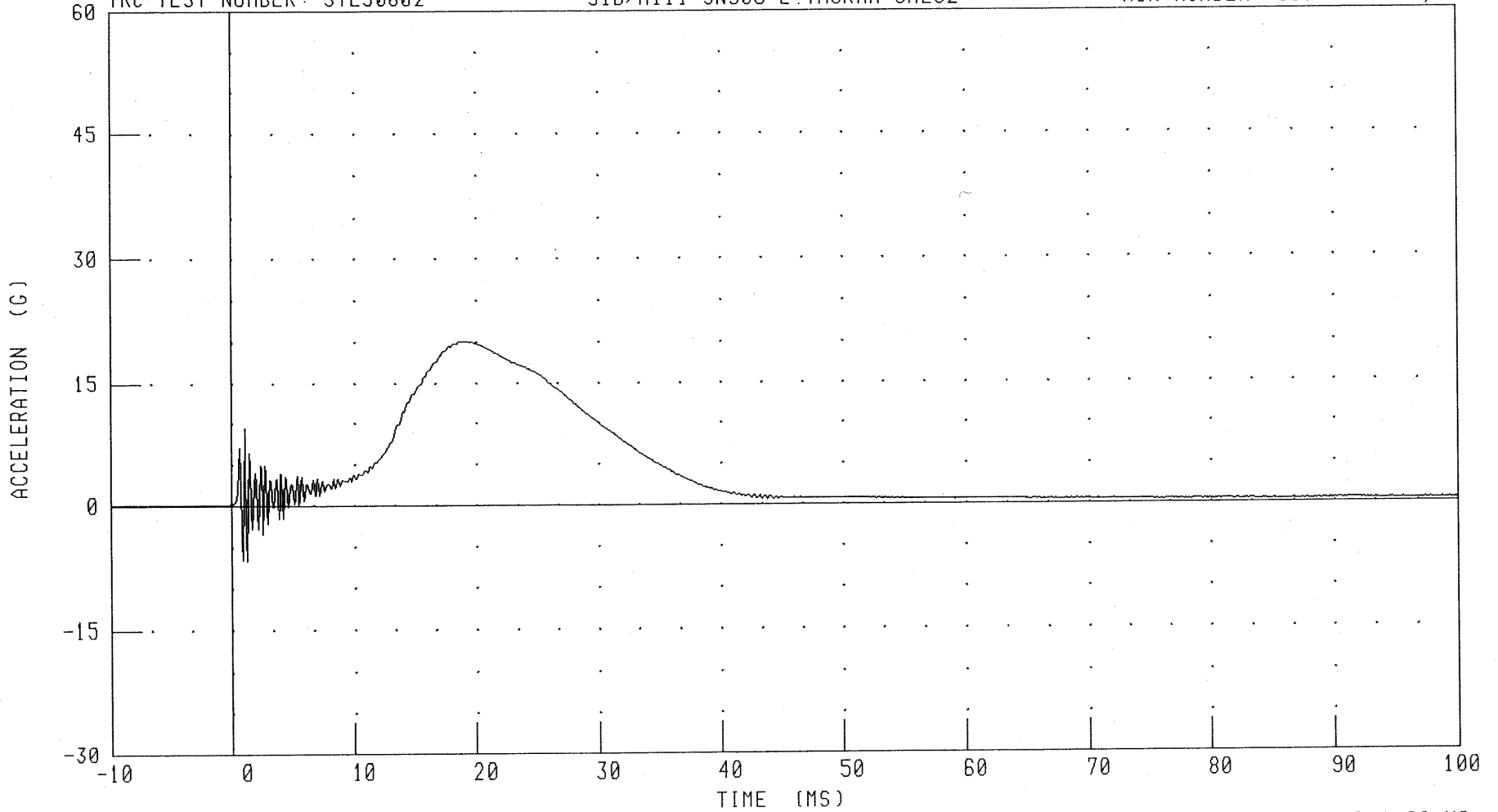
RUN NUMBER: 100203.0724;1

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)  
PENDULUM DECELERATION

TRC TEST NUMBER: STL90602

SID/HIII SN906 L.THORAX CAL02

RUN NUMBER: 100603.1500;1



CHANNEL: PENXC FILTER: CH. CLASS 1000

PEAK DATA: 20.06 G @ 19.20 MS; -6.68 G @ 1.28 MS

C-60

030924-1

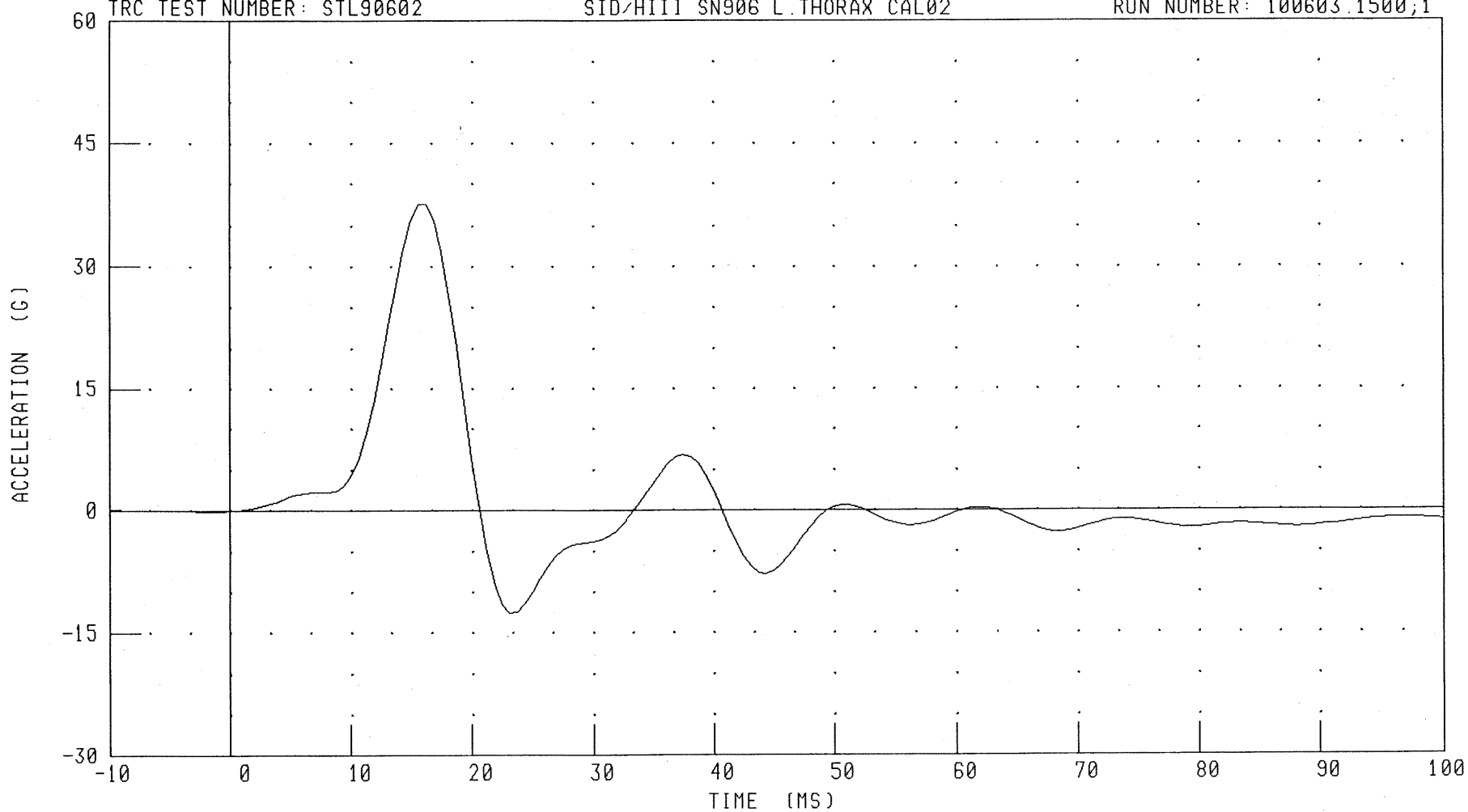
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL90602

SID/HIII SN906 L THORAX CAL02

RUN NUMBER: 100603.1500;1



CHANNEL: LURYG FILTER: FIR 100

PEAK DATA: 37.51 G @ 16.25 MS; -12.60 G @ 23.13 MS

C-61

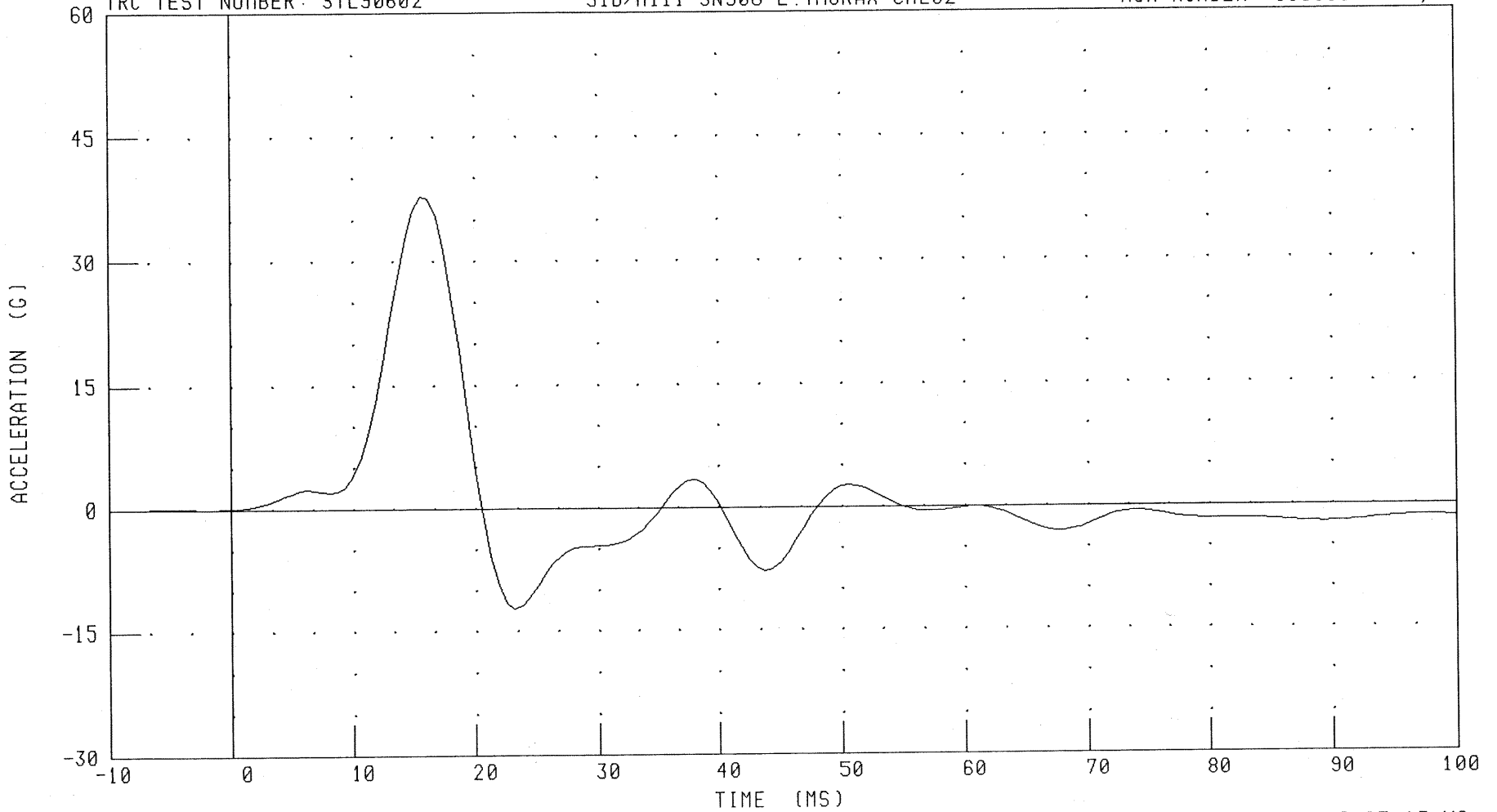
030924-1

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)  
LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL90602

SID/HIII SN906 L.THORAX CAL02

RUN NUMBER: 100603.1500;1



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 37.76 G @ 15.63 MS; -12.18 G @ 23.13 MS

C-62

030924-1

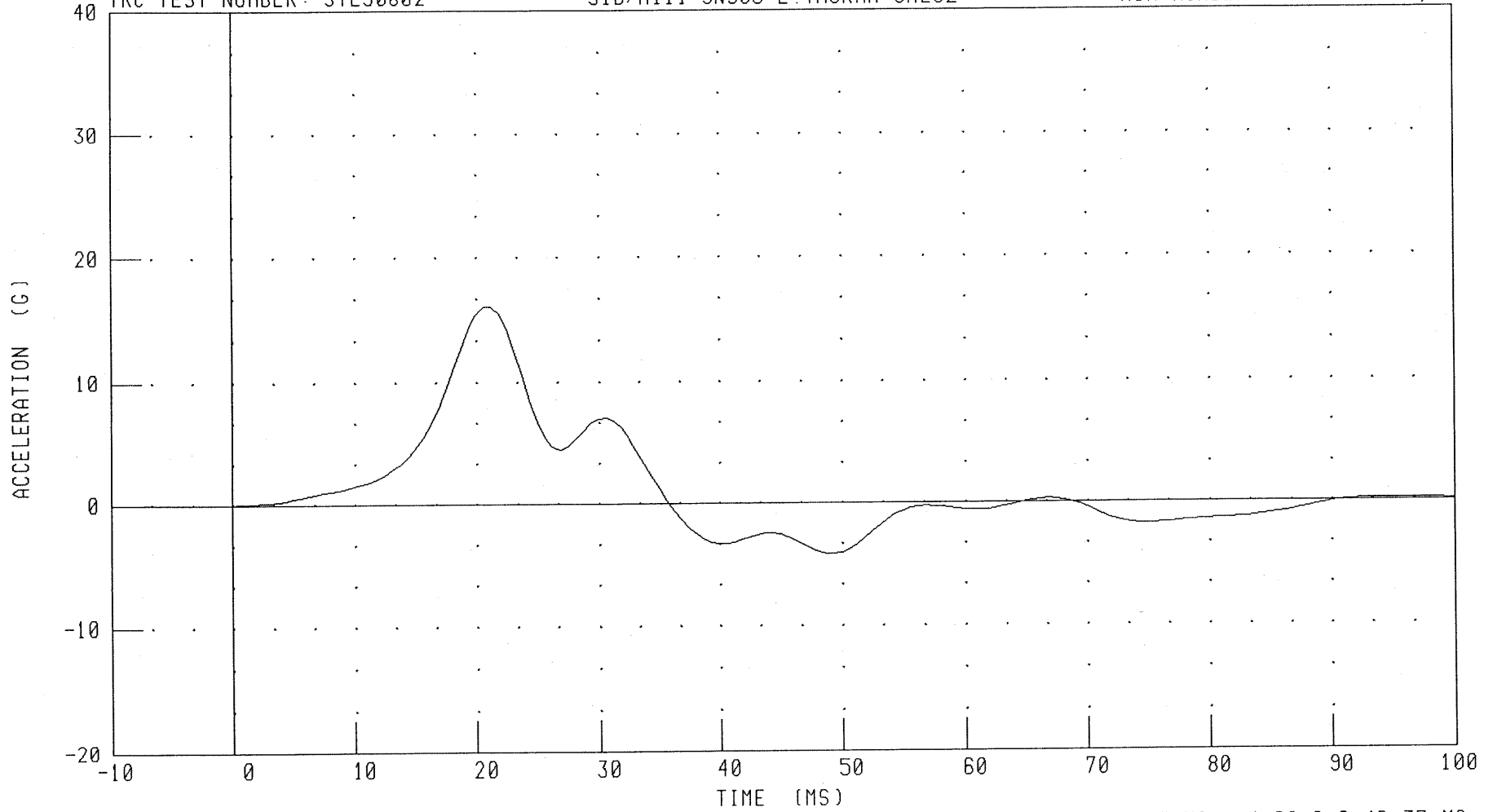
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL90602

SID/HIII SN906 L THORAX CAL02

RUN NUMBER: 100603.1500;1



CHANNEL: T12YG

FILTER: FIR 100

PEAK DATA: 16.10 G @ 21.25 MS; -4.20 G @ 49.37 MS

C-63

030924-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL90602

SID/HIII SN906 L.PELVIS CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	52.6 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

*V.J. Walter*

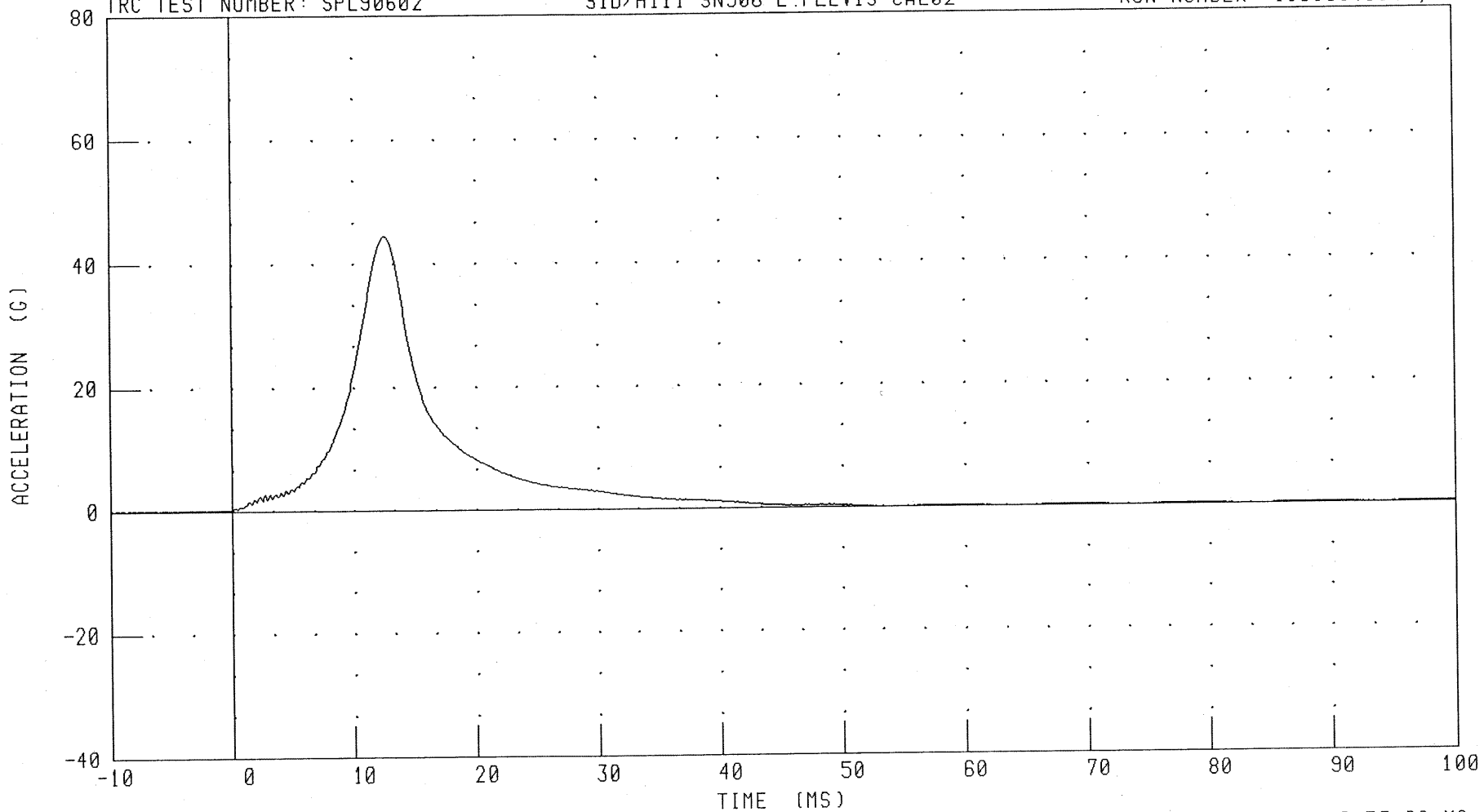
RUN NUMBER: 100203.0723;1

PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)  
PENDULUM DECELERATION

TRC TEST NUMBER: SPL90602

SID/HIII SN906 L.PELVIS CAL02

RUN NUMBER: 100603.1500;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 44.53 G @ 12.56 MS; -0.08 G @ 53.92 MS

C-65

030924-1

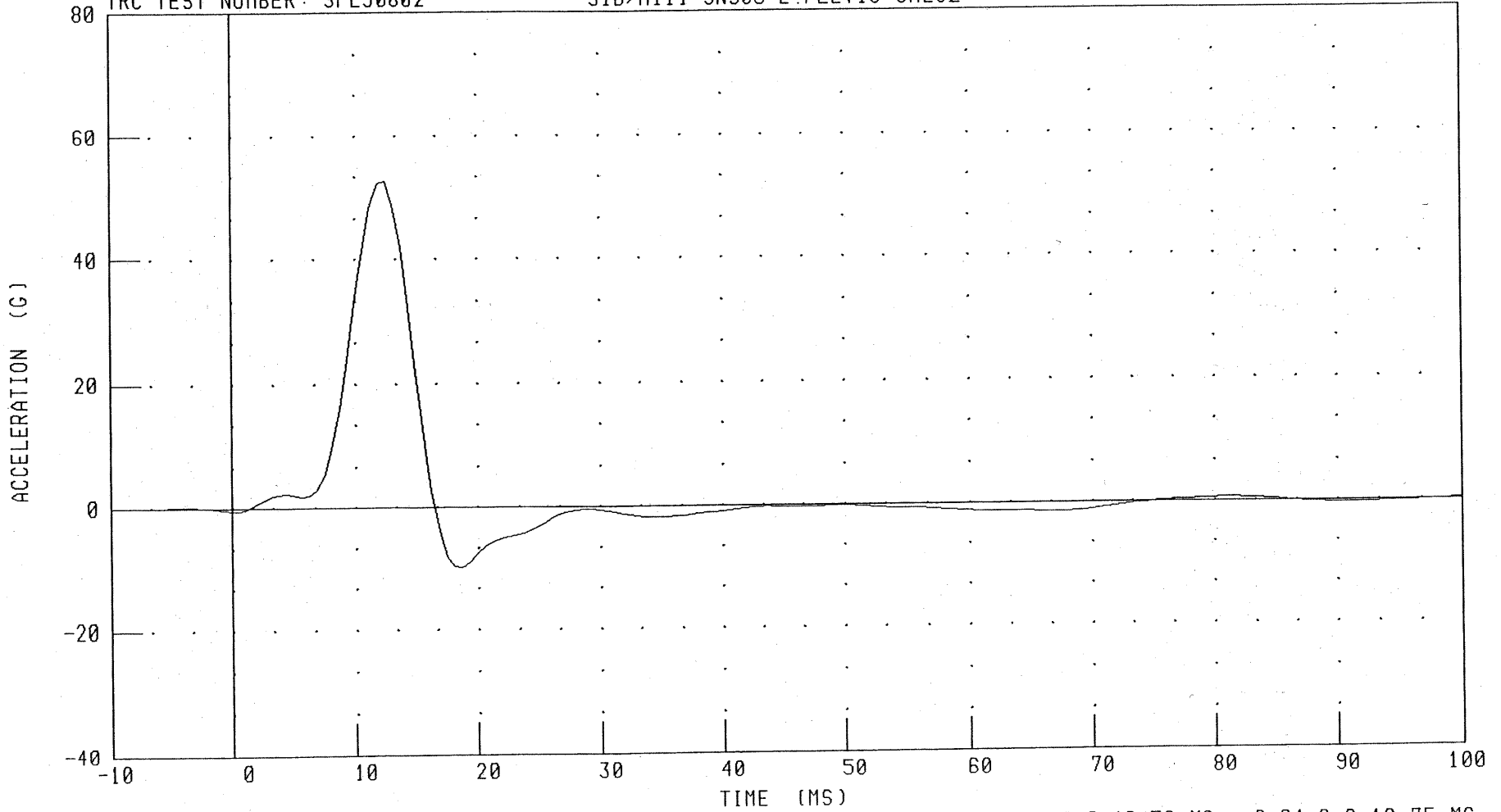
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

SID/HIII SN906 L.PELVIS CAL02

RUN NUMBER: 100603.1500;1

TRC TEST NUMBER: SPL90602



CHANNEL: PEVYG

FILTER: FIR 100

PEAK DATA: 52.58 G @ 12.50 MS; -9.84 G @ 18.75 MS

C-66

030924-1

## Calibration Test Results

Post-Test

SID HIII: 055

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

**Transportation Research Center Inc.**

**SID/HIII Dummy**

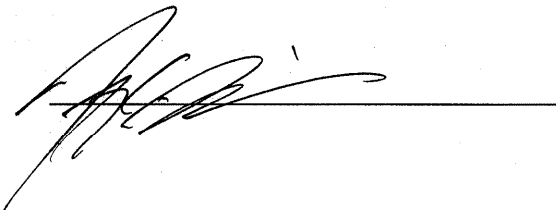
**External Dimensions**

**Serial No. 055 Calibration No. 09**

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	909 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	511 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	223 mm	No *
Knee Pivot From Backline	KH	510.5 - 525.8 mm	525 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	492 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	366 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	171 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

\* Test Does Not Meet Specifications

Technician



Approved




# Transportation Research Center Inc.

572M Left Left Lateral Head Test

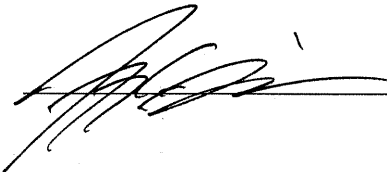
SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

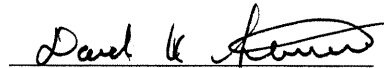
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Peak Resultant Acceleration	115 - 150 g	132.3 g	Yes
Peak Longitudinal Acceleration	15 g Max	7.8 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

## Comments:

Technician



Approved



10.07.2003 07:05:10 609

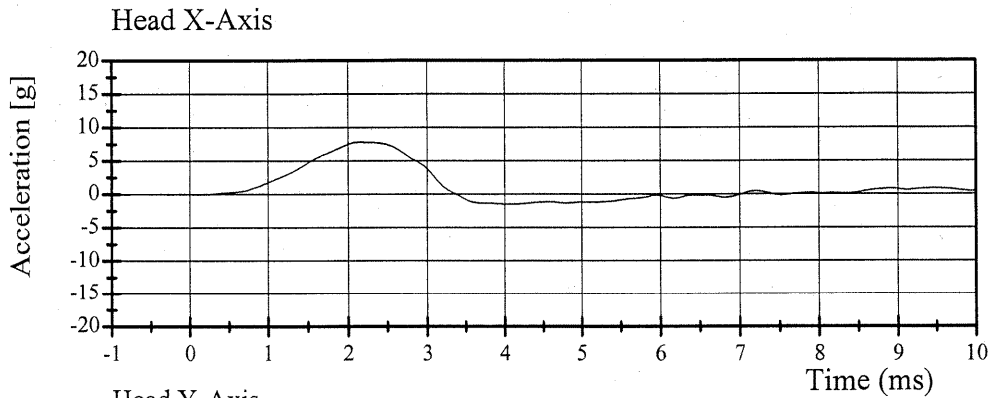


# Transportation Research Center Inc.

572M Left Left Lateral Head Test

SID HIII Serial No. 055 Calibration No. 09 - 1

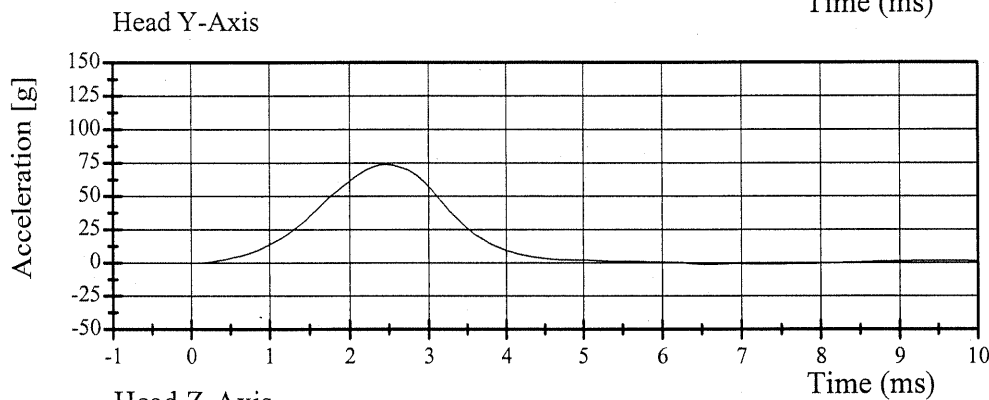
Test Date 10/07/2003



Filter Class: 1000

Max: 7.8 g at 2.2 ms

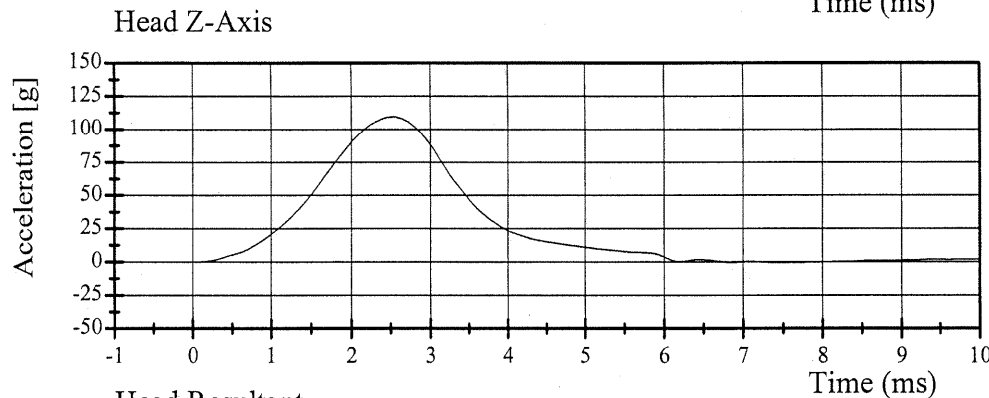
Min: -1.5 g at 4.1 ms



Filter Class: 1000

Max: 74.0 g at 2.5 ms

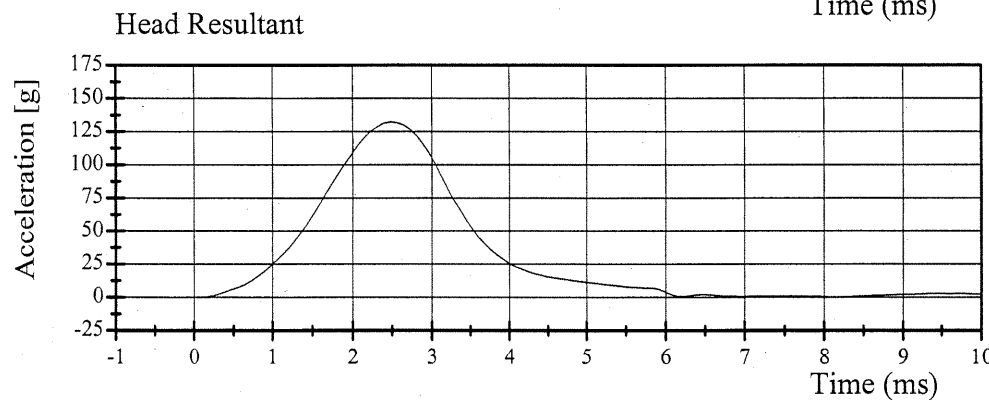
Min: -1.2 g at 6.6 ms



Filter Class: 1000

Max: 109.6 g at 2.6 ms

Min: -0.5 g at 7.6 ms



Filter Class: 1000

Max: 132.3 g at 2.5 ms

Min: 0.0 g at 2.9 ms

10.07.2003 07:05:11 609



# Transportation Research Center Inc.

572M Left Lateral Neck Test

SID HIII Serial No. 055 Calibration No. 09 - 1

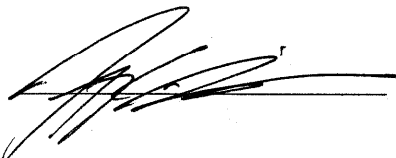
Test Date 10/07/2003

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.96 - 2.55 m/s	2.32 m/s	Yes
20 ms	4.12 - 5.10 m/s	4.66 m/s	Yes
30 ms	5.73 - 7.64 m/s	6.65 m/s	Yes
40 - 70 ms	6.27 - 7.64 m/s	7.19 - 7.33 m/s	Yes
Peak D Plane Rotation	66 - 82 °	70.6 °	Yes
Rotation Decay Time To 0° From Peak Angle	58 - 67 °	59.8 °	Yes
Peak Moment About Occipital Condyles	73.0 - 88.0 N·m	83.43 N·m	Yes
Moment Decay Time To 0 N·m From Peak Moment	49 - 64 ms	54.56 ms	Yes
Time Between Peak Rotation and Peak Moment	2 - 16 ms	11.04 ms	Yes

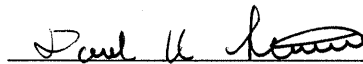
## Comments:

?

Technician



Approved



10.07.2003 07:28:54 500



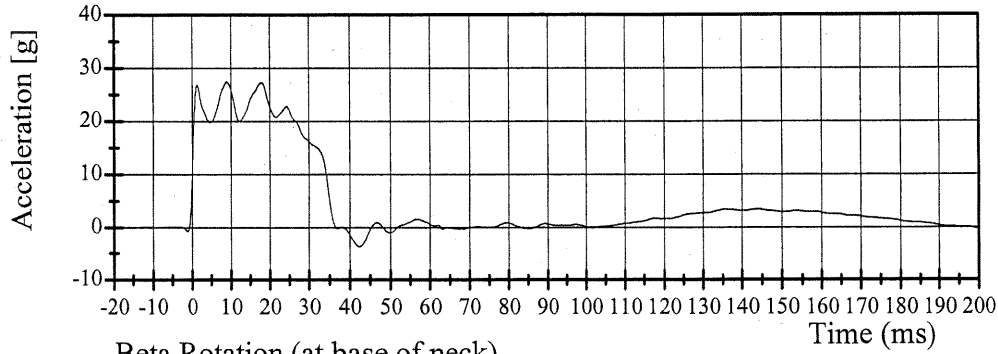
# Transportation Research Center Inc.

572M Left Lateral Neck Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

### Pendulum Deceleration

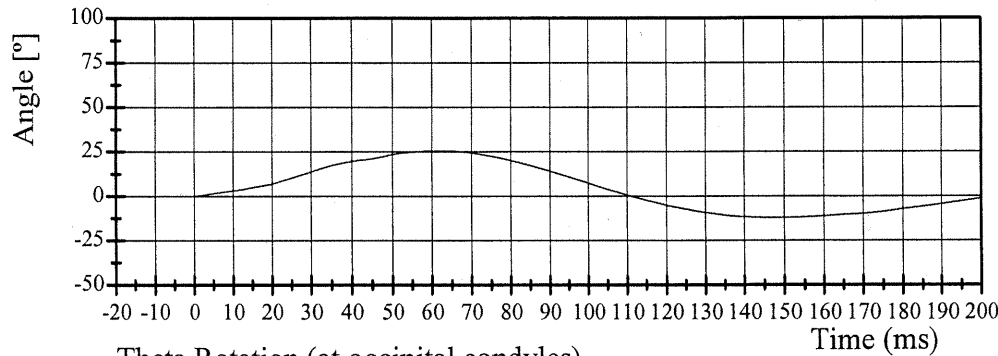


Filter Class: 180

Max: 27.5 g at 9.0 ms

Min: -3.6 g at 42.5 ms

### Beta Rotation (at base of neck)

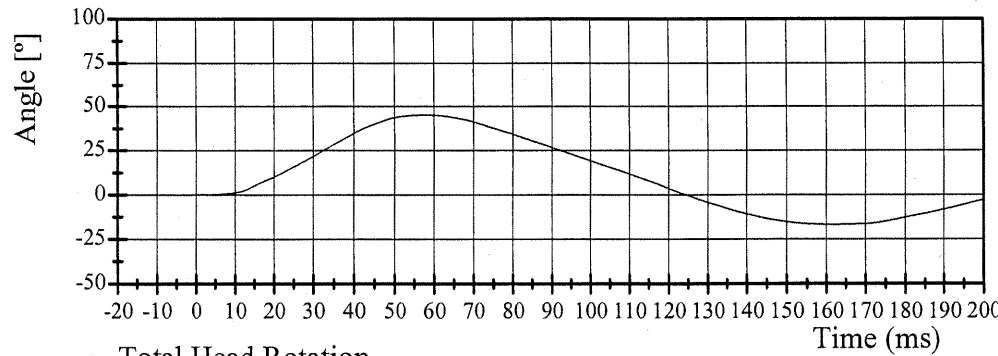


Filter Class: 60

Max: 25.5 ° at 61.8 ms

Min: -12.3 ° at 147.6 ms

### Theta Rotation (at occipital condyles)

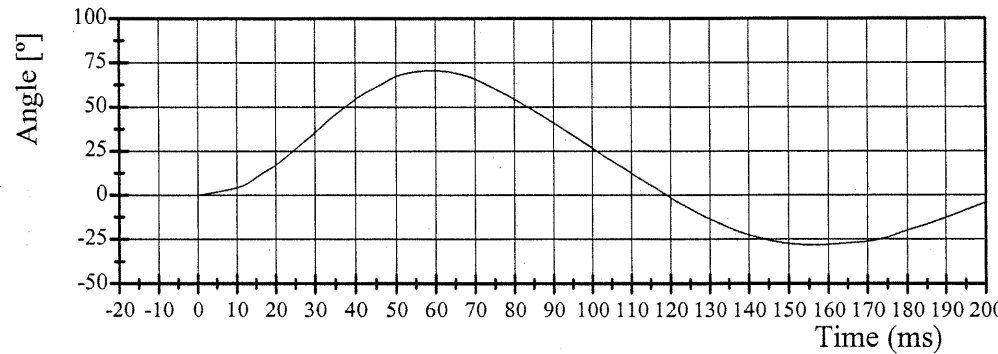


Filter Class: 60

Max: 45.2 ° at 57.7 ms

Min: -16.7 ° at 160.9 ms

### Total Head Rotation



Filter Class: 60

Max: 70.6 ° at 59.2 ms

Min: -28.2 ° at 156.6 ms



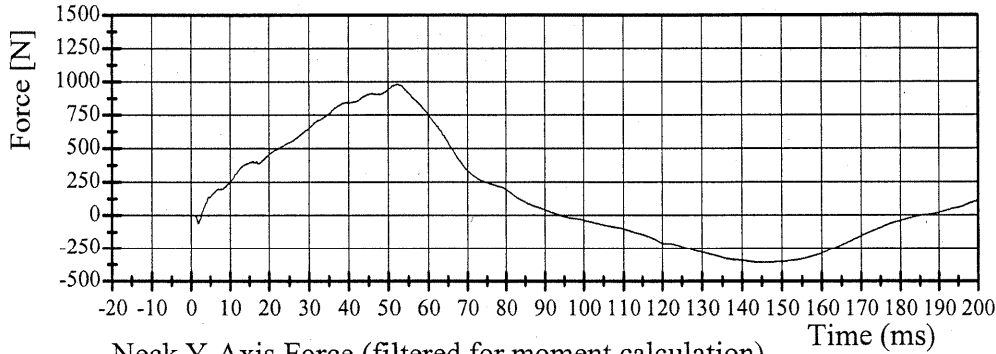
# Transportation Research Center Inc.

572M Left Lateral Neck

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

Neck Y-Axis Force

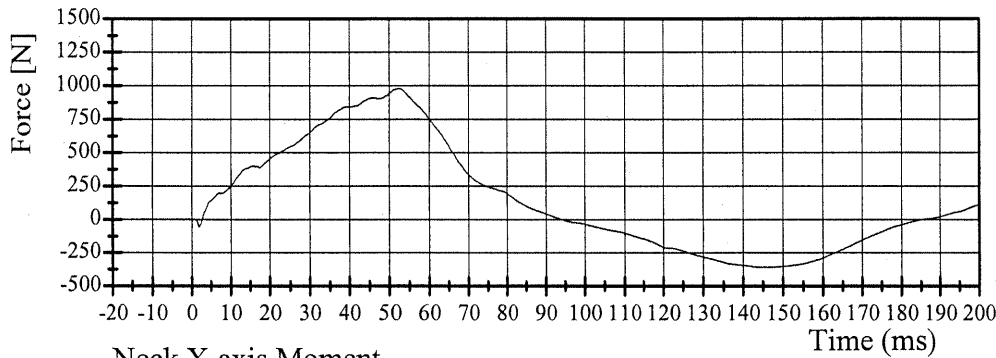


Filter Class: CFC 1000

Max: 979.9 N at 52.2 ms

Min: -358.2 N at 146.6 ms

Neck Y-Axis Force (filtered for moment calculation)

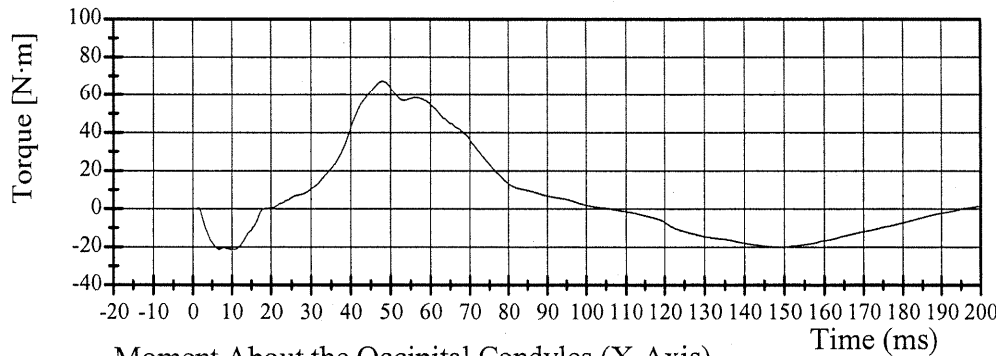


Filter Class: CFC 600

Max: 979.5 N·m at 52.2 ms

Min: -357.8 N·m at 146.7 m

Neck X-axis Moment

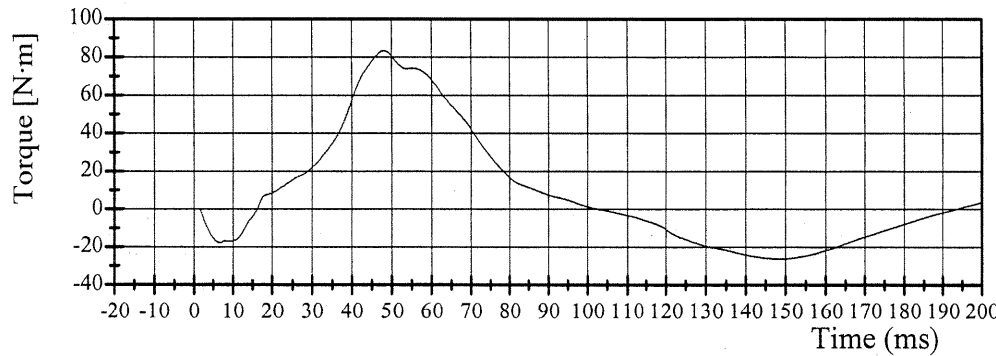


Filter Class: CFC 600

Max: 67.3 N·m at 48.2 ms

Min: -21.2 N·m at 9.9 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 83.4 ° at 48.2 ms

Min: -26.3 ° at 148.4 ms

10.07.2003 07:28:57 500



# Transportation Research Center Inc.

572F Thorax Test

SID HIII Serial No. 055 Calibration No. 09 - 1

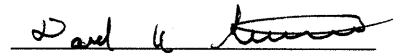
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.7 C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.31 m/sec	Yes
Upper Rib Bar Peak Acceleration	37 - 46 g	38.3 g	Yes
Lower Rib Bar Peak Acceleration	37 - 46 g	37.2 g	Yes
Lower Thoracic Spine (T12) Peak Acceleration	15 - 22 g	17.0 g	Yes

## Comments:

Technician



Approved



10.07.2003 07:34:05 1147



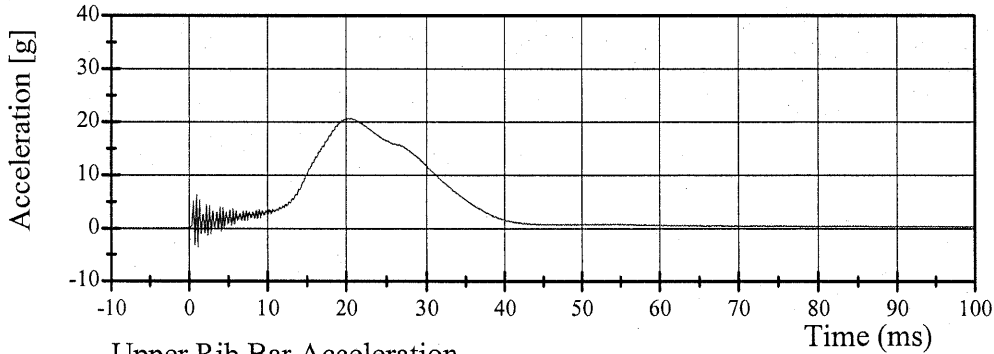
# Transportation Research Center Inc.

572F Thorax Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/06/2003

### Pendulum Deceleration

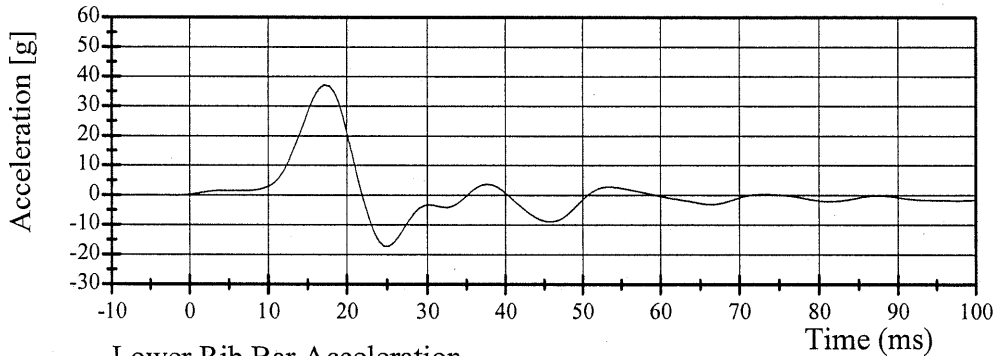


Filter Class: 1000

Max: 20.7 g at 20.3 ms

Min: -3.5 g at 1.1 ms

### Upper Rib Bar Acceleration

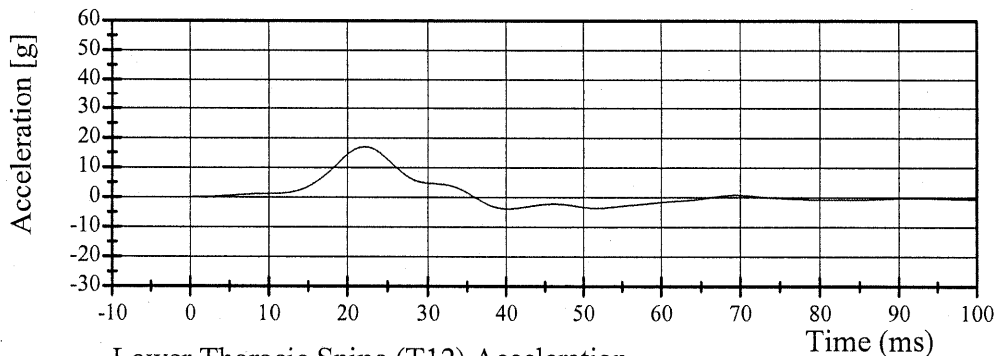


Filter Class: FIR 100

Max: 38.3 g at 17.7 ms

Min: -17.3 g at 25.2 ms

### Lower Rib Bar Acceleration

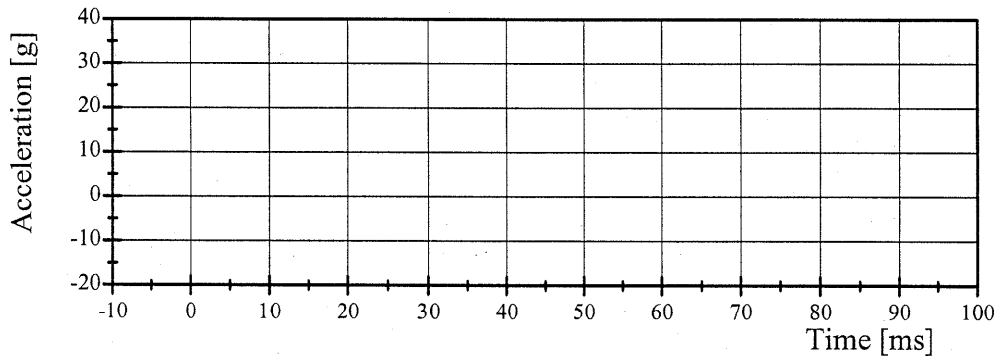


Filter Class: FIR 100

Max: 37.2 g at 17.1 ms

Min: -17.2 g at 25.1 ms

### Lower Thoracic Spine (T12) Acceleration



Filter Class: FIR 100

Max: 17.0 g at 22.1 ms

Min: -3.9 g at 40.2 ms

10.07.2003 07:34:06 1147



# Transportation Research Center Inc.

572B Abdomen Compression Test

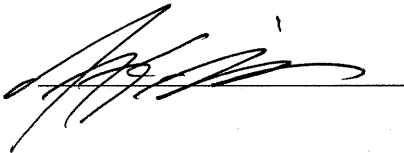
SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

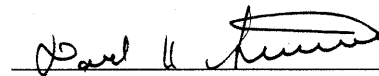
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 7.9 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

## Comments:

Technician



Approved



10.07.2003 07:48:49 8

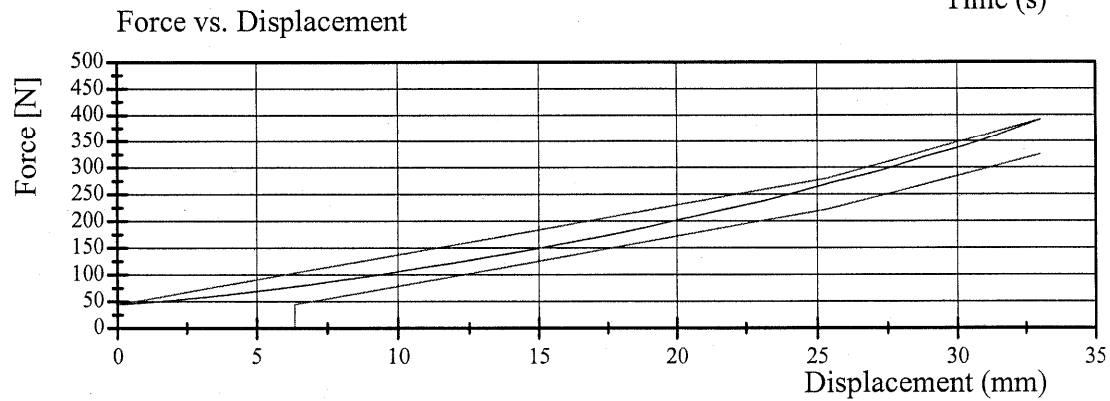
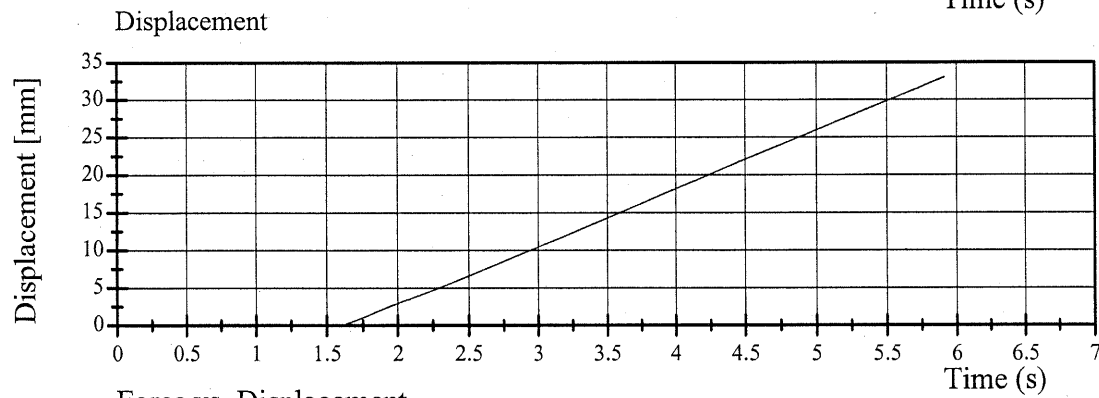
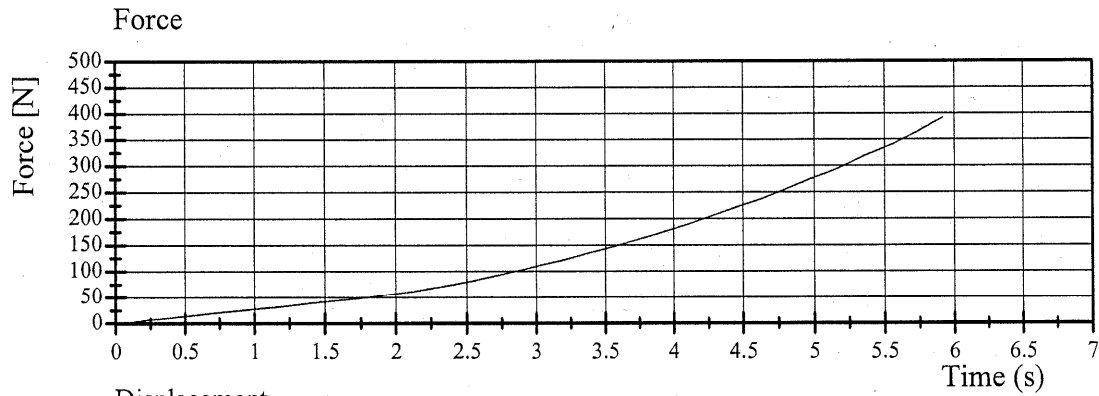


# Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 07-Oct-03

TRC, INC. TEST NO: LF05509 SID/HIII SN 055 TORSO FLEX CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 – 70 %	30 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	133.4 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	164.6 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	200.2 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	5°

TEST MEETS SPECIFICATIONS

TECHNICIAN 

# Transportation Research Center Inc.

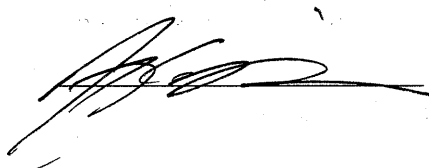
572F Pelvis Test

SID HIII Serial No. 055 Calibration No. 09 - 1

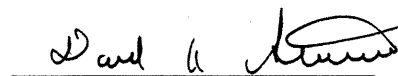
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.1 C	Yes
Relative Humidity	10 - 70 %	22 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.31 m/sec	Yes
Pelvis Peak Acceleration	40 - 60 g	44.6 g	Yes
Time Above 20 g	3 - 7 ms	6.00 ms	Yes
Unimodal requirement for pelvis acceleration	Yes	Yes	Yes

## Comments:

Technician



Approved



10.07.2003 07:33:05 1152



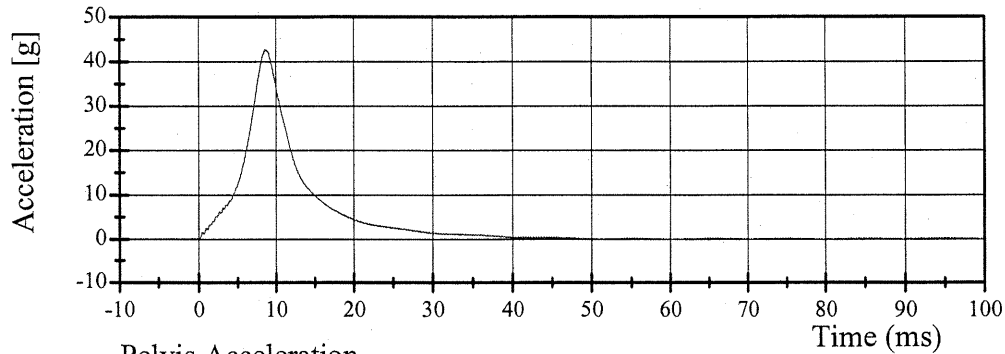
# Transportation Research Center Inc.

572F Pelvis Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/06/2003

Pendulum Deceleration

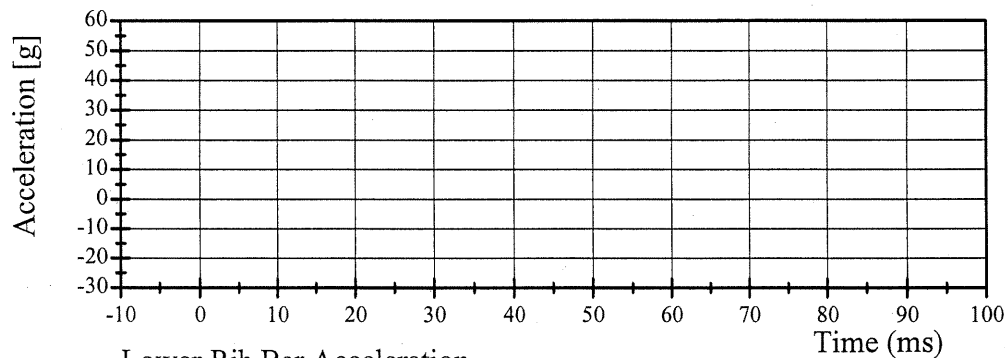


Filter Class: 1000

Max: 42.7 g at 8.6 ms

Min: -0.1 g at -92.0 ms

Pelvis Acceleration



Filter Class: FIR 100

Max: 44.6 g at 8.6 ms

Min: -9.7 g at 21.7 ms

Lower Rib Bar Acceleration

10.07.2003 07:33:06 1152



Calibration Test Results

Post-Test

SID HIII: 906

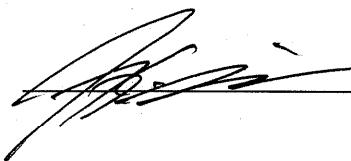
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

**Transportation Research Center Inc.**  
**SID/HIII Dummy**  
**External Dimensions**  
**Serial No. 906 Calibration No. 03**

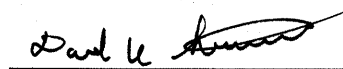
Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	904 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	506 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	229 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	525 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	491 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	384 mm	Yes
Top Rib Width From CL	RW-1	165.1 - 180.3 mm	178 mm	Yes
Bottom Rib Width From CL	RW-2	165.1 - 180.3 mm	177 mm	Yes
Difference Between Top & Bottom Rib Width from CL		<= 2.5 mm	1.0 mm	Yes

Technician




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Approved




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# Transportation Research Center Inc.

572M Left Left Lateral Head Test

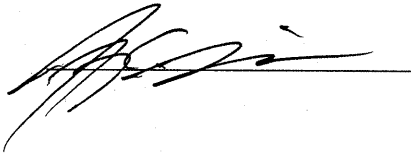
SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

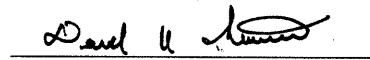
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Peak Resultant Acceleration	115 - 150 g	137.2 g	Yes
Peak Longitudinal Acceleration	15 g Max	13.3 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

## Comments:

Technician



Approved



10.07.2003 06:19:30 604

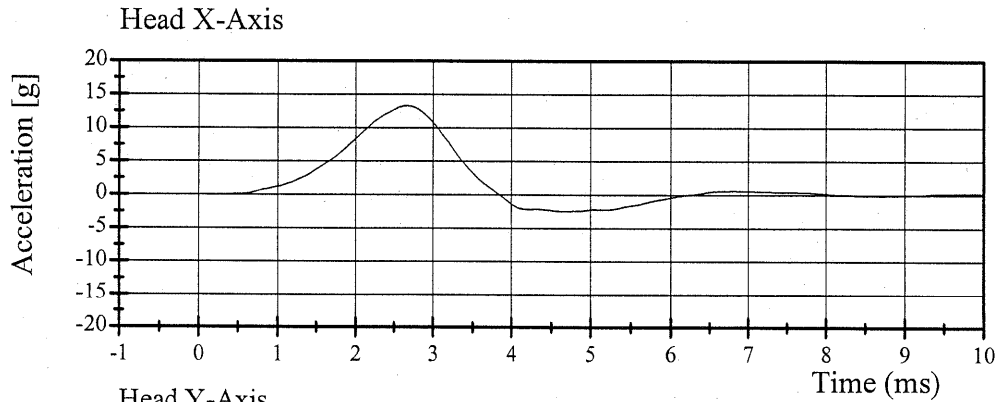


# Transportation Research Center Inc.

572M Left Left Lateral Head Test

SID HIII Serial No. 906 Calibration No. 03 - 1

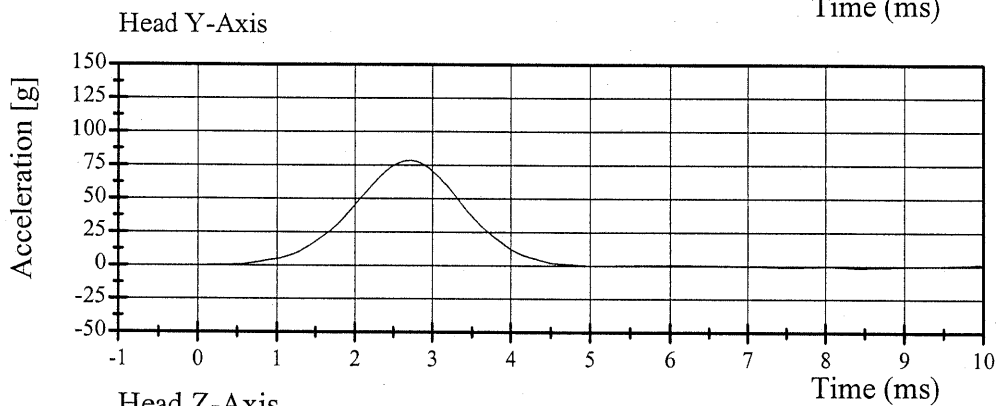
Test Date 10/07/2003



Filter Class: 1000

Max: 13.3 g at 2.6 ms

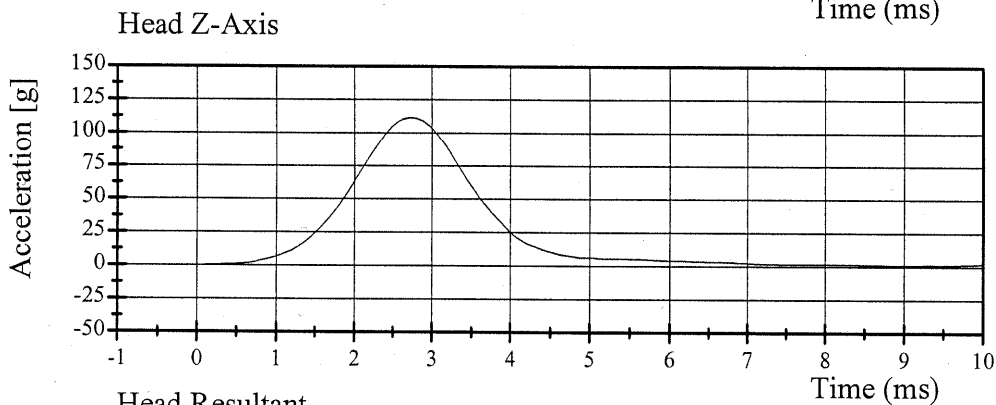
Min: -2.4 g at 4.6 ms



Filter Class: 1000

Max: 78.5 g at 2.7 ms

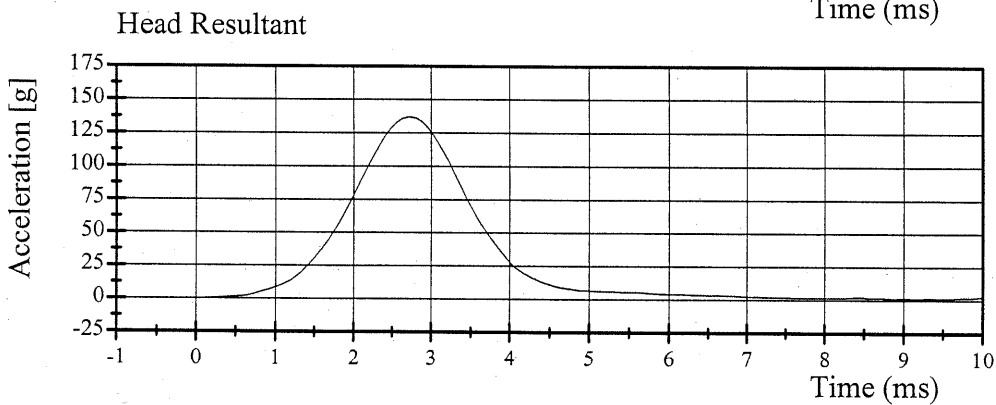
Min: -1.2 g at 8.5 ms



Filter Class: 1000

Max: 111.7 g at 2.7 ms

Min: -0.0 g at 0.0 ms



Filter Class: 1000

Max: 137.2 g at 2.7 ms

Min: 0.0 g at 5.6 ms

10.07.2003 06:19:31 604



# Transportation Research Center Inc.

572M Left Left Lateral Neck Test Test

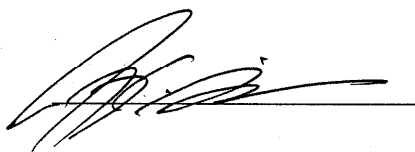
SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

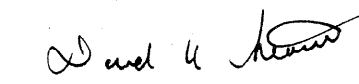
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.96 - 2.55 m/s	2.10 m/s	Yes
20 ms	4.12 - 5.10 m/s	4.56 m/s	Yes
30 ms	5.73 - 7.64 m/s	6.56 m/s	Yes
40 - 70 ms	6.27 - 7.64 m/s	7.11 - 7.23 m/s	Yes
Peak D Plane Rotation	66 - 82 °	68.9 °	Yes
Rotation Decay Time To 0° From Peak Angle	58 - 67 °	61.6 °	Yes
Peak Moment About Occipital Condyles	73.0 - 88.0 N·m	75.61 N·m	Yes
Moment Decay Time To 0 N·m From Peak Moment	49 - 64 ms	56.32 ms	Yes
Time Between Peak Rotation and Peak Moment	2 - 16 ms	10.56 ms	Yes

## Comments:

Technician



Approved



10.07.2003 06:45:43 483



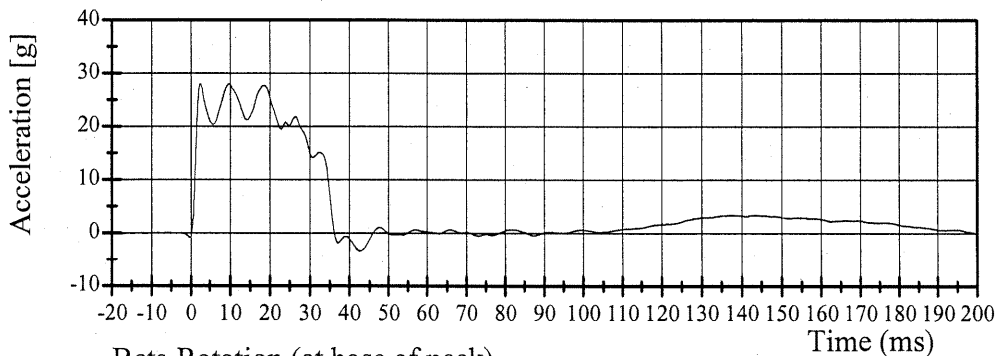
# Transportation Research Center Inc.

572M Left Left Lateral Neck Test Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

### Pendulum Deceleration

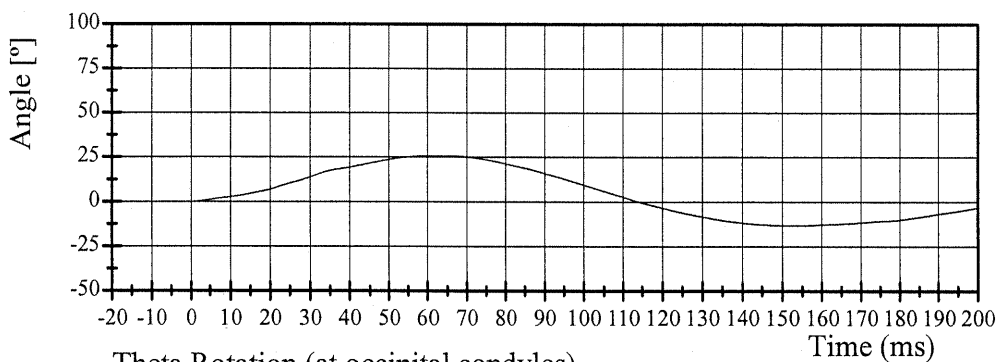


Filter Class: 180

Max: 28.1 g at 9.8 ms

Min: -3.3 g at 42.7 ms

### Beta Rotation (at base of neck)

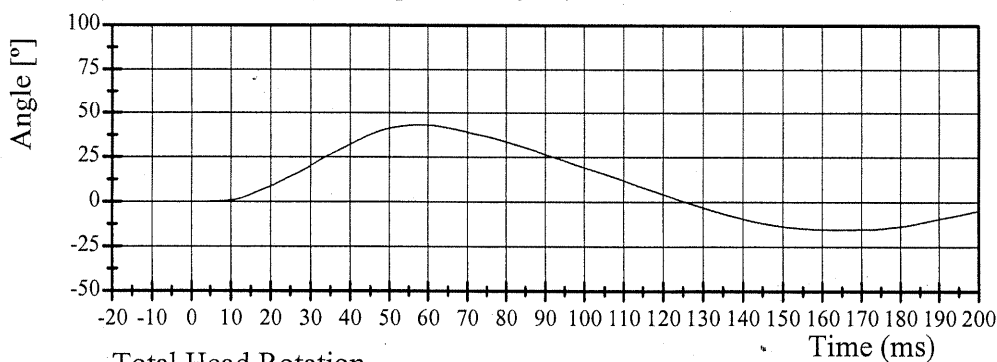


Filter Class: 60

Max: 25.7 ° at 64.6 ms

Min: -13.3 ° at 152.8 ms

### Theta Rotation (at occipital condyles)

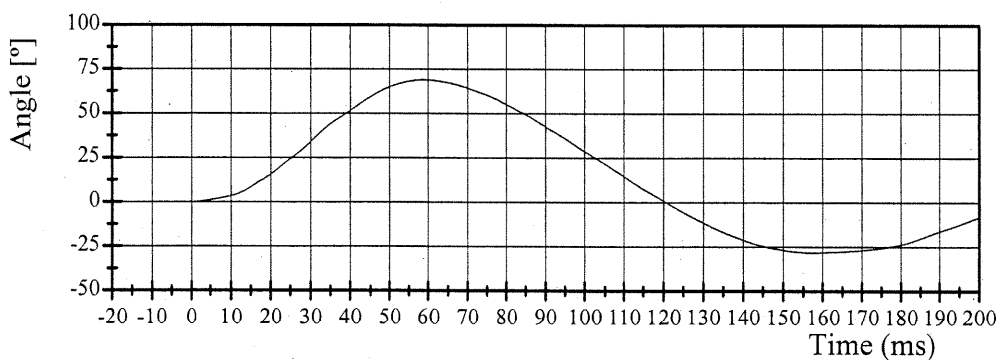


Filter Class: 60

Max: 43.2 ° at 58.2 ms

Min: -15.3 ° at 163.0 ms

### Total Head Rotation



Filter Class: 60

Max: 68.9 ° at 59.1 ms

Min: -28.1 ° at 157.3 ms



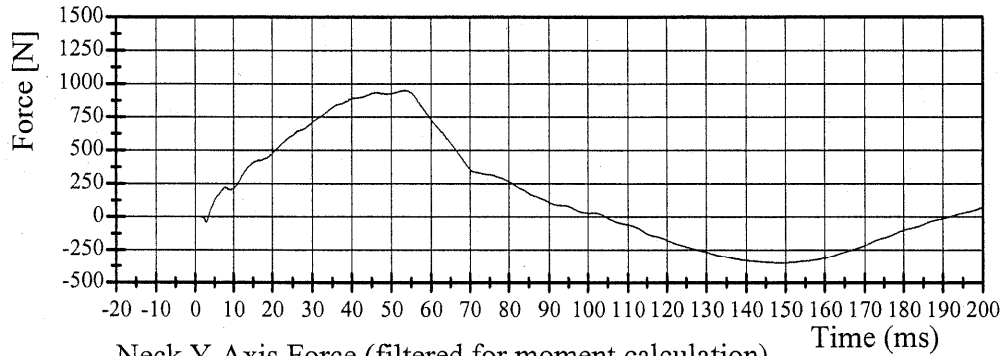
# Transportation Research Center Inc.

572M Left Left Lateral Neck Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

Neck Y-Axis Force

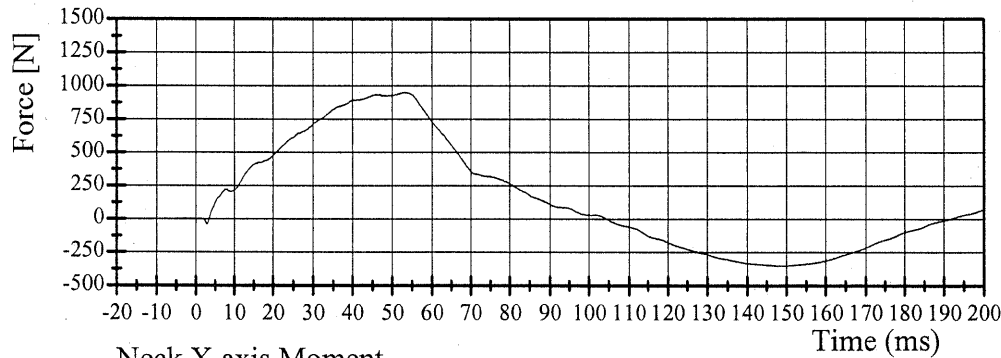


Filter Class: CFC 1000

Max: 950.3 N at 53.2 ms

Min: -350.8 N at 149.6 ms

Neck Y-Axis Force (filtered for moment calculation)

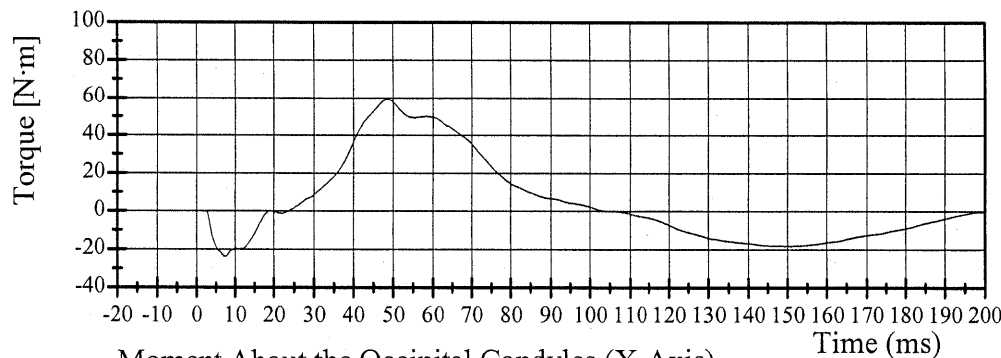


Filter Class: CFC 600

Max: 949.6 N·m at 53.4 ms

Min: -350.3 N·m at 148.5 ms

Neck X-axis Moment

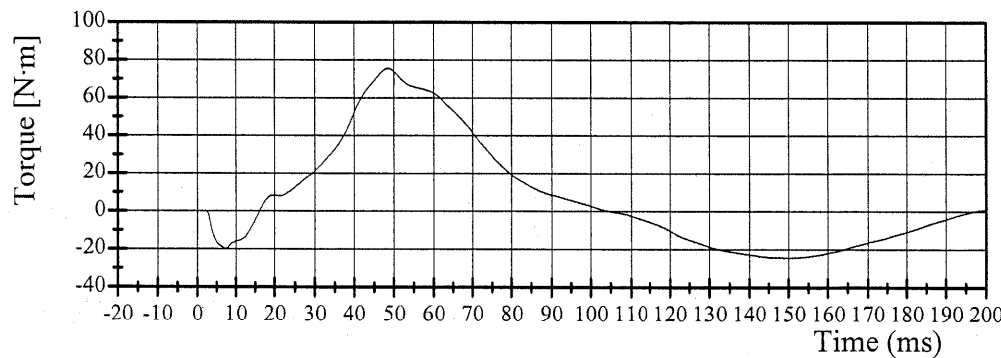


Filter Class: CFC 600

Max: 59.2 N·m at 48.5 ms

Min: -23.8 N·m at 7.6 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 75.6 ° at 48.6 ms

Min: -24.4 ° at 150.9 ms



# Transportation Research Center Inc.

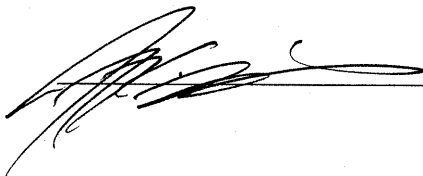
572F Left Side Thorax Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.1 C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.32 m/sec	Yes
Upper Rib Bar Peak Acceleration	37 - 46 g	42.6 g	Yes
Lower Rib Bar Peak Acceleration	37 - 46 g	43.3 g	Yes
Lower Thoracic Spine (T12) Peak Acceleration	15 - 22 g	19.7 g	Yes

## Comments:

Technician



Approved



10.07.2003 08:33:19 1143



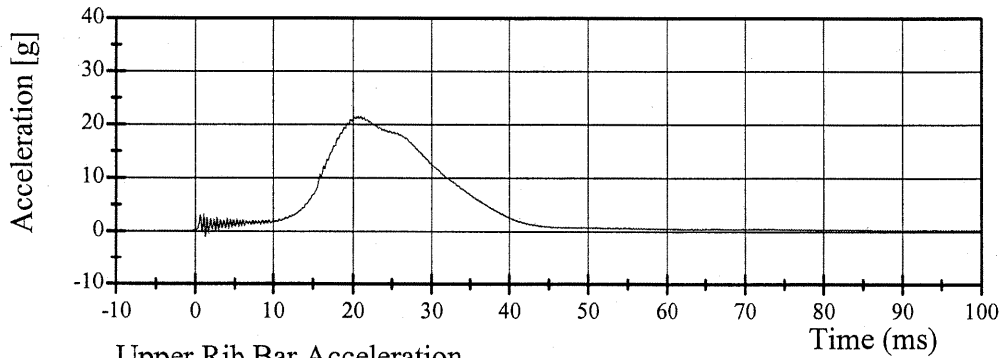
# Transportation Research Center Inc.

572F Left Side Thorax Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

### Pendulum Deceleration

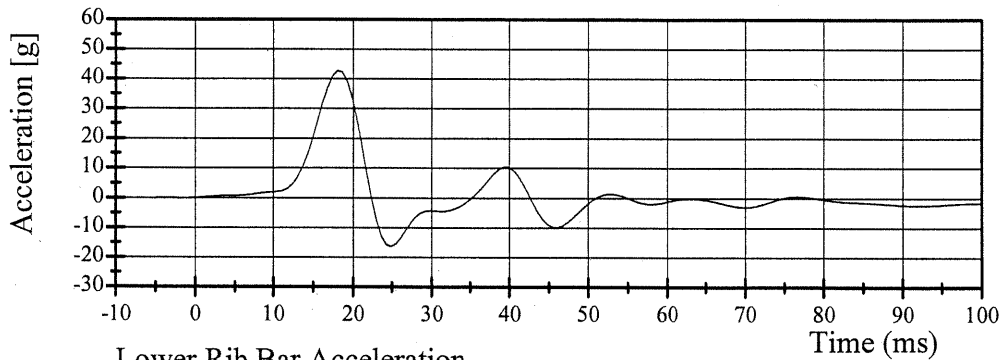


Filter Class: 1000

Max: 21.5 g at 20.6 ms

Min: -1.1 g at 1.3 ms

### Upper Rib Bar Acceleration

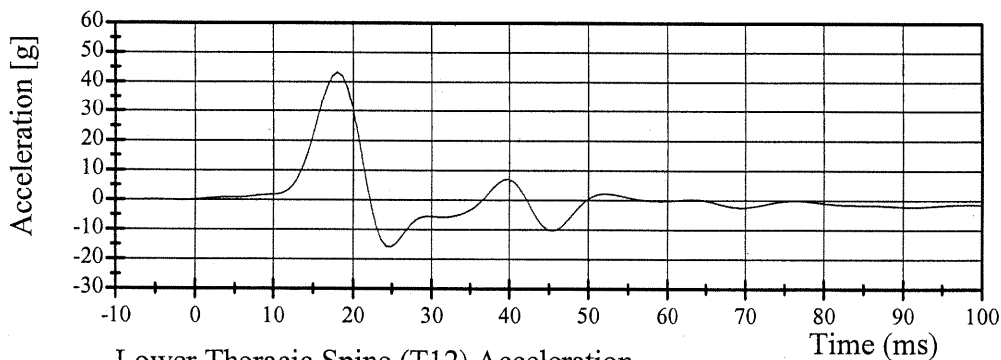


Filter Class: FIR 100

Max: 42.6 g at 18.1 ms

Min: -16.3 g at 24.9 ms

### Lower Rib Bar Acceleration

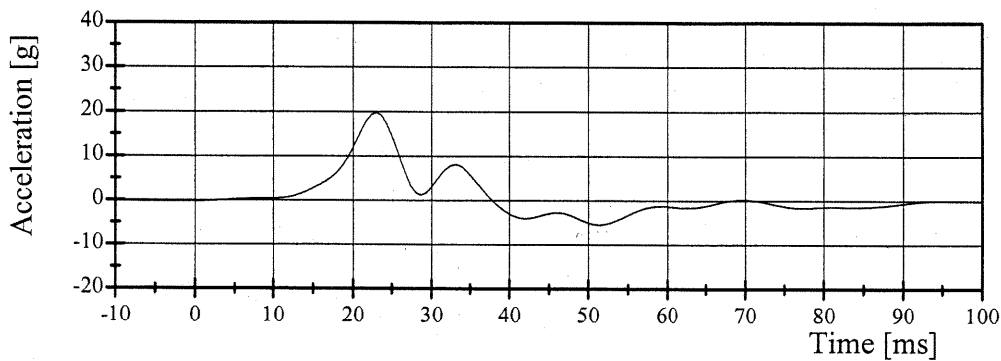


Filter Class: FIR 100

Max: 43.3 g at 18.0 ms

Min: -15.8 g at 24.9 ms

### Lower Thoracic Spine (T12) Acceleration



Filter Class: FIR 100

Max: 19.7 g at 23.0 ms

Min: -5.4 g at 51.2 ms

10.07.2003 08:33:20 1143



# Transportation Research Center Inc.

572B Abdomen Compression Test

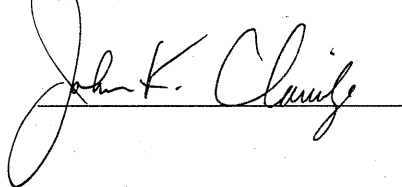
SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/06/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.2 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

## Comments:

Technician

  
\_\_\_\_\_

Approved

  
\_\_\_\_\_

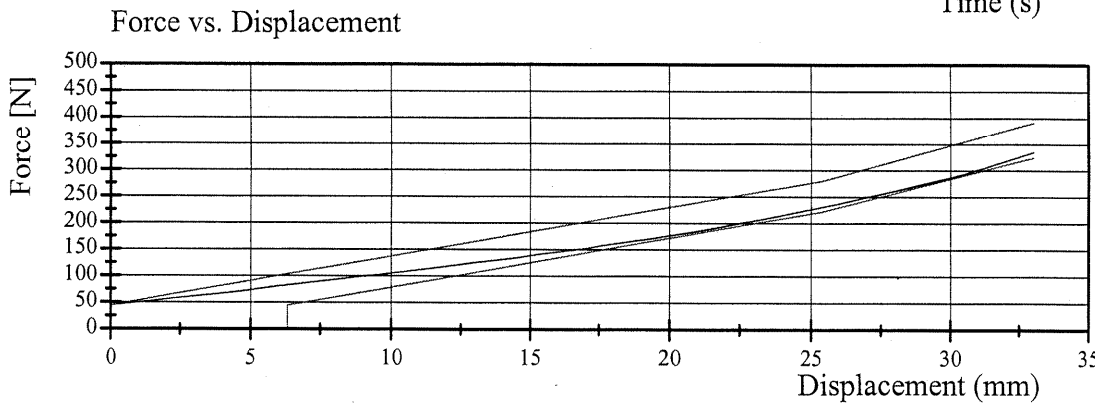
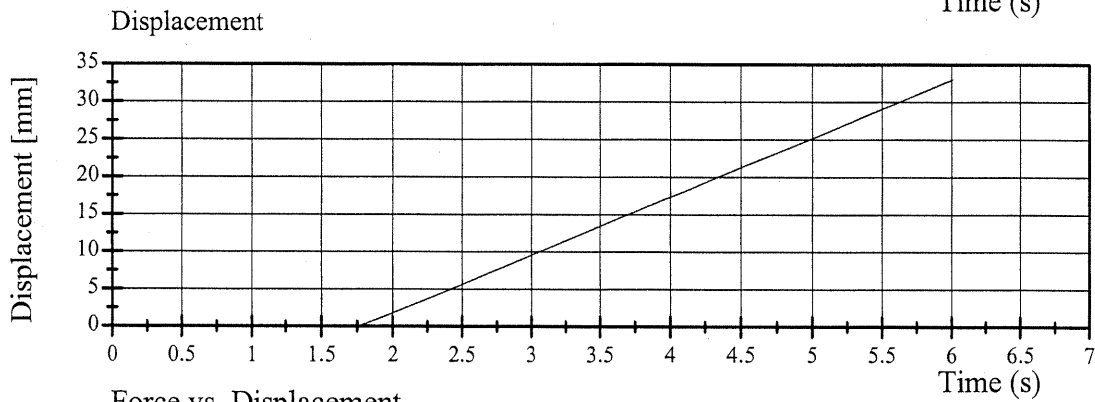
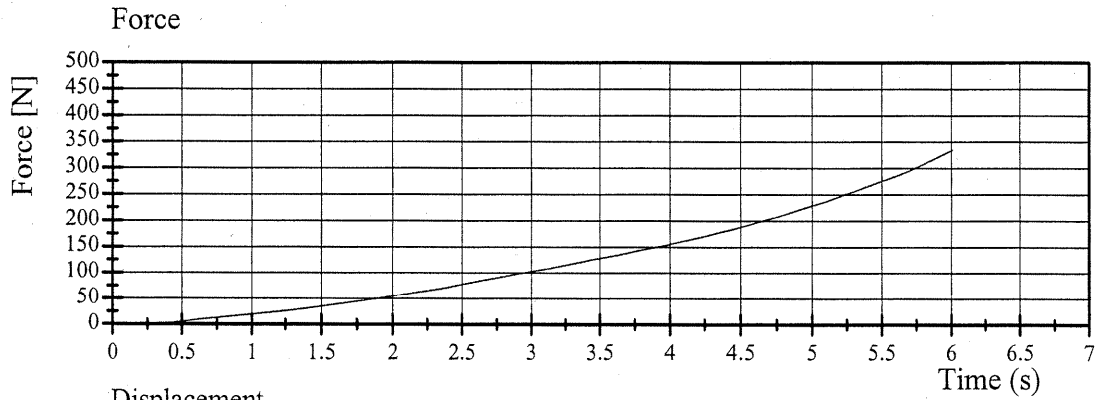


# Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/06/2003



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 07-Oct-03

TRC, INC. TEST NO: 906C03TF1 SID/HIII SN 906 TORSO FLEX CAL 03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 – 70 %	31 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	137.8 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	173.5 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	240.2 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	7 °

TEST MEETS SPECIFICATIONS

TECHNICIAN 

# Transportation Research Center Inc.

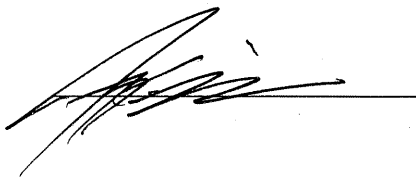
572F Left Side Pelvis Test

SID HIII Serial No. 906 Calibration No. 03 - 1

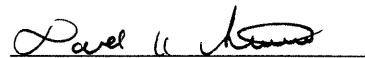
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.1 C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.31 m/sec	Yes
Pelvis Peak Acceleration	40 - 60 g	45.8 g	Yes
Time Above 20 g	3 - 7 ms	5.92 ms	Yes
Unimodal requirement for pelvis acceleration	Yes	Yes	Yes

## Comments:

Technician



Approved



10.07.2003 08:30:37 1168



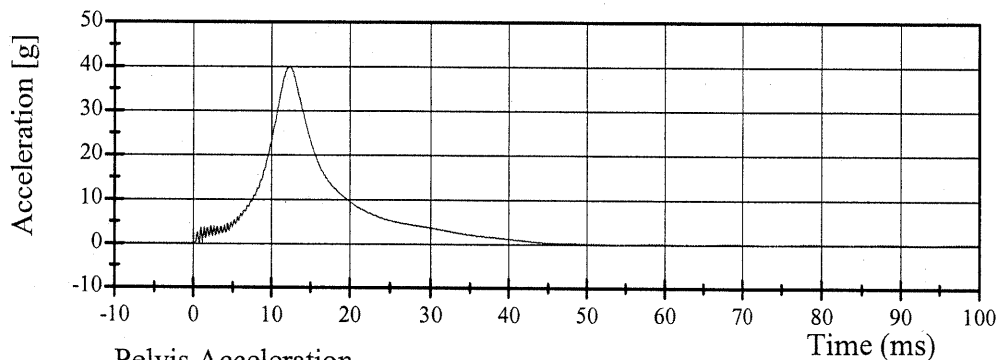
# Transportation Research Center Inc.

572F Left Side Pelvis Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

Pendulum Deceleration

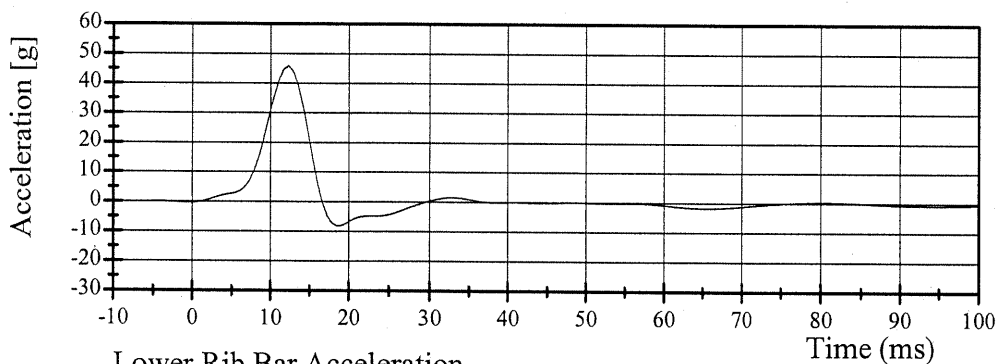


Filter Class: 1000

Max: 40.1 g at 12.3 ms

Min: -0.1 g at -90.9 ms

Pelvis Acceleration



Filter Class: FIR 100

Max: 45.8 g at 12.2 ms

Min: -8.2 g at 18.6 ms

Lower Rib Bar Acceleration

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 09/24/03

Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	PRE-USE	
<b>HEAD:</b>		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) N/A
<b>NECK:</b>		
Rubber Condition and Separation From End Caps	X	
<b>THORAX: Left side configuration</b>		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
<b>PELVIS:</b>		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
<b>LEGS AND FEET:</b>		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
<b>OTHER:</b>		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: J. Clarridge Date: 09/23/03

Type: SID HIII S/N: 906 Mfr: Unknown Test Date: 09/24/03

Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	PRE-USE	
<b>HEAD:</b>		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) N/A
<b>NECK:</b>		
Rubber Condition and Separation From End Caps	X	
<b>THORAX: Left side configuration</b>		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
<b>PELVIS:</b>		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
<b>LEGS AND FEET:</b>		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
<b>OTHER:</b>		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: J. Clarridge Date: 09/23/03

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 09/24/03

Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	POST-USE
<b>HEAD:</b>	
Head Skin Condition	X
Head Ballast Condition	X
<b>NECK:</b>	
Rubber Condition and Separation From End Caps	X
<b>THORAX: Left side configuration</b>	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
<b>PELVIS:</b>	
Illioc Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
<b>LEGS AND FEET:</b>	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: No damage to report.

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Inspection Completed By: J. Clarridge

Date: 10/02/03

Type: SID HIII S/N: 906 Mfr: Unknown Test Date: 09/24/03

Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	POST-USE
<b>HEAD:</b>	
Head Skin Condition	X
Head Ballast Condition	X
<b>NECK:</b>	
Rubber Condition and Separation From End Caps	X
<b>THORAX: Left side configuration</b>	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
<b>PELVIS:</b>	
Illioc Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
<b>LEGS AND FEET:</b>	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: No damage to report.

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Inspection Completed By: J. Clarridge

Date: 10/02/03

Appendix D

Test Equipment List and Calibration Information



Sign Convention, Cont'd.  
SAE J211 MAR95

Lumbar load cells: +X force: Chest rearward, pelvis forward  
+Y force: Chest leftward, pelvis rightward  
+Z force: Chest upward, pelvis downward  
+X moment: Left shoulder toward left hip  
+Y moment: Sternum toward front of legs  
+Z moment: Right shoulder forward, left shoulder rearward

Frequency Response Classes  
SAE J211 MAR95

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head Form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

# Channel Report

9/24/2003 7:58:42 AM

Name of Test 030924-1

System MINIDAU

Name of DAU DAU6

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model
6001	P25298	HEDXG1	Head Accel X	Rwd	801.41499	g	-	9/16/2003	OK 055n	Endevco	7264C-2K-2-180
6002	P25061	HEDYG1	Head Accel Y	Lft	807.76208	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6003	P25261	HEDZG1	Head Accel Z	Up	803.12465	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6004	P25067	HEDXR1	Head Accel X Red	Rwd	803.43972	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6005	P24511	HEDYR1	Head Accel Y Red	Lt	789.83092	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6006	P25063	HEDZR1	Head Accel Z Red	Up	806.42620	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6007	1716-0534-FX	NEKXF1	Neck Force X	Hd	8890.8019	N	-	9/9/2003	OK 055n	Denton	1716
6008	1716-0534-FY	NEKYF1	Neck Force Y	Hd	8885.0977	N	+	9/9/2003	OK 055n	Denton	1716
6009	1716-0534-FZ	NEKZF1	Neck Force Z	Hd	13357.627	N	+	9/9/2003	OK 055n	Denton	1716
6010	1716-0534-MX	NEKXM1	Neck Moment X	Rt Ear	282.37048	N·m	-	9/9/2003	OK 055n	Denton	1716
6011	1716-0534-MY	NEKYM1	Neck Moment Y	Chn	282.42609	N·m	+	9/9/2003	OK 055n	Denton	1716
6012	1716-0534-MZ	NEKZM1	Neck Moment Z	Chn	282.48456	N·m	+	9/9/2003	OK 055n	Denton	1716
6013	P25068	LURYG1	Left Upper Rib Y	Rgt	794.82124	g	+	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6014	P25069	LURYR1	Left Upper Rib Red Y	Rgt	808.28492	g	+	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6015	P25305	LLRYG1	Left Lower Rib Y	Rgt	802.92314	g	+	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
6016	P25395	LLRYR1	Left Lower Rib Red Y	Rgt	806.45161	g	+	8/25/2003	OK 055n	Endevco	7264C-2K-2-180
6017	P24393	T12YG1	Lower Spine Y	Lft	402.81973	g	-	9/9/2003	OK 055n	Endevco	7264C-2K-2-180
6018	P24627	T12YR1	Lower Spine Red Y	Lft	402.18373	g	-	8/25/2003	OK 055n	Endevco	7264C-2K-2-180
6019	P25397	PEVYG1	Pelvis Accel Y	Lft	398.38157	g	-	8/25/2003	OK 055n	Endevco	7264C-2K-2-180
6020	P25231	PEVYR1	Pelvis Accel Red Y	Lft	399.27631	g	-	9/9/2003	OK 055n	Endevco	7264C-2K-2-180
6021	J26885	HEDXG4	Head Accel X	Rwd	803.17505	g	-	9/9/2003	OK 906n	Endevco	7264-2000TZ
6022	J26864	HEDYG4	Head Accel Y	Lft	790.78244	g	-	9/9/2003	OK 906n	Endevco	7264-2000TZ
6024	J27950	HEDZG4	Head Accel Z	Up	791.95668	g	-	9/9/2003	OK 906n	Endevco	7264-2000TZ
6025	J27271	HEDXR4	Head Accel X Red	Rwd	799.75007	g	-	9/9/2003	OK 906n	Endevco	7264-2000TZ
6026	J27283	HEDYR4	Head Accel Y Red	Lt	809.00012	g	-	9/9/2003	OK 906n	Endevco	7264-2000TZ
6027	J26980	HEDZR4	Head Accel Z Red	Up	789.53861	g	-	9/9/2003	OK 906n	Endevco	7264-2000TZ
6028	1716A-1535-FX	NEKXF4	Neck Force X	Hd	8891.7885	N	-	9/9/2003	OK 906n	Denton	1716A
6029	1716A-1535-FY	NEKYF4	Neck Force Y	Hd	8908.0907	N	+	9/9/2003	OK 906n	Denton	1716A
6030	1716A-1535-FZ	NEKZF4	Neck Force Z	Hd	13330.563	N	+	9/9/2003	OK 906n	Denton	1716A
6031	1716A-1535-MX	NEKXM4	Neck Moment X	Rt Ear	282.72169	N·m	-	9/9/2003	OK 906n	Denton	1716A
6032	1716A-1535-MY	NEKYM4	Neck Moment Y	Chn	282.57318	N·m	+	9/9/2003	OK 906n	Denton	1716A

030924-1

# Channel Report

9/24/2003 7:58:43 AM

Name of Test 030924-1

System MINIDAU

Name of DAU DAU7

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
7001	1716A-1535-MZ	NEKZM4	Neck Moment Z	Chn	283.00597 N·m	+	9/9/2003	OK 906n	Denton	1716A
7002	P27850	LURYG4	Left Upper Rib Y	Rgt	792.32435 g	+	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7003	P25374	LURYR4	Left Upper Rib Red Y	Rgt	799.23822 g	+	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7004	P29211	LLRYG4	Left Lower Rib Y	Rgt	787.98325 g	+	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7005	P25075	LLRYR4	Left Lower Rib Red Y	Rgt	797.20976 g	+	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7006	P21635	T12YG4	Lower Spine Y	Lft	397.33043 g	-	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7007	P24564	T12YR4	Lower Spine Red Y	Lft	397.12087 g	-	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7008	P21652	PEVYG4	Pelvis Accel Y	Lft	397.45998 g	-	9/9/2003	OK 906n	Endevco	7264C-2K-2-180
7009	P25318	PEVYR4	Pelvis Accel Red Y	Lft	402.78171 g	-	9/15/2003	OK 906n	Endevco	7264C-2K-2-180
7010	P28241	RFSXG1	RGT SIDE SILL FRNT ST X	FWD	402.43979 g	+	6/19/2003	OK -1	Endevco	7264C-2K-2-180
7011	P27498	RFSYG1	RGT SIDE SILL FRNT ST Y	LT	1004.9067 g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
7012	P27200	RFSZG1	RGT SIDE SILL FRNT ST Z	UP	395.61118 g	-	5/7/2003	OK -1	Endevco	7264C-2K-2-180
7013	P27939	RRSXG1	RGT SIDE SILL RR ST X	FWD	398.80358 g	+	7/19/2003	OK -1	Endevco	7264C-2K-2-180
7014	P23816	RRSYG1	RGT SIDE SILL RR ST Y	LT	994.56099 g	-	7/19/2003	OK -1	Endevco	7264C-2K-2-180
7015	P27913	RRSZG1	RGT SIDE SILL RR ST Z	UP	399.00249 g	-	7/19/2003	OK -1	Endevco	7264C-2K-2-180
7016	P28265	RDKXG1	RR FLRPAN ABV AXLE X	RR	1012.0177 g	-	6/19/2003	OK -1	Endevco	7264C-2K-2-180
7017	P28119	RDKYG1	RR FLRPAN ABV AXLE Y	LT	1023.5496 g	-	7/18/2003	OK -1	Endevco	7264C-2K-2-180
7018	P28081	RDKZG1	RR FLRPAN ABV AXLE Z	UP	1007.7549 g	-	7/19/2003	OK -1	Endevco	7264C-2K-2-180
7019	P27173	LRSYG1	LFT SIDE SILL RR ST Y	RT	976.63328 g	+	5/7/2003	OK -1	Endevco	7264C-2K-2-180
7020	P29287	LFSYG1	LFT SIDE SILL FRNT ST Y	RT	1536.6146 g	+	6/5/2003	OK -1	Endevco	7264C-2K-2-180
7021	P27167	RRTYG1	RGT RR OCP COMP Y	RT	1447.8000 g	+	5/1/2003	OK -1	Endevco	7264C-2K-2-180
7022	P22834	LLBYG1	LFT LOWER B-POST Y	RT	1484.9187 g	+	7/21/2003	OK -1	Endevco	7264C-2K-2-180
7023	P28313	LUBYG1	LFT MID B-POST Y	RT	1528.9058 g	+	6/18/2003	OK -1	Endevco	7264C-2K-2-180
7024	P28618	LLAYG1	LFT LOWER A-POST Y	LT	1476.0998 g	-	6/20/2003	OK -1	Endevco	7264C-2K-2-180
7025	P29285	LUAYG1	LFT MID A-POST Y	LT	1512.3320 g	-	6/5/2003	OK -1	Endevco	7264C-2K-2-180
7026	P27354	LFTYG1	LFT FRNT ST TRK Y	RT	1551.7972 g	+	4/24/2003	OK -1	Endevco	7264C-2K-2-180
7027	P28272	LRTYG1	LFT RR ST TR Y	RT	1478.7430 g	+	6/19/2003	OK -1	Endevco	7264C-2K-2-180
7028	P28620	VCGXG1	VEH C/G X	FWD	1000.6253 g	+	6/20/2003	OK -1	Endevco	7264C-2K-2-180
7029	P28251	VCGYG1	VEH C/G Y	LT	996.47729 g	-	6/19/2003	OK -1	Endevco	7264C-2K-2-180
7030	P25042	VCGZG1	VEH C/G Z	UP	1015.2485 g	-	6/17/2003	OK -1	Endevco	7264C-2K-2-180

D-7

030924-1

# Channel Report

9/24/2003 7:58:43 AM

Name of Test 030924-1

System MINIDAU

Name of DAU DAU8

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
8001	P27554	BCGXG1	MDB CG X-AXIS	FWD	810.12658	g	+ 7/18/2003	OK -1	Endevco	7264C-2K-2-180
8002	P28109	BCGYG1	MDB CG Y-AXIS	LT	798.10450	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180
8003	P27976	BCGZG1	MDB CG Z-AXIS	UP	790.24540	g	- 7/18/2003	OK -1	Endevco	7264C-2K-2-180
8004	P27385	LRRXG1	MDB LT RR X-AXIS	FWD	799.11348	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
8005	P27371	LRRYG1	MDB LT RR Y-AXIS	LT	800.80080	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180

page 3 of 3

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030924-1

# Digital and System Channel Report

2003-09-24 07:59:01

<b>Name of Test</b>	030924-1	<b>System</b>	MINIDAU	<b>Name of DAU</b>	DAU6	<b>descriptio</b>
<b>enable</b>	<b>Channel</b>	<b>Short Name</b>	<b>Type</b>	<b>Data File</b>	<b>Module Type</b>	
d						
Yes	6501	DIG6	dig0	DAT66501	KM3710 Controller	

bit position	bit	short	long	descriptio
MSB = bit 15	1	SHLET1	DRIVER SHOULDER CONTACT	1
bit 14	1	PEVET1	DRIVER PELVIS CONTACT	2
bit 13	1	SHLET4	PASSENGER SHOULDER CONTACT	3
bit 12	1	PEVET1	PASSENGER PELVIS CONTACT	4
bit 11	0			
bit 10	0			
bit 09	0			
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

D-9

030924-1

# Digital and System Channel Report

2003-09-24 07:59:01

Name of Test	030924-1	System	MINIDAU	Name of DAU	DAU8	descriptio
enable	Channel	Short Name	Type	Data File	Module Type	
d						
Yes	8501	DIG8	dig0	DAT88501	KM3710 Controller	

bit position	bit	short	long	descriptio
MSB = bit 15	1	MDBR1	MDB RT SIDE CONTACT SWITCH	1
bit 14	1	MDBL1	MDB LT SIDE CONTACT SWITCH	2
bit 13	0			
bit 12	0			
bit 11	0			
bit 10	0			
bit 09	0			
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

D-10

030924-1

Dummy 055n Type HIII/SID Descriptio NHTSA - 055n SID-LEFT IMP. CONFIG. w/RED ACCELS ICAL'd 8-22-03(DKS)

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264C-2K-2-18	P25298	Endevco	0.02203 g	2000	9/16/2003	Rwd	1
HEDYG	Head Accel Y	7264C-2K-2-18	P25061	Endevco	0.01811 g	2000	8/22/2003	Lft	1
HEDZG	Head Accel Z	7264C-2K-2-18	P25261	Endevco	0.01723 g	2000	8/22/2003	Up	1
HEDXR	Head Accel X Red	7264C-2K-2-18	P25067	Endevco	0.01634 g	2000	8/22/2003	Rwd	1
HEDYR	Head Accel Y Red	7264C-2K-2-18	P24511	Endevco	0.01752 g	2000	8/22/2003	Lt	1
HEDZR	Head Accel Z Red	7264C-2K-2-18	P25063	Endevco	0.01814 g	2000	8/22/2003	Up	1
NEKXF	Neck Force X	1716	1716-0534-FX	Denton	0.000193247 N	8896.4	9/9/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716	1716-0534-FY	Denton	0.000181781 N	8896.4	9/9/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716	1716-0534-FZ	Denton	0.000087114 N	13344.6	9/9/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716	1716-0534-MX	Denton	0.00588708 N	282.5	9/9/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716	1716-0534-MY	Denton	0.005773451 N	282.5	9/9/2003	Chn to Strmm	0
NEKZM	Neck Moment Z	1716	1716-0534-MZ	Denton	0.00839115 N	282.5	9/9/2003	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7264C-2K-2-18	P25068	Endevco	0.01741 g	2000	8/22/2003	Rgt	0
LURYR	Left Upper Rib Red Y	7264C-2K-2-18	P25069	Endevco	0.01712 g	2000	8/22/2003	Rgt	0
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P25305	Endevco	0.02057 g	2000	8/22/2003	Rgt	0
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P25395	Endevco	0.02048 g	2000	8/25/2003	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P24393	Endevco	0.01986 g	2000	9/9/2003	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P24627	Endevco	0.01845 g	2000	8/25/2003	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P25397	Endevco	0.01836 g	2000	8/25/2003	Lft	1
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P25231	Endevco	0.01781 g	2000	9/9/2003	Lft	1

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030924-1

Dummy 906n Type HIII/SID Descriptio NHTSA - 906n SID-LEFT IMP. CONFIG. w/RED ACCELS ICAL'd 9-9-03(DKS)

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264-2000TZ	J26885	Endevco	0.02361 g	2000	9/9/2003	Rwd	1
HEDYG	Head Accel Y	7264-2000TZ	J26864	Endevco	0.02398 g	2000	9/9/2003	Lft	1
HEDZG	Head Accel Z	7264-2000TZ	J27950	Endevco	0.02586 g	2000	9/9/2003	Up	1
HEDXR	Head Accel X Red	7264-2000TZ	J27271	Endevco	0.03201 g	2000	9/9/2003	Rwd	1
HEDYR	Head Accel Y Red	7264-2000TZ	J27283	Endevco	0.02344 g	2000	9/9/2003	Lt	1
HEDZR	Head Accel Z Red	7264-2000TZ	J26980	Endevco	0.03088 g	2000	9/9/2003	Up	1
NEKXF	Neck Force X	1716A	1716A-1535-FX	Denton	0.000186952 N	8896.4	9/9/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-1535-FY	Denton	0.000179612 N	8896.4	9/9/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-1535-FZ	Denton	0.000093678 N	13344.6	9/9/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-1535-MX	Denton	0.005785841 N	282.5	9/9/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1535-MY	Denton	0.00568 N	282.5	9/9/2003	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-1535-MZ	Denton	0.008186195 N	282.5	9/9/2003	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7264C-2K-2-18	P27850	Endevco	0.01795 g	2000	9/9/2003	Rgt	0
LURYR	Left Upper Rib Red Y	7264C-2K-2-18	P25374	Endevco	0.02209 g	2000	9/9/2003	Rgt	0
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P29211	Endevco	0.02096 g	2000	9/9/2003	Rgt	0
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P25075	Endevco	0.01784 g	2000	9/9/2003	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P21635	Endevco	0.01895 g	2000	9/9/2003	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P24564	Endevco	0.01896 g	2000	9/9/2003	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P21652	Endevco	0.02221 g	2000	9/9/2003	Lft	1
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P25318	Endevco	0.01926 g	2000	9/15/2003	Lft	1

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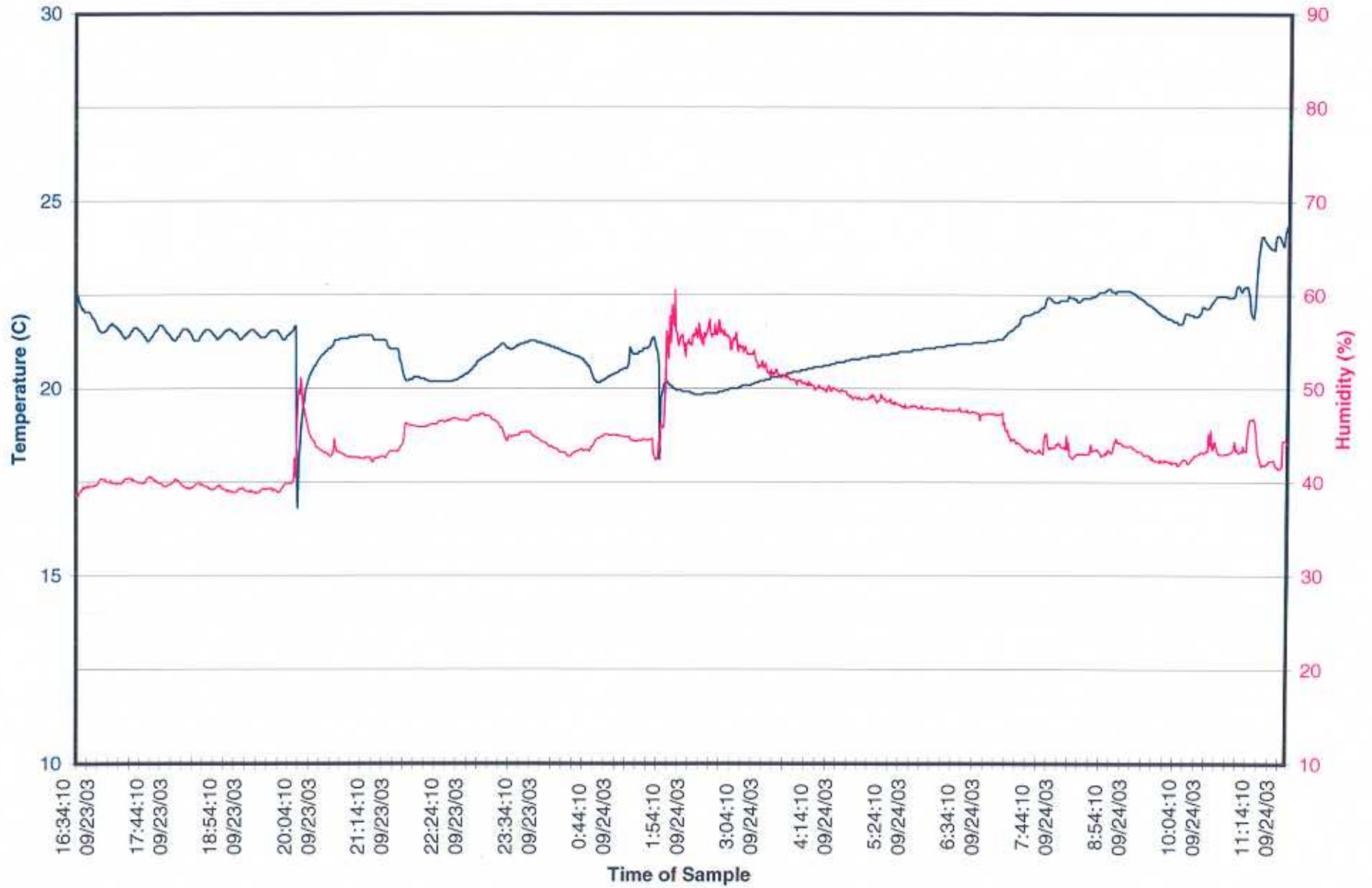
030924-1

Tuesday, September 23, 906n  
2003

FMVSS 214 SIDE IMPACT PROTECTION C45101 / 030924-1

D-13

030924-1



**SIDE IMPACTOR BARRIER CERTIFICATION**

Date: May 13, 2003  
To: Transportation Research  
Ship & Rec Bldg 50  
10820 St. Route 347  
East Liberty, OH 43319-0367

**PURCHASE ORDER INFORMATION**

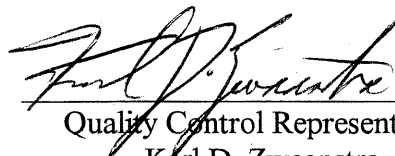
Customer P.O. Number: 23413  
Work Order Number: 16765  
Quantity: 01 piece

**CORE INFORMATION**

Core Type: PCGA-1/4-5.2-P-3003-T  
Measured Cell Size: 0.250 inches  
Measured Density: 5.2 pcf

Unit Number: 033A0303

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 232 – 250 psi as per DWG# DSL-1285.

  
Quality Control Representative  
Karl D. Zwaanstra



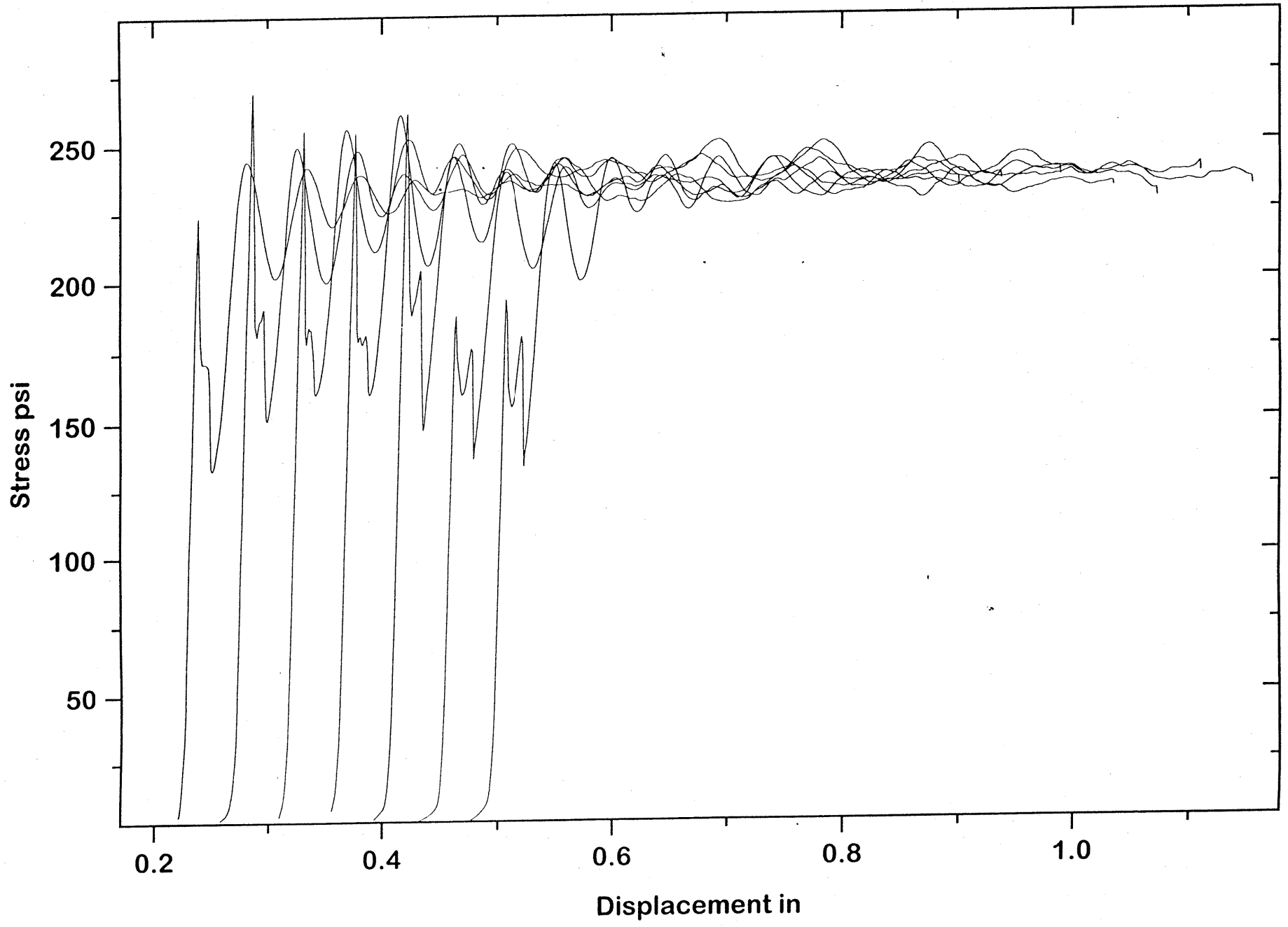


**Crush Data**  
**232 - 250 psi per DWG # DSL-1285**

**Block Number: 033A0303**

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	233.68	234.43	234.32
2	234.84	233.99	234.70
3	241.15	240.58	242.00
4	235.55	234.70	234.32
5	243.22	239.09	237.67
6	236.93	237.02	238.13
7	237.94	240.08	237.33

BLOCK # 033A0303 Sample ID: IN267010



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030924-1

**SIDE IMPACTOR BARRIER CERTIFICATION**

Date: May 13, 2003  
To: Transportation Research  
Ship & Rec Bldg 50  
10820 St. Route 347  
East Liberty, OH 43319-0367

**PURCHASE ORDER INFORMATION**


Customer P.O. Number: 23413  
Work Order Number: 16765  
Quantity: 01 piece

**CORE INFORMATION**

Core Type: PAMG-3/8-1.6-001-P-5052-T  
Measured Cell Size: 0.375 inches  
Measured Density: 1.6 pcf

Unit Number: 024A0403

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 45 psi +/- 2.5 psi as per DWG# DSL-1285.

  
Quality Control Representative  
Karl D. Zwaanstra



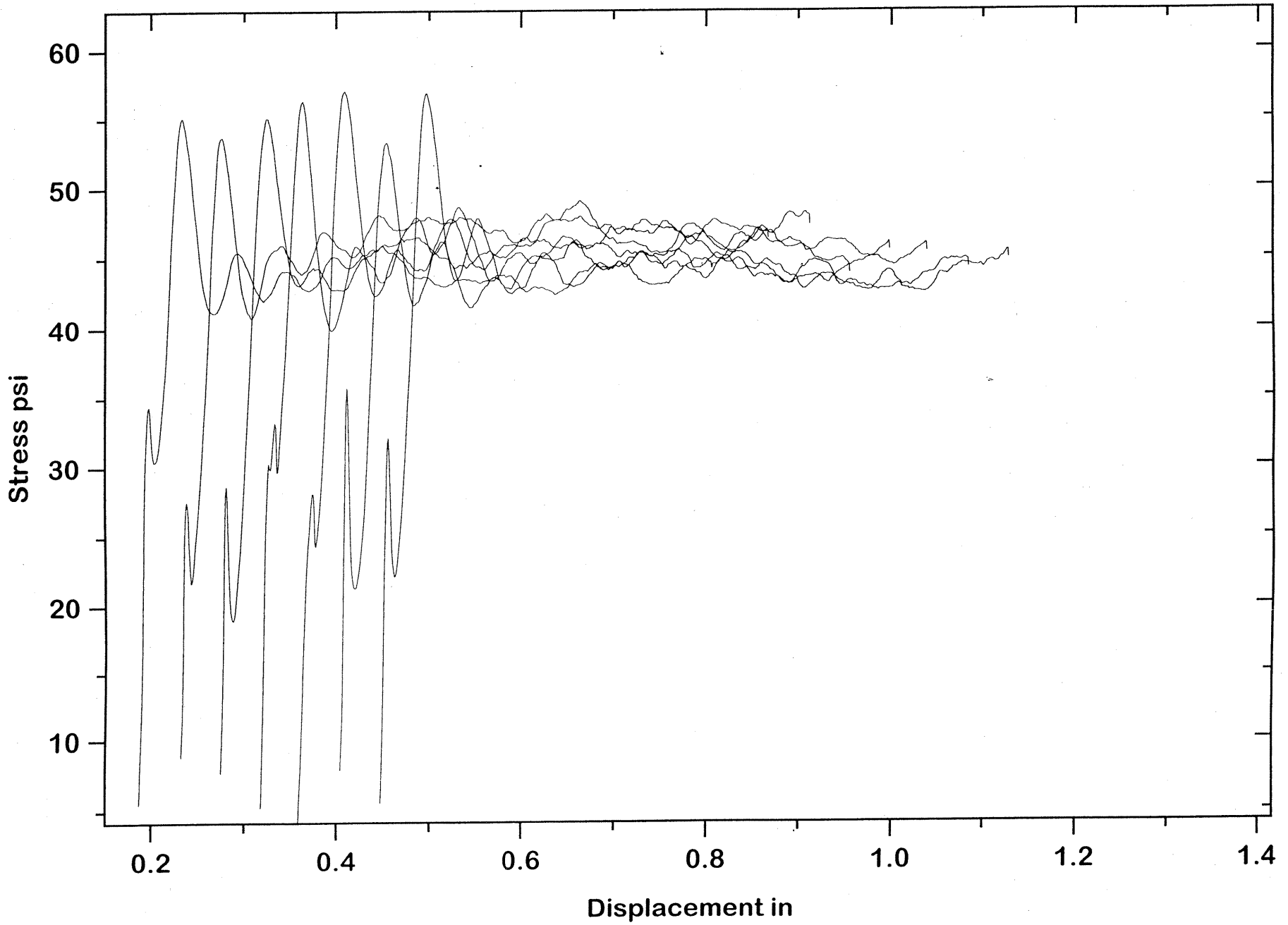
Crush Data

45 psi +/- 2.5 psi per DWG # DSL-1285

**Block Number:** 024A0403

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	44.04	43.50	44.74
2	47.22	47.11	46.31
3	45.50	45.66	45.35
4	45.47	46.98	46.34
5	47.25	46.24	45.37
6	44.54	44.24	43.37
7	44.12	43.94	42.84

BLOCK # 024A0403 Sample ID: IN227200



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