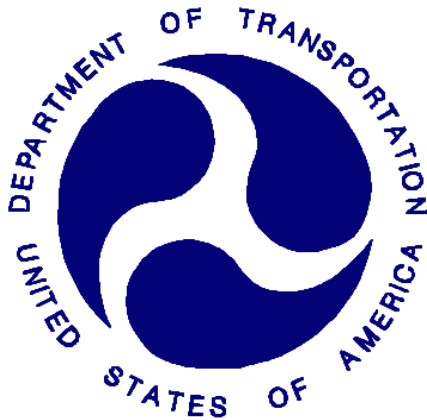


NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

HYUNDAI MOTOR COMPANY
2004 HYUNDAI XG350L
4 DOOR SEDAN

NHTSA NUMBER: M40500

Prepared By:
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9/25/03

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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Date of Acceptance

Technical Report Documentation Page

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Measurement Description		Driver SID/HIII	Pass. SID/HIII		
Left Upper Rib (LUR) G's		54.6	66.9		
Left Lower Rib (LLR) G's		51.8	67.6		
Lower Spine (T ₁₂) G's		67.9	69.0		
Thoracic Trauma Index (TTI) G's		61.0	68.0		
Pelvis (PEV) G's		77.8	63.0		
17. Key Words New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) Side Impact Dummy (SID/HIII)				18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 400 Seventh St., SW, Room 5108 Washington, DC 20590	
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SECTION 1

PURPOSE and TEST PROCEDURE

1.1 PURPOSE

This Side Impact NCAP test was conducted as part of the FY' 2003 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-99-D-02041. The purpose of this test is to generate comparative side impact data on a 2004 Hyundai XG350L 4 Door Sedan SUV manufactured by Hyundai Motor Company.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Crashworthiness Standards (OCS), laboratory test procedure NCAP Side Impact Testing, dated July 1997 and the corresponding KARCO Engineering Test Procedure KTP-214D, dated November 18, 1998. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

SECTION 2
SUMMARY OF SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT NCAP TEST

A model year 2004 Hyundai XG350L 4 Door Sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.12 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1926kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on September 25, 2003.

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front Driver		Left Rear (Passenger)	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	N/A	N/A
Side Torso Airbag	Yes	Deployed	N/A	N/A
Head Airbag	Yes	Deployed	N/A	N/A
Curtain Airbag	N/A	N/A	N/A	N/A

One (1) real-time motion picture camera and eleven (11) high-speed motion picture cameras were used to document the impact event. **Note: No time means camera ran but there were no timing marks on the film.** The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIIs can be found in Appendix A. Two 50th percentile adult male Side Impact Dummy's, Hybrid III (SID/HIIIs) were placed in the driver's and left rear passenger designated seating positions according to the test procedure. SID/HIII information is contained in Appendix C. Each SID/HIII was instrumented with contact switches on the pelvis, thorax and six-axis neck load cells, and fourteen accelerometers in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes primary and redundant)

The test vehicle was instrumented with twenty-five (25) structural accelerometers and the MDB was instrumented with five (5) accelerometers and one (1) contact switch on the right bumper to compare left side to right side bumper impact timing. All data channels were recorded with the fully self contained on-board Data Acquisition System (DAS). The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

SECTION 2.....(CONTINUED)

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 398 mm at level 2, 1650mm rearward of the left vertical impact point. The driver SID/Hybrid III, Serial No. 275 and the passenger SID/Hybrid III, Serial No. 274 were calibrated one test prior to this test. The SID/Hybrid III injury criteria is summarized as follows:

Measurement	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	61.0	68.0
Peak Pelvic G's (PEV)	G's	77.8	63.0

Tests summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIIs, vehicle, and MDB response data traces. Appendix C contains the SID Configuration and performance verification data. Appendix D contains the test equipment information.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION SHEETS

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M40500	Anti-Lock Brakes	Yes
Make	Hyundai	All Wheel Drive	No
Model	XG350L	Power Steering	Yes
Body Style	4-Door	Driver Front Airbag	Yes
Vin No.	KMHFU45E94A300786	Driver Side Torso Airbag	Yes
Color	Black	Driver Side Head Airbag	Yes
Delivery Date	9/17/2003	Driver Curtain Airbag	No
Odometer	0.7	Rear Pass. Airbag	No
Dealer	Romero Hyundai of Ontario	Rear Pass. Side Airbag	No
Transmission	5 Speed Automatic	Rear Pass. Head Airbag	No
Final Drive	Front	Rear Pass. Curtain Airbag	No
Type/No. Cyl.	V-6	Pre-Tensioners	No
Engine Disp. (L)	3.5	Load Limiters	No
Engine Placement	Longitudinal	Bucket Seats	Yes
Roof Rack	No	Air Cond.	Yes
Sunroof/T-Top	Yes	AM/Fm Cassette	Yes
Tinted Glass	No	Tilt Steering	Yes
Traction Control	Yes	Power Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	Yes
Rear Disc	Yes	Other	None

DATA FROM CERTIFICATION LABEL

Manufactured By	Hyundai Motor Company	GVWR (kg)	2120
Date of Manufacture	07/03	GAWR Front (kg)	1230
		GAWR Rear (kg)	1095

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	None	
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				390
Cargo Weight (RCLW) (kg)				50

DATA SHEET NO. 1.....(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

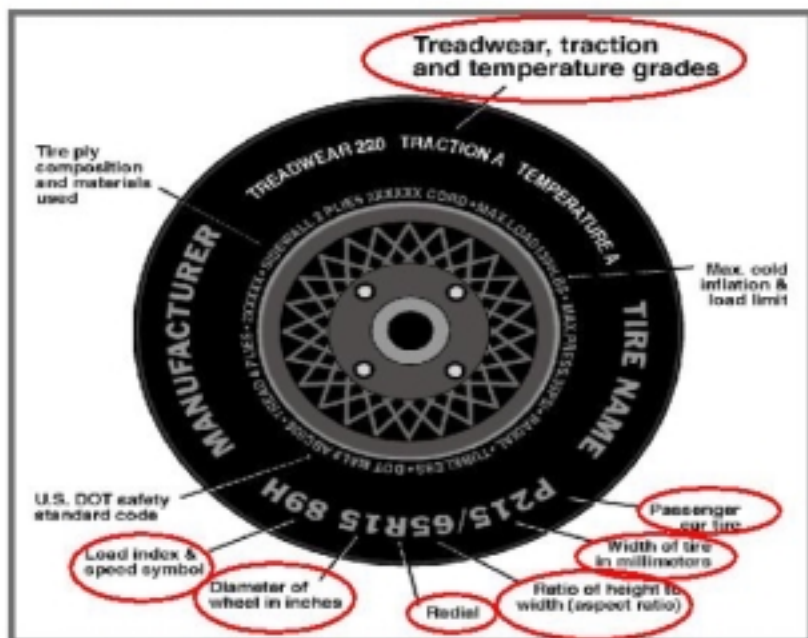
Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03

Collect year, make, model, VIN, items circled in red, and tire manufacturer and tire name.



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpg)*	350	350
Cold Pressure (kpg)	230	210
Recommended Tire Size	P205/60R16	P205/60R16
Tire Size on Vehicle	P205/60R16	P205/60R16
Tire Manufacturer	Michelin	Michelin
Treadwear	400	400
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	2	2
Load Index/Speed Symbol	94H	94H
Tire Material	Polyester/Steel	Polyester/Steel
DOT Safety Code Right	DOTED7RFRTX1203	DOTED7RFRTX1203
DOT Safety Code Left	DOTED7RFRTX1203	DOTED7RFRTX1203

Note: Maximum Tire Pressure comes from sidewall of the tire.

DATA SHEET NO. 1.....(continued)**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2004 Hyundai XG350L 4 Door SedanNHTSA No.: M40500Test Program: 55/28 km/h 90 Deg. Side Impact NCAPTest Date: 9/25/03**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	542	338		587	419	
Right	kg	524	318		544	376	
Ratio	%	61.9	38.1		58.7	41.3	
Totals	kg	1066	656	1722	1131	795	1926

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1722
Weight of 2 P572 ATD's	kg	162
Rated Cargo/Luggage Wt. (RCLW)	kg	50
Calculated Vehicle Target Wt. (TVTW)	kg	1934

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	692	696	685	685	1048
As Tested	mm	678	695	646	679	1135
Fully Loaded	mm	675	695	636	655	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2750
Total Vehicle Length at Left Side	mm	3150
Total Vehicle Length at Centerline	mm	4878
Total Vehicle Length at Right Side	mm	3150
Weight of Ballast In Cargo Area	kg	36
Amount of Stoddard Solvent in Fuel Tank	Liters	65.1
1/3 of Usable Capacity	Liters	22.2

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2750
Target Impact Point Aft of Front Axle	mm	435
Actual Impact Point Aft of Front Axle	mm	431

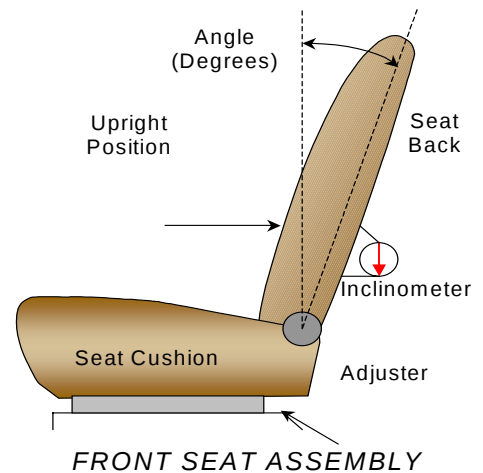
DATA SHEET NO. 1.....(continued)**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan
Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

NHTSA No.: M40500
Test Date: 9/25/03

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: A special application tool with pointed probes is inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly, approximately 13 inches above the pivot point of the seat back. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.

**SEAT BACK ANGLES**

	Deg.
Driver Seat Back Angle	26.0
Rear Seat Back Angle	25.0

SEAT FORE/AFT POSITIONS

The Drivers seat is adjustable. The fore/aft position is set to the middle.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	228mm	114mm
Rear Seat	0	0

SEAT BELT UPPER ANCHORAGE**SEAT BELT UPPER ANCHORAGE**

	Total # of Positions	Placed in Position #
Driver Seat	4	2
Rear Seat	4	2

Position number one (1) is the uppermost position.

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

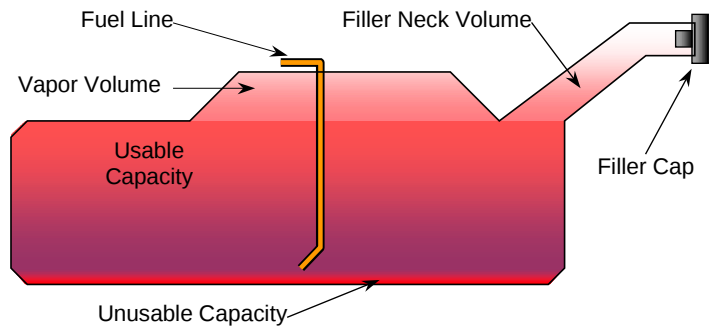
Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan
Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

NHTSA No.: M40500
Test Date: 9/25/03

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	70.0
Usable Capacity of "Optional" Tank	N/A
Usable Capacity used for FMVSS 301	64.4 to 65.8
Actual Amount of Solvent used	65.1
1/3 of Usable Capacity	22.2

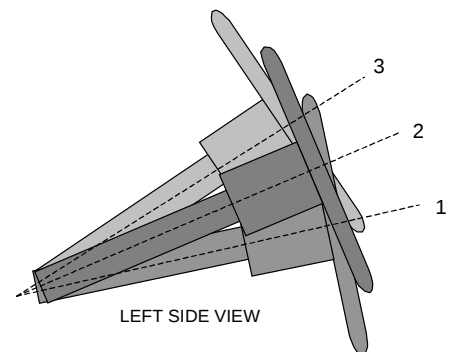
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Degrees
Lowermost position No. 1	20.0
Geometric center position No. 2	25.5
Uppermost position No. 3	31.0

DATA SHEET NO. 2**TEST VEHICLE SUMMARY OF RESULTS**Test Vehicle: 2004 Hyundai XG350L 4 Door SedanNHTSA No.: M40500Test Program: 55/28 km/h 90 Deg. Side Impact NCAPTest Date: 9/25/03**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	542	338		587	419	
Right	kg	524	318		544	376	
Ratio	%	61.9	38.1		58.7	41.3	
Totals	kg	1066	656	1722	1131	795	1926

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	237	278
Level 2	Occupant H-Point	mm	398	515
Level 3	Mid Door	mm	361	598
Level 4	Window Sill	mm	298	901
Level 5	Window top	mm	82	1350
N/A	Maximum Penetration	mm	398	

INSTRUMENTATION

Driver SID/Hybrid III Accelerometers	20
Passenger SID/Hybrid III Accelerometers	20
Vehicle Structure Accelerometers	25
MDB Accelerometers	5
Total	70

CAMERA COVERAGE

High Speed, Vehicle On-Board	3
High Speed, Off-Board	5
High Speed, MDB On-Board	2
Real Time, Panning	1
Total	11

DATA SHEET NO. 3**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**Test Vehicle: 2004 Hyundai XG350L 4 Door SedanNHTSA No.: M40500Test Program: 55/28 km/h 90 Deg. Side Impact NCAPTest Date: 9/25/03

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length including Honeycomb Face	4115
Wheel Base of Framework Carriage	2590
C.G. location aft of Front Axle	1127

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	384	308	
Right	kg	385	284	
Ratio	%	56.5	43.5	
Totals	kg	769	592	1361

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.12
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.14
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max. Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	308	Left	241
B	Top of Bumper	533	156	Left	138
C	Mid Level	686	114	Right	146
D	Top of Stack	813	101	Right	156

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	2
High Speed Cameras	11

DATA SHEET NO. 4

POST TEST OBSERVATIONS

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan
 Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

NHTSA No.: M40500
 Test Date: 9/25/03

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	P572F, SID / No. 275	P572F, SID / No. 274
Head Contact	Airbag	C-Pillar, Roof
Upper Torso Contact	Airbag	Door Panel
Lower Torso Contact	Door Panel	Door Panel
Left Knee Contact	Knee	Door Panel/Knee
Right Knee Contact	Knee	Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Remained closed/latched, inoperable	Remained closed/latched, inoperable
Right Side Door Opening	Remained closed/latched, operable	Remained closed/latched, operable
Seat Movement	None	None
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Pillars pushed inward with no apparent failure
Sill Separation	No apparent visible failure
Windshield Damage	Glazing cracks on struck side only
Window Damage	Both struck side windows broke
Other Notable Effects	No other significant items to note

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01		Left Rear (Passenger) Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	No	N/A
Side Airbag	Yes	Deployed	No	N/A
Head Airbag	Yes	Deployed	No	N/A
Curtain Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	No	N/A	No	N/A
Seat Belt Load Limiter	No	N/A	No	N/A

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	4 left
Vertical Offset	mm	+/- 20	16 below

DATA SHEET NO. 5
IIII/SID INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 9/25/03

THORAX AND PELVIS PEAK ACCELERATIONS, PRIMARY (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	54.6	38.1	-8.4	85.6	66.8	42.5	-5.8	131.9
Lower Rib (LLR)	Y	G's	51.8	39.4	-14.7	83.8	67.6	41.3	-10.1	69.4
Lower Spine (T ₁₂)	Y	G's	67.9	36.3	-16.8	80.6	69.0	47.5	-14.1	73.8
Pelvis (PEV)	Y	G's	77.8	33.1	-18.5	68.8	63.0	38.8	-11.1	92.5

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, PRIMARY (FIR 100 Filtered)

Location	Driver				Passenger			
	LUR	T ₁₂	TTI(g)	PEV(g)	LLR	T ₁₂	TTI(g)	PEV(g)
Primary Rib, Spine, and Pelvis	54.633	67.946	61	78	67.610	68.959	68	63

THORAX AND PELVIS PEAK ACCELERATIONS, REDUNDANT (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	54.7	38.1	-8.2	85.6	66.5	42.5	-5.7	132.5
Lower Rib (LLR)	Y	G's	51.5	39.4	-14.5	83.8	67.4	41.3	-8.8	69.4
Lower Spine (T ₁₂)	Y	G's	68.1	35.6	-16.8	80.6	69.2	47.5	-14.2	73.1
Pelvis (PEV)	Y	G's	77.6	32.5	-18.9	68.8	62.4	38.8	-11.1	92.5

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, REDUNDANT (FIR 100 Filtered)

Location	Driver				Passenger			
	LUR	T ₁₂	TTI(g)	PEV(g)	LLR	T ₁₂	TTI(g)	PEV(g)
Redundant Rib, Spine, and Pelvis	54.747	68.085	61	78	67.443	69.207	68	62

Positive Acceleration Polarities:

Longitudinal (X) = Forward

Lateral (Y) = Right

Vertical (Z) = Down

DATA SHEET NO. 5...(continued)
IIII/SID INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 9/25/03

HEAD PRIMARY PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	6.6	39.5	-20.0	89.6	7.9	66.7	-29.2	52.9
Head CG	Y	G's	22.2	46.3	-7.3	186.4	98.0	52.1	-4.7	42.8
Head CG	Z	G's	21.3	158.2	-3.7	12.4	15.7	48.1	-35.0	59.4
Head CG Resultant	N/A	G's	30.4	50.4			103.1	52.1		

HEAD PRIMARY INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG	99.6	35.7	71.6	23.8	507.9	48.7	58.1	77.9

HEAD REDUNDANT PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	7.6	39.8	-20.6	91.8	8.0	66.7	-29.0	52.7
Head CG	Y	G's	22.6	46.3	-7.3	184.2	98.7	51.9	-5.2	42.0
Head CG	Z	G's	21.0	44.6	-2.6	91.6	15.8	48.2	-35.4	60.0
Head CG Resultant	N/A	G's	30.2	54.2			103.5	51.9		

HEAD REDUNDANT INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG	101.6	34.9	70.8	24.0	518.0	48.5	58.0	78.1

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	146.5	189.9	-758.1	92.9	771.0	60.6	-102.8	116.8
Neck Force	Y	Newtons	477.1	50.1	-362.7	185.2	79.4	1.8	-1323.3	61.5
Neck Force	Z	Newtons	1242.0	47.4	-134.9	18.5	384.7	41.5	-2165.0	59.2
Neck Force Resultant	N/A	Newtons	1362.0	47.4			2626.0	60.6		
Neck Moment	X	N•m	21.0	39.9	-23.9	26.6	11.4	101.1	-62.1	55.3
Neck Moment	Y	N•m	51.2	88.1	-36.0	50.7	29.2	61.8	-12.2	79.4
Neck Moment	Z	N•m	31.6	80.8	-10.6	189.9	4.1	147.1	-25.9	63.0
Neck Moment Res.	N/A	N•m	57.9	87.2			69.0	57.5		

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

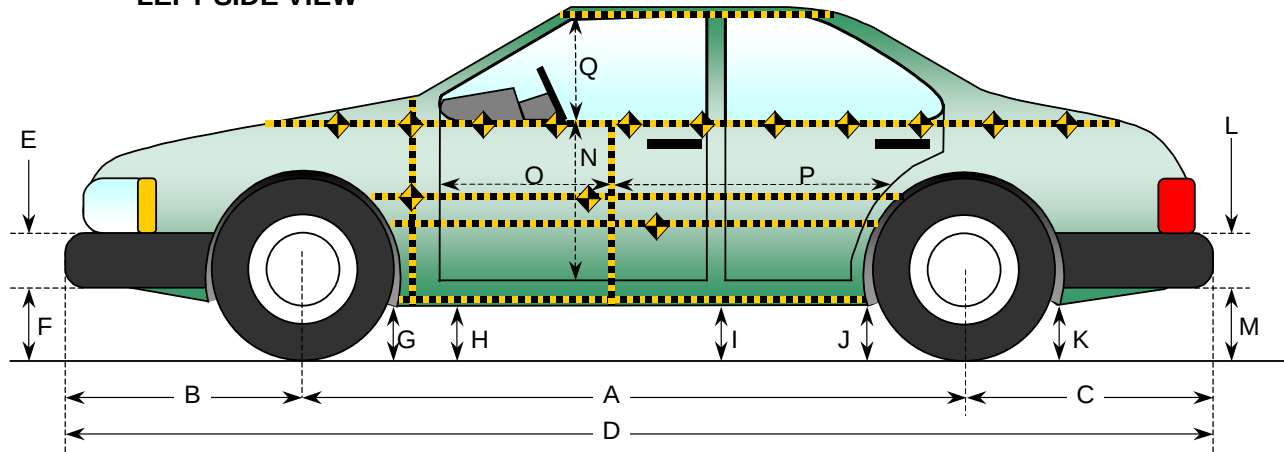
Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03

LEFT SIDE VIEW



VEHICLE PRE AND POST TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2750	2700	-50
B	Front Axle to FSOV	1005	1020	15
C	Rear Axle to RSOV	1122	1150	28
D	Total Length at Centerline	4878	4860	-18
E	Front Bumper Thickness	330	330	0
F	Front Bumper Bottom to Ground	235	266	31
G	Sill Height at Front Wheel Well	186	209	23
H	Sill Height at Front Door Leading Edge	192	211	19
I	Sill Height at "B" Pillar	199	276	77
J1	Sill Height at Rear Wheel Well	181	226	45
J2	Pinch Weld Height at Rear Wheel Well	193	265	72
K	Sill Height aft of Rear Wheel Well	213	270	57
L	Rear Bumper Thickness	320	320	0
M	Rear Bumper Bottom to Ground	259	336	77
N	Sill Height to Window Bottom Sill	640	598	-42
O	Front Door Leading Edge to Impact CL	760	735	-25
P	Rear Door Trailing Edge to Impact CL	1446	998	-448
Q	Front Window Opening	398	360	-38
R	Right Side Length	3150	3080	-70
S	Left Side Length	3150	3183	33
T	Vehicle Width at "B" Post	1810	1506	-304

DATA SHEET NO. 7

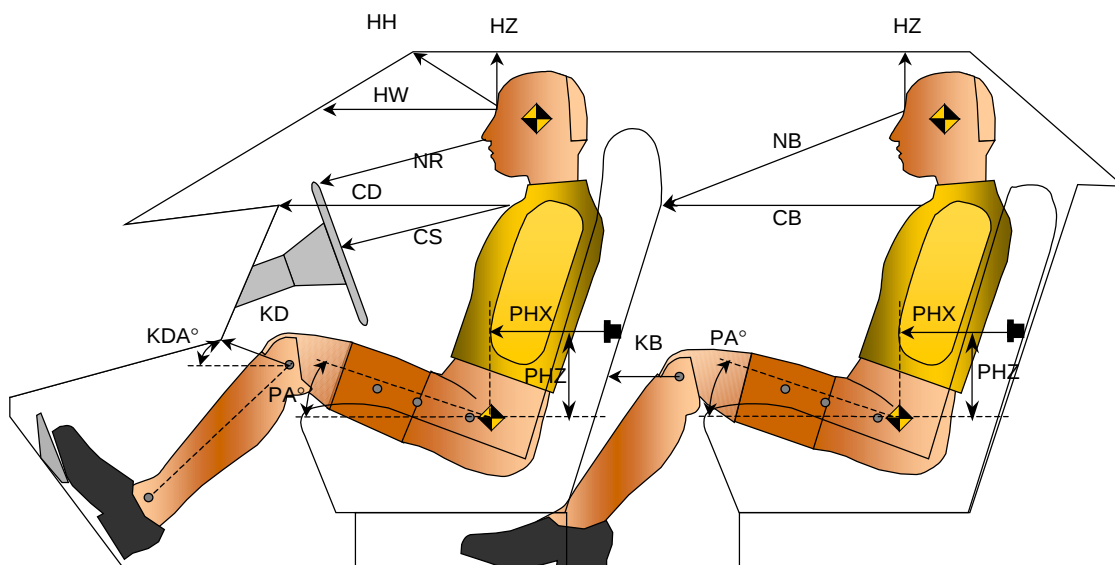
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03



LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle	Length(mm)	Angle
HH		Head to Header	408	14		
HW		Head to Windshield	648	0		
HZ	HZ	Head to Roof	162		167	90
NR	NB	Nose to Rim/Nose to Seatback	515	16	642	25
CD	CB	Chest to Dash or Seatback	580	4	570	4
CS		Chest to Steering Wheel	295	0		
KDL	KBL	Left Knee to Dash or Seatback	157	7	235	12
KDR	KBR	Right Knee to Dash or Seatback	172		245	
PA	PA	Pelvic Angle		23		25
PHX	PHX	H-Point to Striker (X-Axis)	258		510	
PHZ	PHZ	H-Point to Striker (Z-Axis)	70		317	

DATA SHEET NO. 8

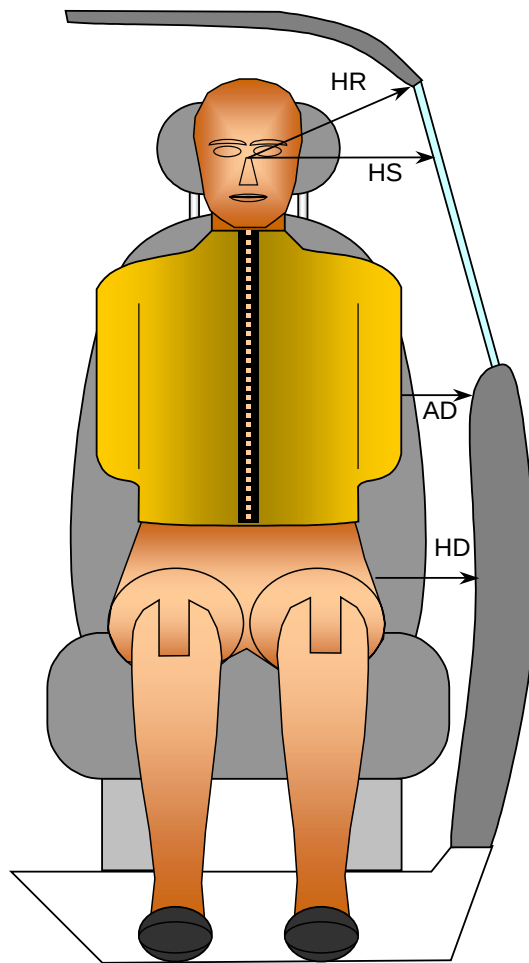
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03



FRONT VIEW OF DUMMY

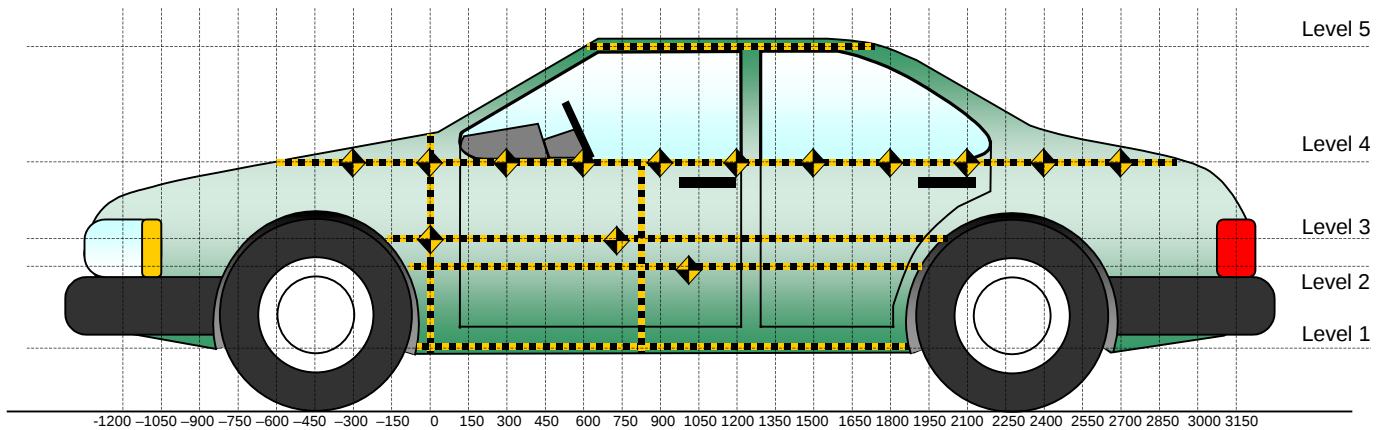
LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	275	325
HS	Head to Side Window	mm	332	240
AD	Arm to Door	mm	133	133
HD	H-Point to Door	mm	170	150

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan
 Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

NHTSA No.: M40500
 Test Date: 9/25/03



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements taken 900mm right of impact reference.

All measurements below in mm.

Level	Measurement Description	Height Above Ground
1	Sill Top	278
2	Occupant H-Point	515
3	Mid Door	598
4	Window Sill	901
5	Window Top	1350

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300															
-150			604					664					60		
0	658	606	606	704		693	684	686	756		35	78	80	52	
150	656	608	610	694		806	886	847	758		150	278	237	64	
300	656	610	611	693		824	926	914	791		168	316	303	98	
450	654	610	611	689		842	924	914	816		188	314	303	127	
600	654	609	612	690		856	948	920	841		202	339	308	151	
750	654	609	611	689	908	865	967	926	876	961	211	358	315	187	53
900	653	609	612	690	901	873	974	931	909	972	220	365	319	219	71
1050	656	609	612	689	901	884	979	943	952	983	228	370	331	263	82
1200	654	620	612	691	902	891	1003	949	989	983	237	383	337	298	81
1350	653	609	613	691	904	889	1002	974	981	976	236	393	361	290	72
1500	653	611	614	695	906	861	973	949	956	973	208	362	335	261	67
1650	651	535	614	697	904	826	933	942	906	968	175	398	328	209	64
1800	652	611	616	699	908	792	876	921	855	963	140	265	305	156	55
1950	653	610	616	704	920	742	716	760	784	966	89	106	144	80	46
2100			612	708				693	768				81	60	
2250				716					771					55	
2400				722					771					49	
2550				733					781					48	
2700															
2850															
3000															

Measurements are taken from fixed reference 1000mm from vehicle CL.

DATA SHEET NO. 10.....(CONTINUED)

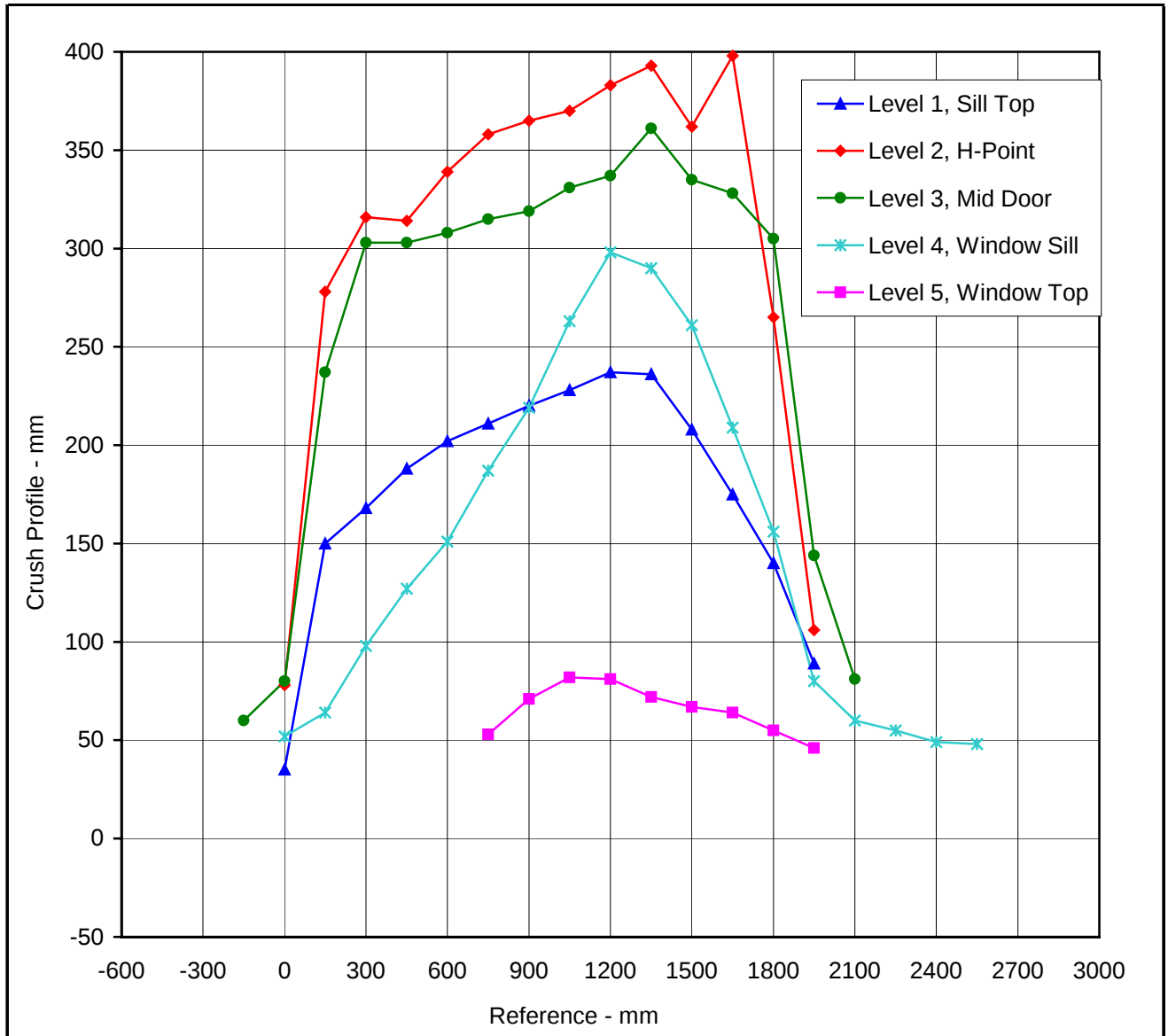
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03



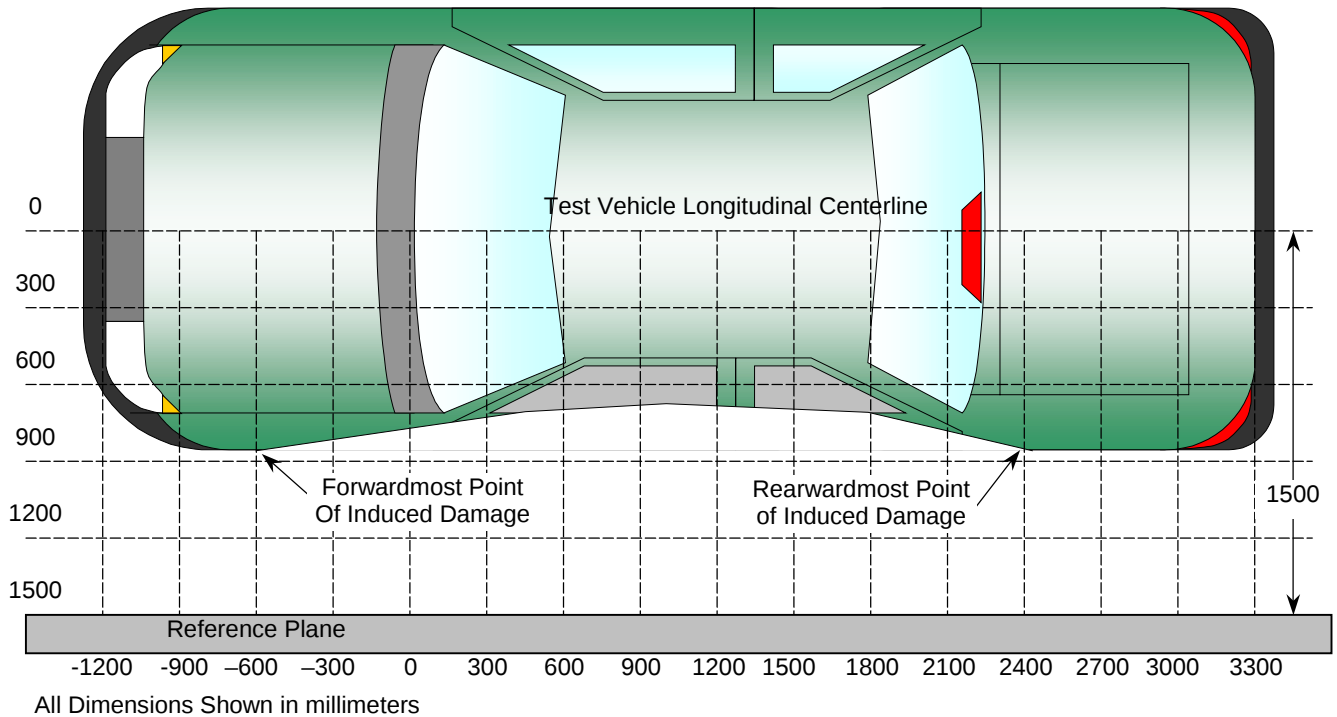
	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	237	398	361	298	82
Distance from Impact	mm	1200	1650	1350	1200	1050

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan
 Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

NHTSA No.: M40500
 Test Date: 9/25/03



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	-150	3	604	664	60
2	450	2	610	924	314
3	1050	2	609	979	370
4	1650	2	535	933	398
5	2100	3	612	693	81
6	2550	4	733	781	48

DATA SHEET NO. 12

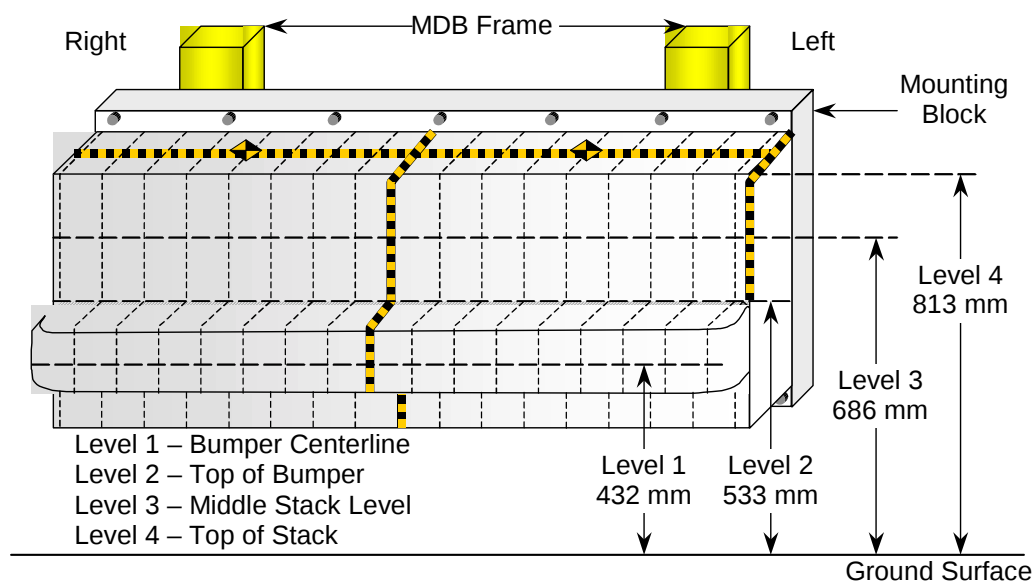
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	226	241	201	93	91	104	118	114	116	121	133	144	66	95	130	265	308
2	57	24	6	6	5	7	16	12	14	14	15	20	26	41	59	91	156
3	114	90	60	43	38	39	30	34	36	49	62	69	79	86	92	99	90
4	101	62	26	-6	-26	-30	-27	-22	-16	-10	-3	3	10	15	22	34	59

All Dimensions in mm

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

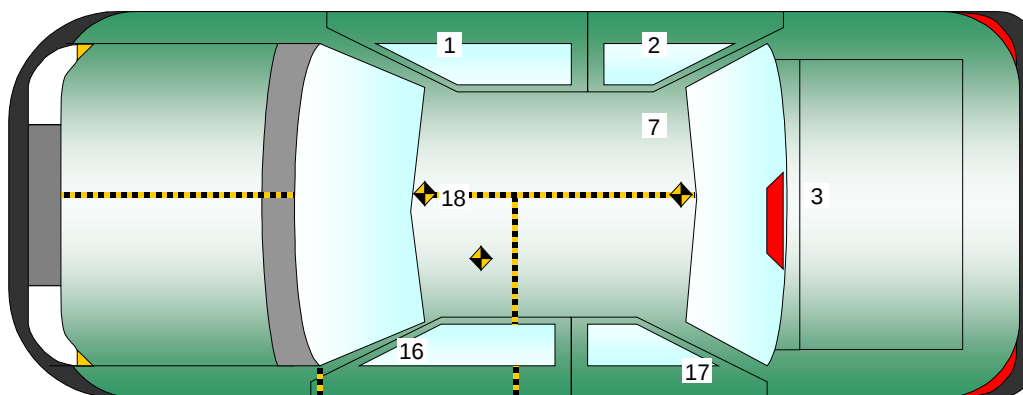
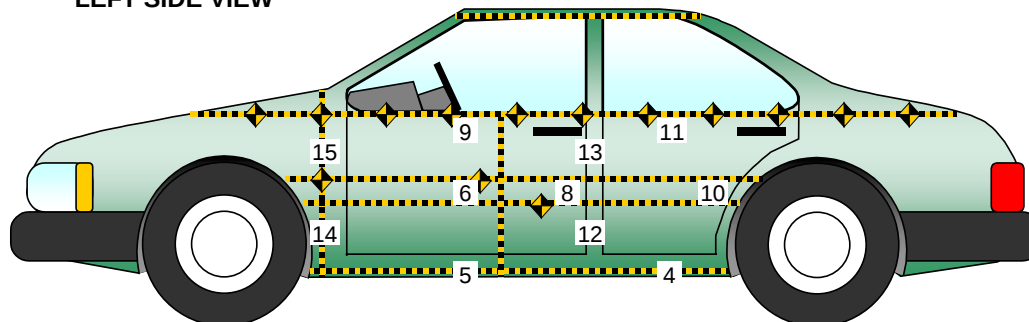
Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	Right Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Sill at Rear Door
5	Left Sill at Front Door
6	Left Front Door Centerline
7	Right Rear Occupant Compartment
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	Left Rear Door Mid-Rear
11	Left Rear Door Upper Centerline
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	Rear Seat Track or Structure
18	Vehicle CG

DATA SHEET NO. 13
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 9/25/03

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	Right Sill at Front Seat	2910	660	250	X	2.4	35.7	-6.4	12.8
					Y	15.9	13.9	-2.3	160.6
					Z	4.7	28.4	-5.8	39.4
					RES	17.0	13.6		
2	Right Sill at Rear Seat	1840	660	360	X	2.2	40.6	-5.7	13.3
					Y	22.2	7.0	-1.9	164.9
					Z	4.4	5.4	-6.1	40.0
					RES	22.3	7.0		
3	Rear Floorpan Above Axle	1100	0	580	X	4.0	30.0	-9.0	18.8
					Y	25.1	7.3	-3.1	112.7
					Z	6.8	52.3	-11.4	15.6
					RES	26.7	7.2		
4	Left Sill at Rear Door	2140	-680	90	Y	79.3	15.2	-10.2	54.5
5	Left Sill at Front Door	2530	-680	90	Y	0.0	0.0	0.0	0.0
6	Front Door Centerline	2720	-735	610	Y	125.5	9.5	-66.1	22.5
7	Rt. Rear Occ. Compartment	2190	280	240	Y	19.6	9.3	-2.0	164.1
8	Front Door Mid-Rear	2460	-730	650	Y	213.1	8.2	-123.8	23.2
9	Front Door Upper Centerline	2720	-730	740	Y	204.1	14.1	-62.6	21.2
10	Rear Door Mid-Rear	1410	-740	730	Y	139.0	17.1	-58.7	31.3
11	Rear Door Upper Centerline	1830	-740	830	Y	123.2	14.3	-62.9	30.6
12	B-Post Lower	2230	-740	470	Y	201.5	4.9	-32.9	11.3
13	B-Post Middle	2230	-815	630	Y	111.9	5.2	-13.7	31.0
14	A-Post Lower	3300	-815	740	Y	179.3	3.6	-88.4	14.4
15	A-Post Middle	3300	-810	550	Y	70.9	3.2	-31.4	15.0
16	Front Seat Track	3000	-810	370	Y	105.2	13.8	-32.5	19.9
17	Rear Seat Structure				Y				
18	Vehicle CG	3090	200	250	X	2.2	3.8	-6.3	10.7
					Y	17.8	14.3	-2.5	161.0
					Z	5.3	29.0	-8.9	11.1
					RES	18.0	14.3		

1.) Not installed

2.) Channel failed, no data

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 9/25/03

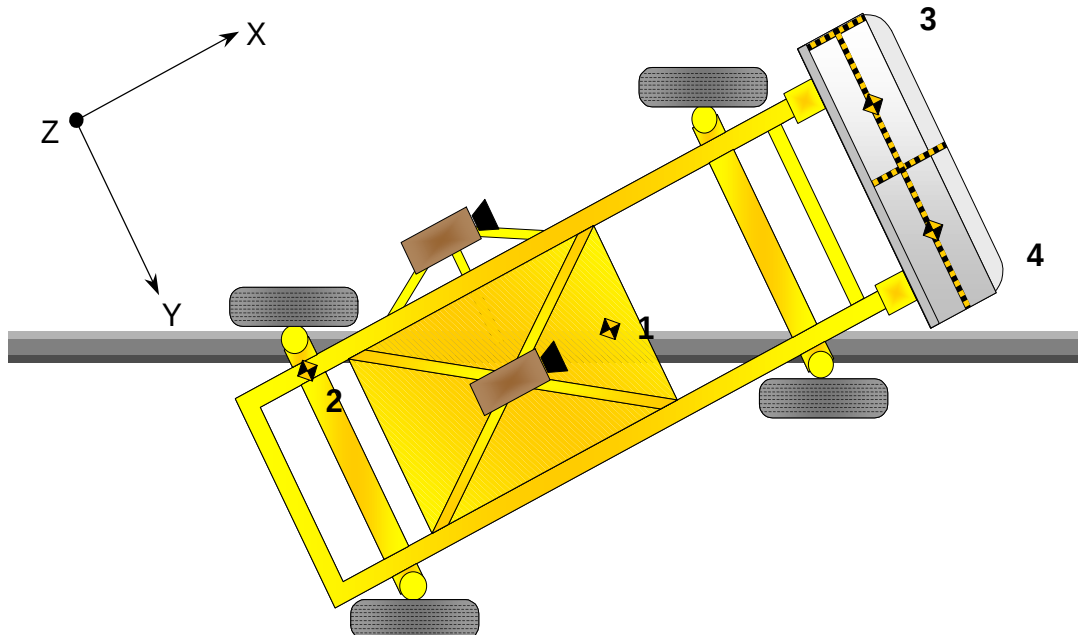
MDB ACCELEROMETER PEAK DATA AND LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1195	0	430	X	1.7	152.6	-18.5	35.6
					Y	1.3	134.6	-6.2	42.3
					Z	10.6	56.5	-13.9	134.9
					RES	19.3	23.0		
2	MDB Rear	-2642	-593	608	X	2.5	97.0	-20.7	35.3
					Y	2.2	101.3	-5.3	20.3

Reference Points X - MDB Front Axle Y - MDB Centerline Z - Ground Plane

MDB BUMPER CONTACT SWITCH DATA

Loc. No.	Contact Switch Location	Units	Peak and 50% Crossing Point			
			Max	Time	50%	Time
3	MDB Left Bumper (T=0)	% F.S	100.0	0.0	50.0	0.0
4	MDB Right Bumper	% F.S.	101.2	5.5	50.0	-0.6



DATA SHEET NO. 15

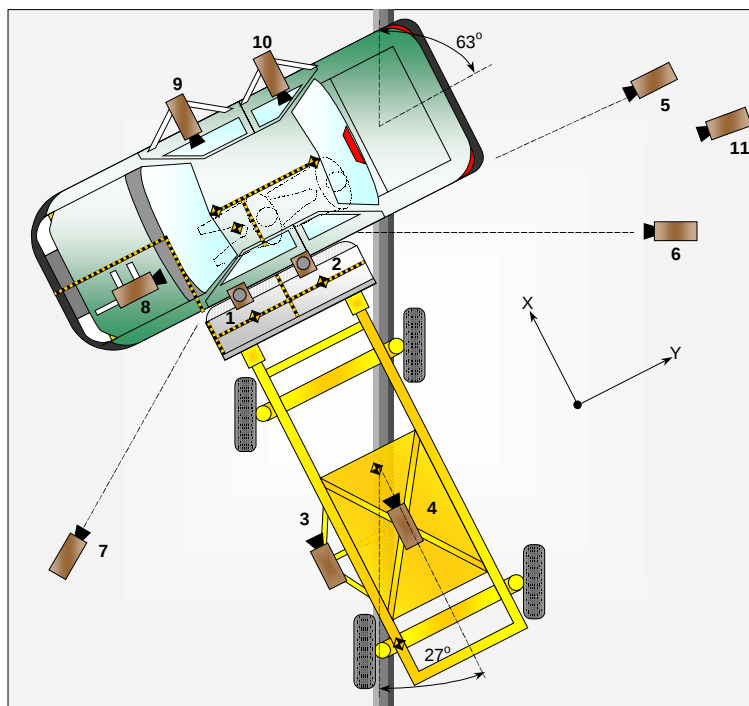
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

Test Date: 9/25/03



No.	Camera View	Location (mm)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Overall	2438	609	5486	80	6	1010
2	Overhead Close-up	1676	-1067	5486	90	35	1000
3	Impact Point	0	-2134	1143	7	13	No Time
4	Side Overall	838	-3912	1829	11	13	No Time
5	Rear	15545	228	1371	1	35-80	990
6	Left Rear	16437	-7188	939	1	80	No Time
7	Left Front	-4775	-2666	1473	7	13	1000
7B	Left Front	-5080	-3531	1524	7	17	900
8	Driver Front	-381	483	1397	11	19	1000
9	Driver Side	762	1727	914	7	6	1020
10	Rear Passenger	1524	1727	914	7	6	No Time
11	Real Time	17459	-8188	1727	5	17-70	24

X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run

DATA SHEET NO. 16

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan NHTSA No.: M40500
Test Program: 55/28 km/h 90 Deg. Side Impact NCAP Test Date: 9/25/03

Test Time: 12:00 PM Temperature: 30.0 Deg. C.

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Details: No leakage occurred

DATA SHEET NO. 17

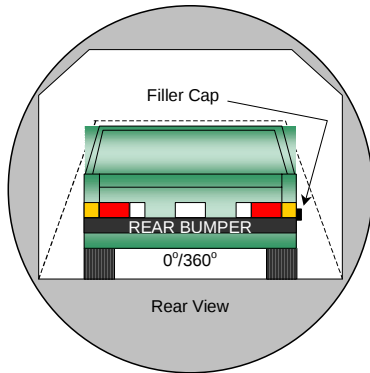
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

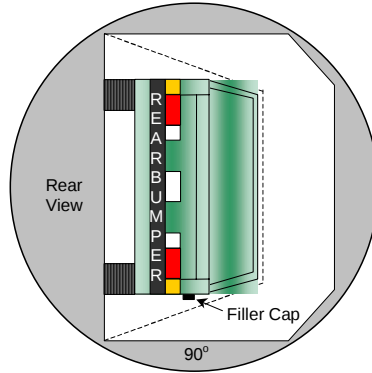
NHTSA No.: M40500

Test Program: 55/28 km/h 90 Deg. Side Impact NCAP

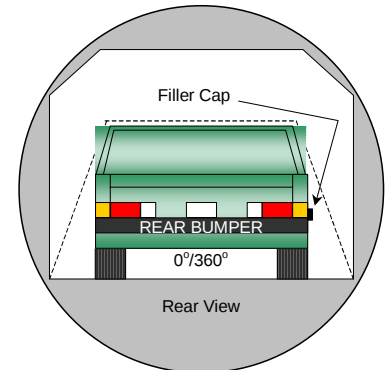
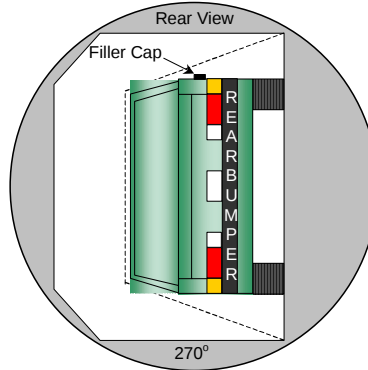
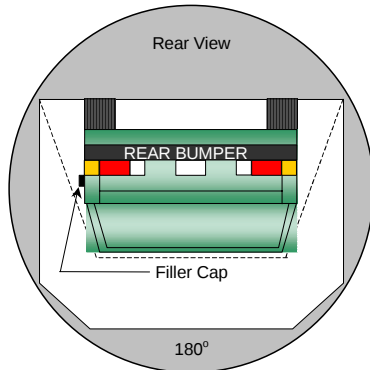
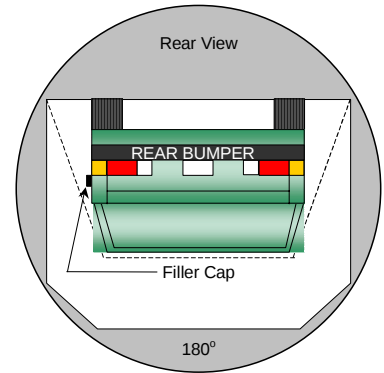
Test Date: 9/25/03



0° TO 90°



90° TO 180°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations.

No solvent leakage occurred during static rollover testing.

DATA SHEET NO. 17.....(CONTINUED)**FMVSS 301 STATIC ROLLOVER DATA SHEET**Test Vehicle: 2004 Hyundai XG350L 4 Door SedanNHTSA No.: M40500Test Program: 55/28 km/h 90 Deg. Side Impact NCAPTest Date: 9/25/03**SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	87	300	387
90° to 180°	87	300	387
180° to 270°	79	300	379
270° to 360°	78	300	378

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5.0
Sixth Minute	1.0
Seventh Minute	1.0
Eighth Minute	1.0

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

**APPENDIX A
PHOTOGRAPHS**

LIST OF PHOTOGRAPHS

Figure		Page
A-1	Left Front as Received	A-1
A-2	Right Rear as Received	A-2
A-3	Vehicle Certification Label	A-3
A-4	Vehicle Tire Label	A-4
A-5	Front View, Pre-test	A-5
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Figure A-1: Left Front, as Received



Figure A-2: Right Rear, as Received



Figure A-3: Vehicle Certification Label

0



TIRE INFORMATION

SEATING CAPACITY

TOTAL	5	FRONT	2	REAR	3
-------	---	-------	---	------	---

The combined weight of occupants and cargo should never exceed 860 pounds.

TIRE SIZE	COLD TIRE INFLATION PRESSURE		
P205/60R16 94H	LOAD UP TO 4 PERSONS	FRONT	230KPA, 33PSI
		REAR	210KPA, 30PSI
	MAX. VEHICLE WEIGHT LIMIT	FRONT	240KPA, 35PSI
		REAR	240KPA, 35PSI

SEE OWNER'S
MANUAL FOR
ADDITIONAL
INFORMATION

Figure A-4: Vehicle Tire Label



Figure A-5: Front View, Pre-Test



Figure A-6: Front View, Post-Test



Figure A-7: Left Front $\frac{3}{4}$ View, Pre-Test



Figure A-8: Left Front 3/4 View, Post-Test



Figure A-9: Left (Impacted) Side View, Pre-Test



Figure A-10: Left (Impacted) Side View, Post-Test



Figure A-11: Left Rear $\frac{3}{4}$ View, Pre-Test



Figure A-12: Left Rear $\frac{3}{4}$ View, Post-Test



Figure A-13: Rear View, Pre-Test



Figure A-14: Rear View, Post-Test



Figure A-15: Overhead Overall View, Pre-Test



Figure A-16: Overhead Overall View, Post-Test

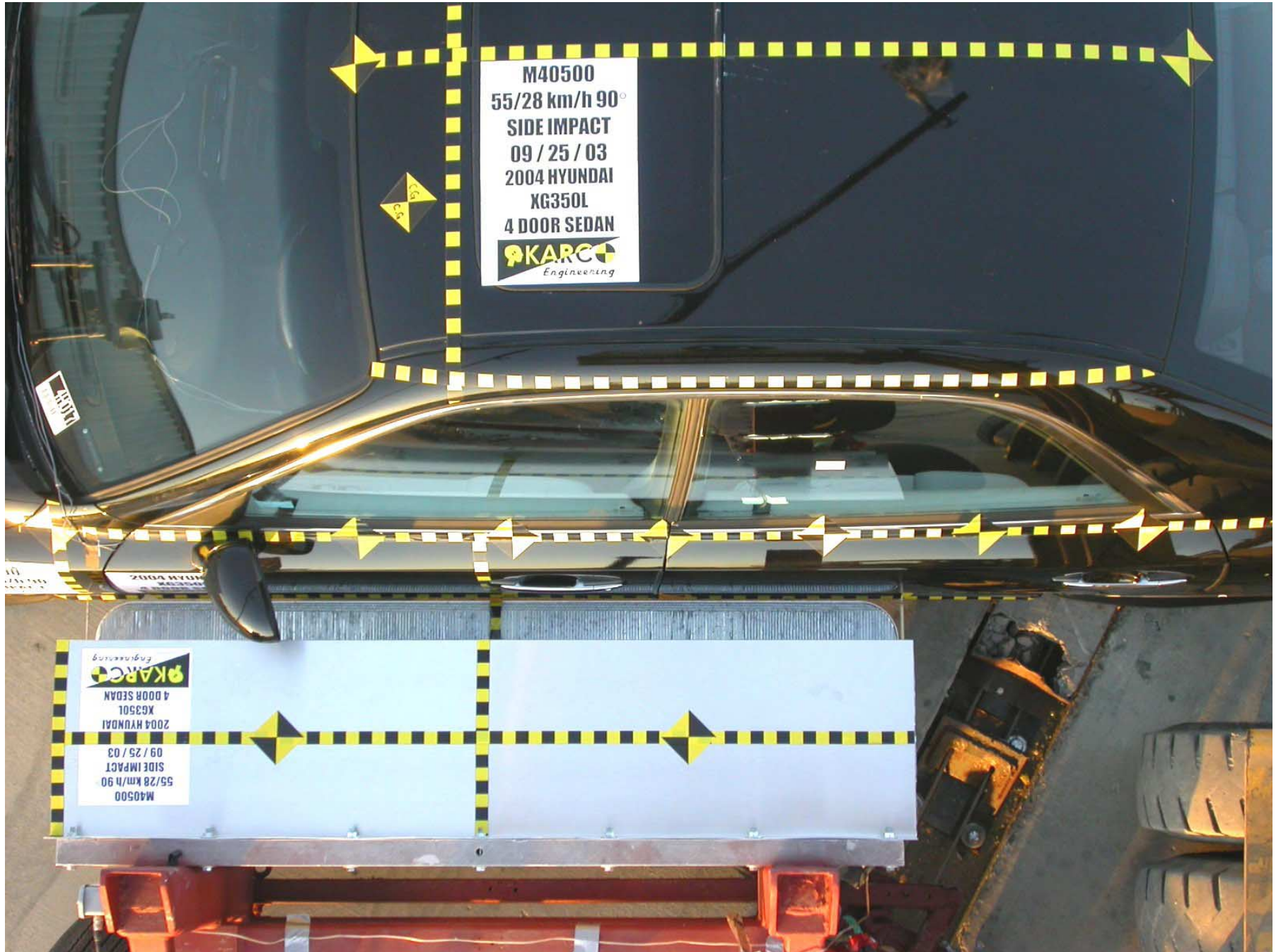


Figure A-17: Overhead Close-up View, Pre-Test



Figure A-18: Overhead Close-up View, Post-Test



Figure A-19: Impact Point Target Set-up, Pre-Test



Figure A-20: Impact Point Target, Post-Test



Figure A-21: Front $\frac{3}{4}$ View of Left Side Doors, Pre-Test



Figure A-22: Front $\frac{3}{4}$ View of Left Side Doors, Post-Test



Figure A-23: Rear $\frac{3}{4}$ View of Left Side Doors, Pre-Test



Figure A-24: Rear ¾ View of Left Side Doors, Post-Test



Figure A-25: Left Front Door Closed, Pre-Test



Figure A-26: Left Front Door Closed, Post-Test

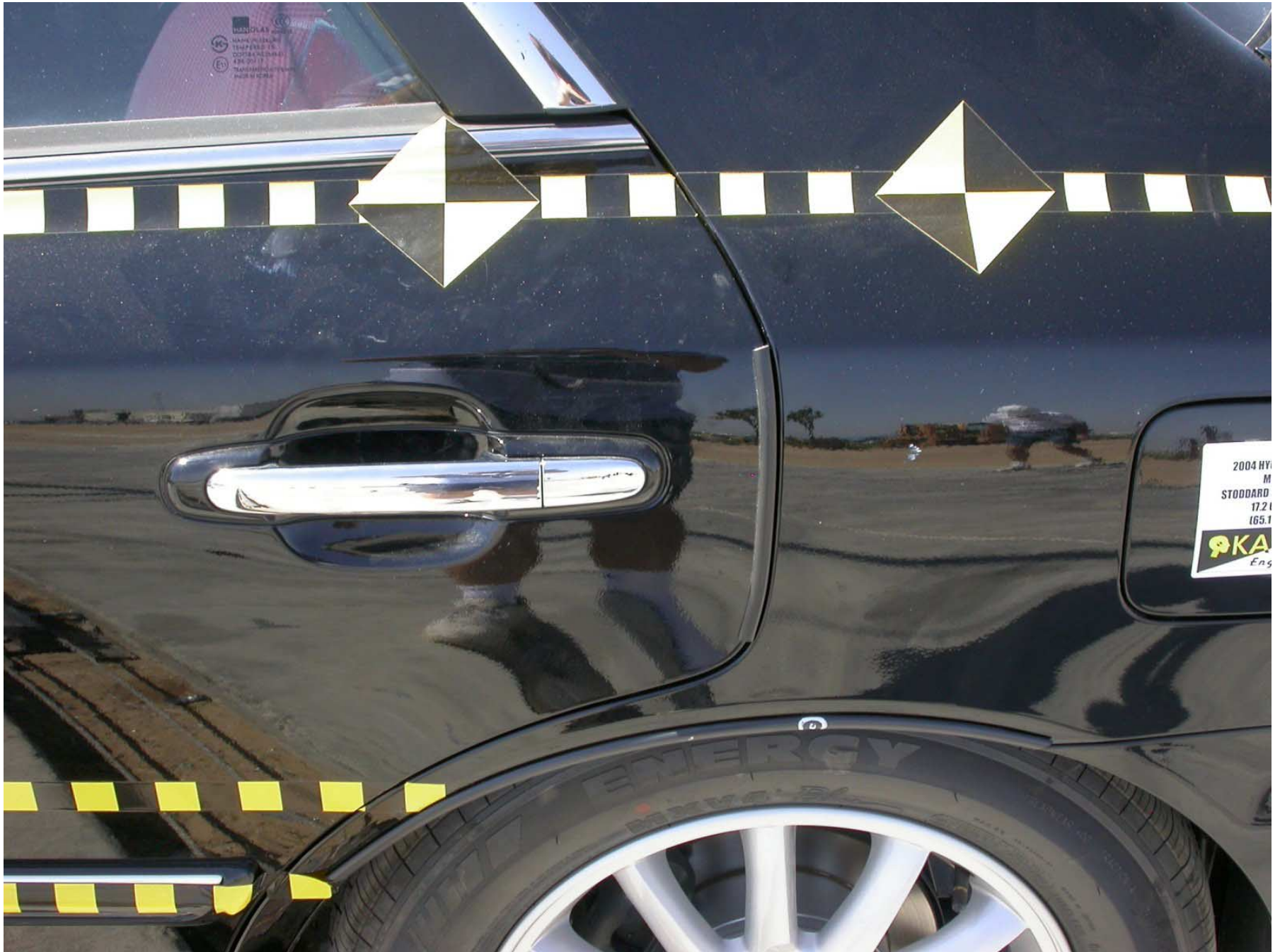


Figure A-27: Left Rear Door Closed, Pre-Test



Figure A-28: Left Rear Door Closed, Post-Test



Figure A-29: Driver Dummy Left Side with Door Open, Pre-Test



Figure A-30: Driver Dummy Left Side, Pre-test



Figure A-31: Driver Dummy Left Side, Post-Test



Figure A-32: Driver Dummy Clearance, Pre-Test



Figure A-33: Driver Dummy Clearance, Post-Test



Figure A-34: Driver Dummy Inside View, Pre-Test



Figure A-35: Driver Dummy Inside View, Post-Test



Figure A-36: Driver Door Inside View, Pre-Test



Figure A-37: Driver Dummy Contact Points Inside View, Post-Test (Vehicle Moved)



Figure A-38: Passenger Dummy Left Side with Door Open, Pre-Test



Figure A-39: Passenger Dummy Left Side, Pre-Test



Figure A-40: Passenger Dummy Left Side, Post-Test



Figure A-41: Passenger Dummy Clearance, Pre-Test



Figure A-42: Passenger Dummy Clearance, Post-Test



Figure A-43: Passenger Dummy Inside View, Pre-Test



Figure A-44: Passenger Dummy Inside View, Post-Test



Figure A-45: Passenger Door Inside View, Pre-Test



Figure A-46: Passenger Dummy Contact Points Inside View, Post-Test (Vehicle Moved)



Figure A-47: Front View of Deformable Barrier, Pre-Test

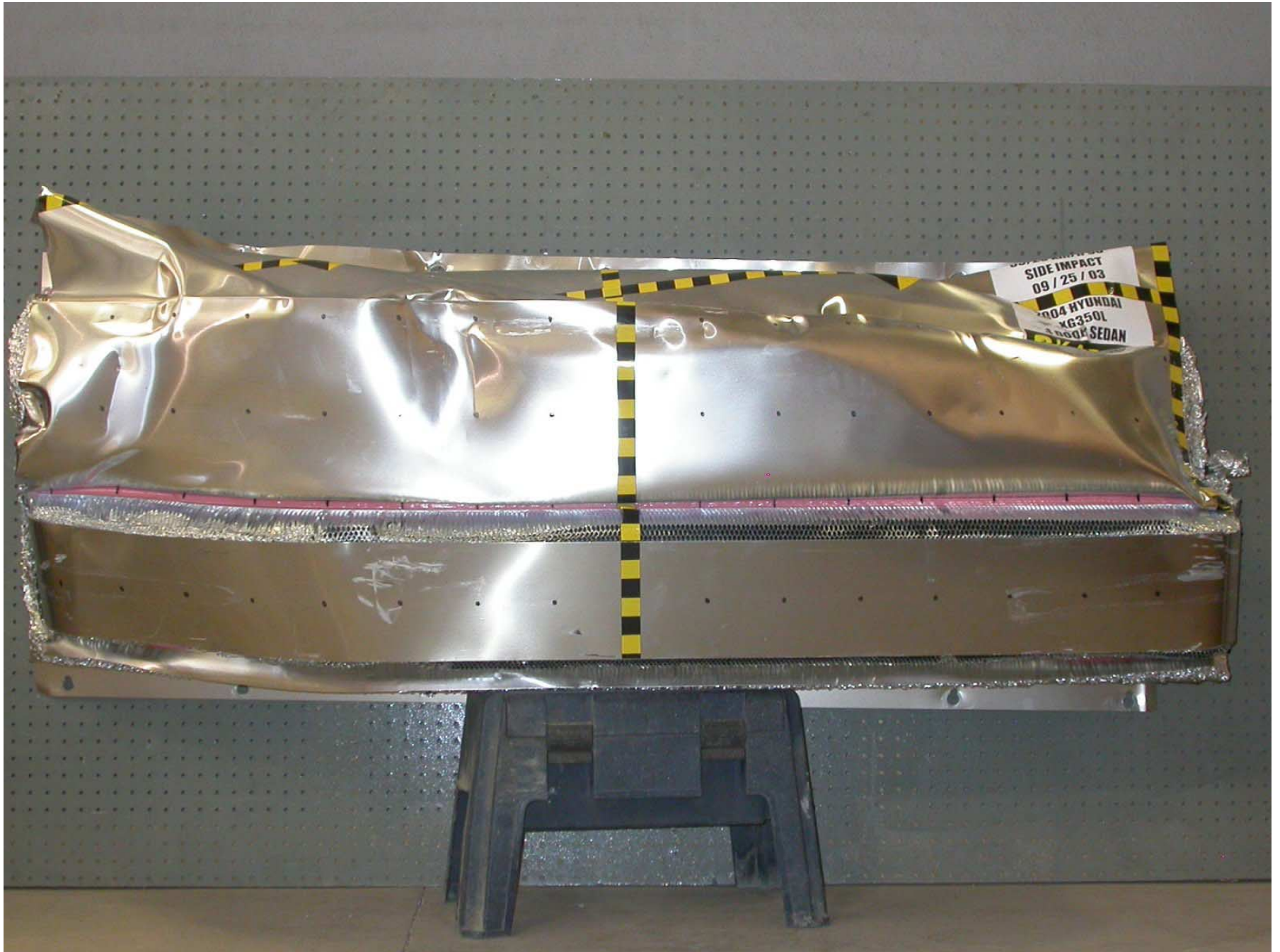


Figure A-48: Front View of Deformable Barrier, Post-Test

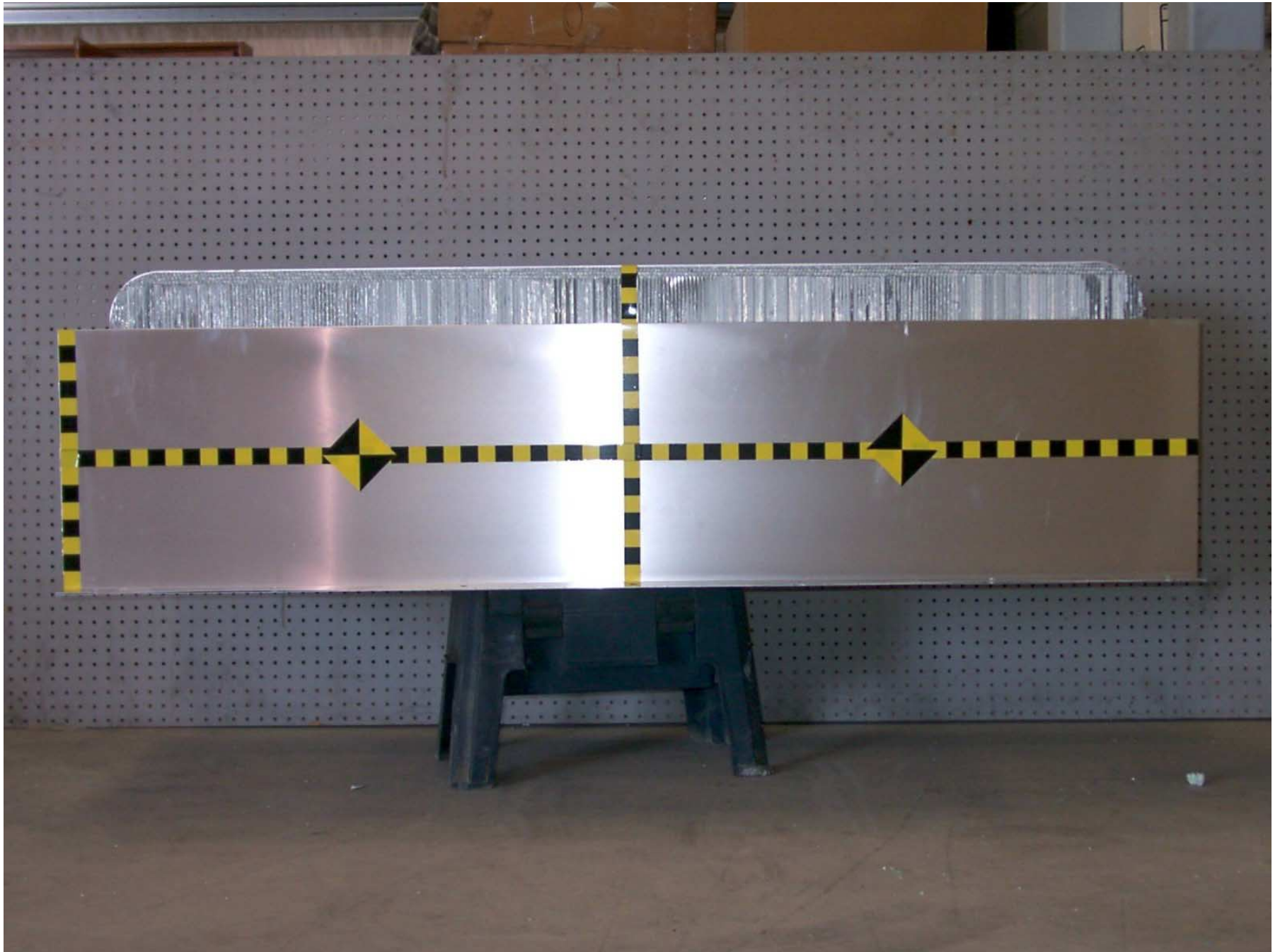


Figure A-49: Top View of Deformable Barrier, Pre-Test



Figure A-50: Top View of Deformable Barrier, Post-Test



Figure A-51: Right Side View of Deformable Barrier, Pre-Test



Figure A-52: Right Side View of Deformable Barrier, Post-Test



Figure A-53: Left Side View of Deformable Barrier, Pre-Test



Figure A-54: Left Side View of Deformable Barrier, Post-Test



Figure A-55: Vehicle on Rollover Device, Top View



Figure A-56: Vehicle During Impact



Figure A-57: Vehicle on Rollover Device, Left View



Figure A-58: Vehicle on Rollover Device, Right View



Figure A-59: Vehicle on Rollover Device, Bottom View

Figure A-60: Right Rear $\frac{3}{4}$ View, Pre-Test



Figure A-61: Right Rear 3/4 View, Post-Test



Figure A-62: Right (Non-Impacted) Side View, Pre-Test



Figure A-63: Right (Non-Impacted) Side View, Post-Test



Figure A-64: Right Front $\frac{3}{4}$ View, Pre-Test



Figure A-65: Right Front $\frac{3}{4}$ View, Post-Test

APPENDIX B
SID/HIII, VEHICLE AND MDB RESPONSE DATA

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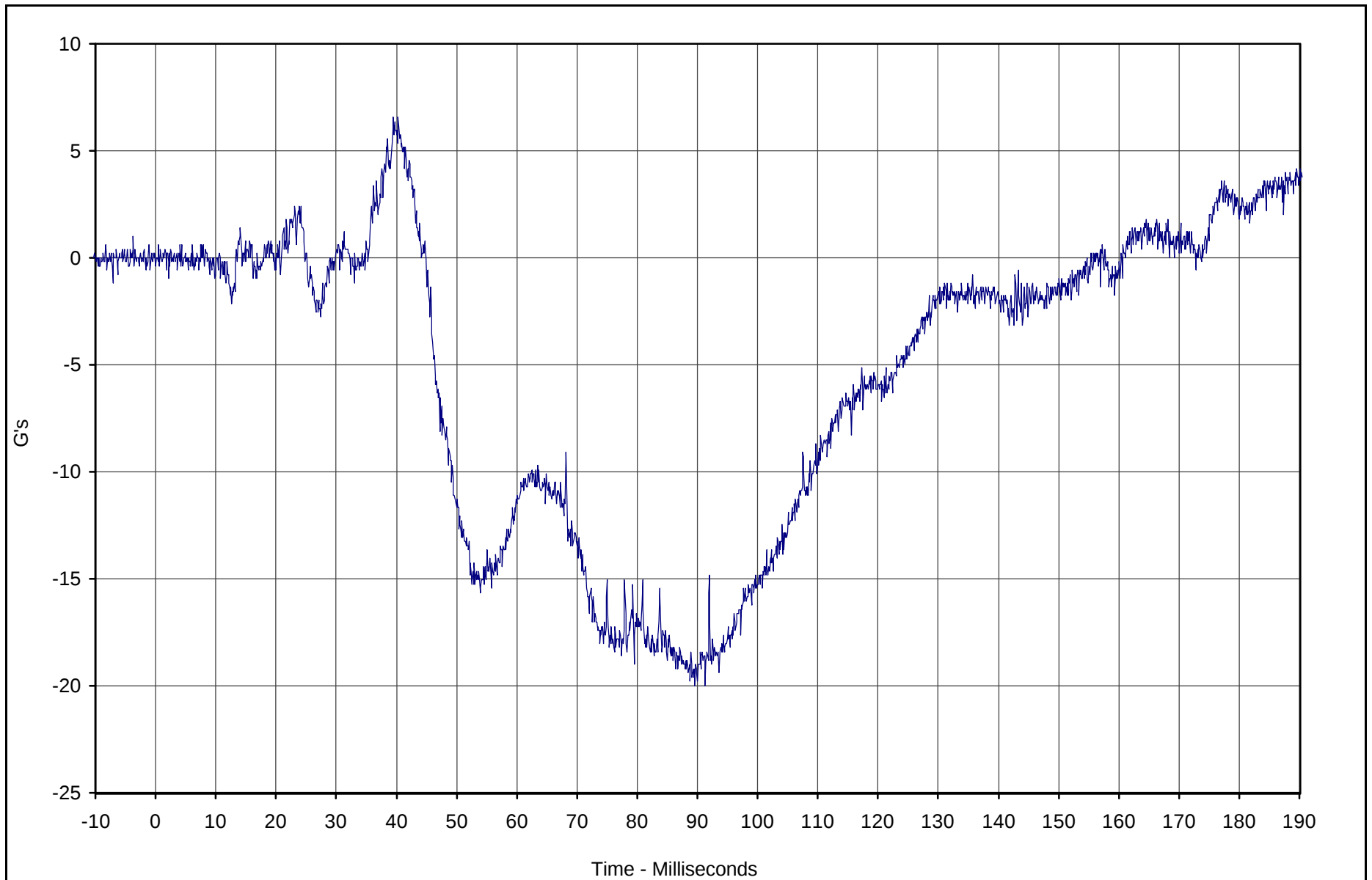
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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X	001	FIL	G's	6.6	39.5	-20.0	89.6	1000

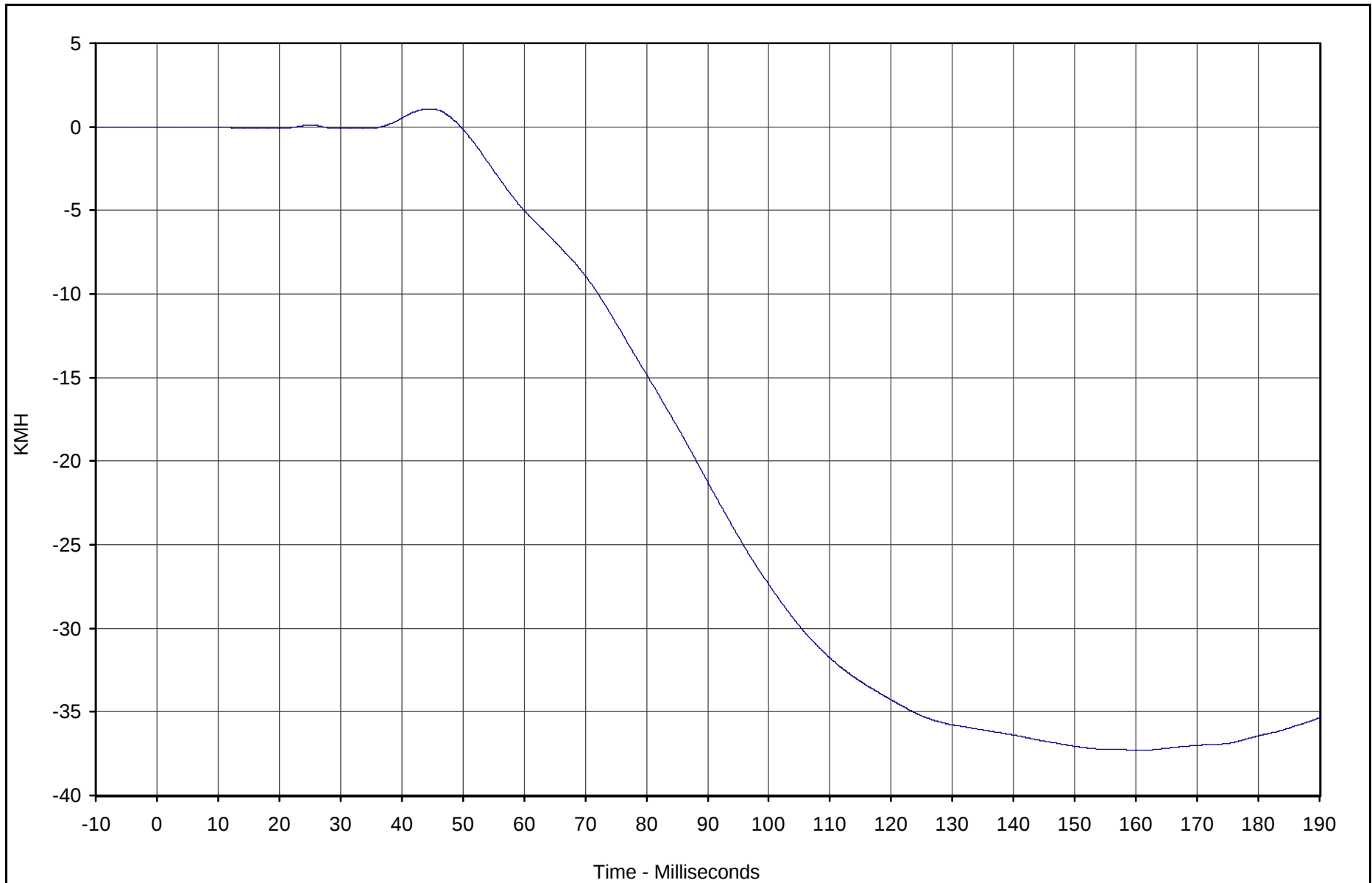


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X Velocity	001	IN1	KMH	1.1	44.7	-37.3	160.7	180

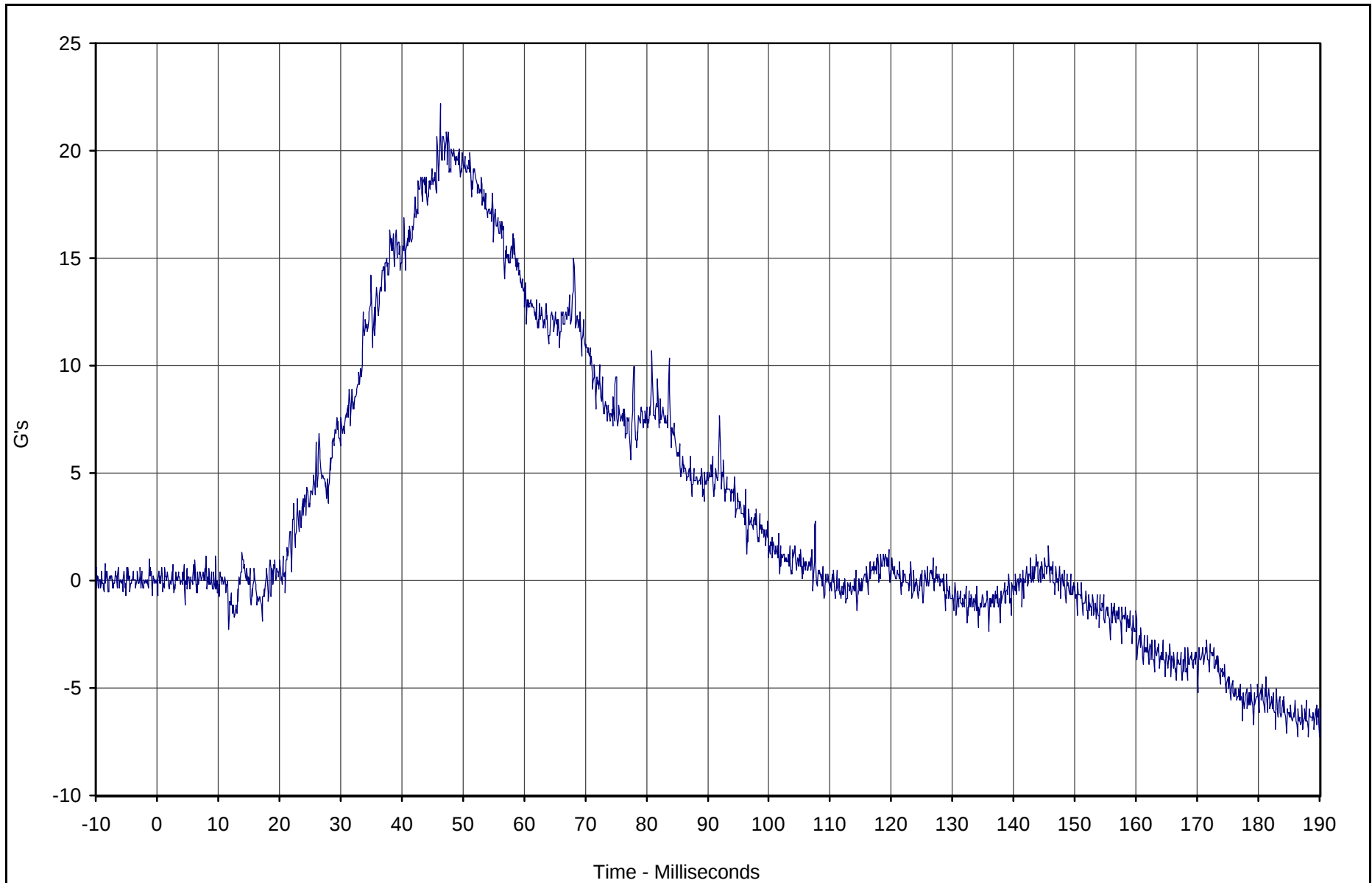


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Y	002	FIL	G's	22.2	46.3	-7.3	186.4	1000

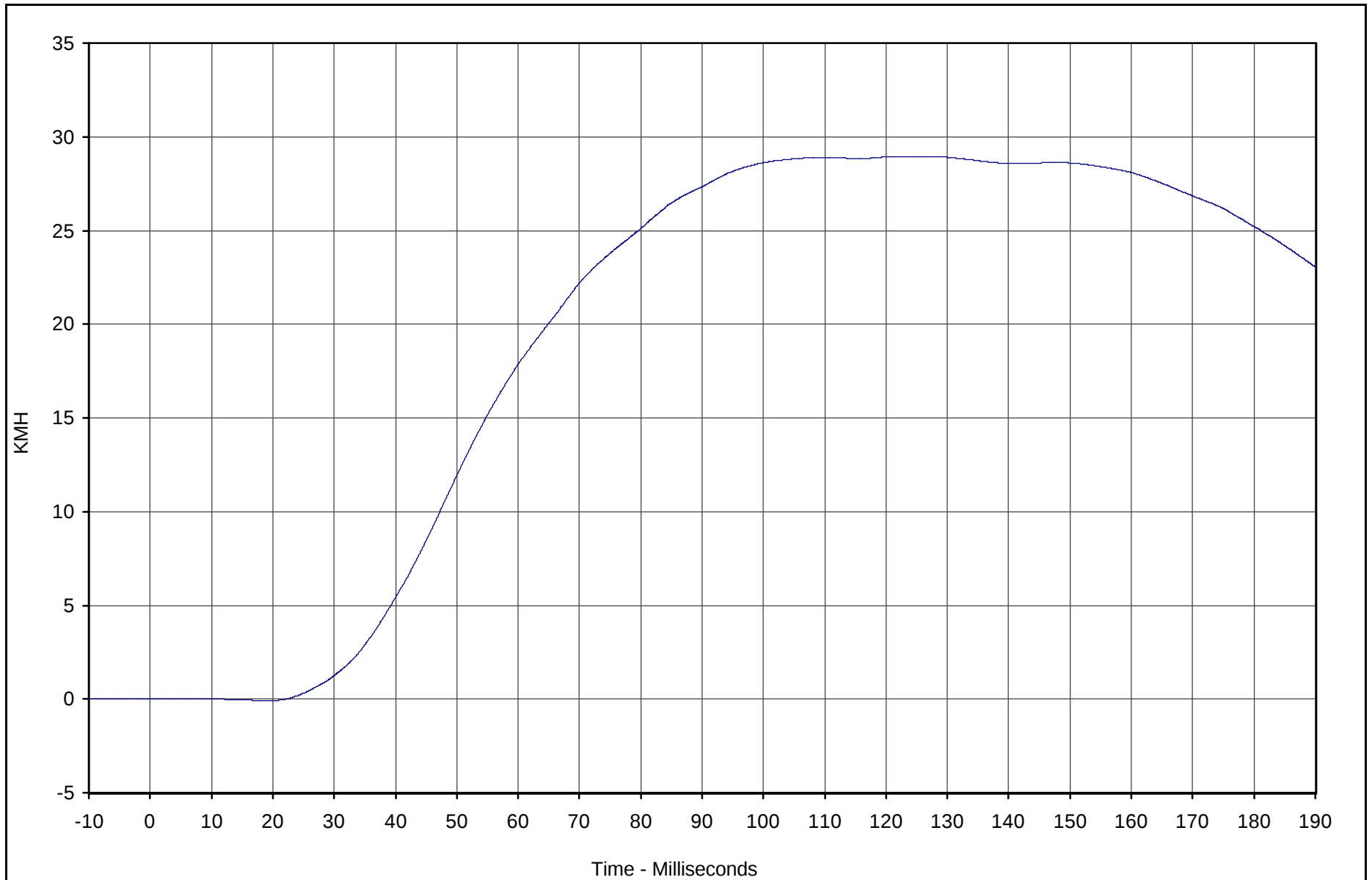


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Y Velocity	002	IN1	KMH	28.9	122.4	-0.1	18.3	180

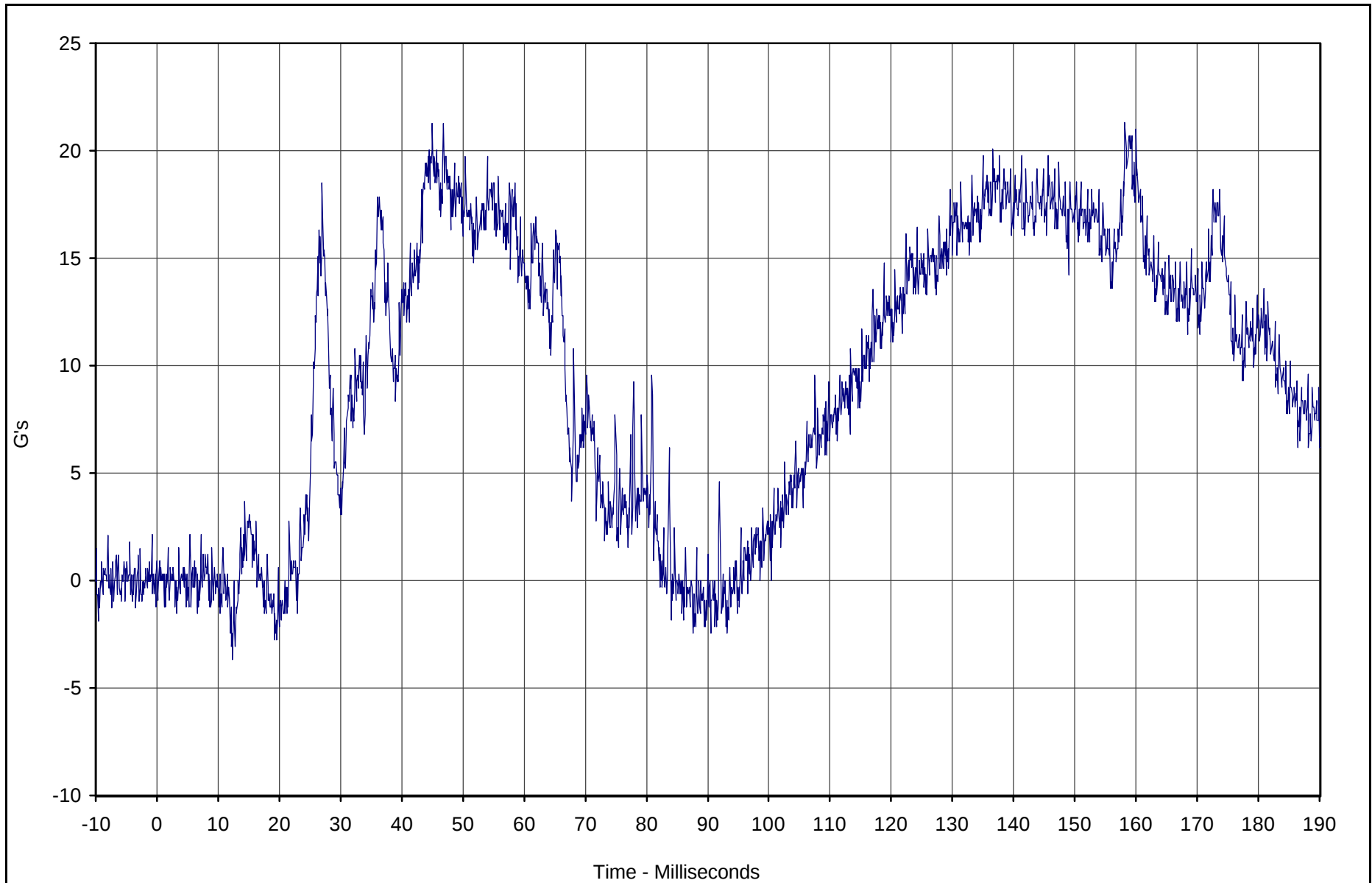


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Z	003	FIL	G's	21.3	158.2	-3.7	12.4	1000

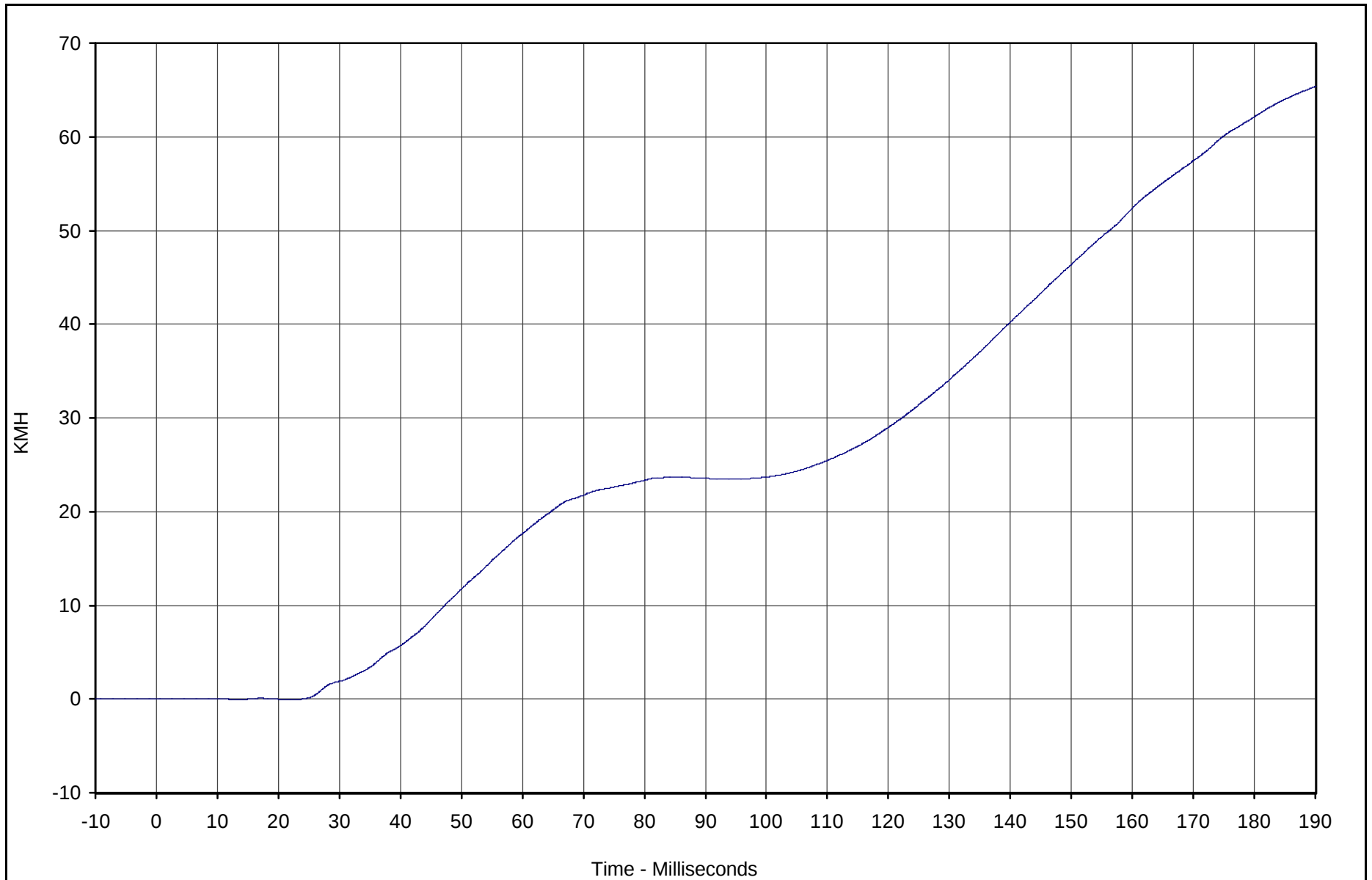


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Z Velocity	003	IN1	KMH	65.4	189.9	-0.1	13.4	180

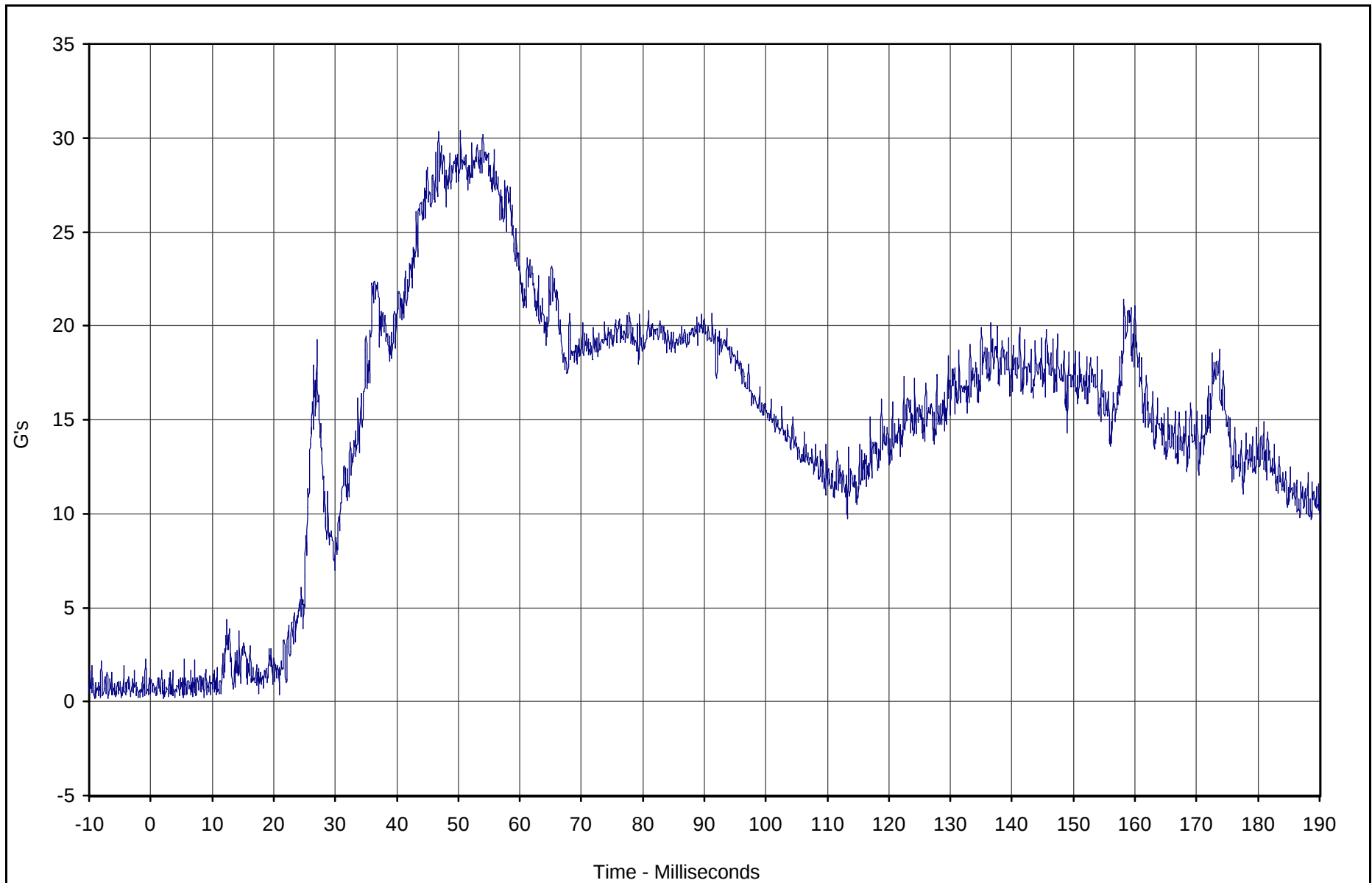


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Resultant Primary	001	RES	G's	30.4	50.4	0.2	2.1	1000

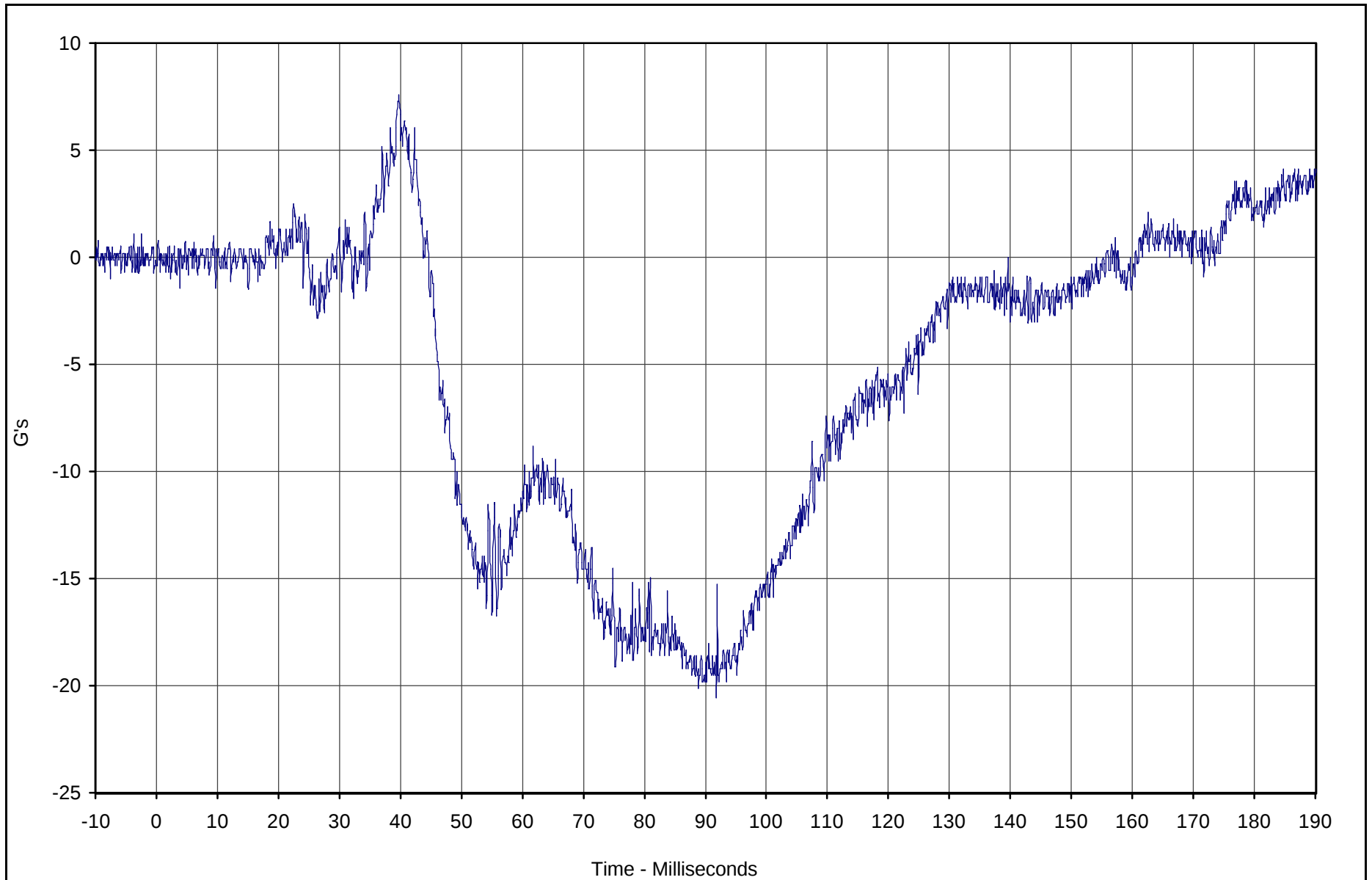


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X	004	FIL	G's	7.6	39.8	-20.6	91.8	1000

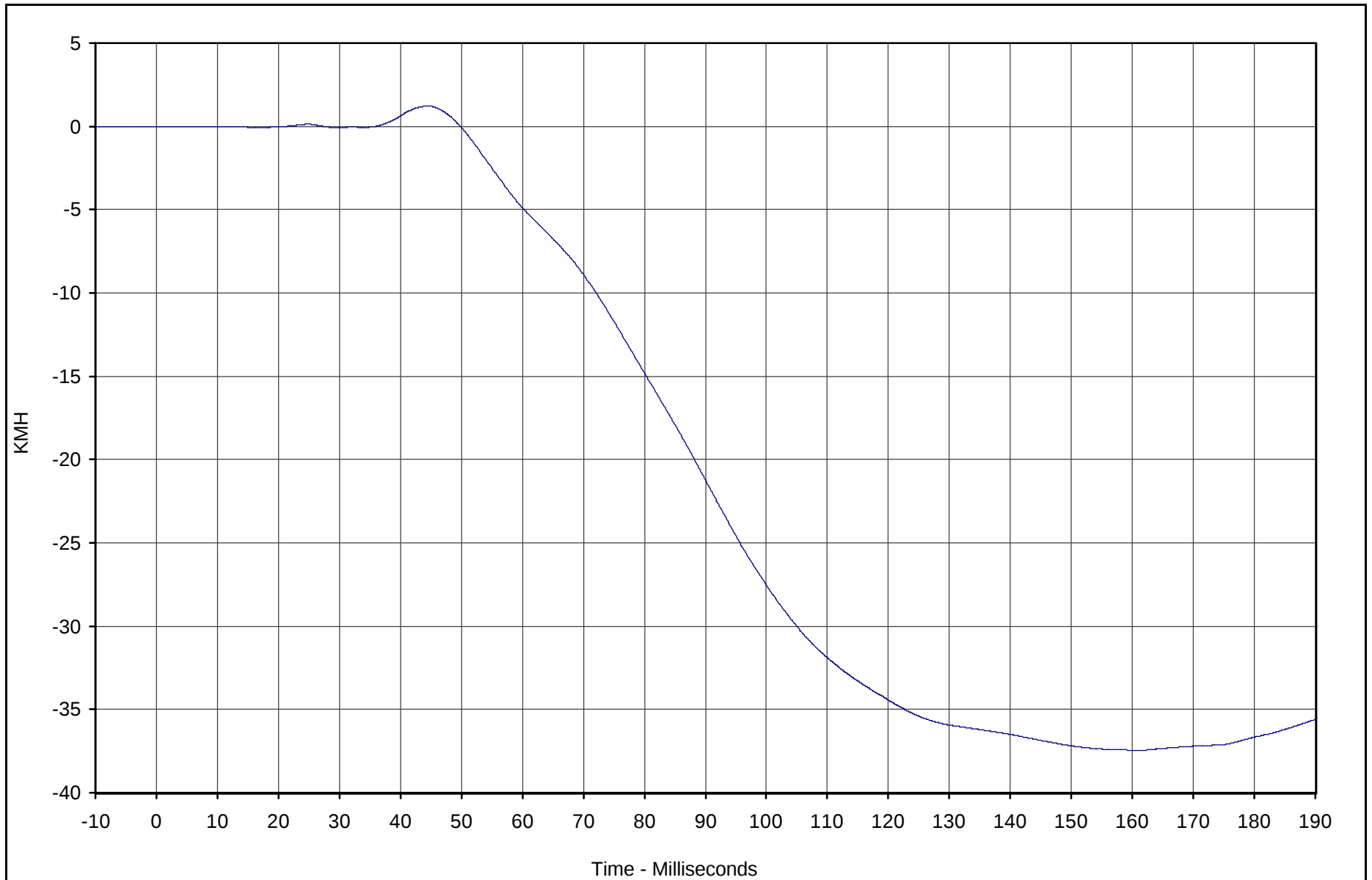


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X Velocity	004	IN1	KMH	1.2	44.5	-37.5	160.8	180

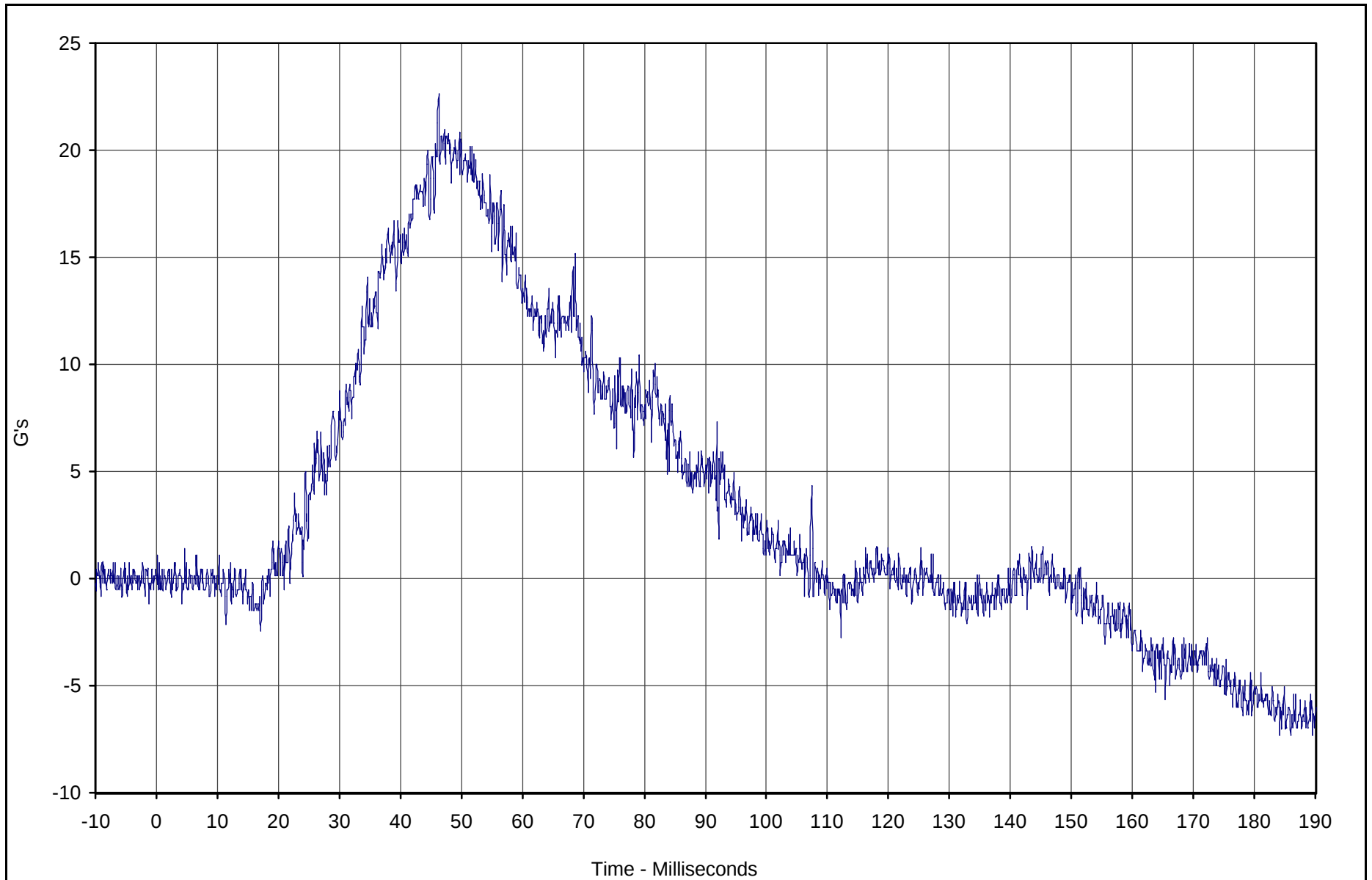


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Y	005	FIL	G's	22.6	46.3	-7.3	184.2	1000

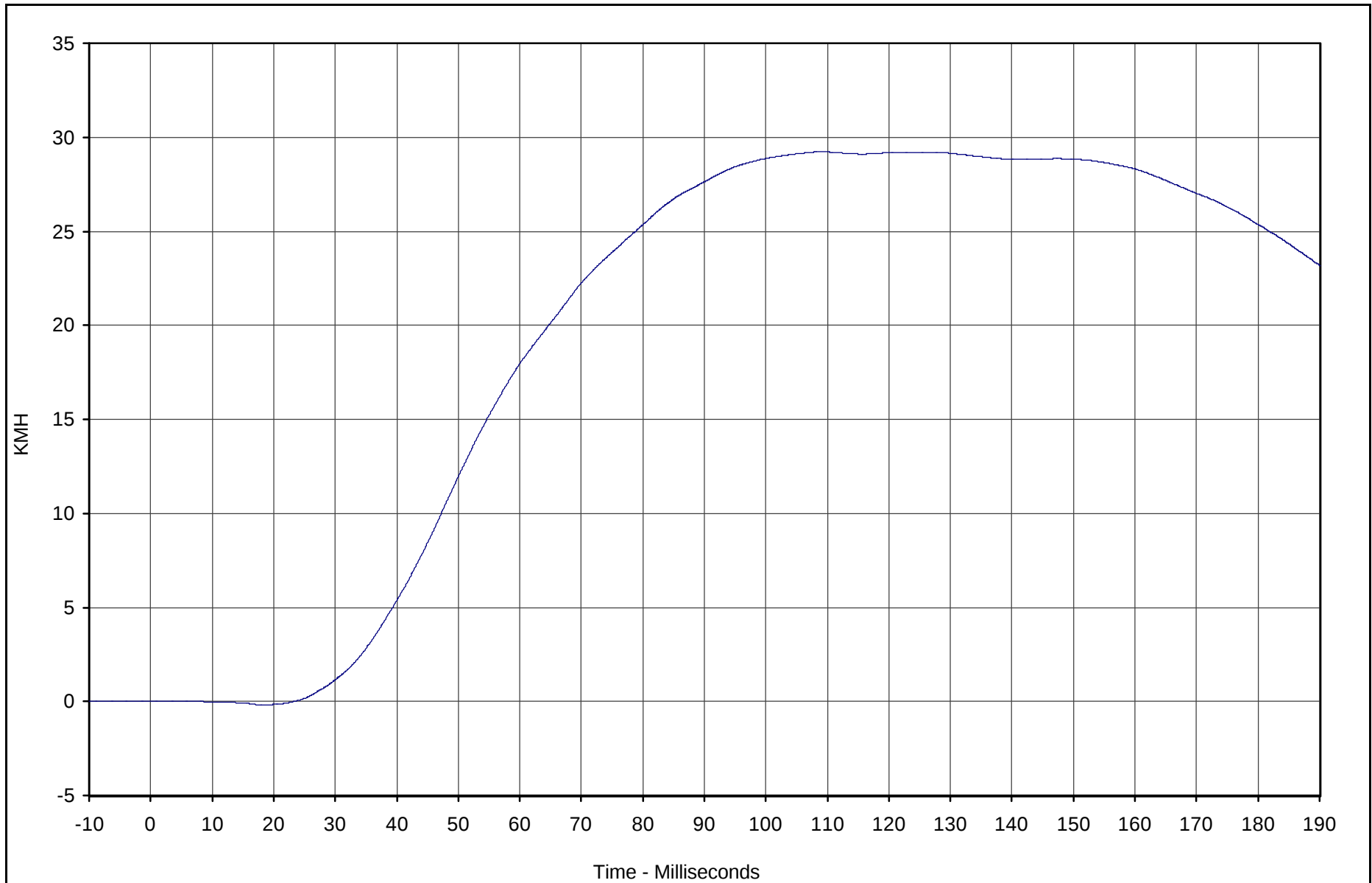


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Y Velocity	005	IN1	KMH	29.2	108.8	-0.2	18.4	180

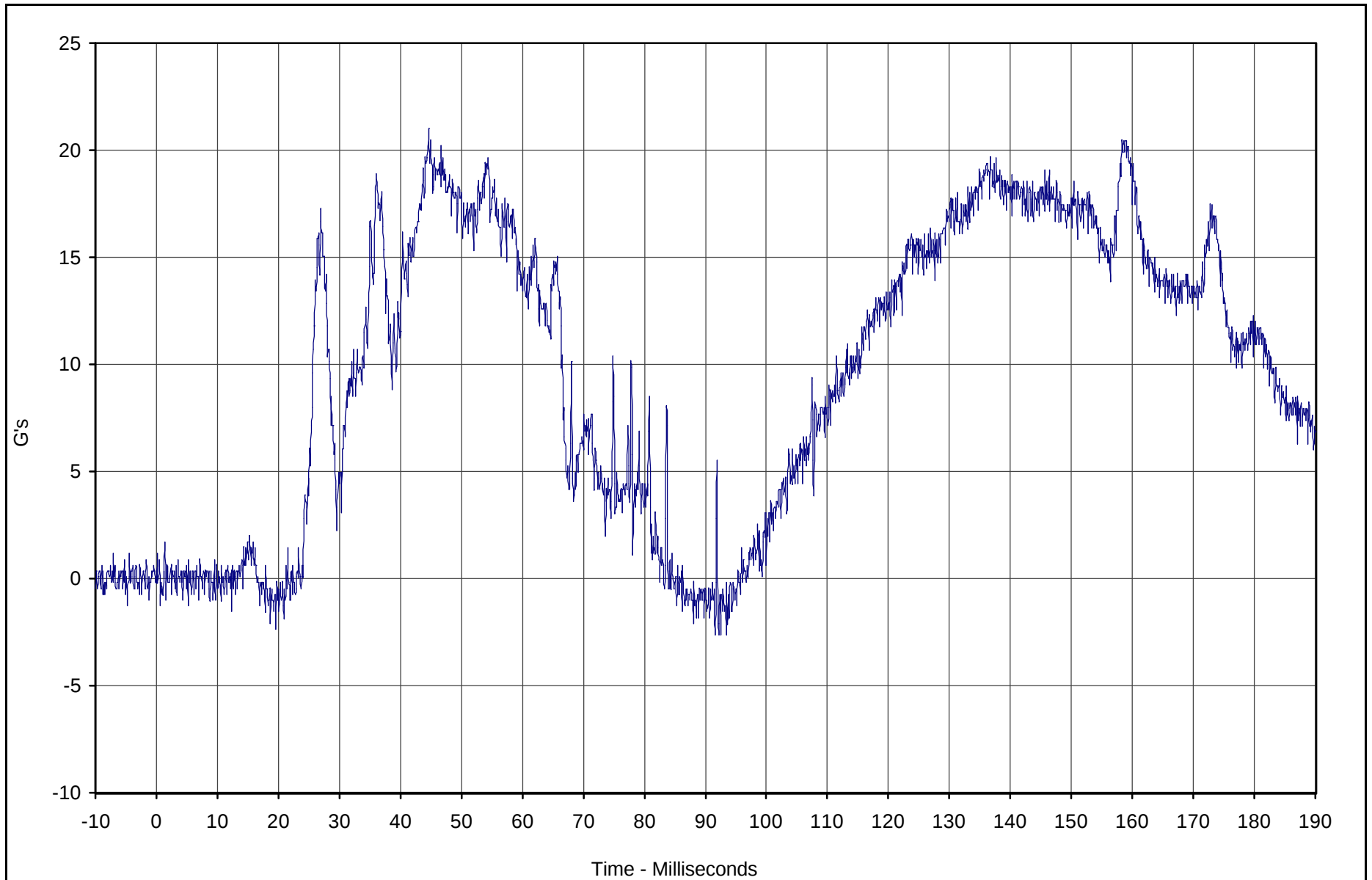


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Z	006	FIL	G's	21.0	44.6	-2.6	91.6	1000

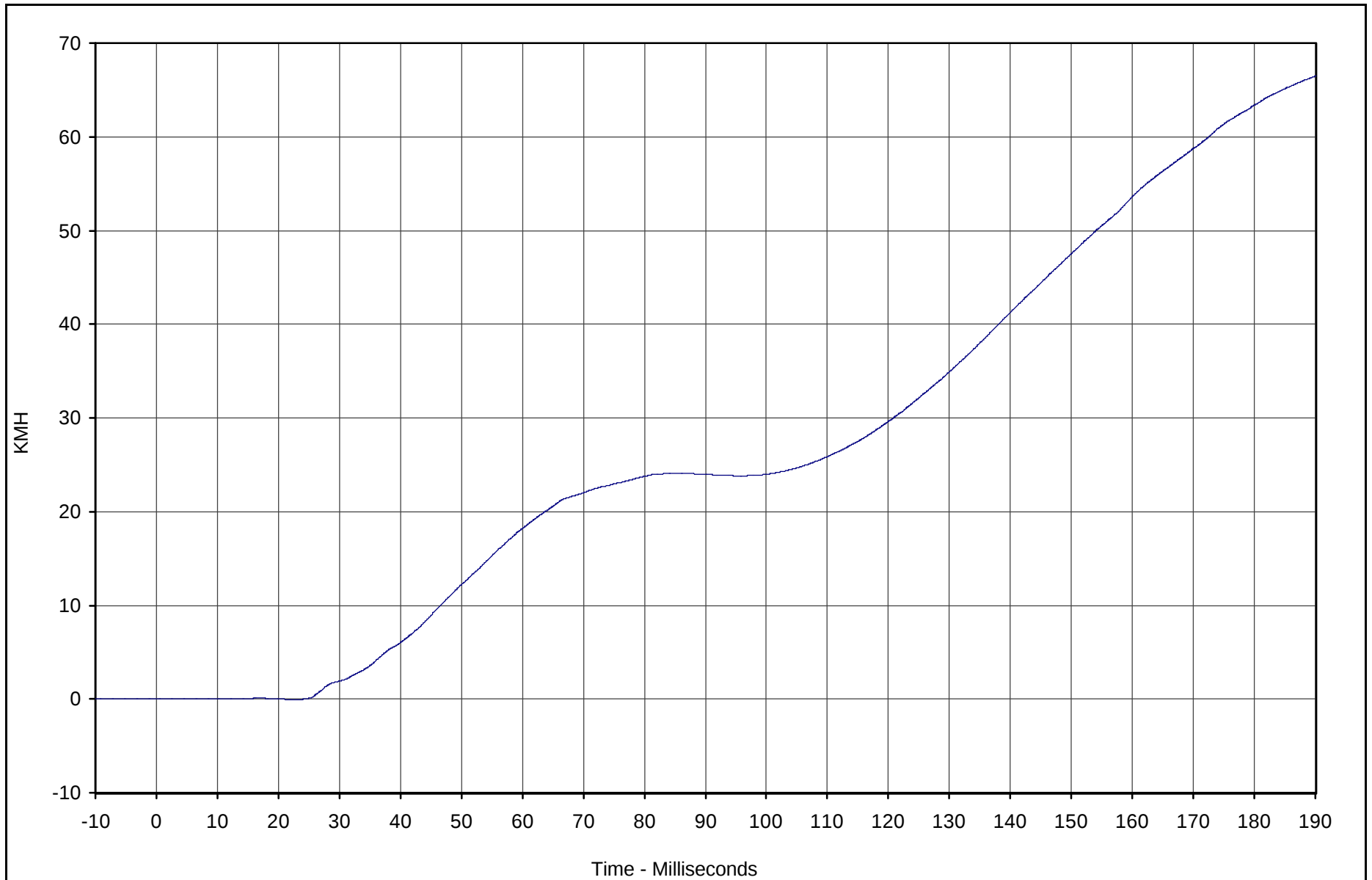


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Z Velocity	006	IN1	KMH	66.5	189.9	0.0	23.2	180

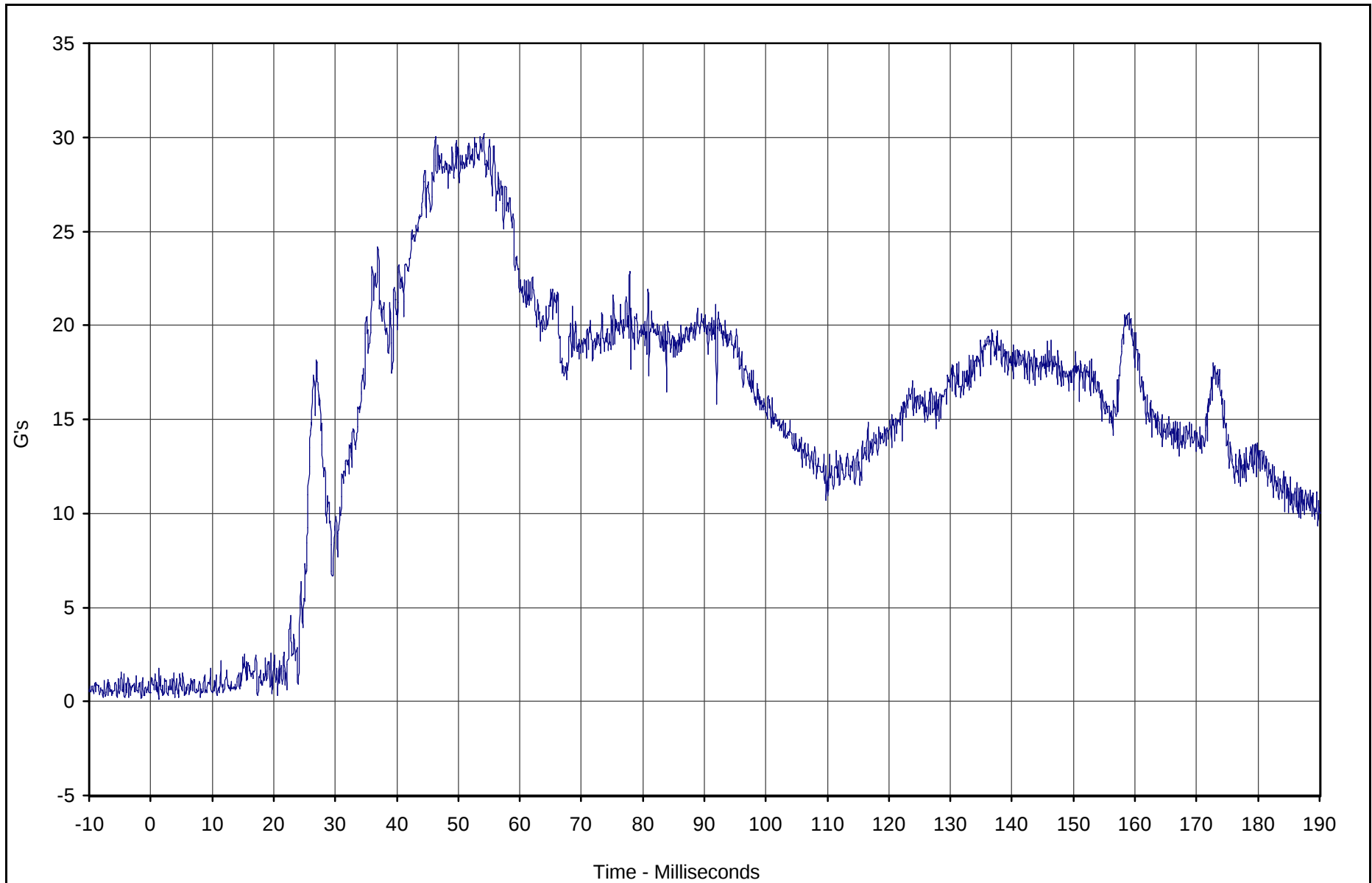


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Resultant Redundant	004	RES	G's	30.2	54.2	0.2	1.3	1000

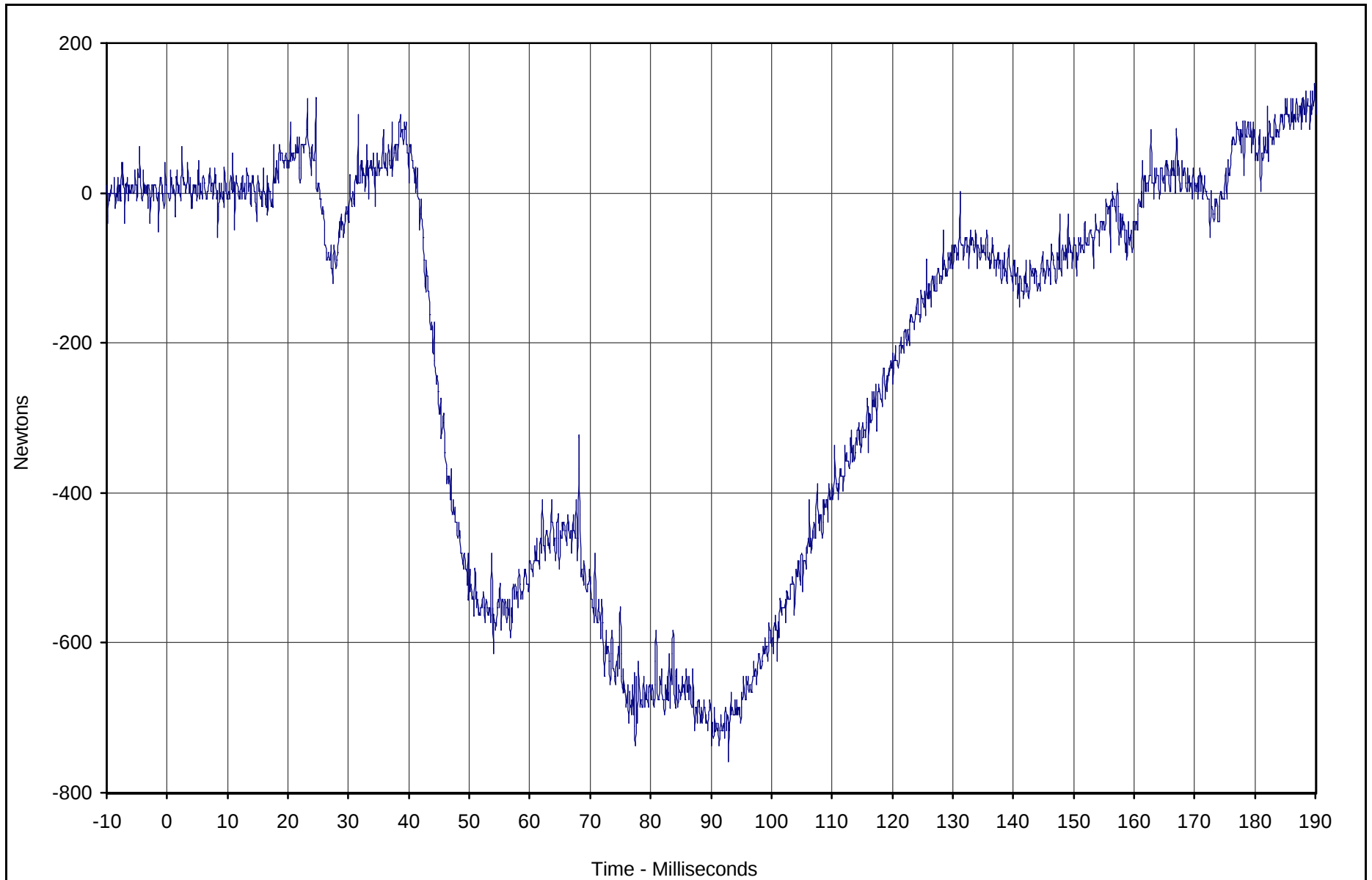


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force X	007	FIL	Newtons	146.5	189.9	-758.1	92.9	1000

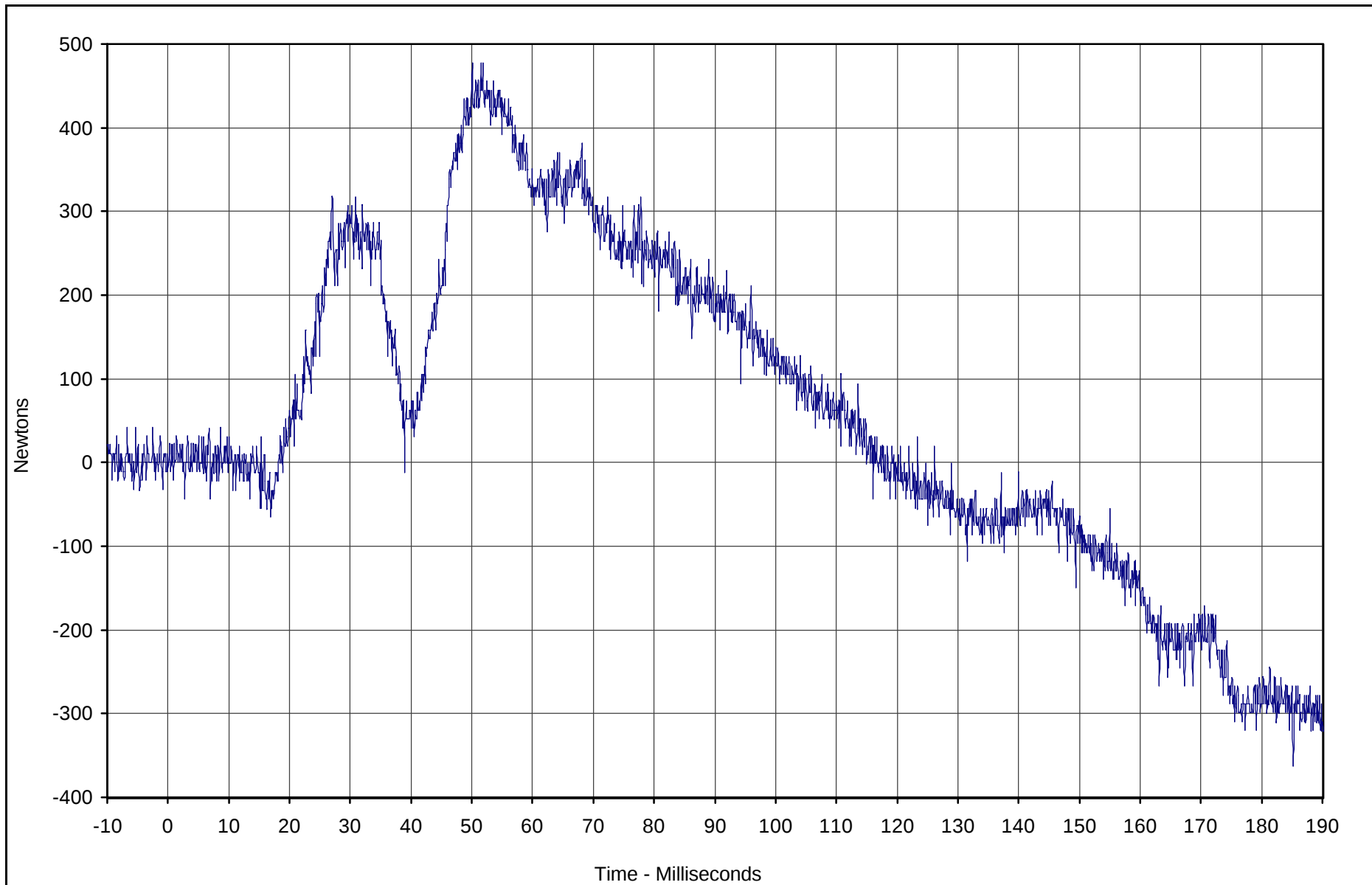


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Y	008	FIL	Newtons	477.1	50.1	-362.7	185.2	1000

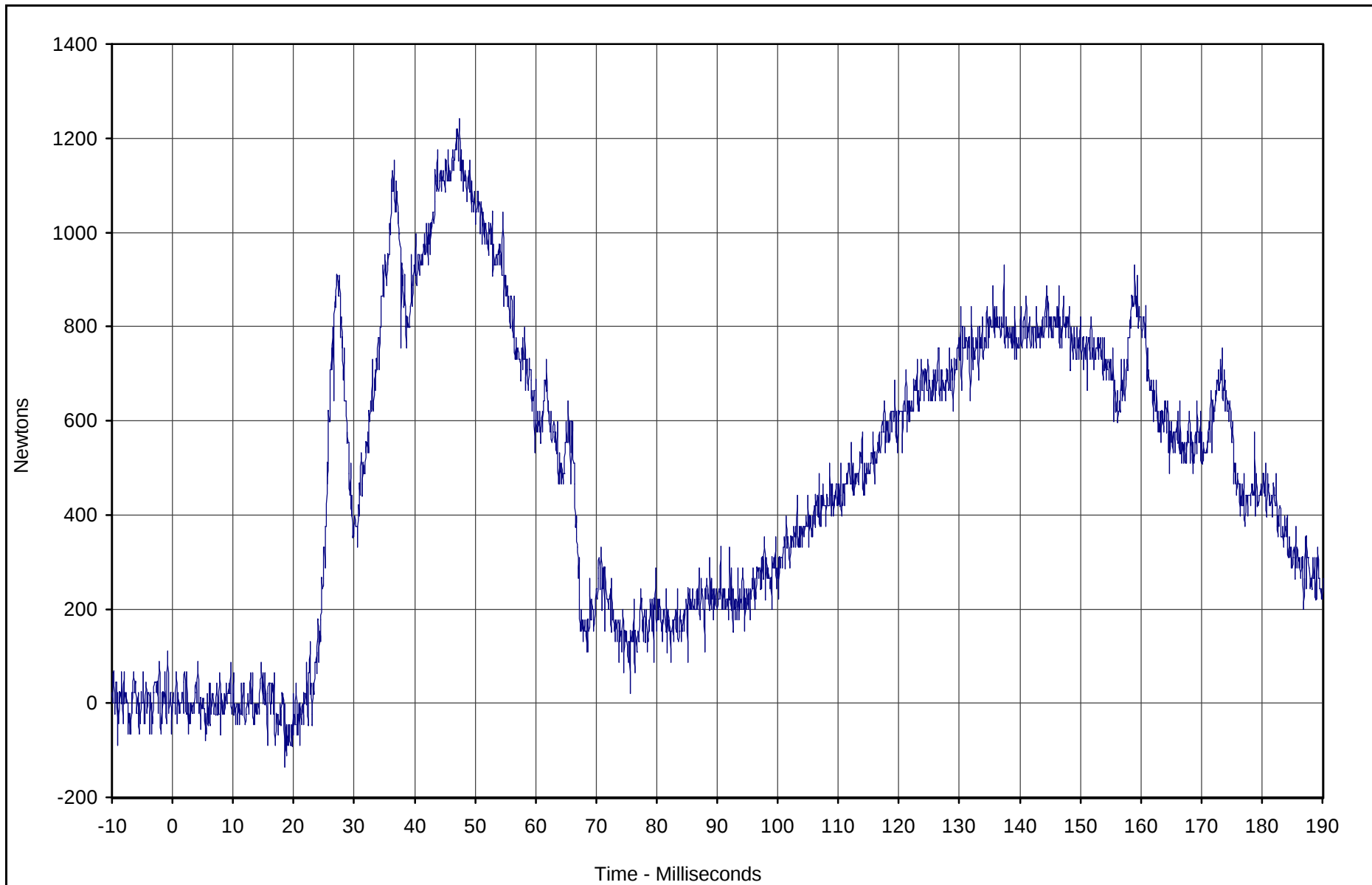


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Z	009	FIL	Newtons	1242.0	47.4	-134.9	18.5	1000

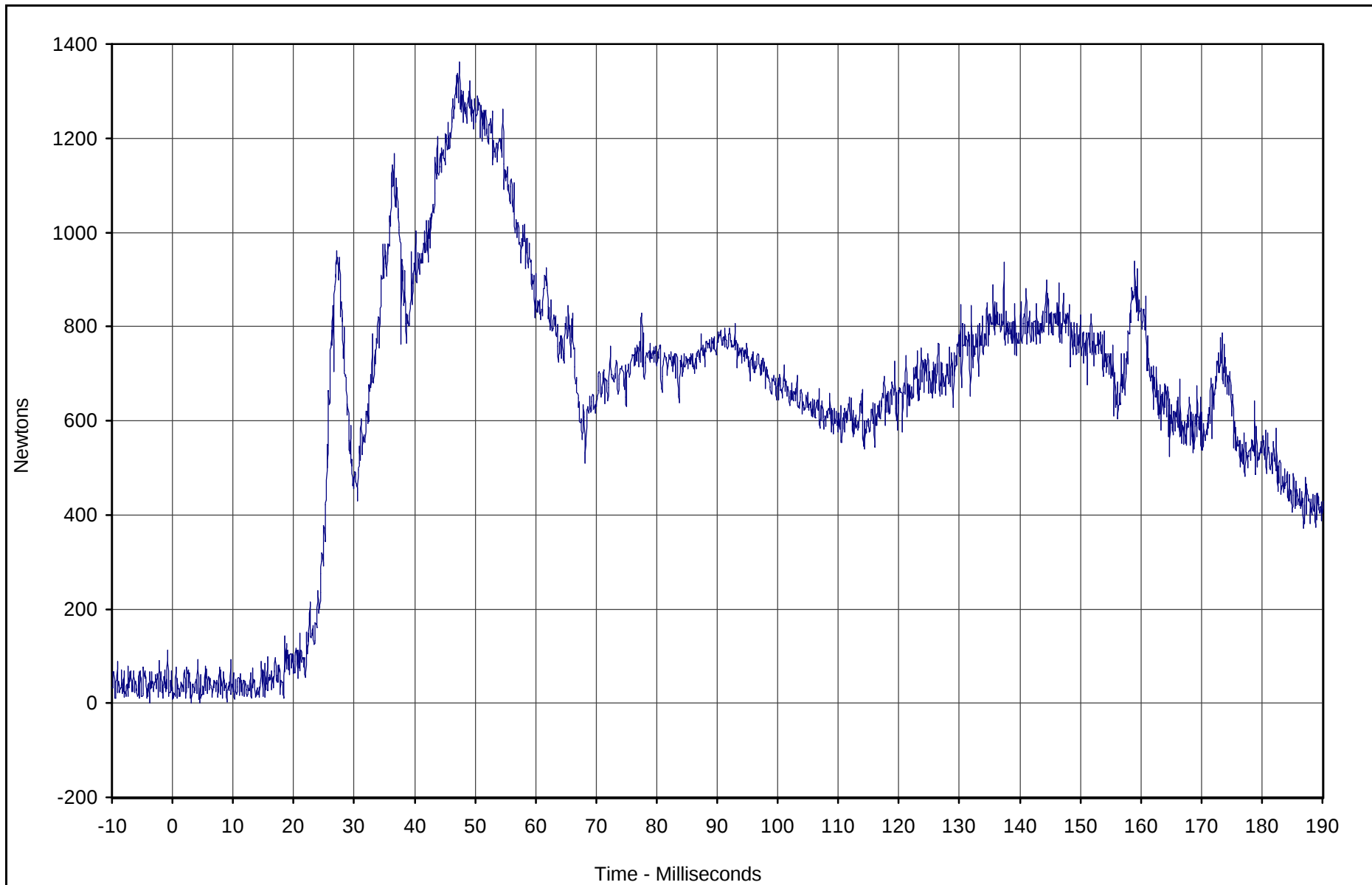


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Resultant	007	RES	Newtons	1362.0	47.4	0.0	3.1	1000

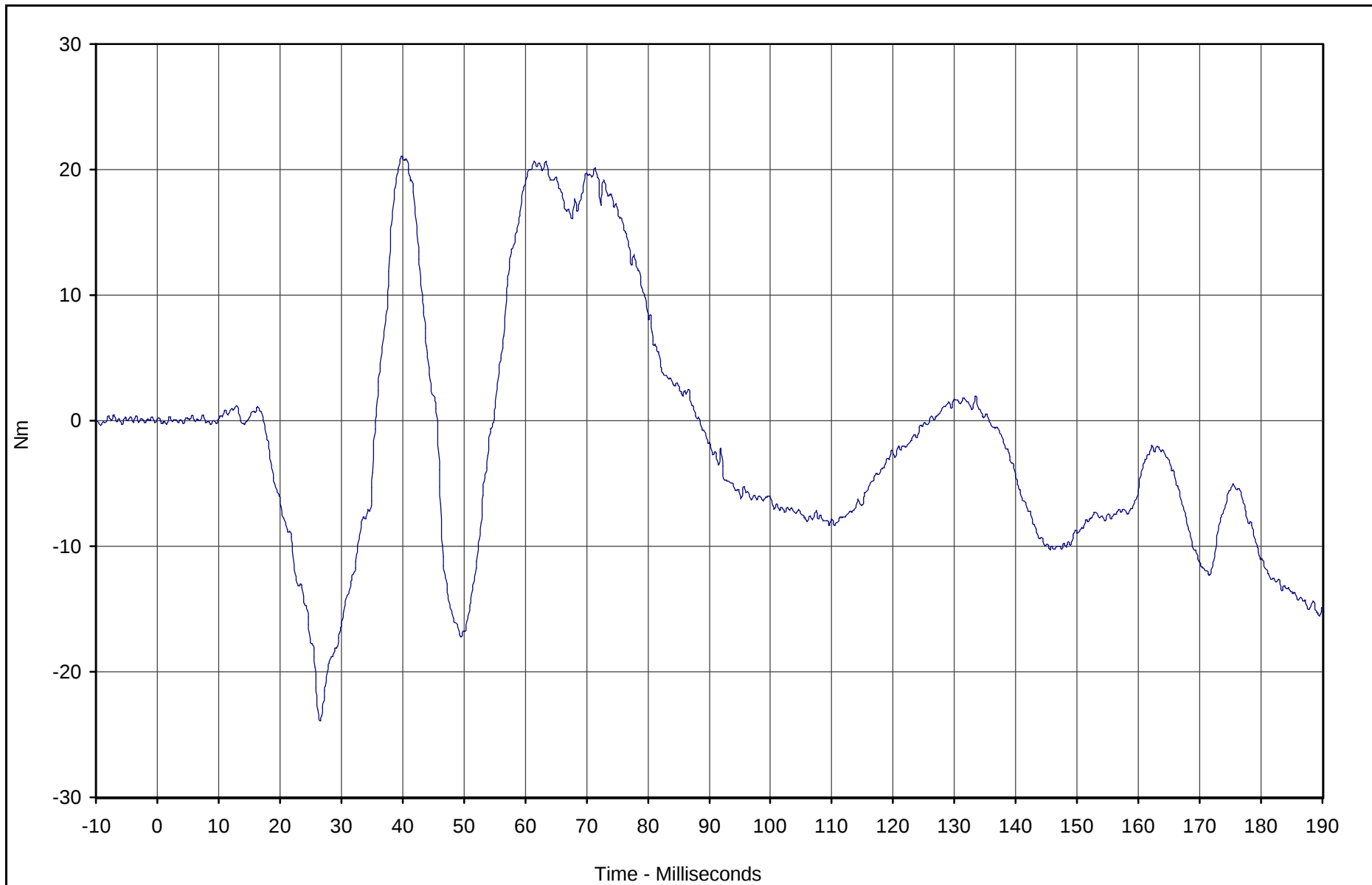


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment X	010	FIL	Nm	21.0	39.9	-23.9	26.6	600

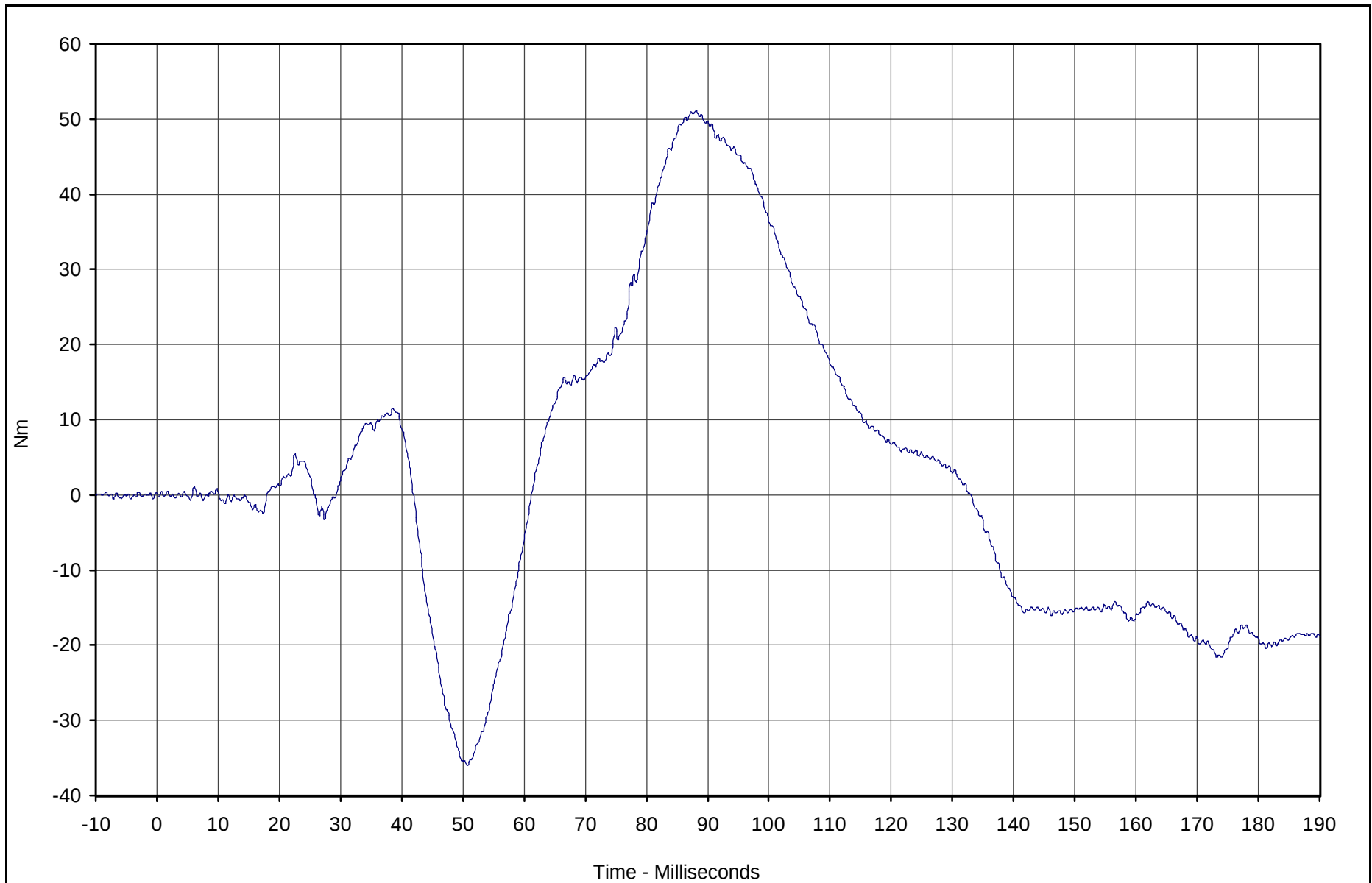


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Y	011	FIL	Nm	51.2	88.1	-36.0	50.7	600

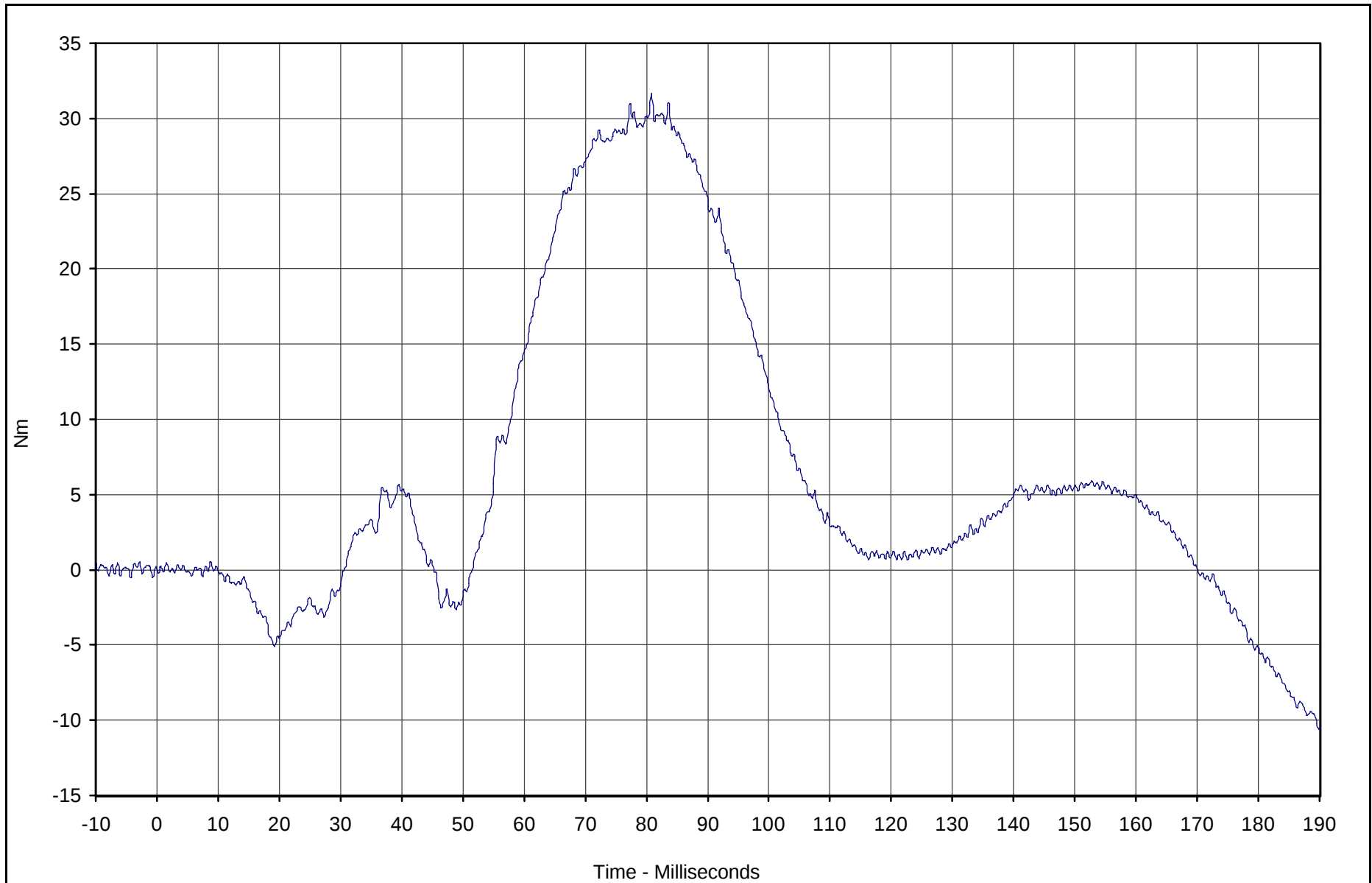


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Z	012	FIL	Nm	31.6	80.8	-10.6	189.9	600

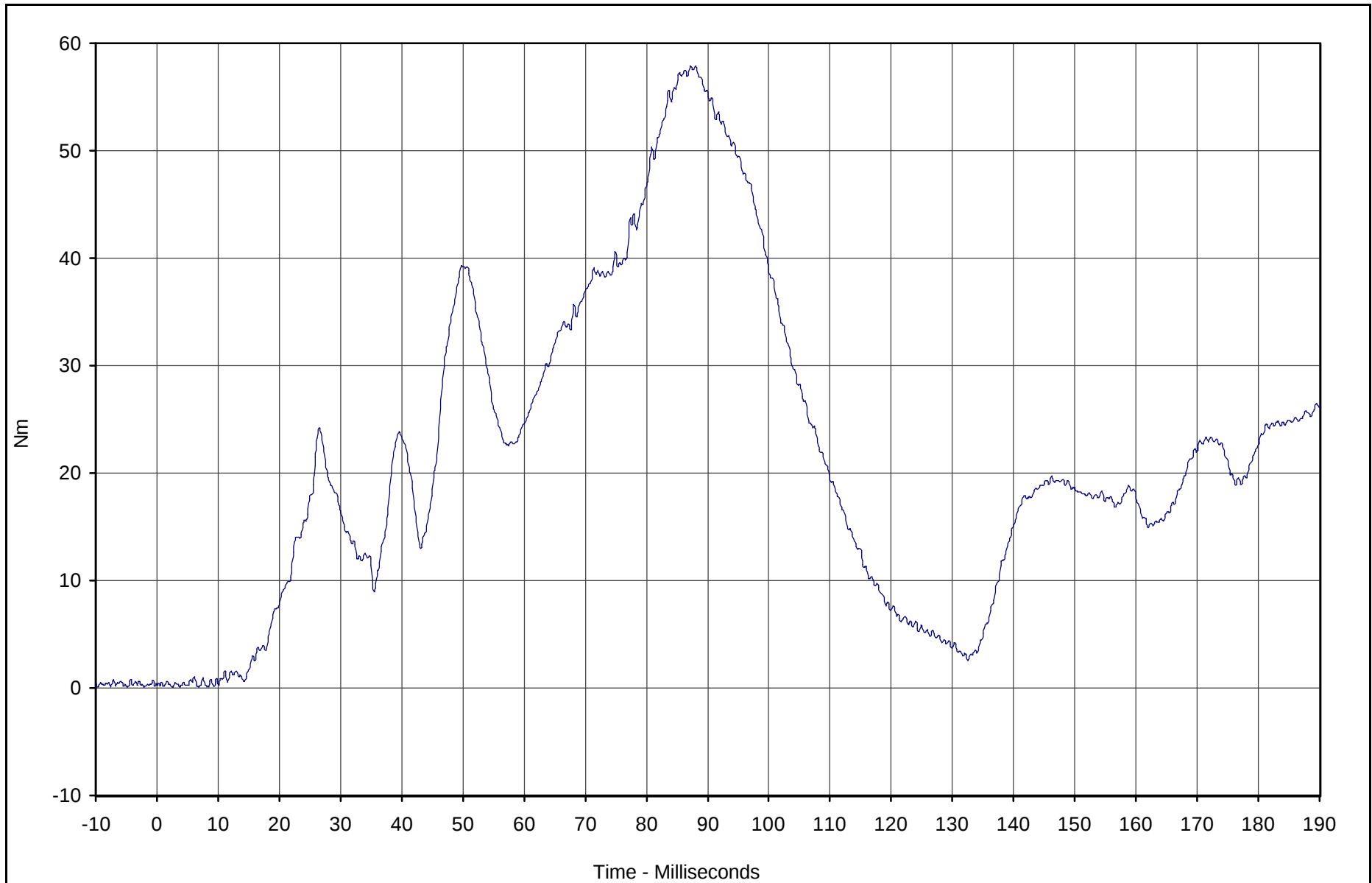


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Resultant	010	RES	Nm	57.9	87.2	0.1	6.9	600

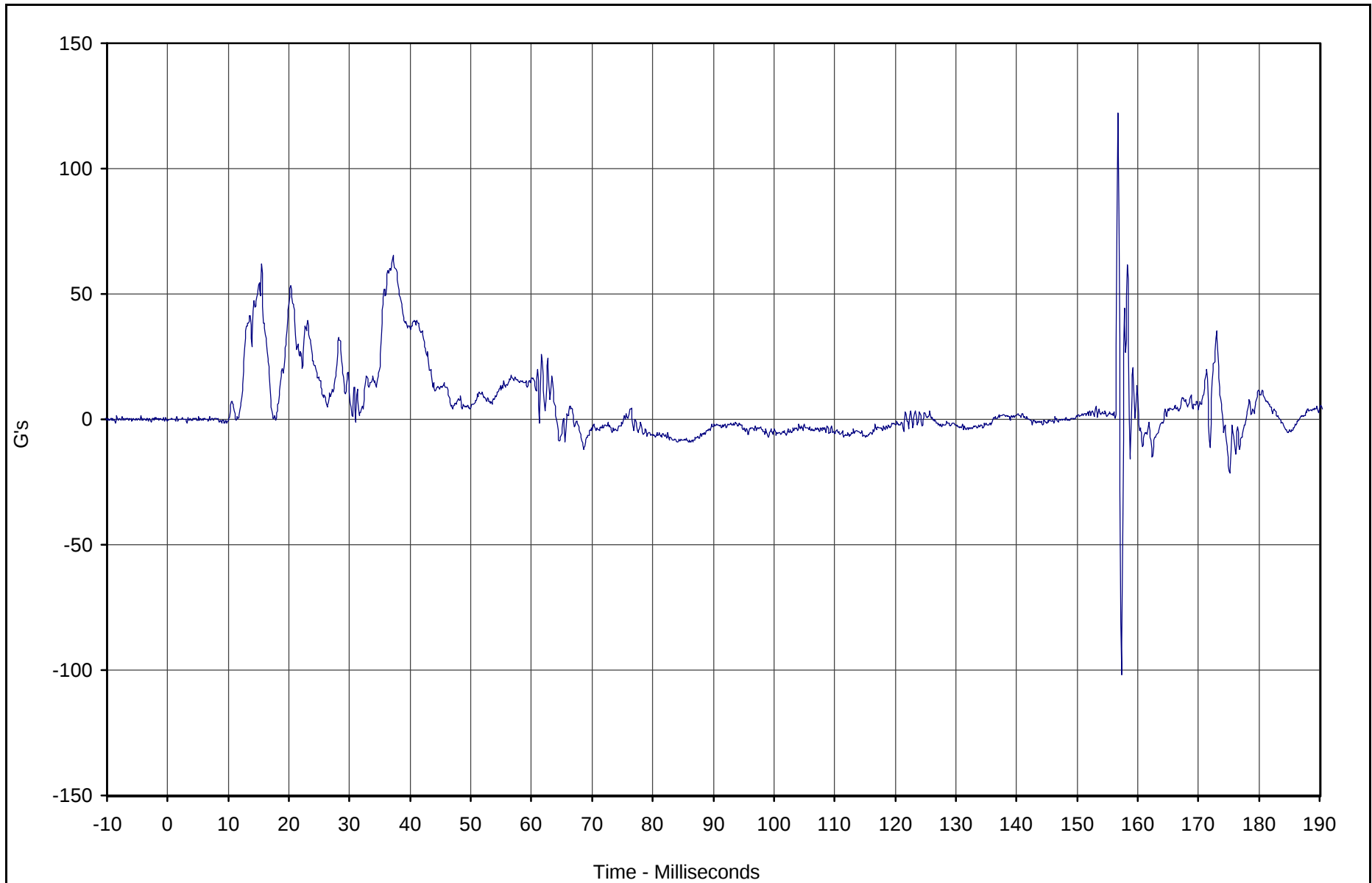


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Upper Rib Primary Y	013	FIL	G's	122.2	156.7	-101.8	157.3	1000

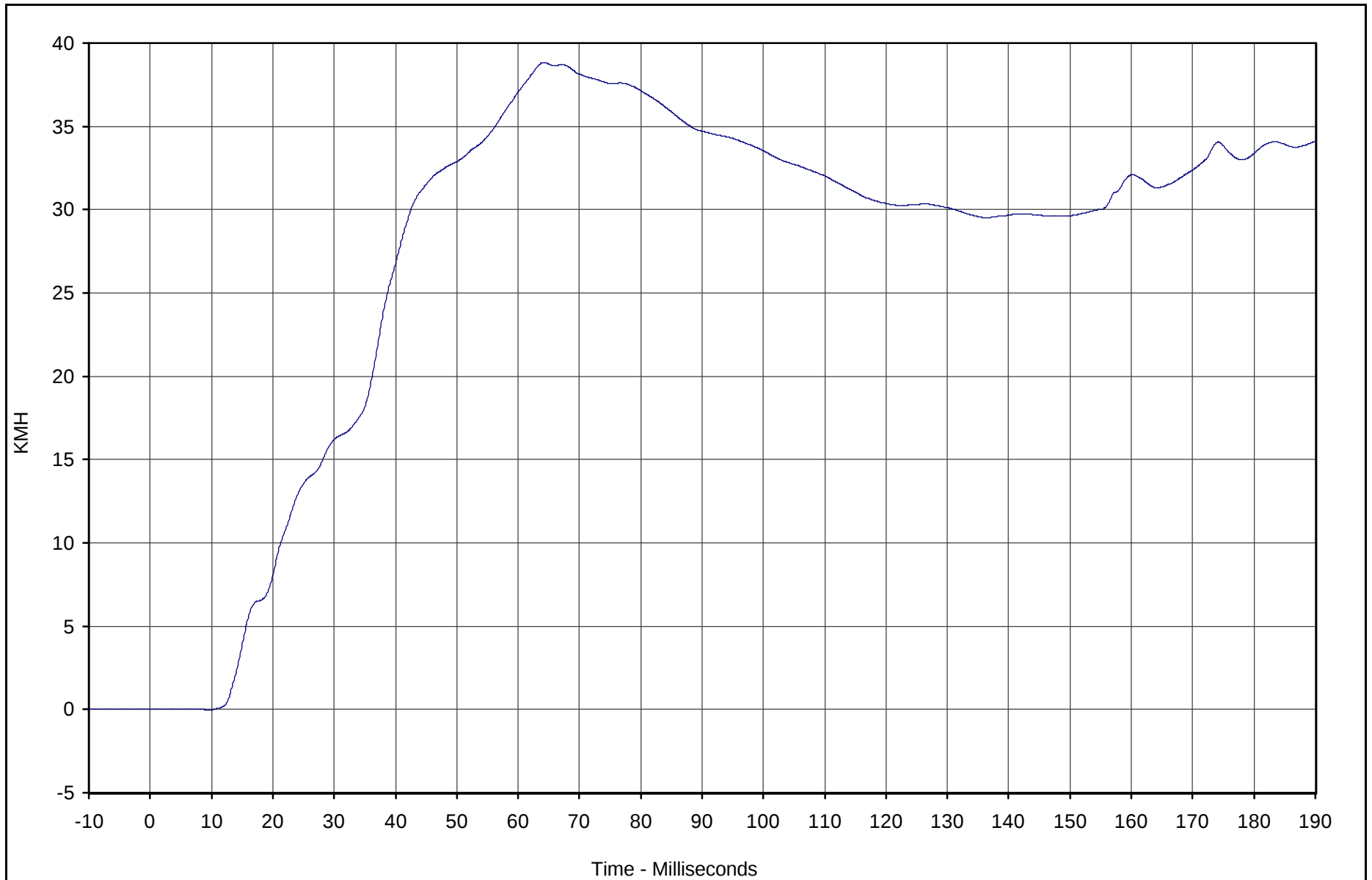


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Upper Rib Primary Y Velocity	013	IN1	KMH	38.8	64.2	0.0	9.7	180

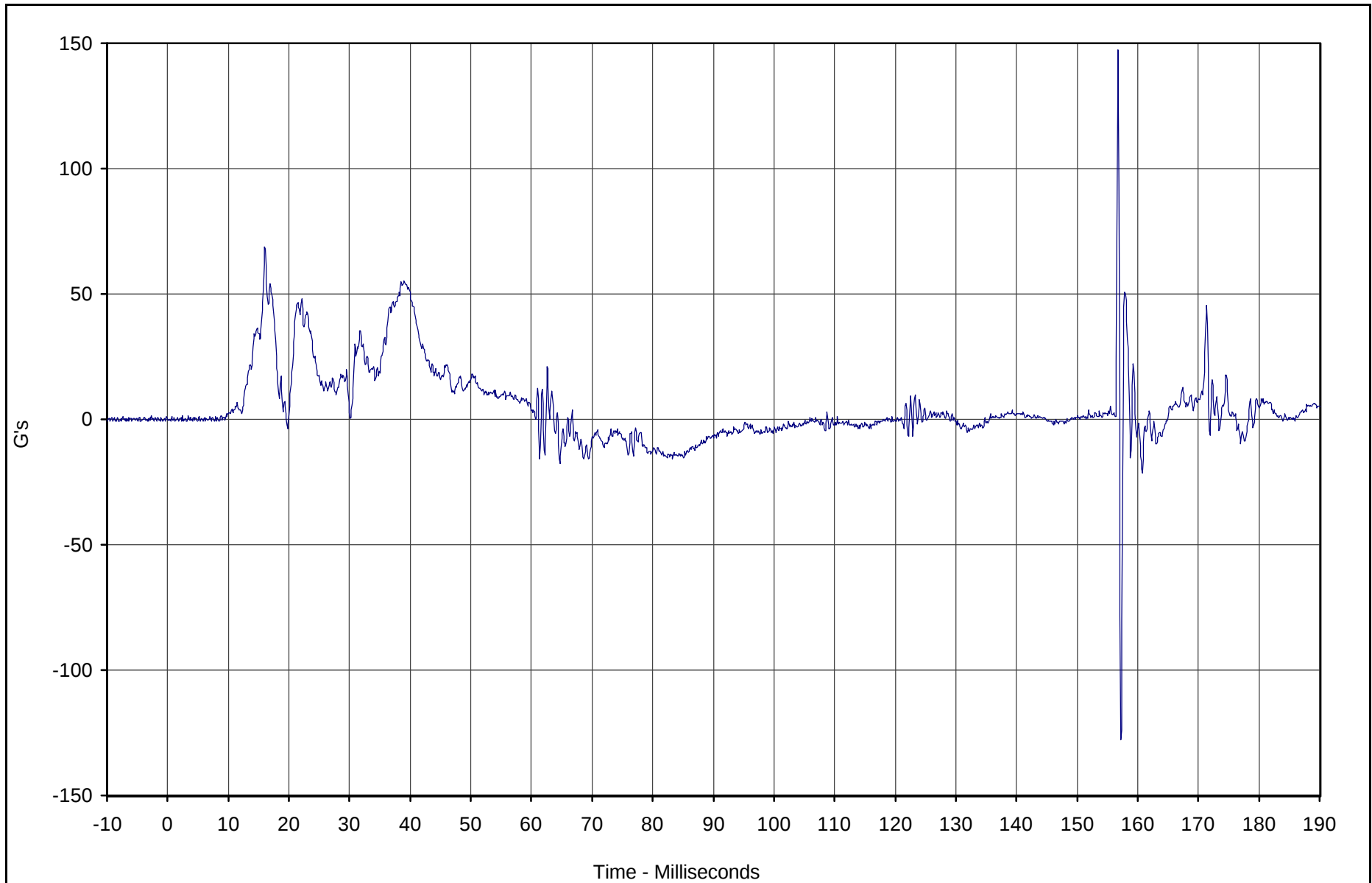


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Rib Primary Y	014	FIL	G's	147.3	156.8	-127.7	157.2	1000

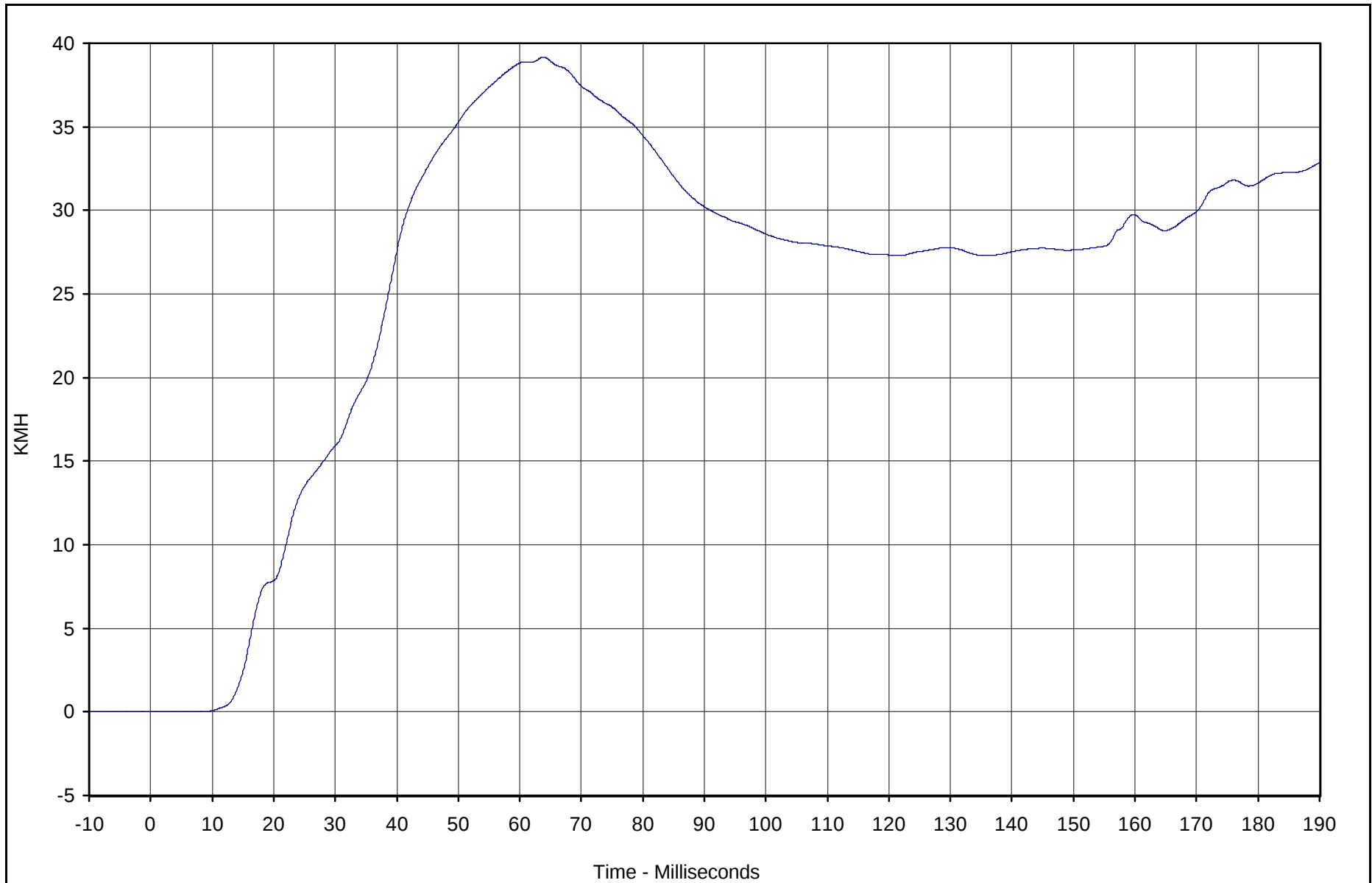


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Rib Primary Y Velocity	014	IN1	KMH	39.2	63.8	0.0	0.6	180

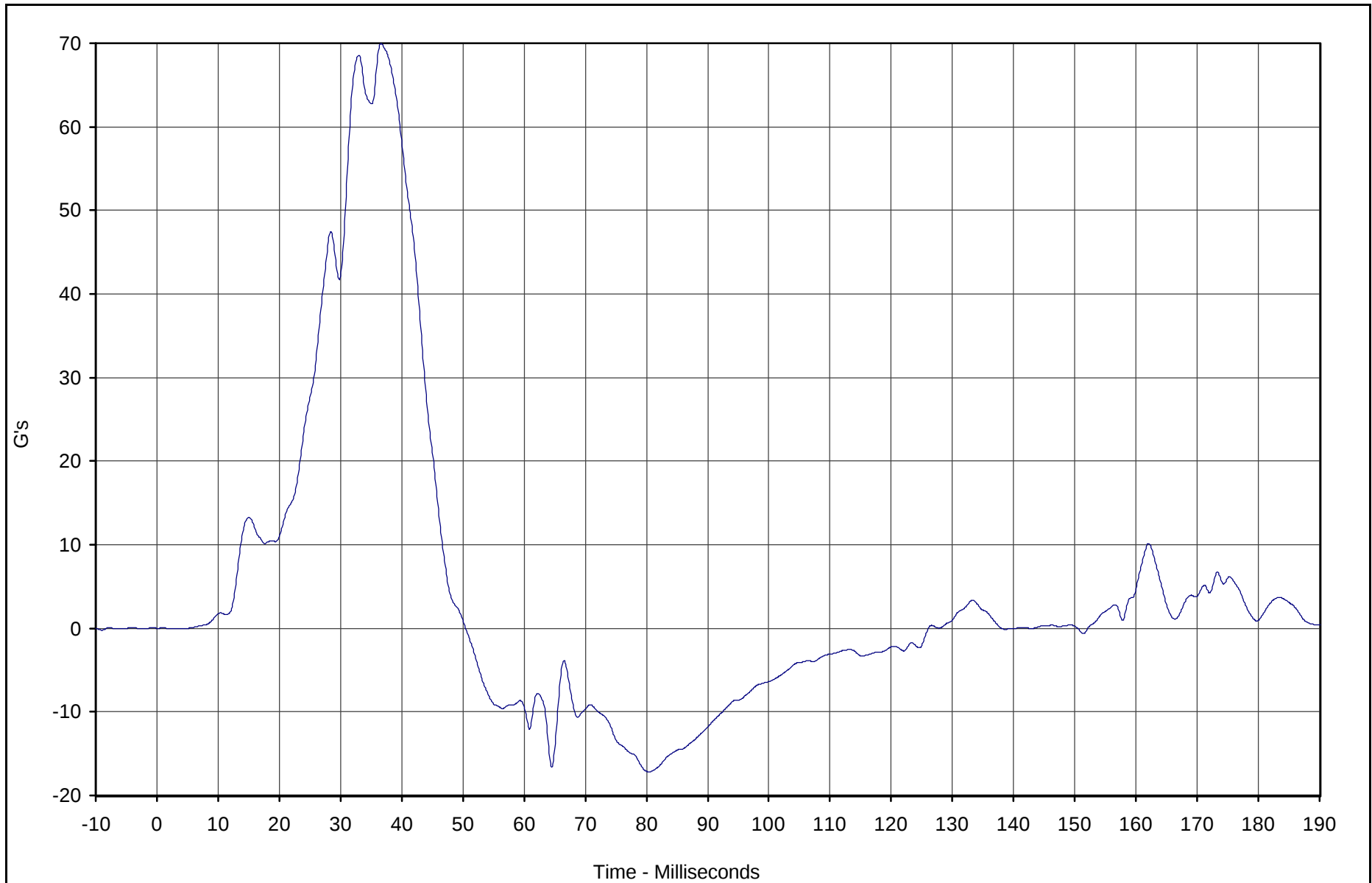


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Spine Primary Y	015	FIL	G's	69.9	36.6	-17.2	80.4	180

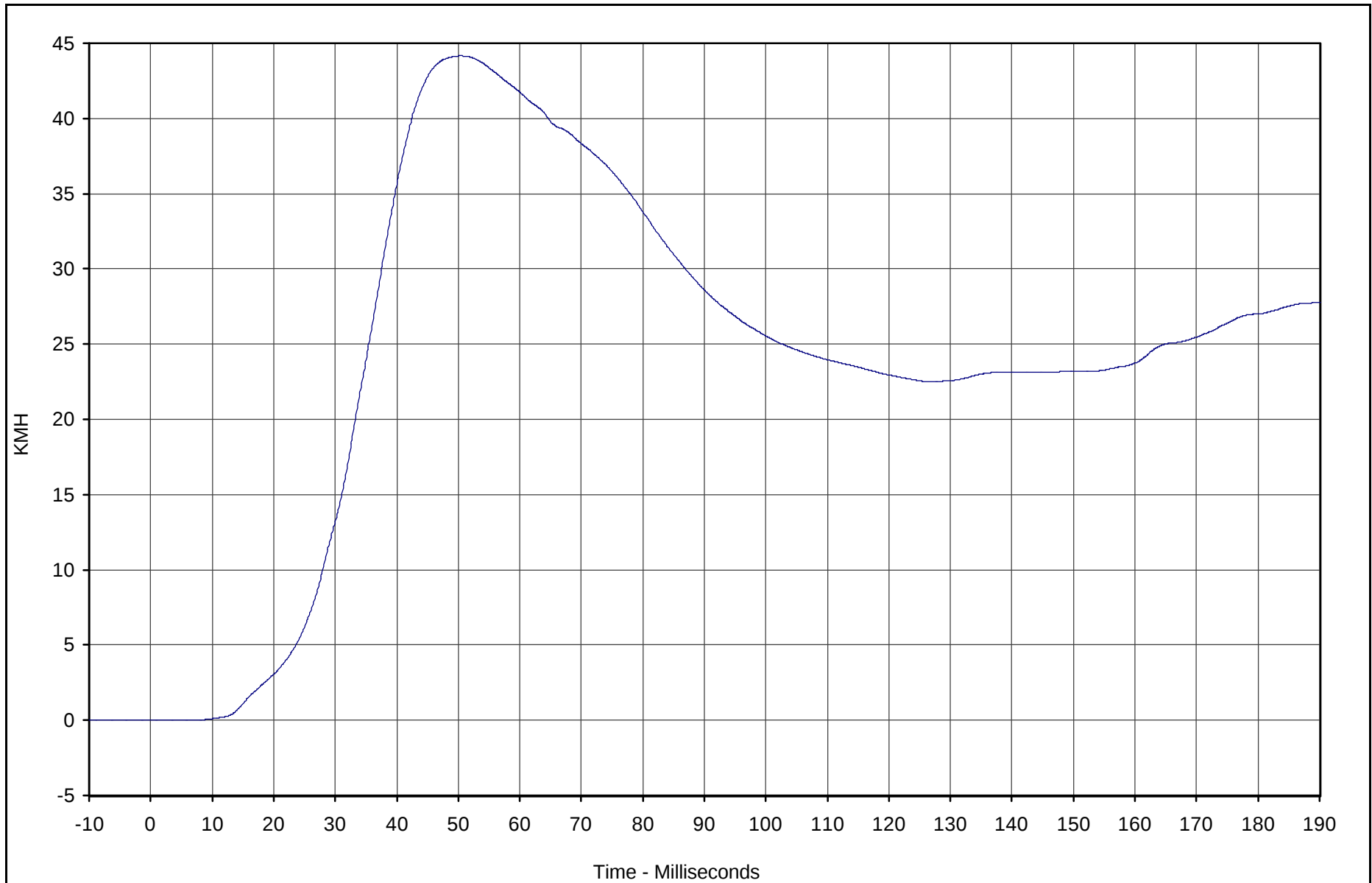


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Spine Primary Y Velocity	015	IN1	KMH	44.2	50.4	0.0	4.3	180

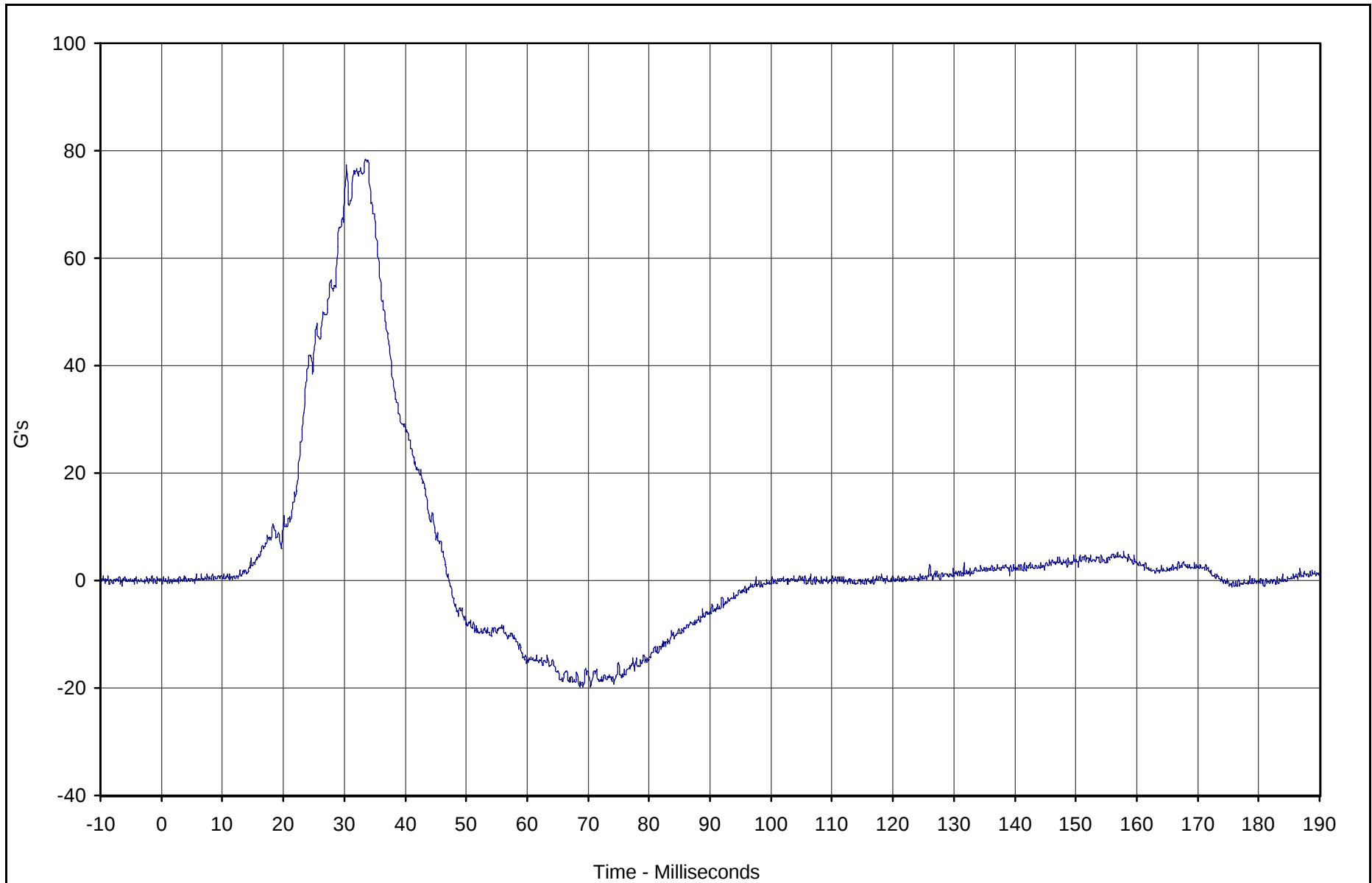


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Primary Y	016	FIL	G's	78.5	33.5	-19.8	68.6	1000

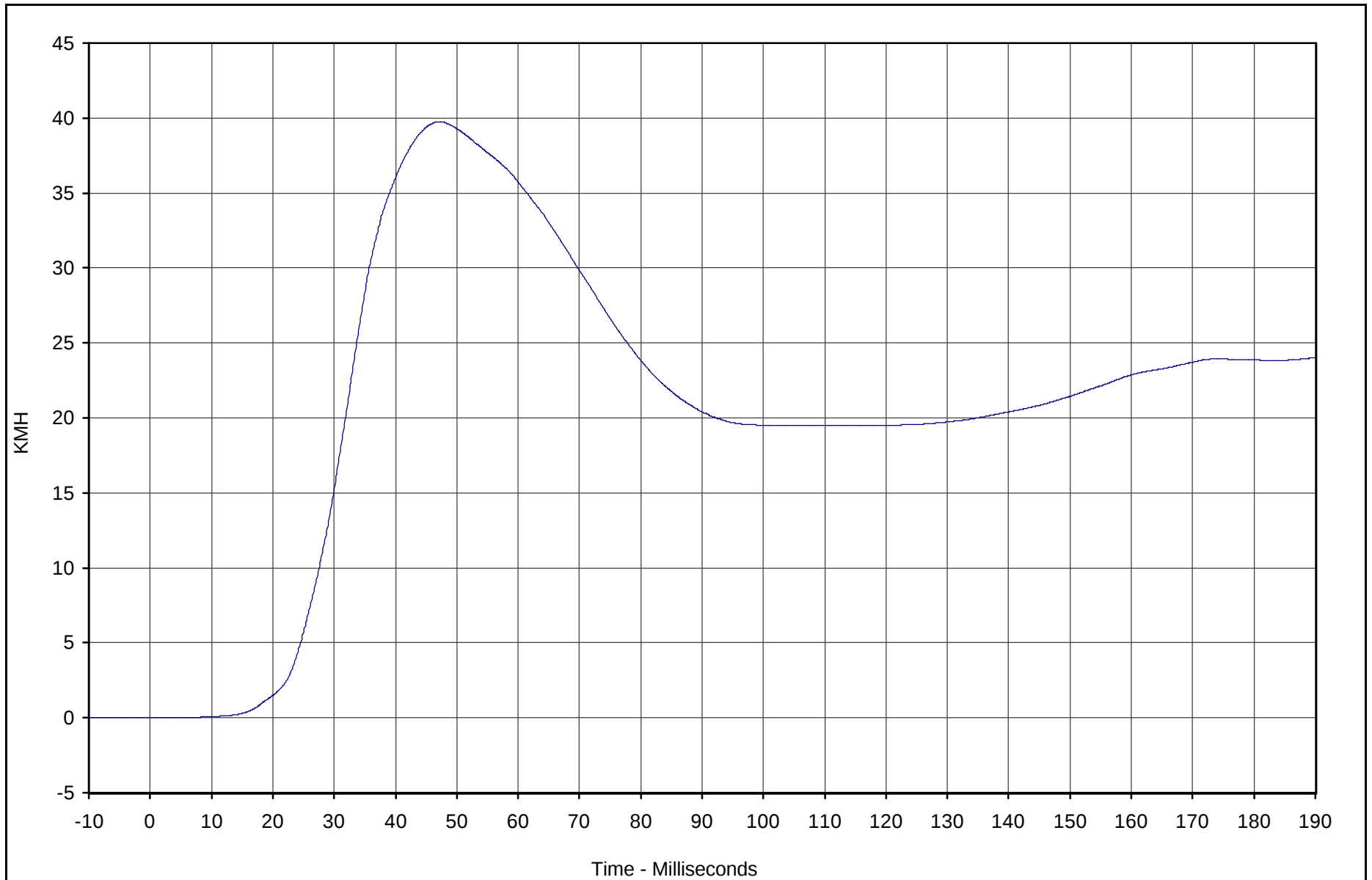


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Primary Y Velocity	016	IN1	KMH	39.8	47.2	0.0	2.4	180

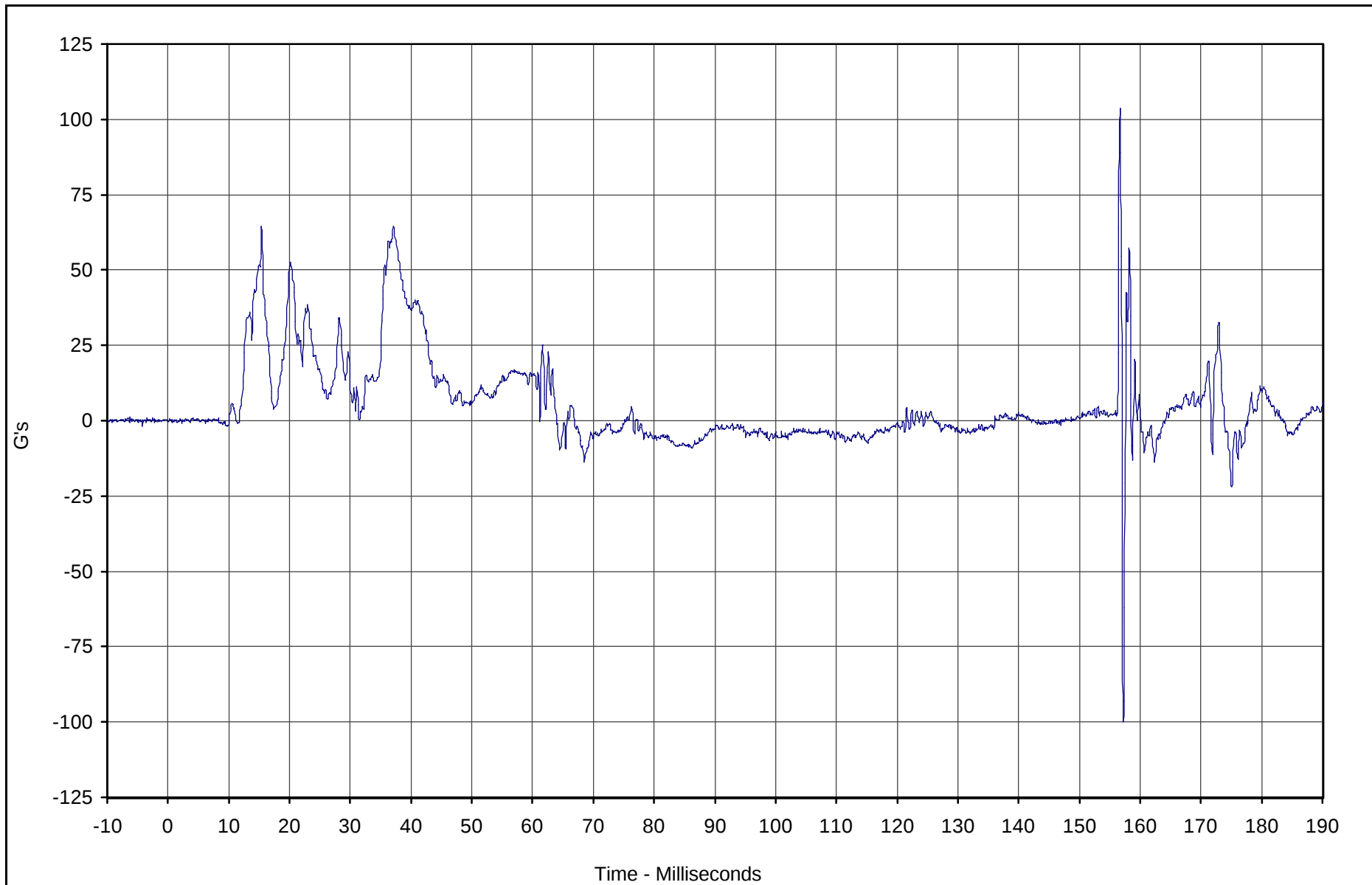


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Upper Rib Redundant Y	017	FIL	G's	103.7	156.7	-99.3	157.2	1000

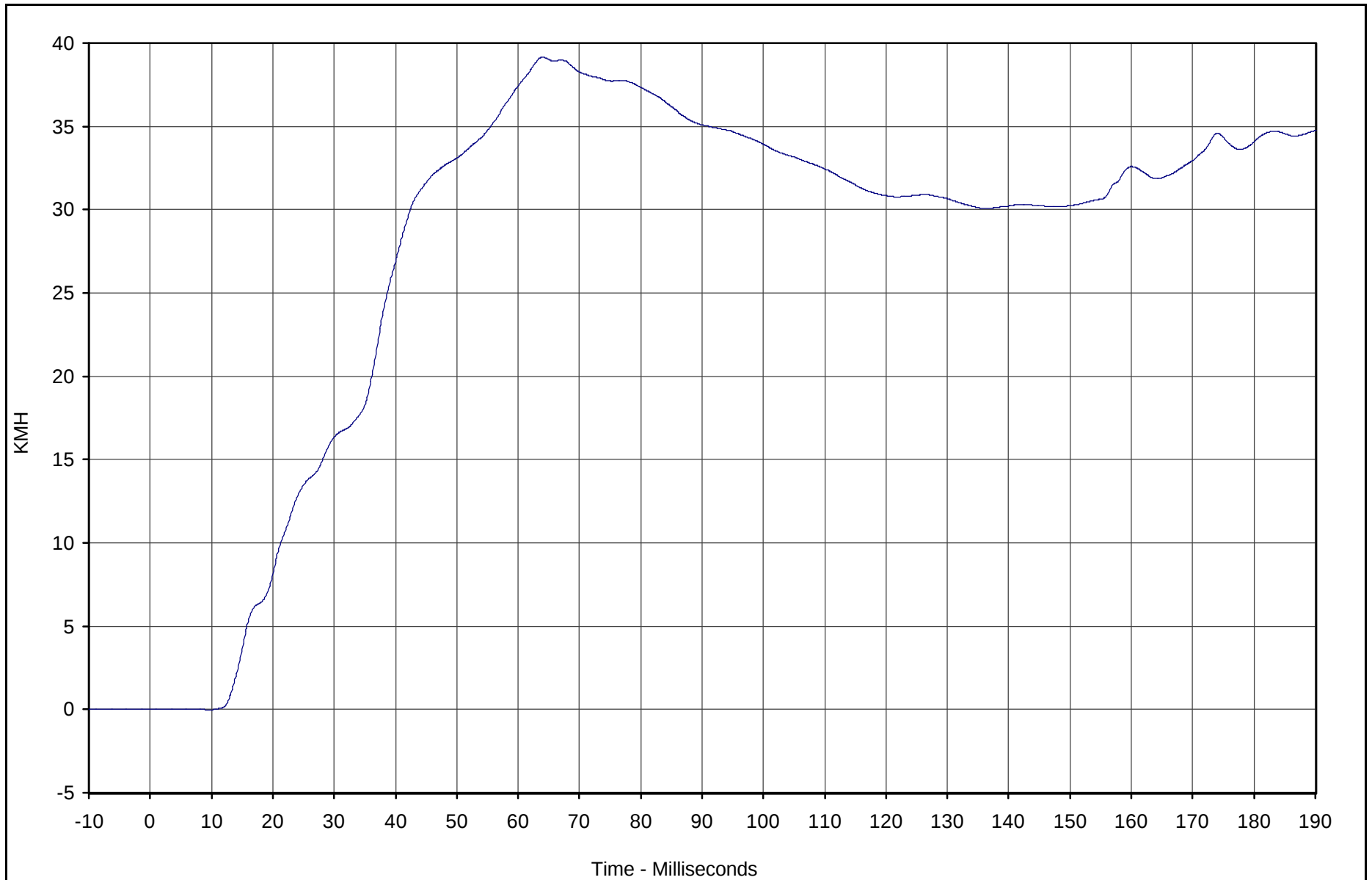


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Upper Rib Redundant Y Velocity	017	IN1	KMH	39.2	64.0	0.0	9.7	180

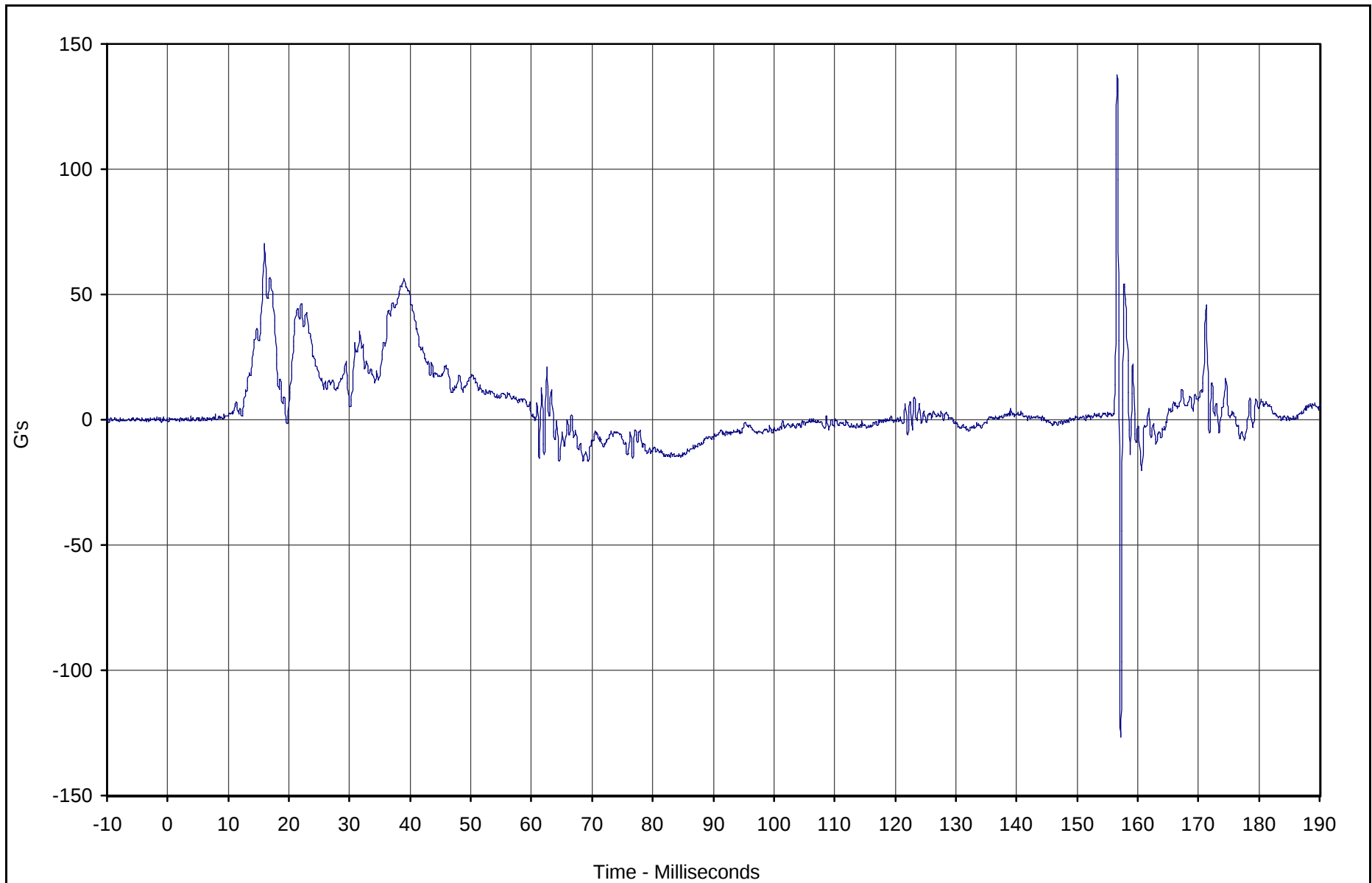


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Rib Redundant Y	018	FIL	G's	137.1	156.6	-126.8	157.2	1000

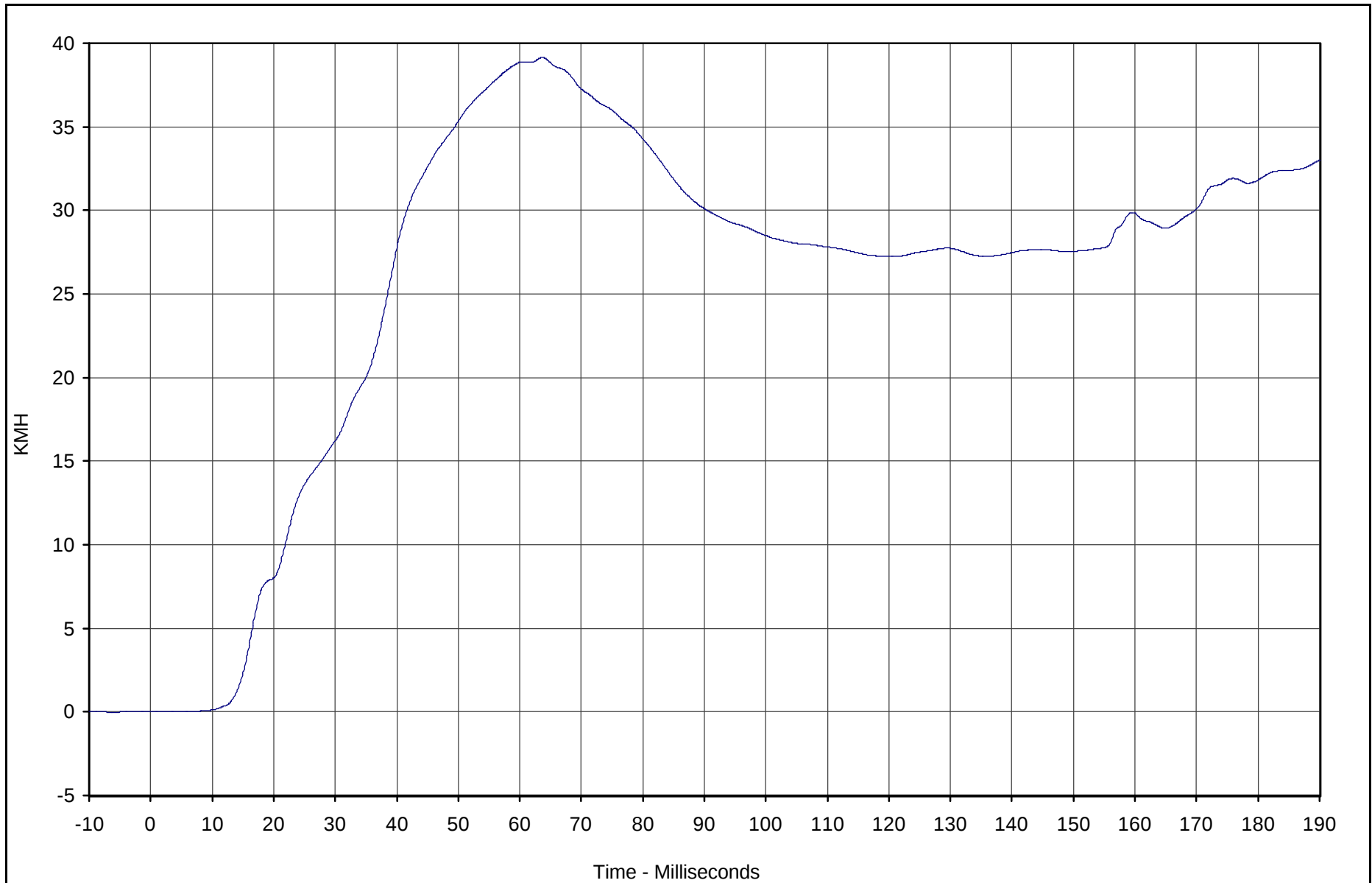


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Rib Redundant Y Velocity	018	IN1	KMH	39.1	63.7	0.0	0.1	180

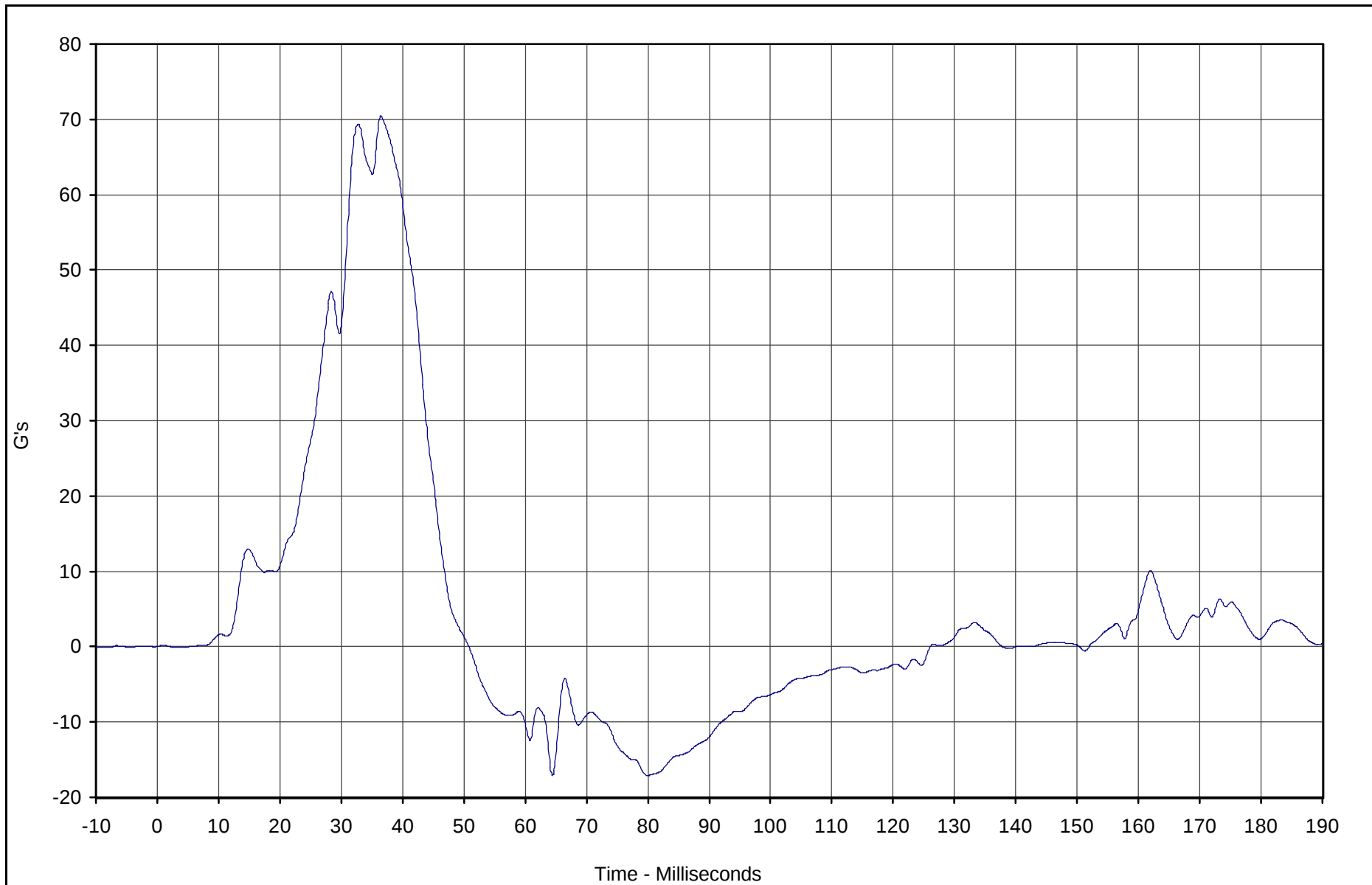


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Spine Redundant Y	019	FIL	G's	70.5	36.5	-17.1	80.0	180

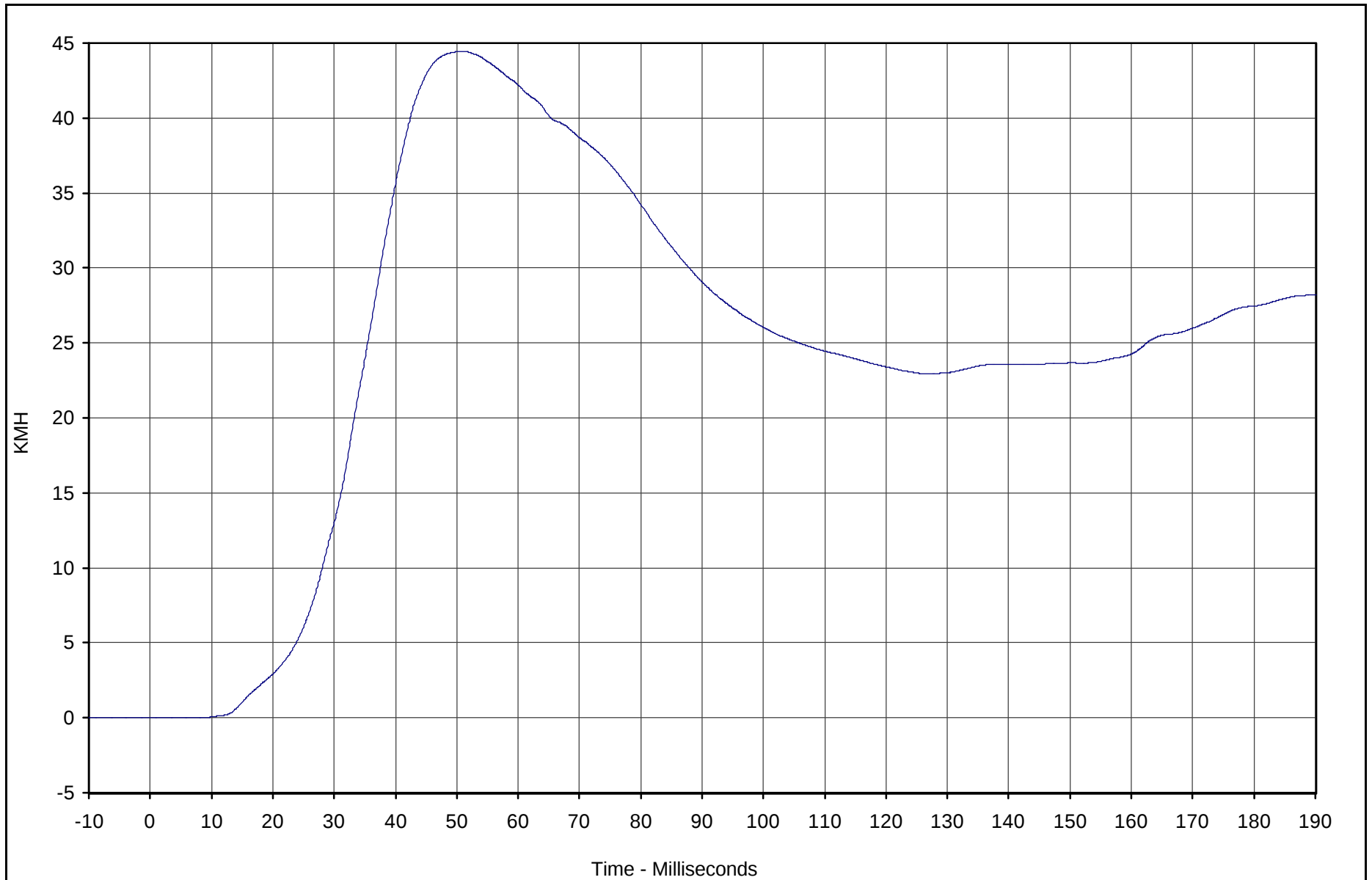


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Spine Redundant Y Velocity	019	IN1	KMH	44.4	50.8	0.0	6.0	180

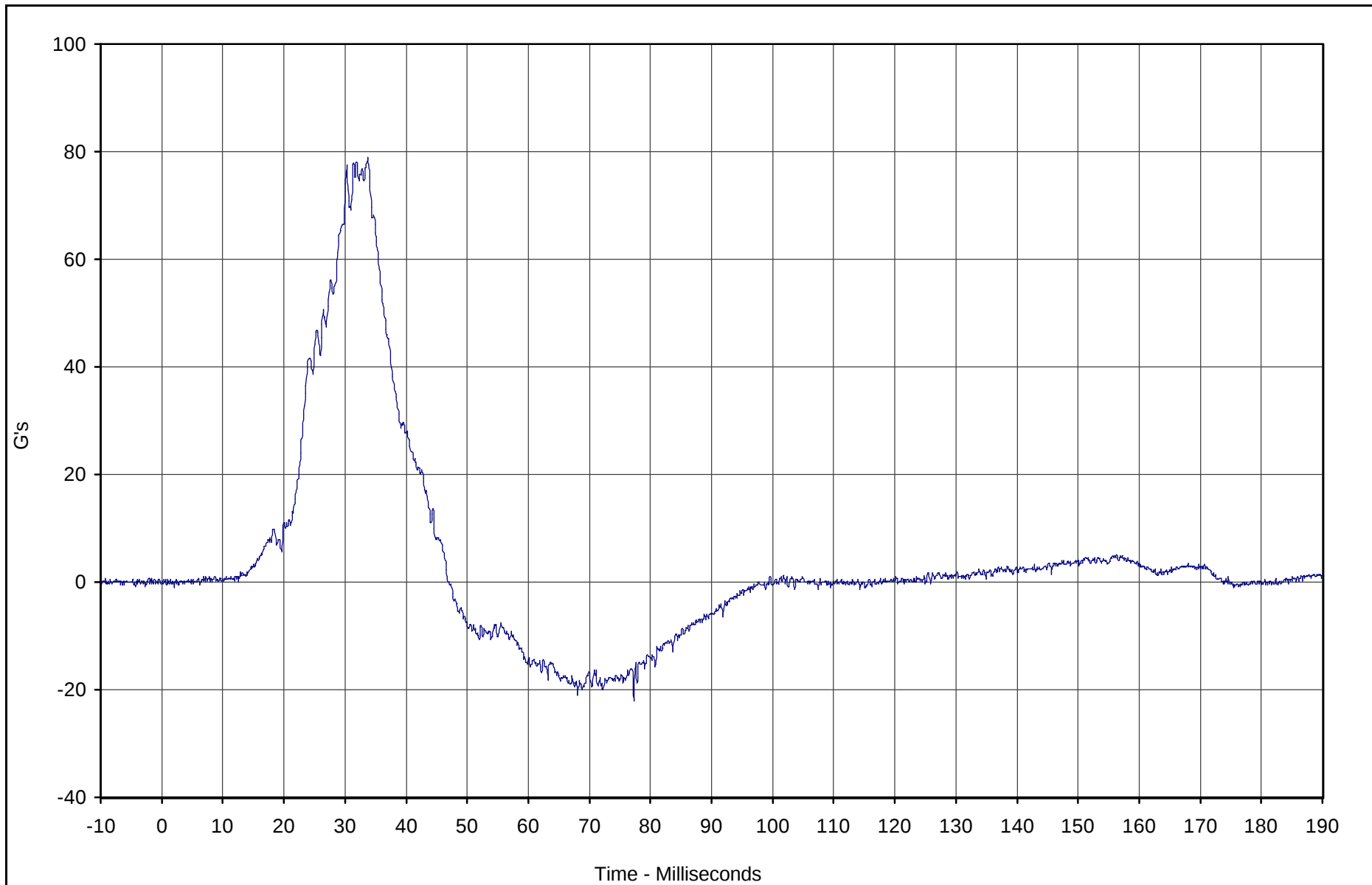


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Redundant Y	020	FIL	G's	78.9	33.7	-22.1	77.3	1000

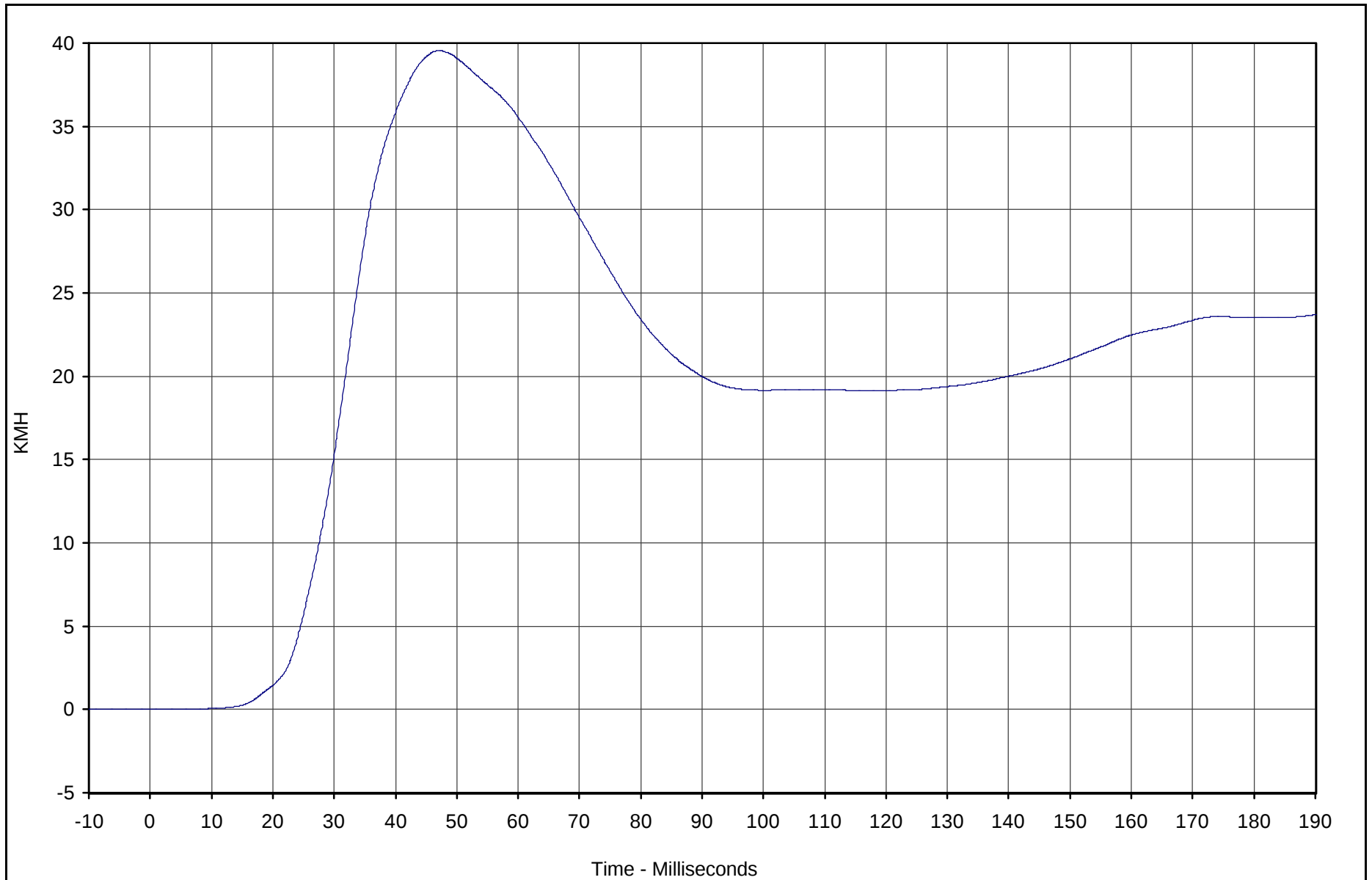


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Redundant Y Velocity	020	IN1	KMH	39.5	47.1	0.0	3.8	180

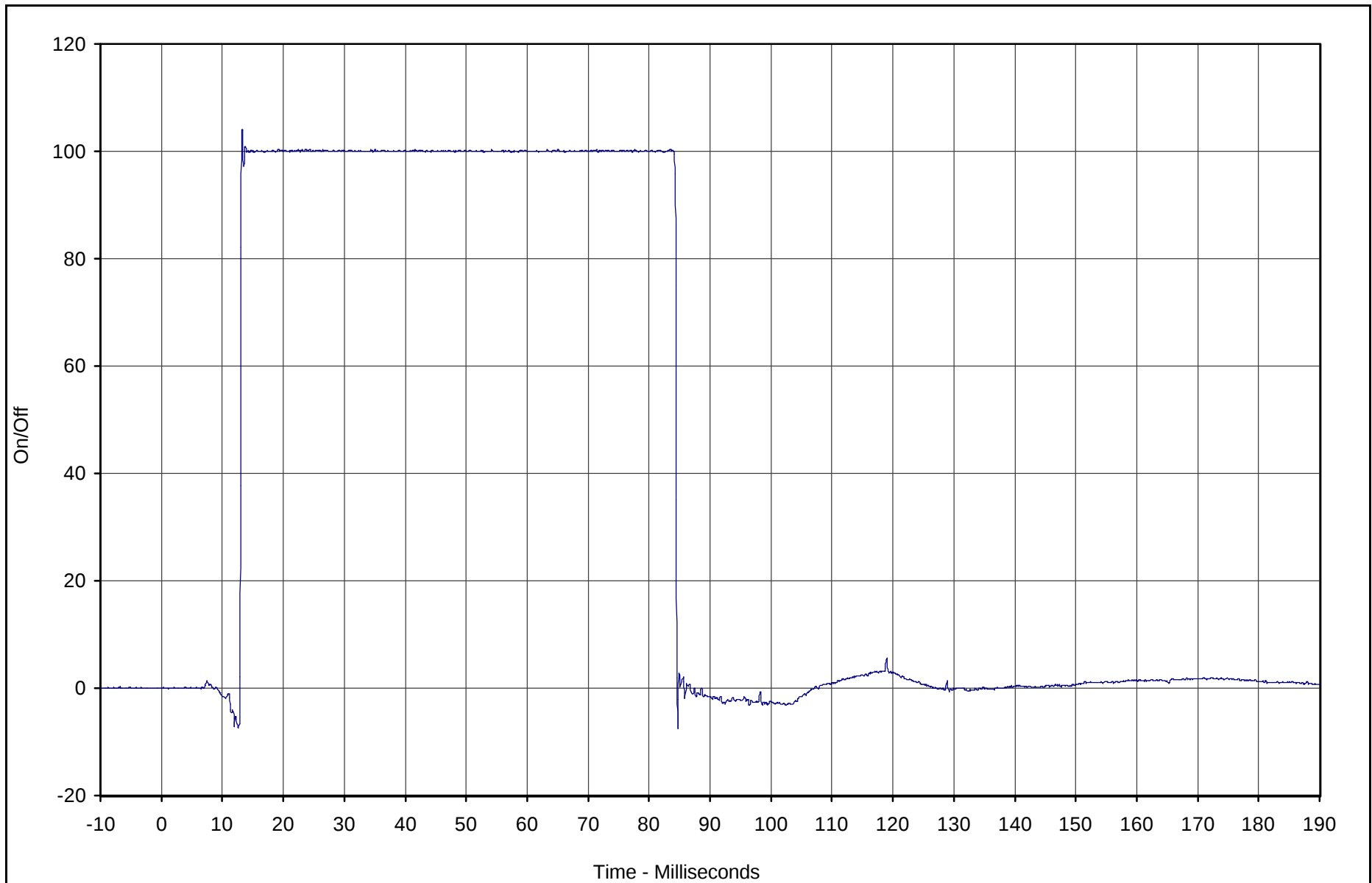


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Cross %	Time	SAE Class
Driver Thorax Contact	021	FIL	On/Off	104.0	13.2	50.0	13.1	1000

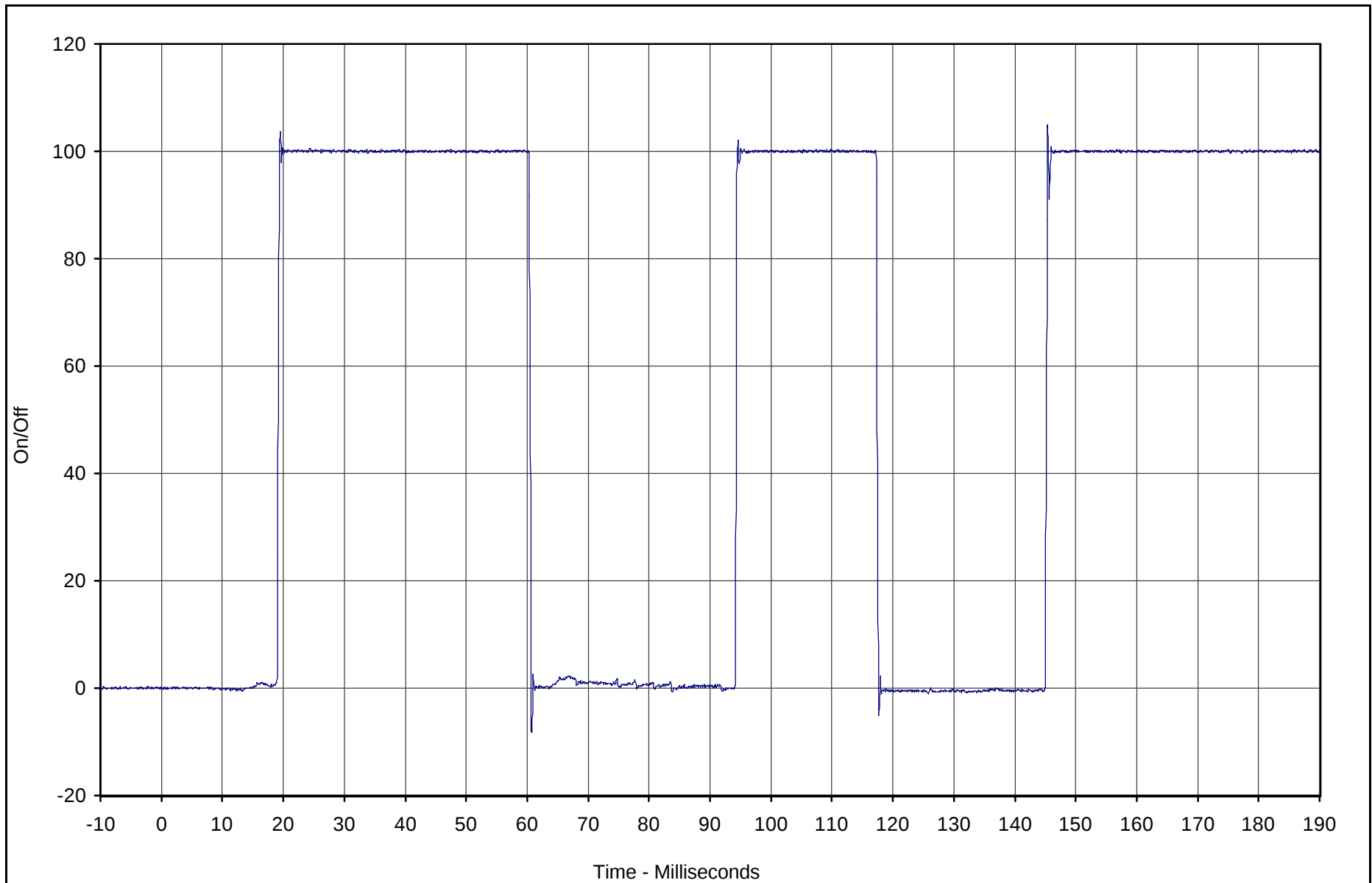


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Cross %	Time	SAE Class
Driver Pelvis Contact	022	FIL	On/Off	104.4	145.4	50.0	19.2	1000

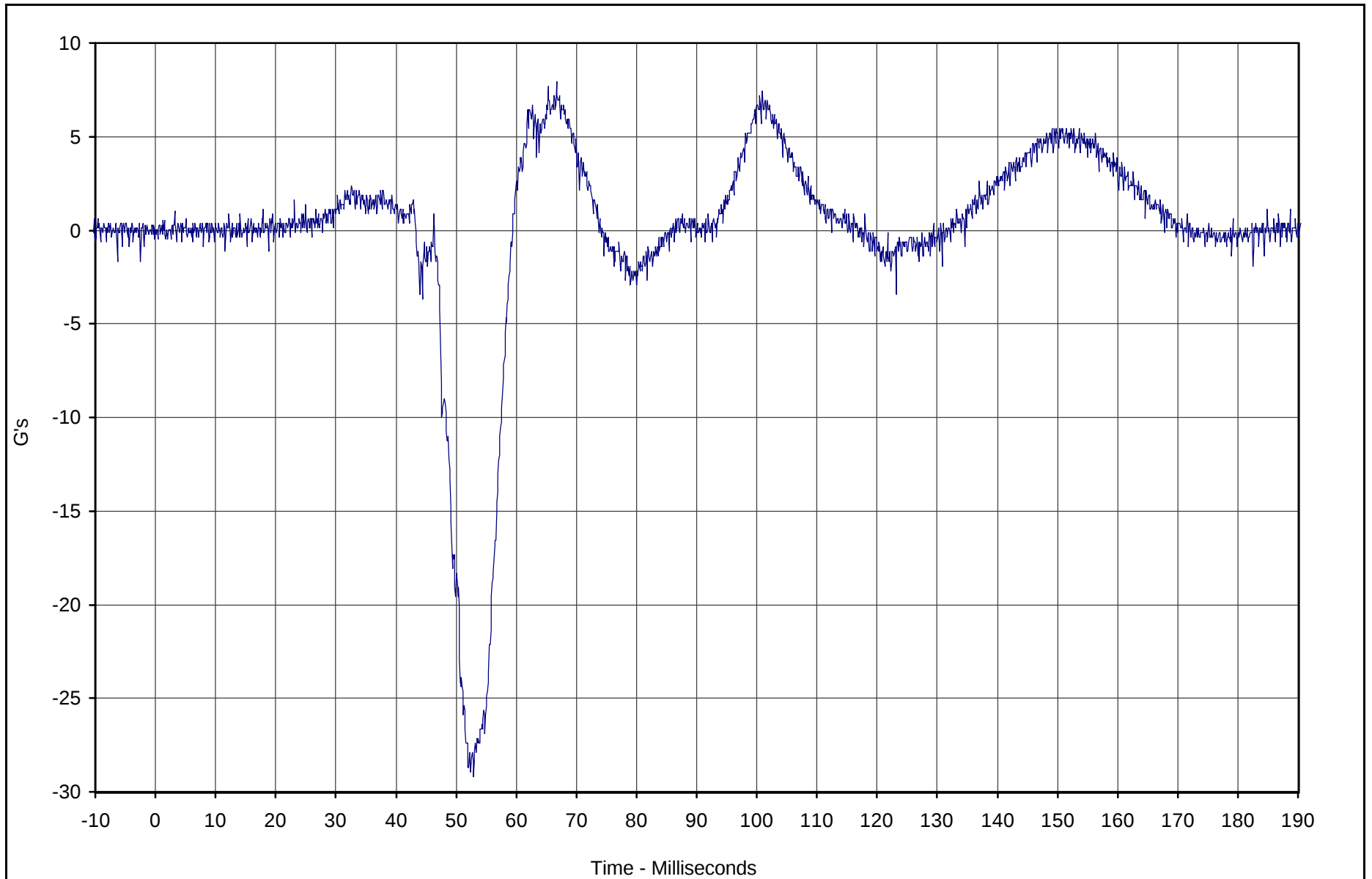


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Primary X	023	FIL	G's	7.9	66.7	-29.2	52.9	1000

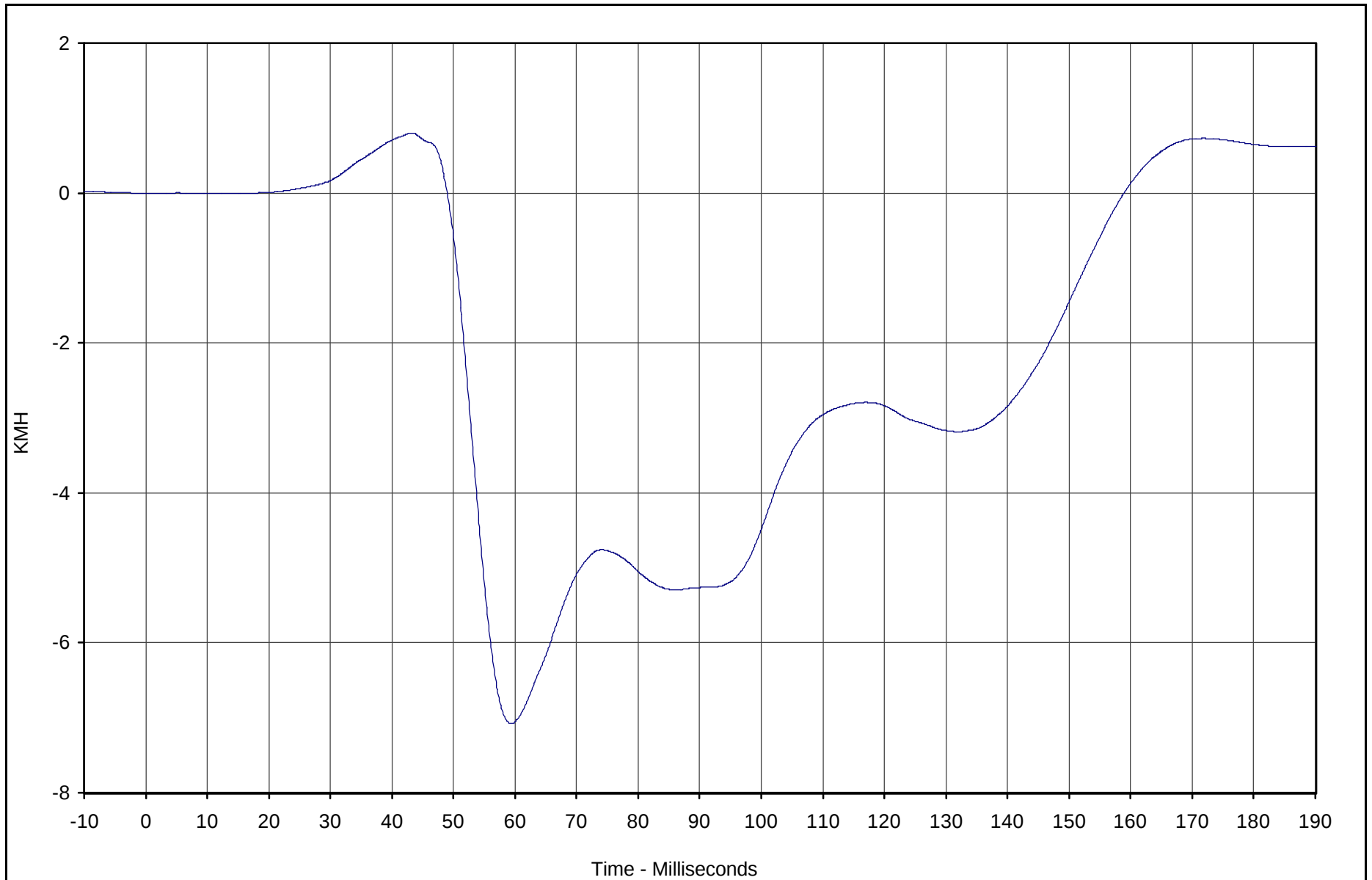


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Primary X Velocity	023	IN1	KMH	0.8	43.2	-7.1	59.4	180

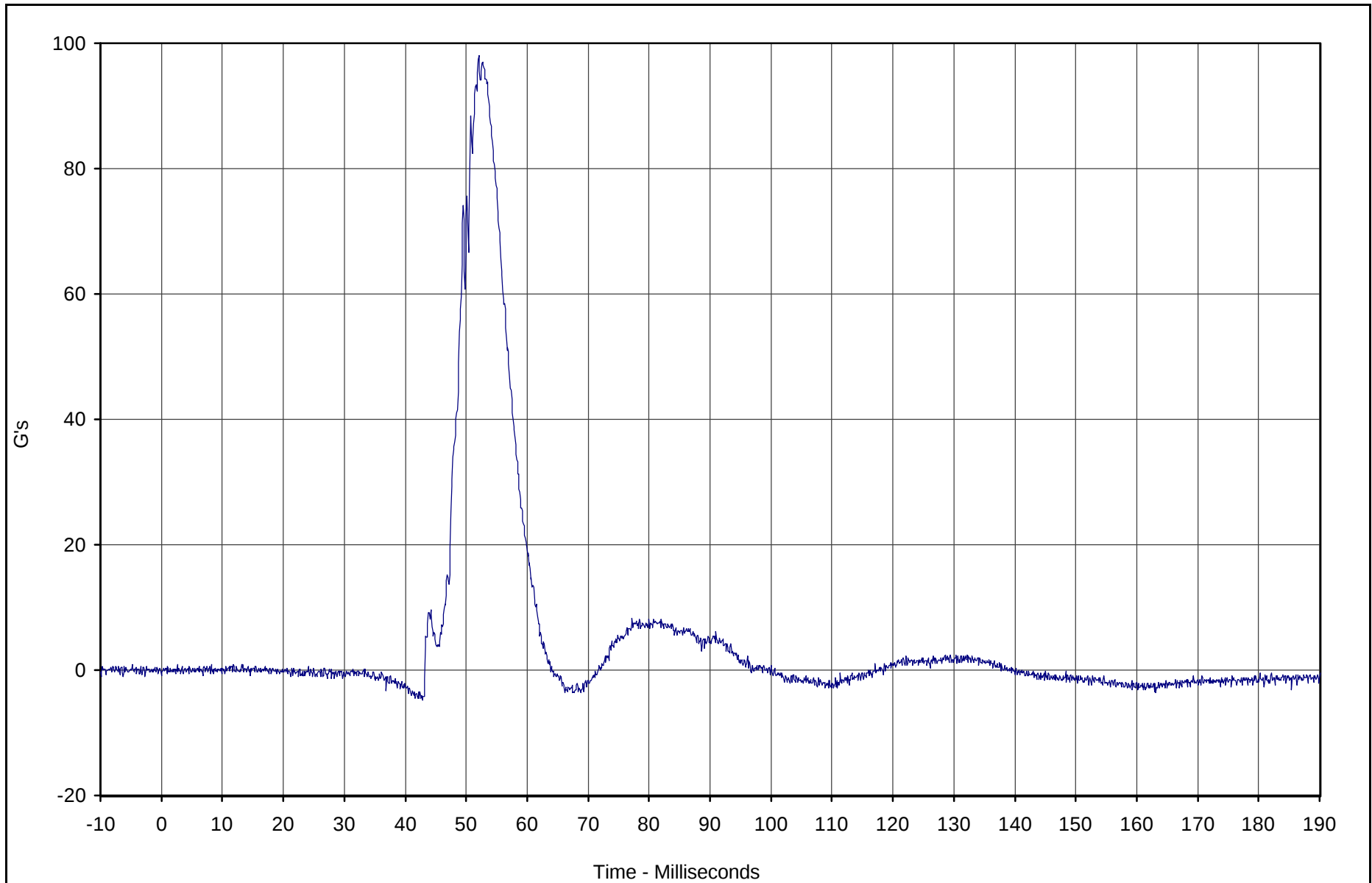


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Primary Y	024	FIL	G's	98.0	52.1	-4.7	42.8	1000

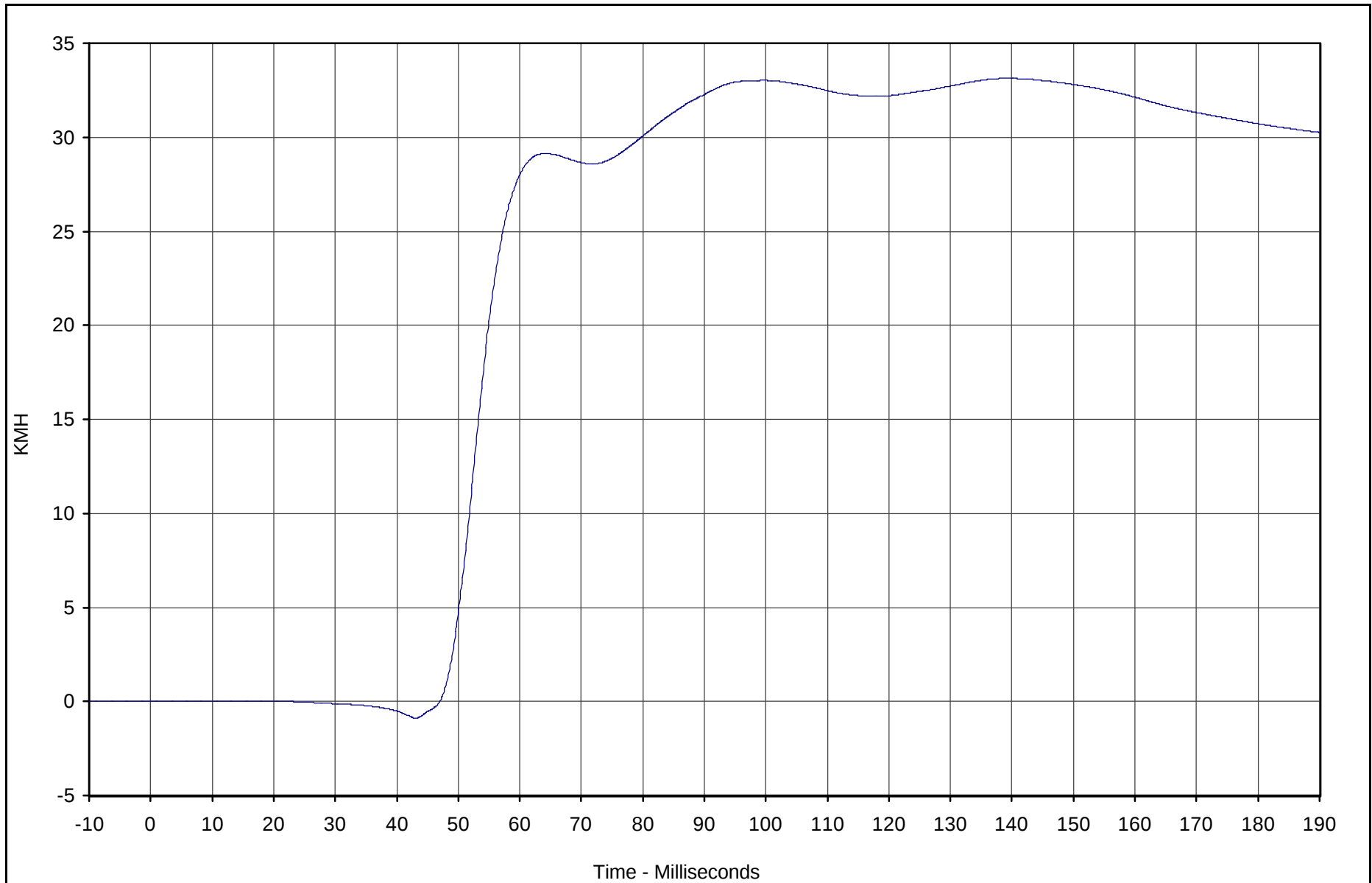


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Primary Y Velocity	024	IN1	KMH	33.1	139.3	-0.9	43.1	180

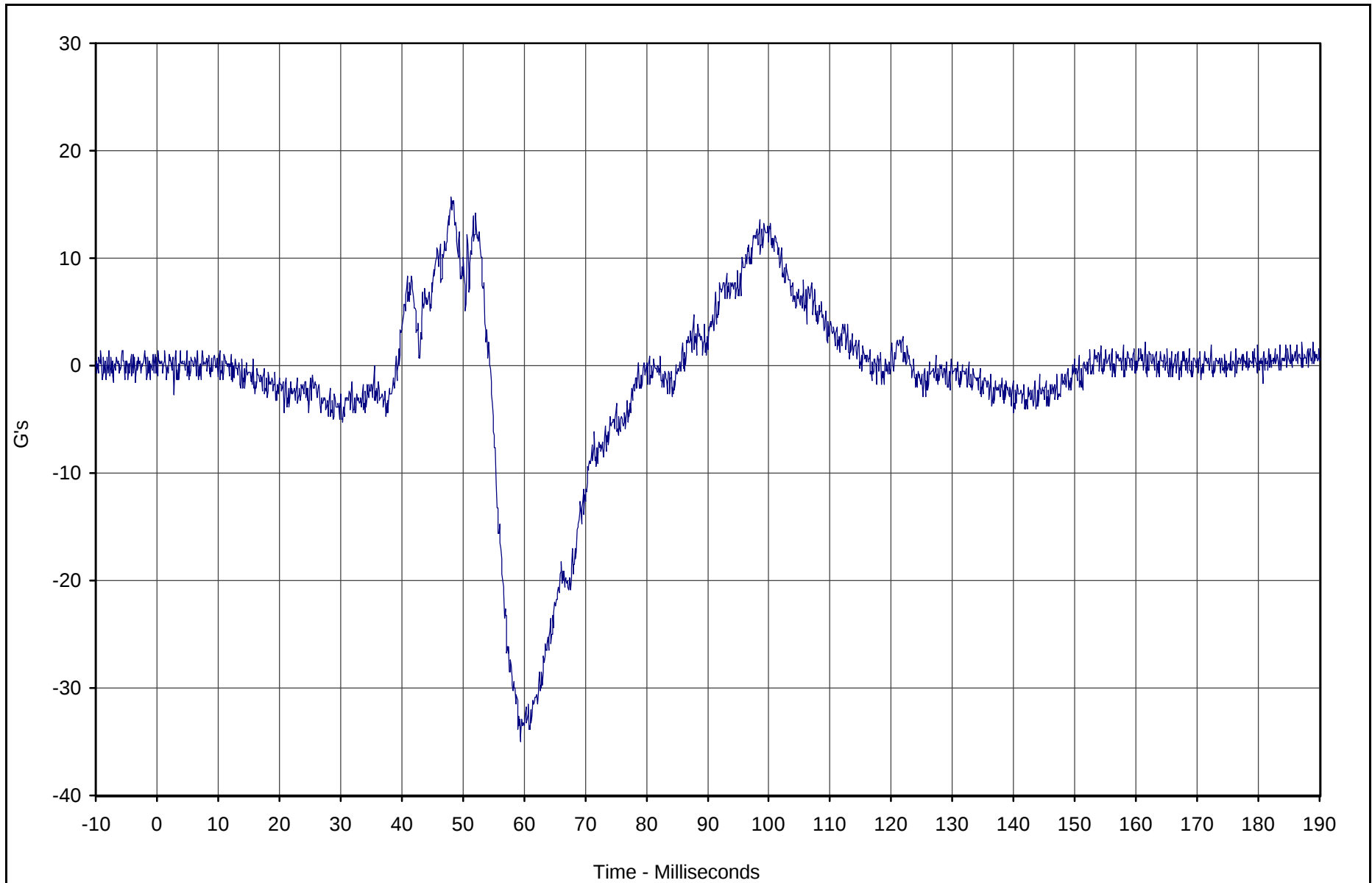


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Primary Z	025	FIL	G's	15.7	48.1	-35.0	59.4	1000

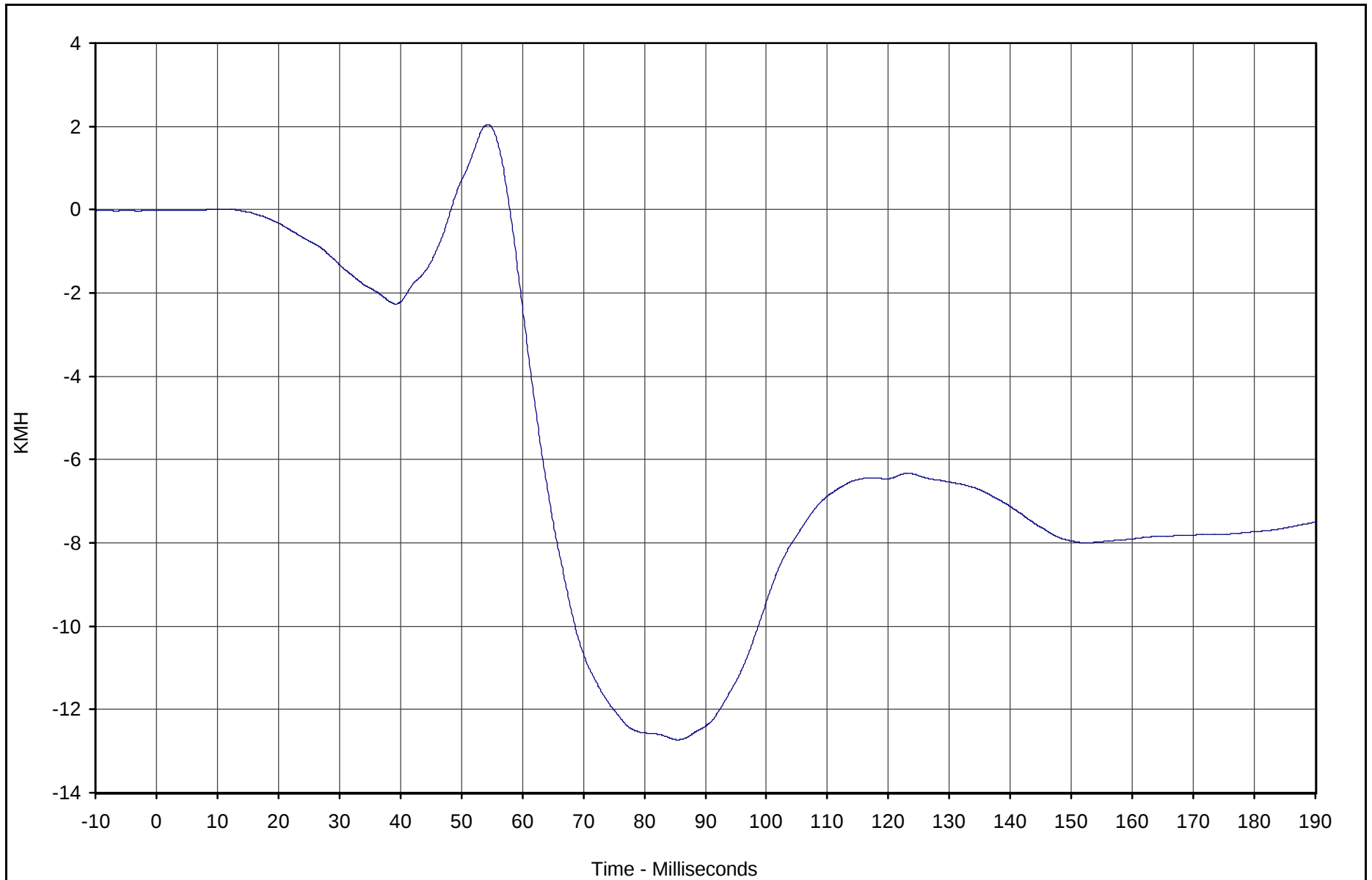


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Primary Z Velocity	025	IN1	KMH	2.0	54.3	-12.7	85.5	180

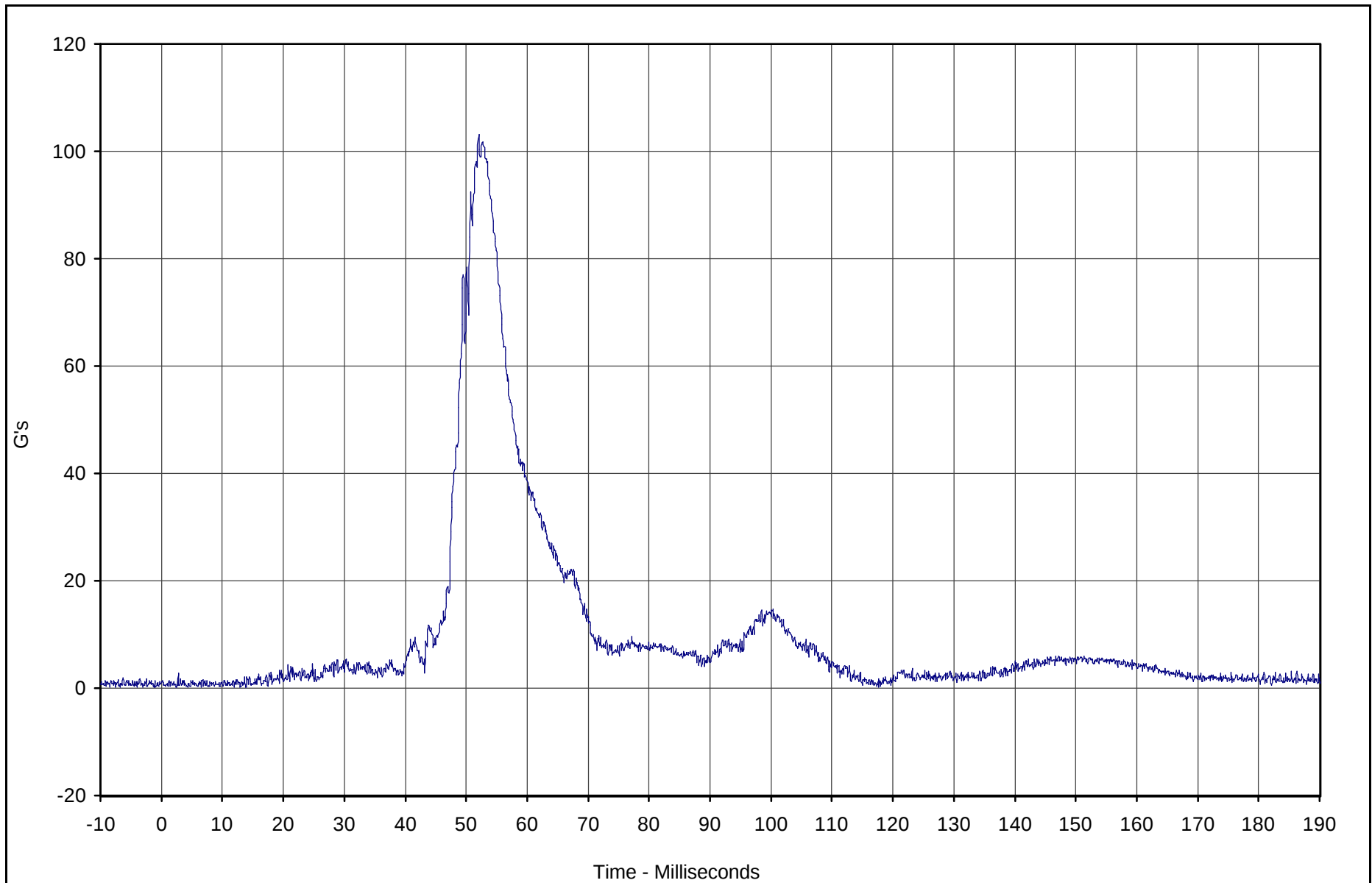


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Resultant Primary	023	RES	G's	103.1	52.1	0.1	117.7	1000

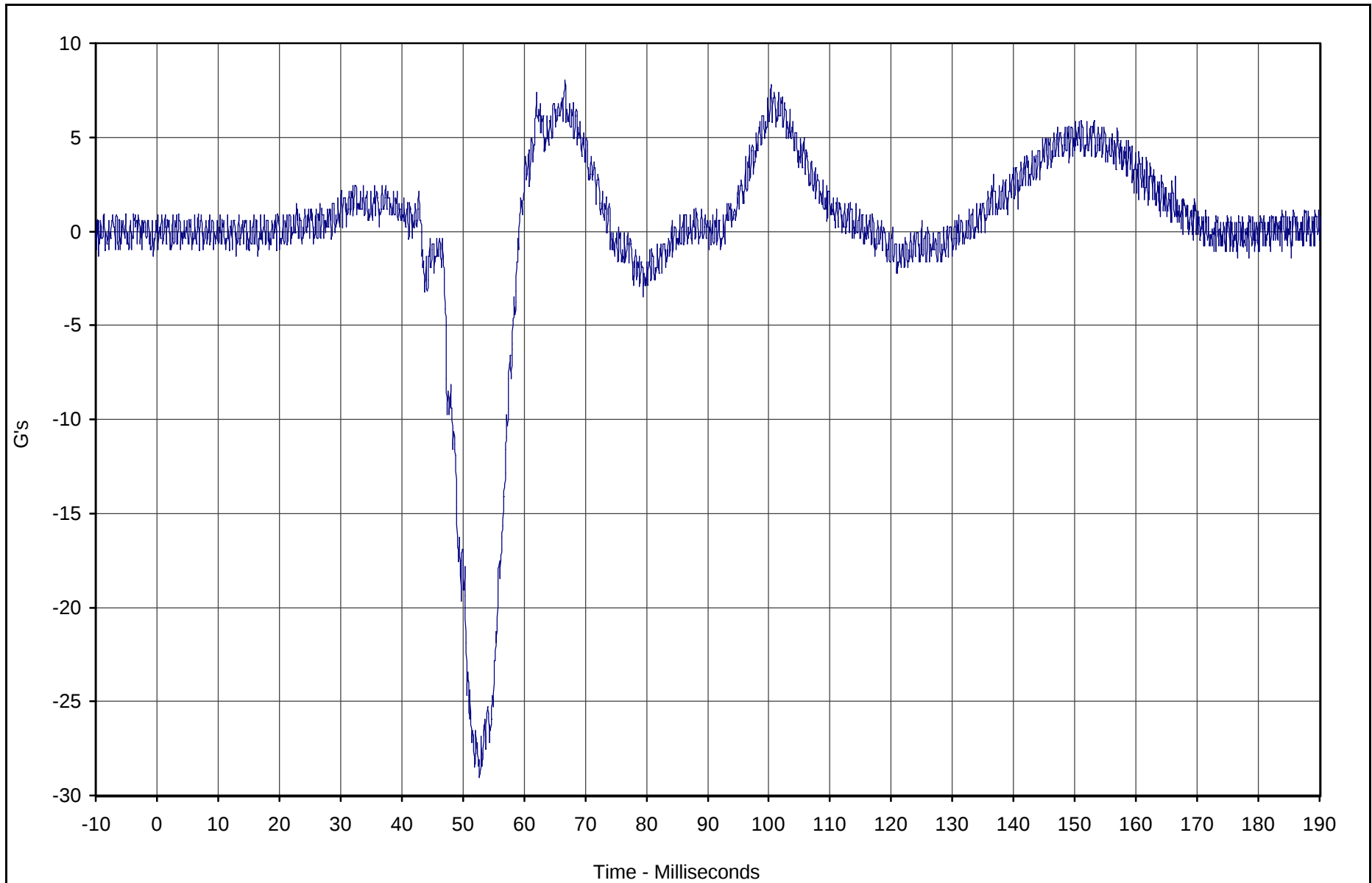


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Redundant X	026	FIL	G's	8.0	66.7	-29.0	52.7	1000

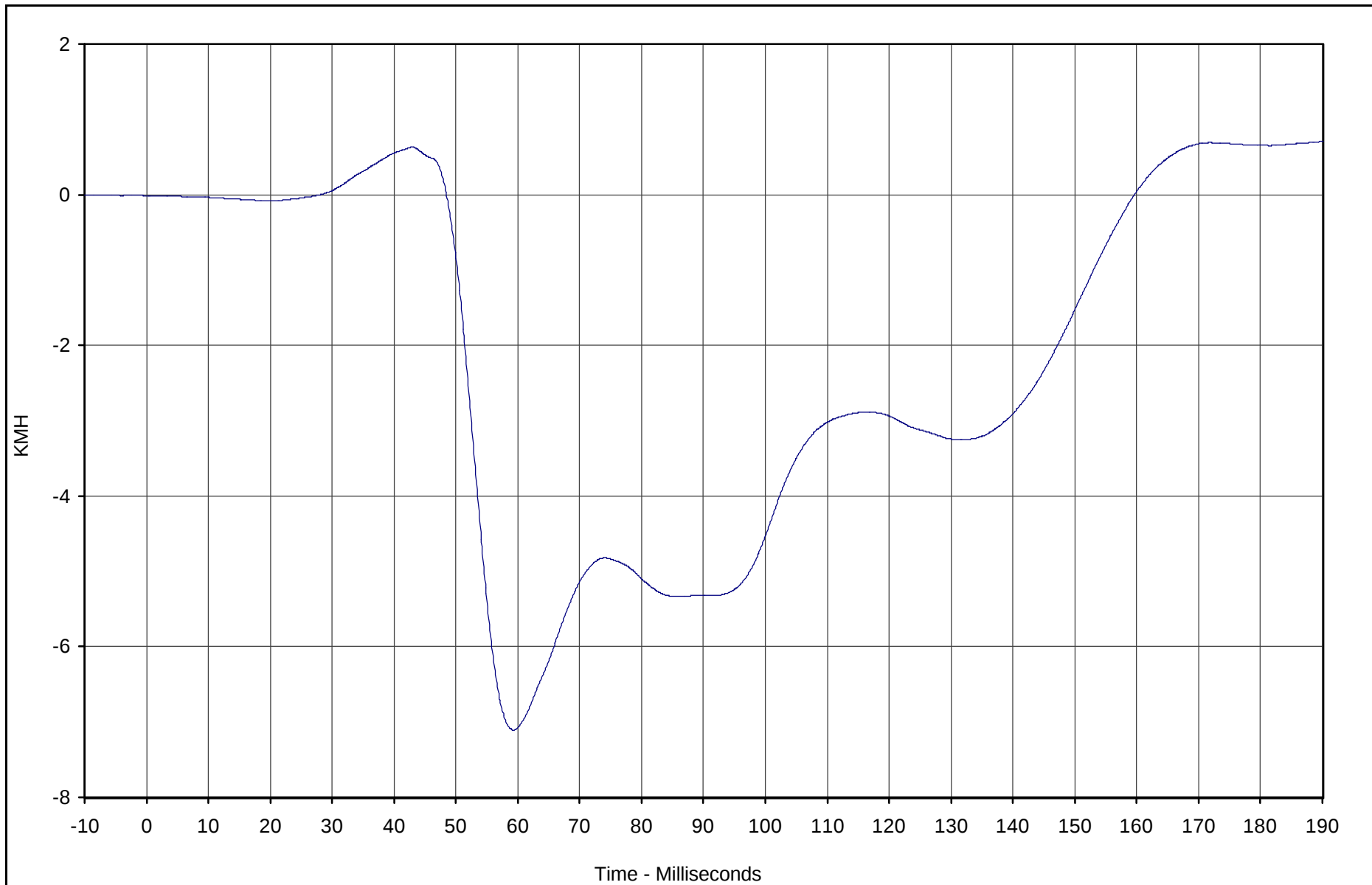


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Redundant X Velocity	026	IN1	KMH	0.7	189.9	-7.1	59.3	180

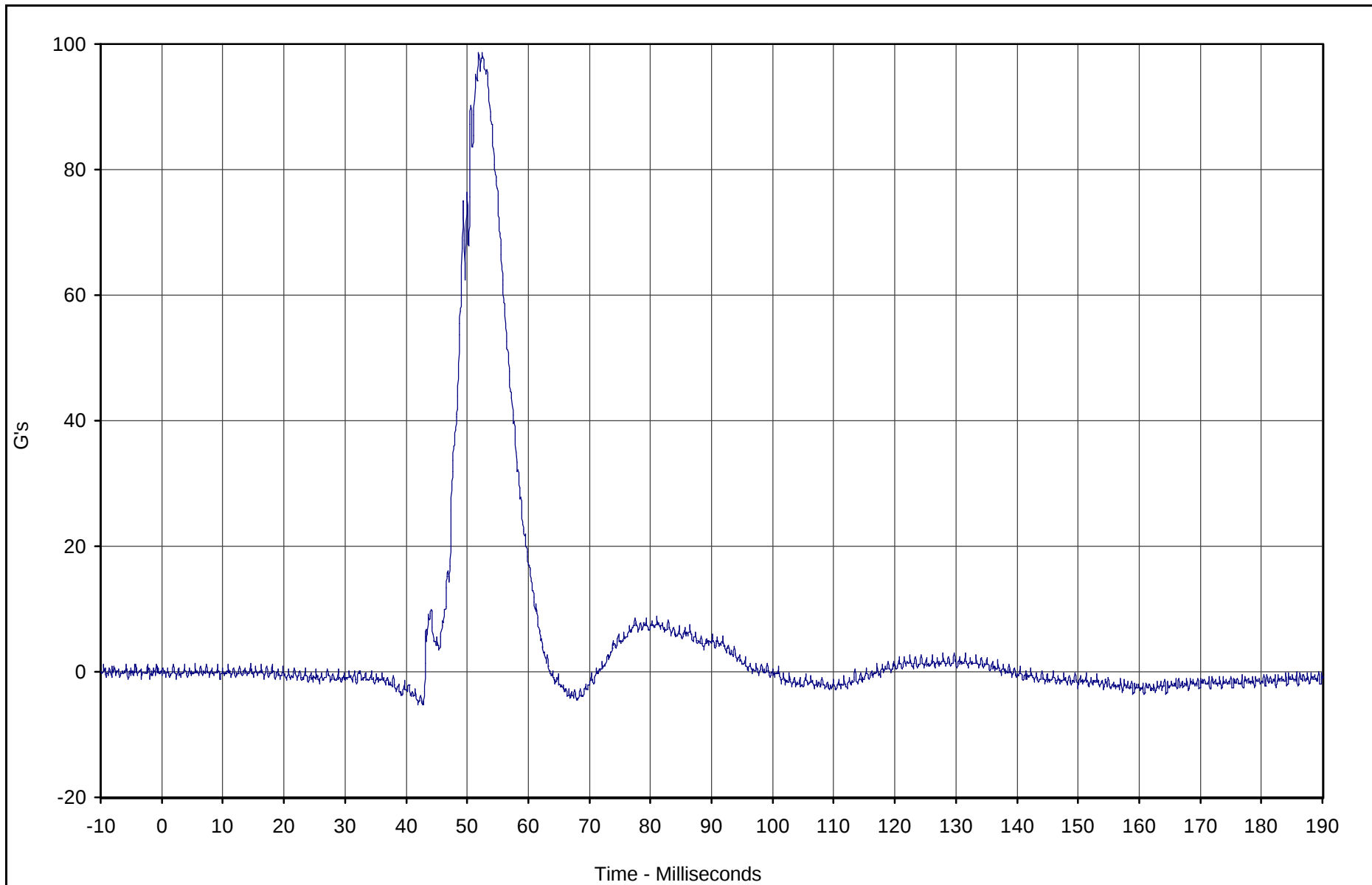


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Redundant Y	027	FIL	G's	98.7	51.9	-5.2	42.0	1000

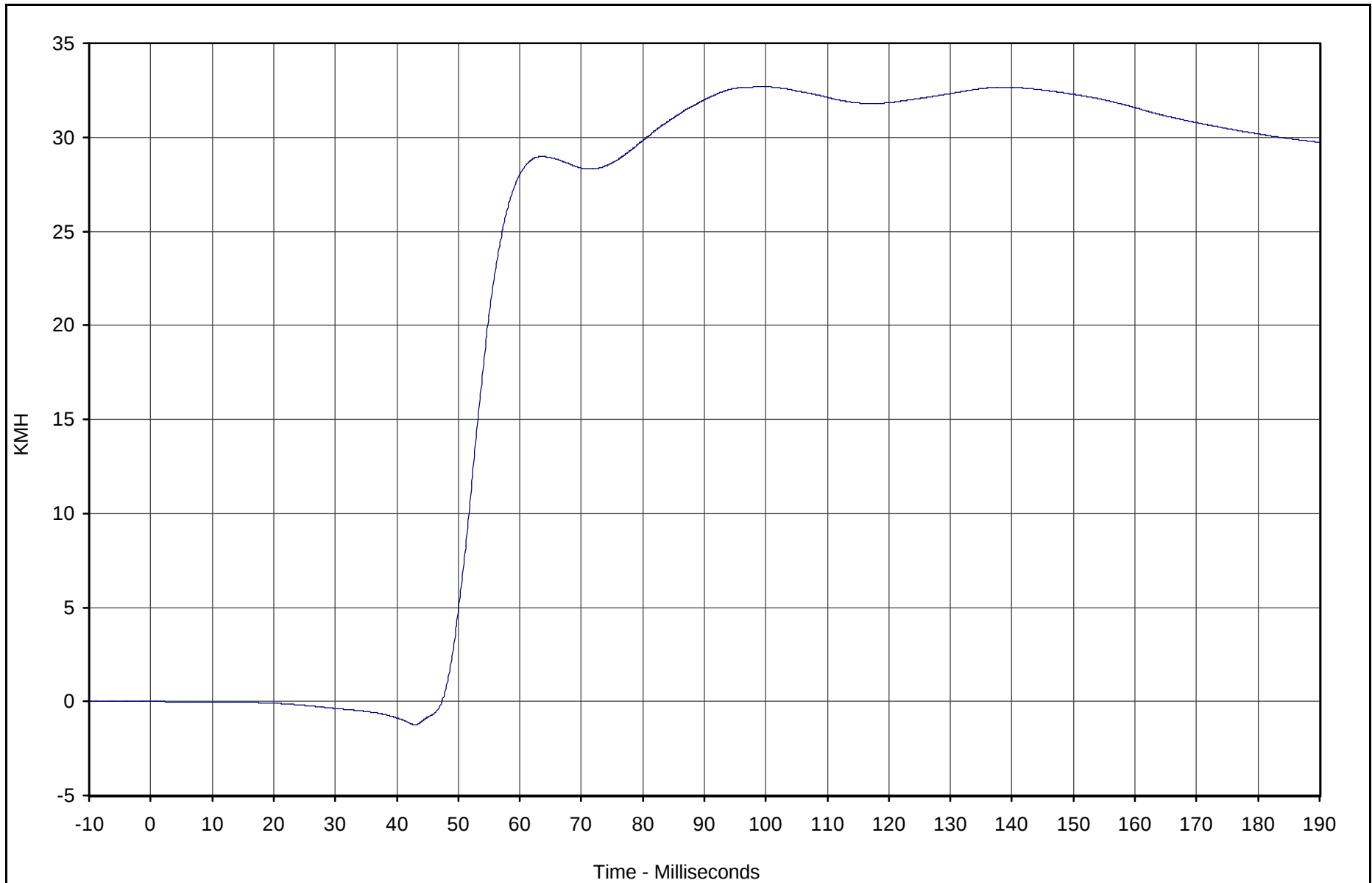


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Redundant Y Velocity	027	IN1	KMH	32.7	99.5	-1.2	43.0	180

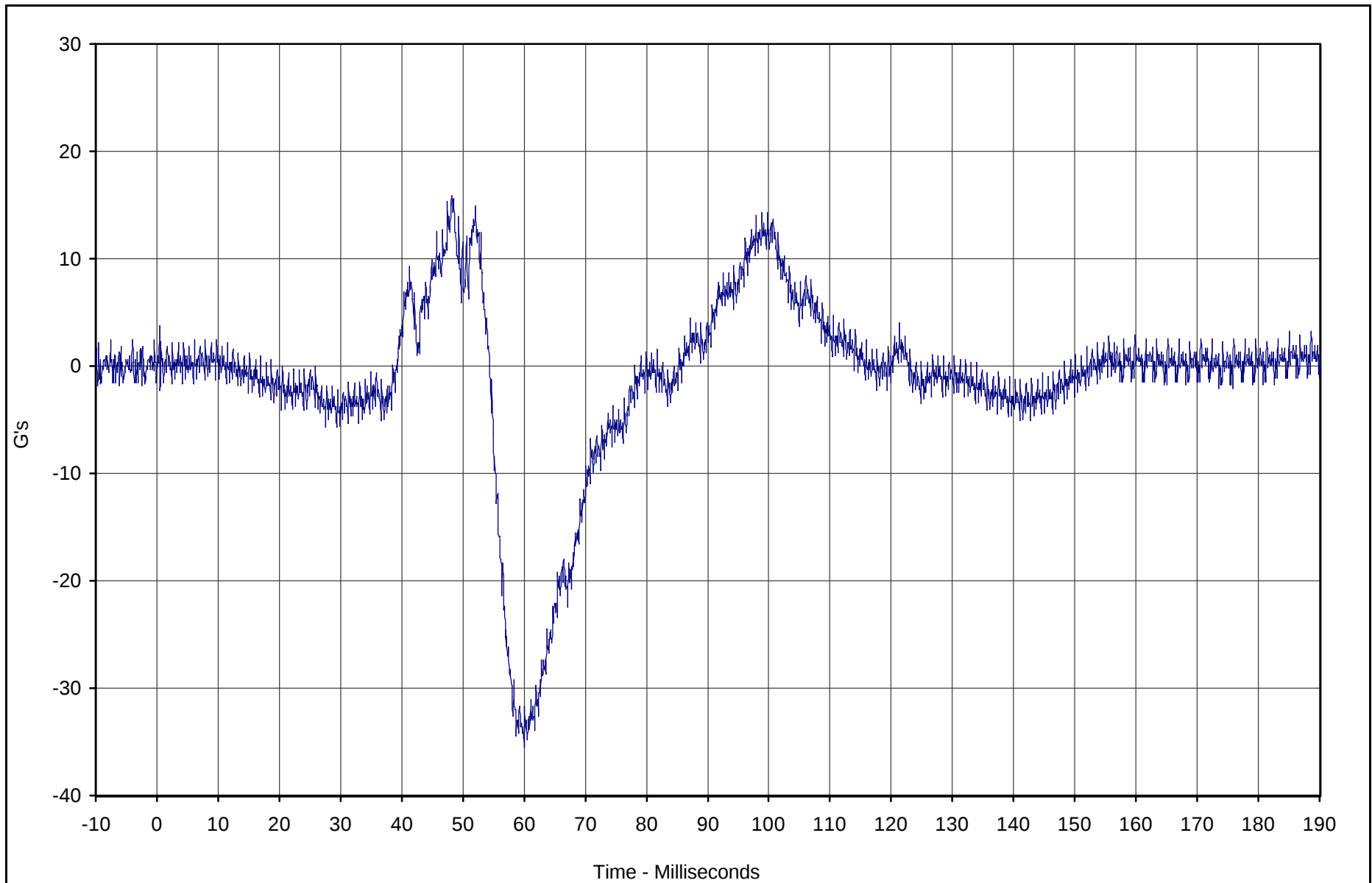


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Redundant Z	028	FIL	G's	15.8	48.2	-35.4	60.0	1000

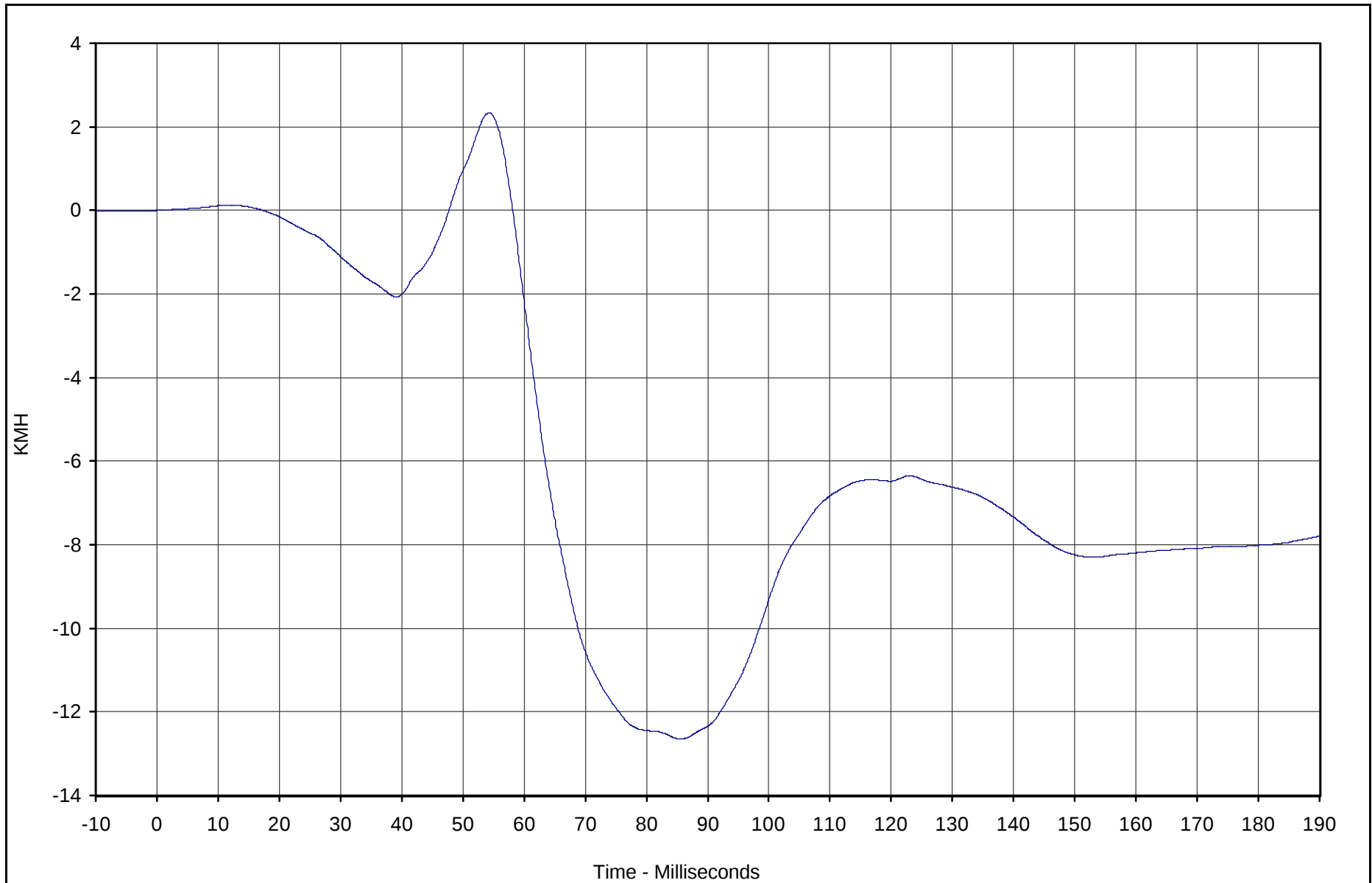


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Redundant Z Velocity	028	IN1	KMH	2.3	54.3	-12.7	85.6	180

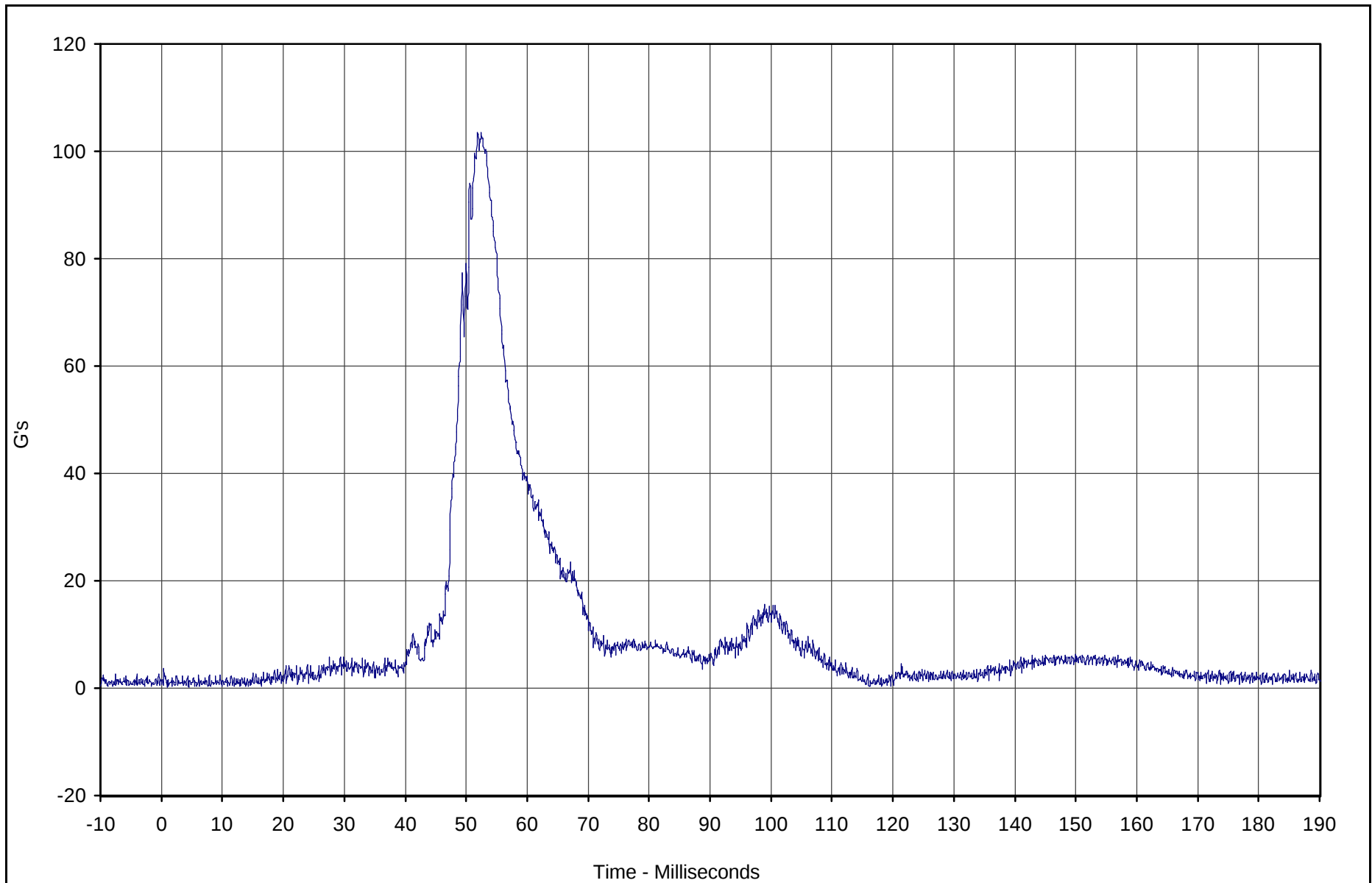


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Resultant Redundant	026	RES	G's	103.5	51.9	0.1	0.9	1000

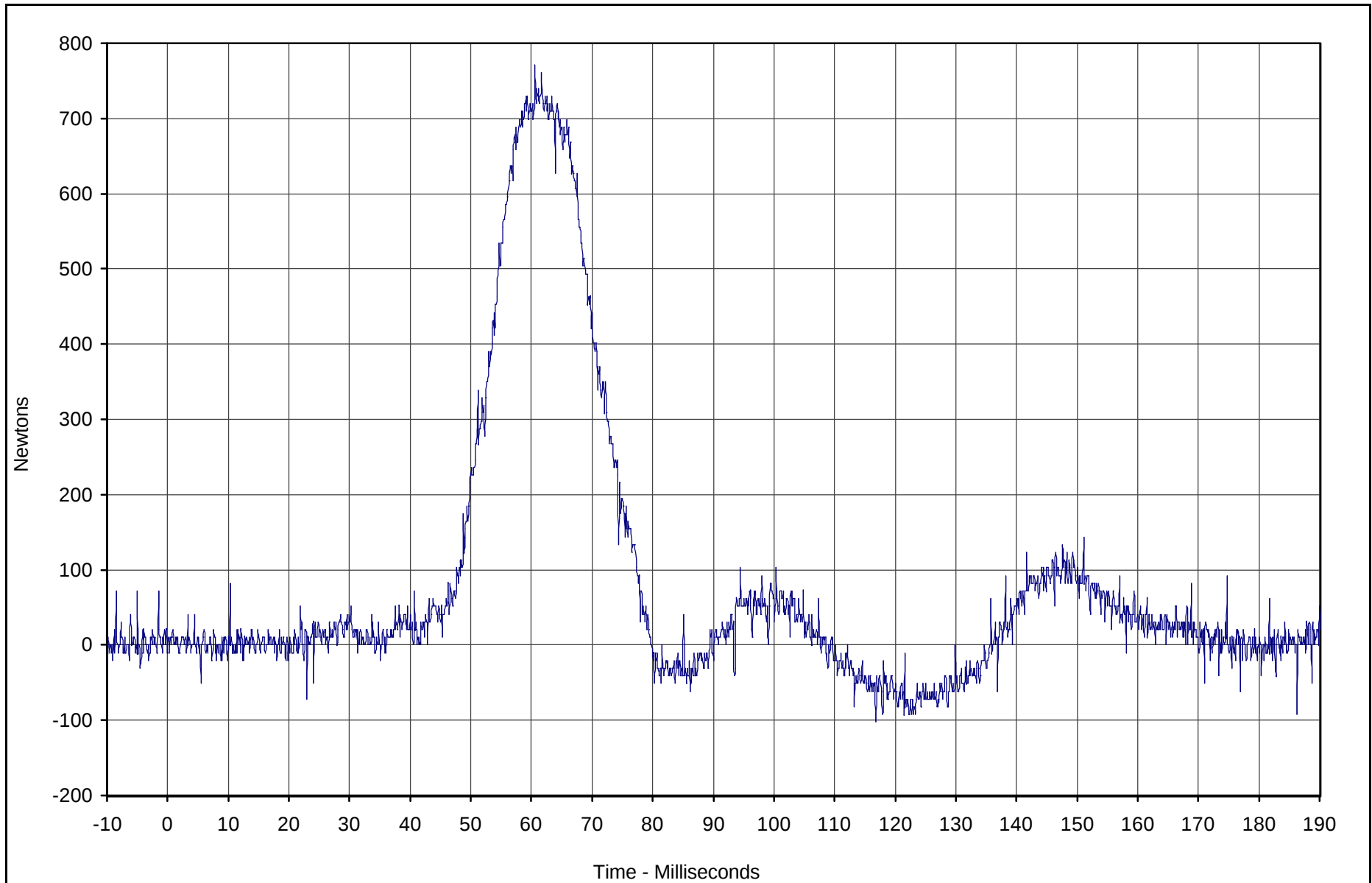


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Force X	029	FIL	Newtons	771.0	60.6	-102.8	116.8	1000

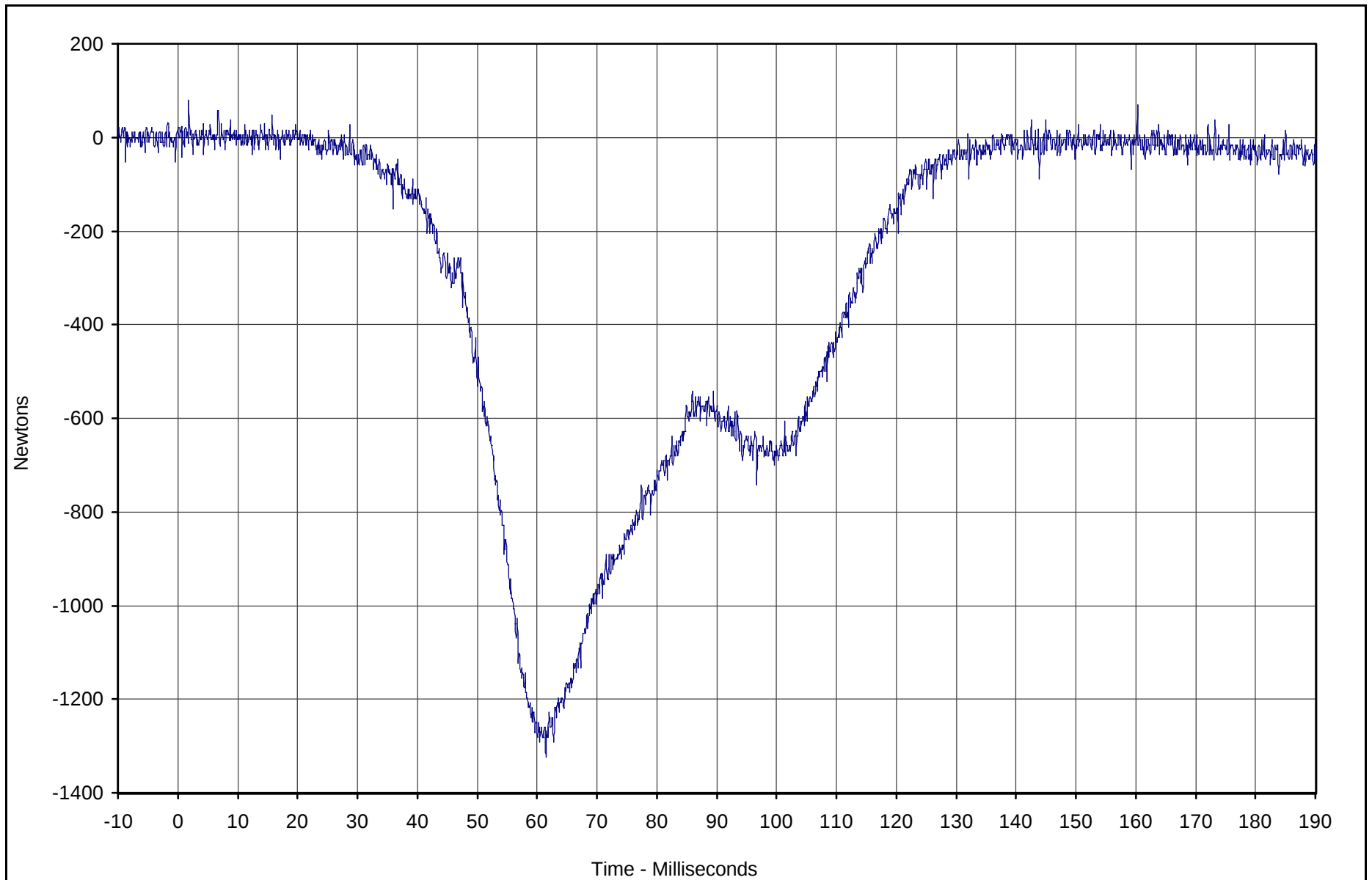


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Force Y	030	FIL	Newtons	79.4	1.8	-1323.3	61.5	1000

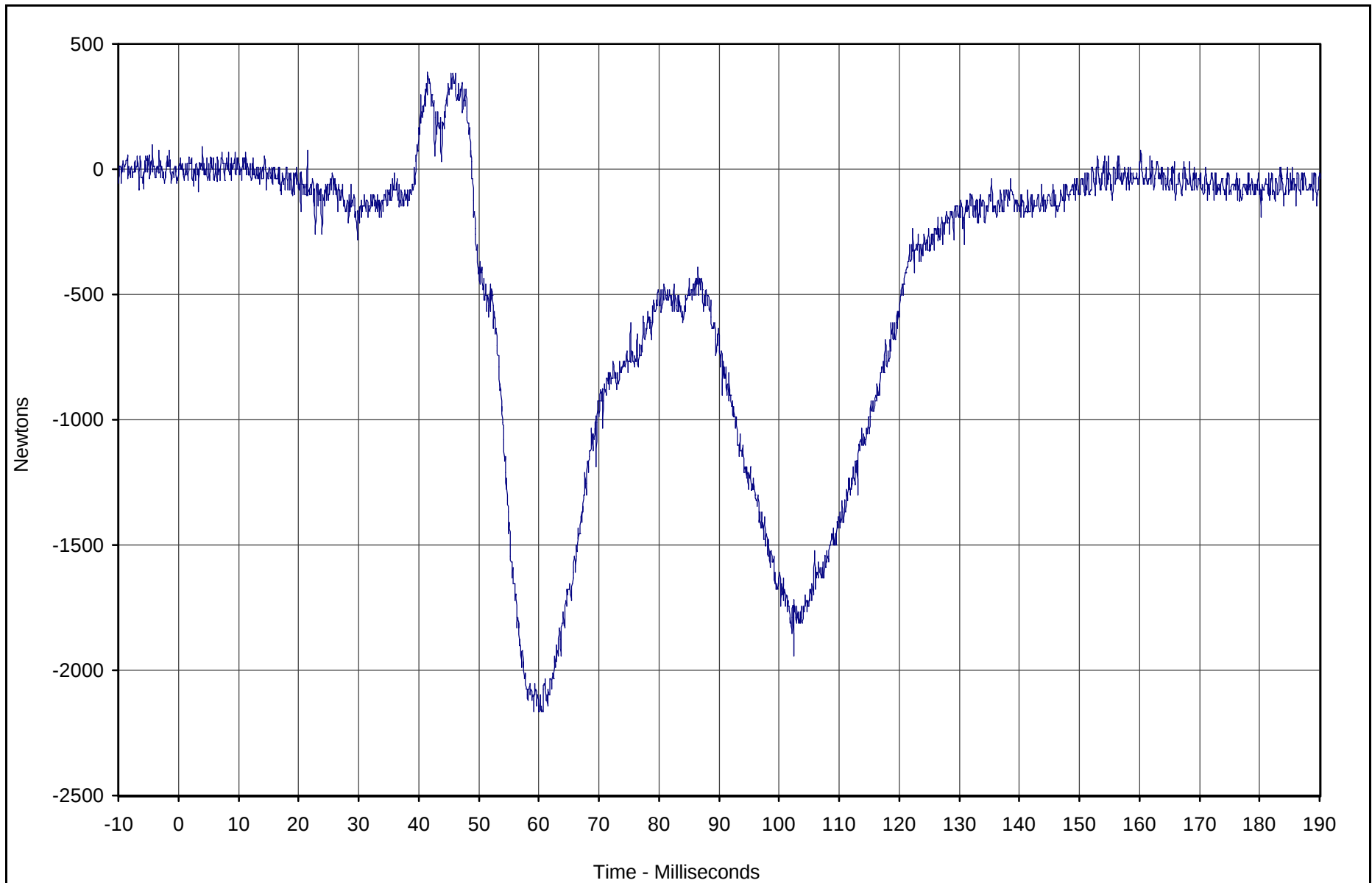


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Force Z	031	FIL	Newtons	384.7	41.5	-2165.0	59.2	1000

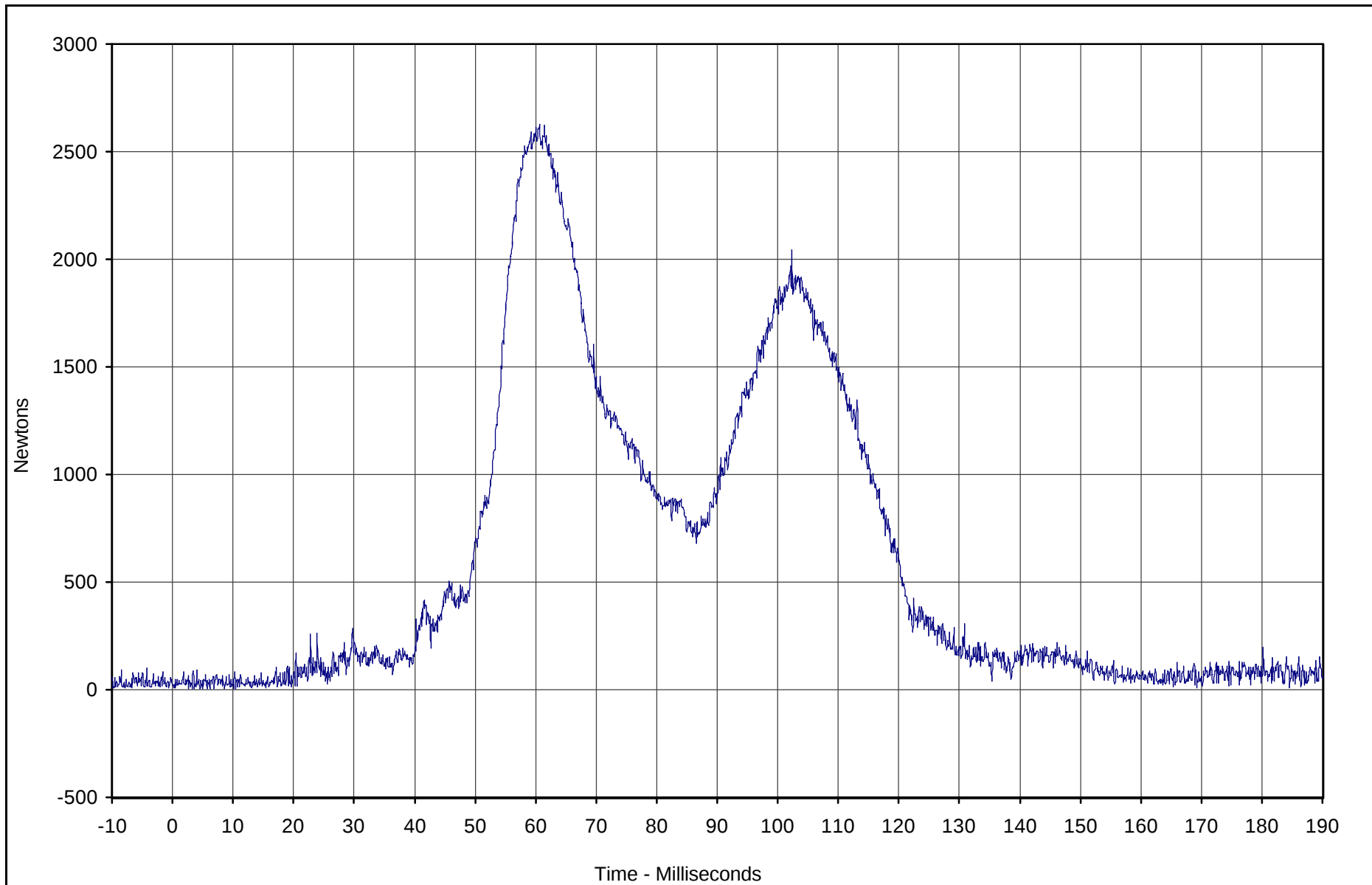


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Force Resultant	029	RES	Newtons	2626.0	60.6	5.0	2.7	1000

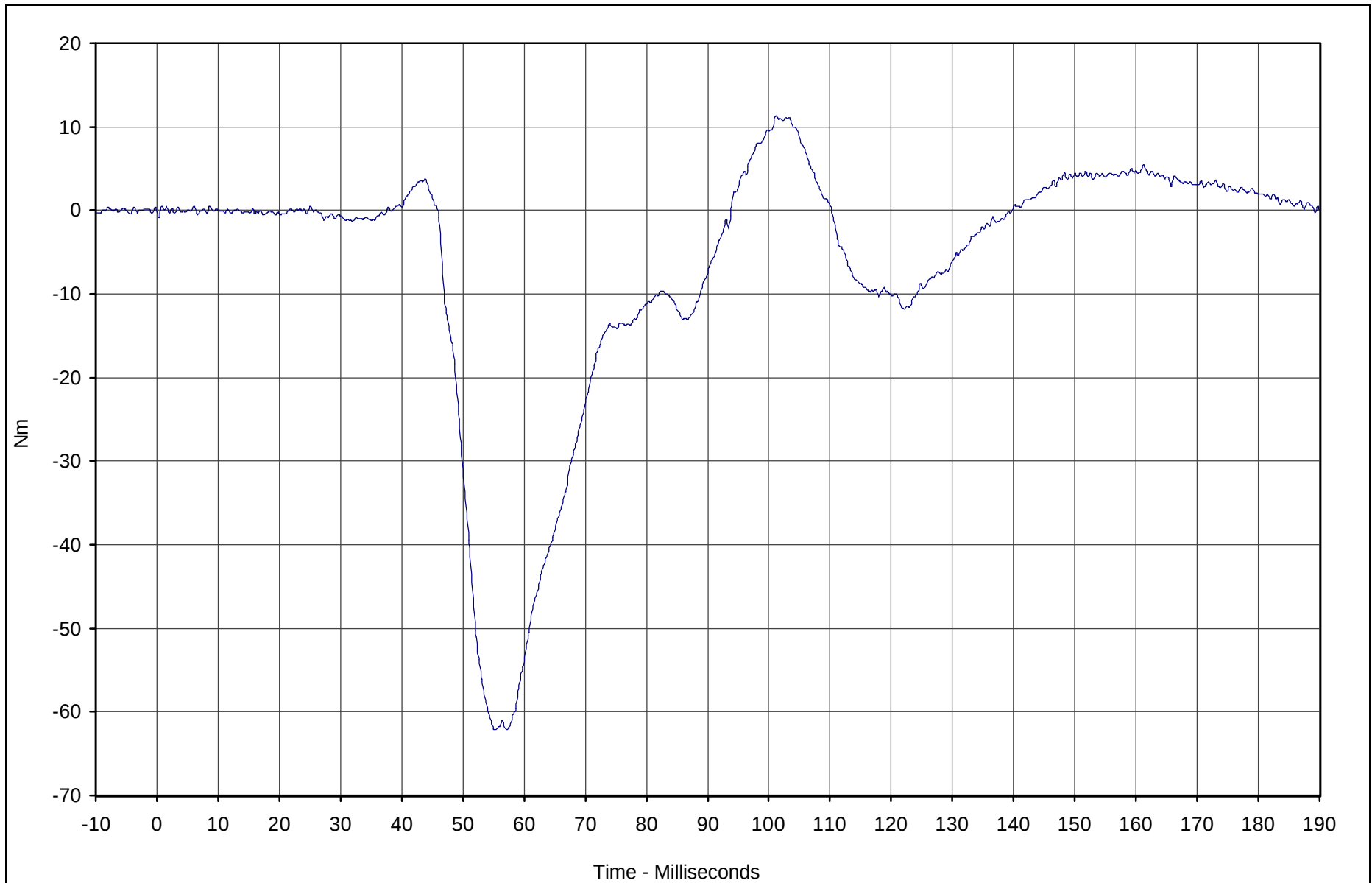


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Moment X	032	FIL	Nm	11.4	101.1	-62.1	55.3	600

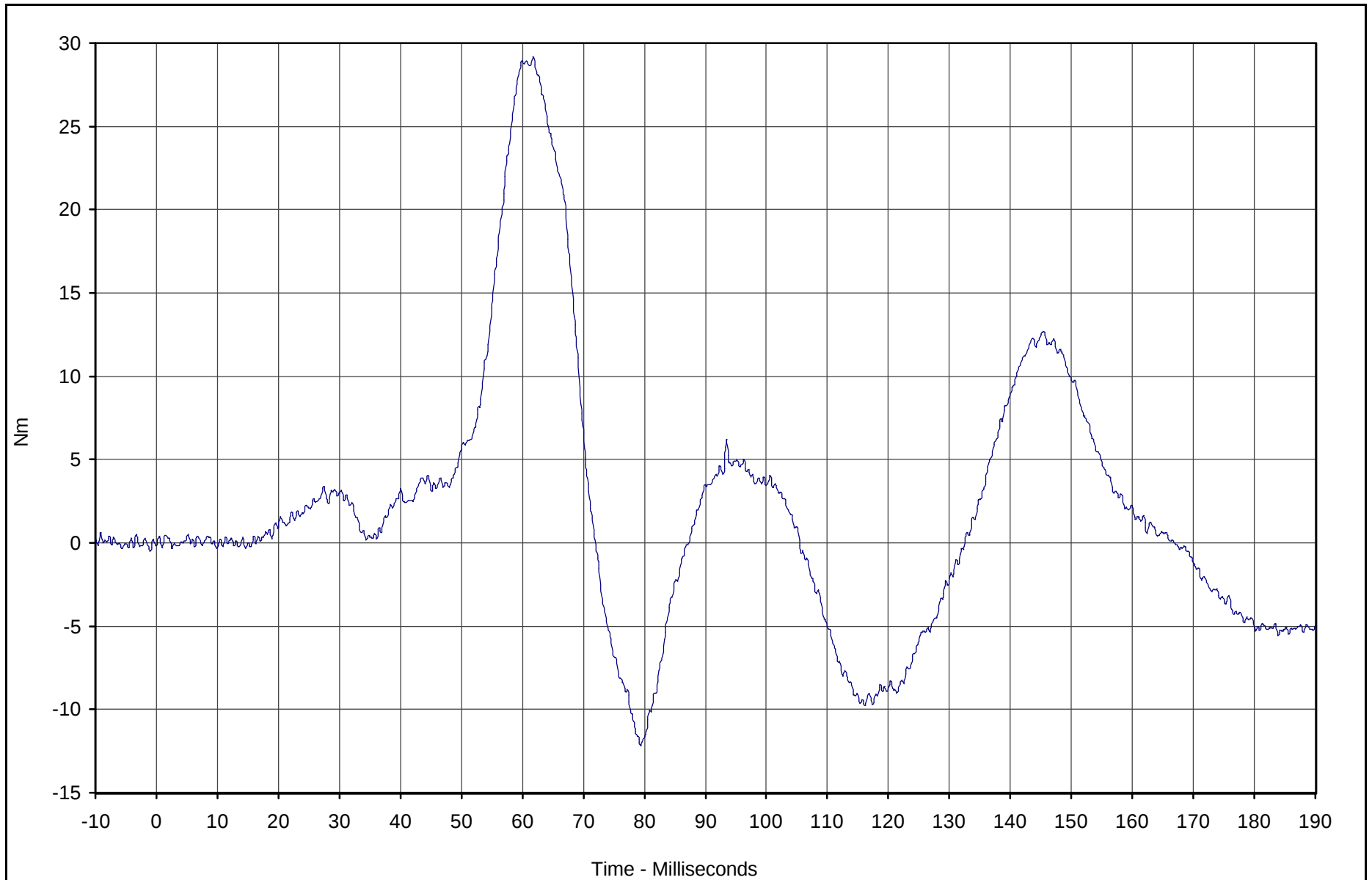


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Moment Y	033	FIL	Nm	29.2	61.8	-12.2	79.4	600

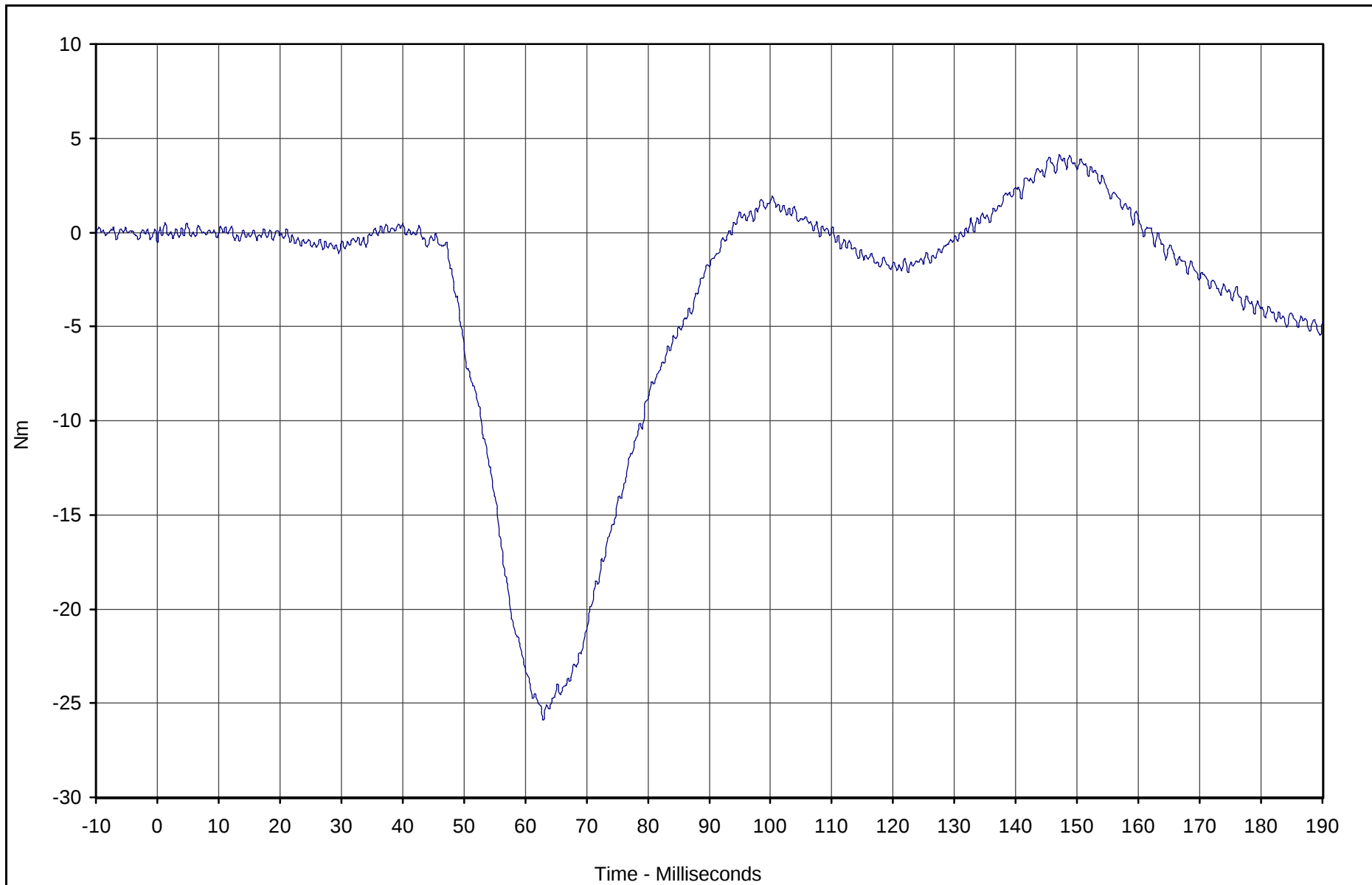


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Moment Z	034	FIL	Nm	4.1	147.1	-25.9	63.0	600

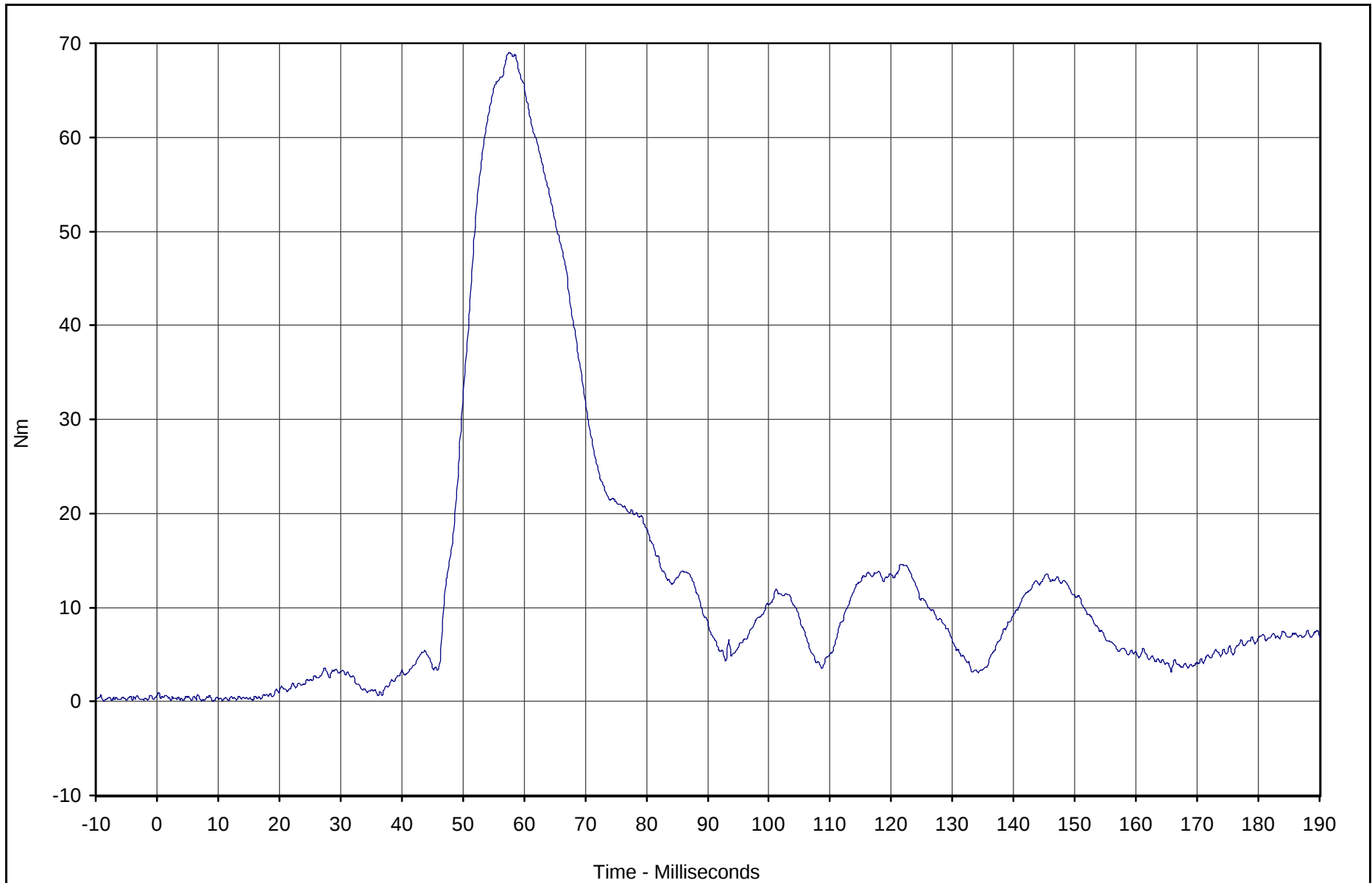


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Neck Moment Resultant	032	RES	Nm	69.0	57.5	0.0	7.3	600

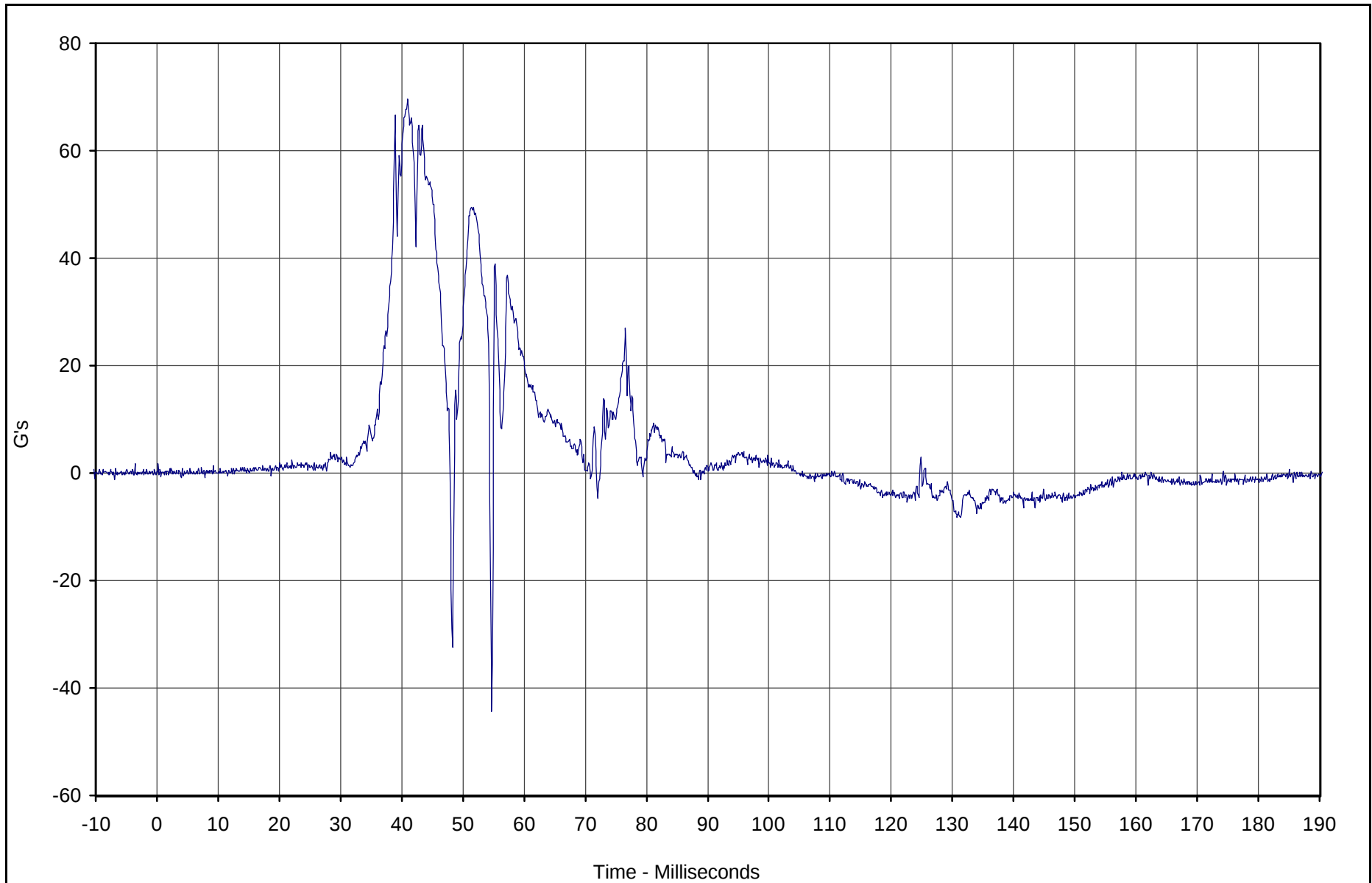


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Rib Primary Y	035	FIL	G's	69.6	41.0	-44.4	54.7	1000

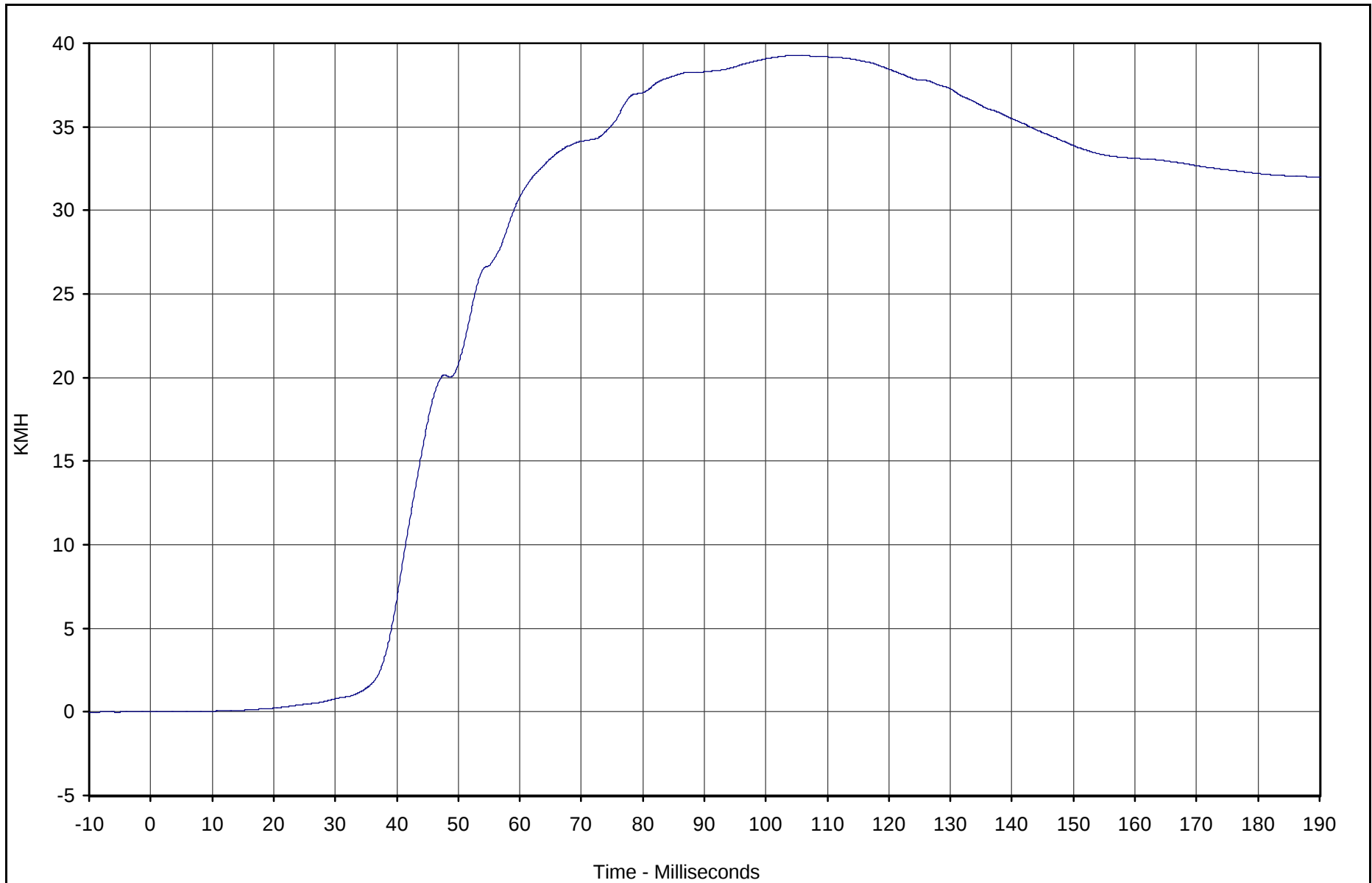


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Rib Primary Y Velocity	035	IN1	KMH	39.3	104.8	0.0	0.0	180

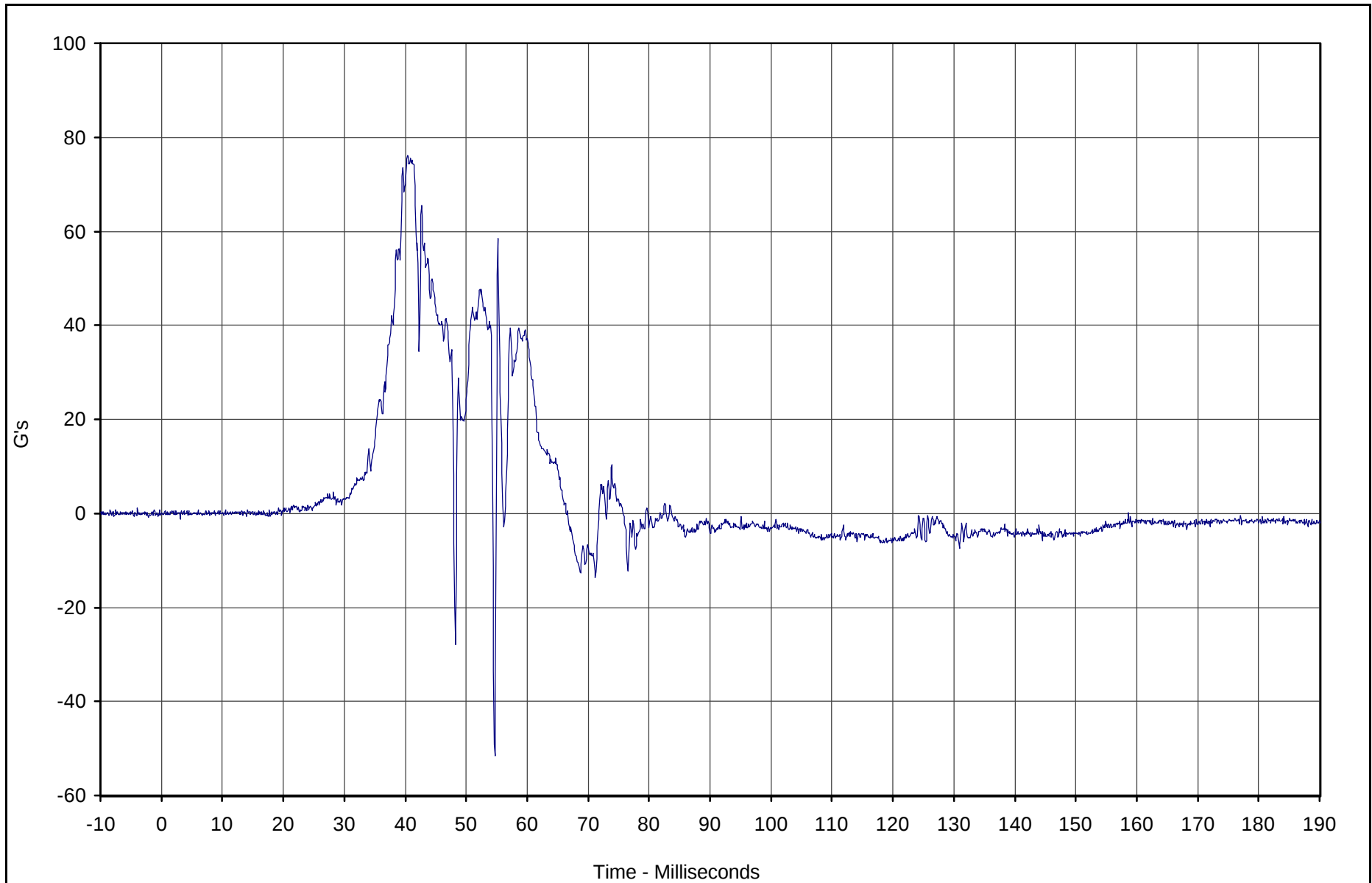


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Rib Primary Y	036	FIL	G's	76.1	40.4	-51.7	54.7	1000

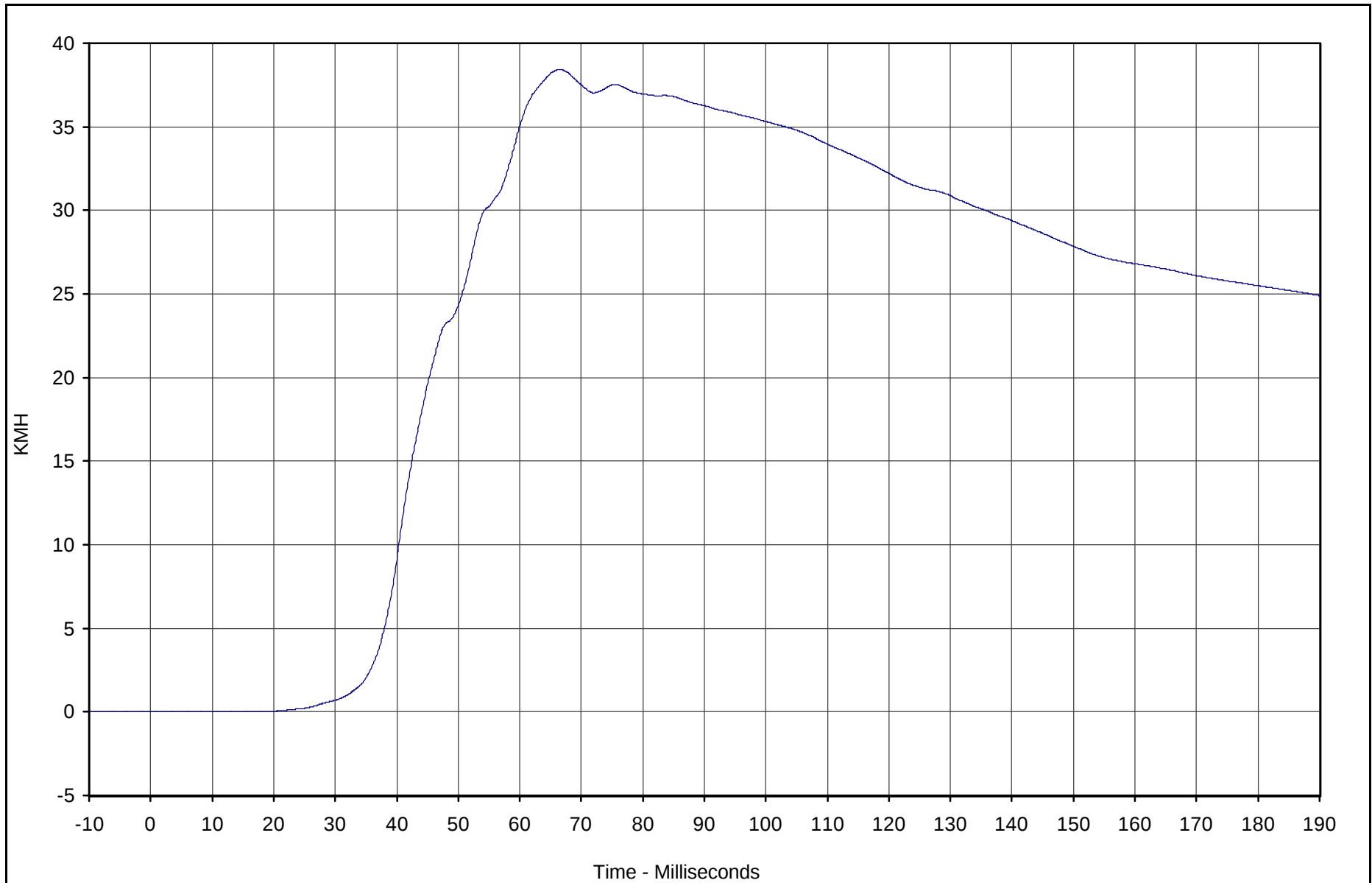


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Rib Primary Y Velocity	036	IN1	KMH	38.4	66.5	0.0	0.4	180

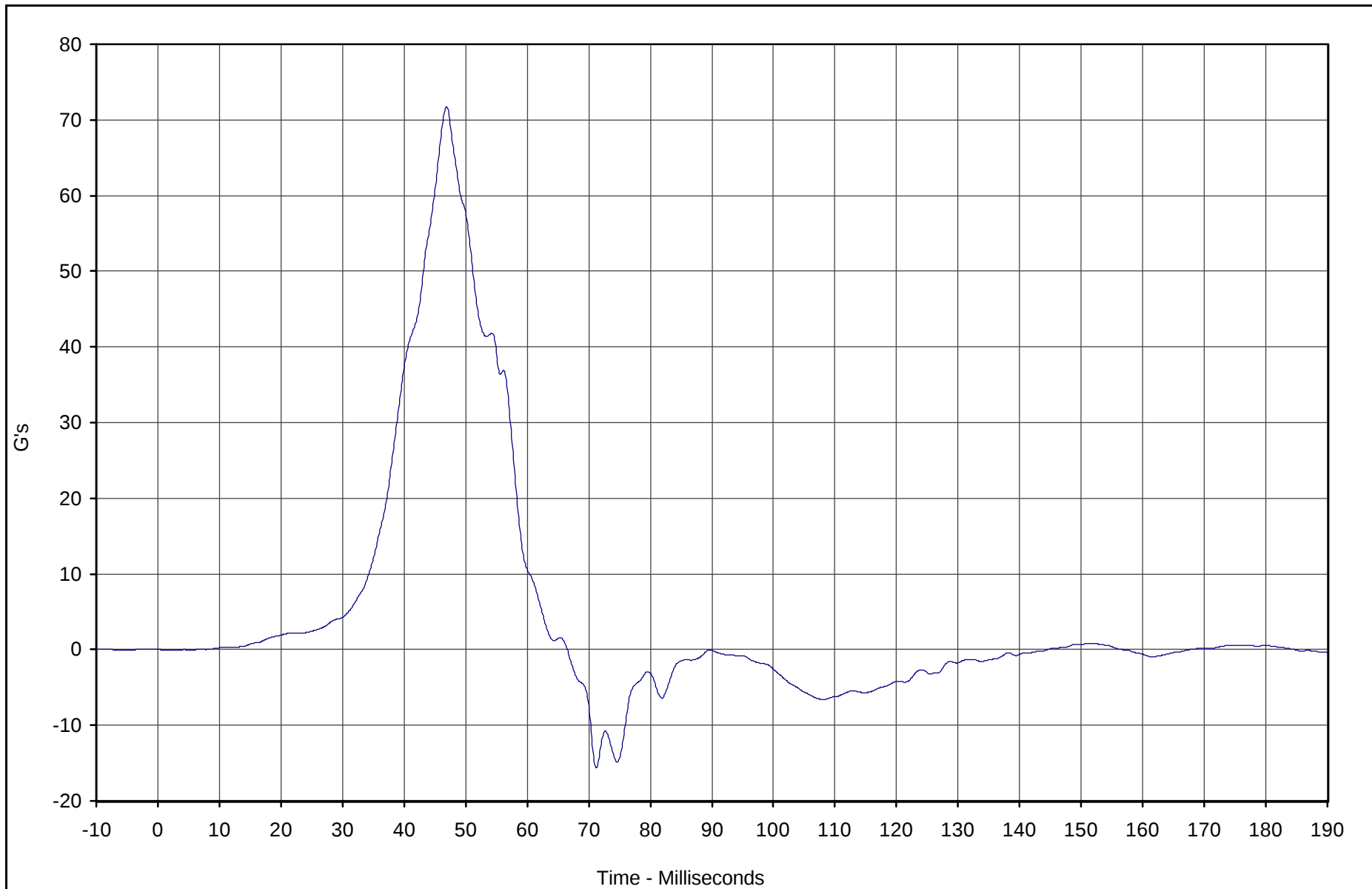


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Spine Primary Y	037	FIL	G's	71.7	46.9	-15.7	71.2	180

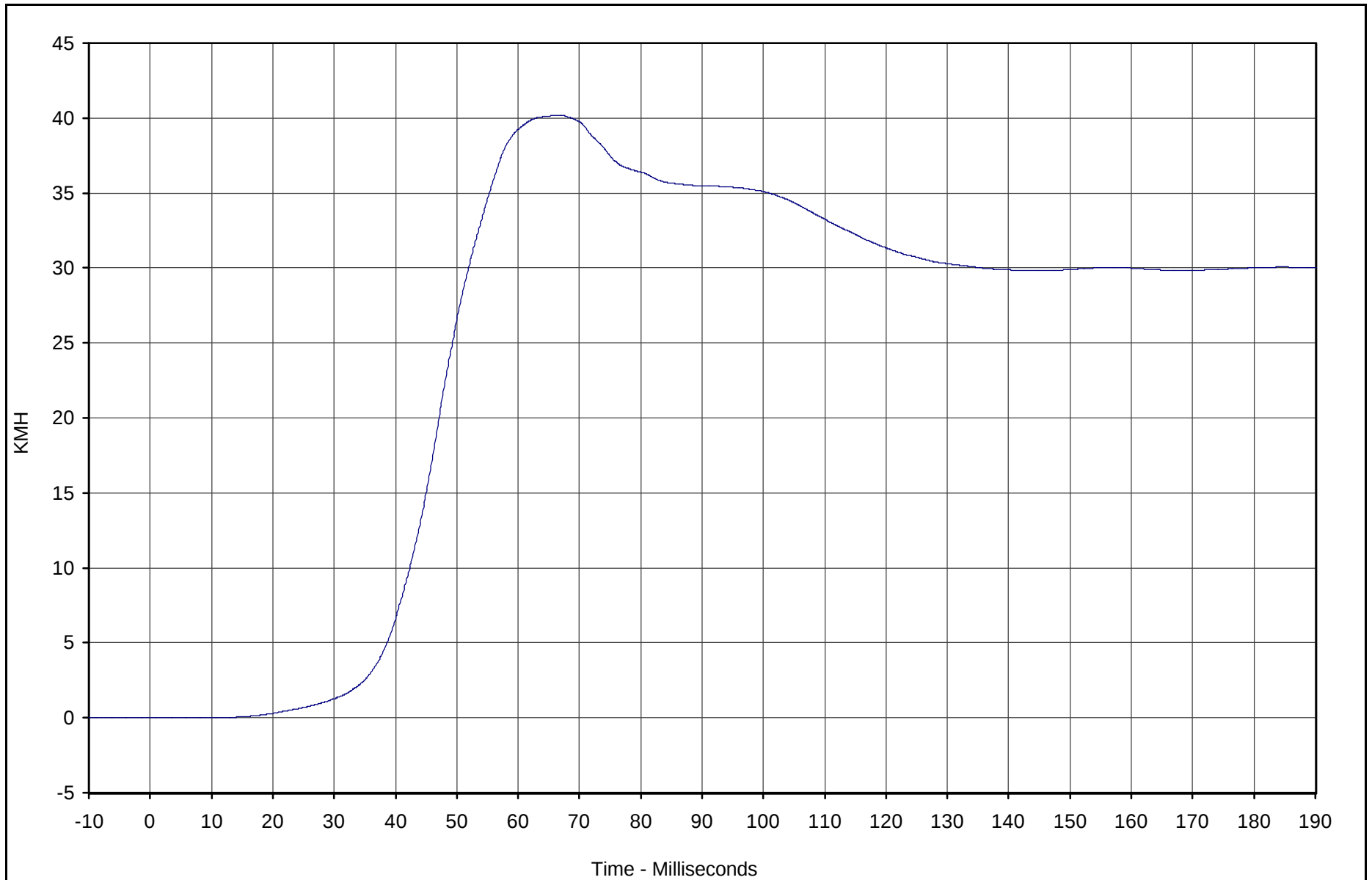


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Spine Primary Y Velocity	037	IN1	KMH	40.2	66.5	0.0	6.3	180

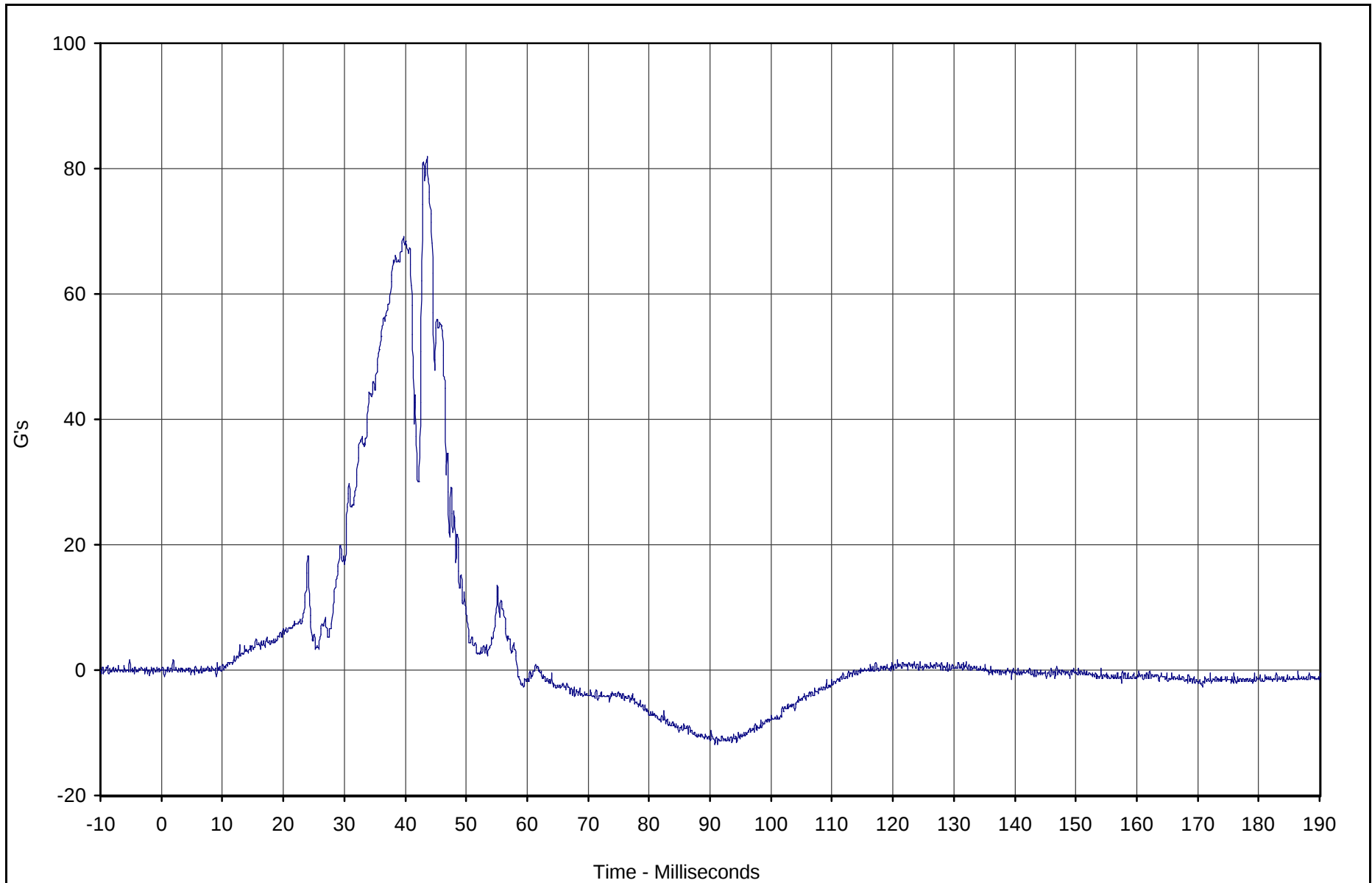


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Primary Y	038	FIL	G's	81.9	43.6	-11.8	90.8	1000

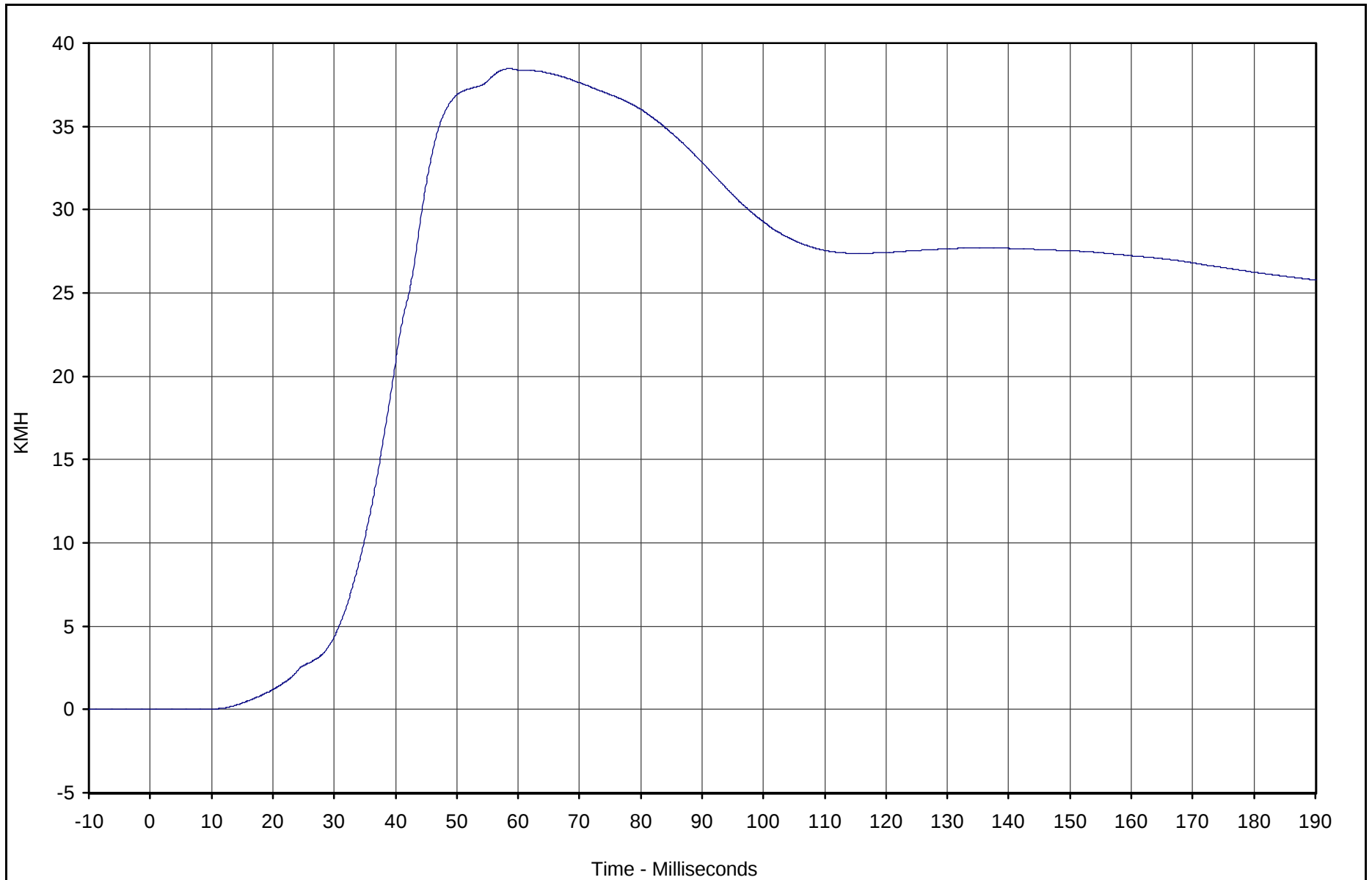


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Primary Y Velocity	038	IN1	KMH	38.5	58.5	0.0	0.8	180

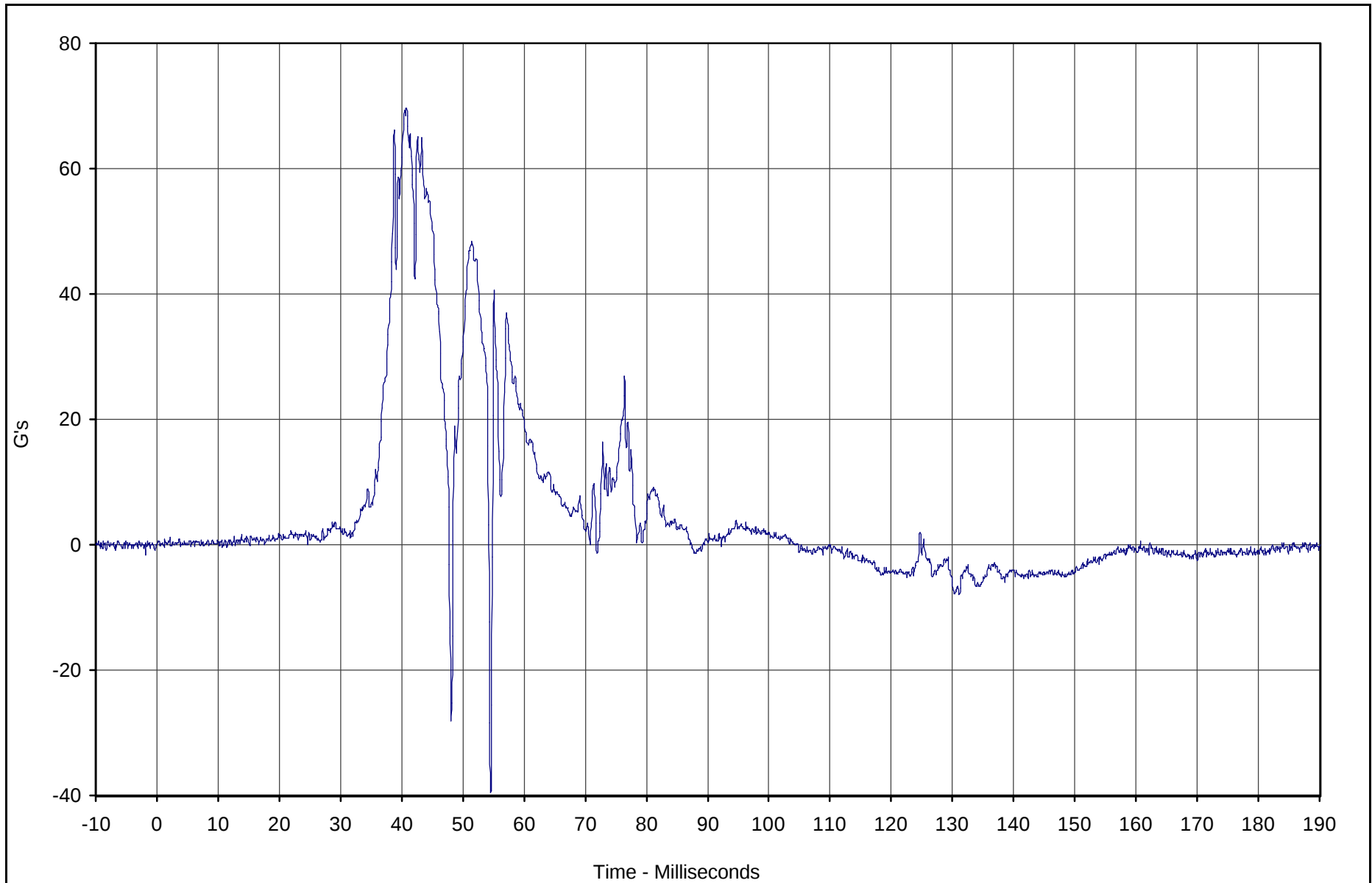


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Rib Redundant Y	039	FIL	G's	69.6	40.7	-39.5	54.5	1000

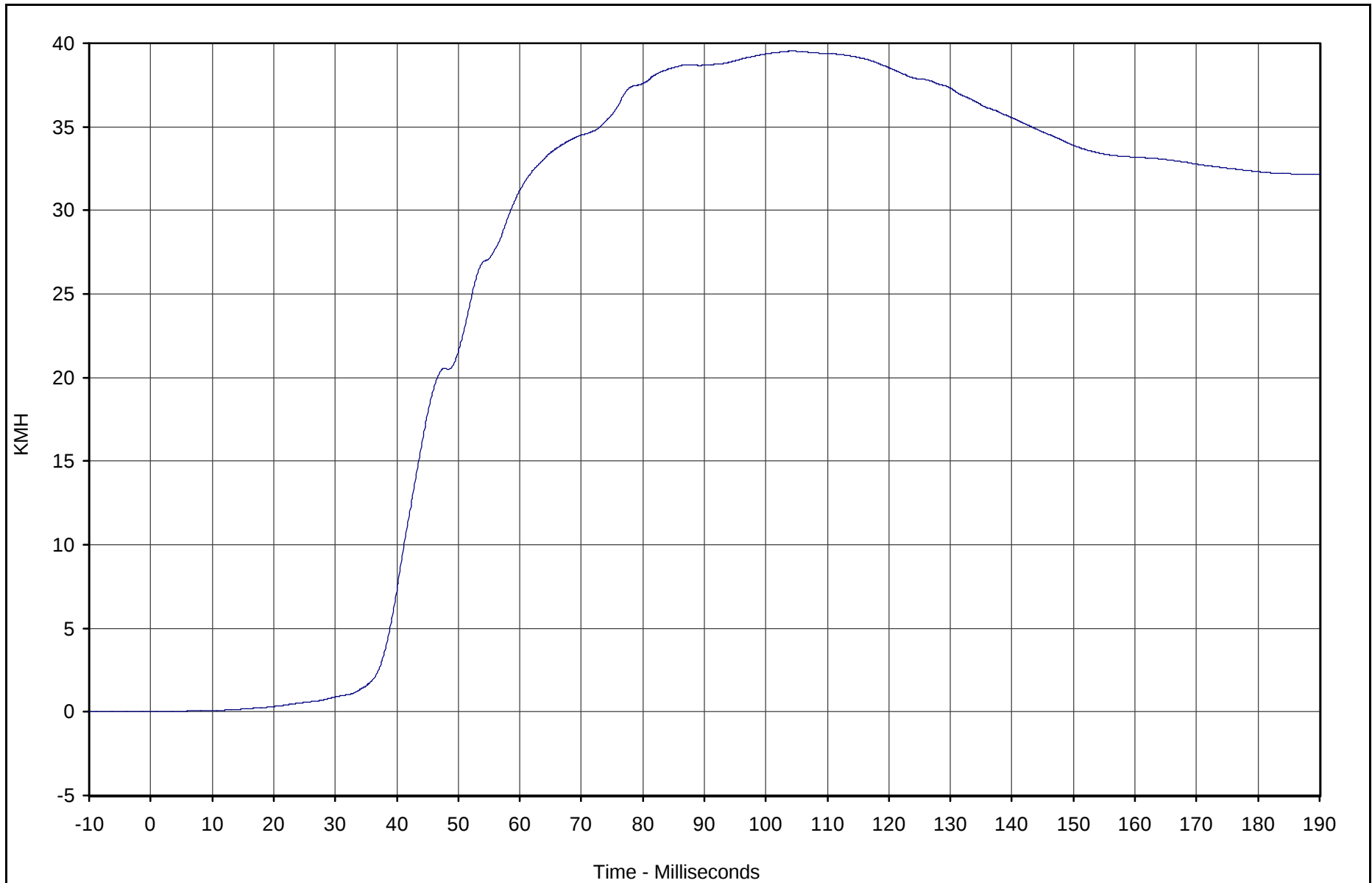


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Rib Redundant Y Velocity	039	IN1	KMH	39.5	104.4	0.0	0.0	180

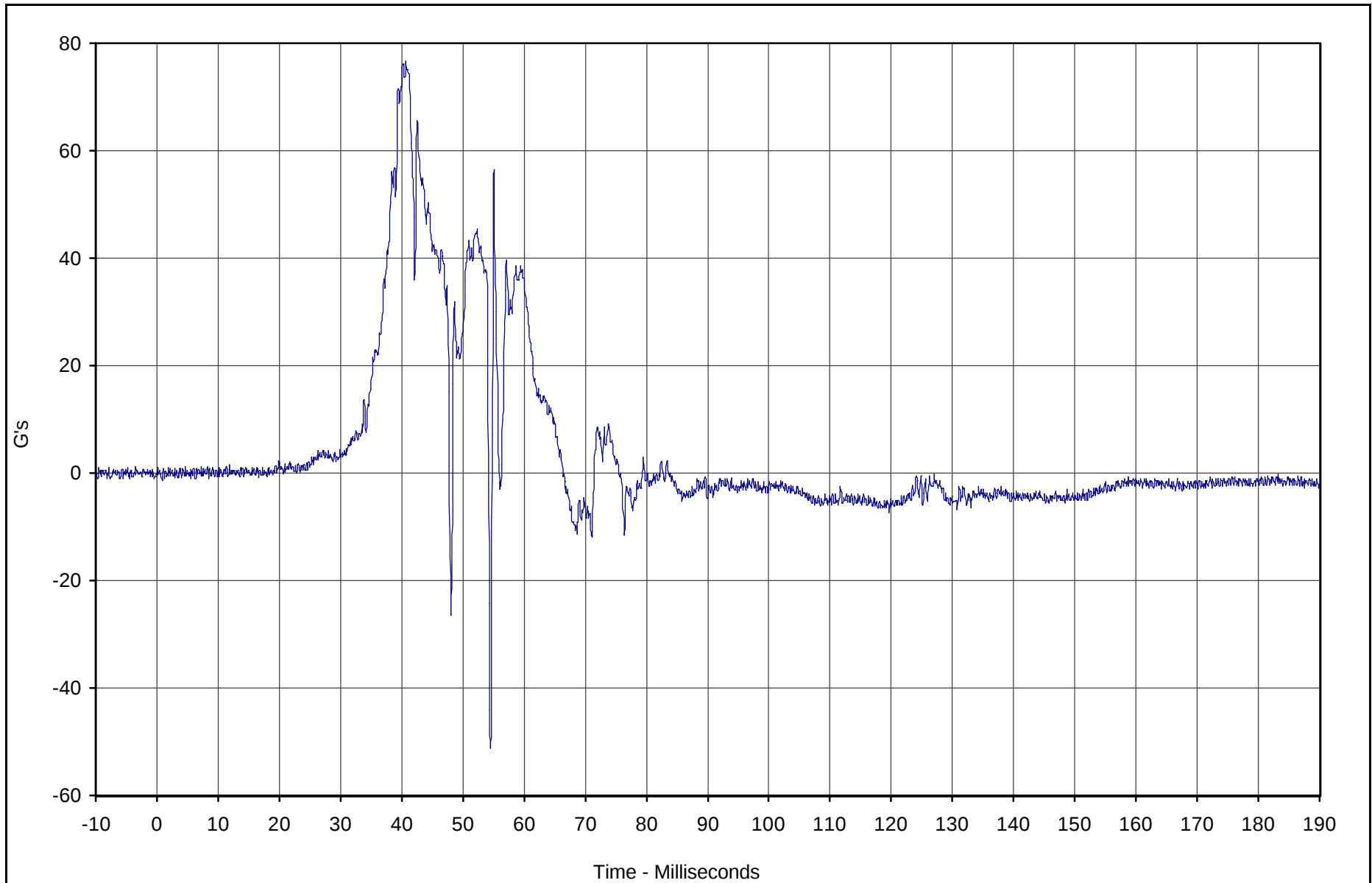


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Rib Redundant Y	040	FIL	G's	76.7	40.7	-51.2	54.5	1000

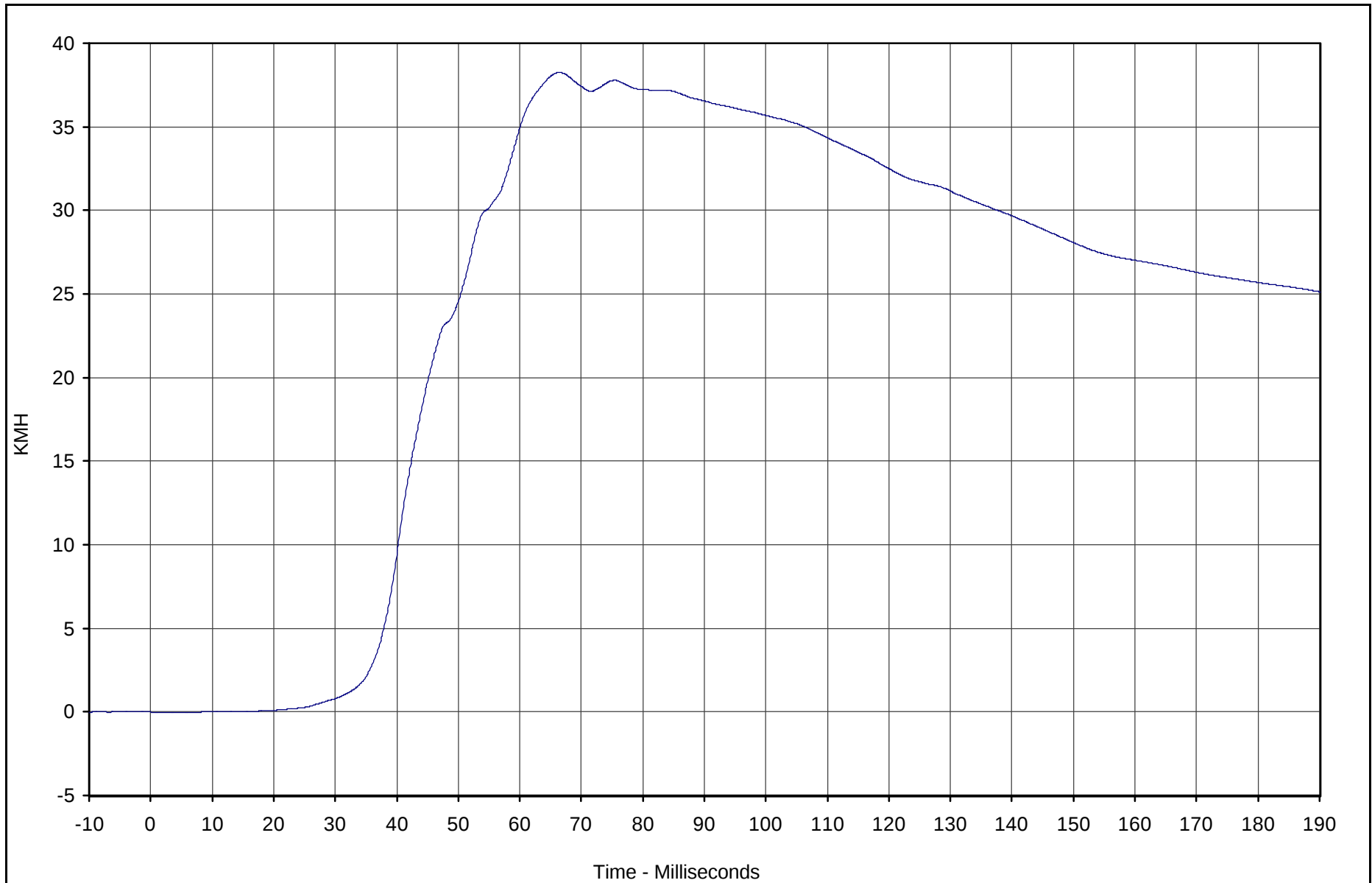


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Rib Redundant Y Velocity	040	IN1	KMH	38.2	66.4	0.0	2.0	180

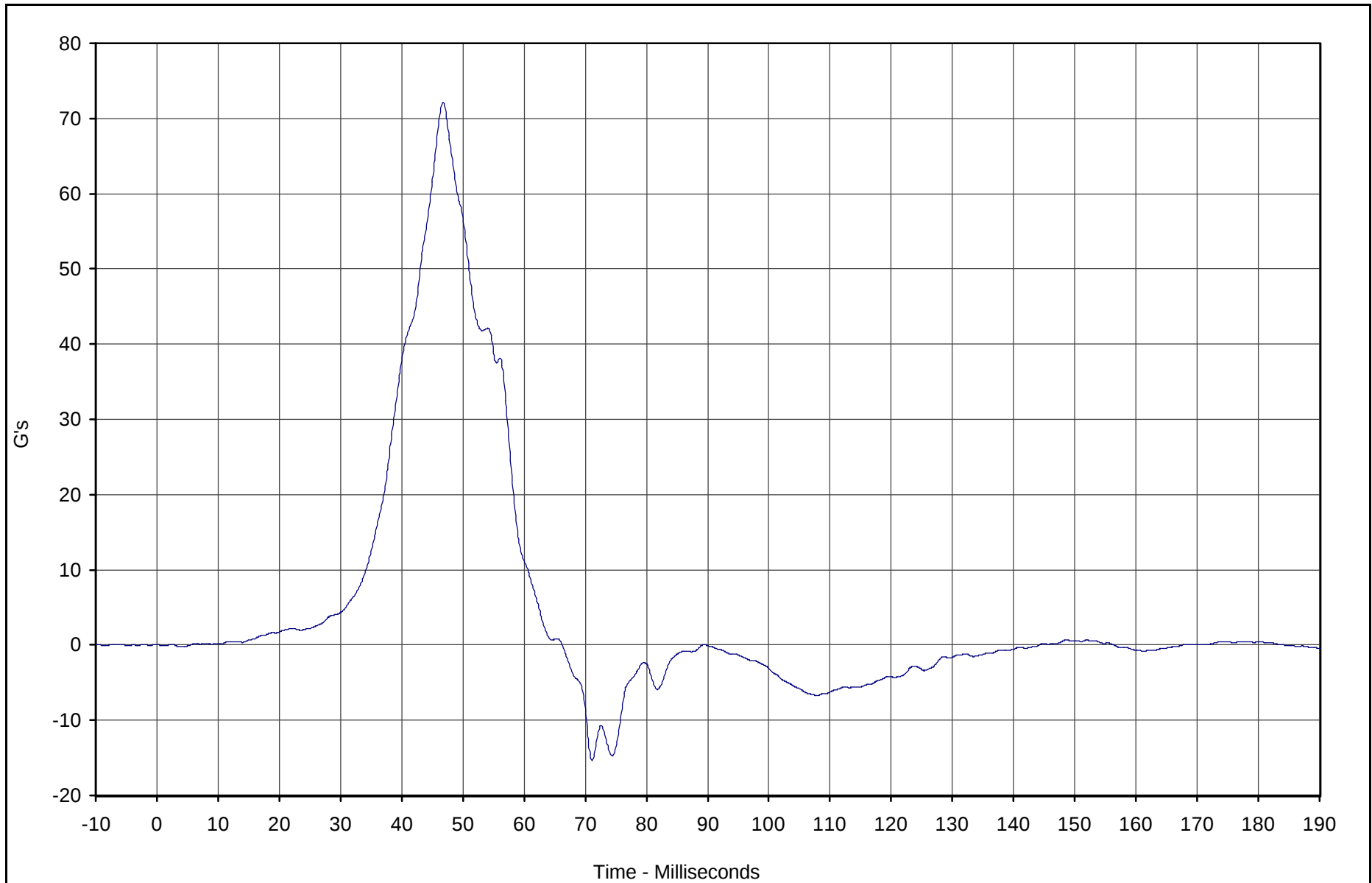


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Spine Redundant Y	041	FIL	G's	72.1	46.8	-15.4	71.1	180

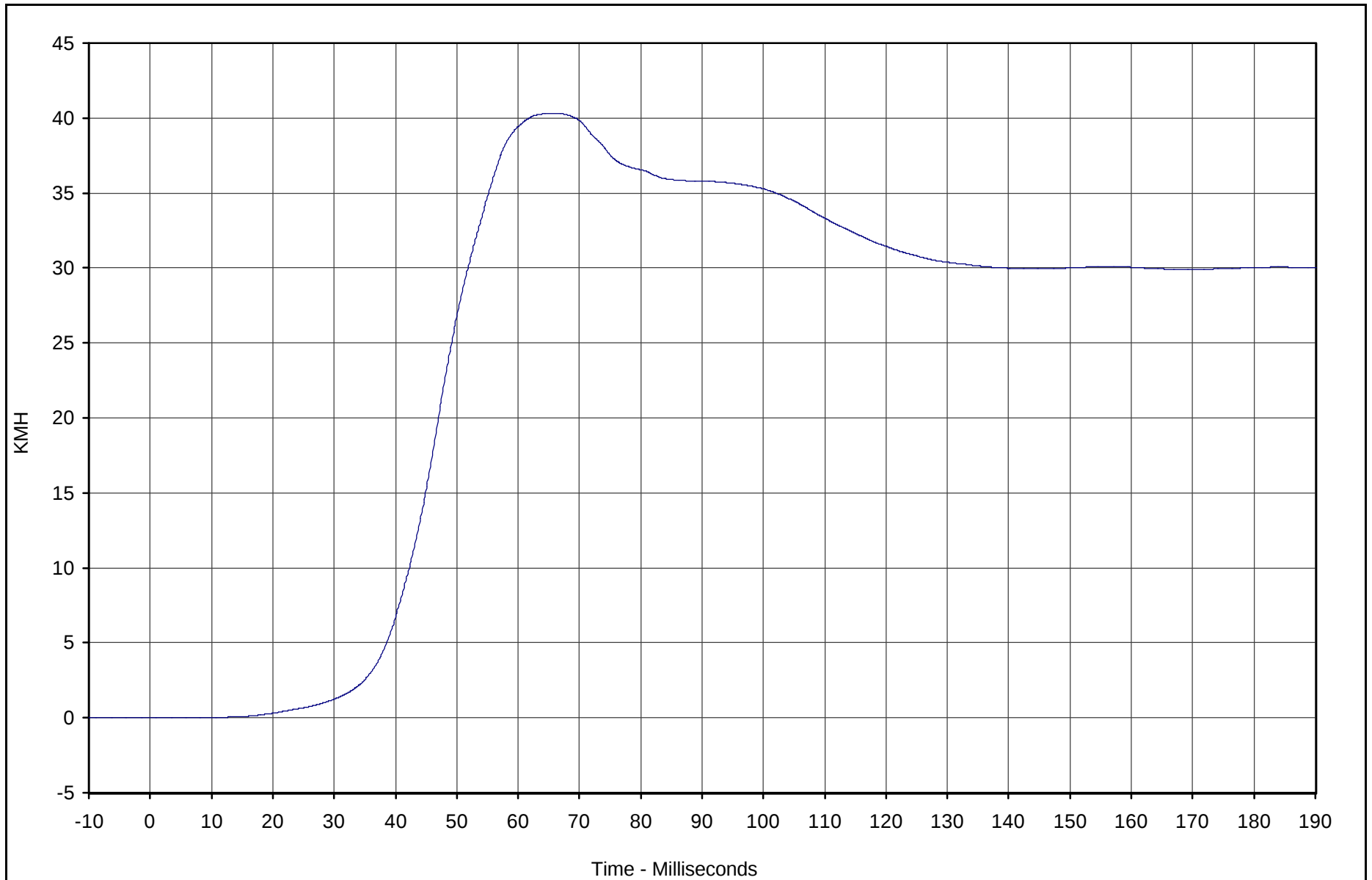


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Spine Redundant Y Velocity	041	IN1	KMH	40.3	66.2	0.0	5.5	180

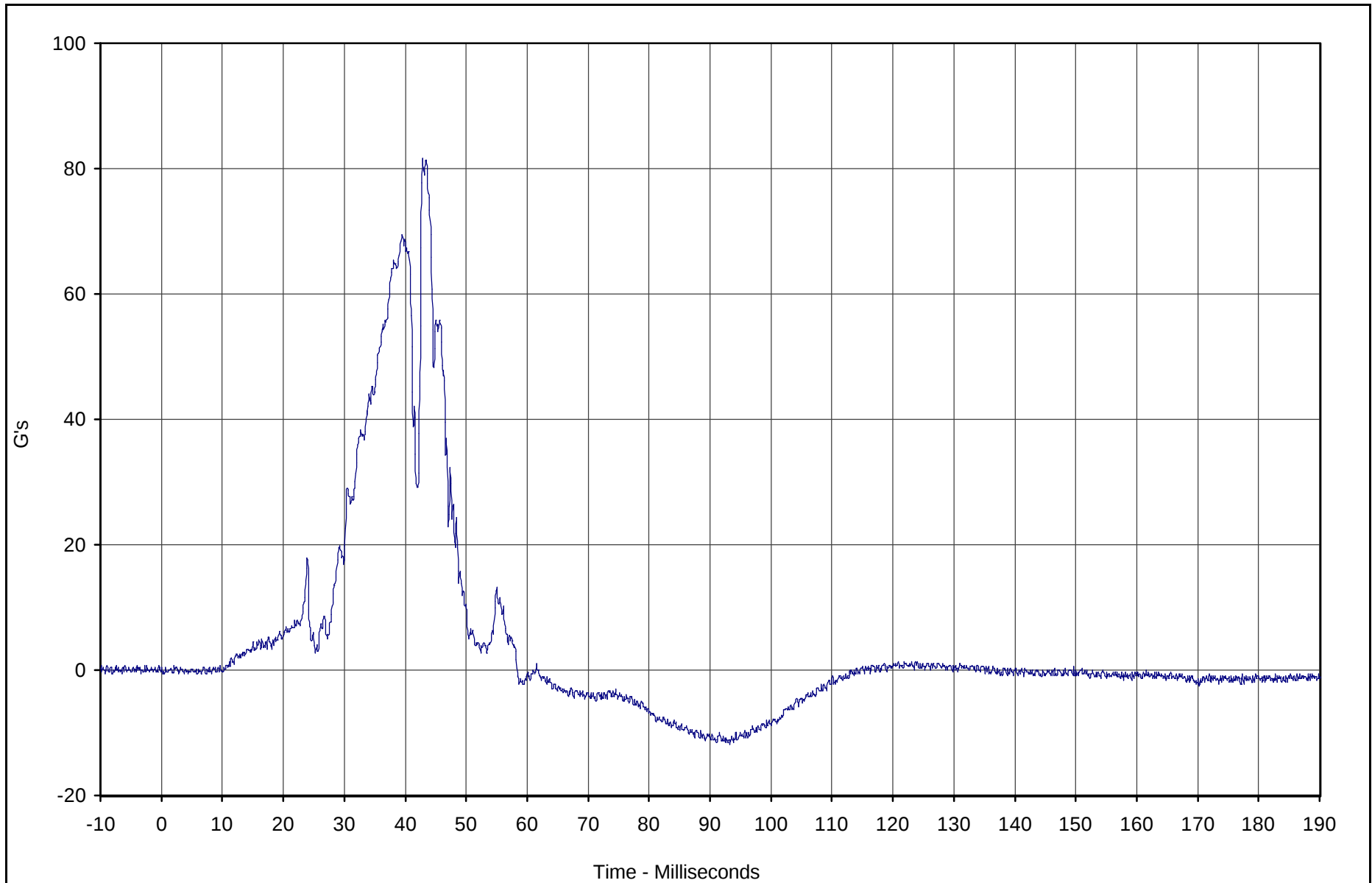


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Redundant Y	042	FIL	G's	81.7	42.8	-11.9	93.3	1000

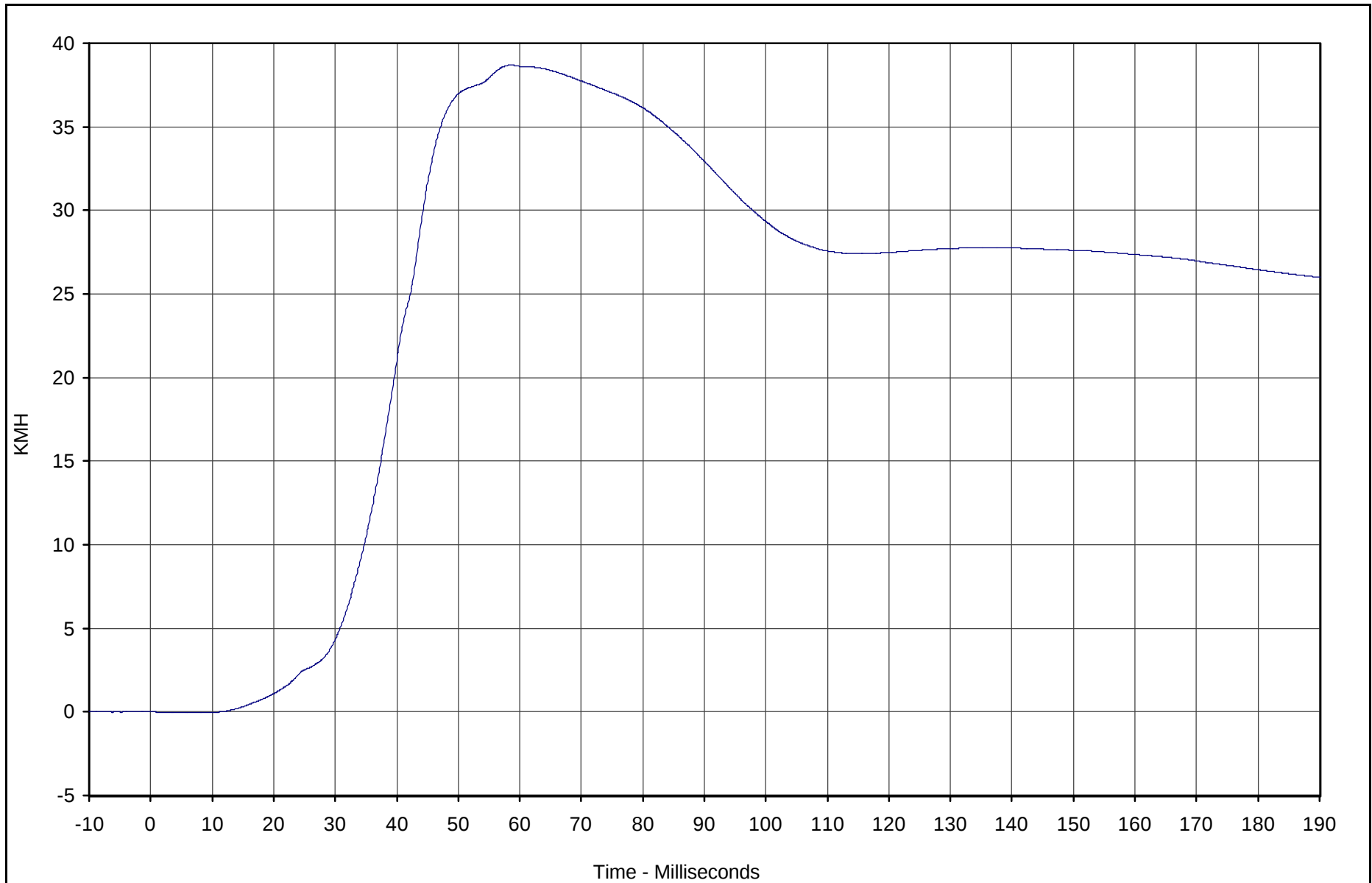


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Redundant Y Velocity	042	IN1	KMH	38.7	58.5	0.0	8.6	180

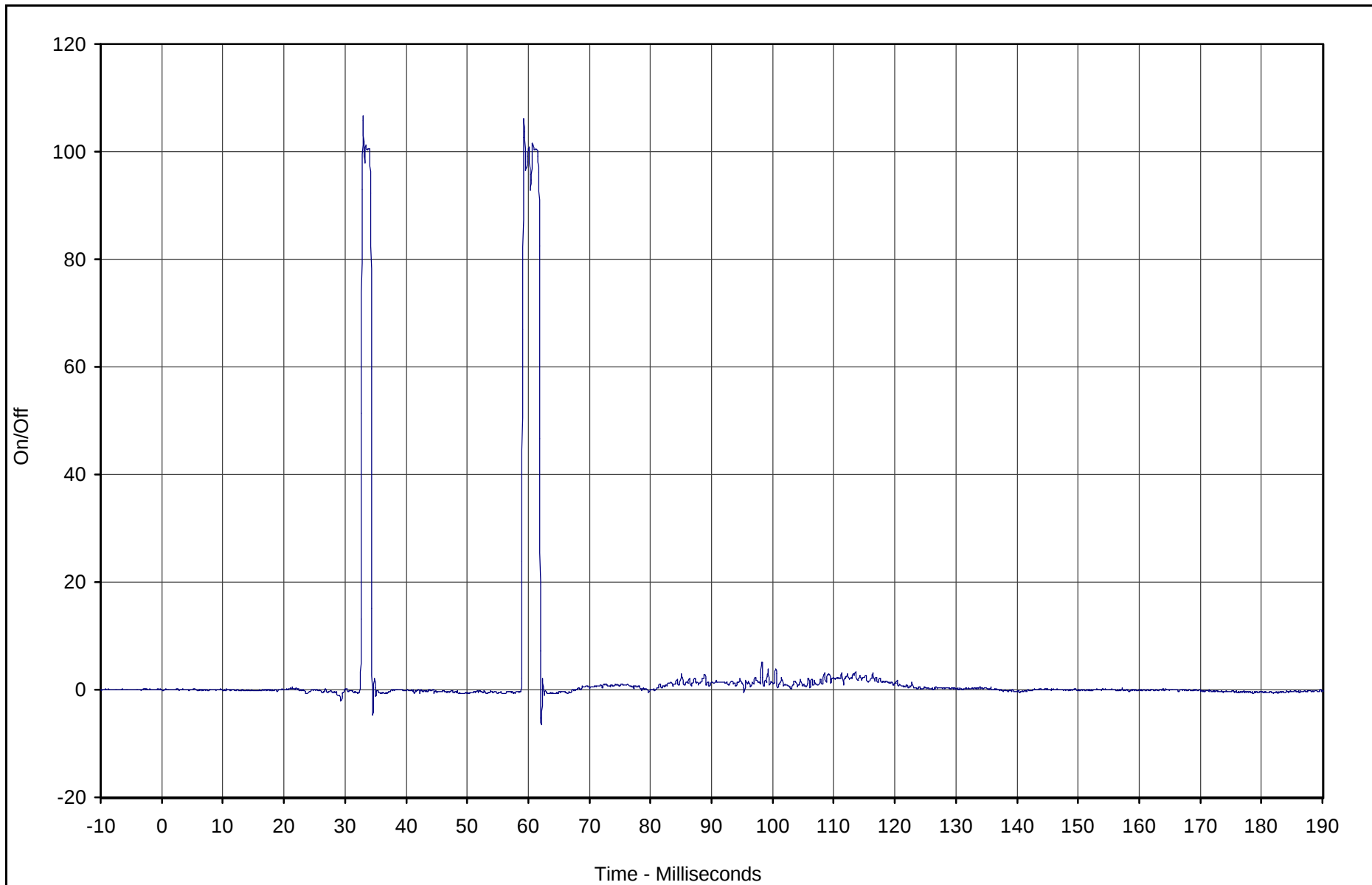


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Cross %	Time	SAE Class
Pass. Thorax Contact	043	FIL	On/Off	106.7	33.0	50.0	45.6	1000

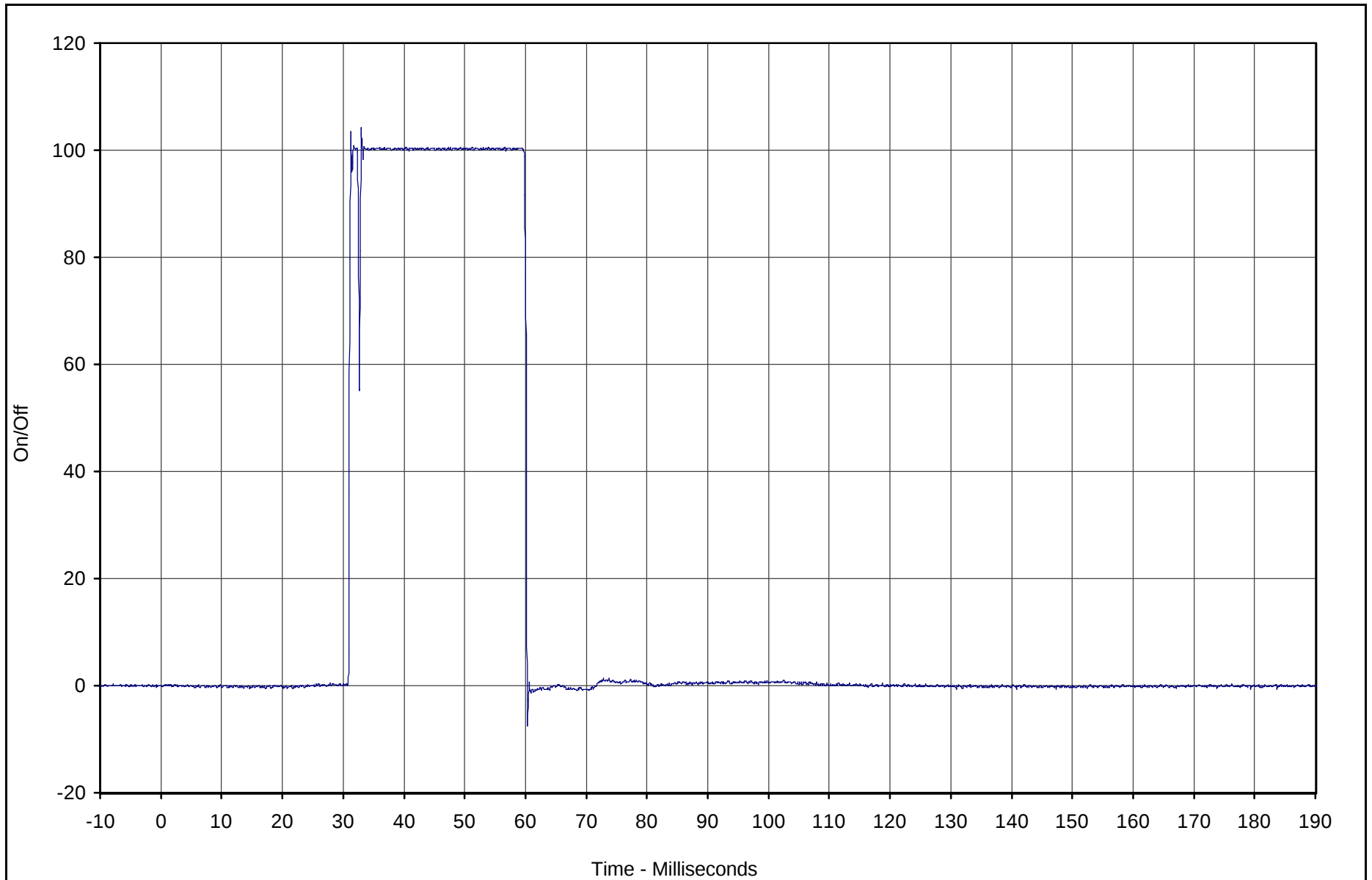


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Cross %	Time	SAE Class
Pass. Pelvis Contact	044	FIL	On/Off	104.1	32.9	50.0	31.1	1000

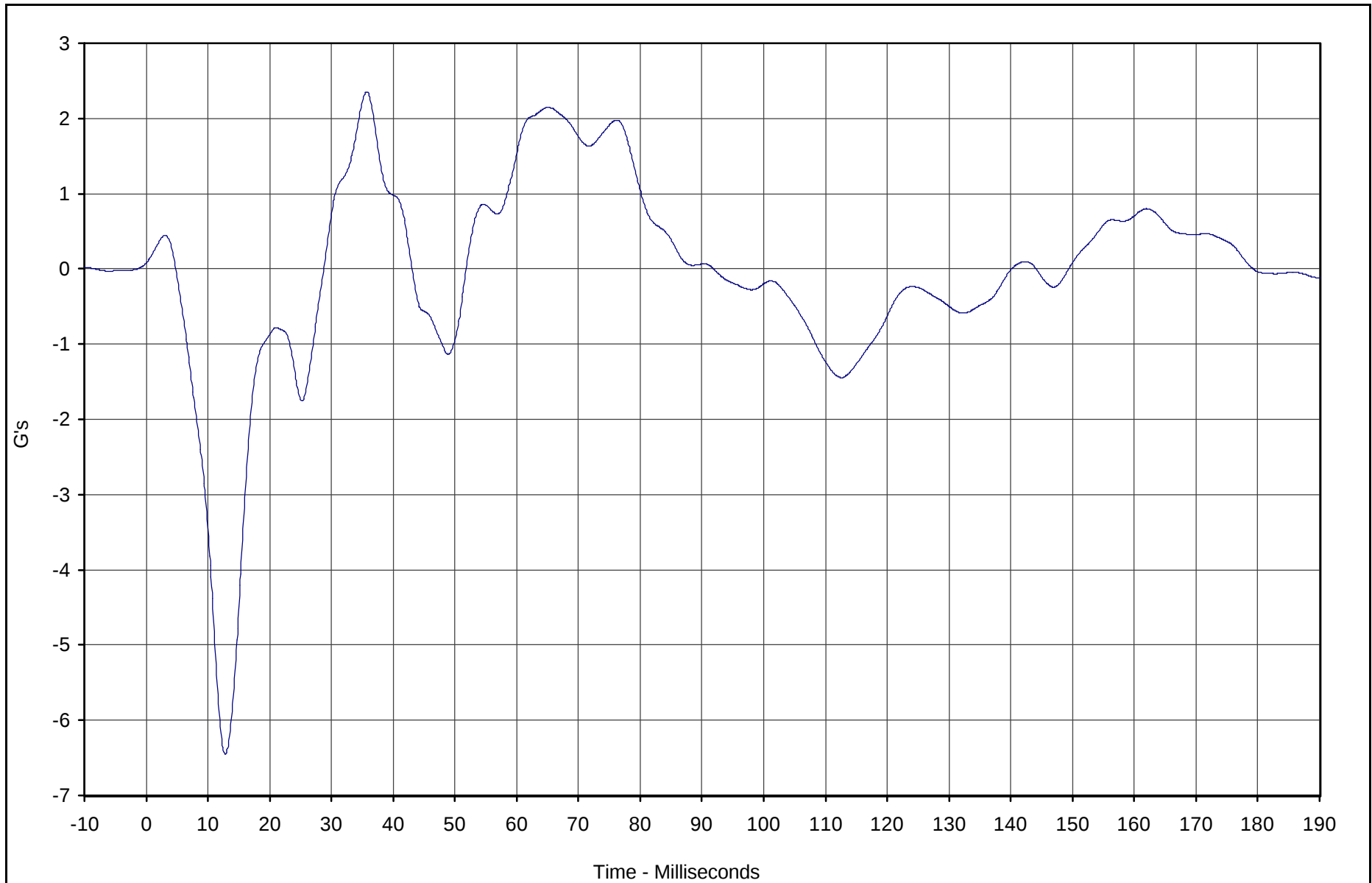


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat X	045	FIL	G's	2.4	35.7	-6.4	12.8	60

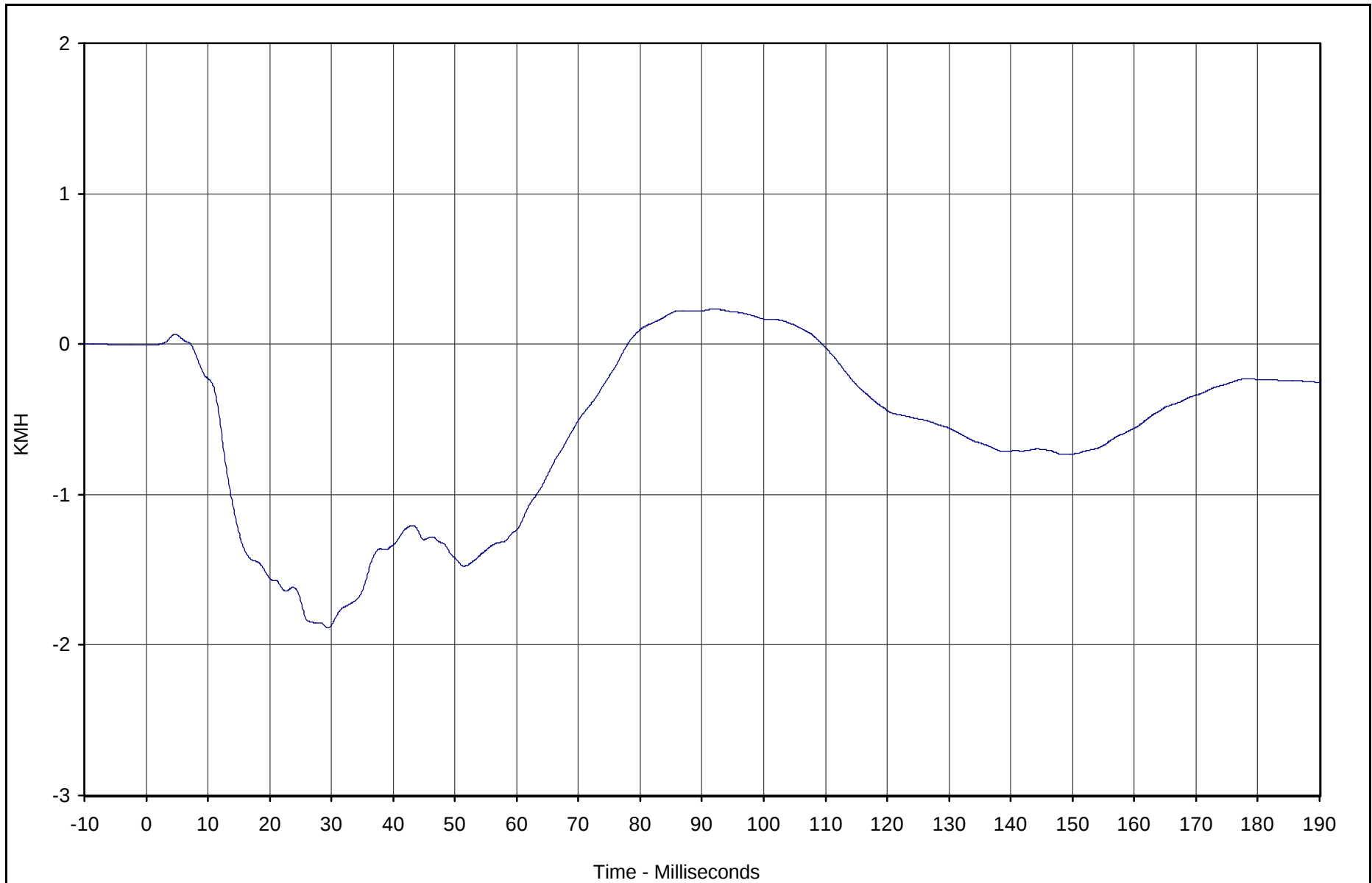


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat X Velocity	045	IN1	KMH	0.2	91.9	-1.9	29.5	180

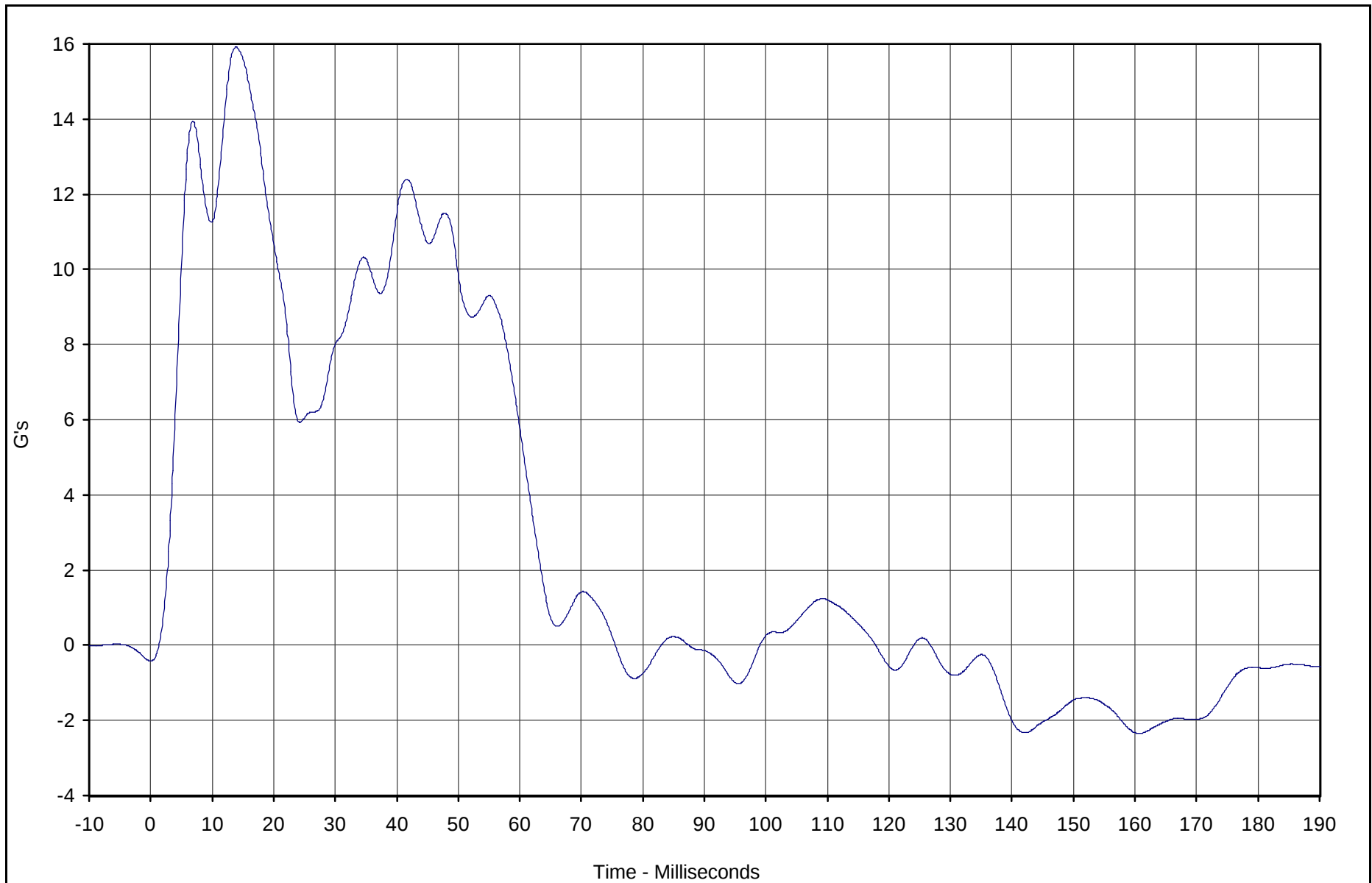


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat Y	046	FIL	G's	15.9	13.9	-2.3	160.6	60

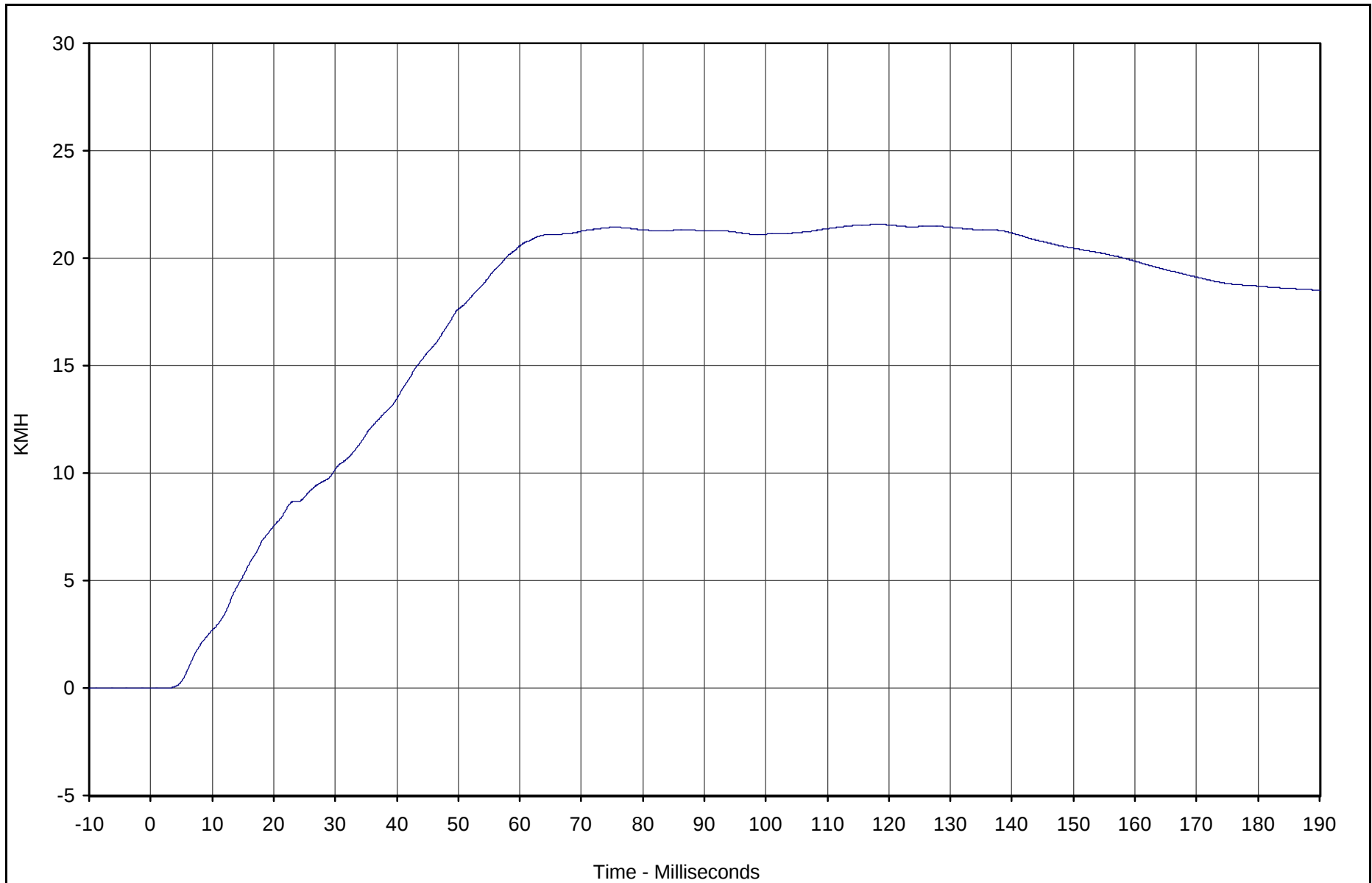


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat Y Velocity	046	IN1	KMH	21.6	118.4	0.0	0.0	180

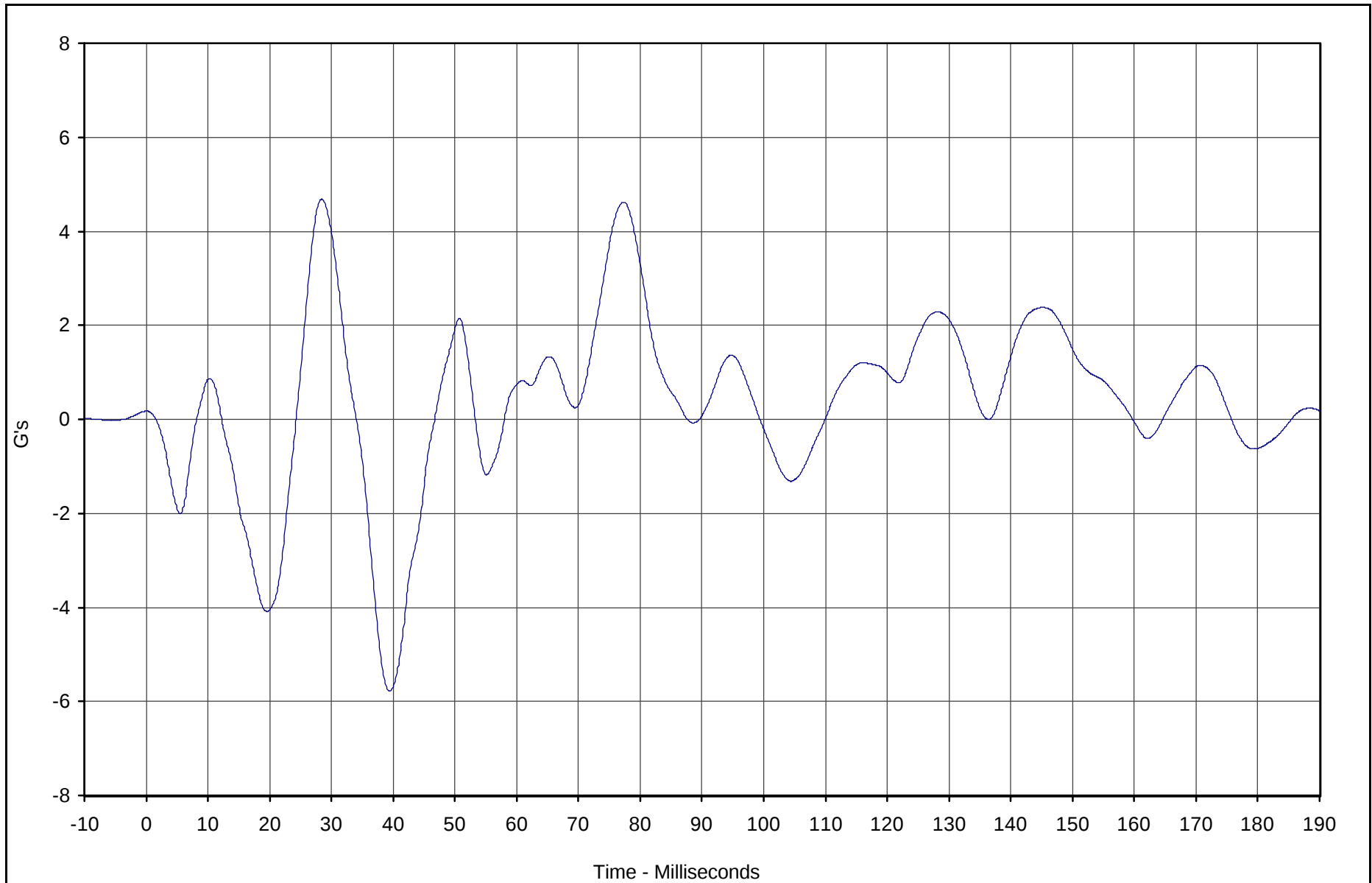


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat Z	047	FIL	G's	4.7	28.4	-5.8	39.4	60

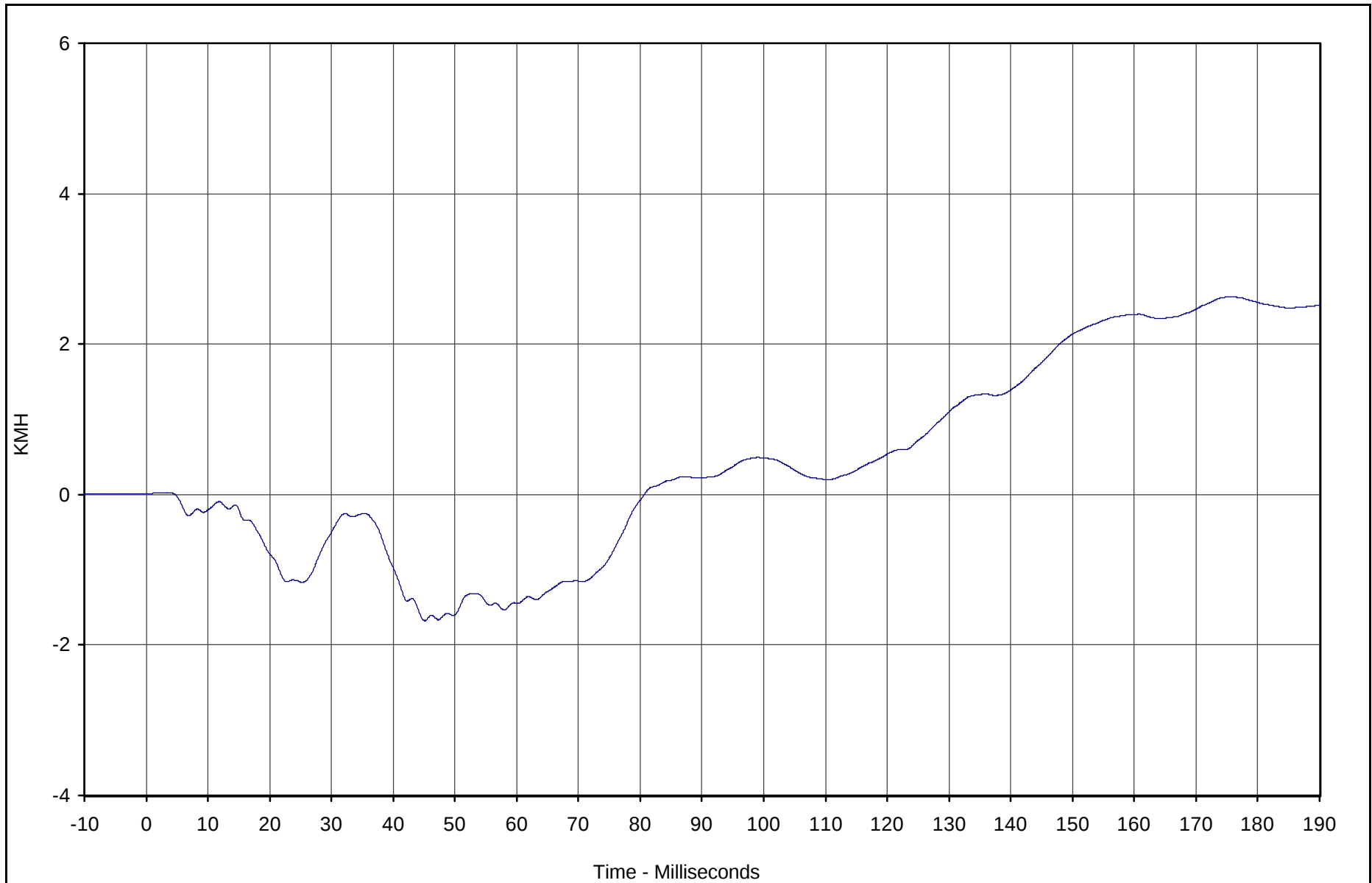


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat Z Velocity	047	IN1	KMH	2.6	175.6	-1.7	45.1	180

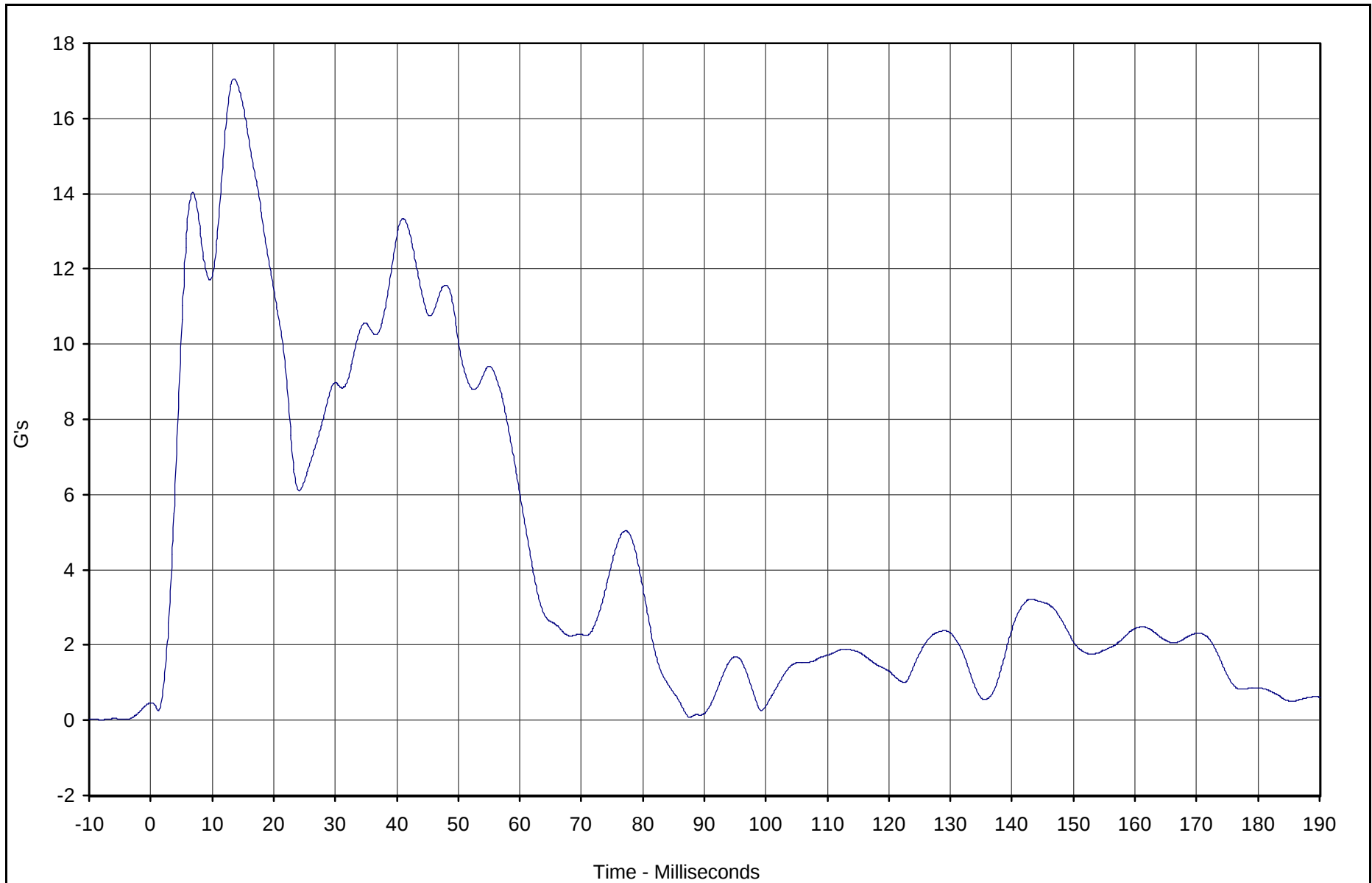


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Front Seat Resultant	045	RES	G's	17.0	13.6	0.1	87.6	60

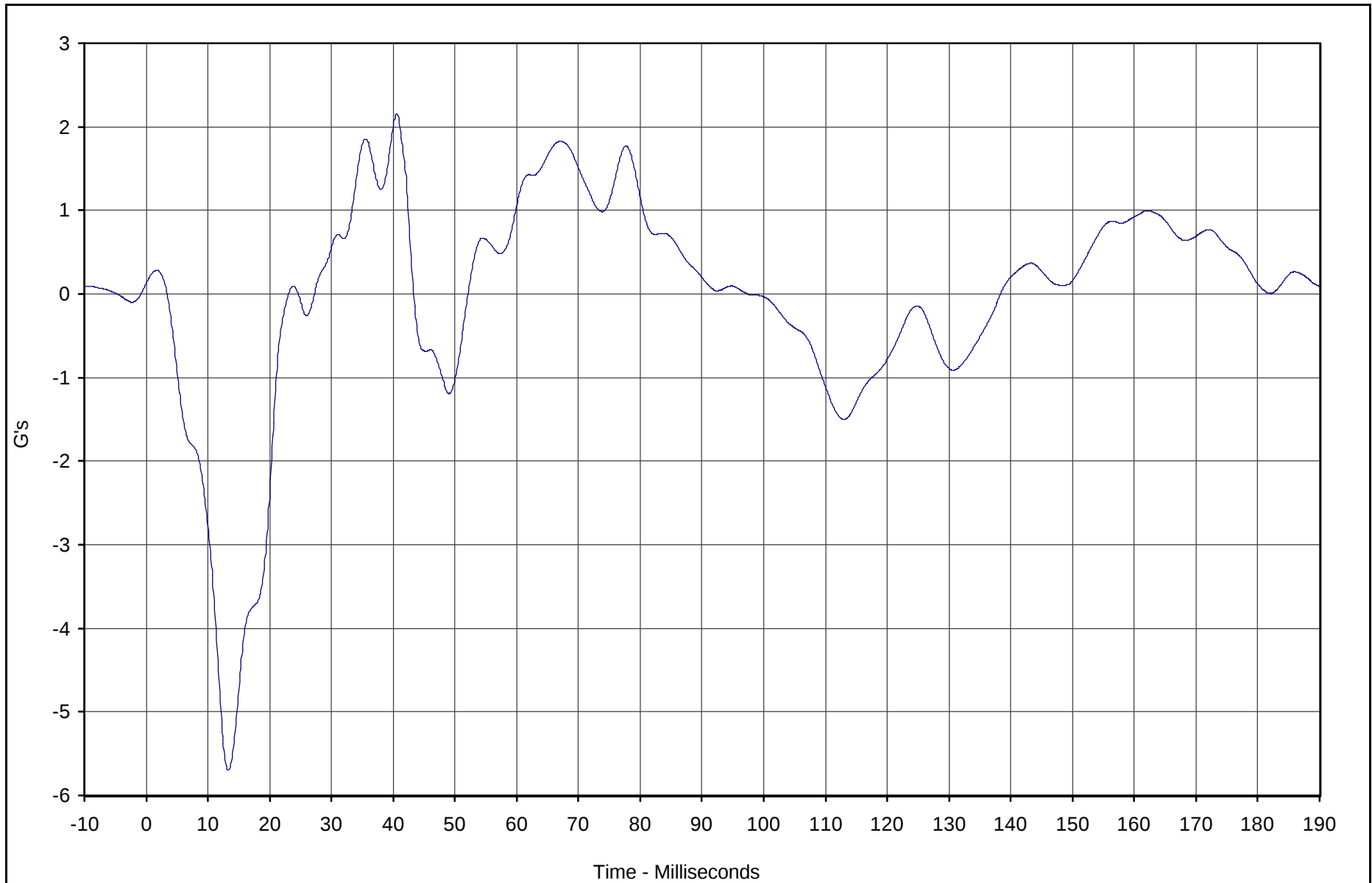


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat X	048	FIL	G's	2.2	40.6	-5.7	13.3	60

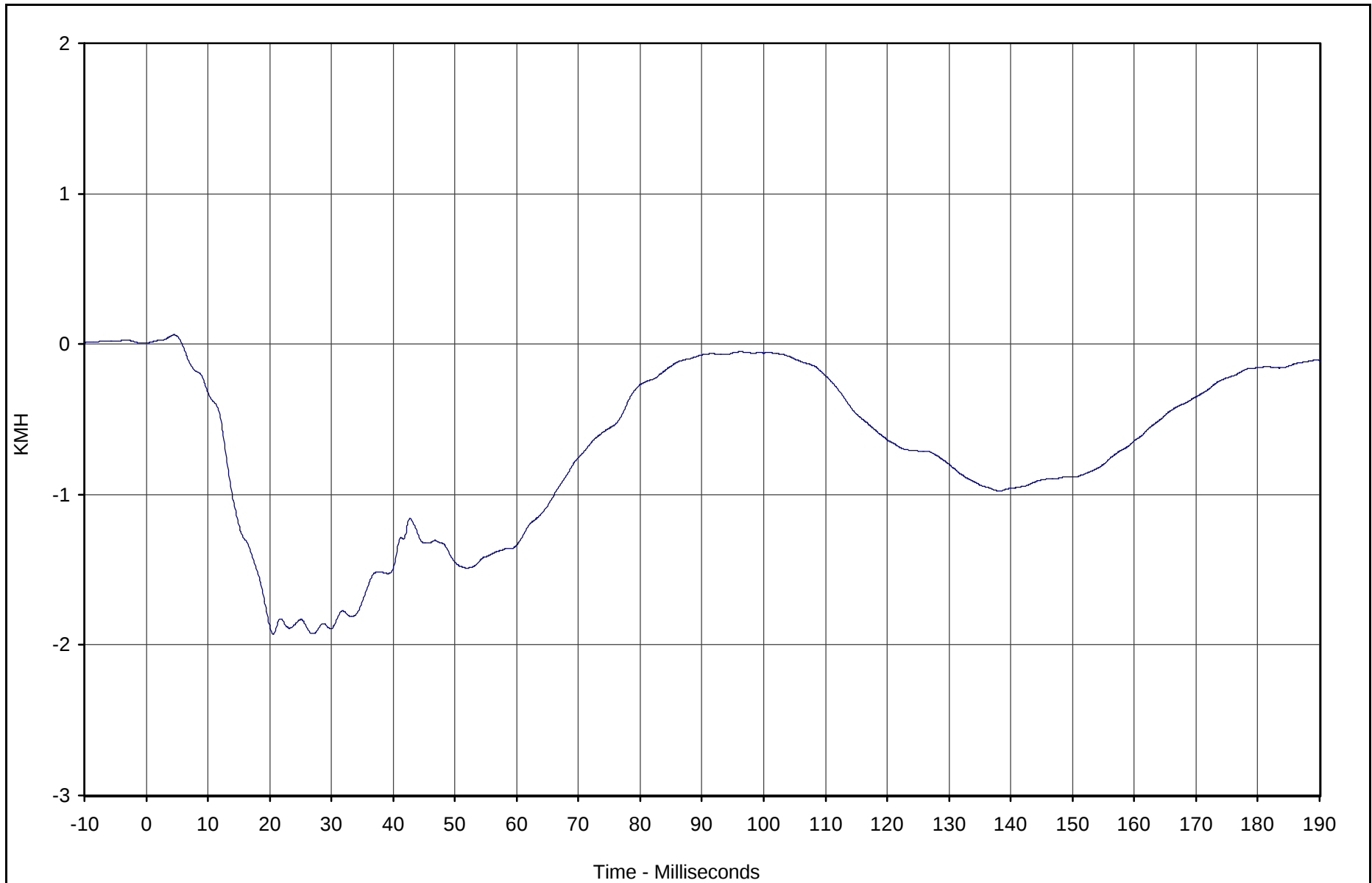


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat X Velocity	048	IN1	KMH	0.1	4.5	-1.9	20.5	180

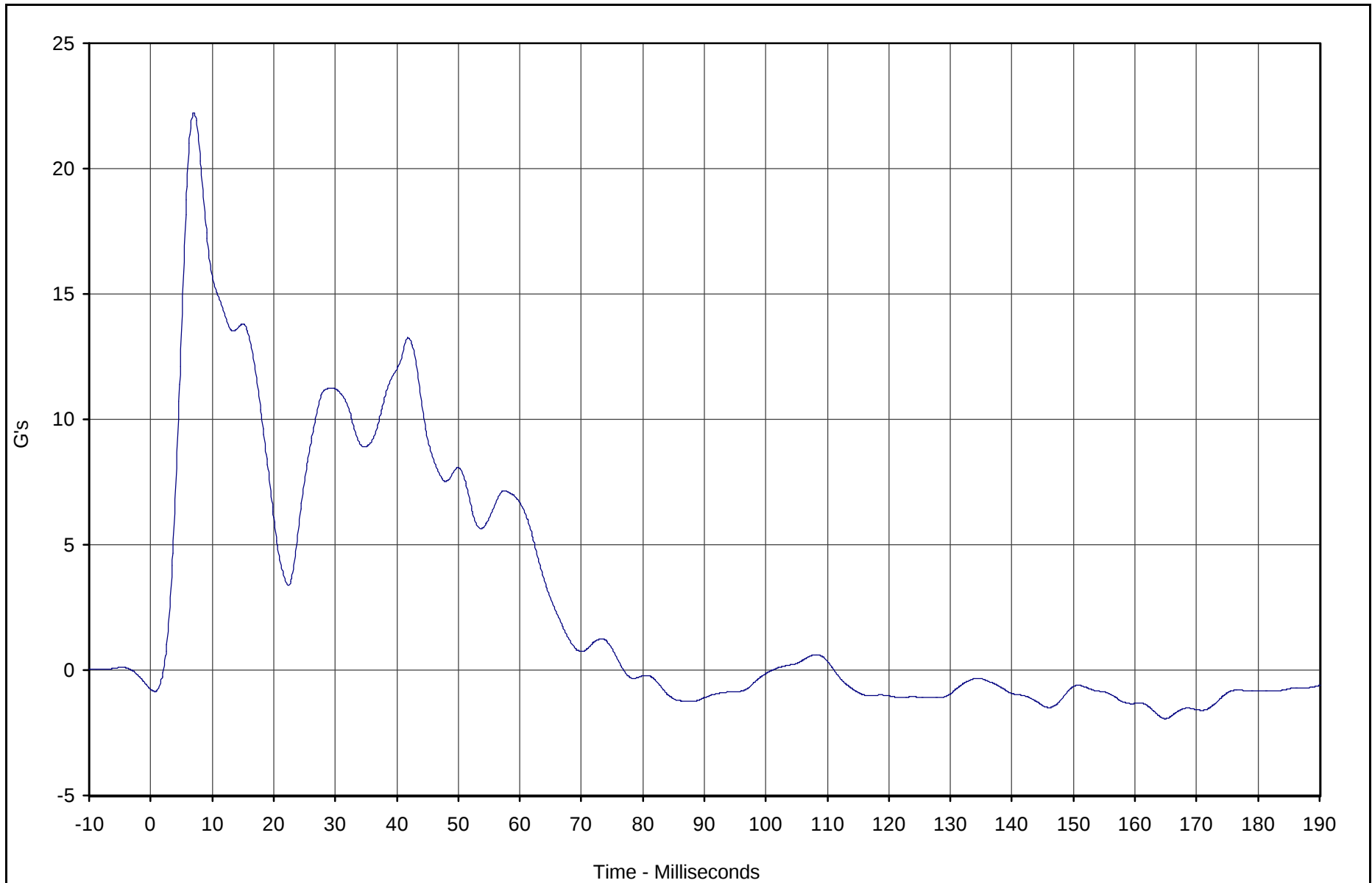


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat Y	049	FIL	G's	22.2	7.0	-1.9	164.9	60

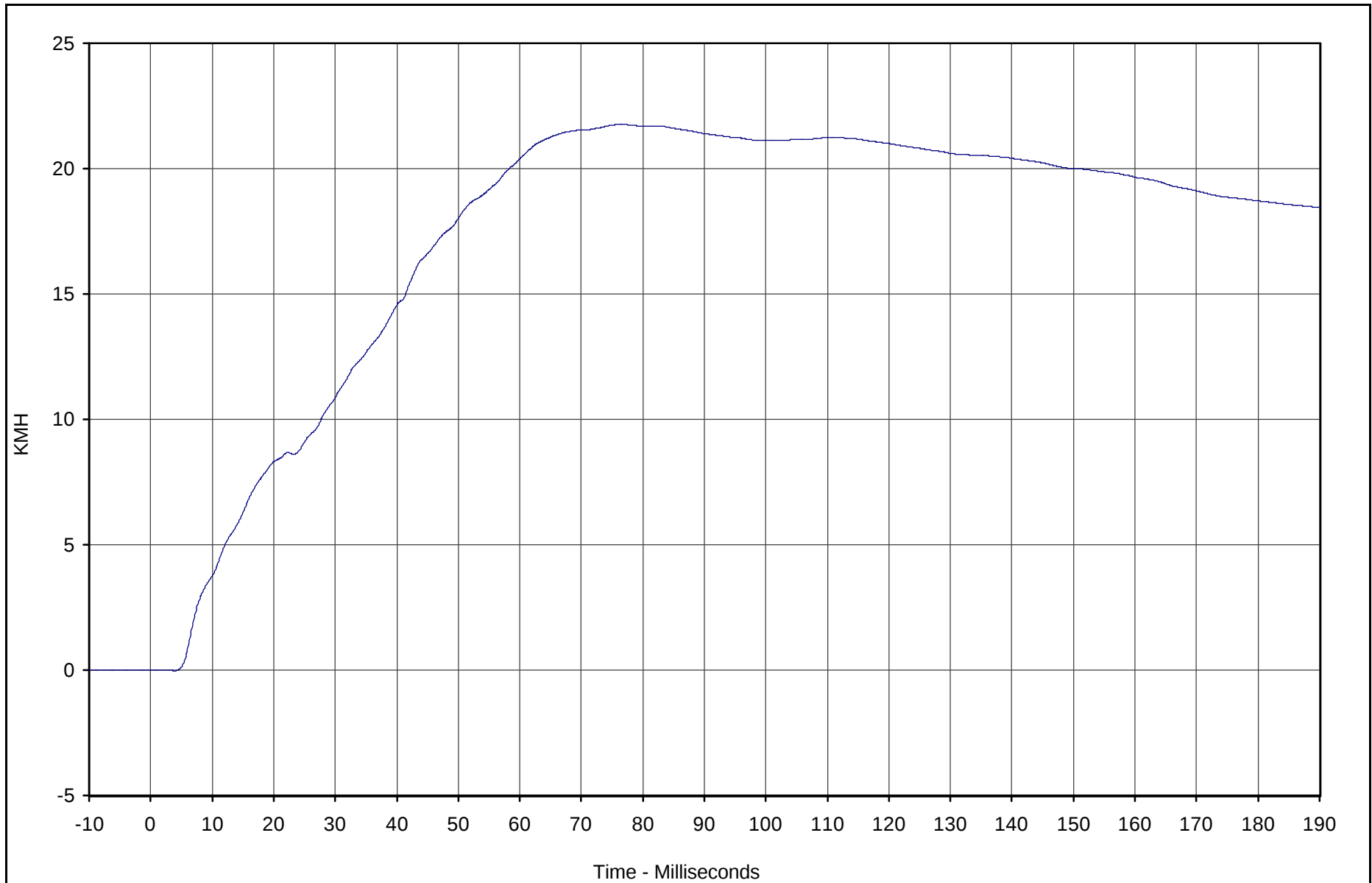


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat Y Velocity	049	IN1	KMH	21.8	76.5	0.0	3.9	180

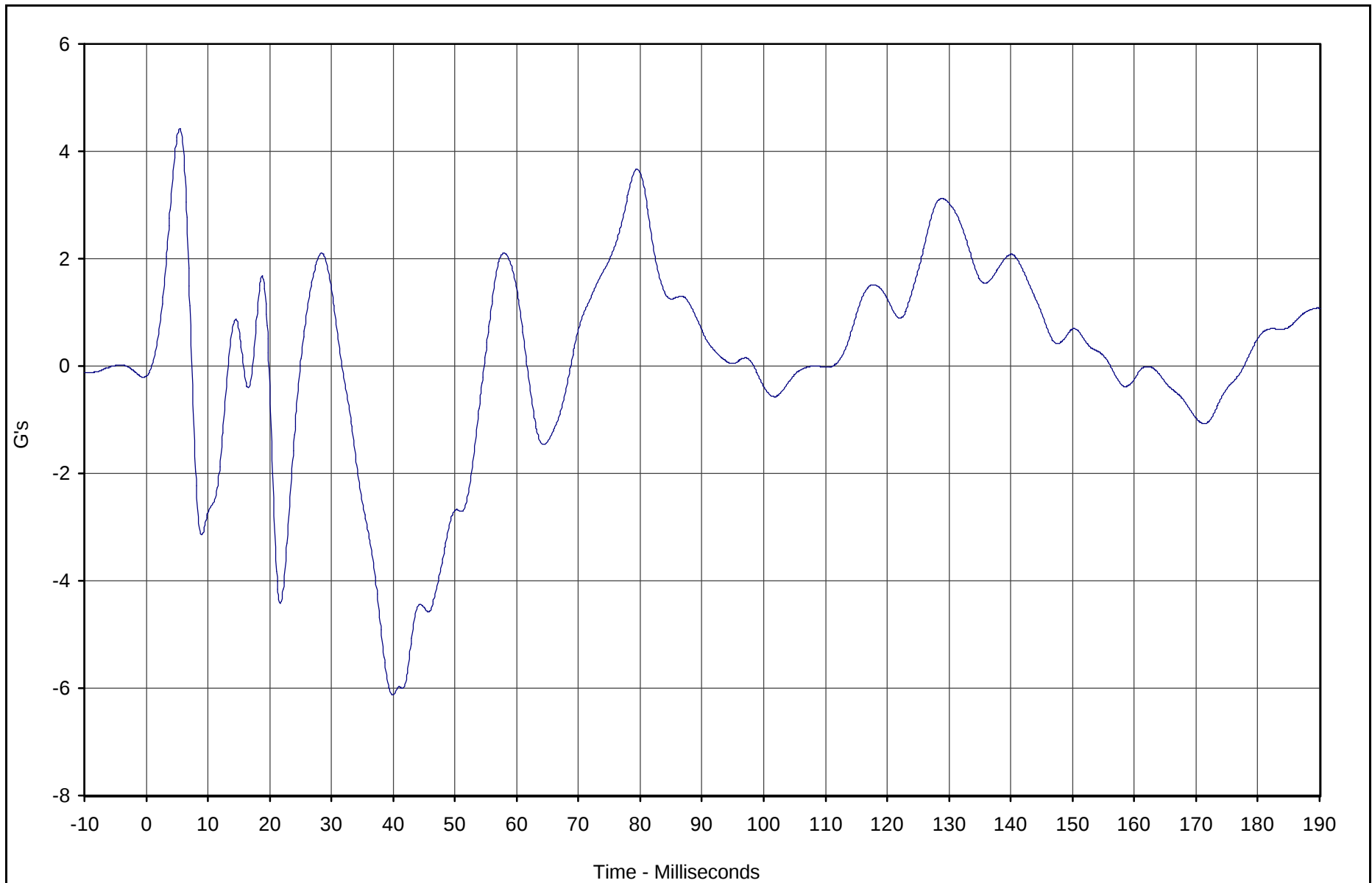


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat Z	050	FIL	G's	4.4	5.4	-6.1	40.0	60

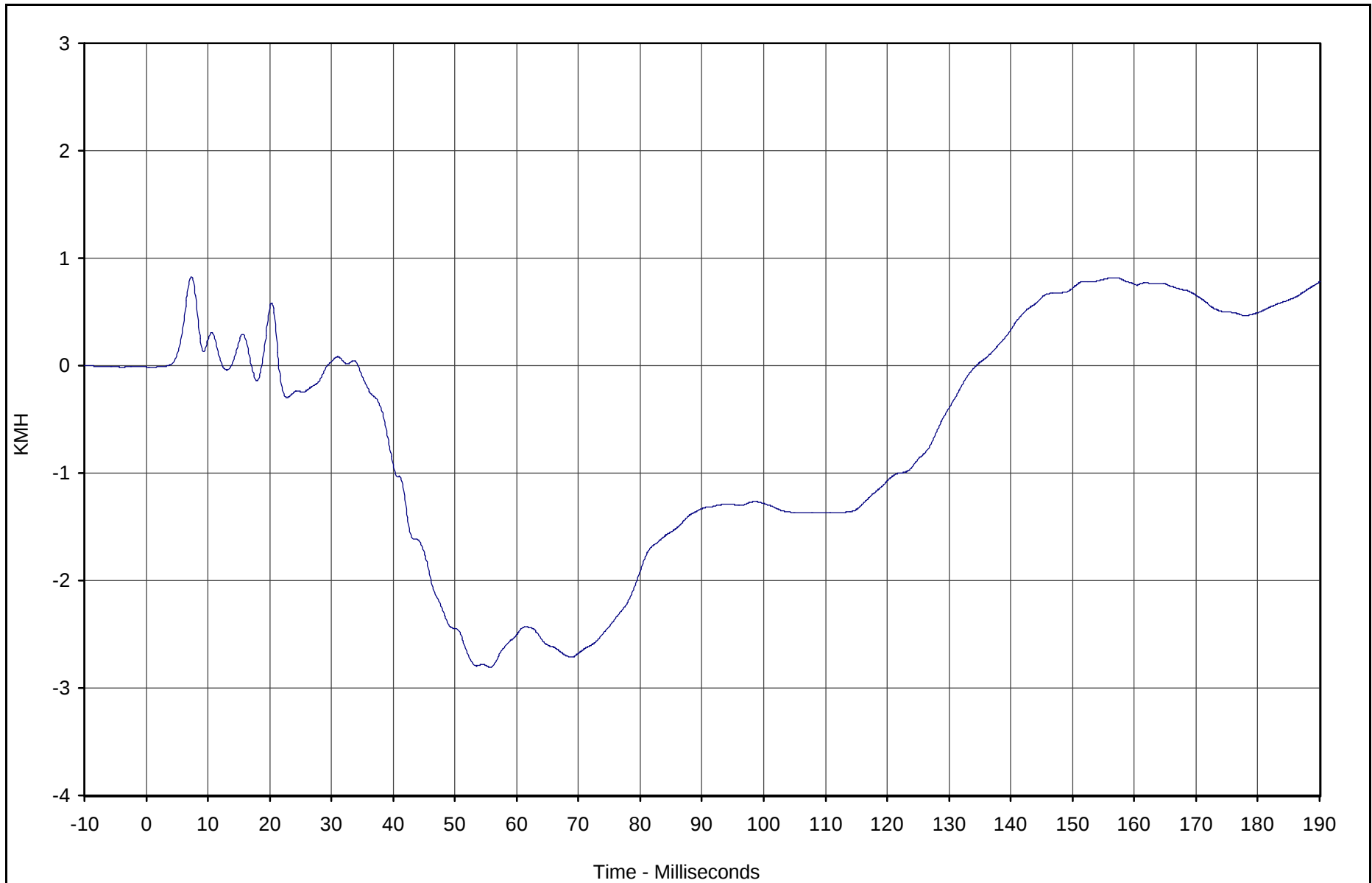


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat Z Velocity	050	IN1	KMH	0.8	7.3	-2.8	55.7	180

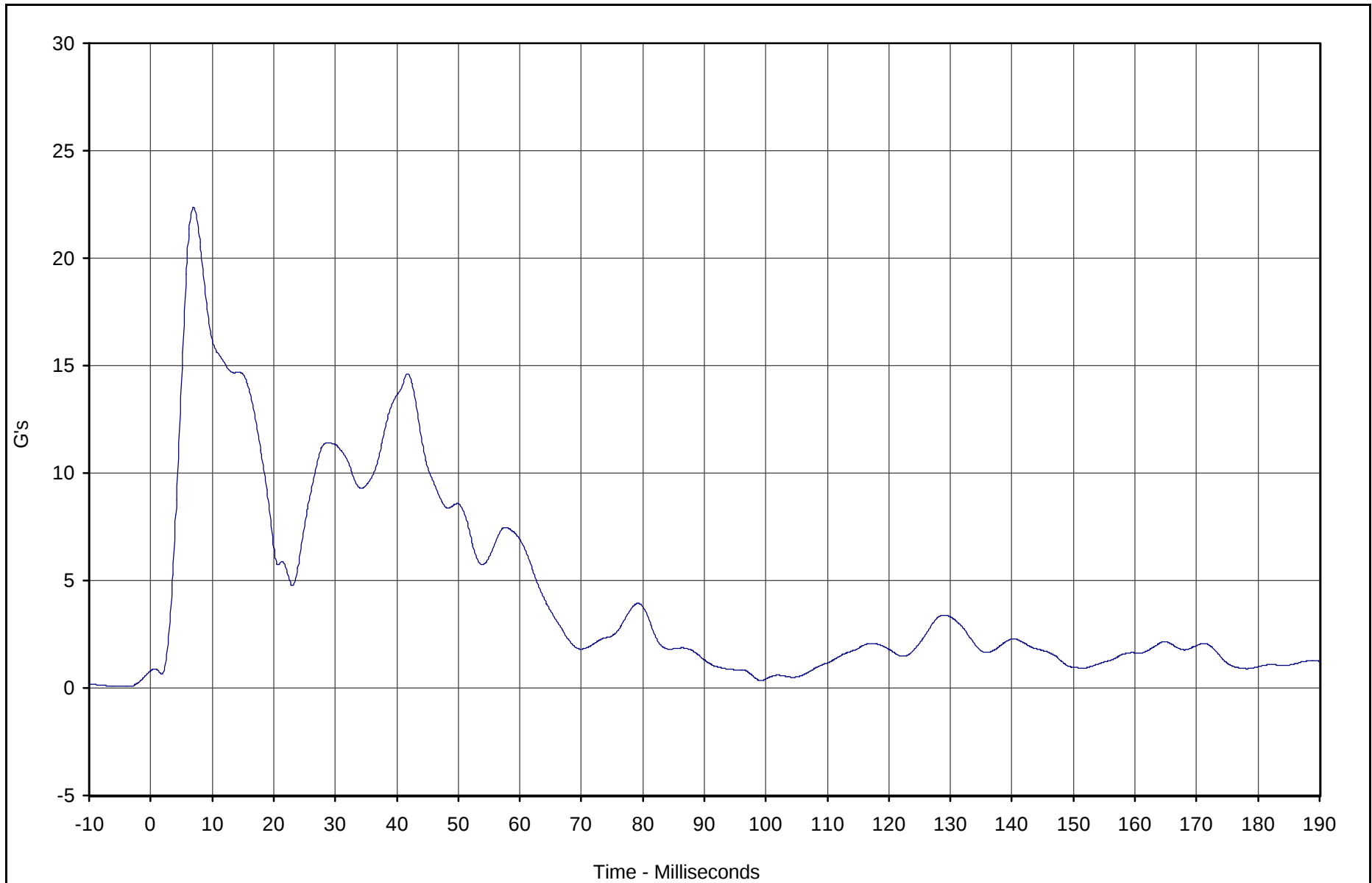


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Sill Rear Seat Resultant	048	RES	G's	22.3	7.0	0.3	99.2	60

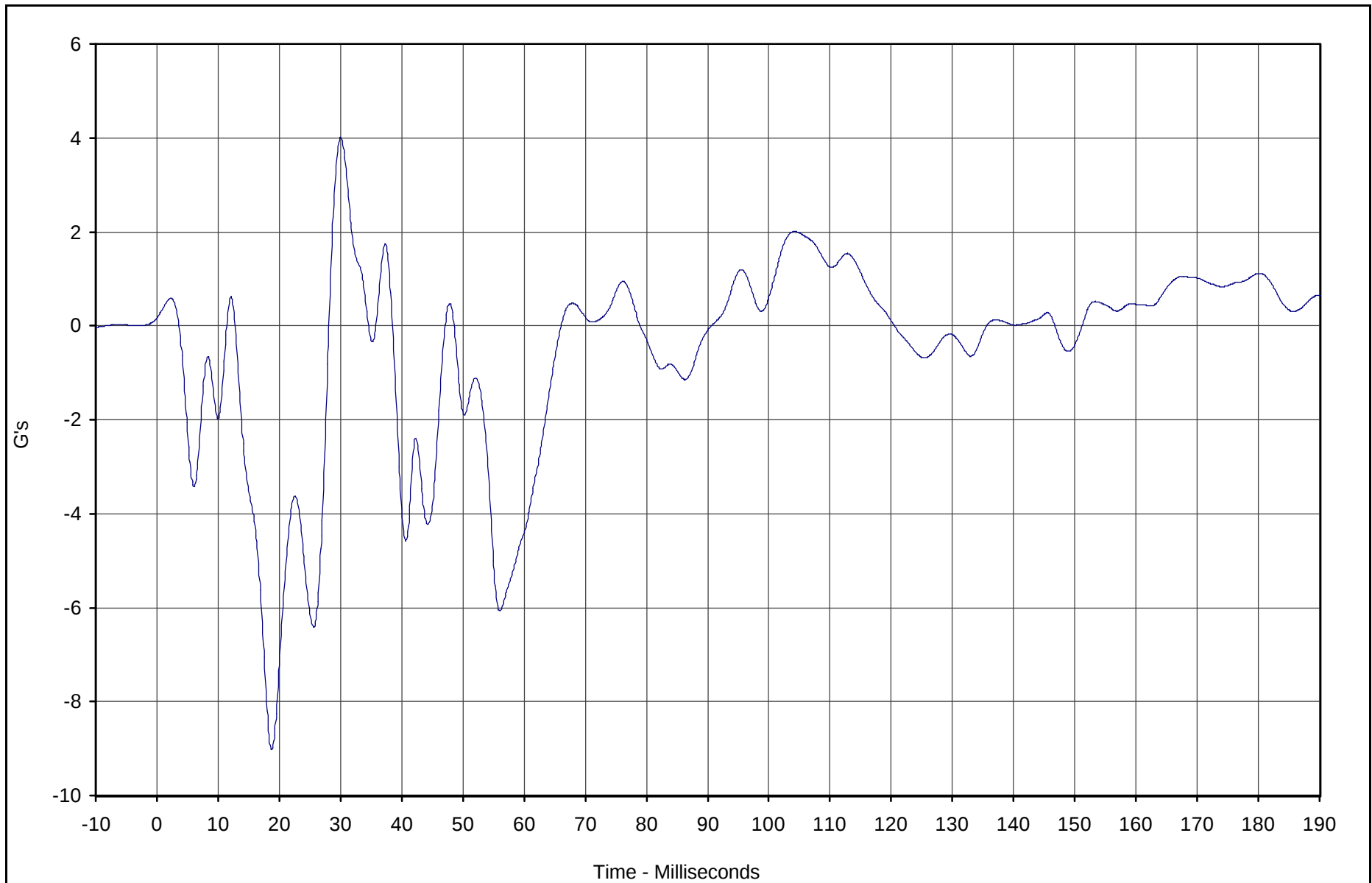


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle X	051	FIL	G's	4.0	30.0	-9.0	18.8	60

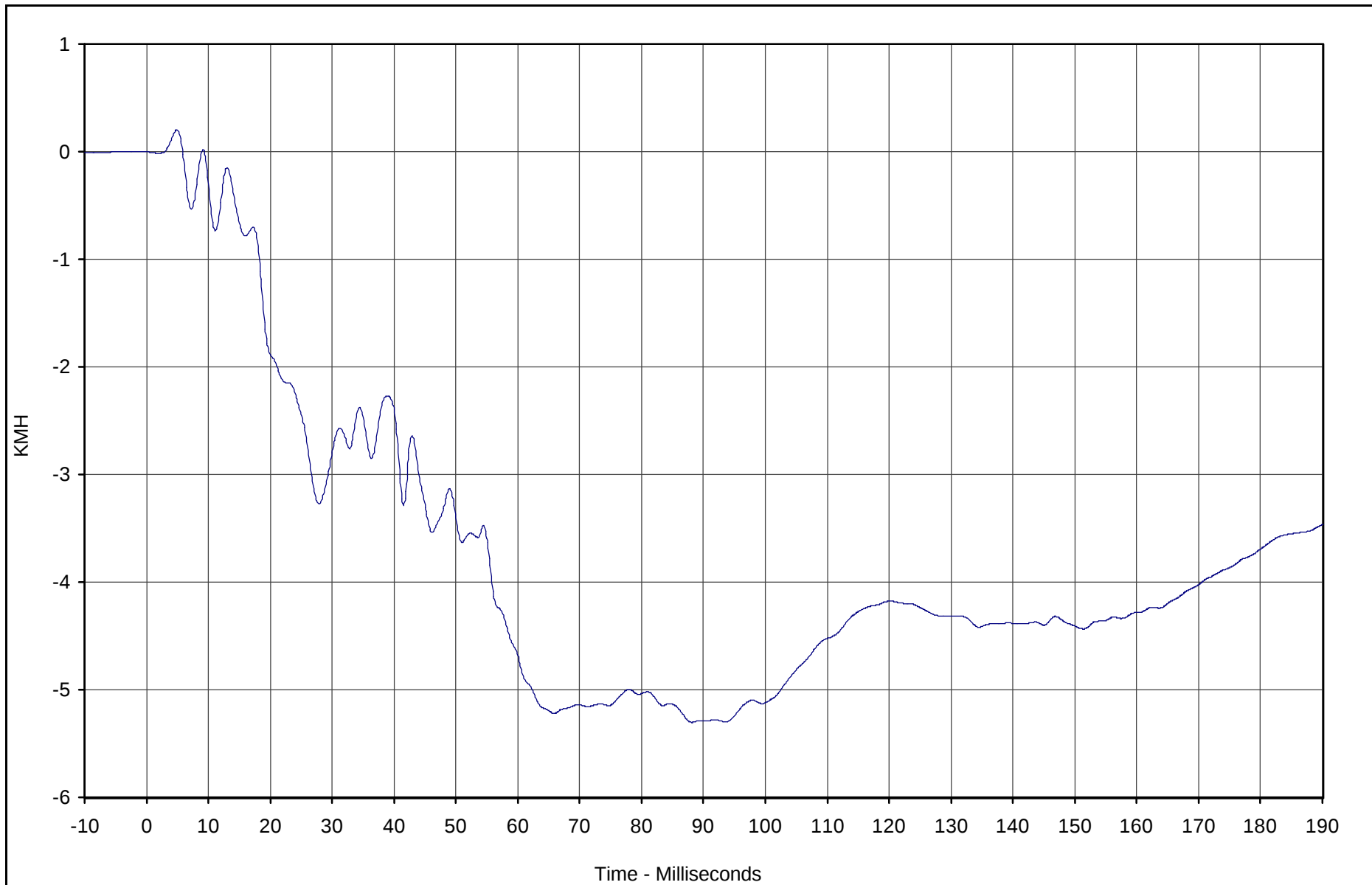


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle X Velocity	051	IN1	KMH	0.2	4.9	-5.3	88.1	180

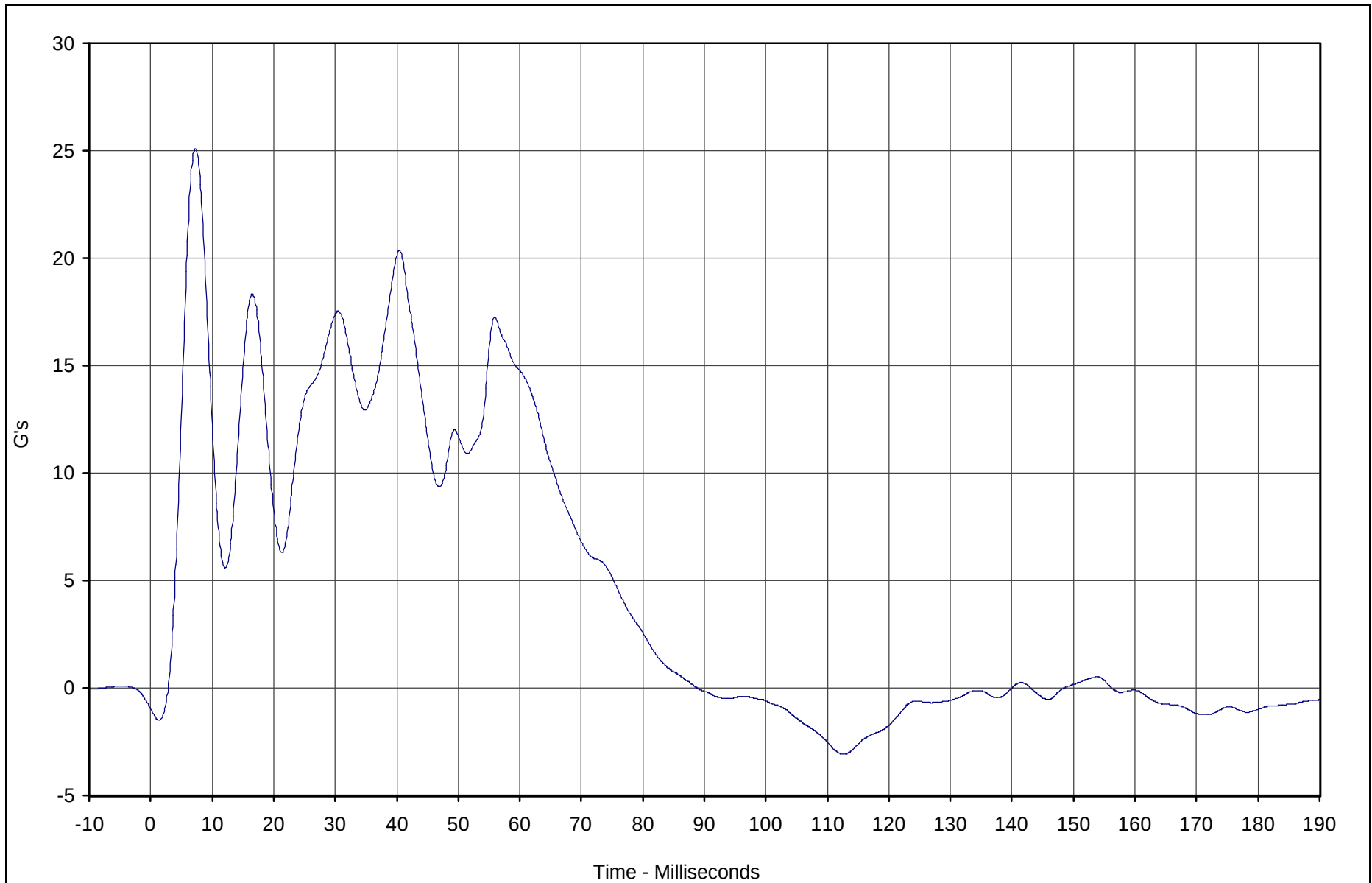


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle Y	052	FIL	G's	25.1	7.3	-3.1	112.7	60

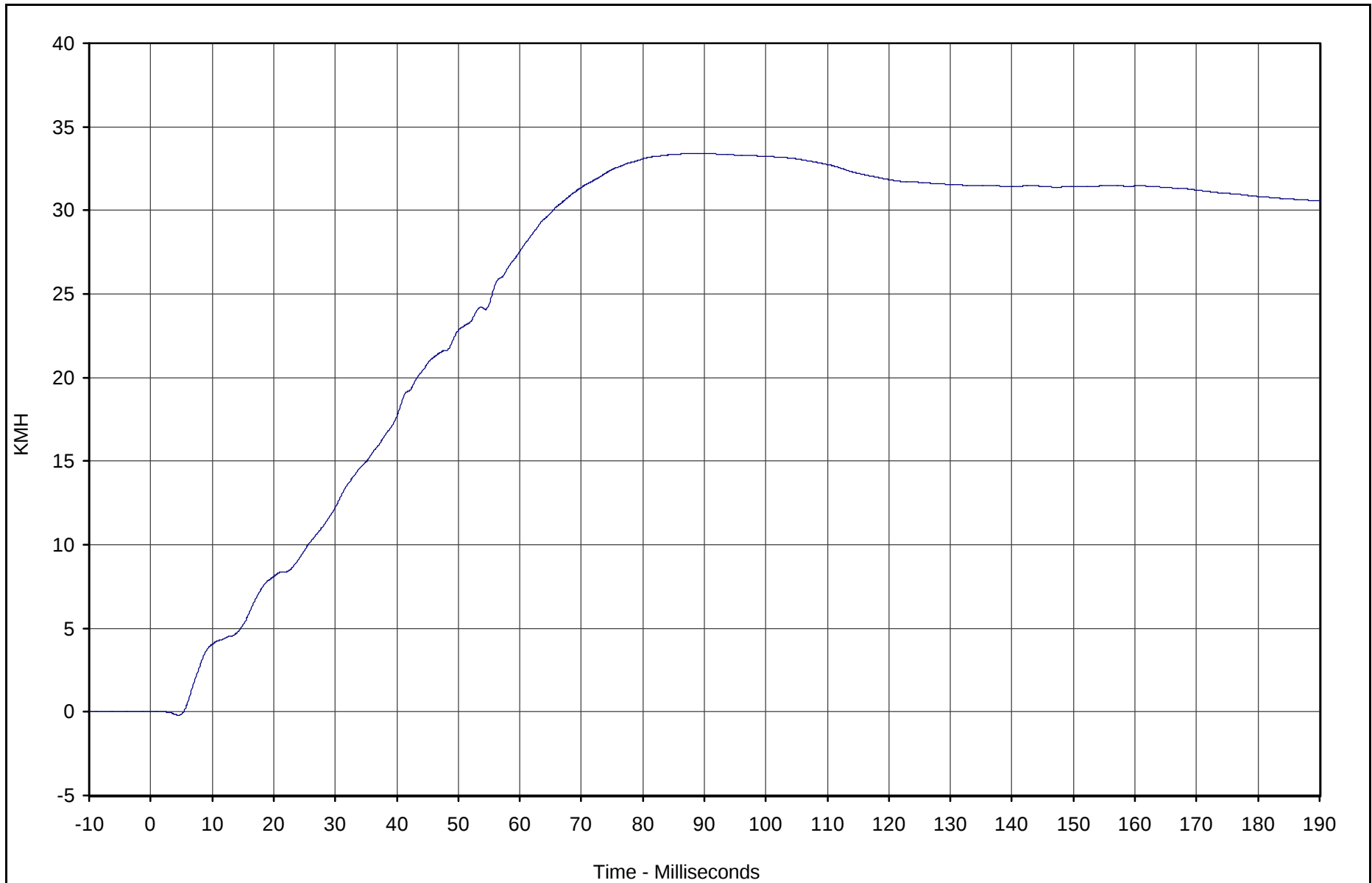


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle Y Velocity	052	IN1	KMH	33.4	88.3	-0.2	4.5	180

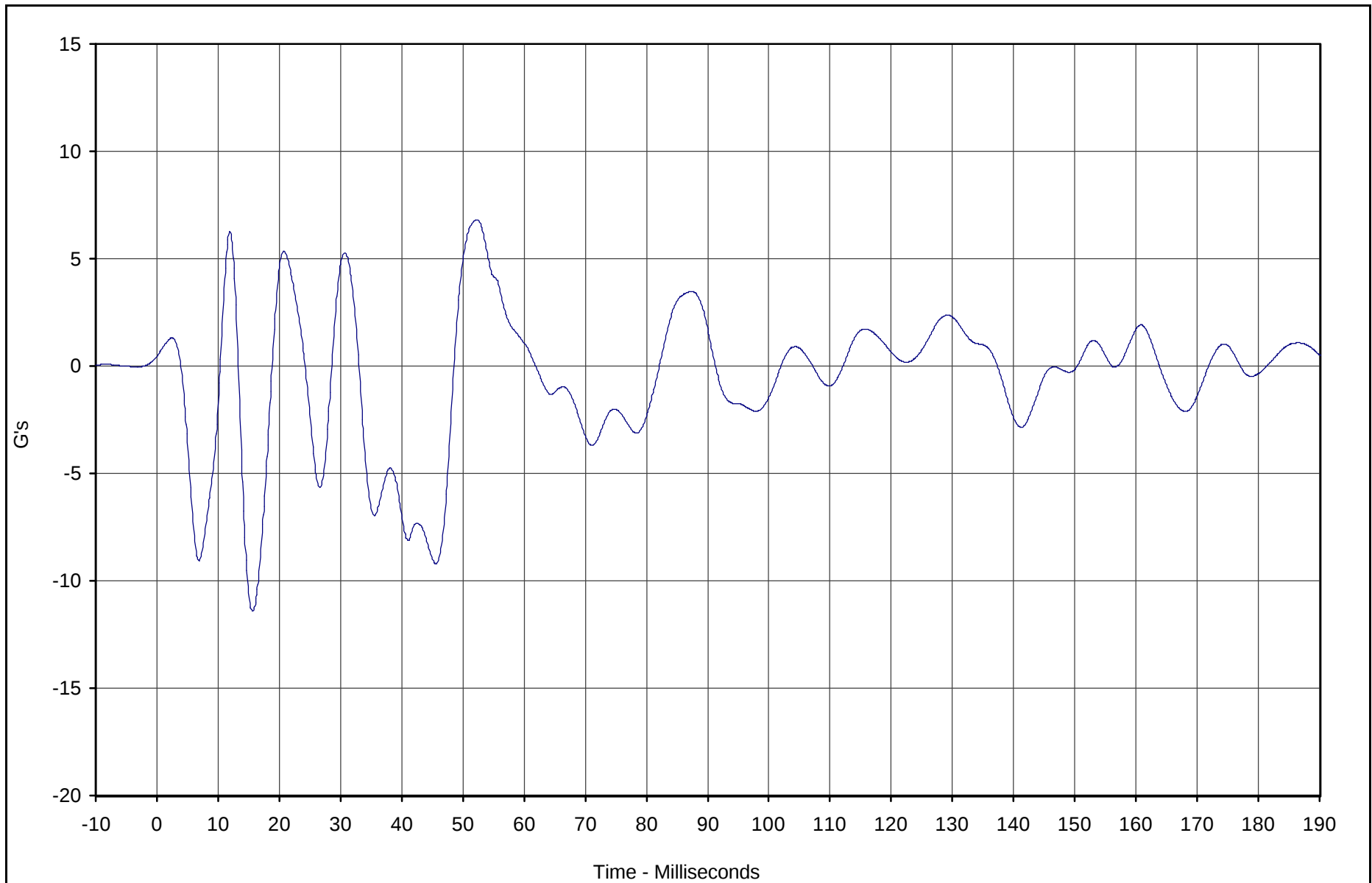


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle Z	053	FIL	G's	6.8	52.3	-11.4	15.6	60

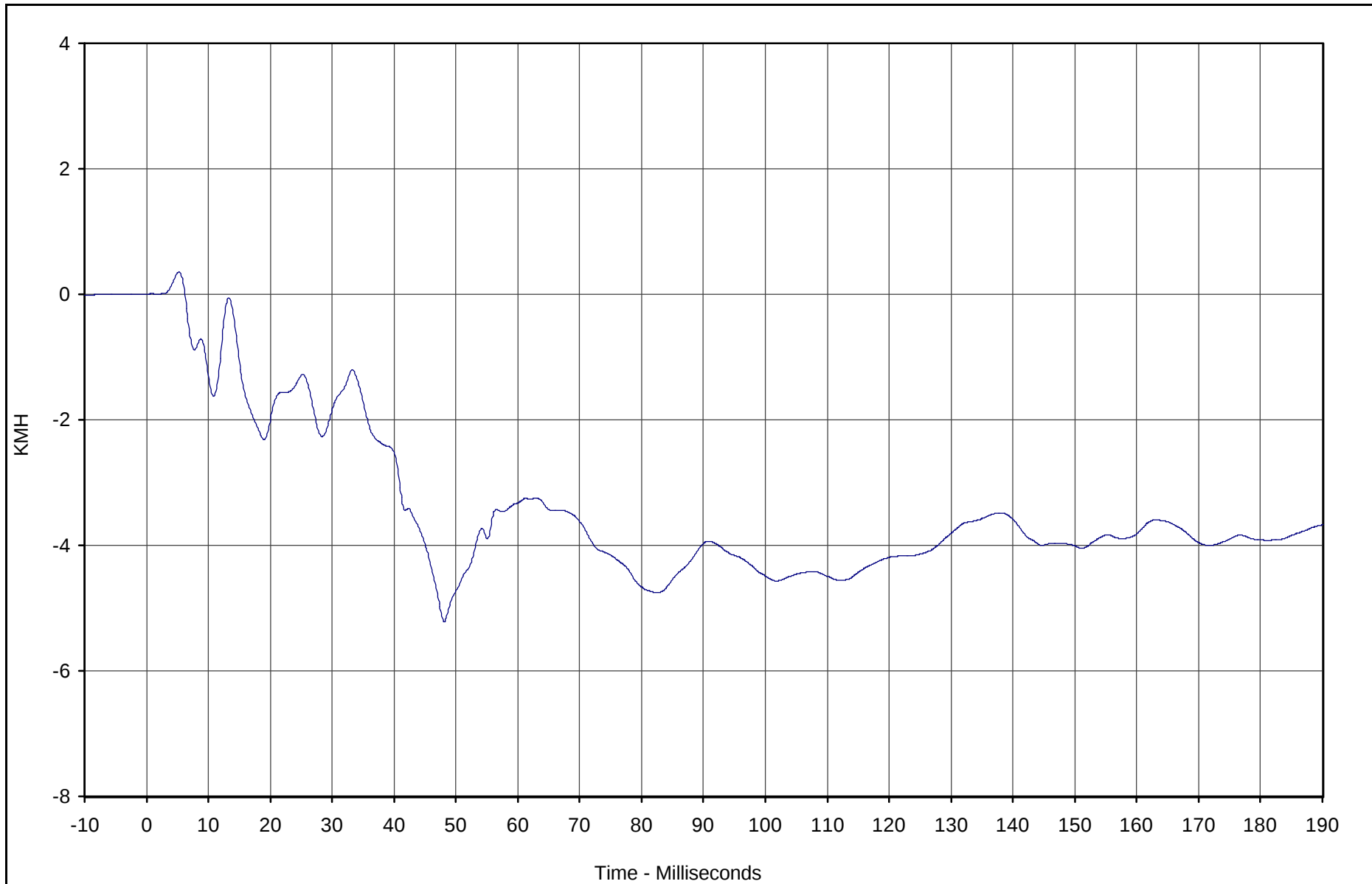


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle Z Velocity	053	IN1	KMH	0.4	5.2	-5.2	48.1	180

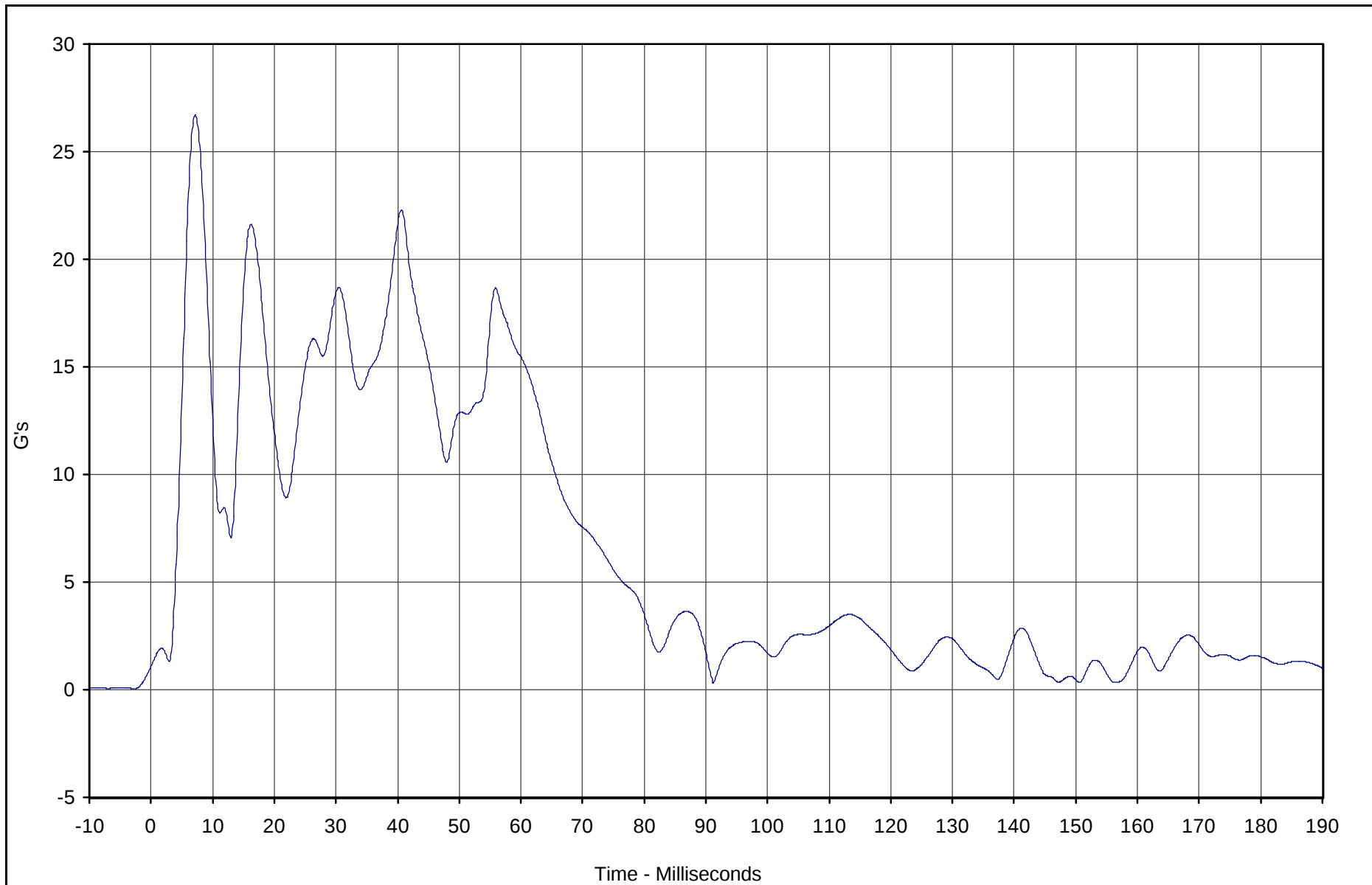


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Floor Above Axle Resultant	051	RES	G's	26.7	7.2	0.3	91.2	60

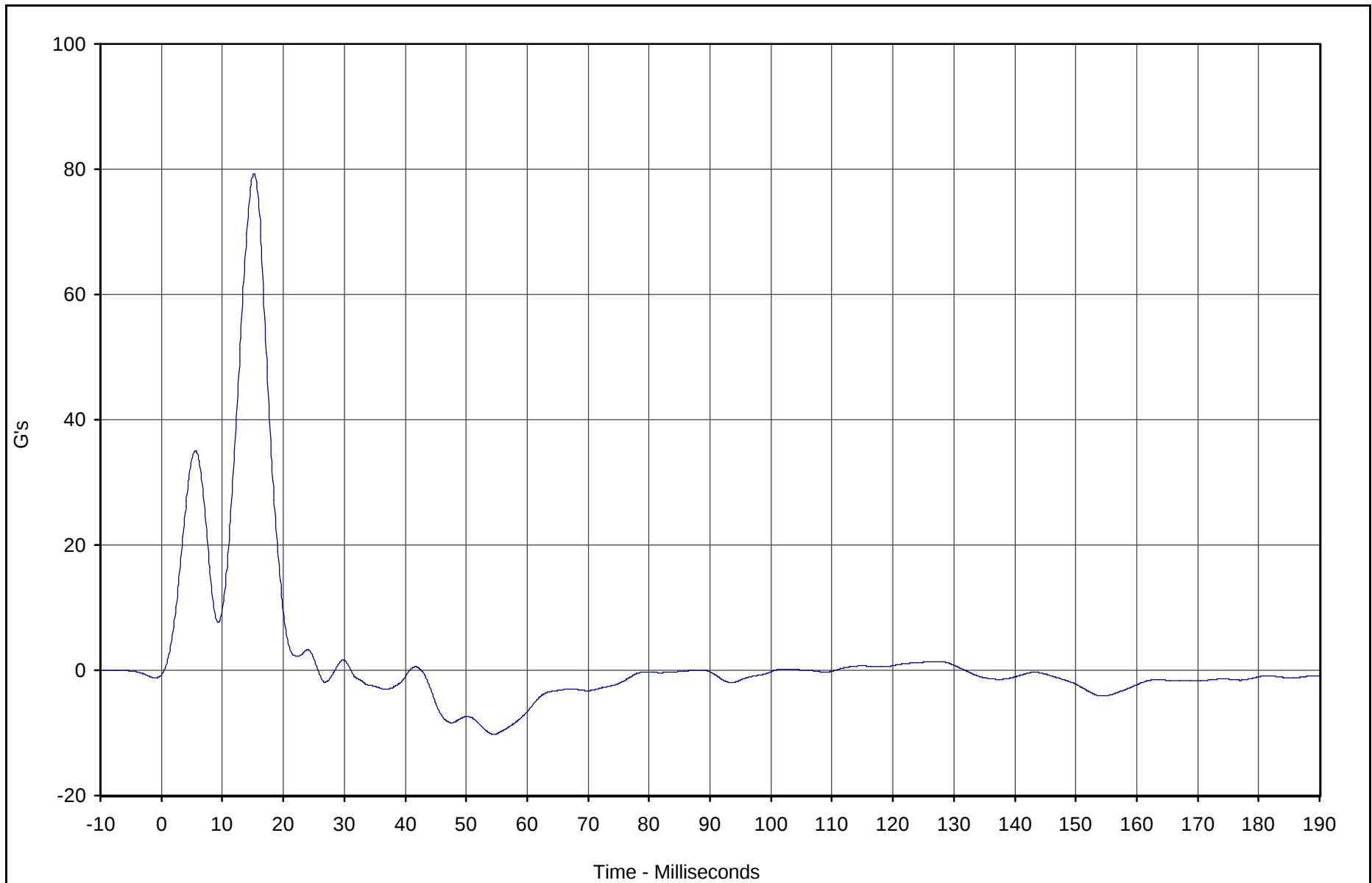


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Sill Rear Seat Y	054	FIL	G's	79.3	15.2	-10.2	54.5	60

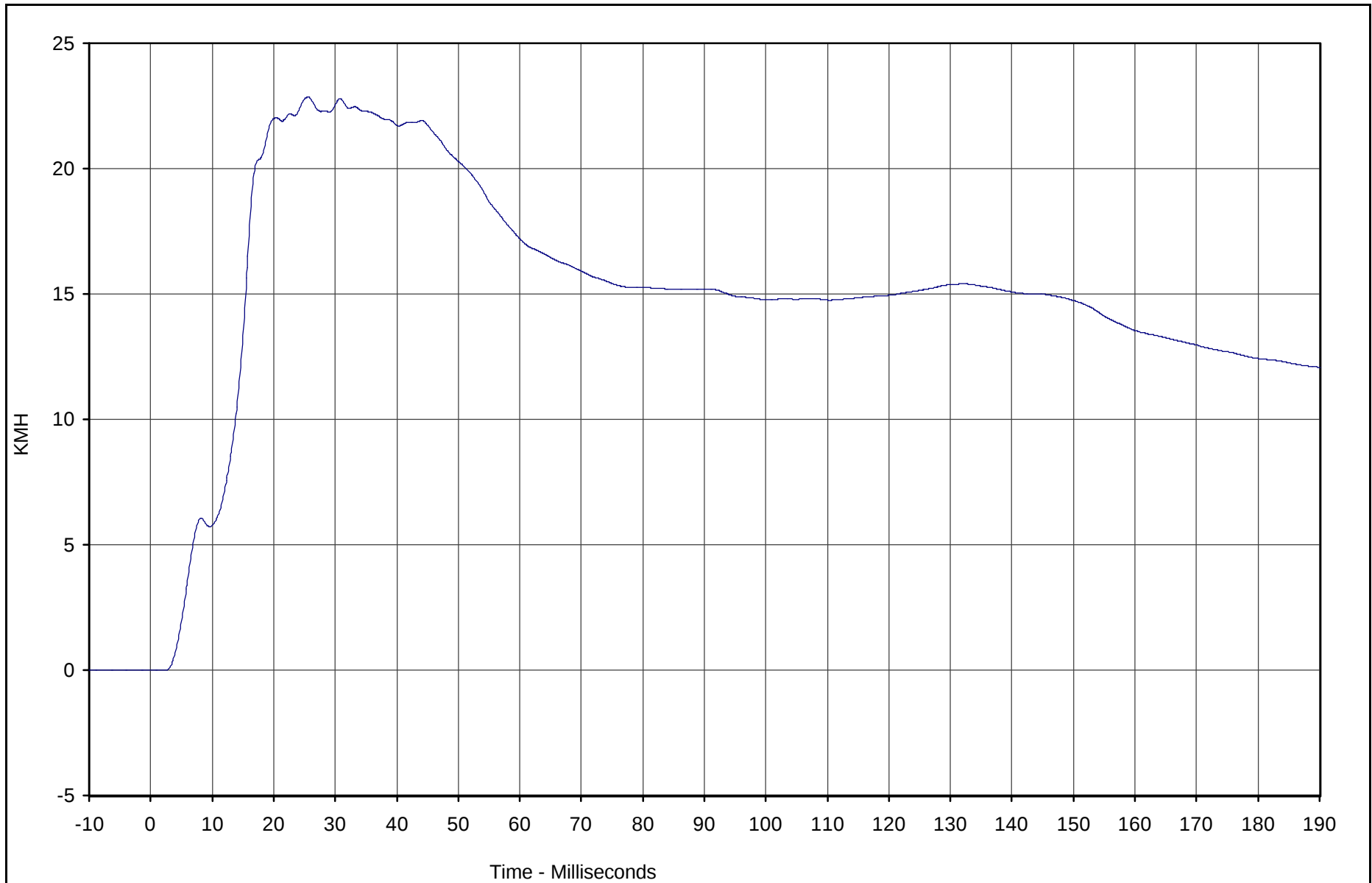


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Sill Rear Door Y Velocity	054	IN1	KMH	22.8	25.6	0.0	2.1	180

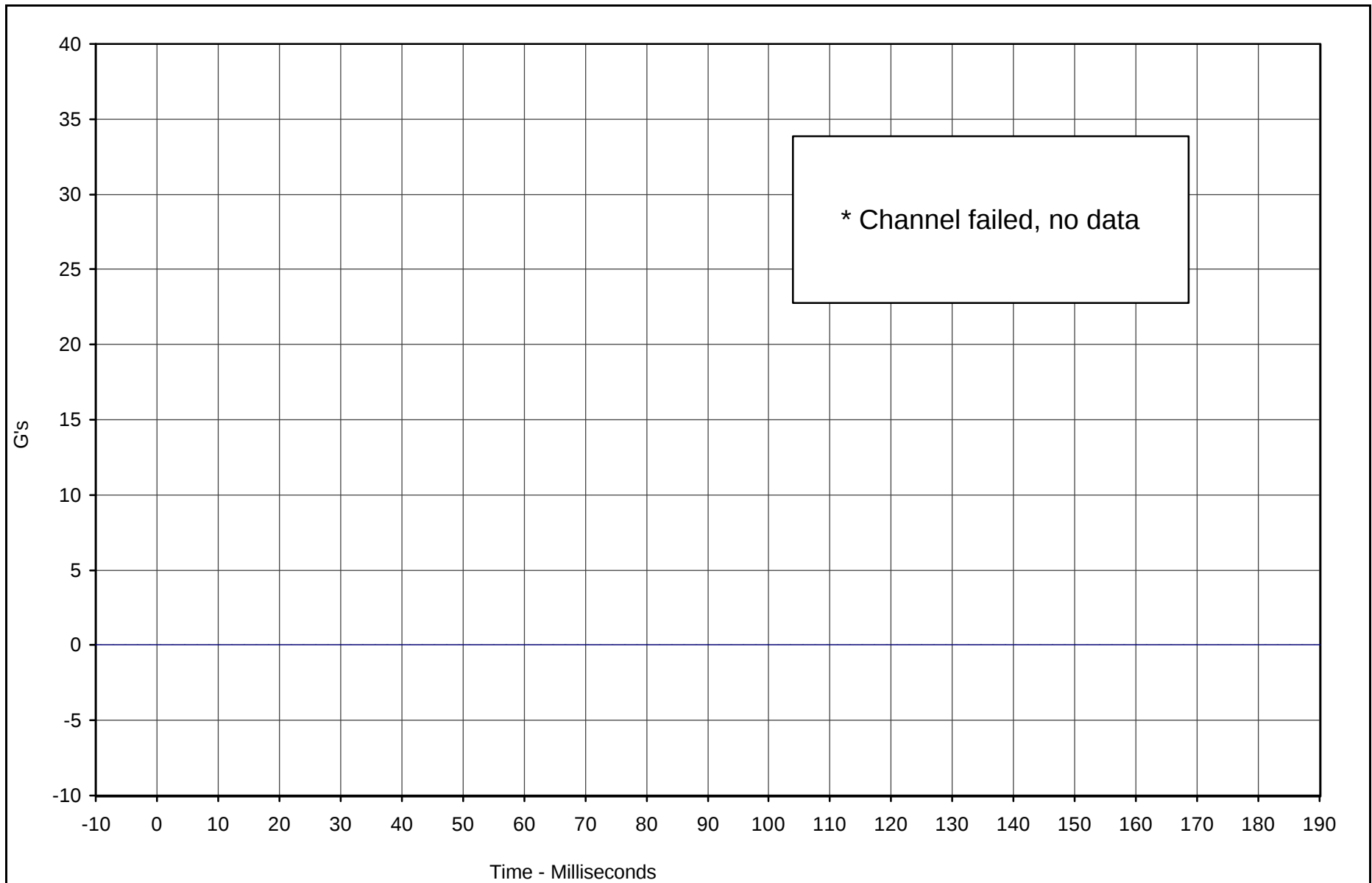


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



* Channel failed, no data

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Sill Front Seat Y	055	FIL	G's	0.0	0.0	0.0	0.0	60

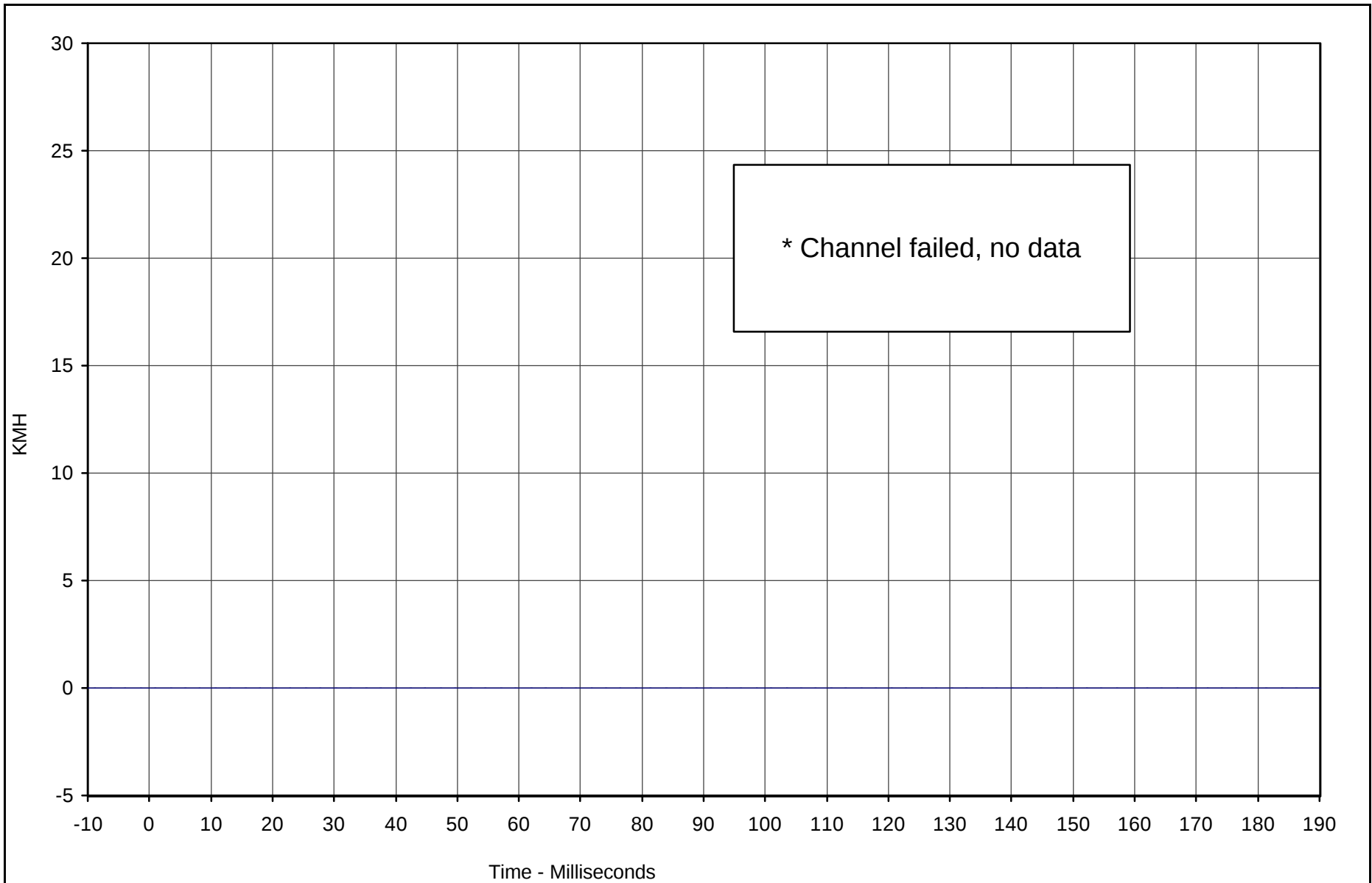


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



* Channel failed, no data

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Sill Front Door Y Velocity	055	IN1	KMH	0.0	0.0	0.0	0.0	180

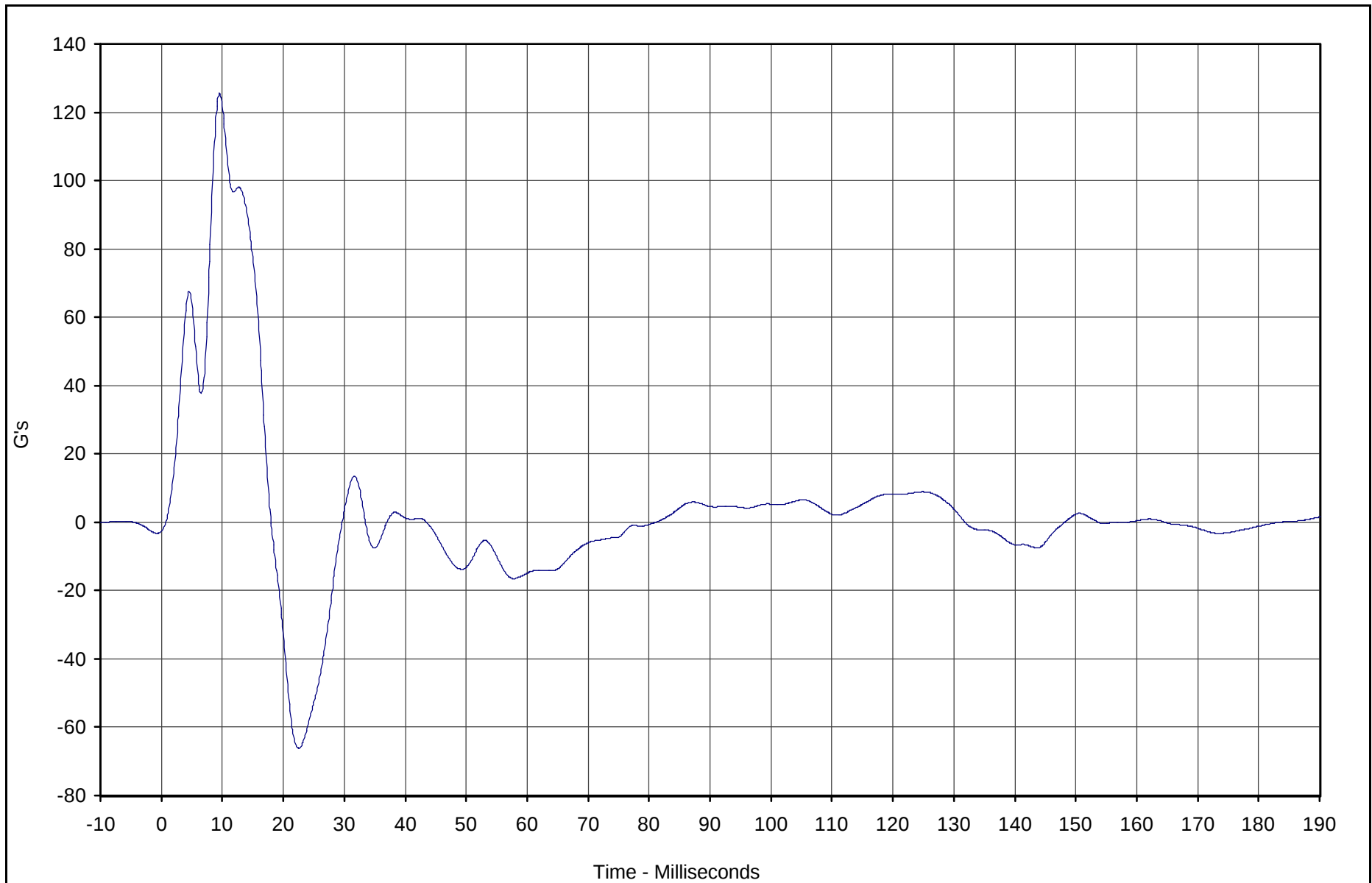


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Door CL Y	056	FIL	G's	125.5	9.5	-66.1	22.5	60

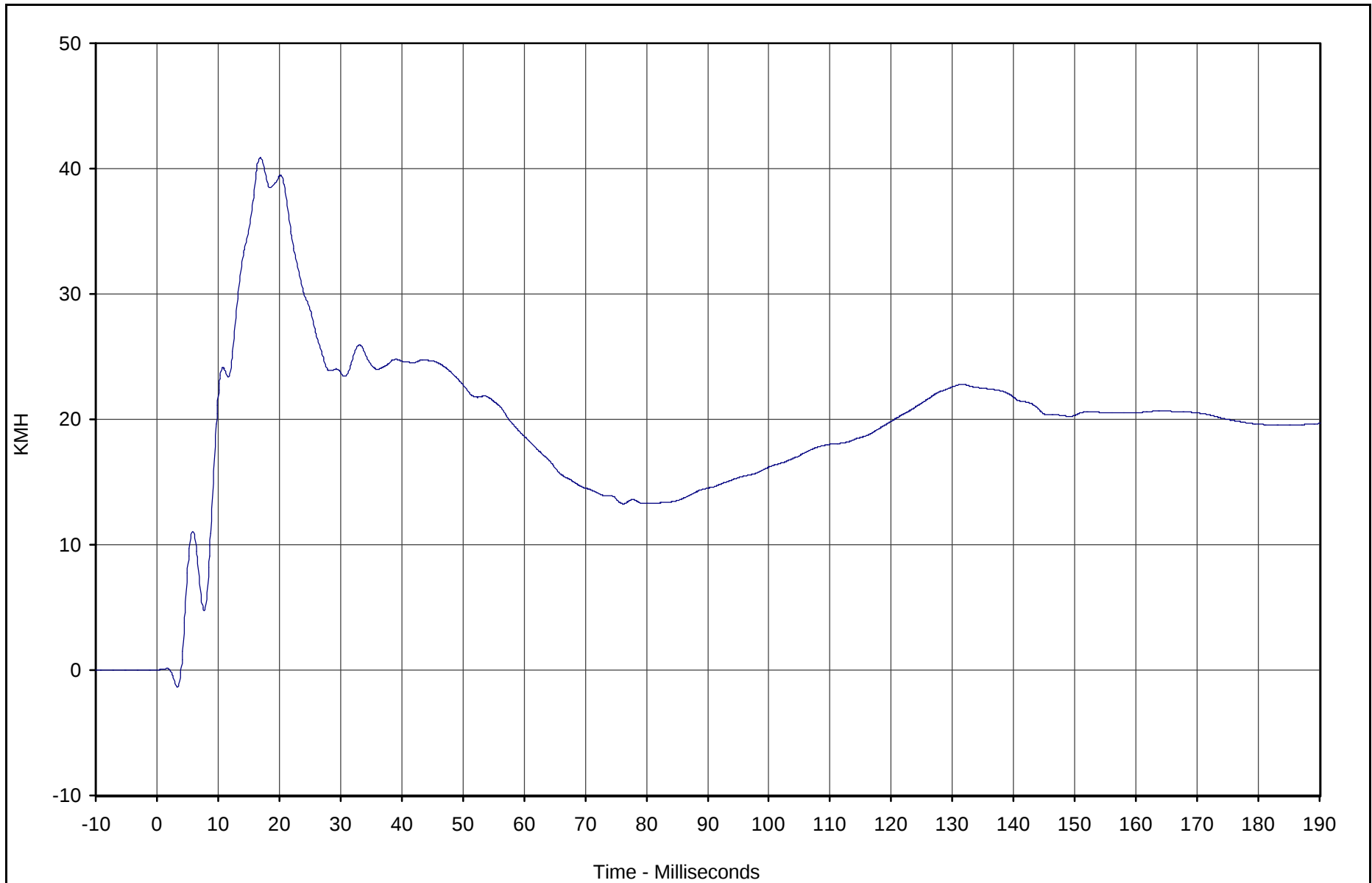


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Door CL Y Velocity	056	IN1	KMH	40.9	16.9	-1.3	3.3	180

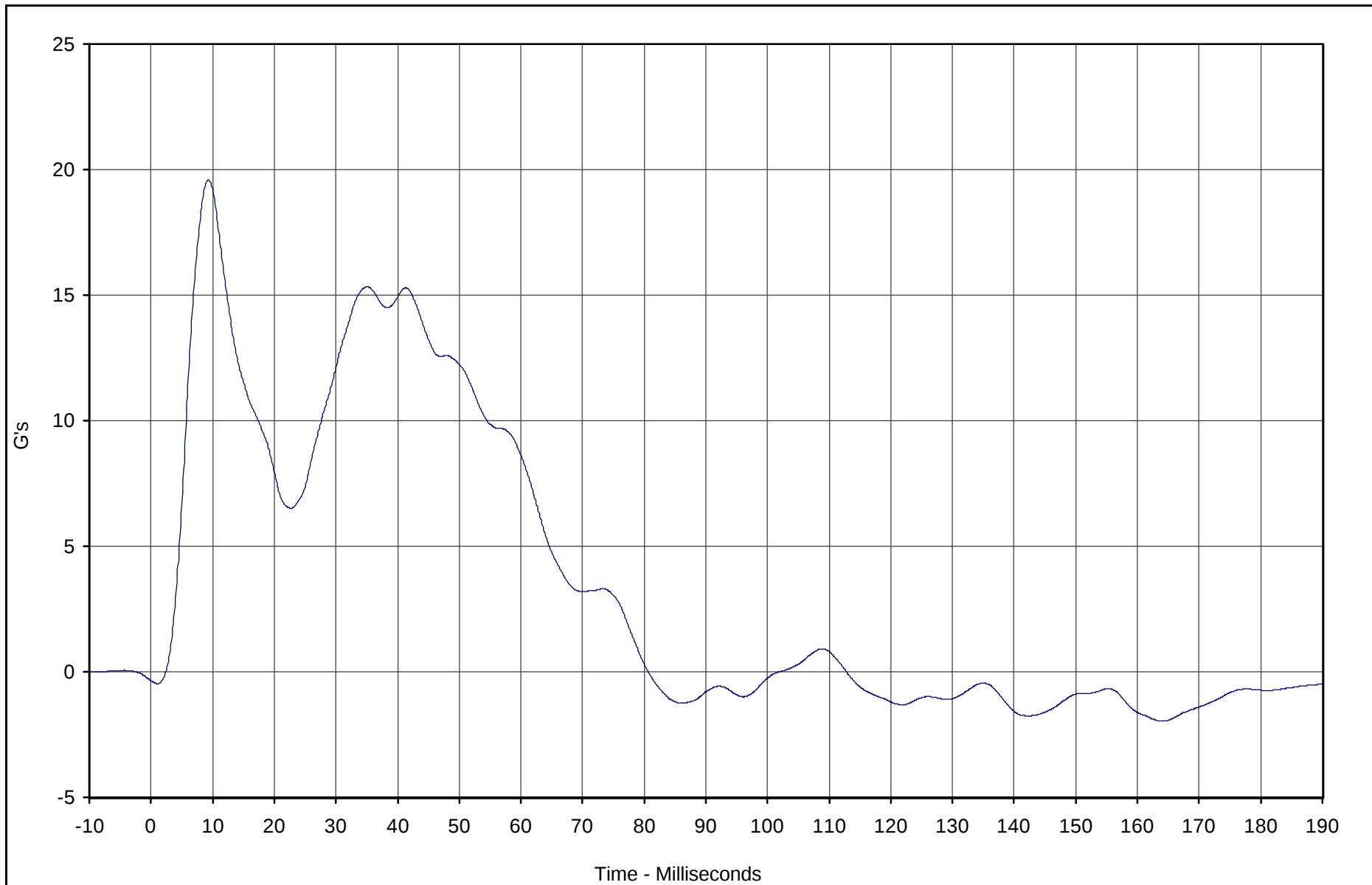


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear Occ. Comp. Y	057	FIL	G's	19.6	9.3	-2.0	164.1	60

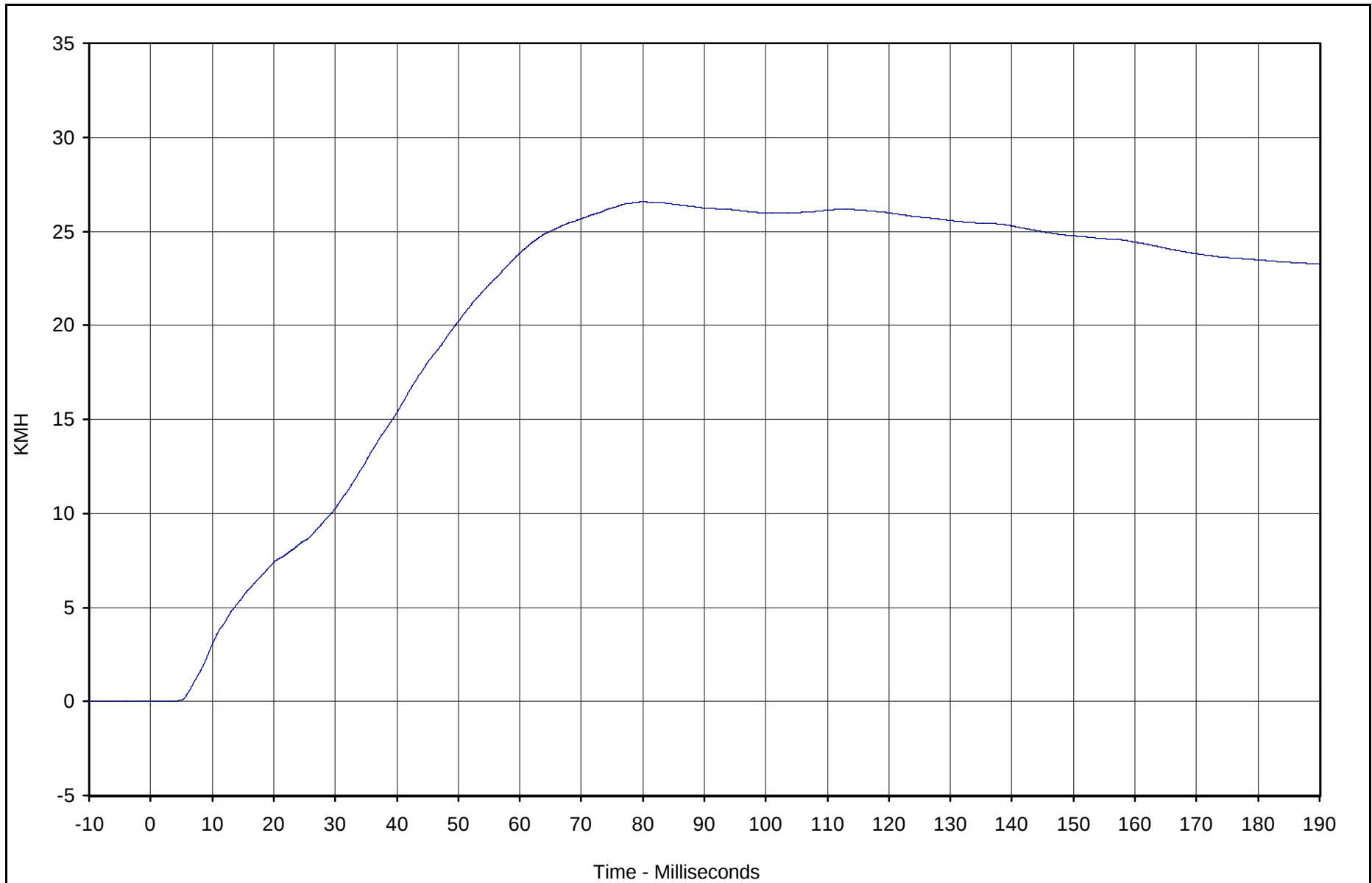


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear Occ. Comp. Y Velocity	057	IN1	KMH	26.6	80.1	0.0	0.0	180

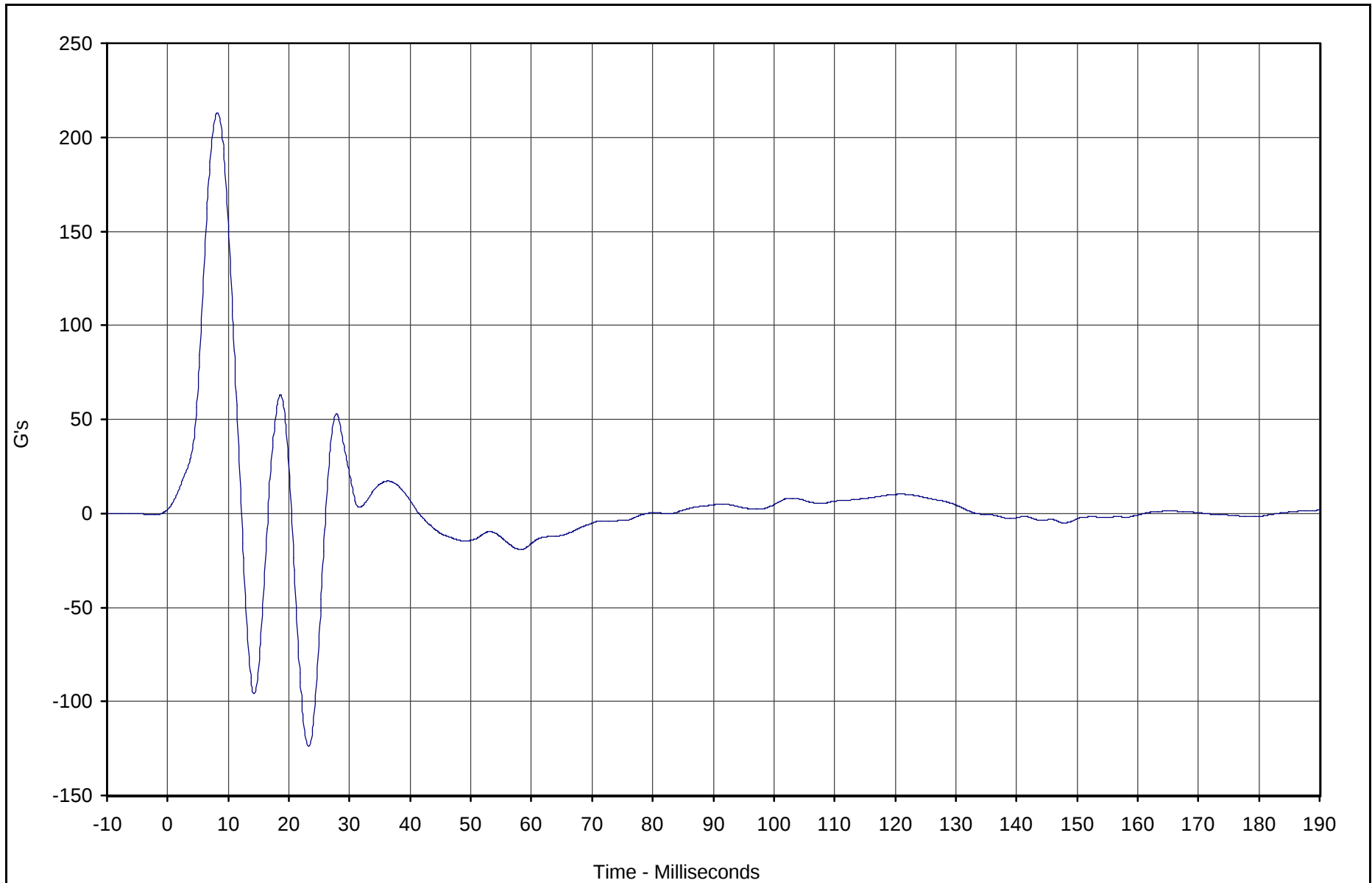


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Door Mid Rear Y	058	FIL	G's	213.1	8.2	-123.8	23.2	60

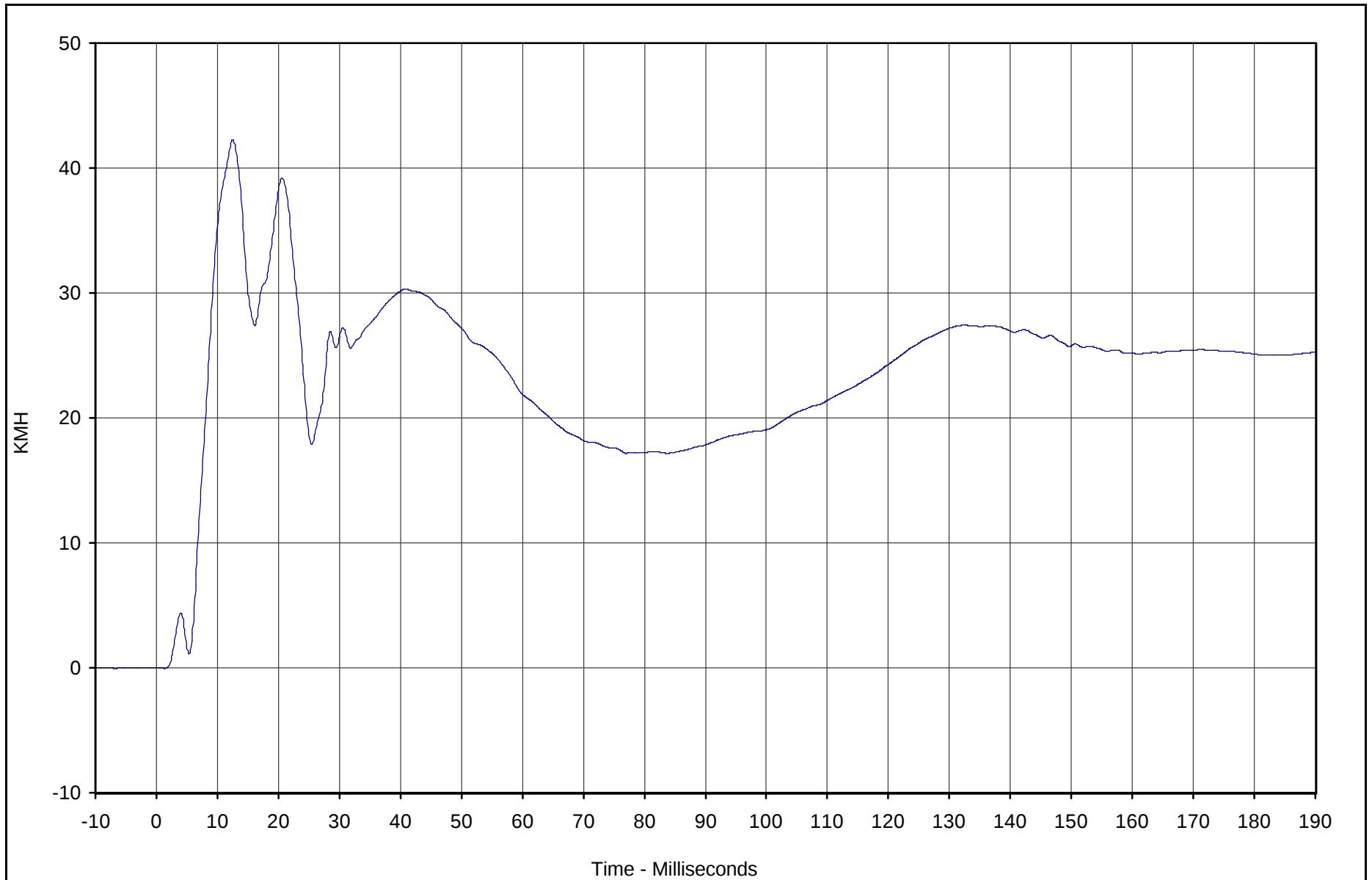


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Door Mid Rear Y Vel.	058	IN1	KMH	42.3	12.5	0.0	1.3	180

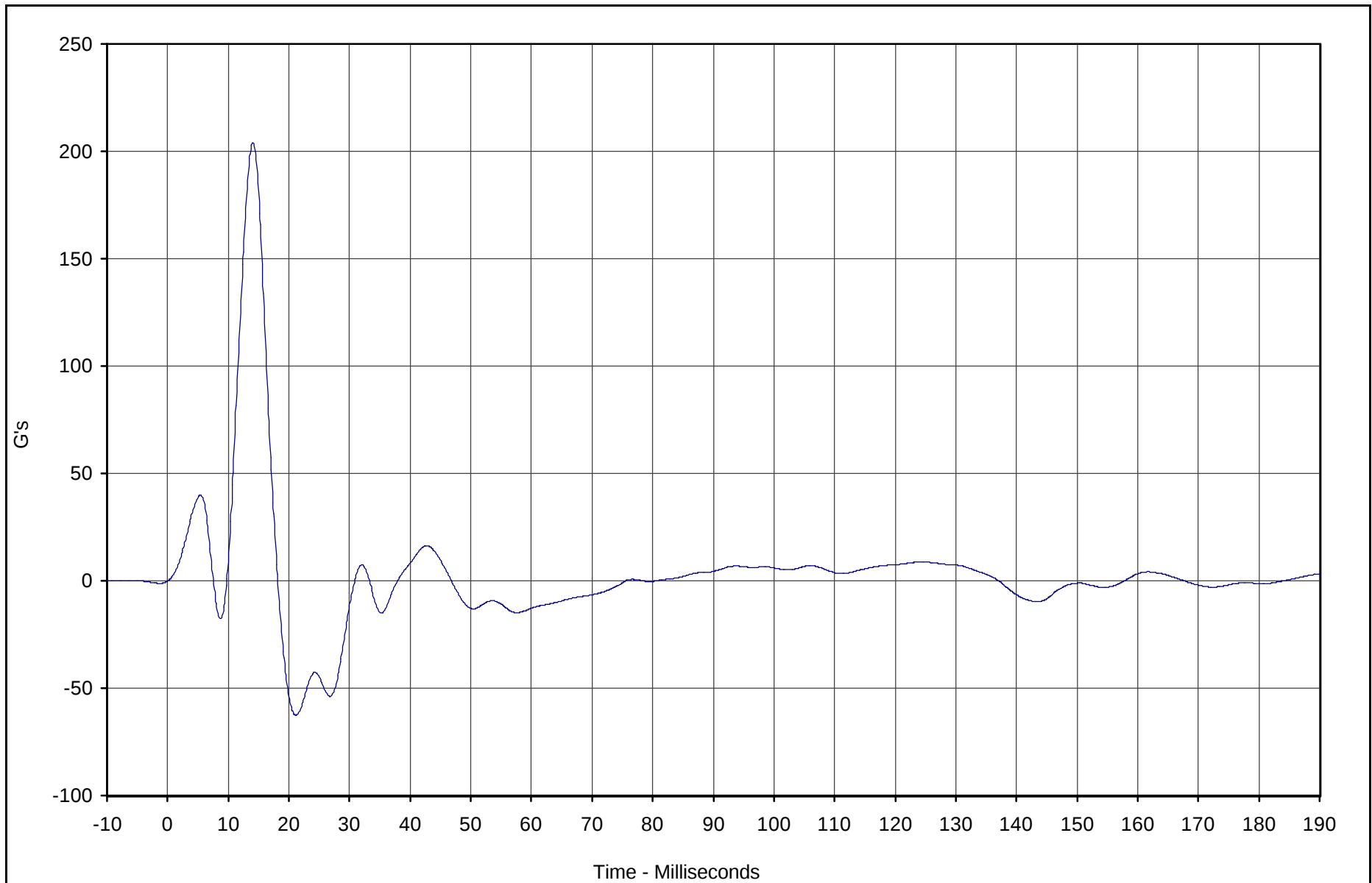


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Door Upper CL Y	059	FIL	G's	204.1	14.1	-62.6	21.2	60

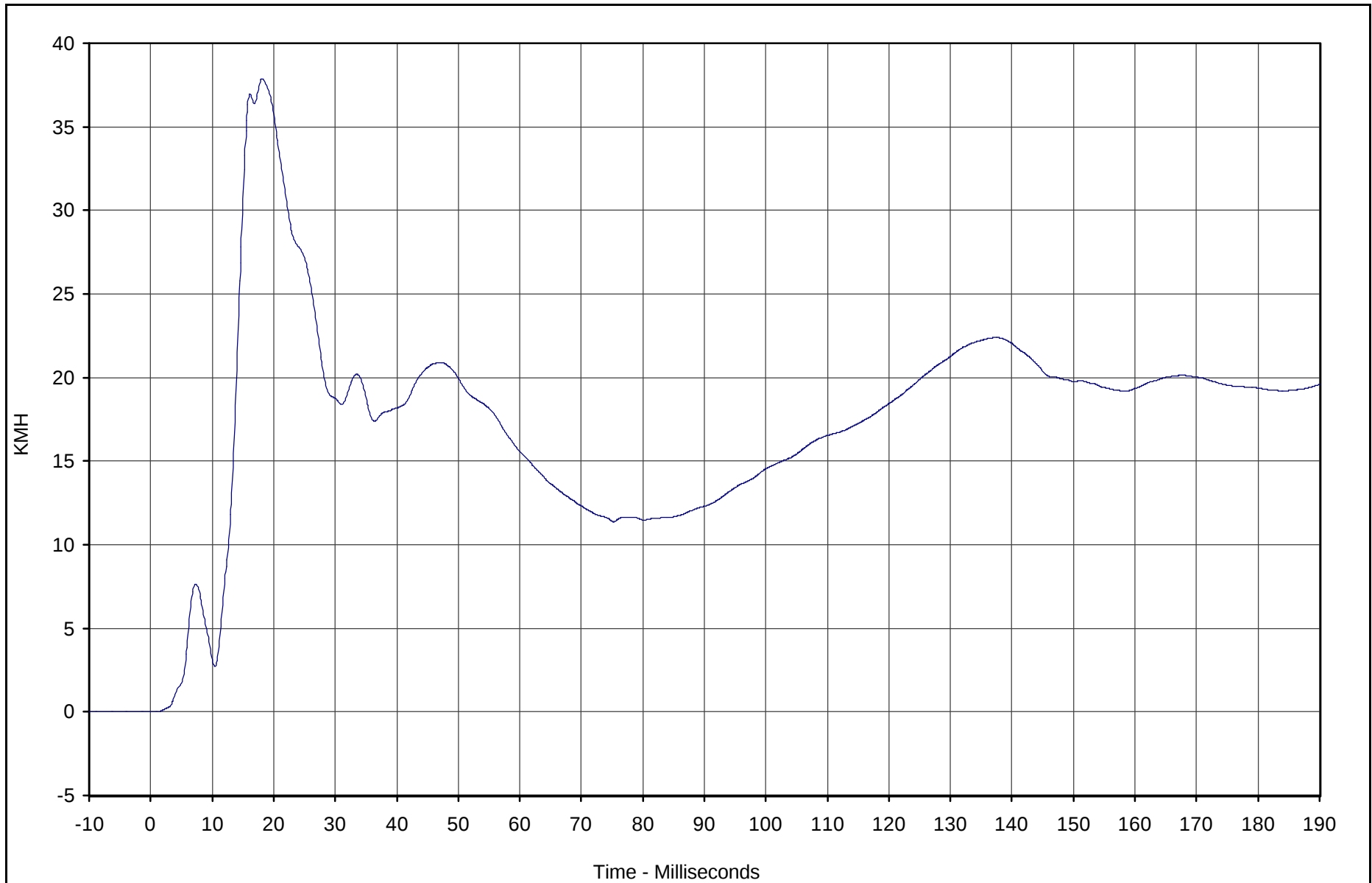


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



* Channel failed at 22.1 msec.

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Door Upper CL Y Vel.	059	IN1	KMH	37.9	18.1	0.0	0.9	180

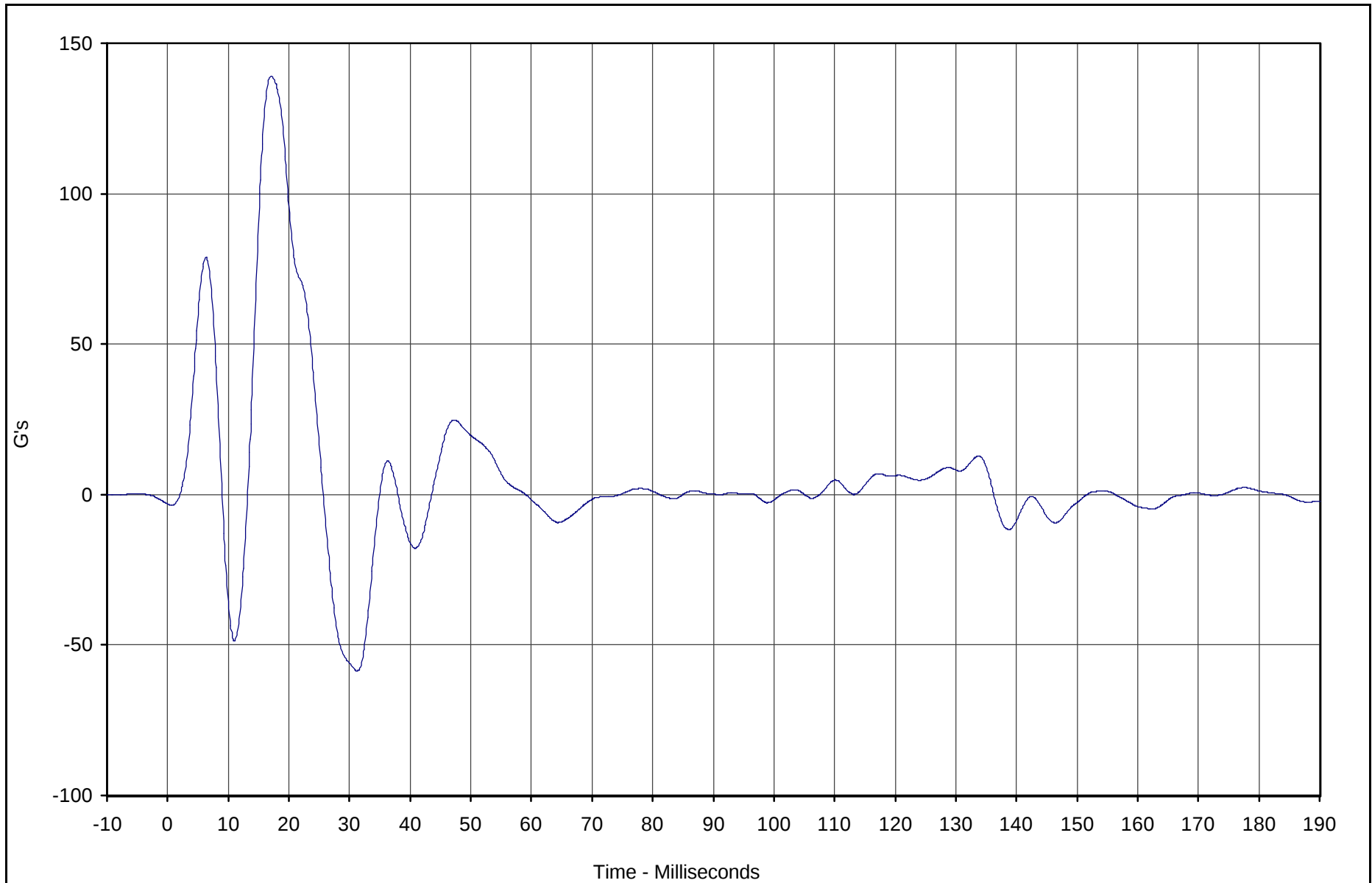


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear Door Mid Rear Y	060	FIL	G's	139.0	17.1	-58.7	31.3	60

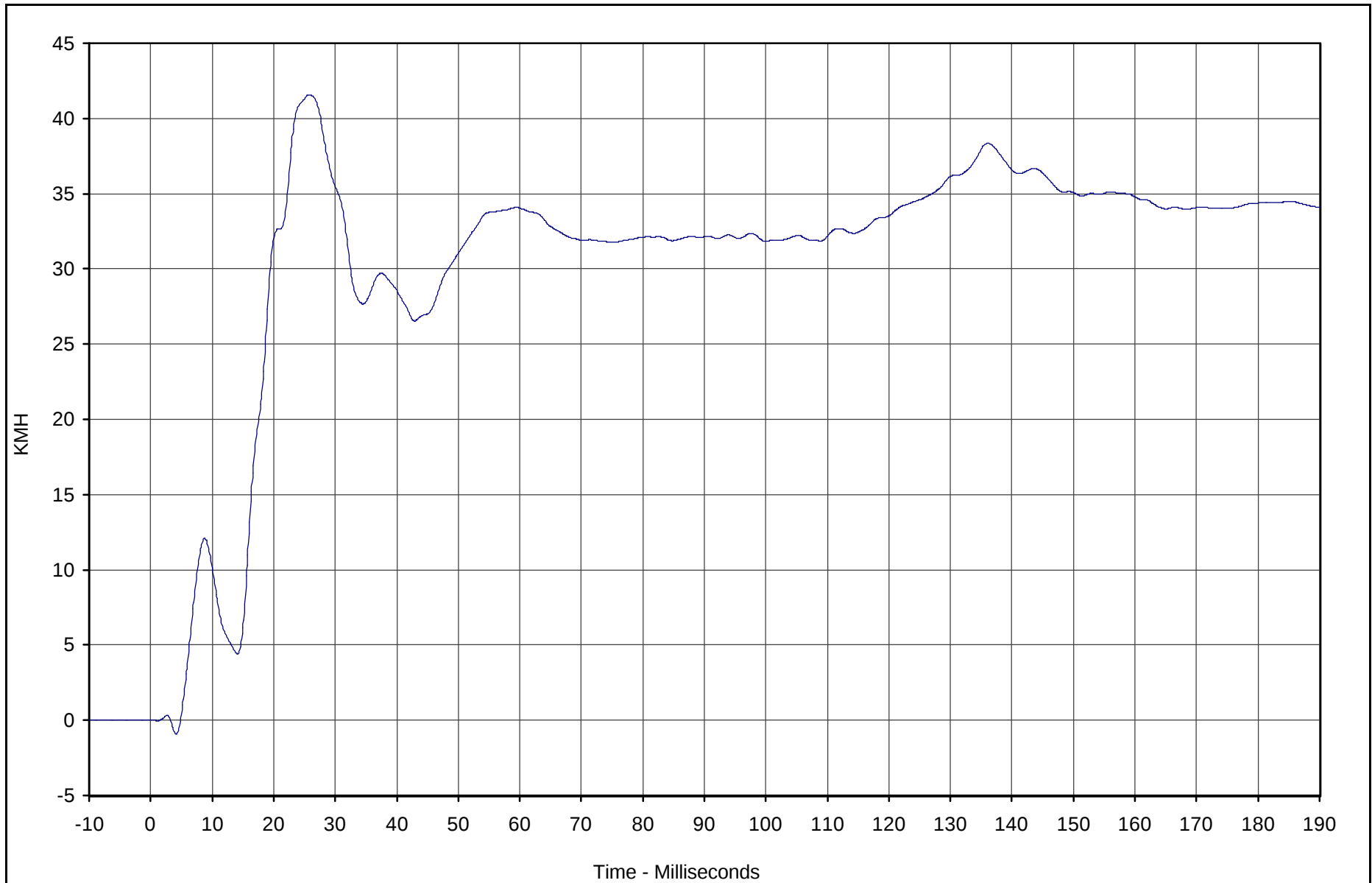


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear Door Mid Rear Y Vel.	060	IN1	KMH	41.6	25.8	-0.9	4.2	180

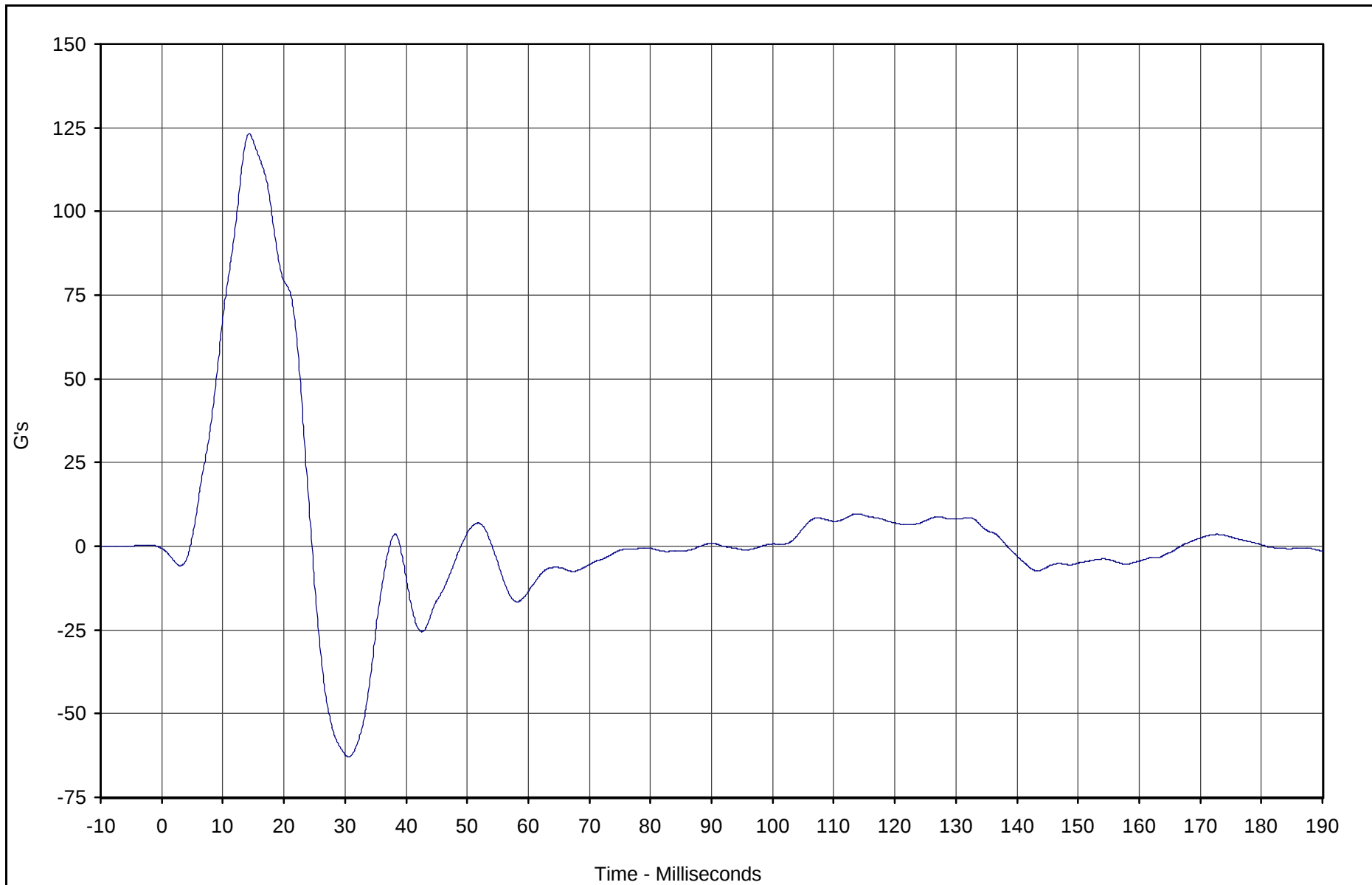


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear Door Upper CL Y	061	FIL	G's	123.2	14.3	-62.9	30.6	60

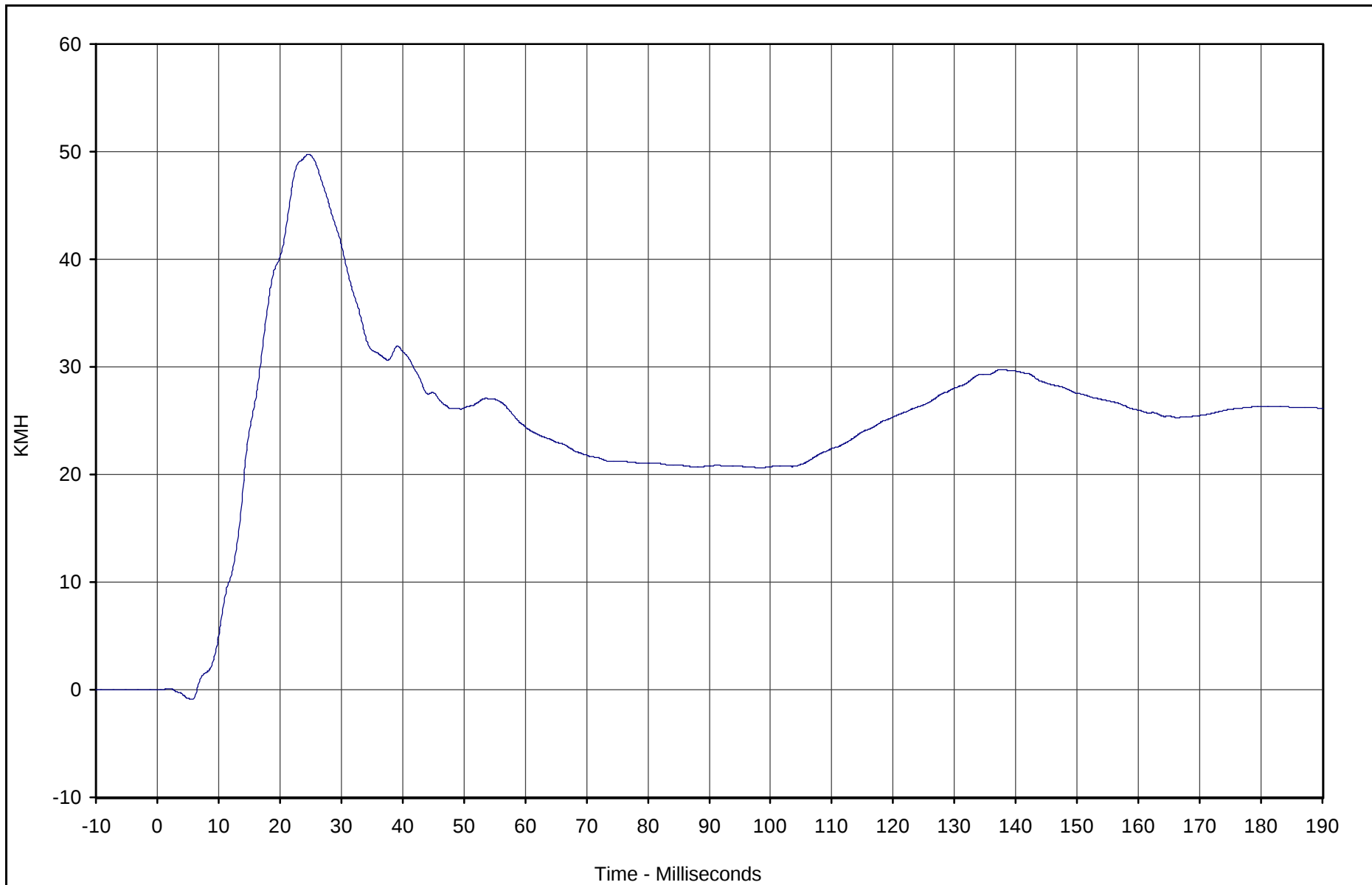


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear Door Upper CL Y Vel.	061	IN1	KMH	49.8	24.7	-0.9	5.6	180

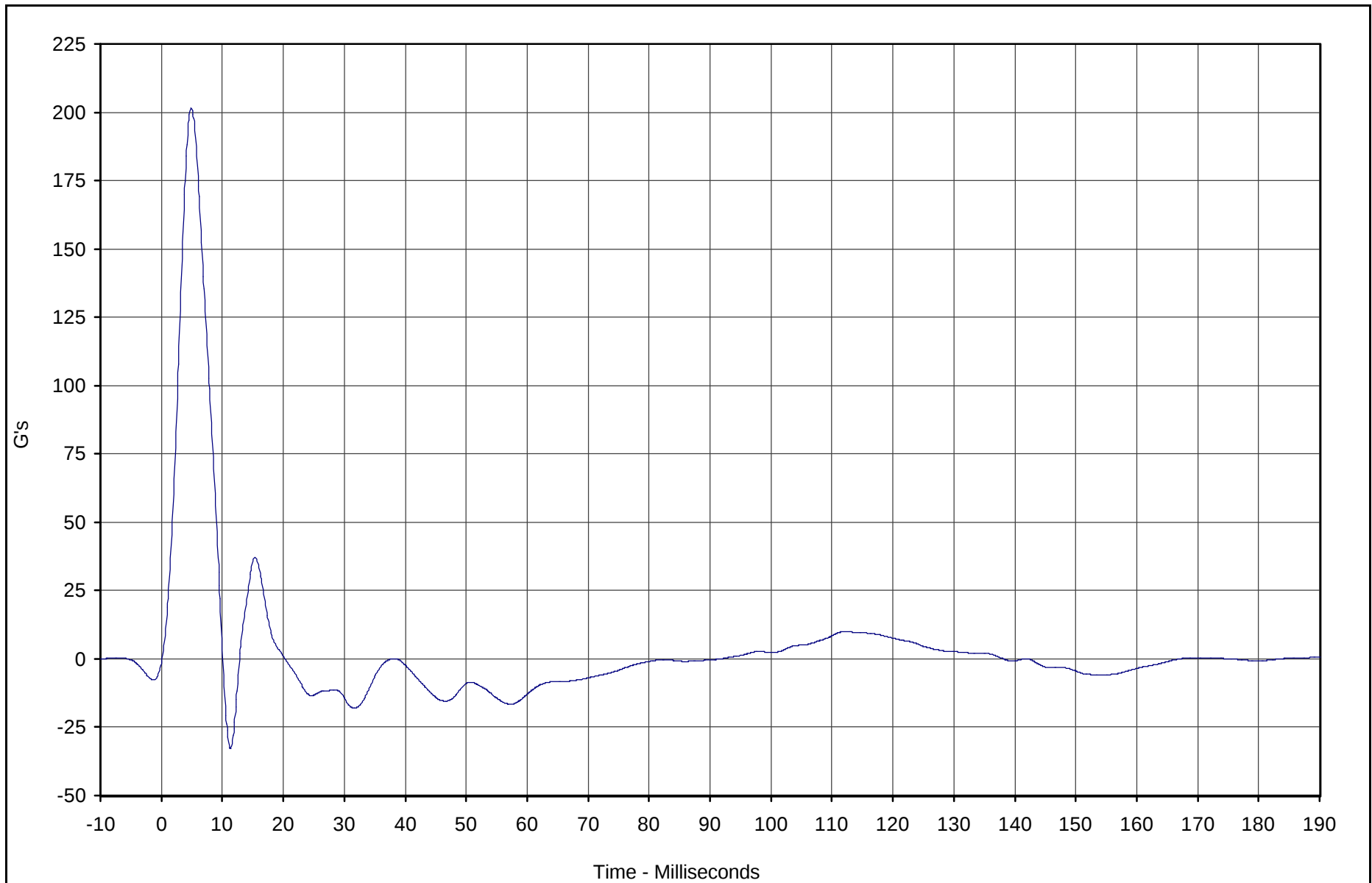


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
B-Post Lower Y	062	FIL	G's	201.5	4.9	-32.9	11.3	60

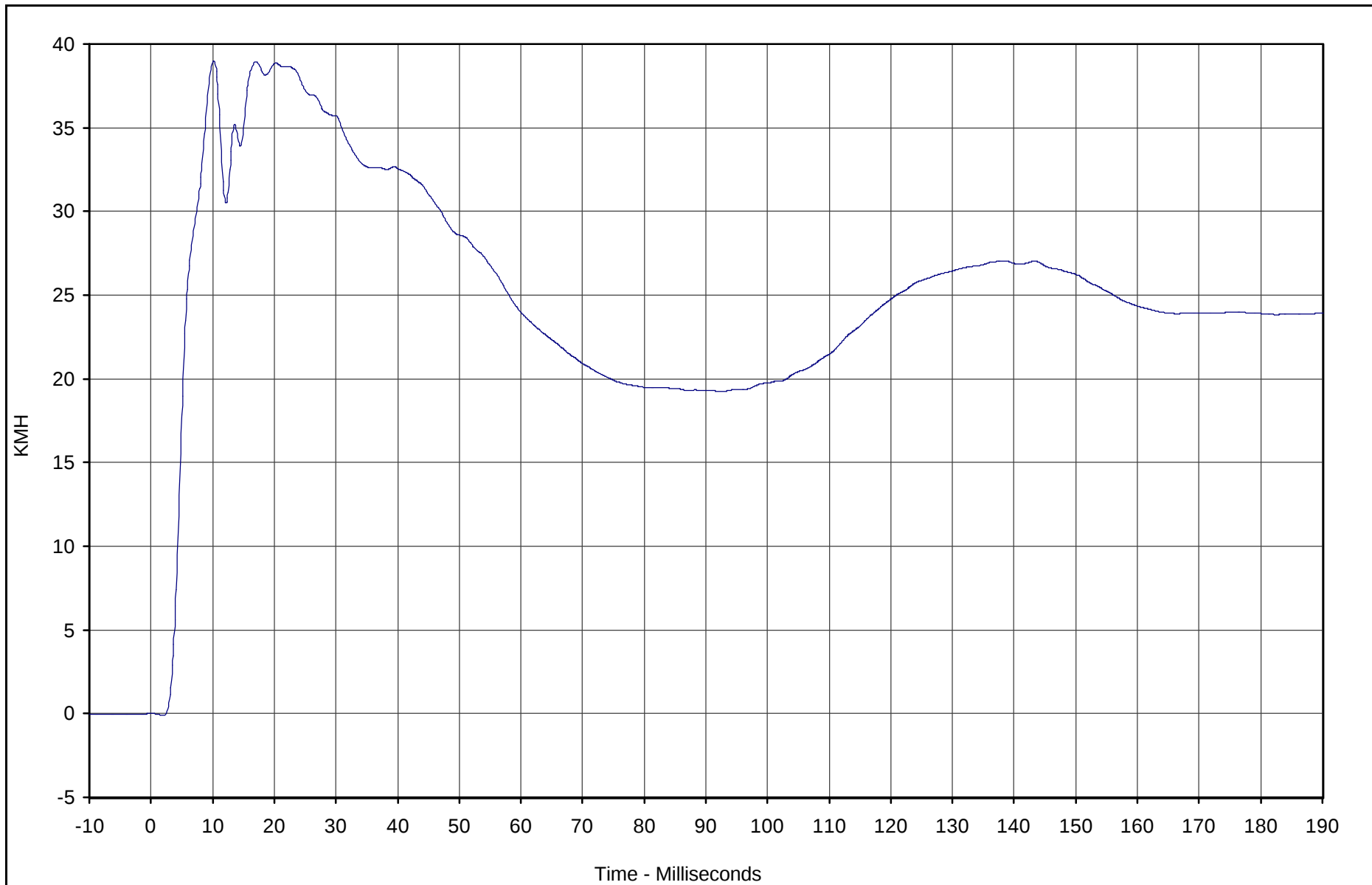


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
B-Post Lower Y Velocity	062	IN1	KMH	39.0	10.2	-0.1	2.0	180

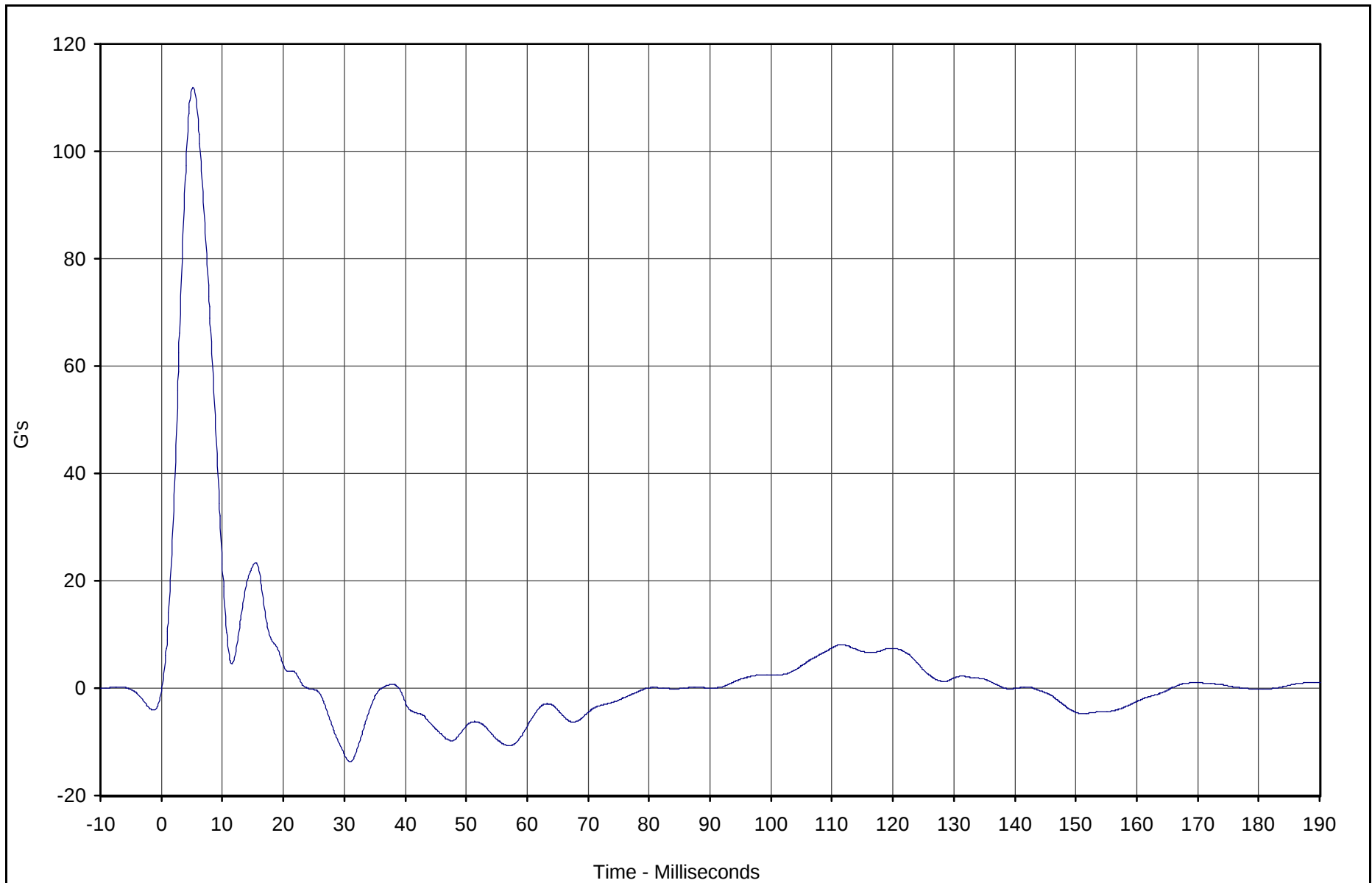


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
B-Post Middle Y	063	FIL	G's	111.9	5.2	-13.7	31.0	60

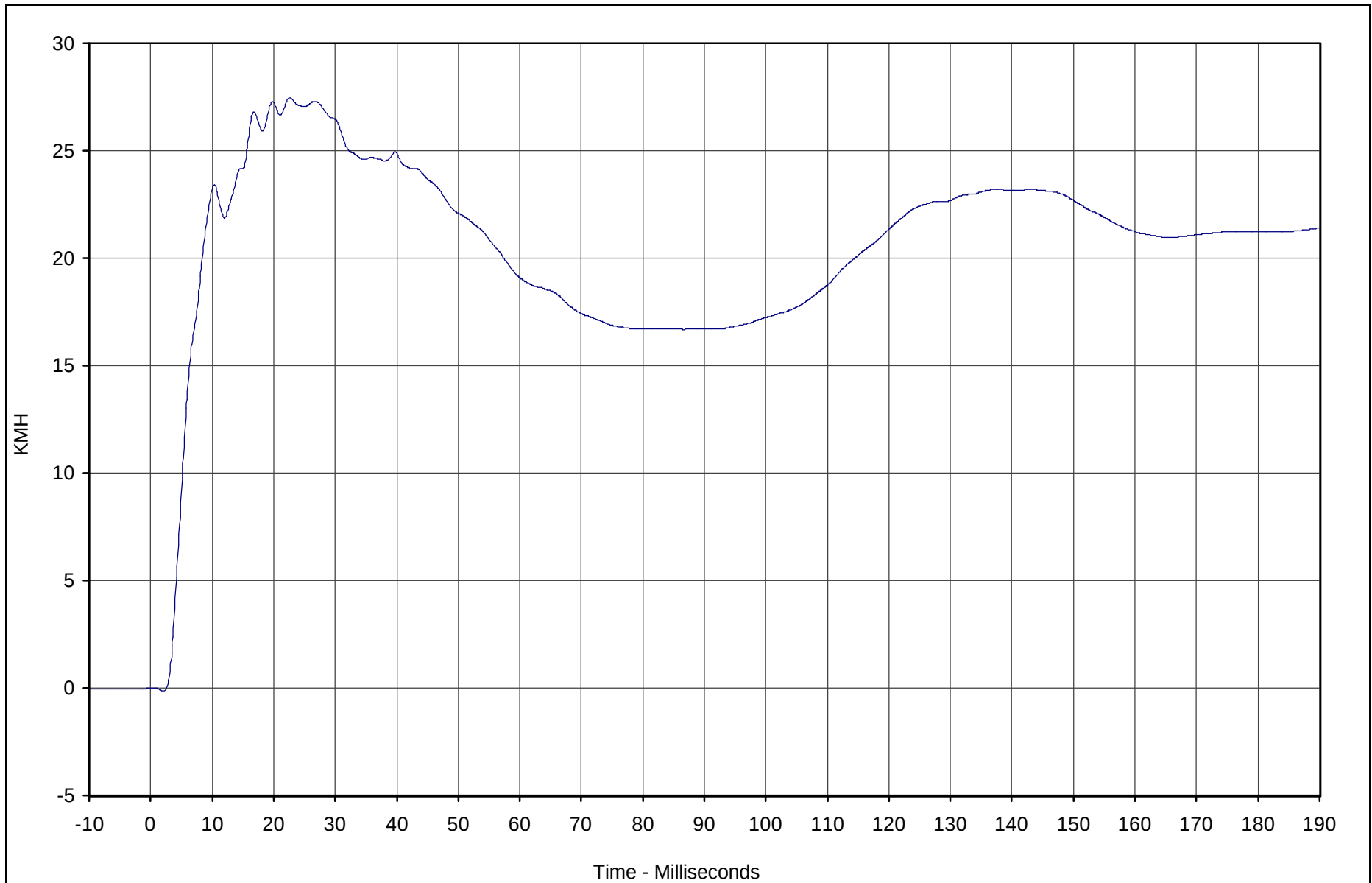


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
B-Post Middle Y Velocity	063	IN1	KMH	27.5	22.6	-0.2	2.1	180

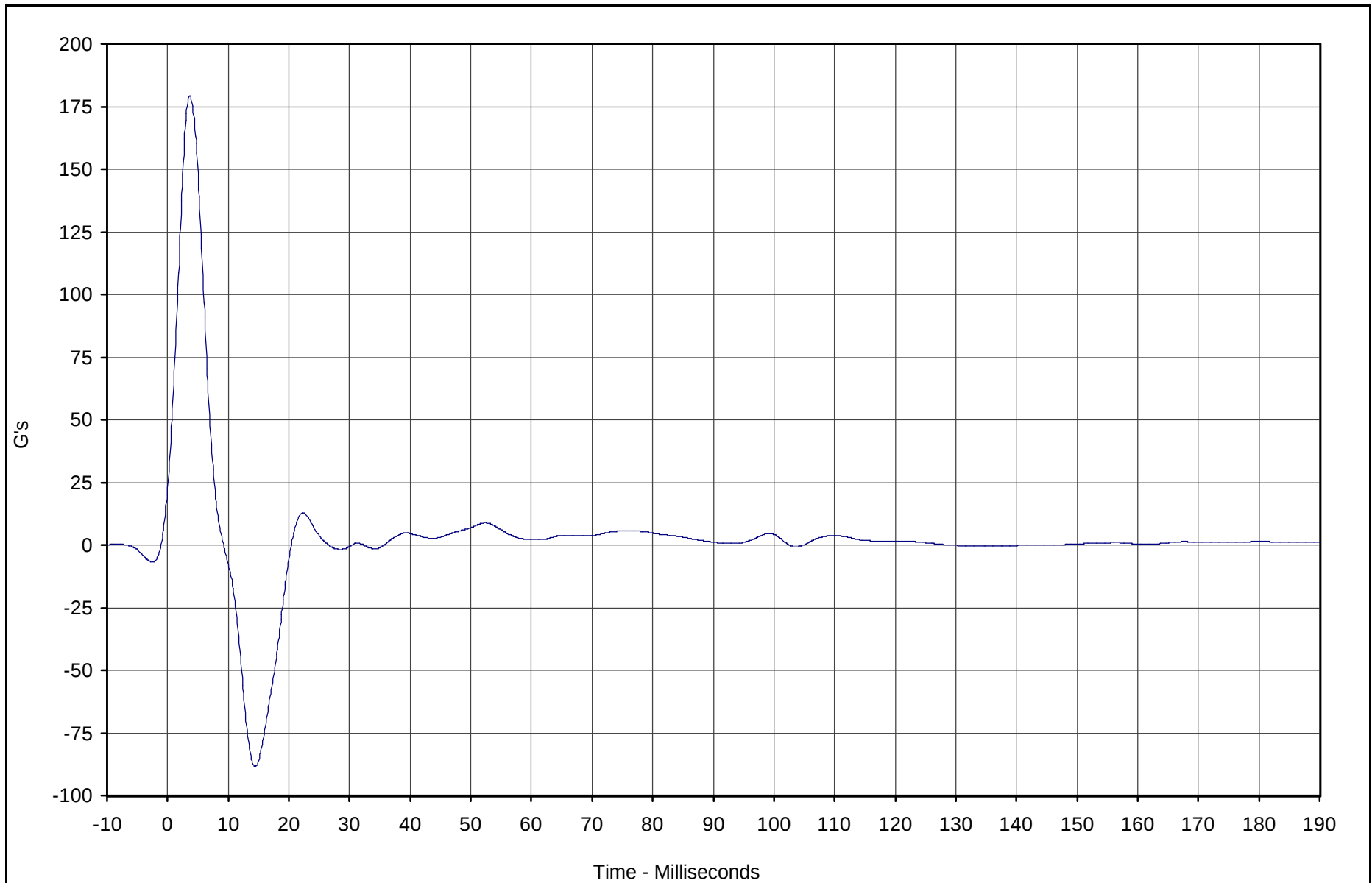


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
A-Post Lower Y	064	FIL	G's	179.3	3.6	-88.4	14.4	60

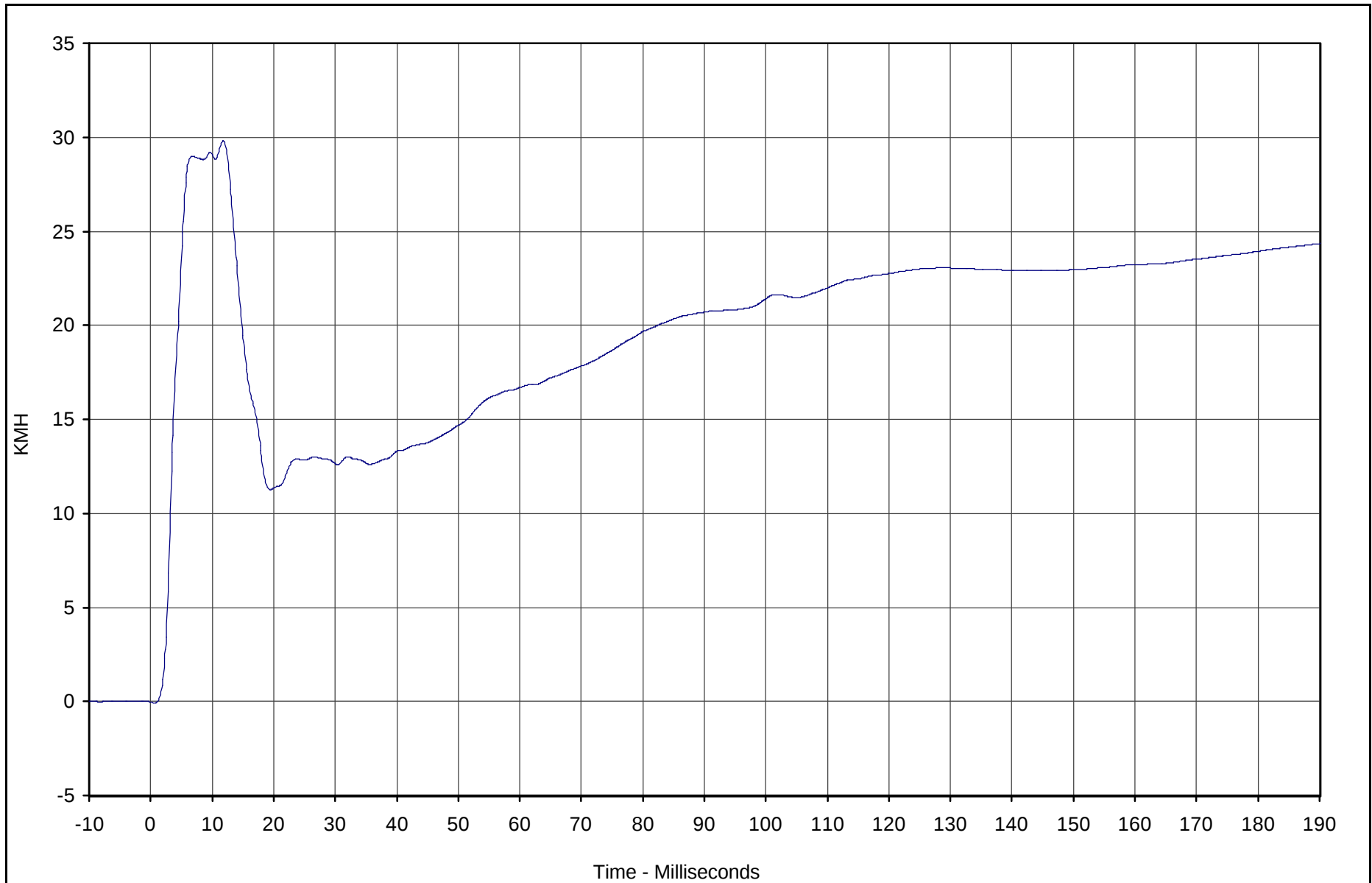


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
A-Post Lower Y Velocity	064	IN1	KMH	29.8	11.8	-0.1	0.7	180

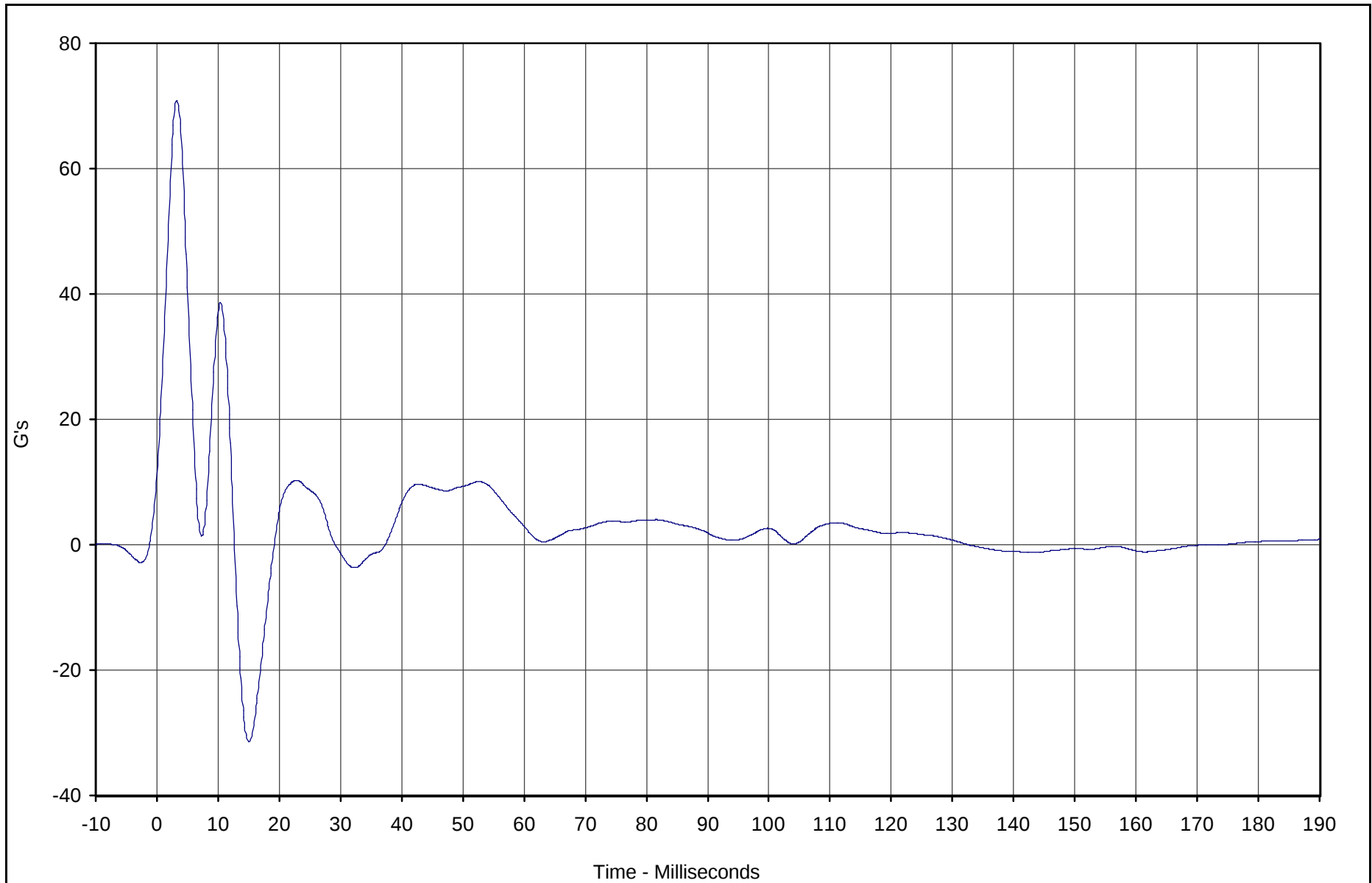


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
A-Post Middle Y	065	FIL	G's	70.9	3.2	-31.4	15.0	60

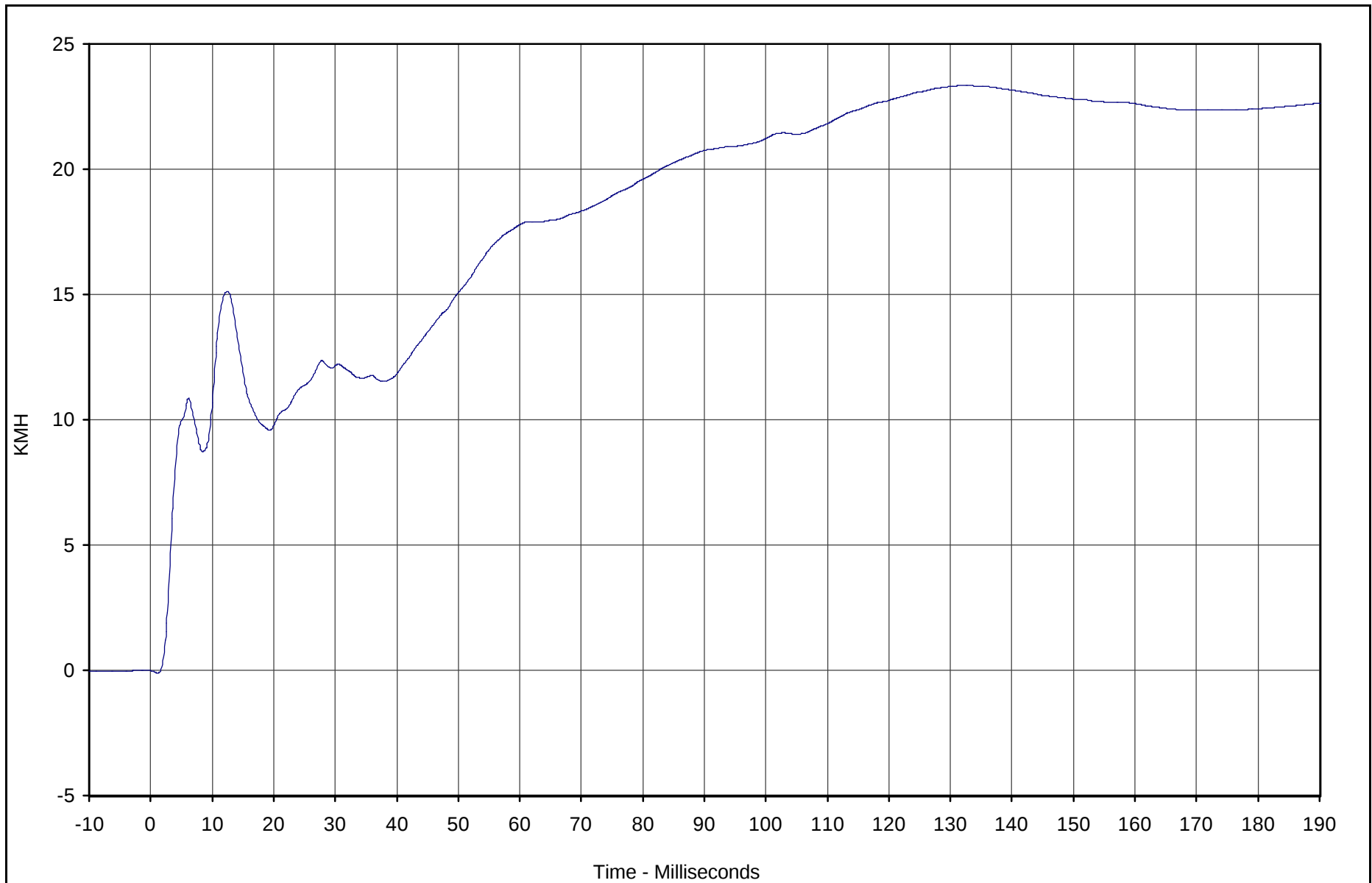


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
A-Post Middle Y Velocity	065	IN1	KMH	23.3	132.6	-0.1	1.2	180

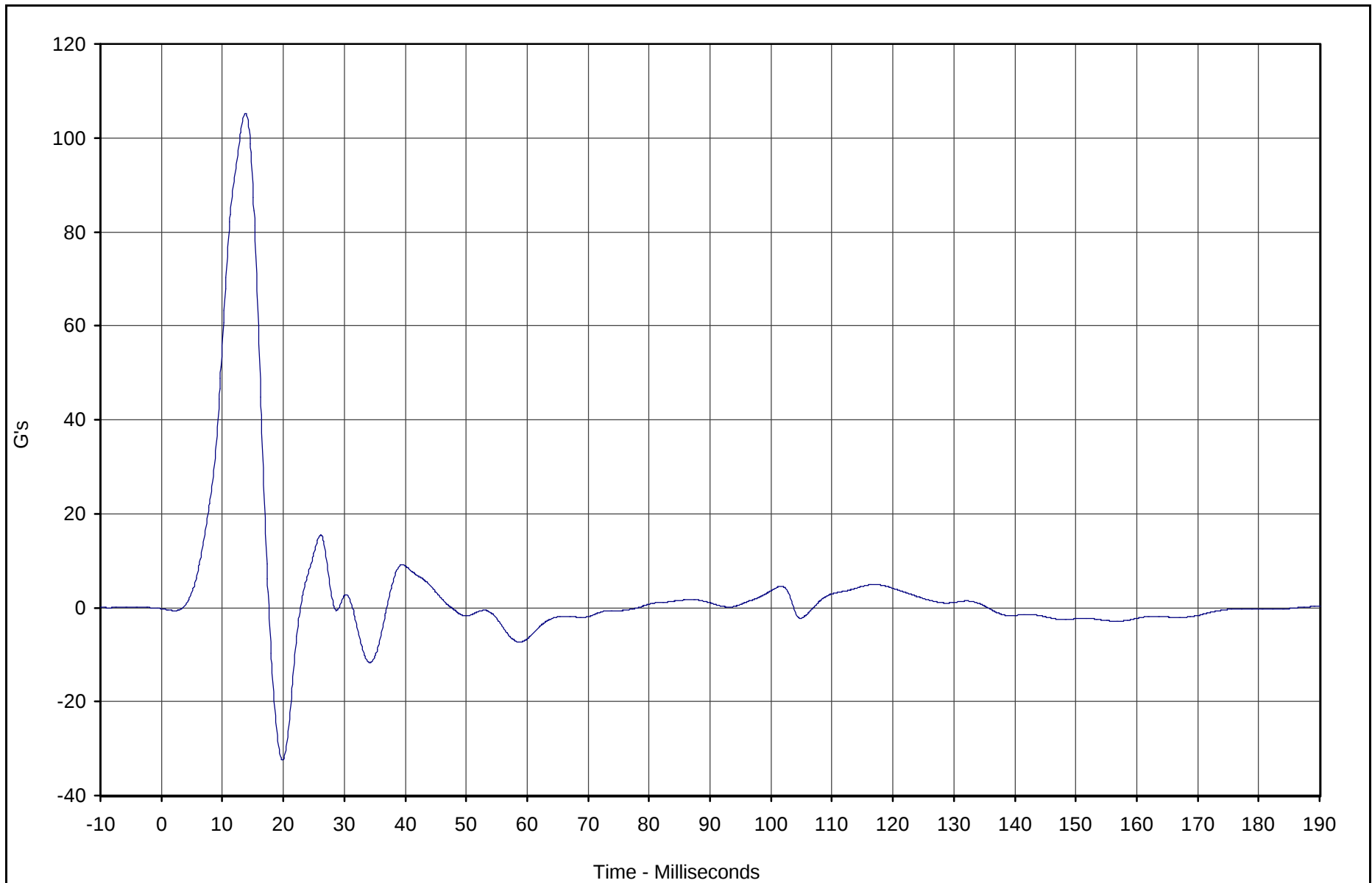


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Seat Track Y	066	FIL	G's	105.2	13.8	-32.5	19.9	60

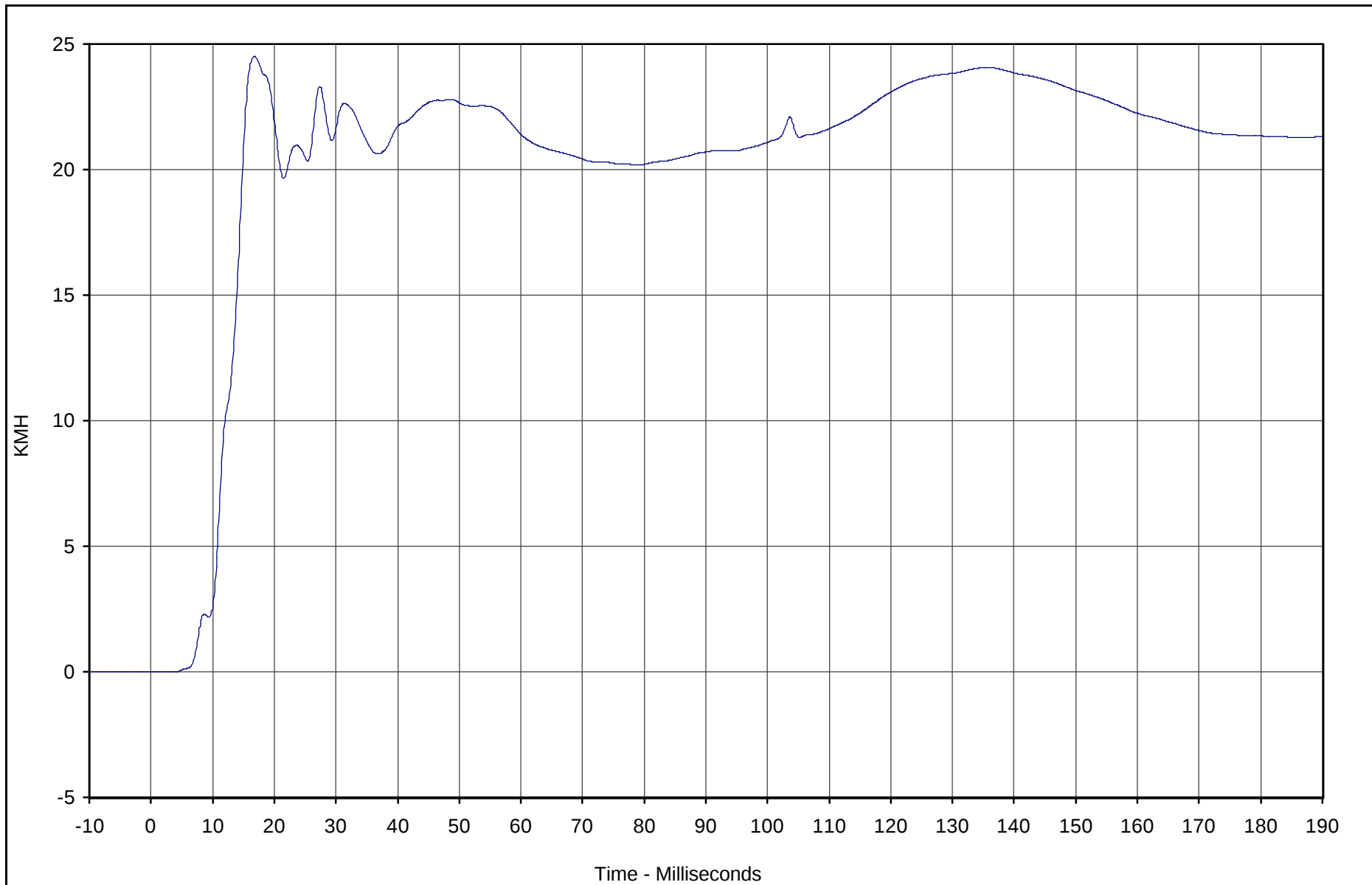


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Front Seat Track Y Velocity	066	IN1	KMH	24.5	16.8	0.0	3.6	180

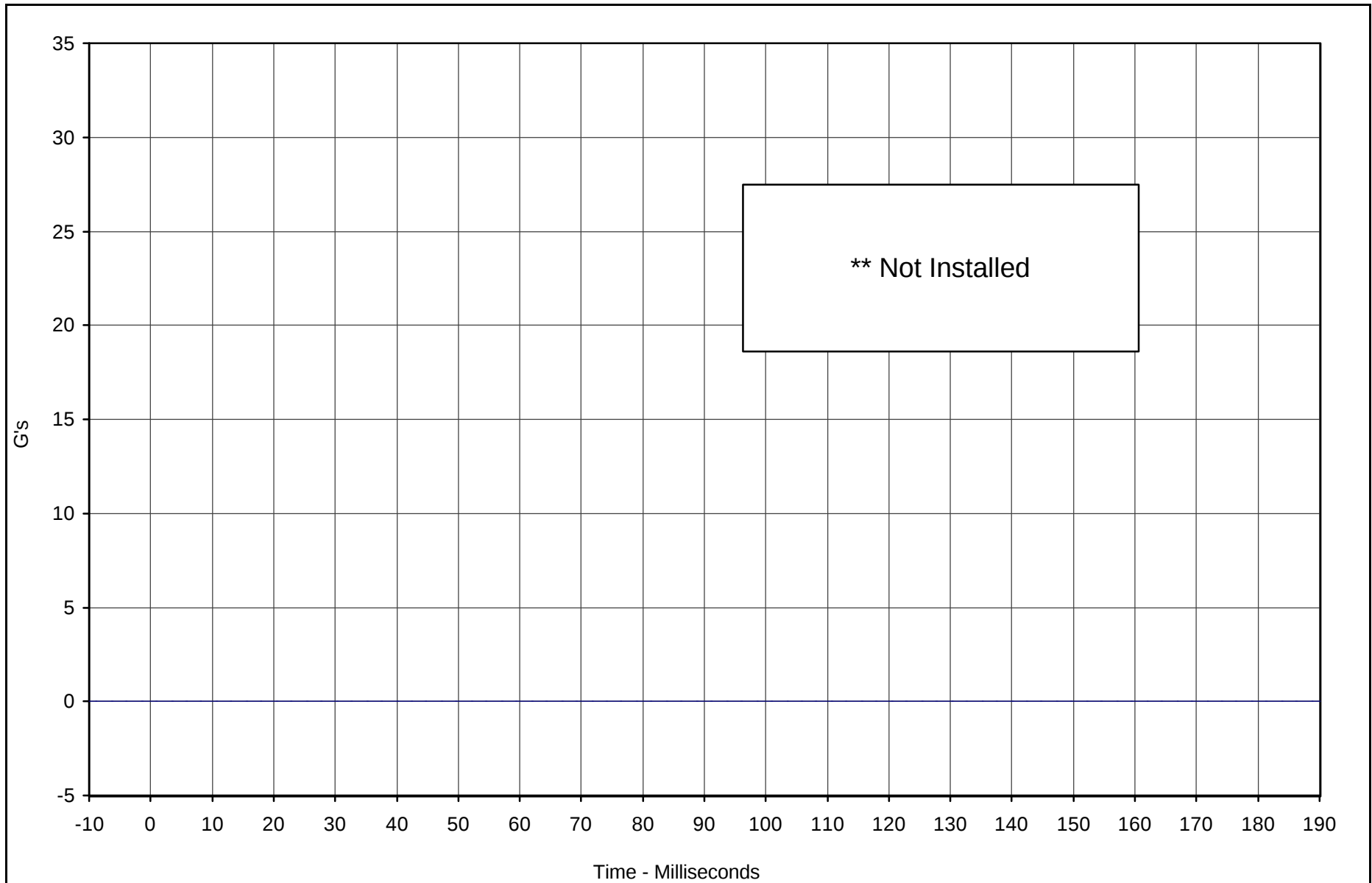


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



** Not installed

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Seat Structure Y	067	FIL	G's	0.0	0.0	0.0	0.0	60

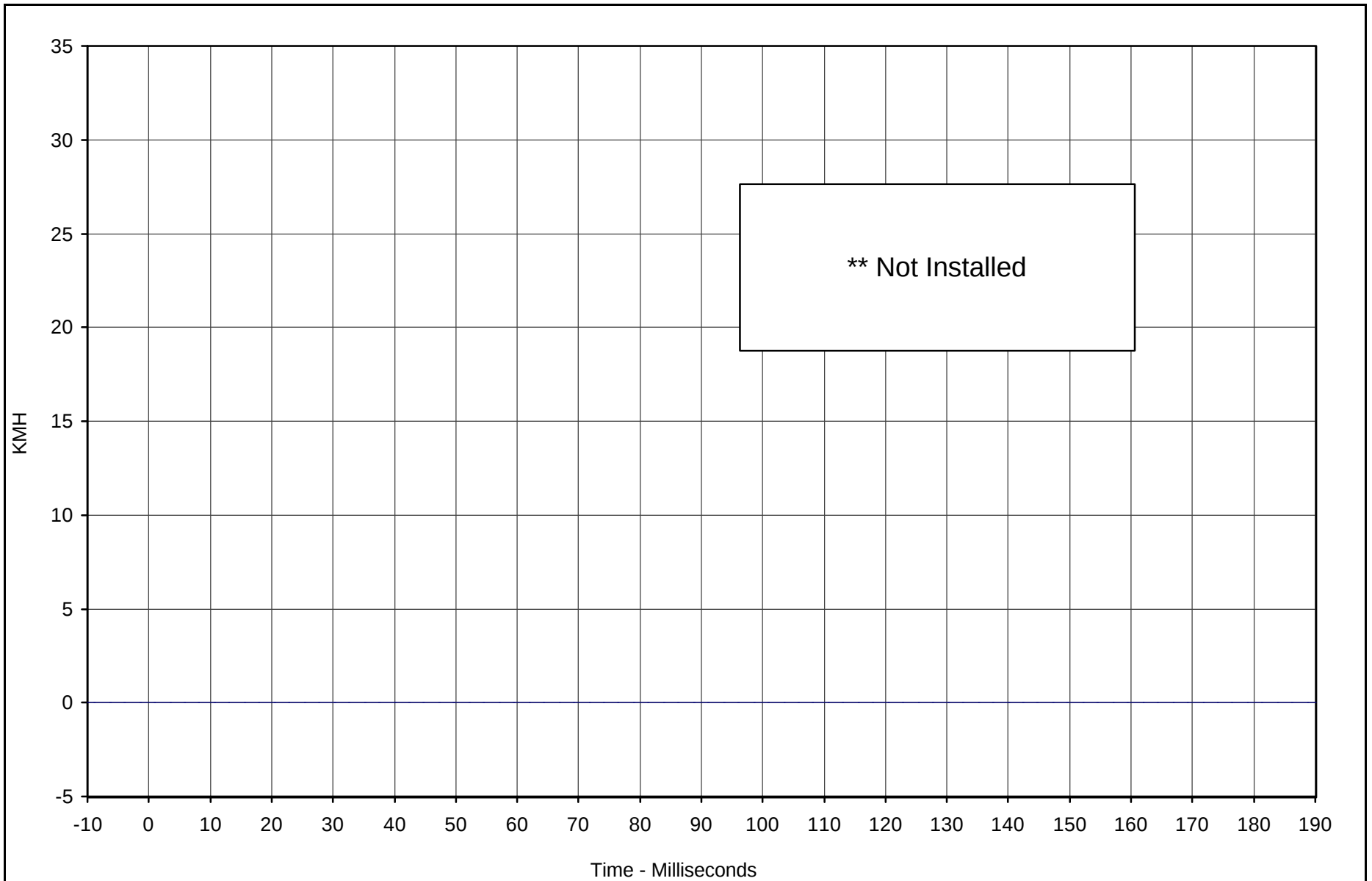


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



** Not installed

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Rear Seat Structure Y Velocity	067	IN1	KMH	0.0	0.0	0.0	0.0	180

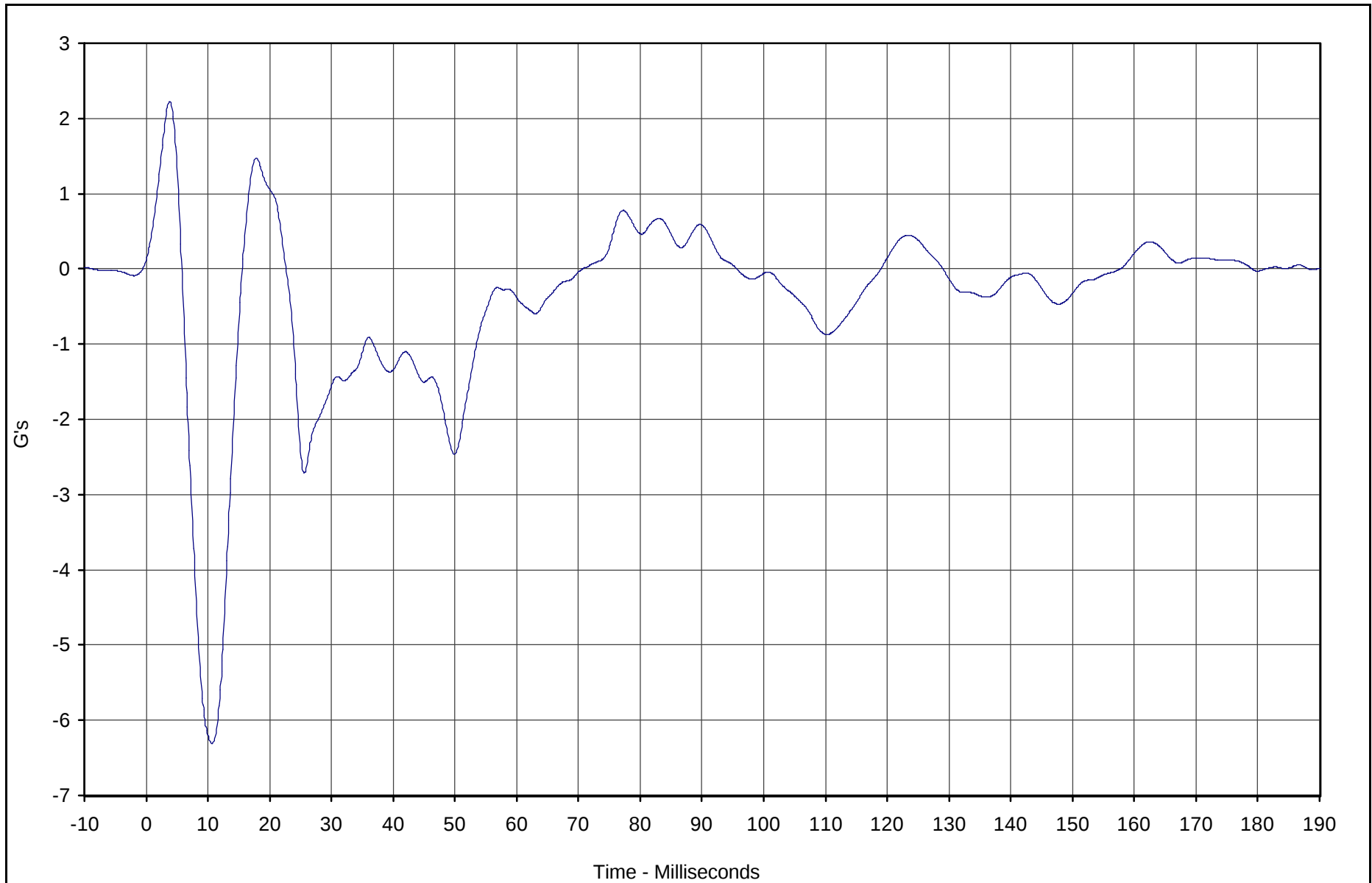


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG X	068	FIL	G's	2.2	3.8	-6.3	10.7	60

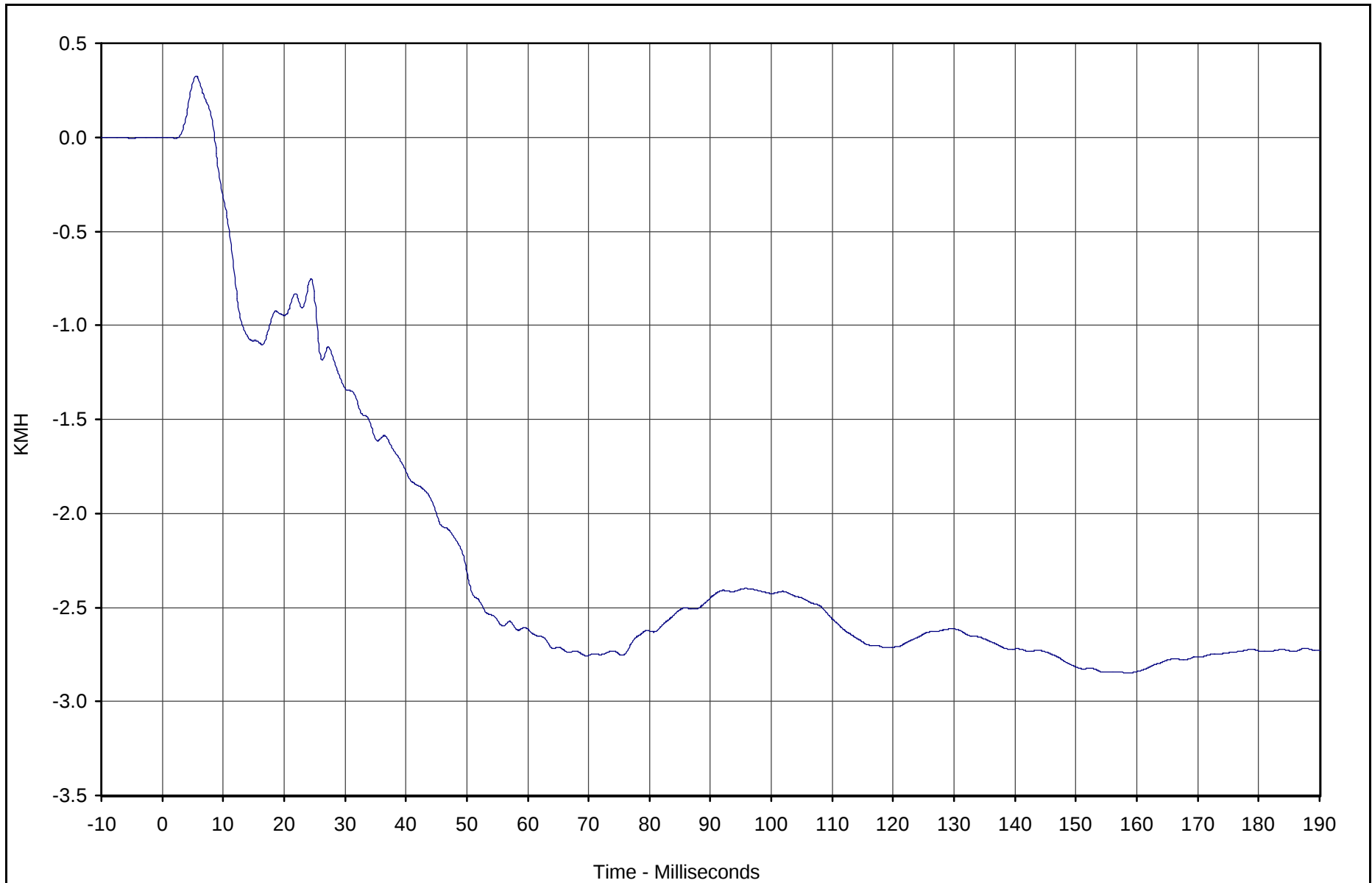


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG X Velocity	068	IN1	KMH	0.3	5.5	-2.8	158.8	180

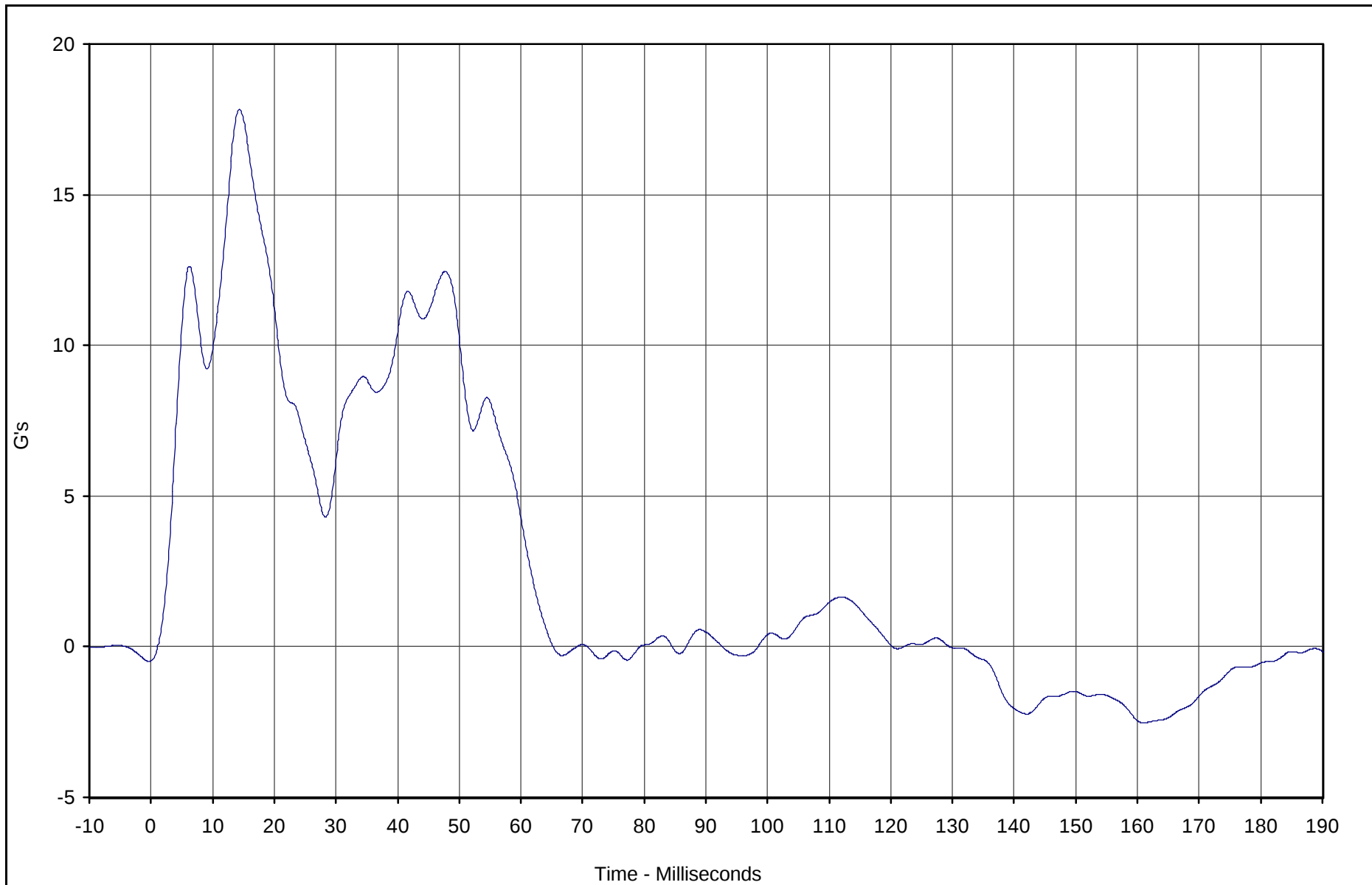


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG Y	069	FIL	G's	17.8	14.3	-2.5	161.0	60

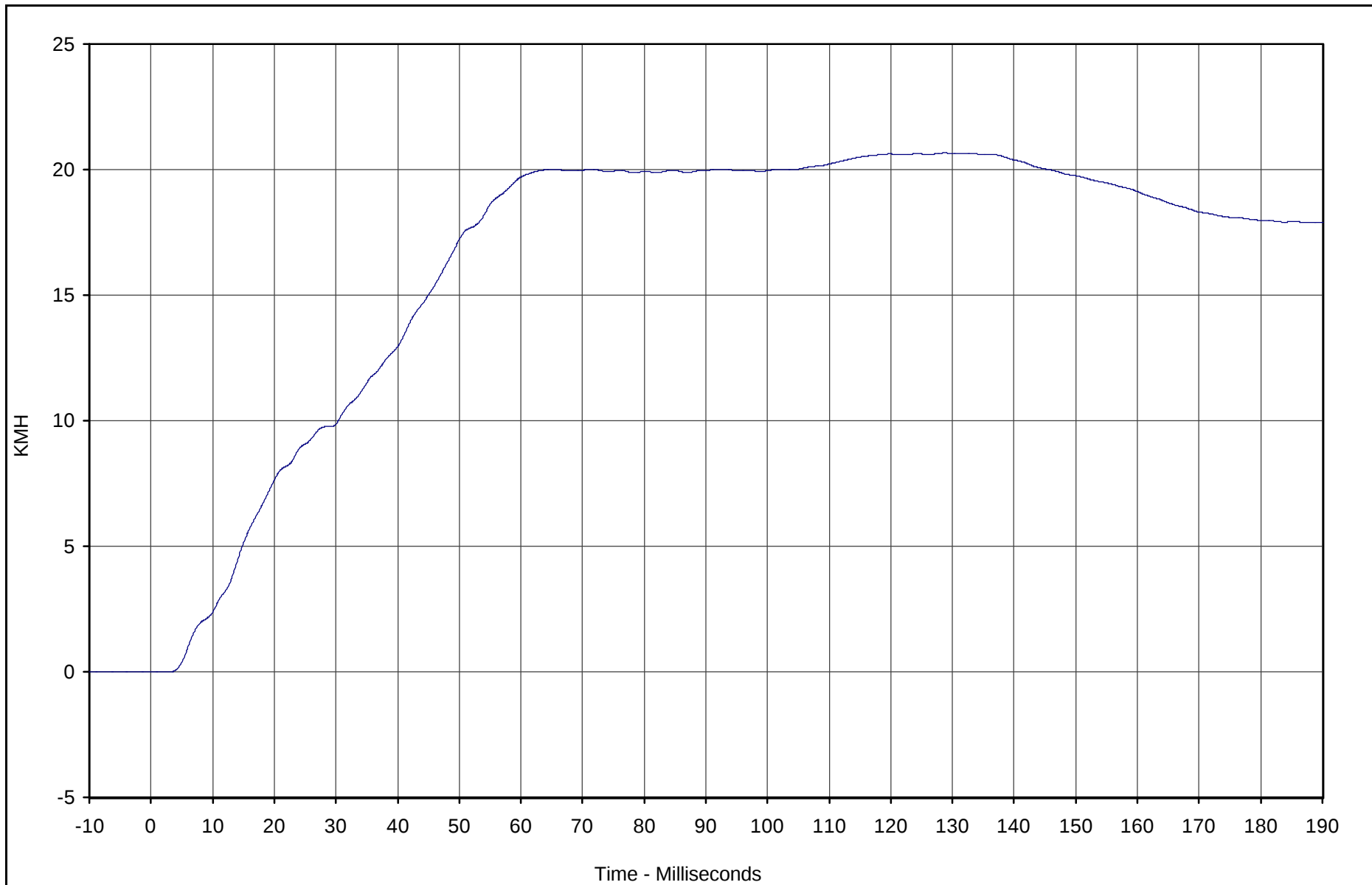


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG Y Velocity	069	IN1	KMH	20.7	128.7	0.0	2.7	180

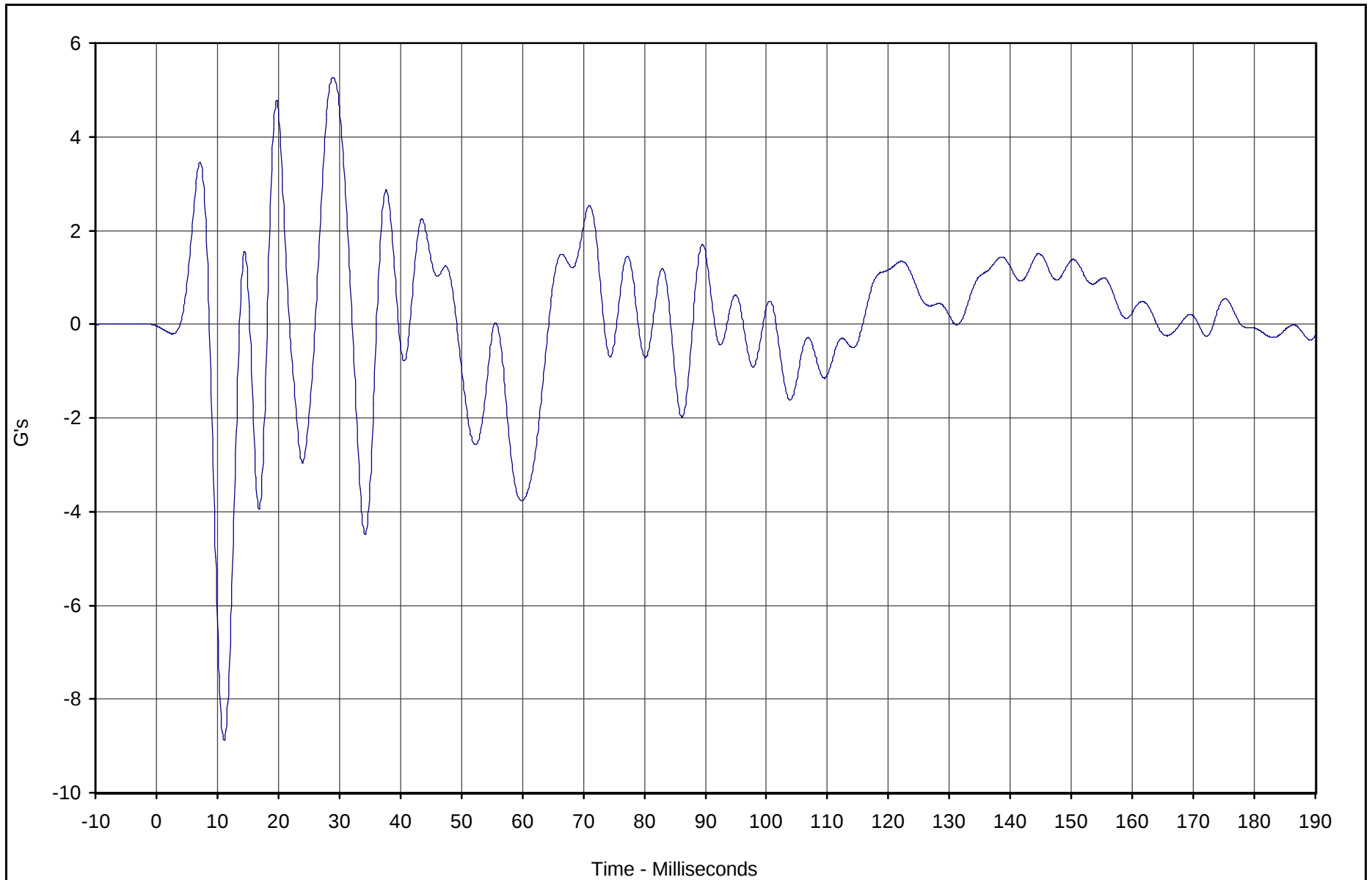


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG Z	070	FIL	G's	5.3	29.0	-8.9	11.1	60

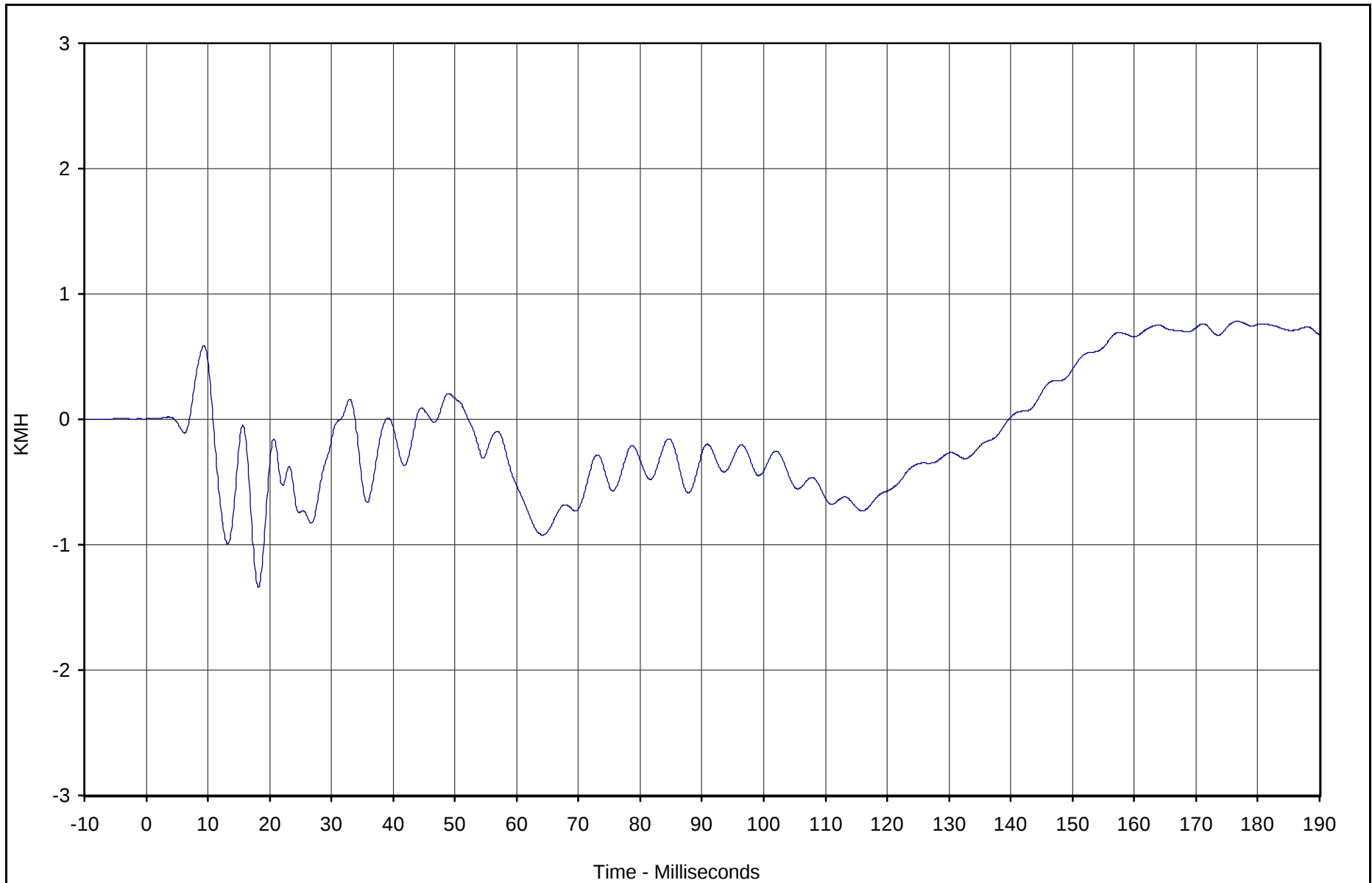


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG Z Velocity	070	IN1	KMH	0.8	176.6	-1.3	18.2	180

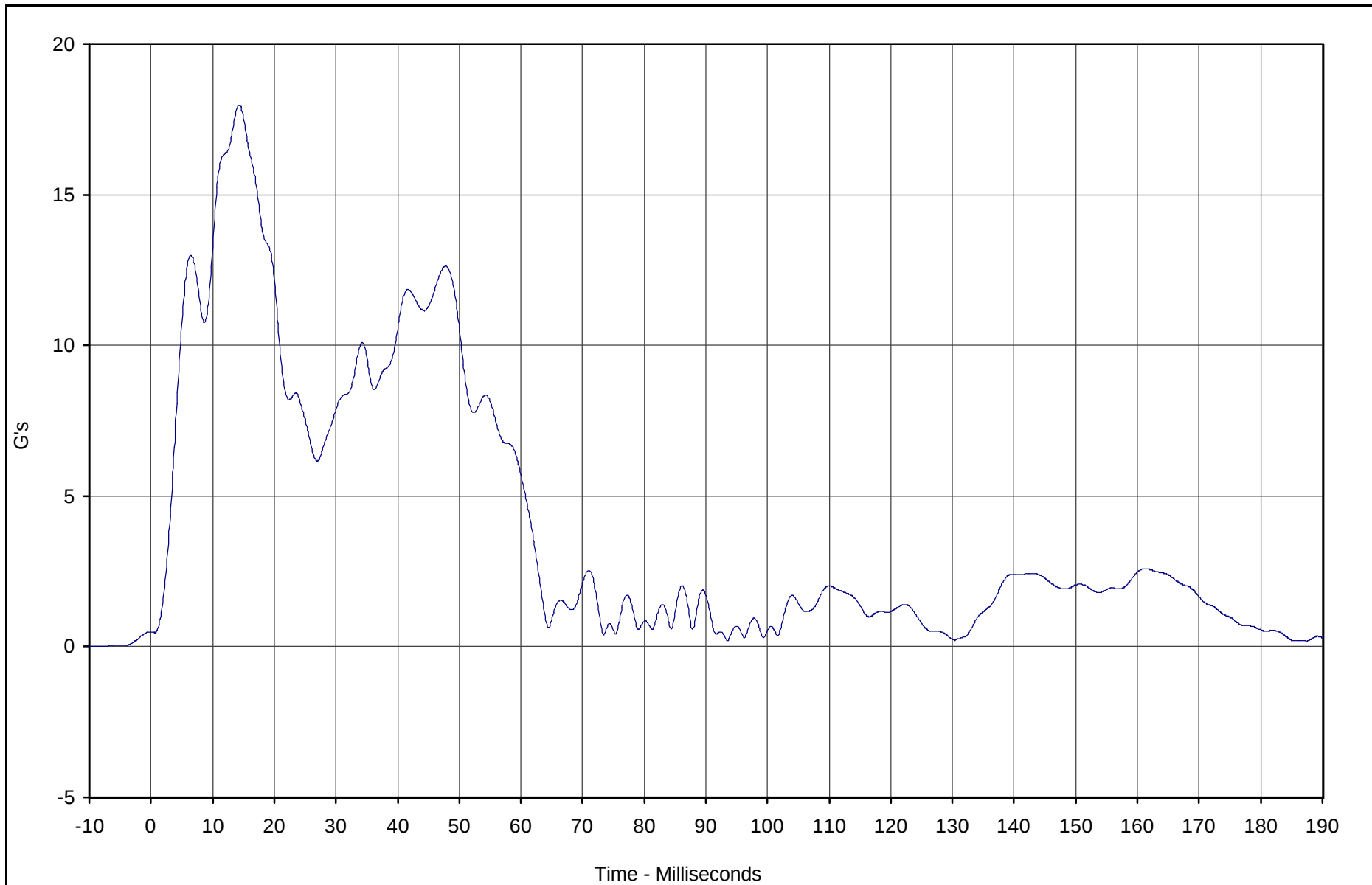


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle CG Resultant	068	RES	G's	18.0	14.3	0.2	187.4	60

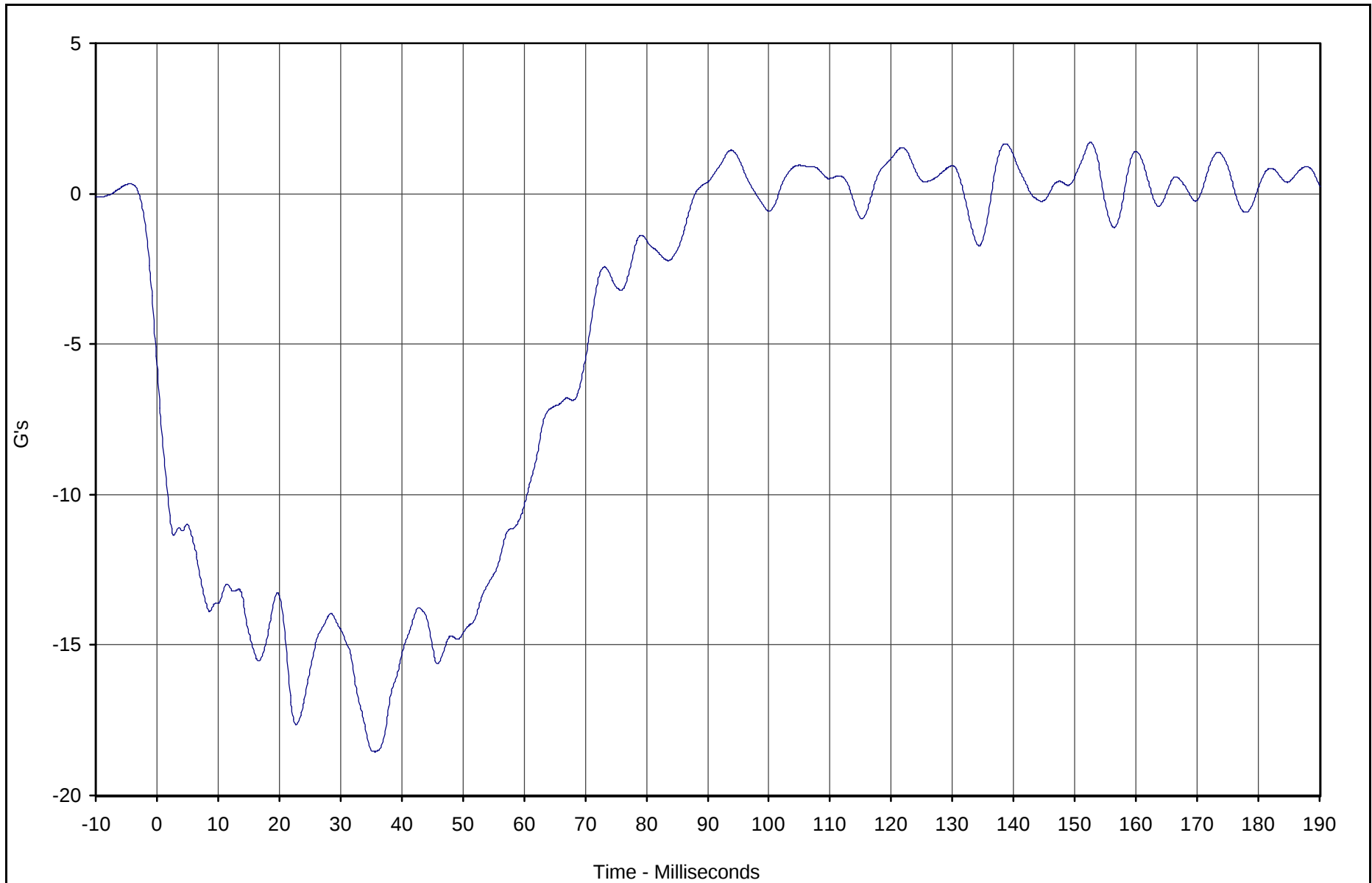


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB CG X	071	FIL	G's	1.7	152.6	-18.5	35.6	60

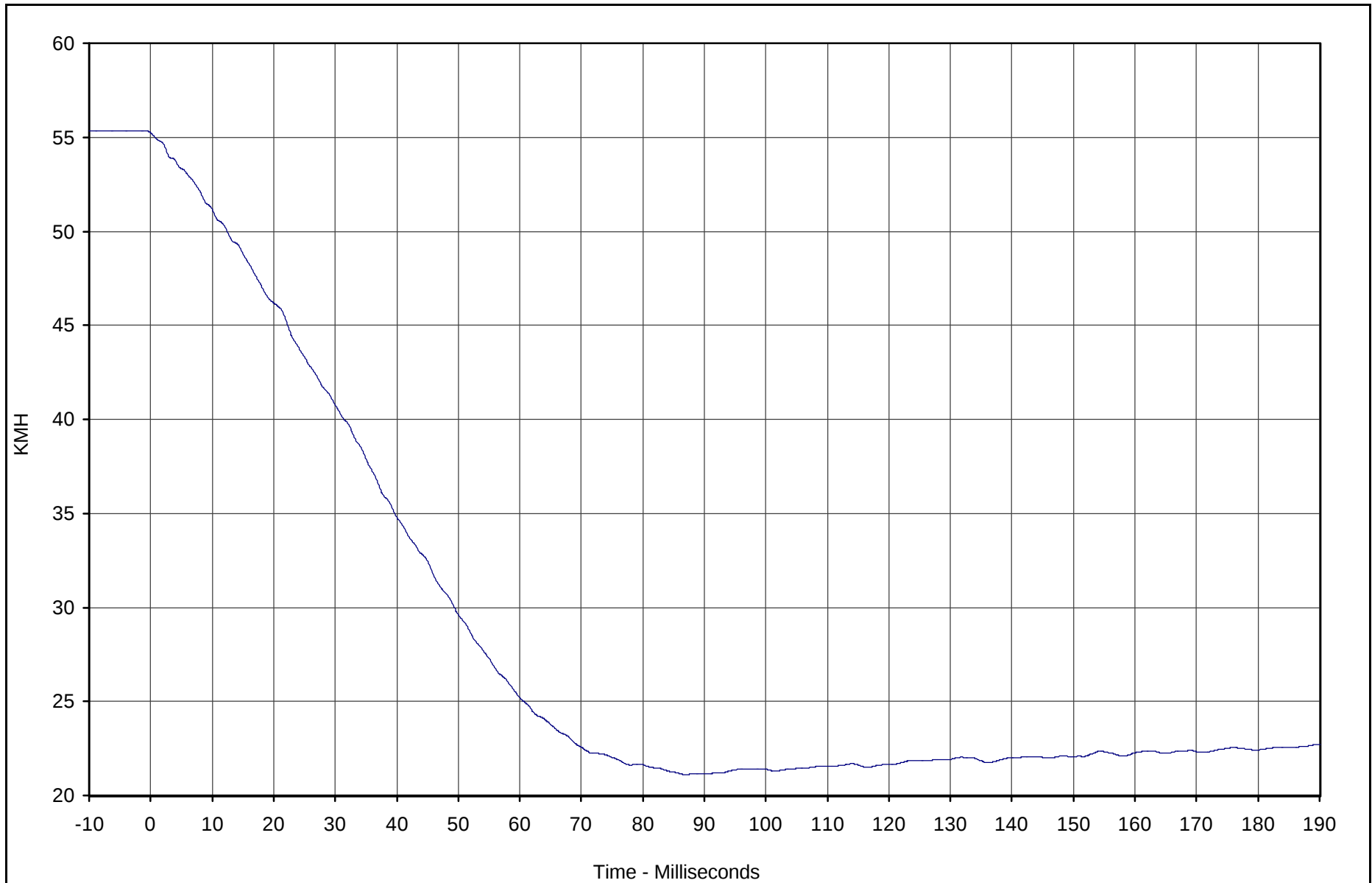


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB CG X Velocity	071	IN1	KMH	55.2	0.0	21.1	87.0	180

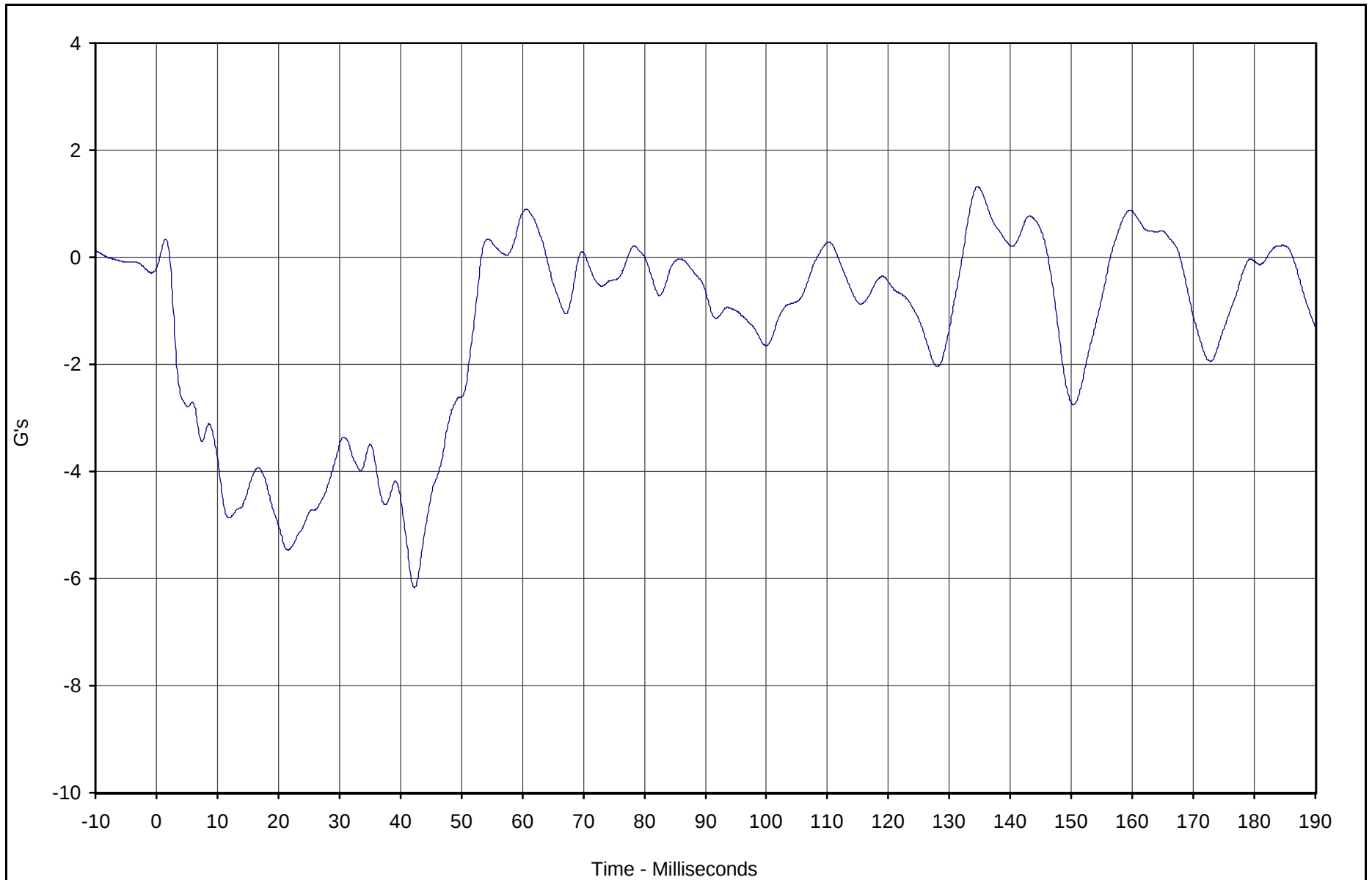


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB CG Y	072	FIL	G's	1.3	134.6	-6.2	42.3	60

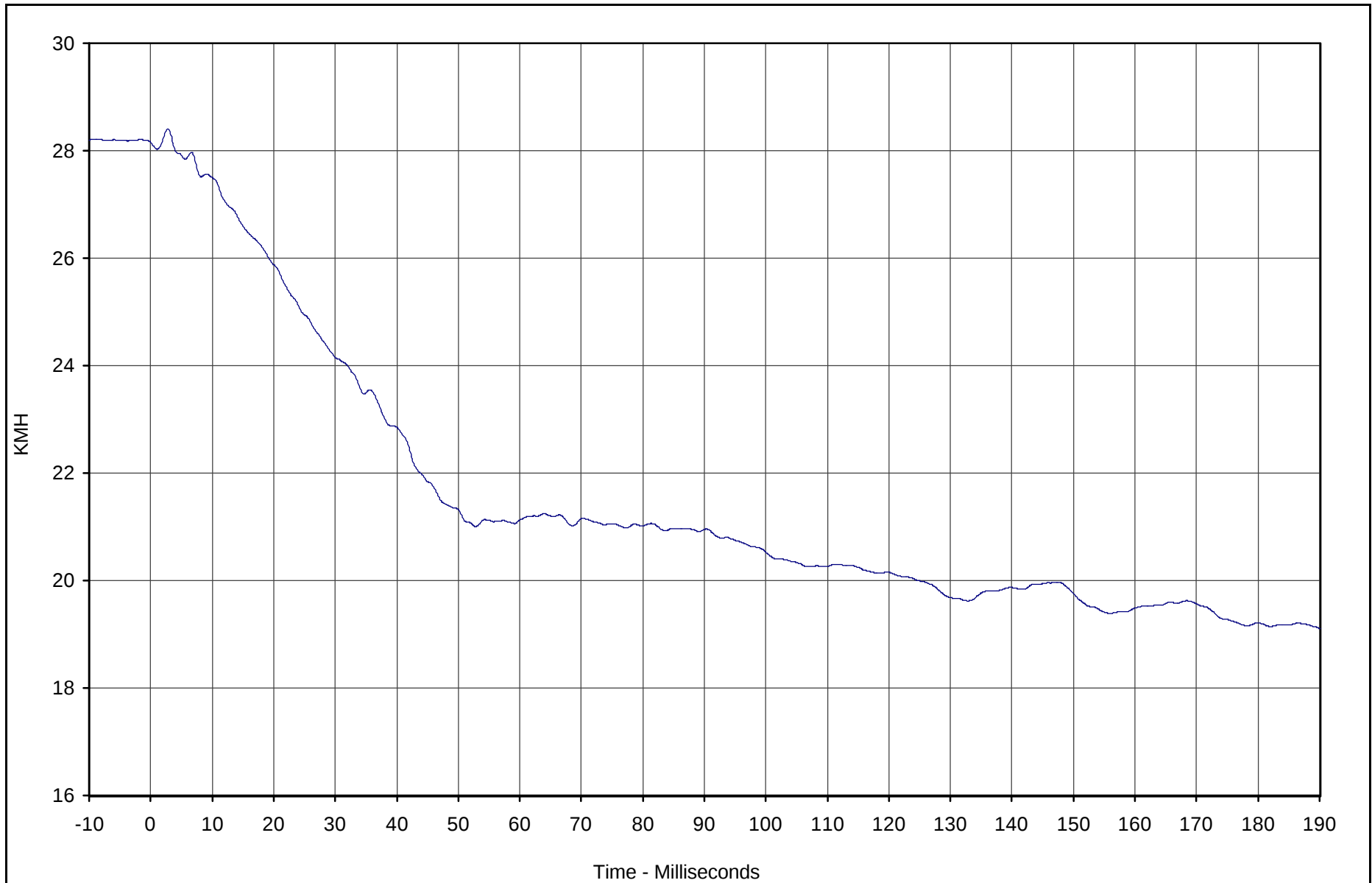


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB CG Y Velocity	072	IN1	KMH	28.4	2.8	19.1	189.9	180

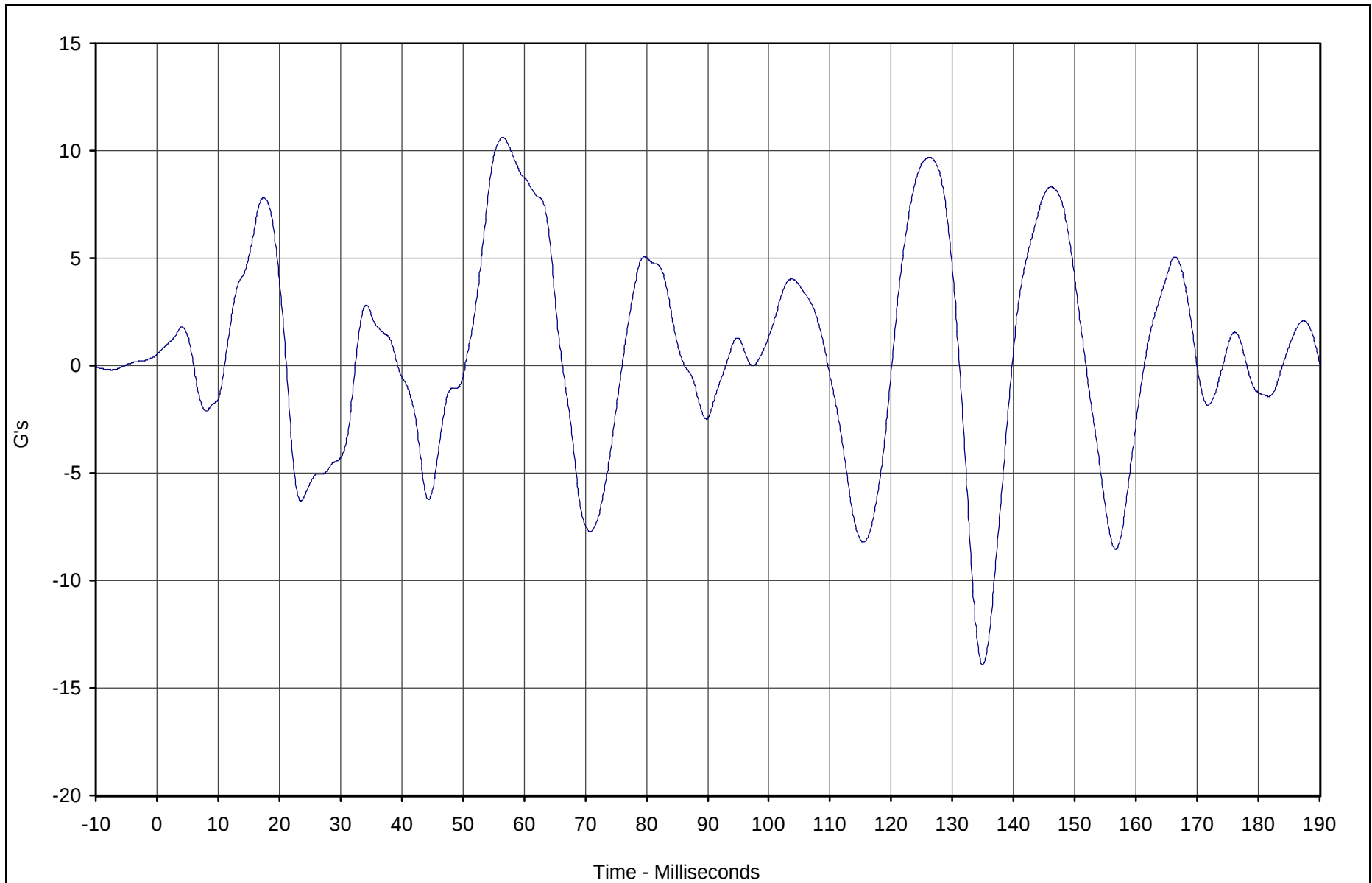


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB CG Z	073	FIL	G's	10.6	56.5	-13.9	134.9	60

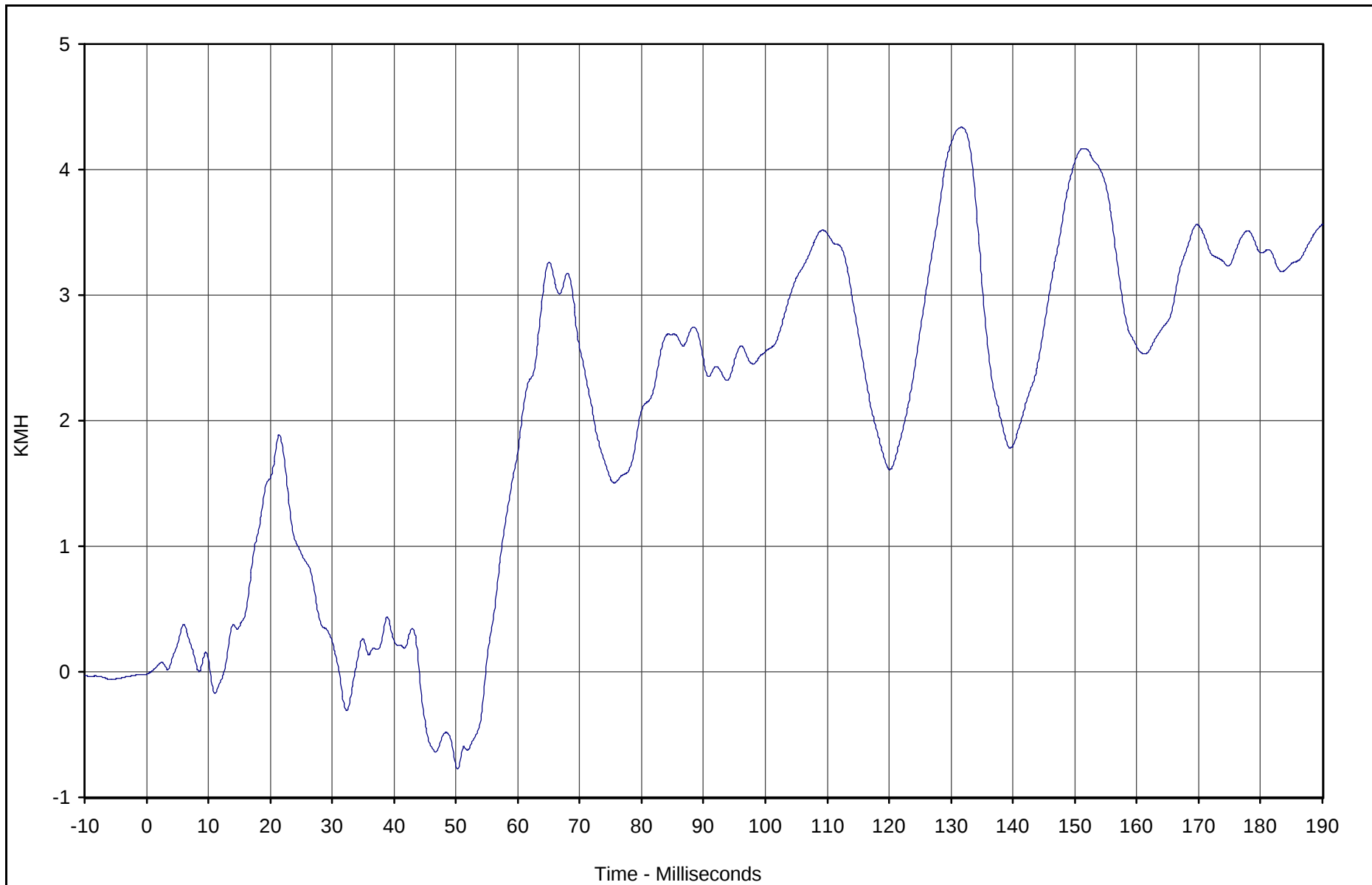


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB CG Z Velocity	073	IN1	KMH	4.3	131.7	-0.8	50.2	180

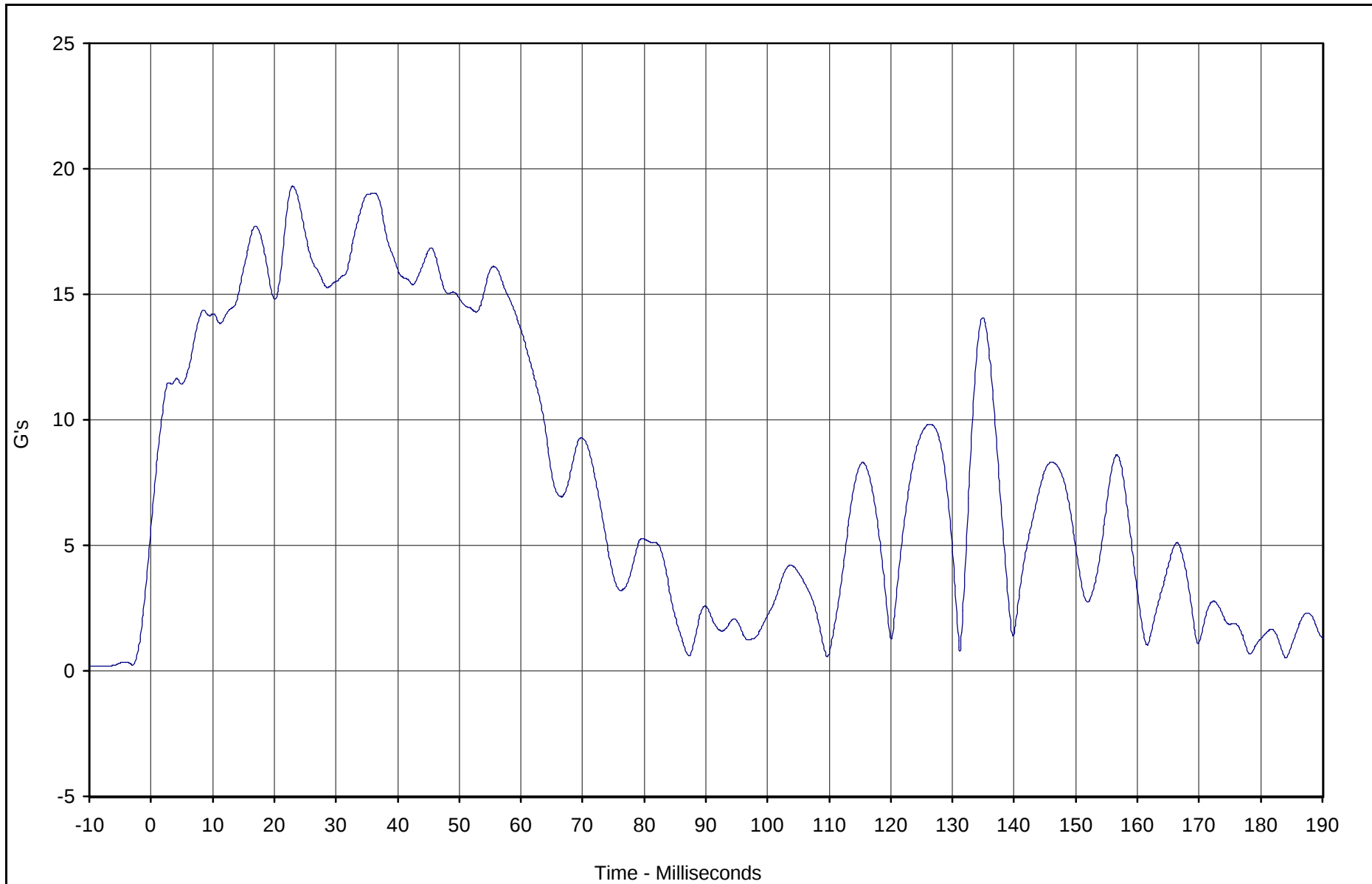


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
CG Resultant	071	RES	G's	19.3	23.0	0.5	184.1	60

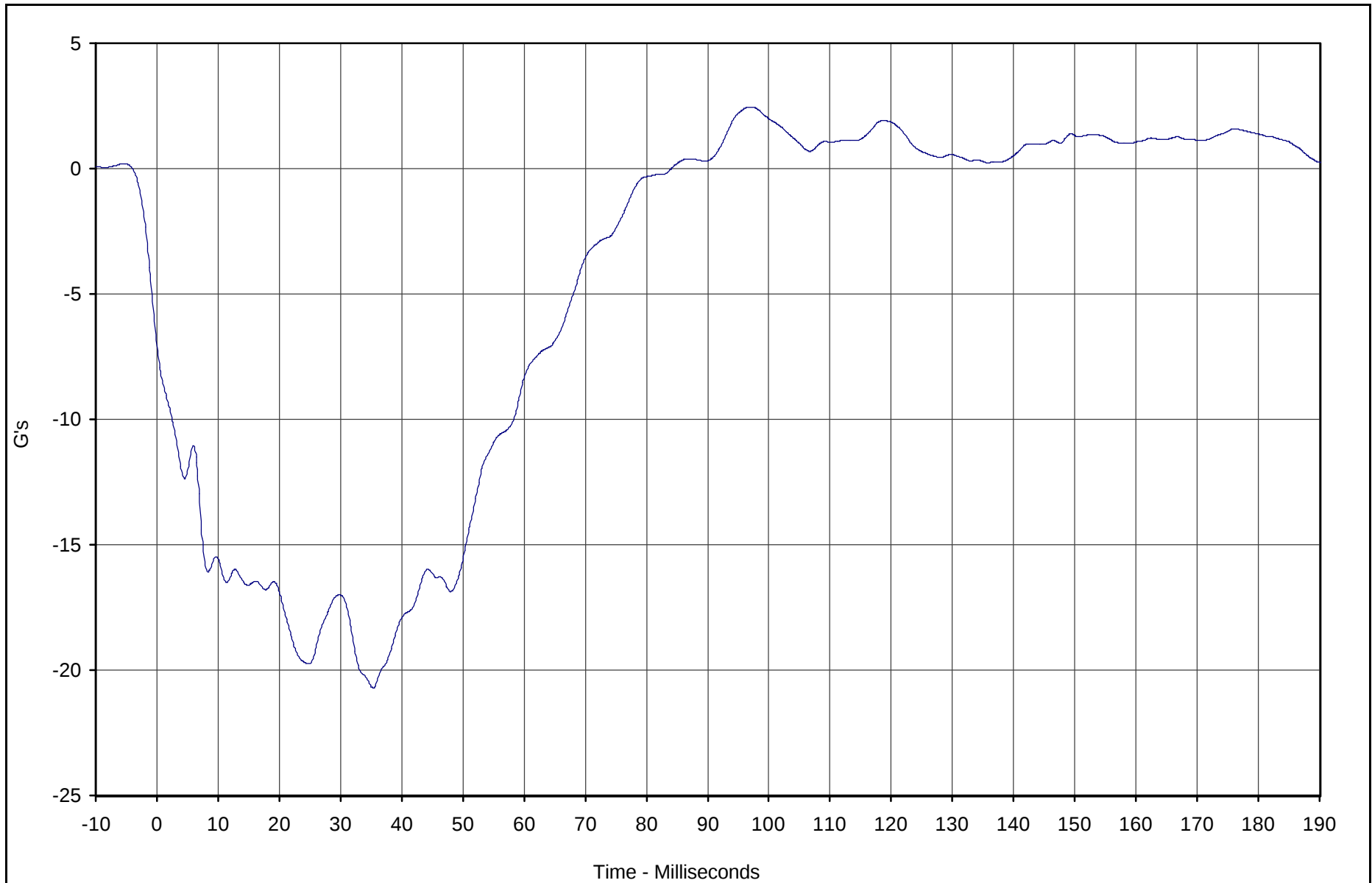


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB Rear X	074	FIL	G's	2.5	97.0	-20.7	35.3	60

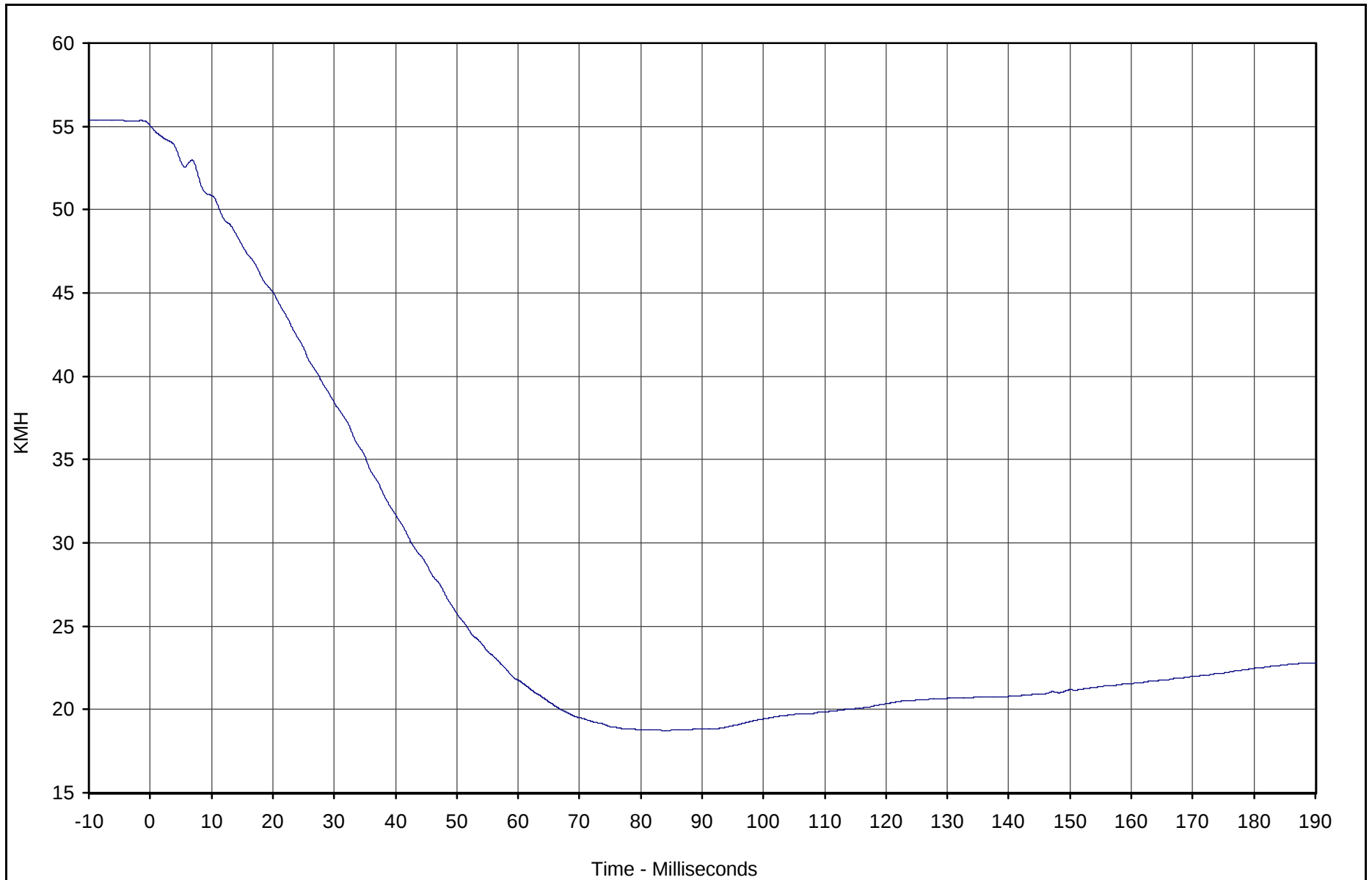


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB Rear X Velocity	074	IN1	KMH	55.0	0.0	18.7	83.8	180

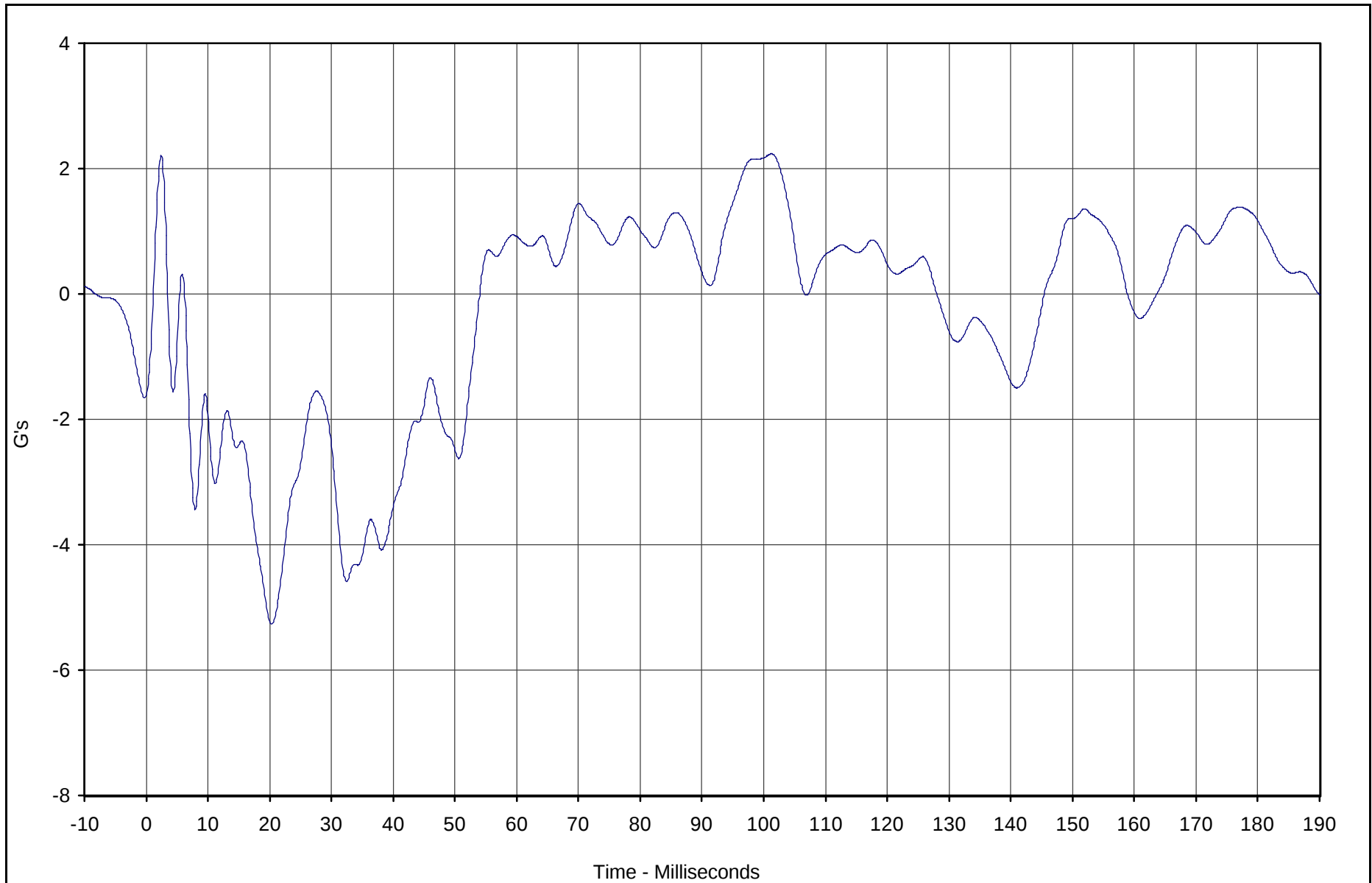


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB Rear Y	075	FIL	G's	2.2	101.3	-5.3	20.3	60

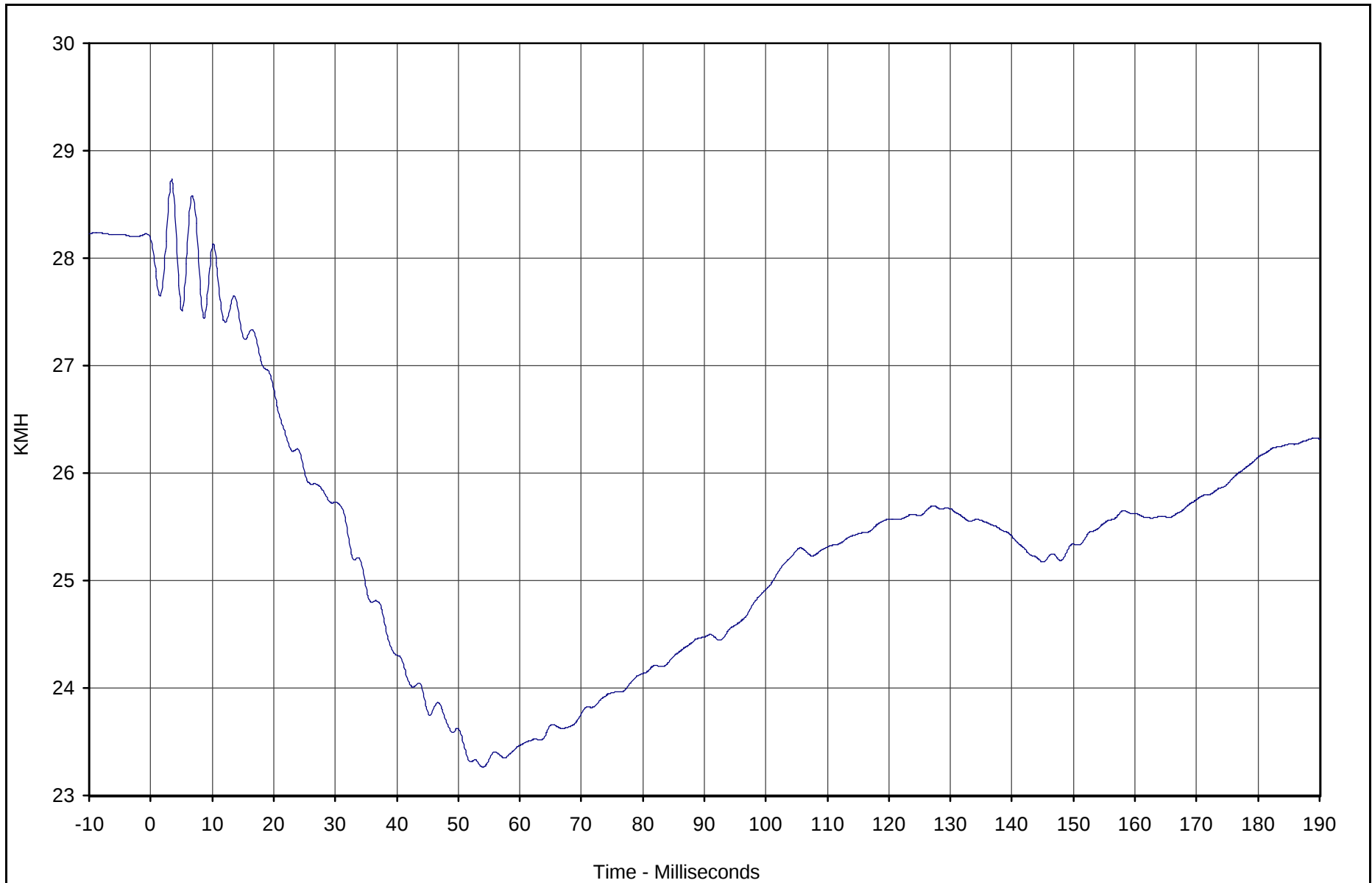


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
MDB Rear Y Velocity	075	IN1	KMH	28.7	3.4	23.3	54.0	180

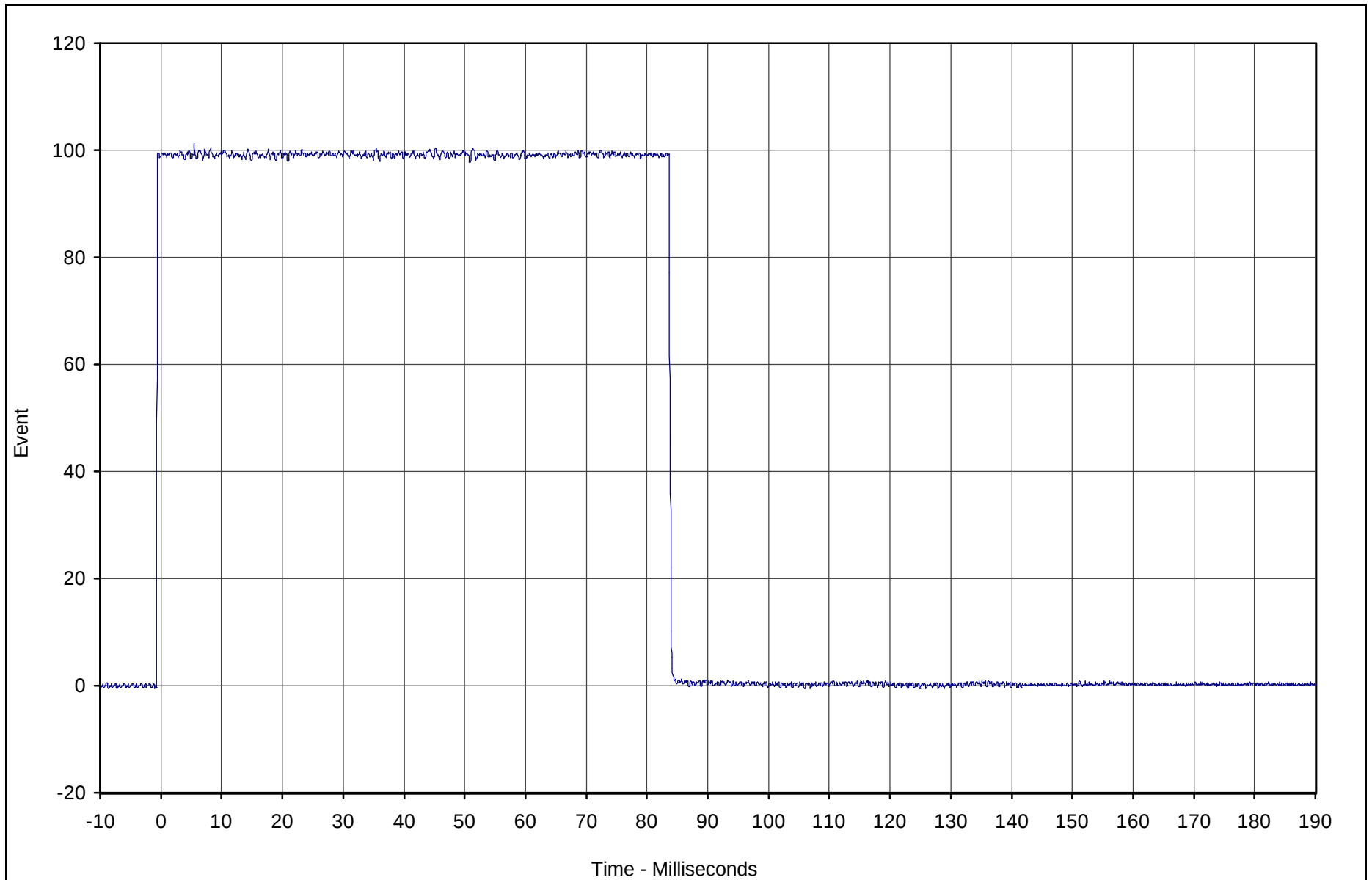


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Cross %	Time	SAE Class
MDB Right Bumper Contact	076	FIL	Event	101.2	5.5	50.0	-0.6	1000

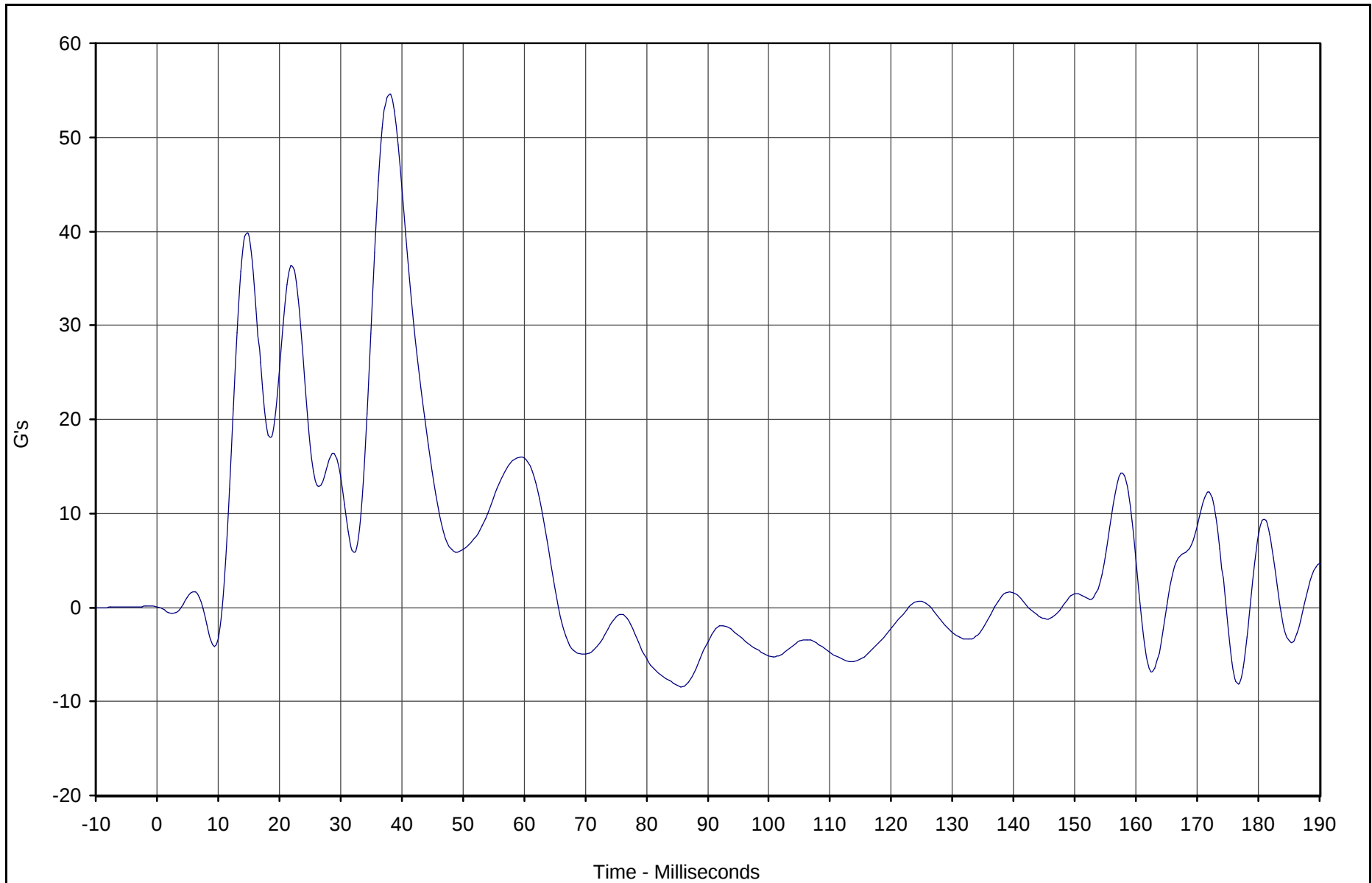


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Upper Rib Primary Y	013	FIR	G's	54.6	38.1	-8.4	85.6	FIR100

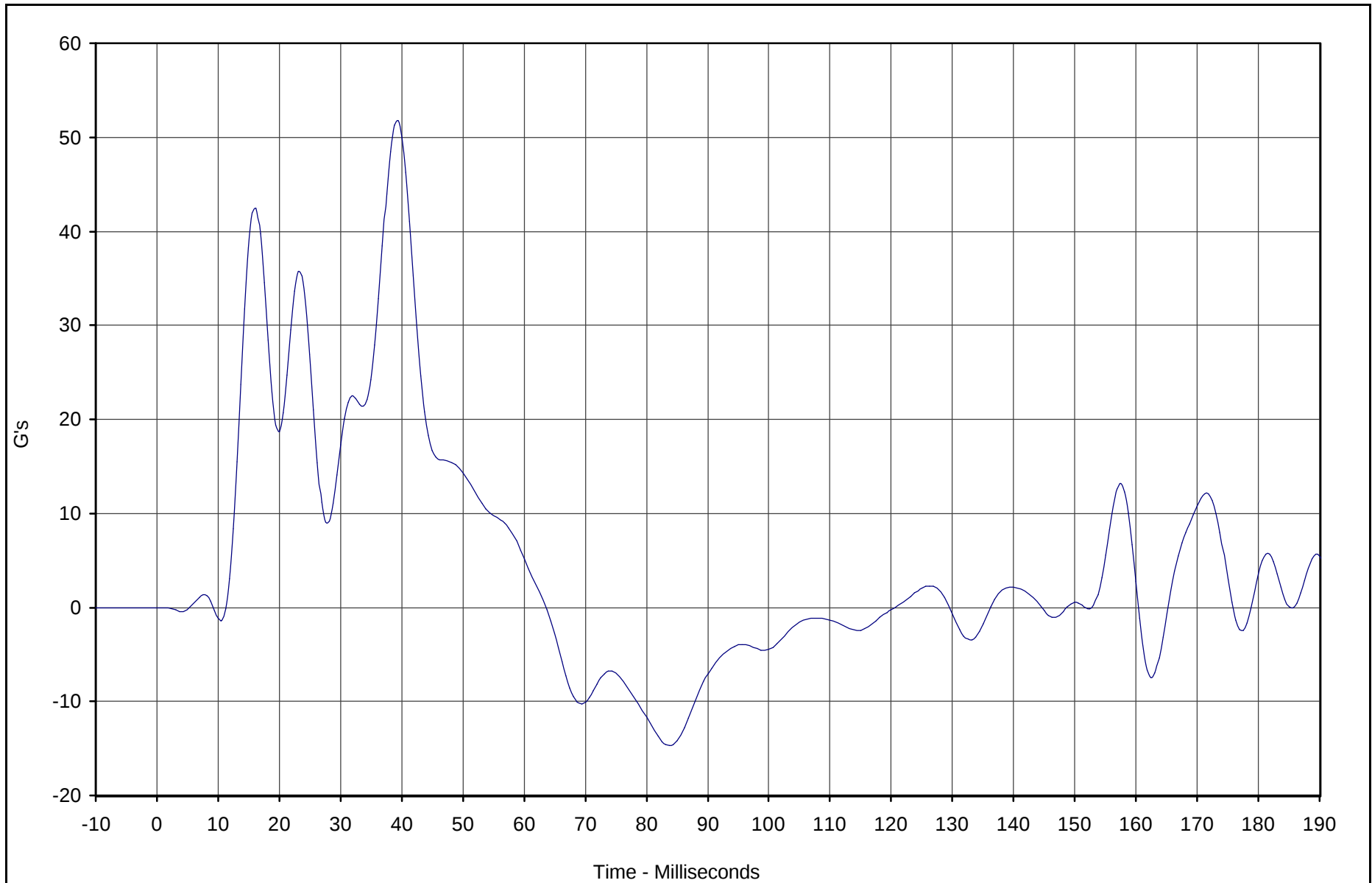


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Rib Primary Y	014	FIR	G's	51.8	39.4	-14.7	83.8	FIR100

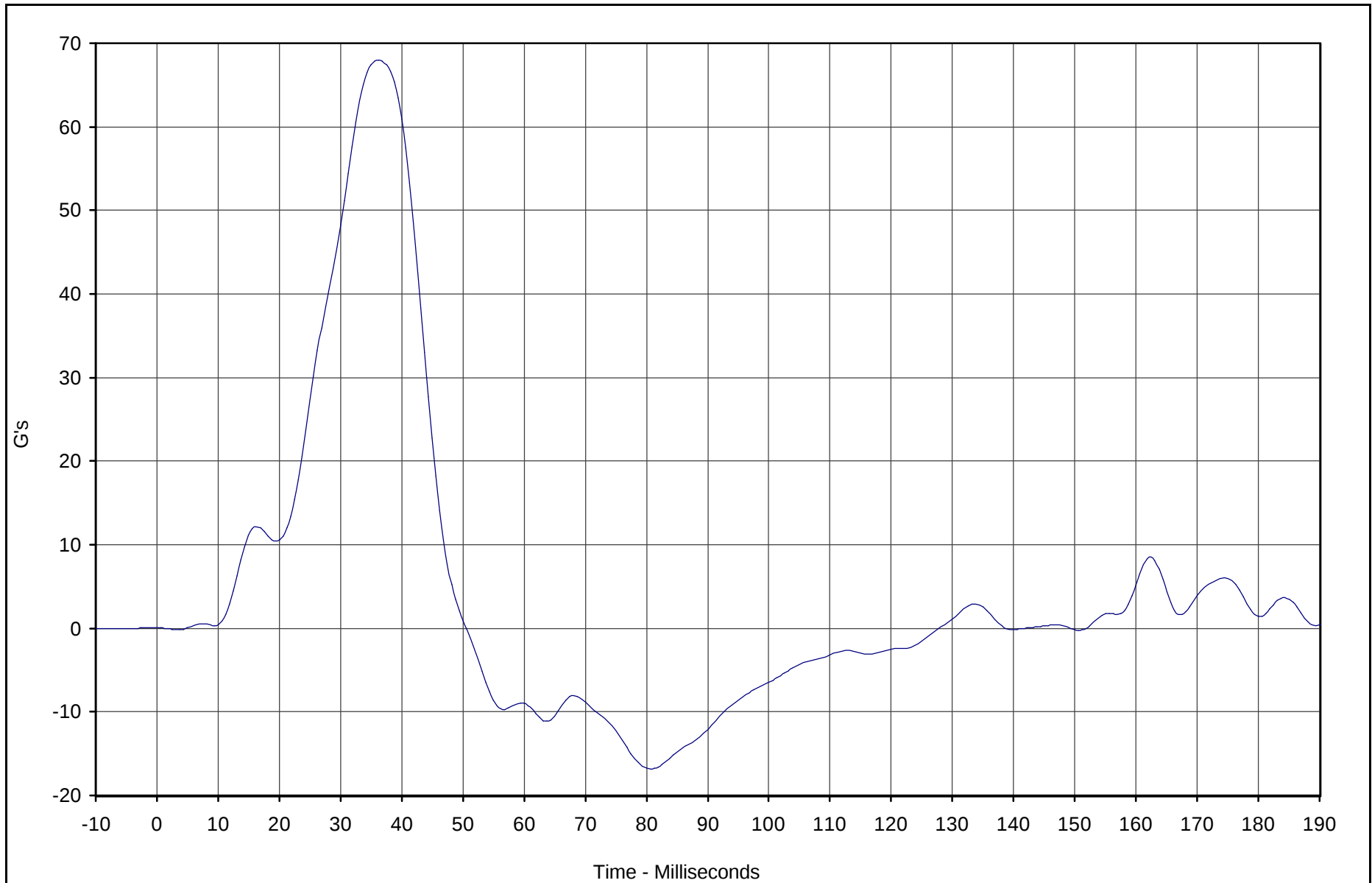


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Spine Primary Y	015	FIR	G's	67.9	36.3	-16.8	80.6	FIR100

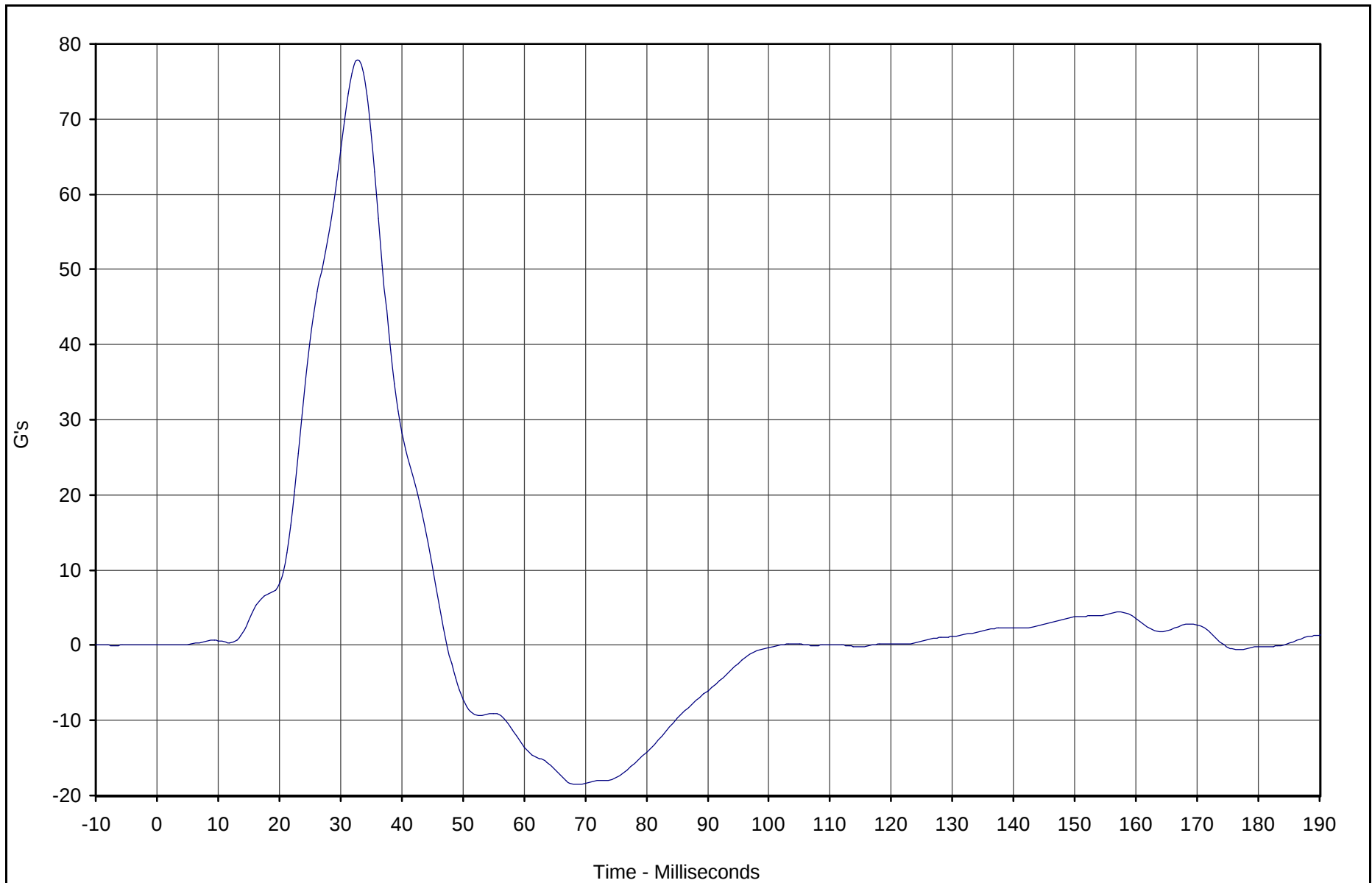


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Primary Y	016	FIR	G's	77.8	33.1	-18.5	68.8	FIR100

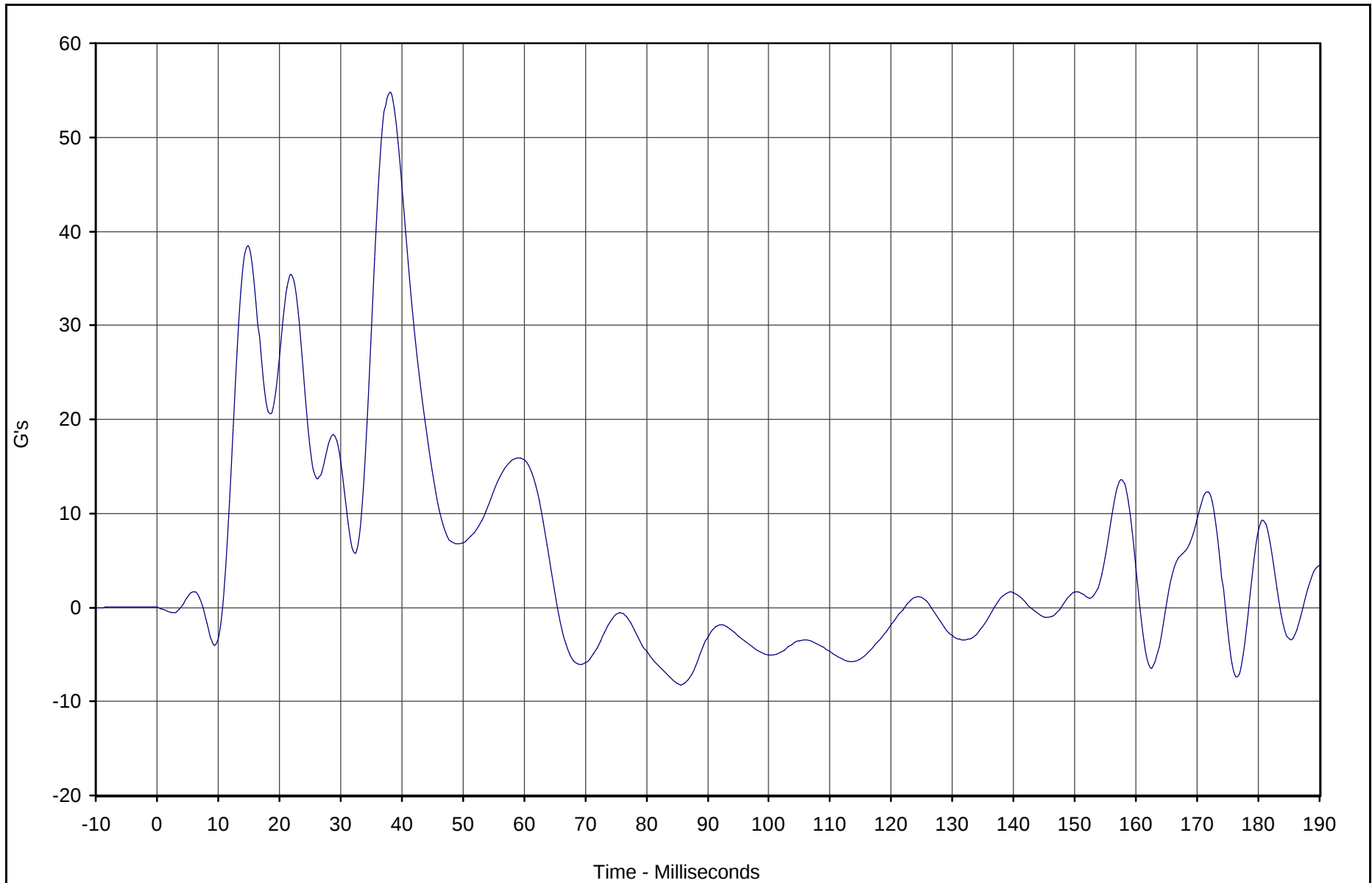


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Upper Rib Redundant Y	017	FIR	G's	54.7	38.1	-8.2	85.6	FIR100

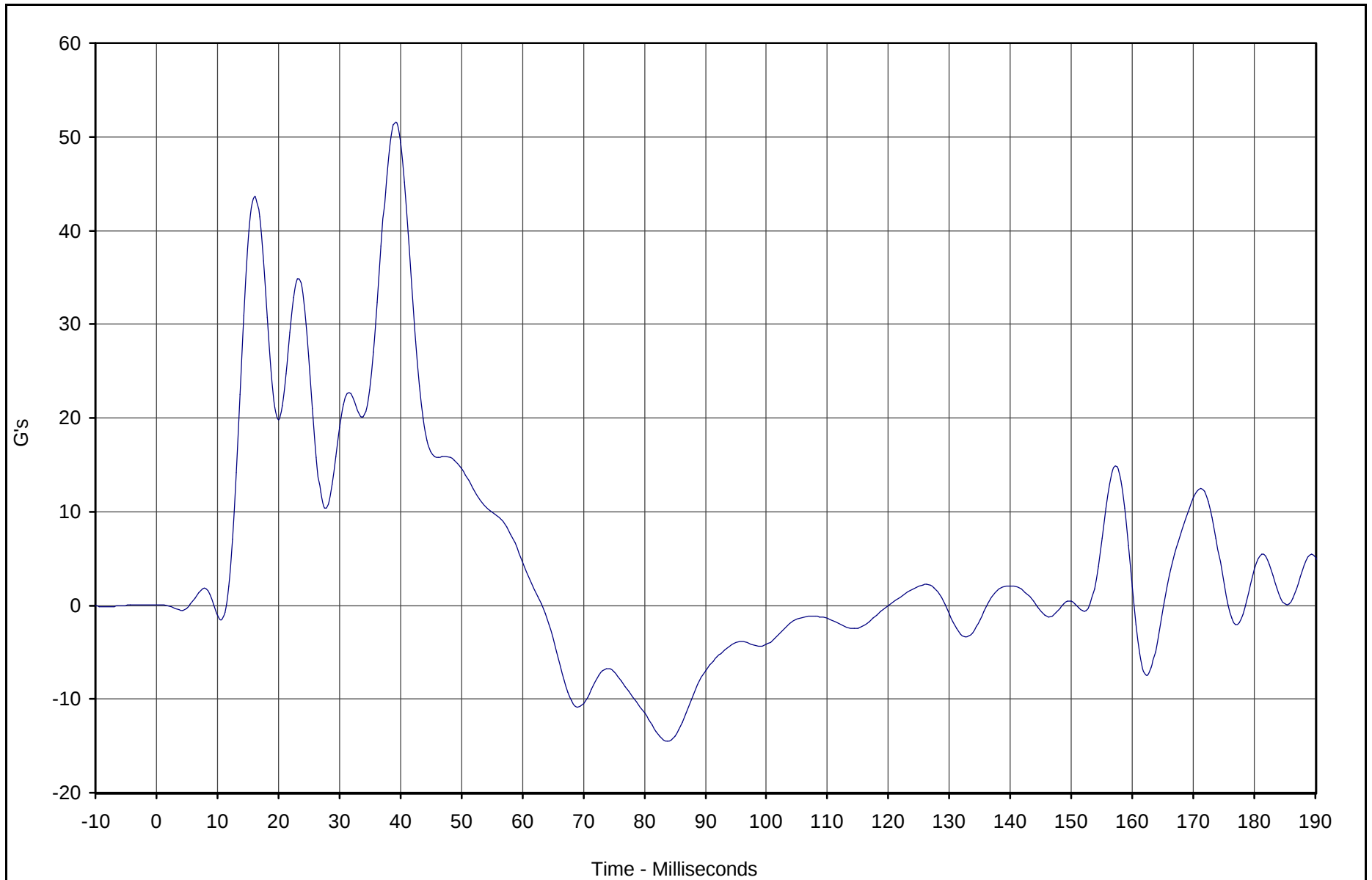


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Rib Redundant Y	018	FIR	G's	51.5	39.4	-14.5	83.8	FIR100

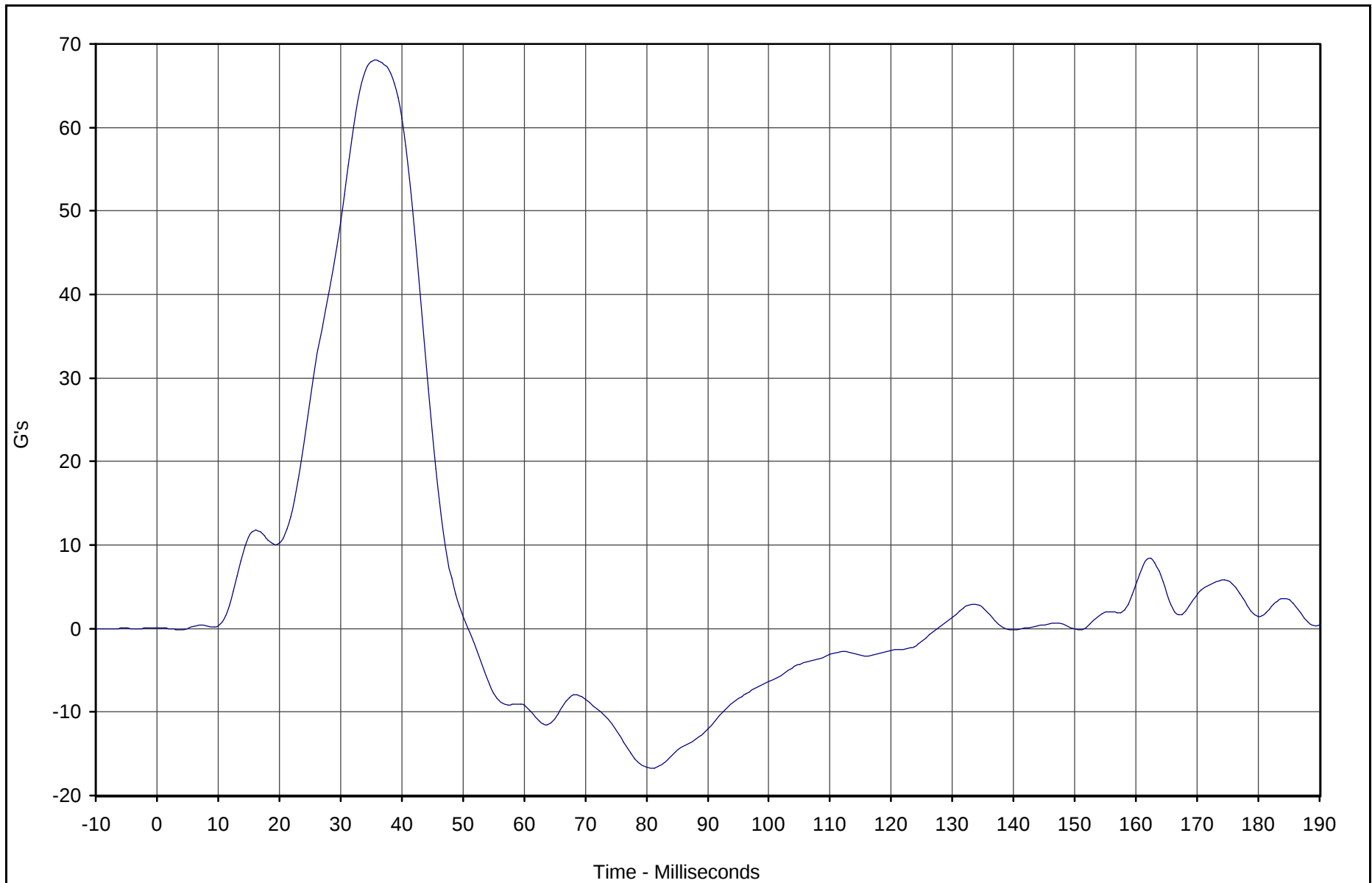


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lower Spine Redundant Y	019	FIR	G's	68.1	35.6	-16.8	80.6	FIR100

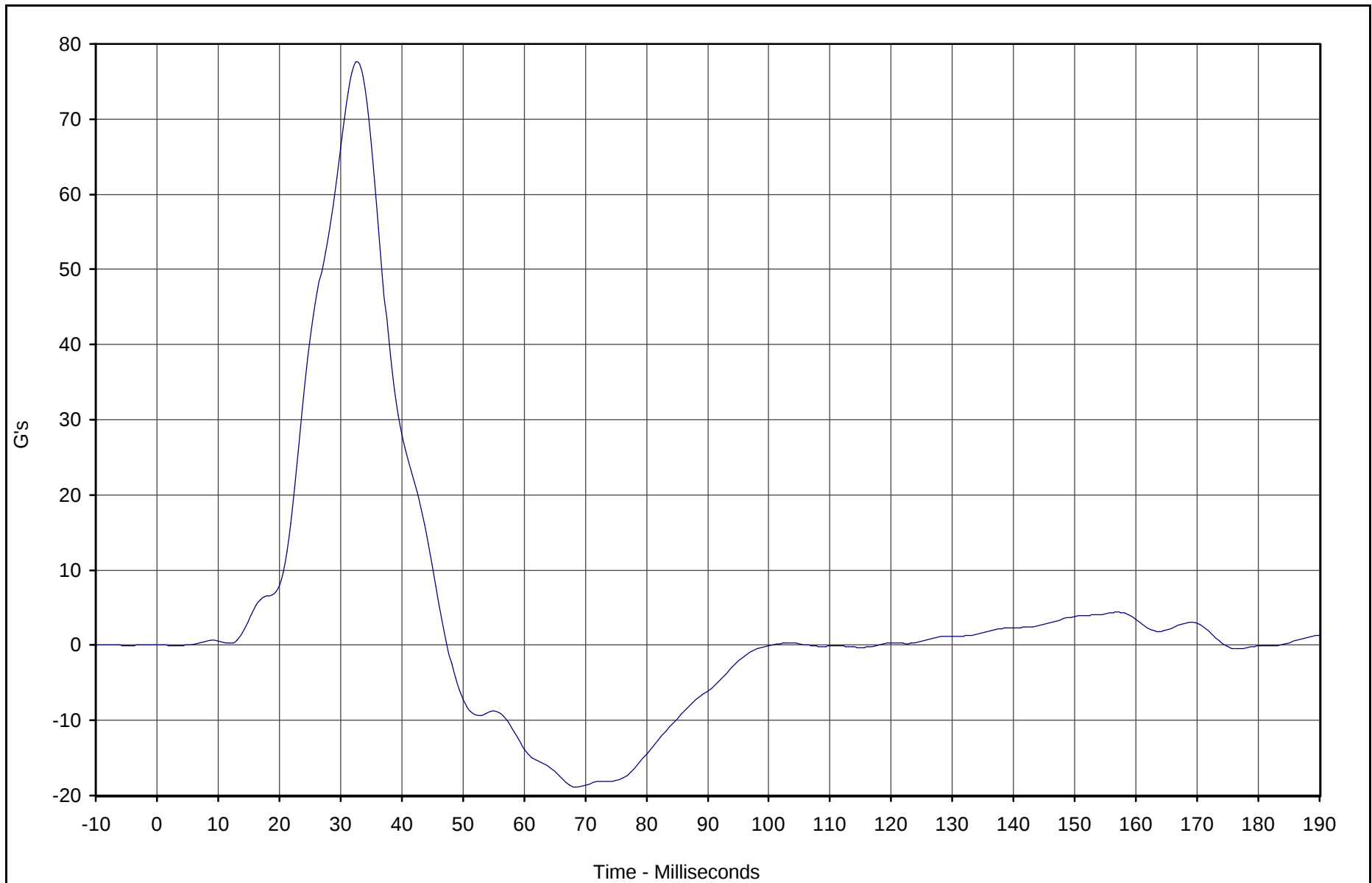


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Redundant Y	020	FIR	G's	77.6	32.5	-18.9	68.8	FIR100

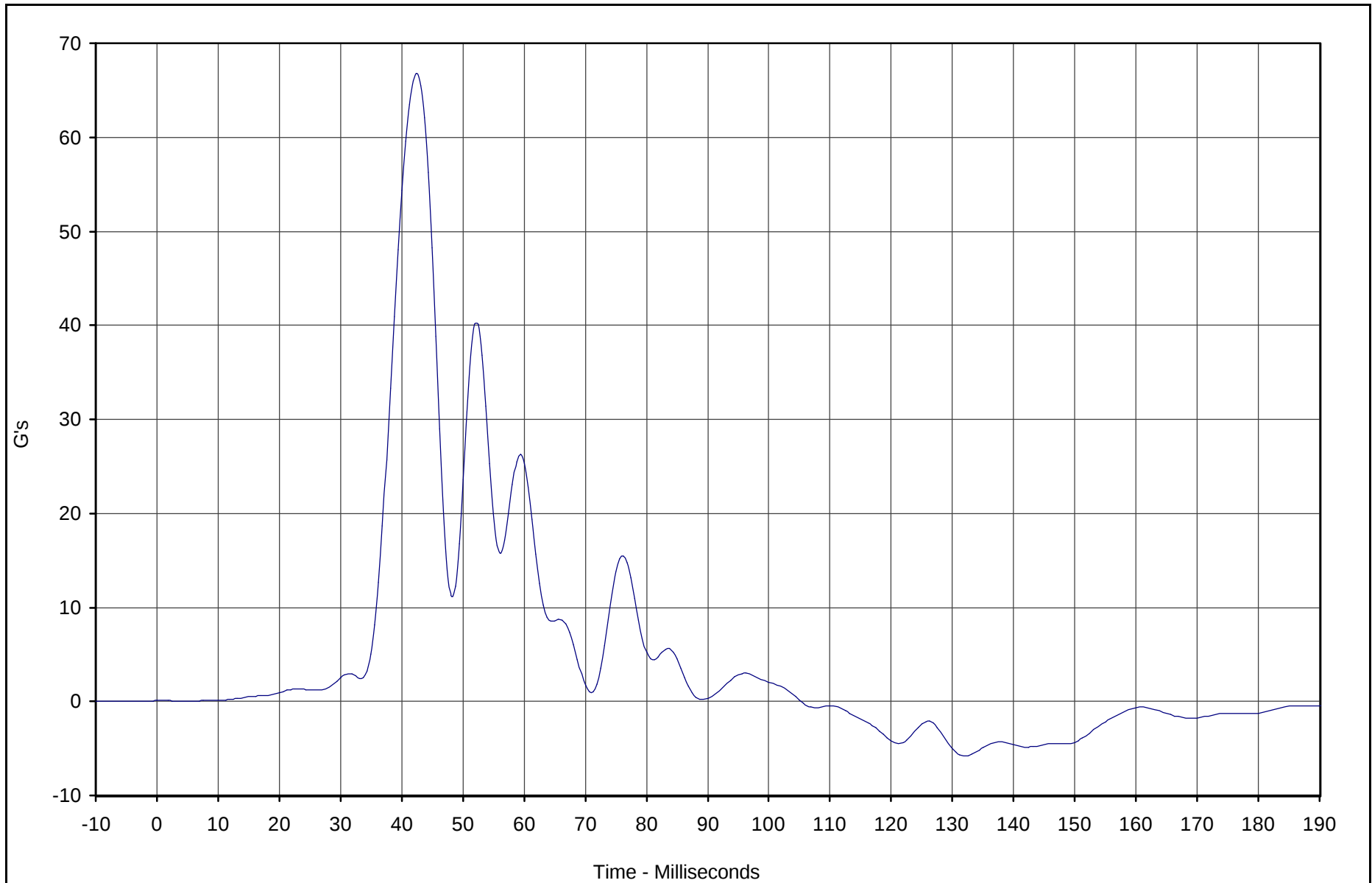


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Rib Primary Y	035	FIR	G's	66.8	42.5	-5.8	131.9	FIR100

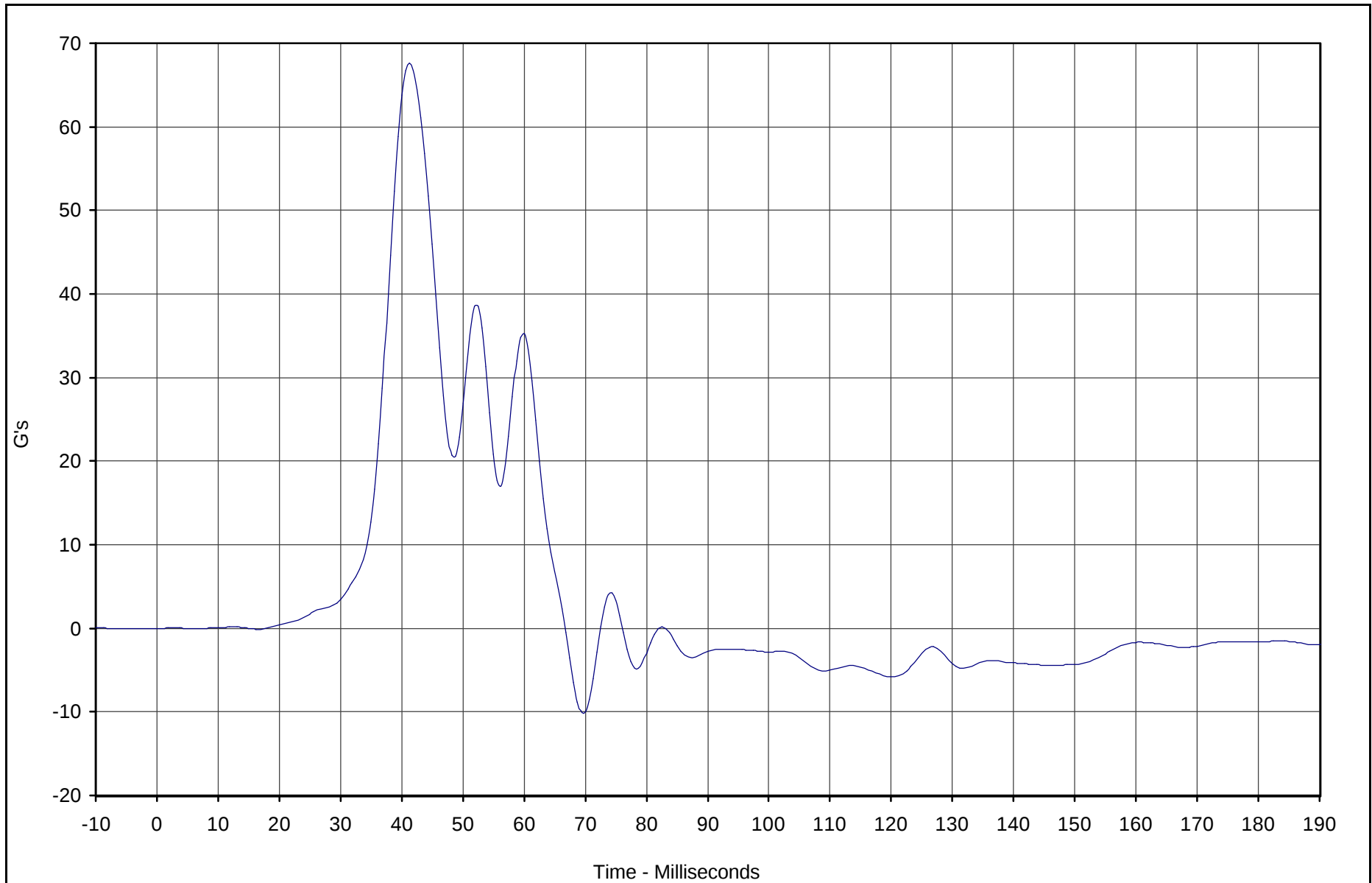


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Rib Primary Y	036	FIR	G's	67.6	41.3	-10.1	69.4	FIR100

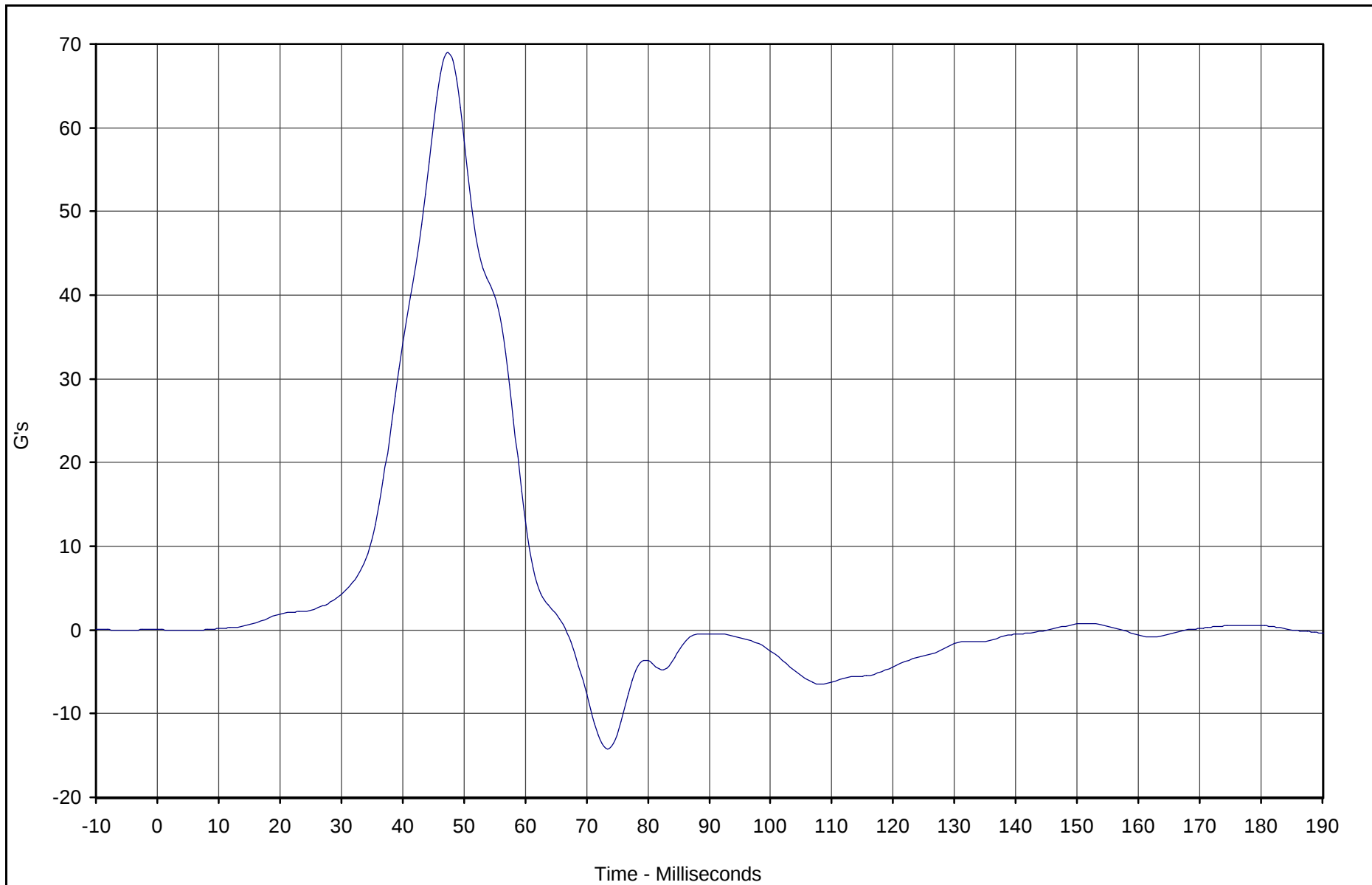


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Spine Primary Y	037	FIR	G's	69.0	47.5	-14.1	73.8	FIR100

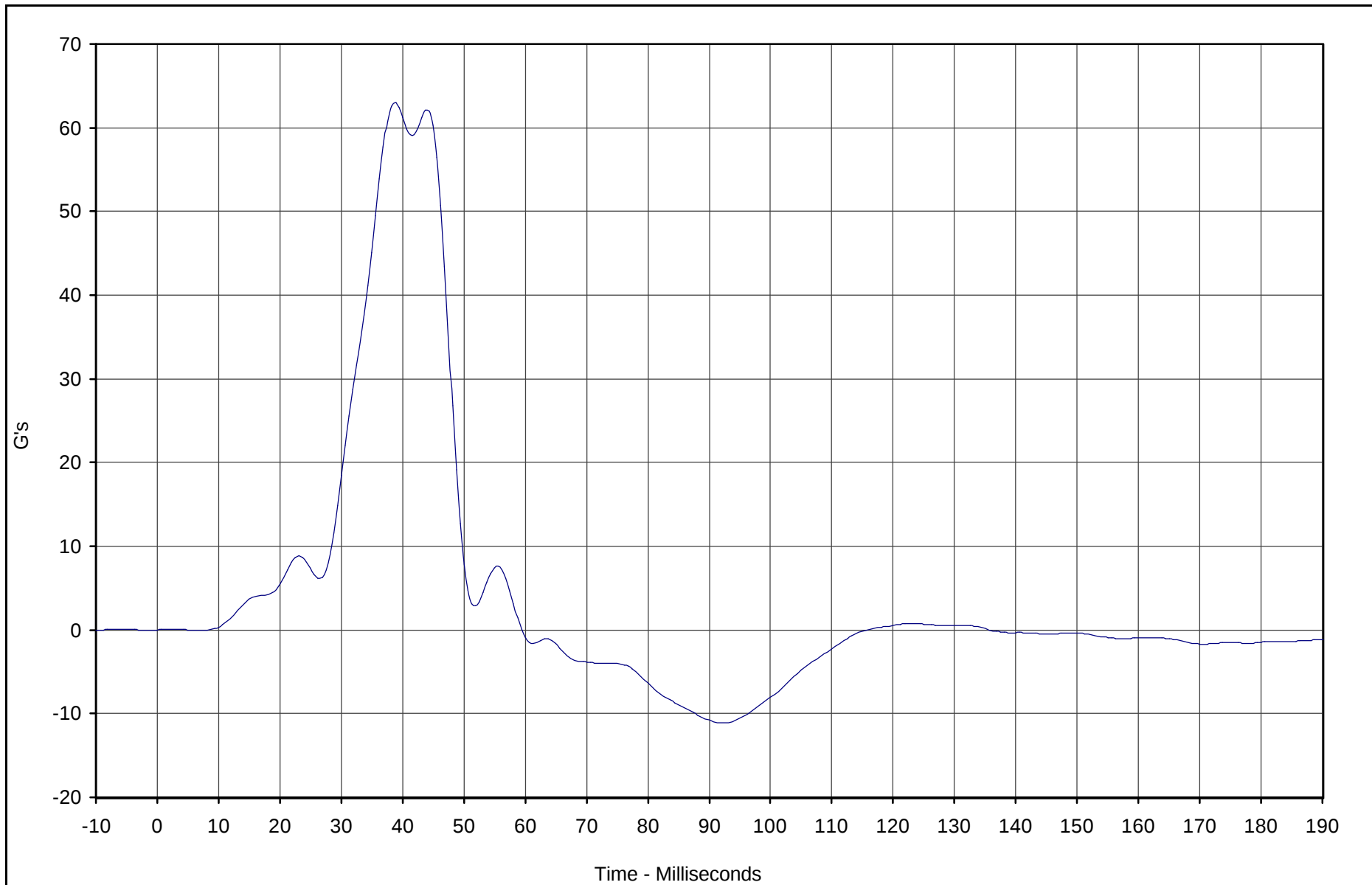


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Primary Y	038	FIR	G's	63.0	38.8	-11.1	92.5	FIR100

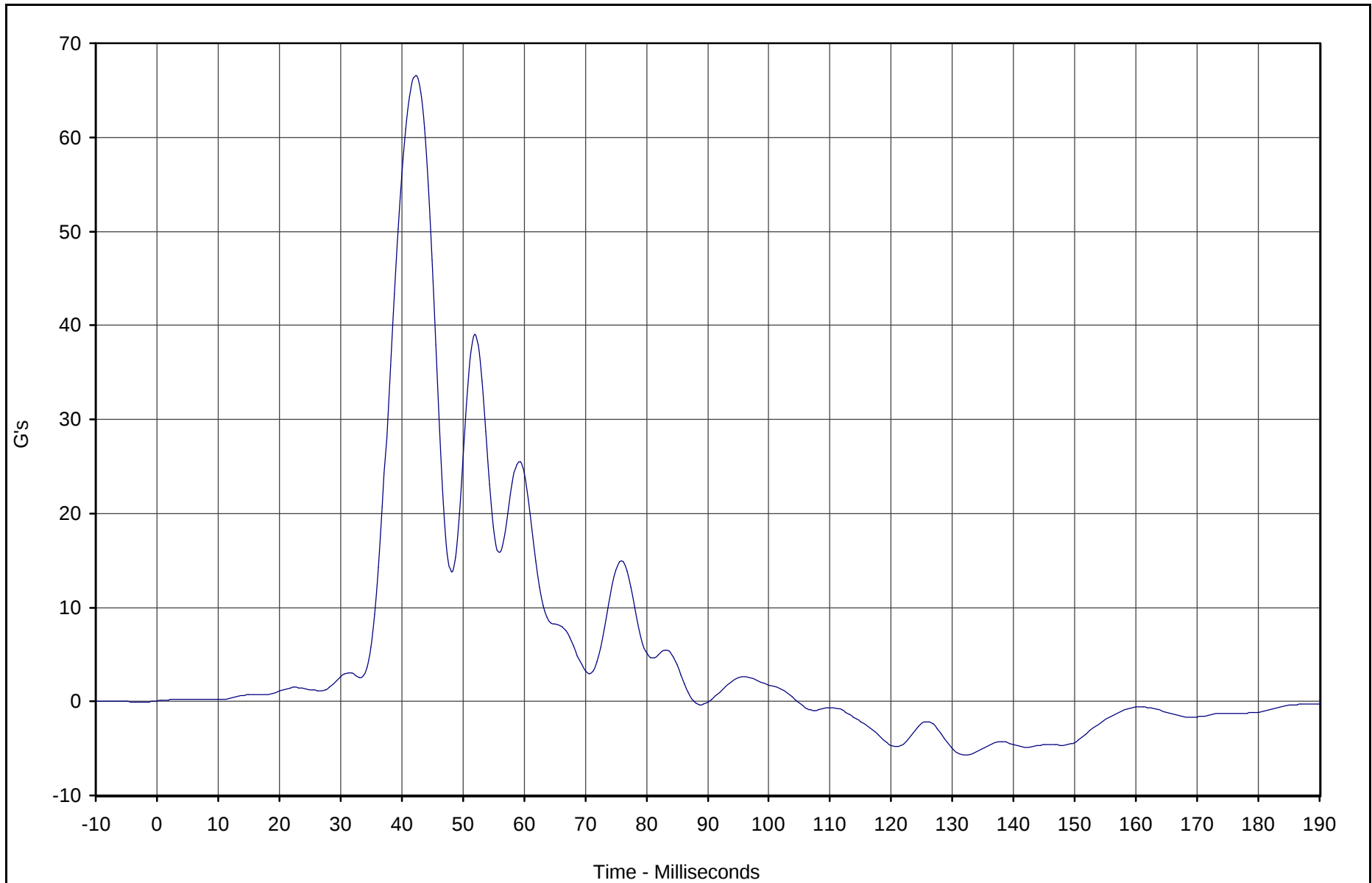


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Rib Redundant Y	039	FIR	G's	66.5	42.5	-5.7	132.5	FIR100

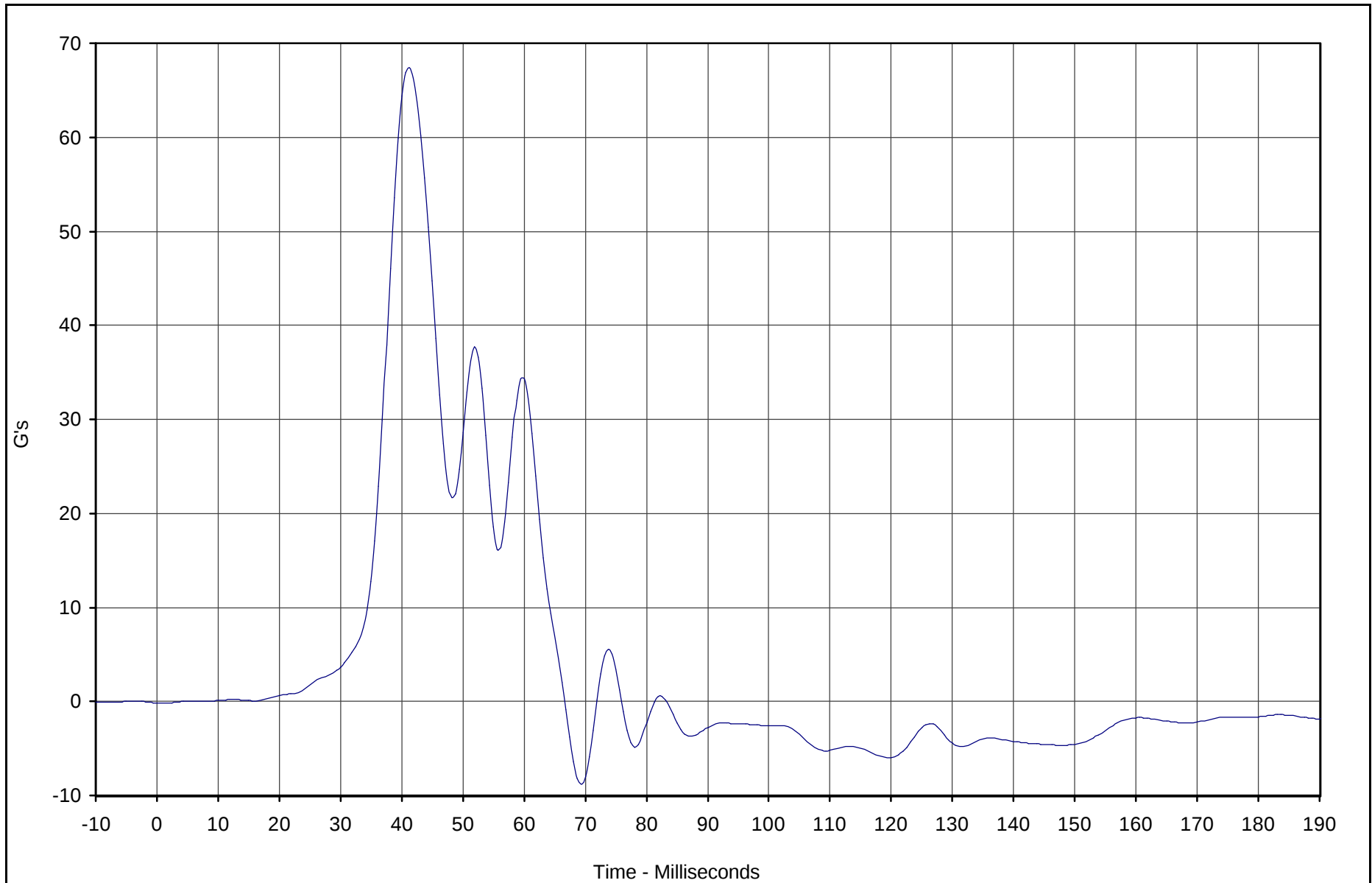


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Rib Redundant Y	040	FIR	G's	67.4	41.3	-8.8	69.4	FIR100

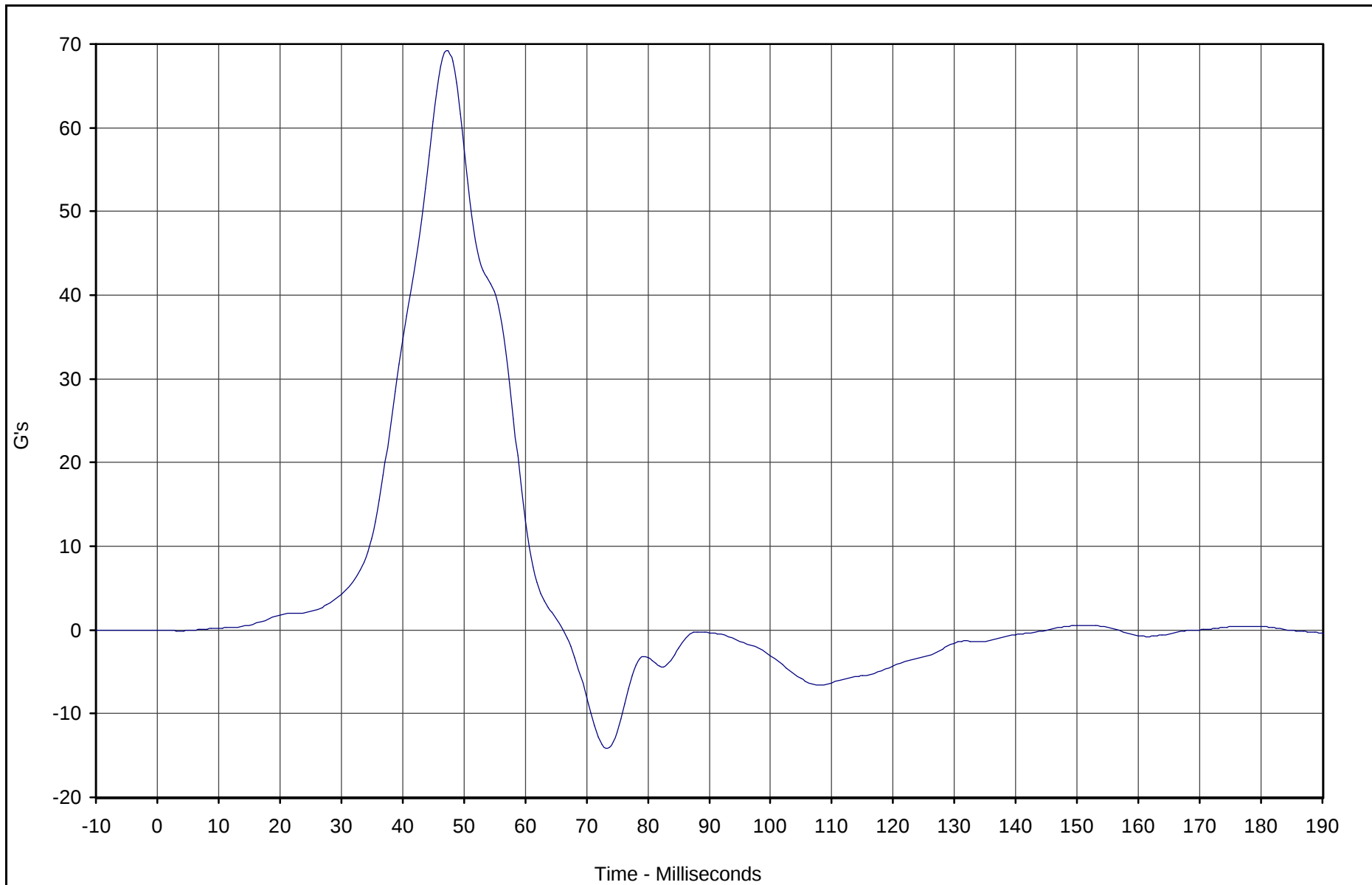


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Lower Spine Redundant Y	041	FIR	G's	69.2	47.5	-14.2	73.1	FIR100

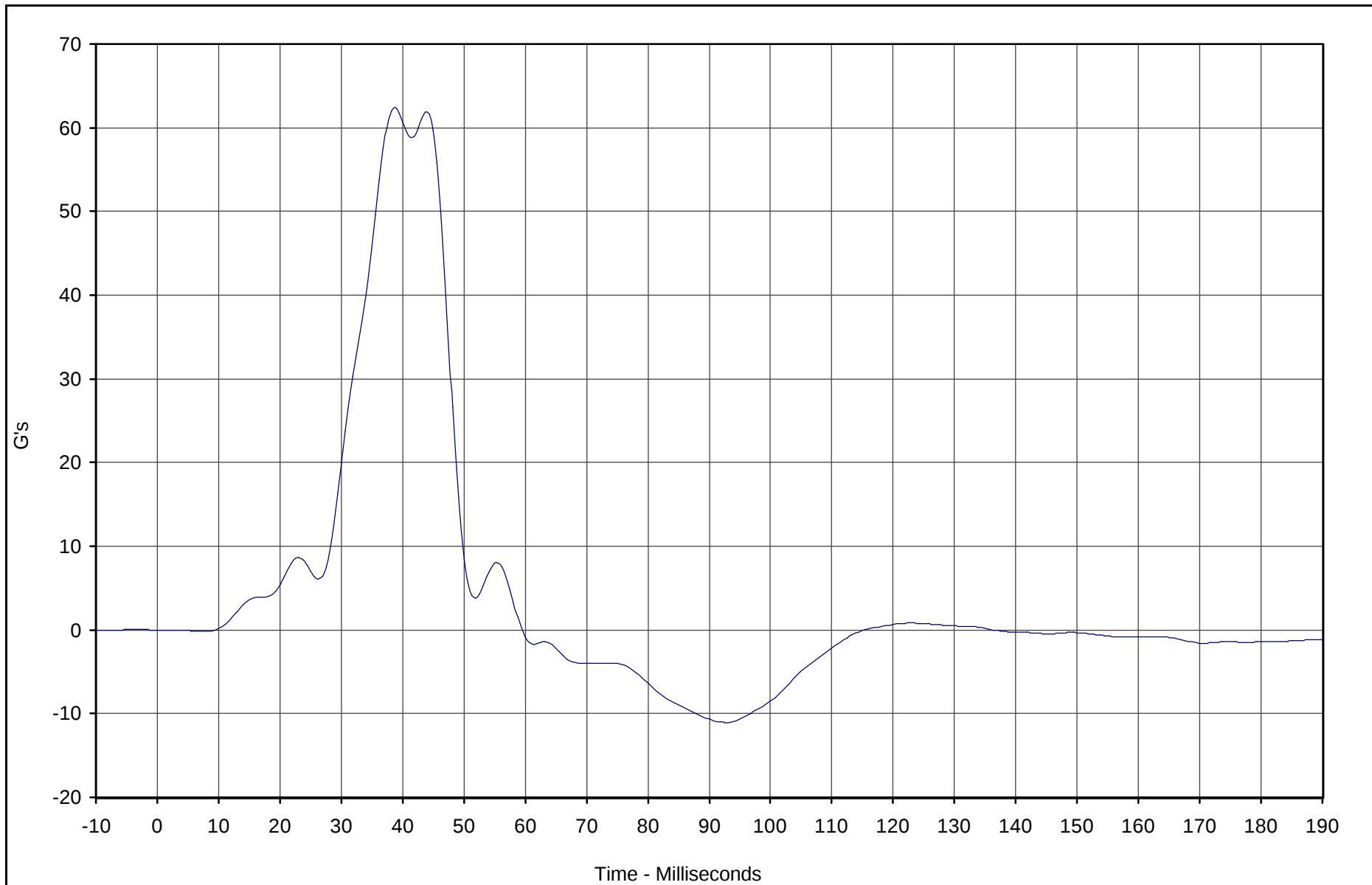


Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Redundant Y	042	FIR	G's	62.4	38.8	-11.1	92.5	FIR100



Test Vehicle: 2004 Hyundai XG350L 4 Door Sedan

Test Date: 9/25/03

Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: M40500

APPENDIX C
SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA



Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) External Measurements

ATD Serial No.: 274

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	500	Pass
HW- Hip Width	mm	356 to 391	385	Pass
Overall Test Results				Pass

C-1

TR-P23003-08-NC

Laboratory Technician

September 23, 2003

Test Date



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Thorax Lateral Impact

ATD Serial No.: 274

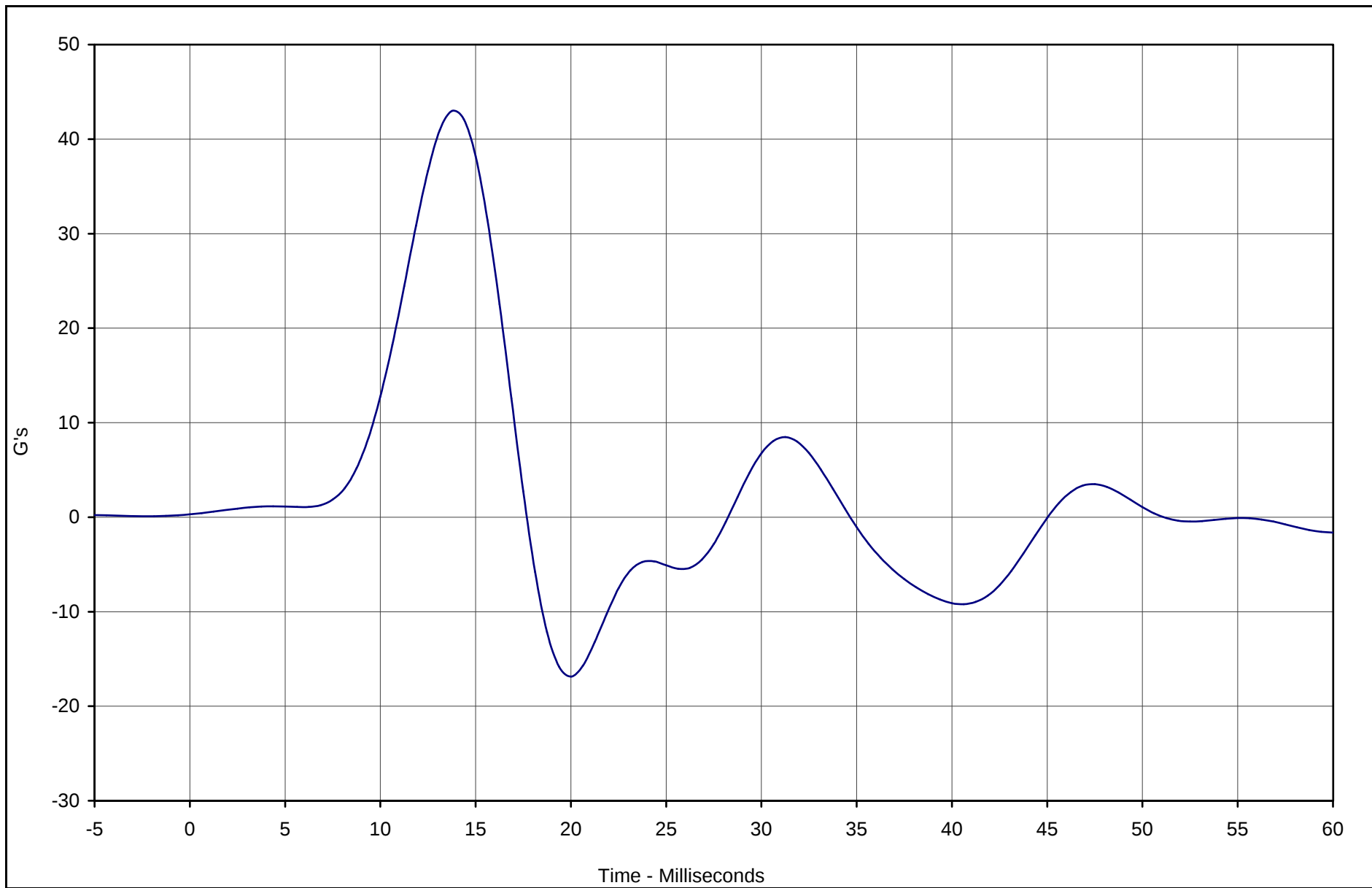
Test I.D.: TH10C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.30	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	43.0	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	40.0	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	16.5	Pass
Overall Test Results				Pass

Laboratory Technician

September 22, 2003

Test Date



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Upper Rib Y Acceleration	001	FIL	G's	43.0	13.8	-16.9	20.0	FIR100

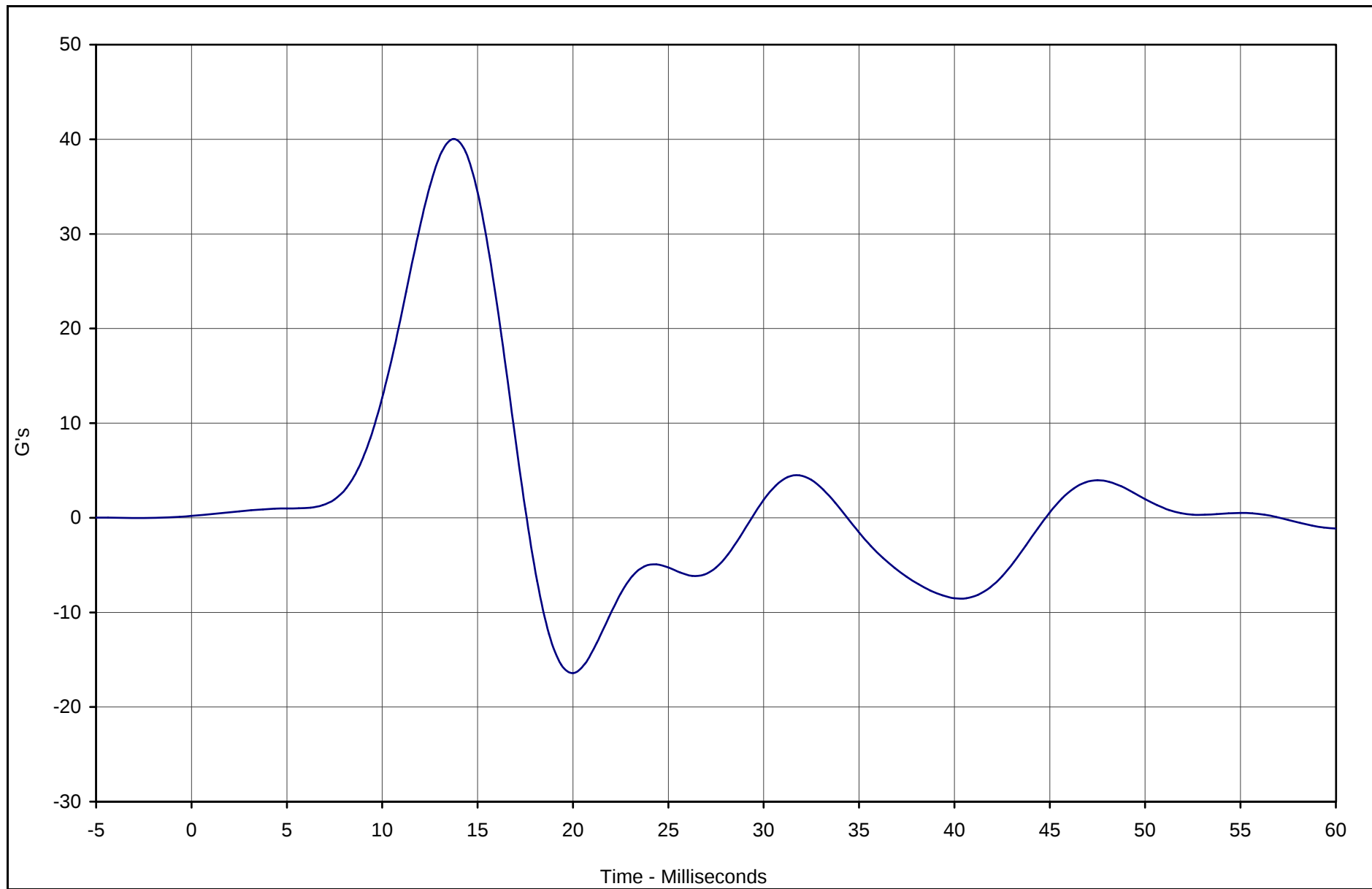


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 274

Test Date: 9/22/03

Test I.D.: TH10C



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Rib Y Acceleration	002	FIL	G's	40.0	13.8	-16.4	20.0	FIR100

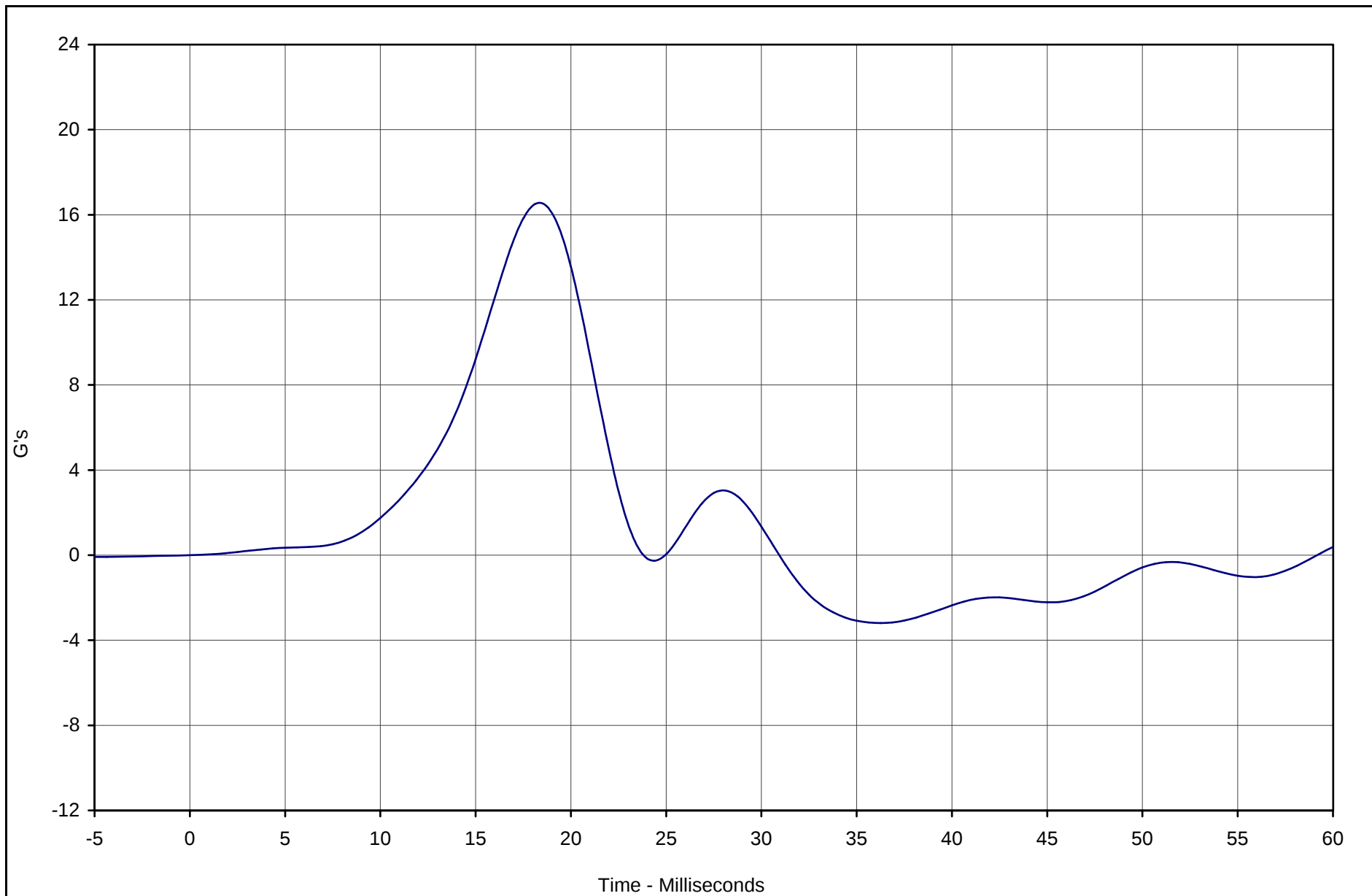


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 274

Test Date: 9/22/03

Test I.D.: TH10C



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Spine Y Acceleration	003	FIL	G's	16.5	18.1	-3.2	36.3	FIR100



Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 274

Test Date: 9/22/03

Test I.D.: TH10C



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Pelvis Lateral Impact

ATD Serial No.: 274

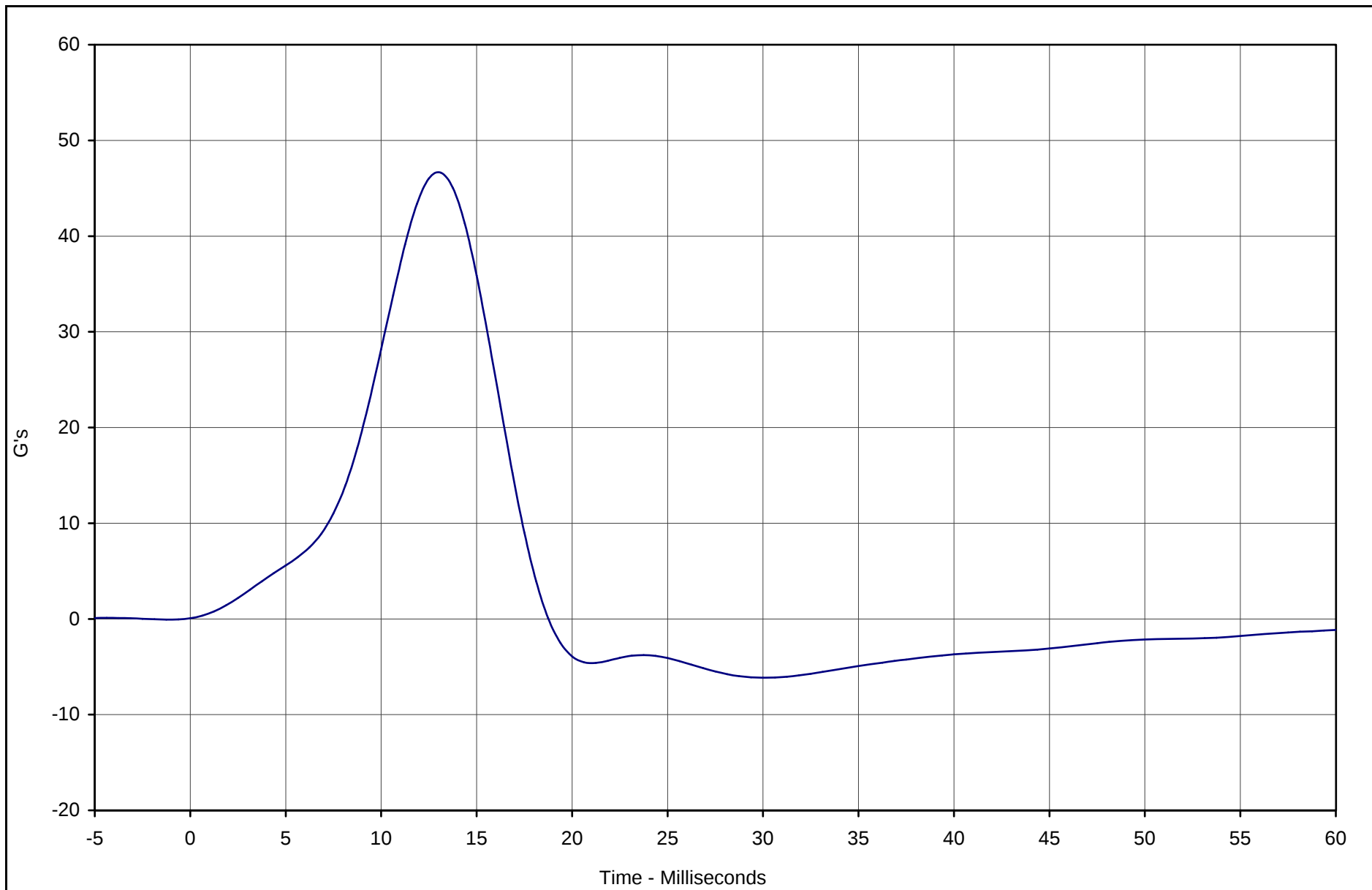
Test I.D.: PE10C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.24	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	46.6	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.9	Pass
Overall Test Results				Pass

Laboratory Technician

September 22, 2003

Test Date



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pelvis Y Acceleration	001	FIL	G's	46.6	13.1	-6.1	30.0	FIR100



Test Vehicle: Side Impact Dummy (SID) Pelvis Lateral Impact

SID Serial No.: 274

Test Date: 9/22/03

Test I.D.: PE10C



Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) Head Drop Lateral Impact Test

ATD Serial No.: 274

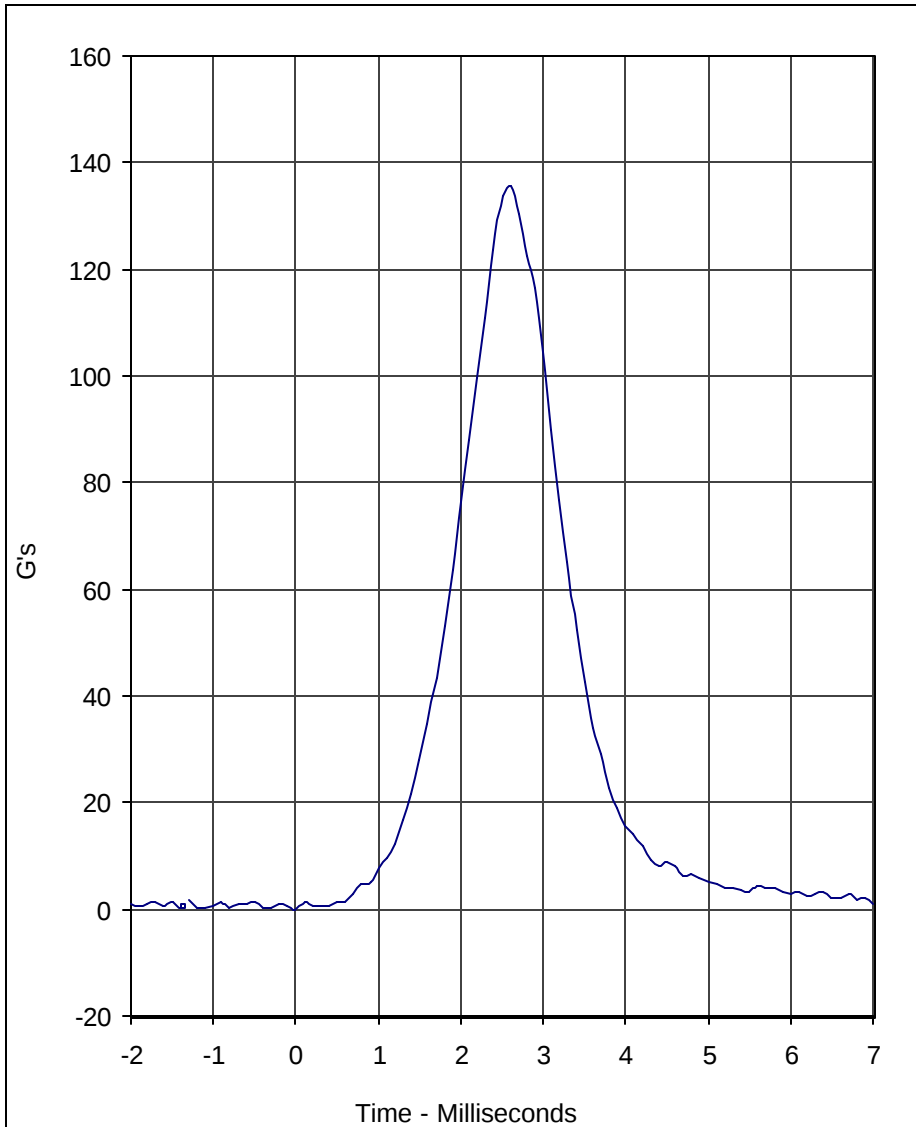
Test I.D.: HD10C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	135.6	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.8	Pass
Overall Test Results				Pass

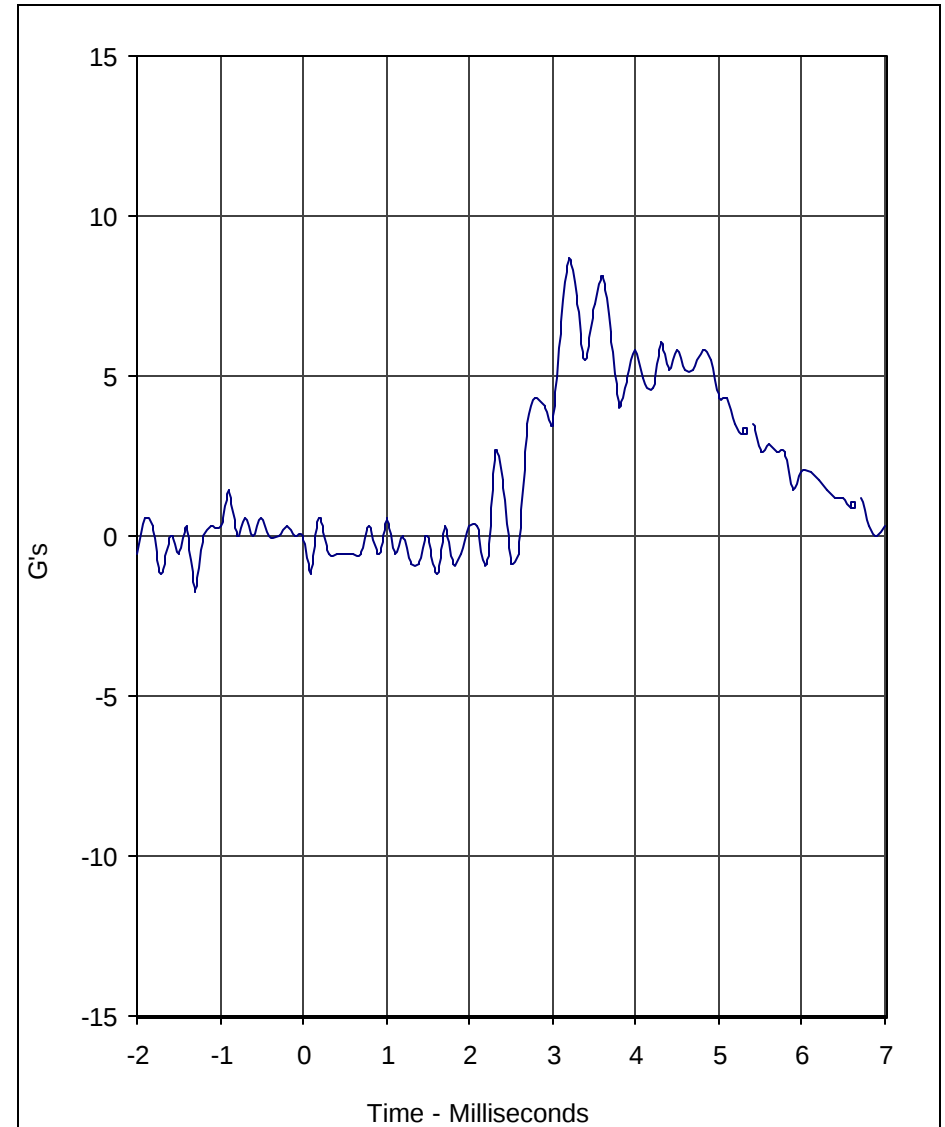
Laboratory Technician

September 22, 2003

Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	135.6	2.6	0.0	0.0	1000



Curve Description				CURNO	Type
Head X				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	8.7	3.2	-1.7	-1.3	1000

Test Program: SID / HIII Head Drop Lateral Impact Test

Test Date: 9/22/03

A.T.D. Serial No.: 274

Test I.D.: HD10C





Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Neck Pendulum Lateral Test

ATD Serial No.: 274

Test I.D.: NB10C

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.92	Pass
Pendulum Deceleration	10	Msec.	1.96 to 2.55	1.96	Pass
	20	Msec.	4.12 to 5.10	4.34	Pass
	30	Msec.	5.73 to 7.01	6.38	Pass
	40 to 70	Msec.	6.27 to 7.64	7.55	Pass
Maximum "D" Plane Rotation		Degrees	66.0 to 82.0	73.3	Pass
Maximum "D" Plane Rotation Time After Peak Moment		Msec.	2.0 to 15.0	4.9	Pass
"D" Plane Rotation Decay Time From Peak Angle to Zero Angle		Msec.	58.0 to 67.0	60.7	Pass
Calculated Moment About Occipital Condyle		N•m	73.0 to 88.0	83.4	Pass
Moment About Occipital Condyle Decay, Time From Positive Peak Value To 0 N•m		Msec.	49.0 to 64.0	58.4	Pass
Overall Test Results					Pass

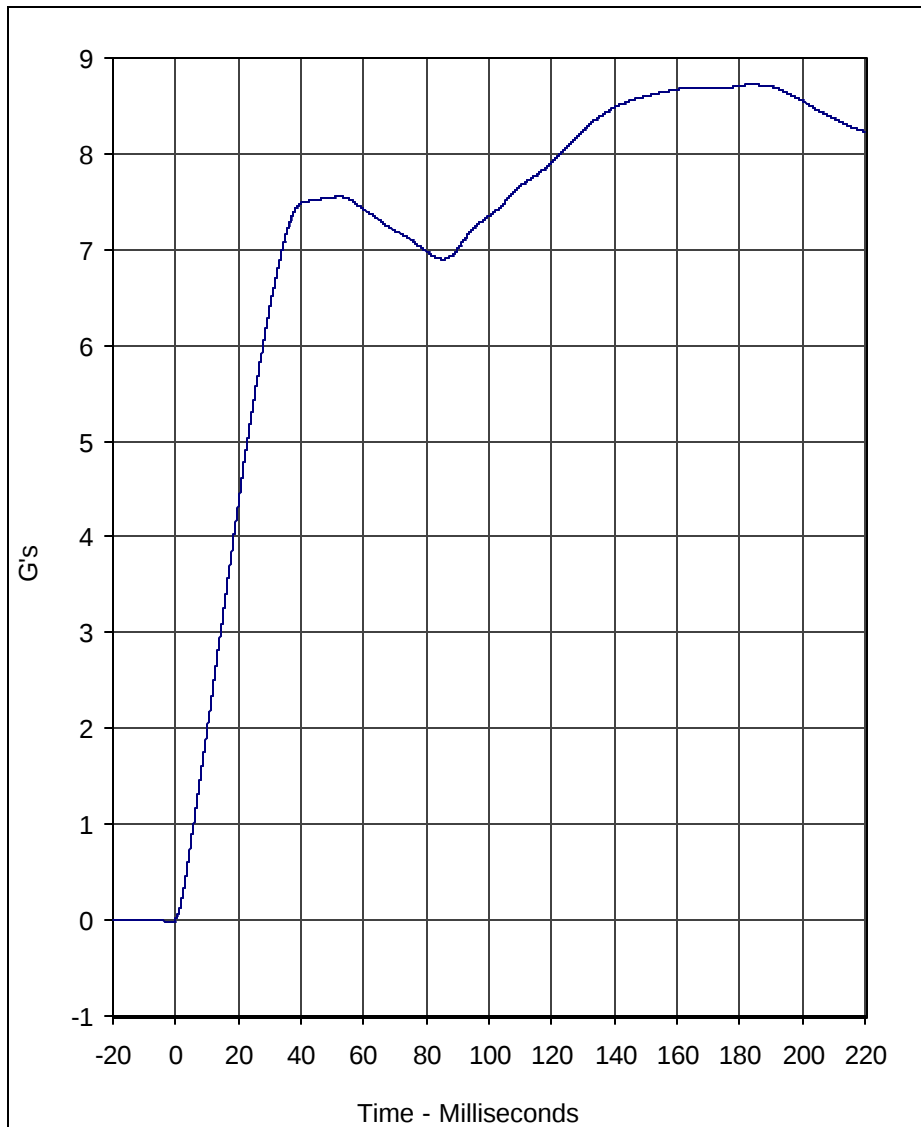
Laboratory Technician

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Test Date

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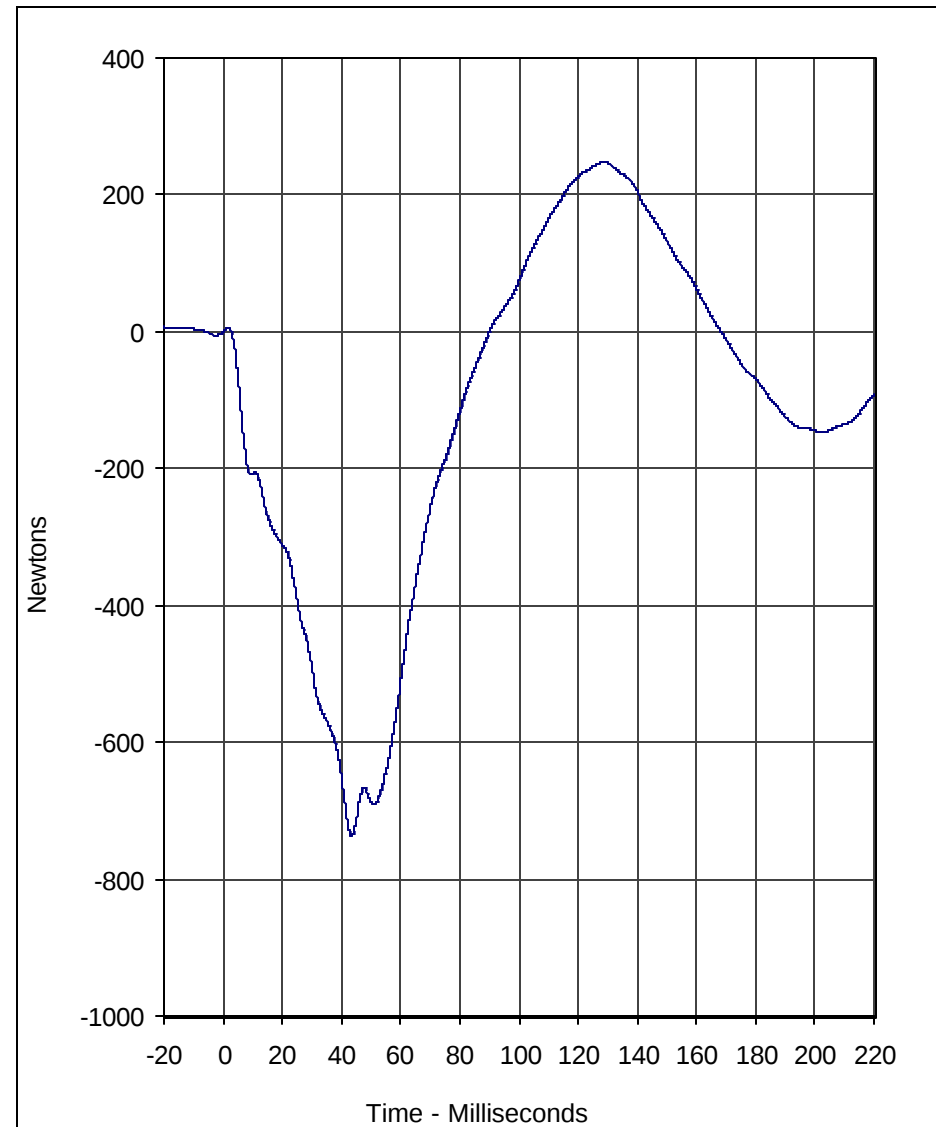
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Curve Description				CURNO	Type
Pendulum Velocity				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	8.7	184.0	0.0	-1.5	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/22/03

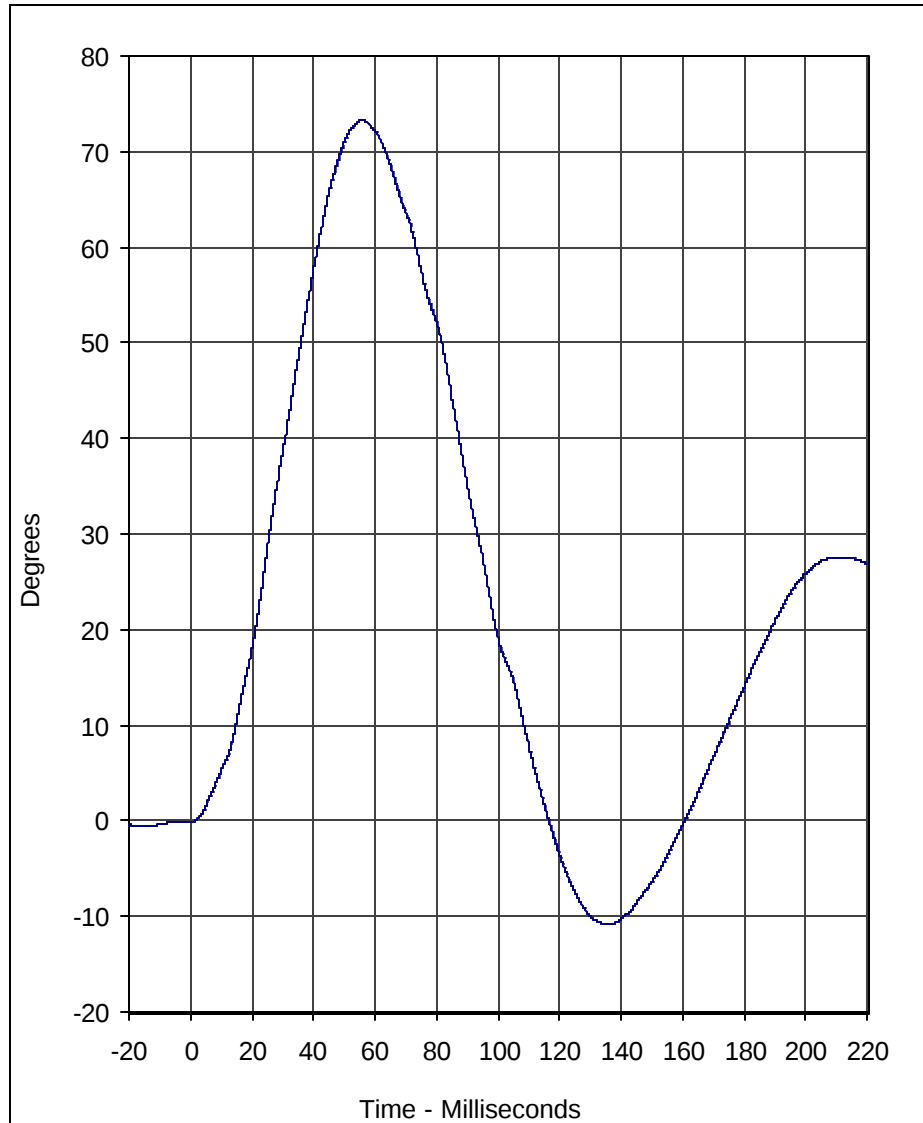


Curve Description				CURNO	Type
Neck Force Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	248.2	128.8	-736.2	43.4	60

A.T.D. Serial No.: 274

Test I.D.: NB10C

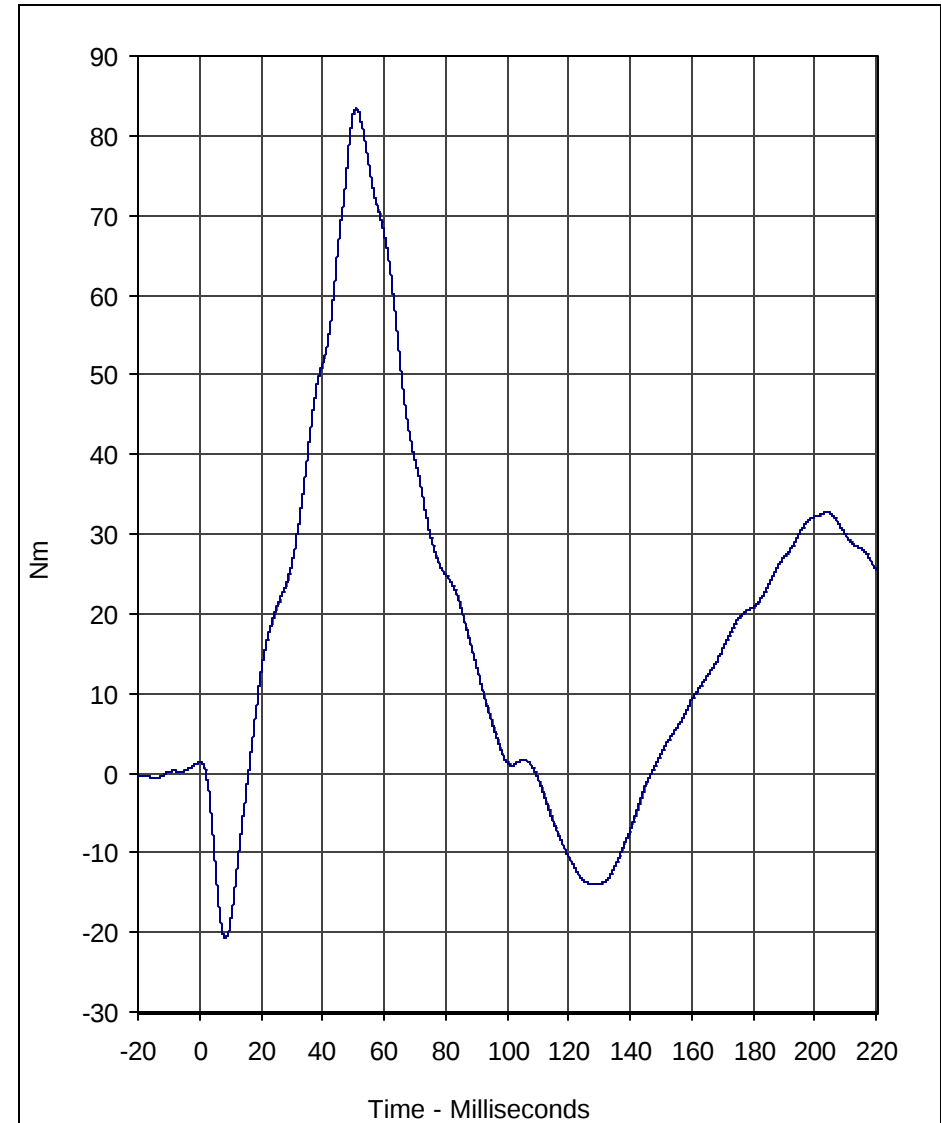




Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	73.3	55.9	-10.9	136.2	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/22/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	83.4	51.0	-20.8	8.5	60

A.T.D. Serial No.: 274

Test I.D.: NB10C





Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) External Measurements

ATD Serial No.: 275

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	905	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	510	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	500	Pass
HW- Hip Width	mm	356 to 391	380	Pass
Overall Test Results				Pass

Laboratory Technician

September 23, 2003

Test Date



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Thorax Lateral Impact

ATD Serial No.: 275

Test I.D.: TH10D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.23	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	38.2	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	40.3	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.4	Pass
Overall Test Results				Pass

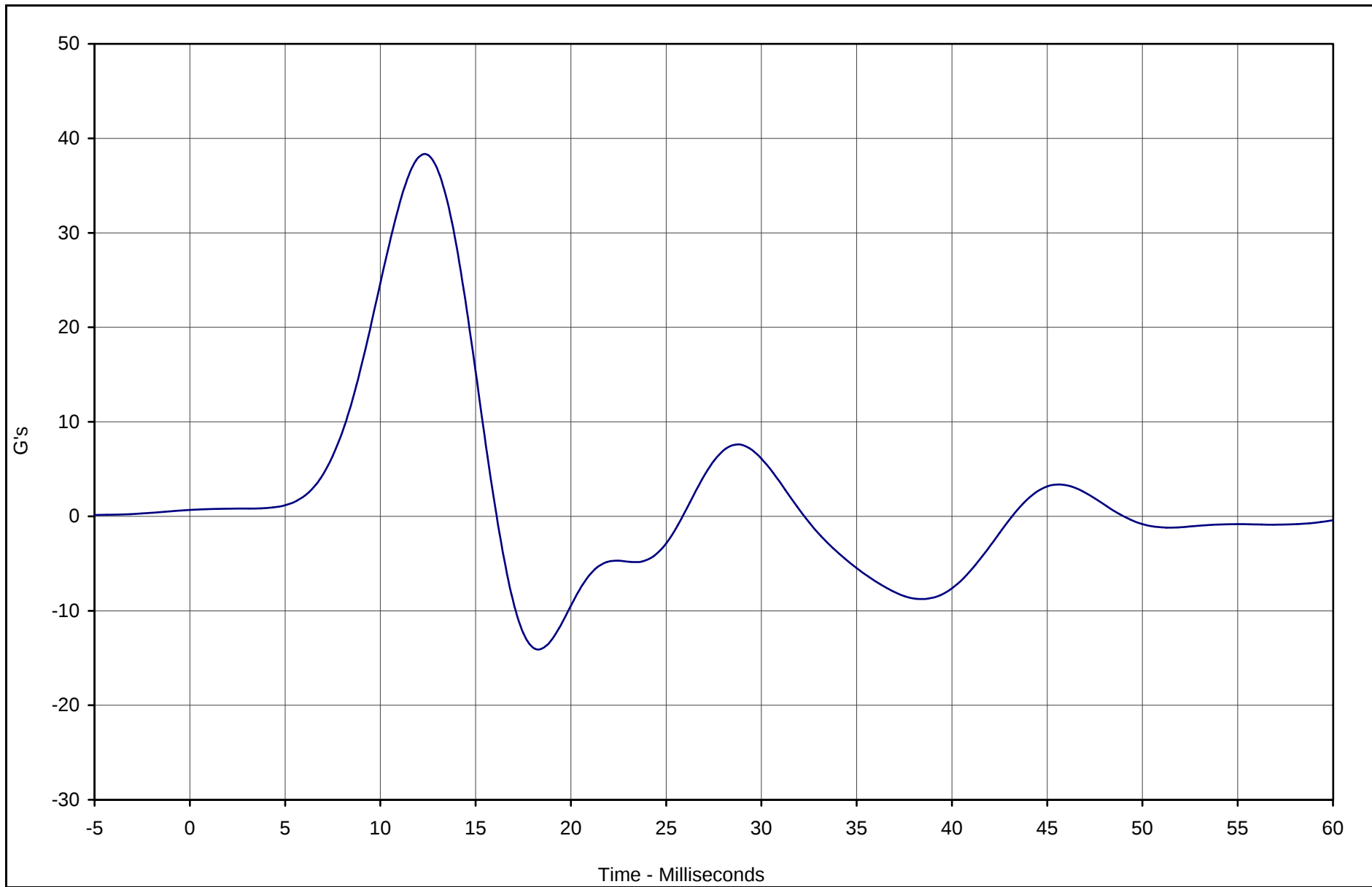
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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Upper Rib Y Acceleration	001	FIL	G's	38.2	12.5	-14.0	18.1	FIR100

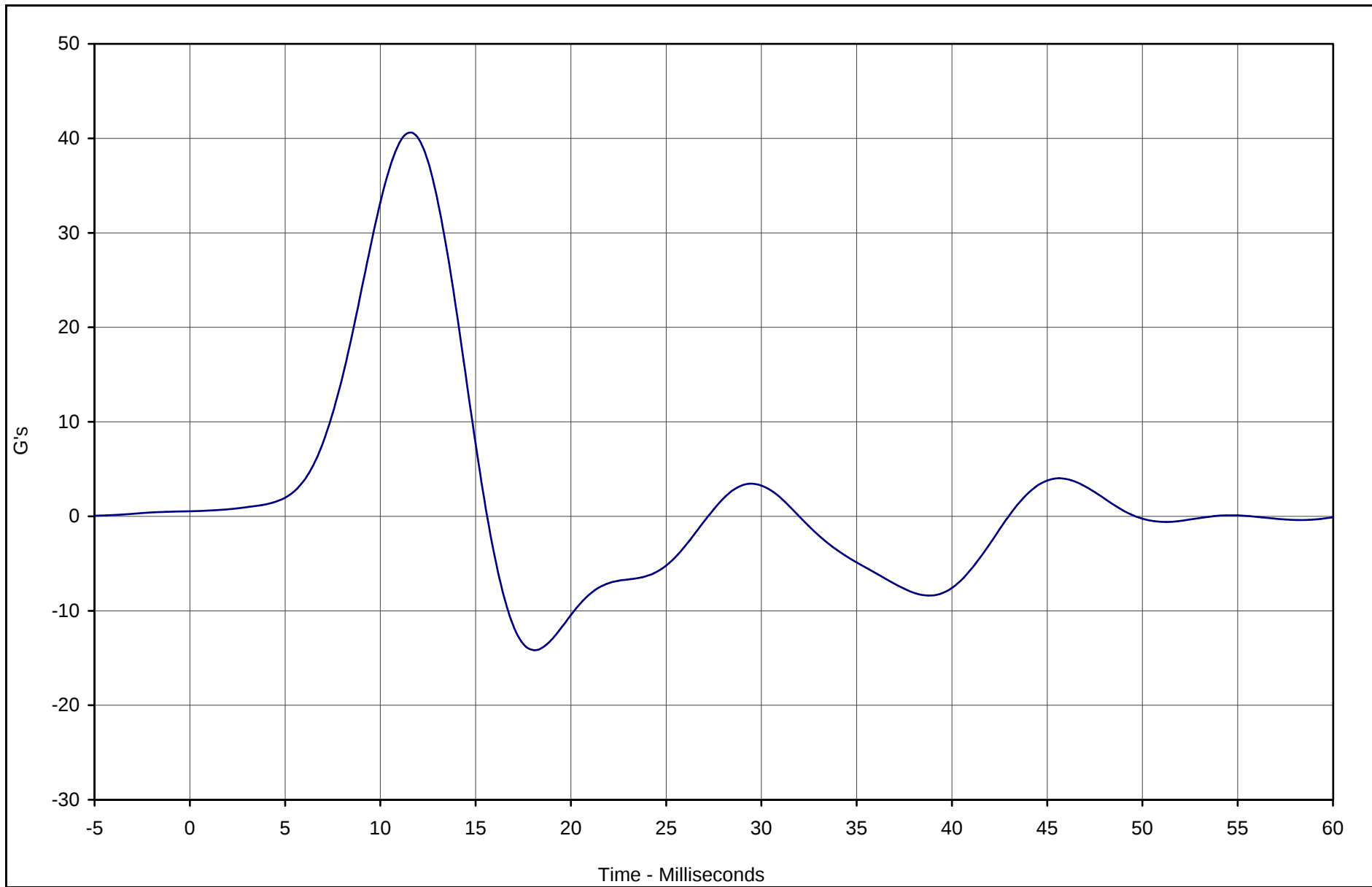


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 275

Test Date: 9/22/03

Test I.D.: TH10D



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Rib Y Acceleration	002	FIL	G's	40.3	11.9	-14.2	18.1	FIR100

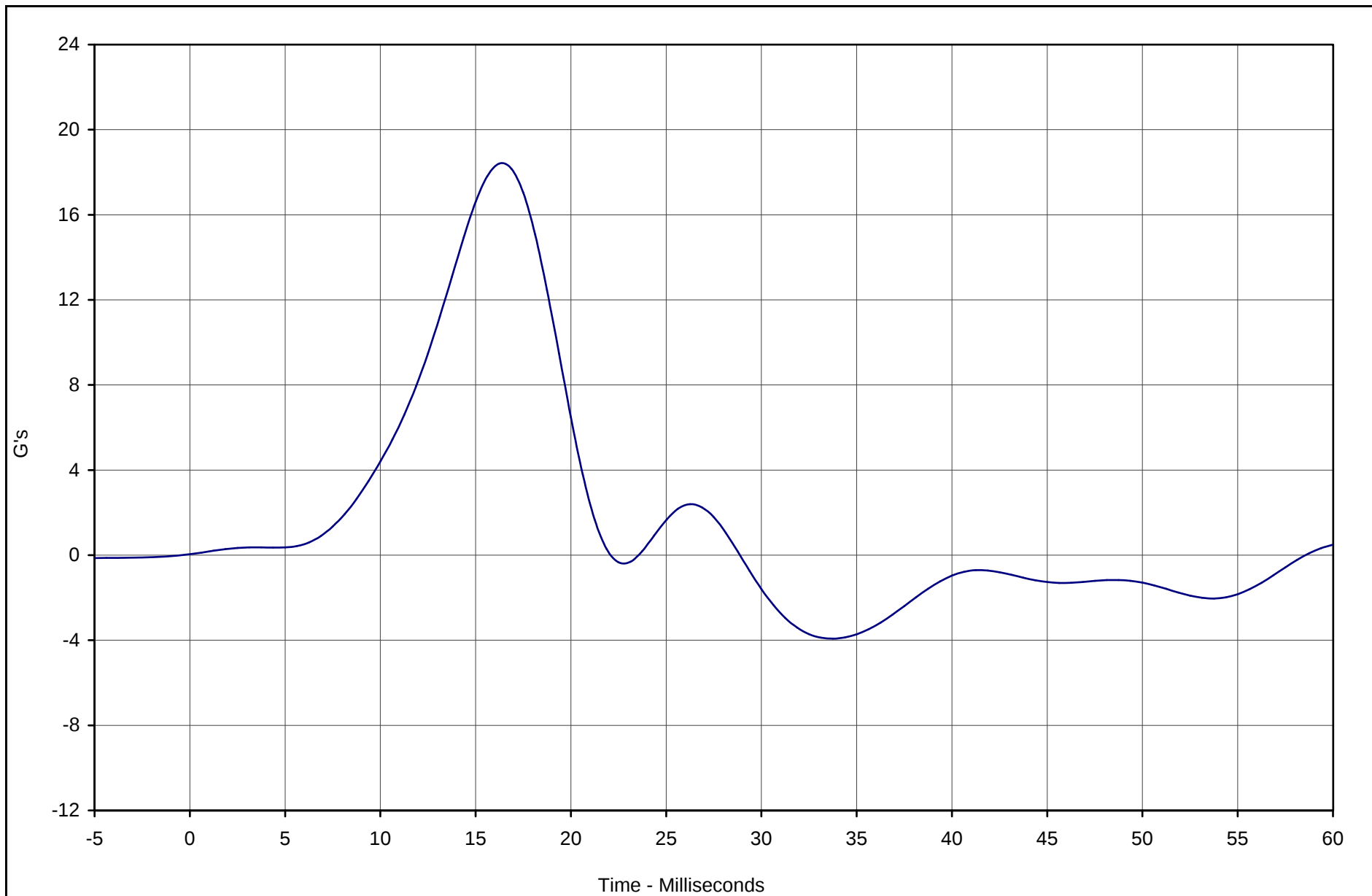


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 275

Test Date: 9/22/03

Test I.D.: TH10D



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Spine Y Acceleration	003	FIL	G's	18.4	16.3	-3.9	33.8	FIR100



Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 275

Test Date: 9/22/03

Test I.D.: TH10D



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Pelvis Lateral Impact

ATD Serial No.: 275

Test I.D.: PE10D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.22	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	43.7	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.9	Pass
Overall Test Results				Pass

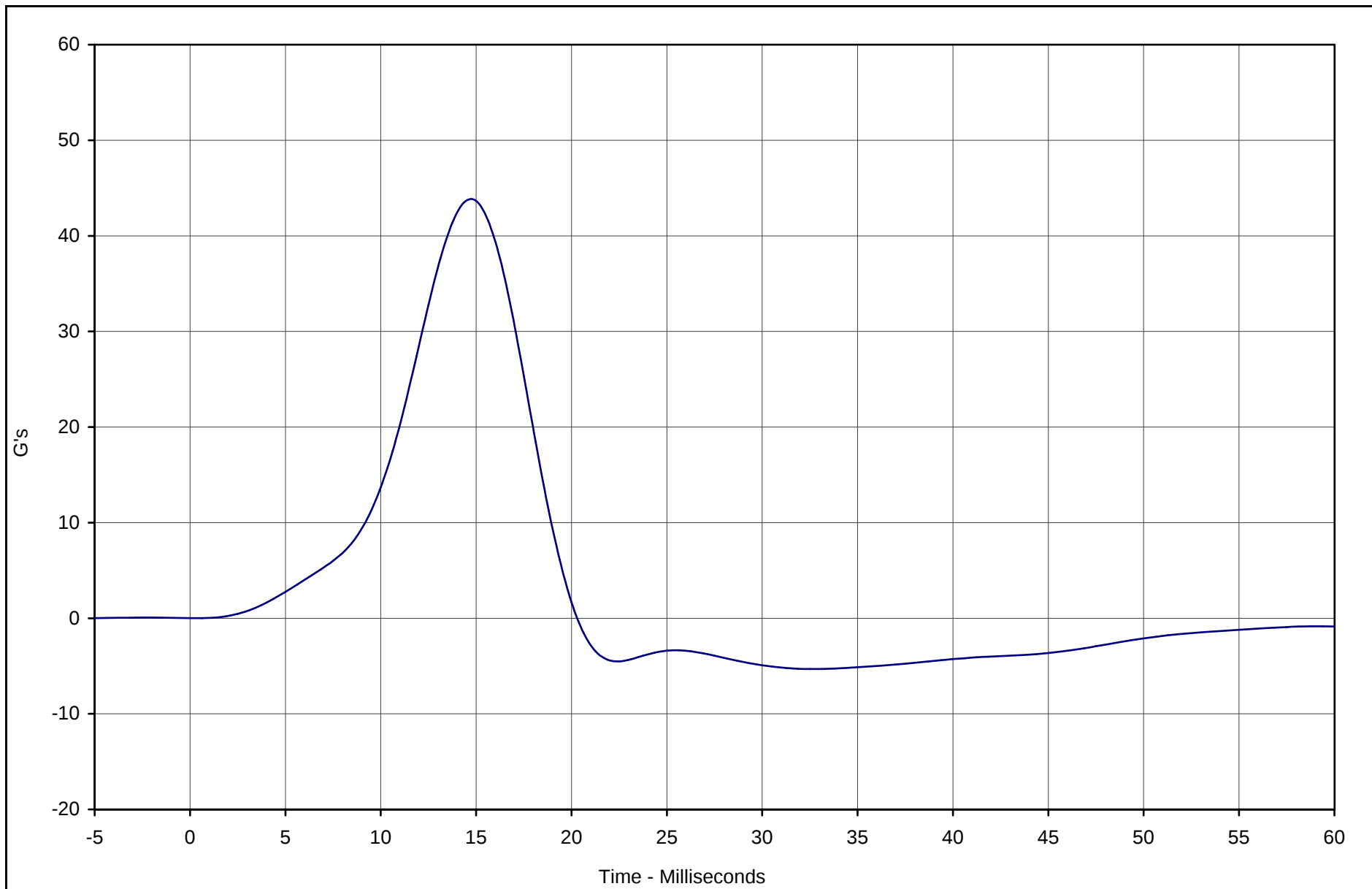
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Test Date



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pelvis Y Acceleration	001	FIL	G's	43.7	15.0	-5.3	32.5	FIR100



Test Vehicle: Side Impact Dummy (SID) Pelvis Lateral Impact

SID Serial No.: 275

Test Date: 9/22/03

Test I.D.: PE10D



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Head Drop Lateral Impact Test

ATD Serial No.: 275

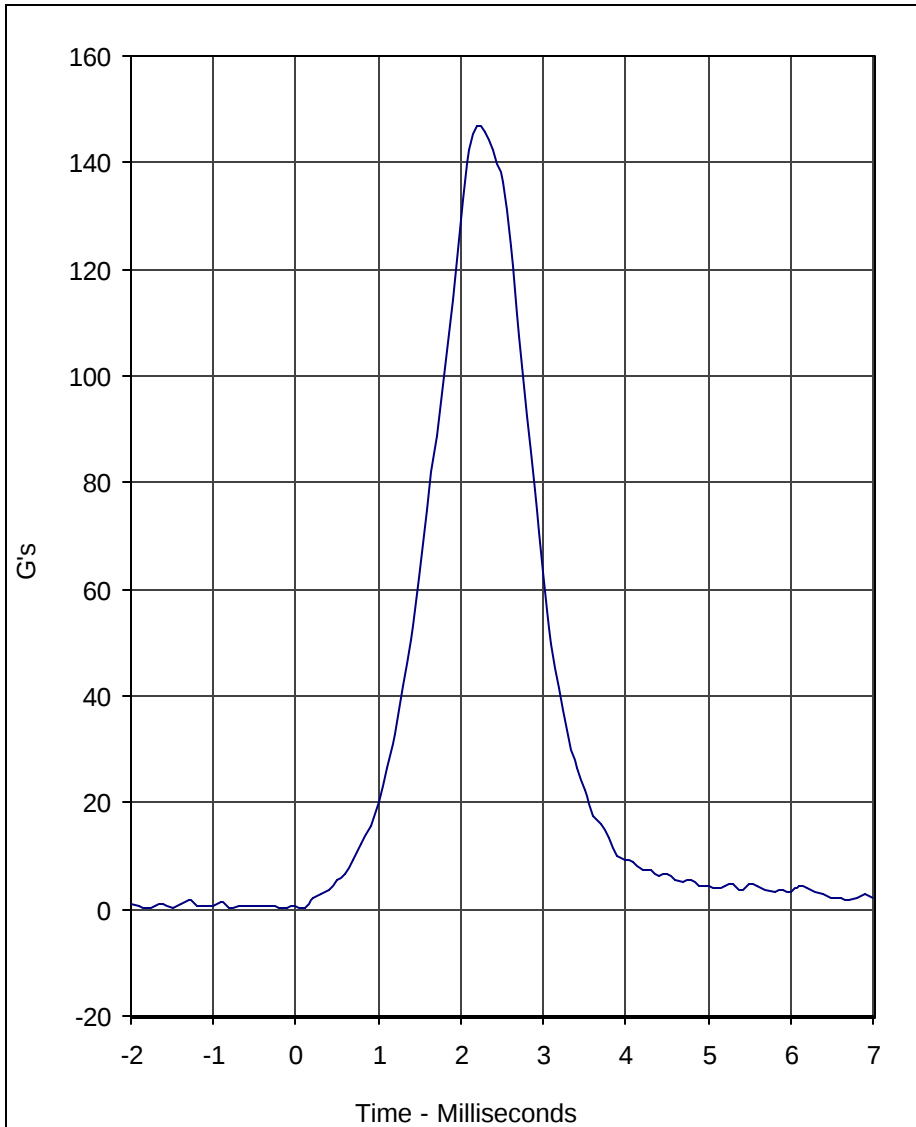
Test I.D.: HD10D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	146.9	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.2	Pass
Overall Test Results				Pass

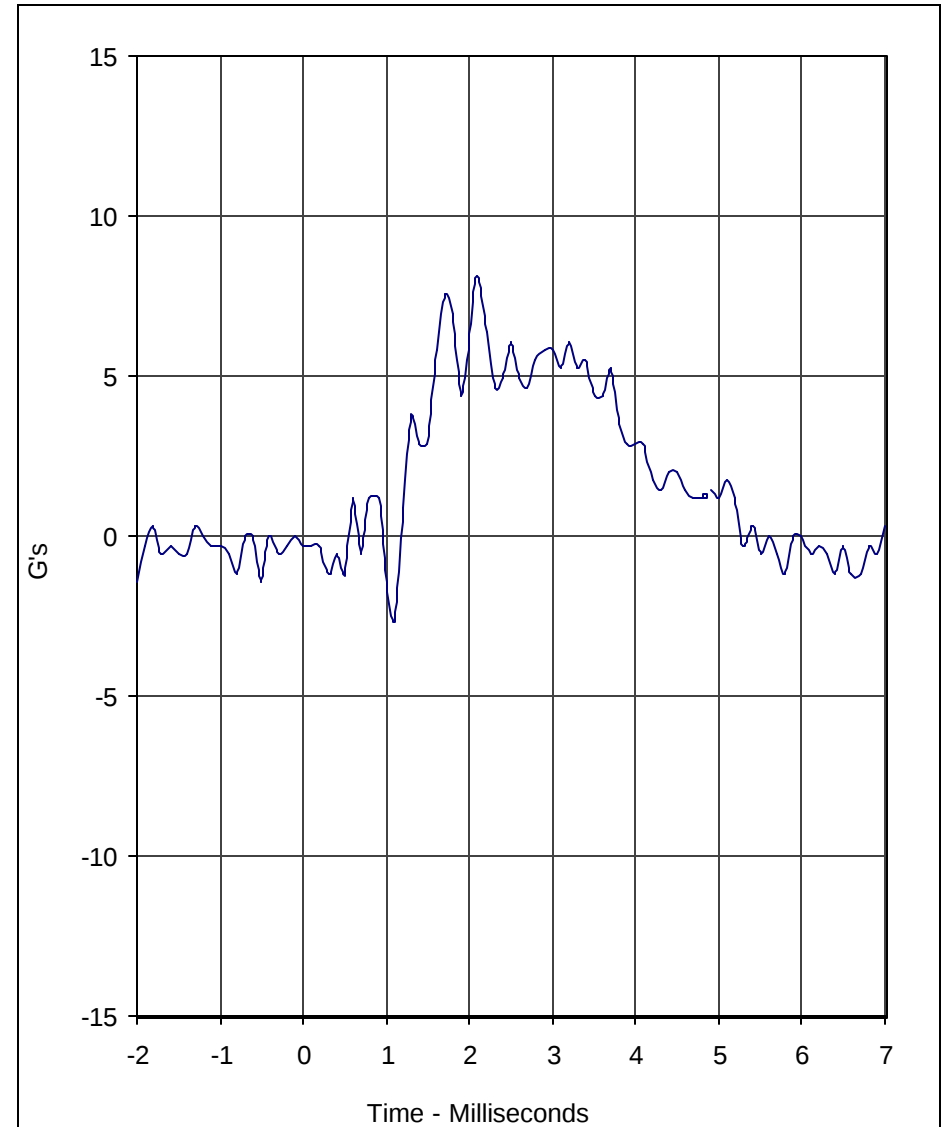
Laboratory Technician

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Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	146.9	2.2	0.3	-0.1	1000



Curve Description				CURNO	Type
Head X				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	8.1	2.1	-2.6	1.1	1000

Test Program: SID / HIII Head Drop Lateral Impact Test
 Test Date: 9/22/03

A.T.D. Serial No.: 275
 Test I.D.: HD10D





Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) Neck Pendulum Lateral Test

ATD Serial No.: 275

Test I.D.: NB10D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10	Msec.	1.96 to 2.55	2.07	Pass
	20	Msec.	4.12 to 5.10	4.51	Pass
	30	Msec.	5.73 to 7.01	6.67	Pass
	40 to 70	Msec.	6.27 to 7.64	7.17	Pass
Maximum "D" Plane Rotation		Degrees	66.0 to 82.0	79.0	Pass
Maximum "D" Plane Rotation Time After Peak Moment		Msec.	2.0 to 15.0	5.8	Pass
"D" Plane Rotation Decay Time From Peak Angle to Zero Angle		Msec.	58.0 to 67.0	59.5	Pass
Calculated Moment About Occipital Condyle		N•m	73.0 to 88.0	82.2	Pass
Moment About Occipital Condyle Decay, Time From Positive Peak Value To 0 N•m		Msec.	49.0 to 64.0	55.9	Pass
Overall Test Results					Pass

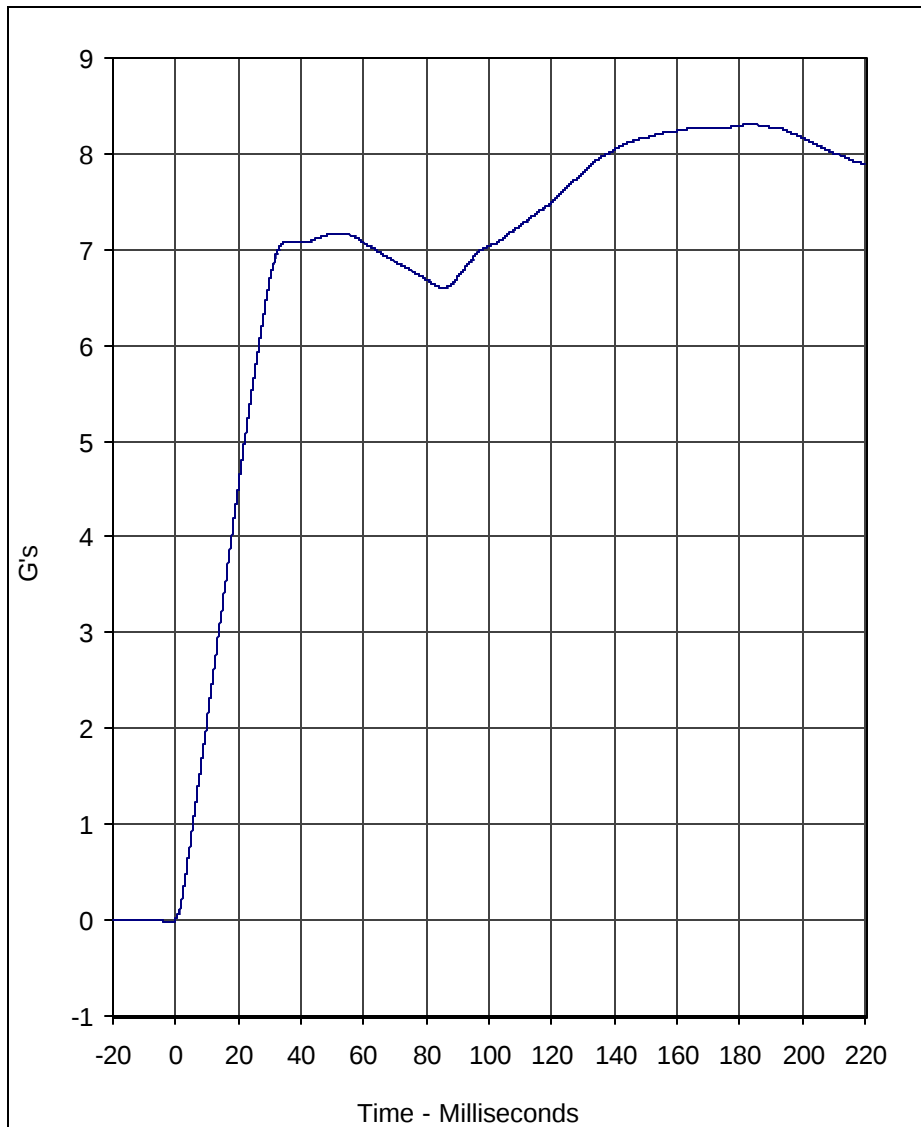
Laboratory Technician

September 23, 2003

Test Date

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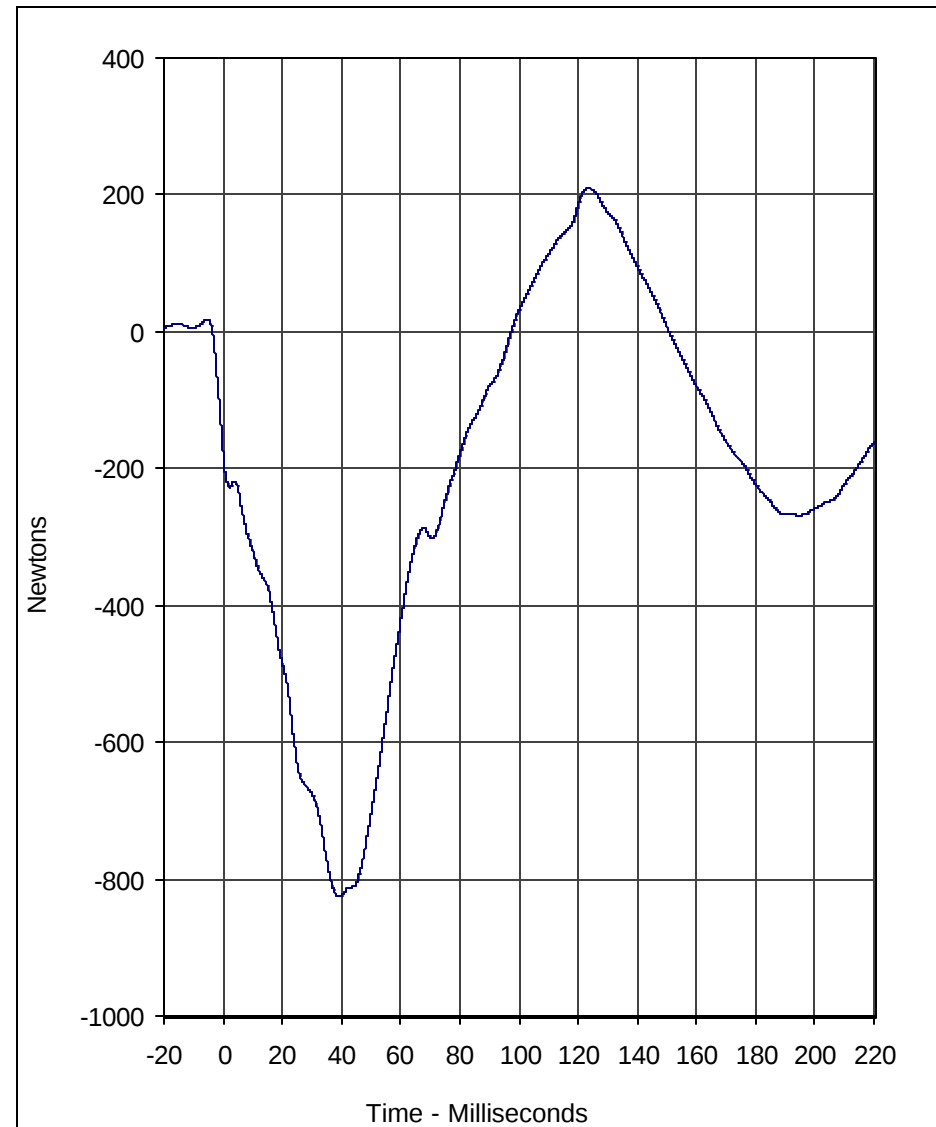
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Curve Description				CURNO	Type
Pendulum Velocity				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	8.3	183.7	0.0	-1.6	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/23/03

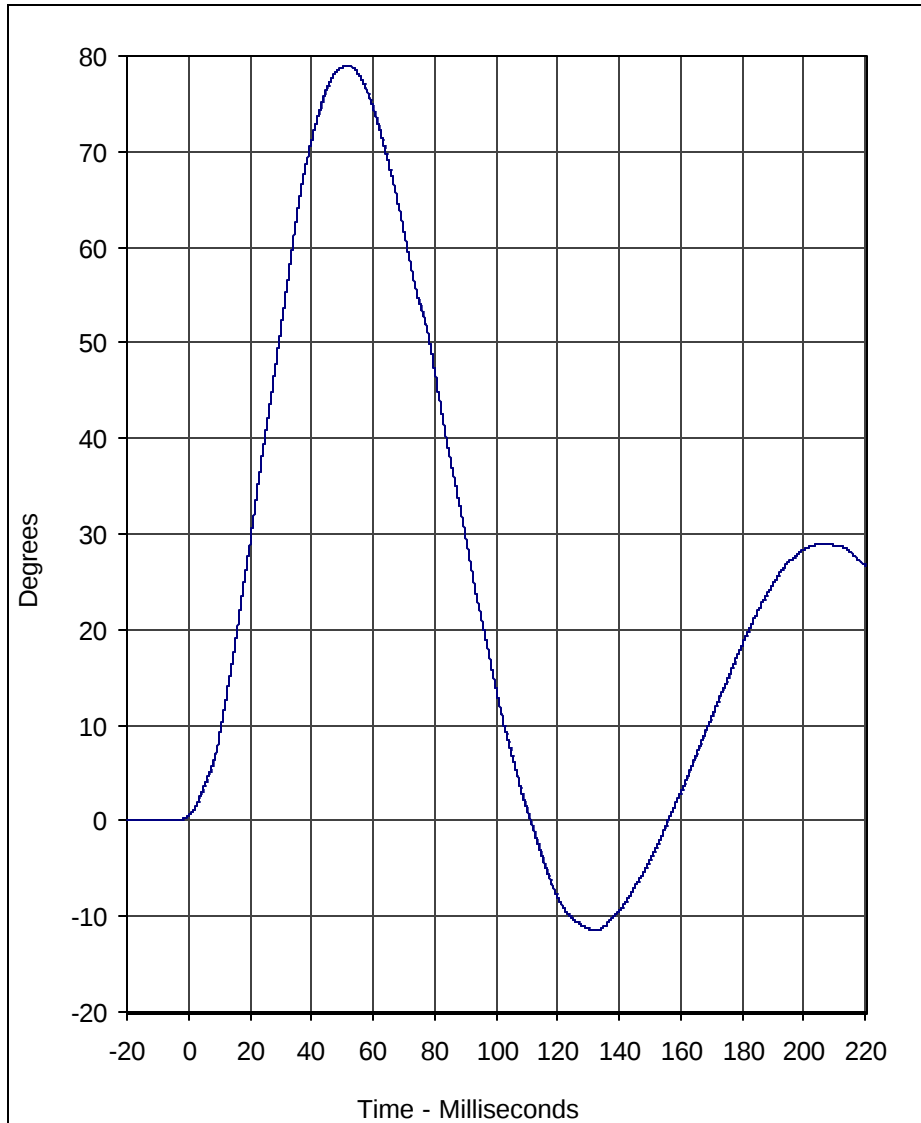


Curve Description				CURNO	Type
Neck Force Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	209.2	123.7	-824.8	39.2	60

A.T.D. Serial No.: 275

Test I.D.: NB10D

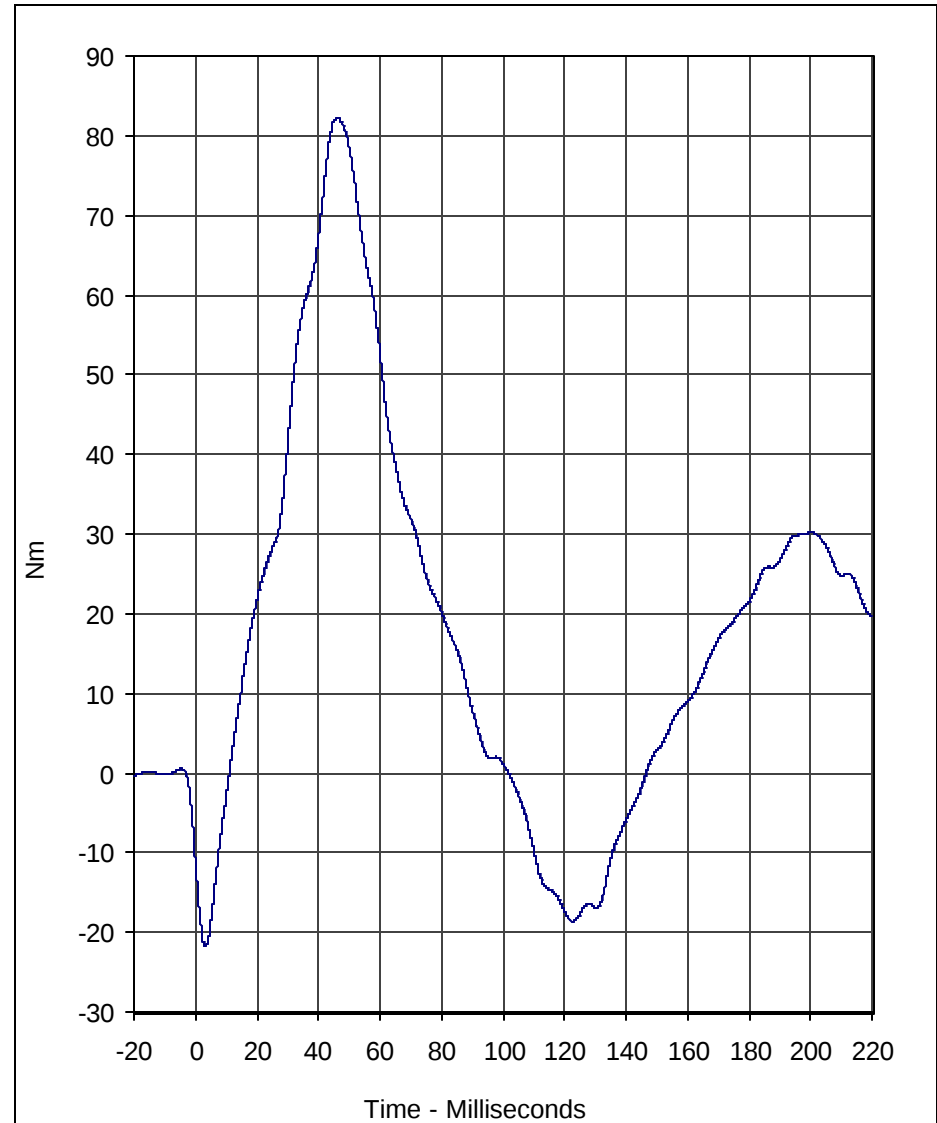




Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	79.0	51.8	-11.5	132.5	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/23/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	82.2	46.0	-21.8	3.3	60

A.T.D. Serial No.: 275

Test I.D.: NB10D



APPENDIX C
POST-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA



Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) External Measurements

ATD Serial No.: 274

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	895	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	380	Pass
Overall Test Results				Pass

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September 29, 2003

Test Date



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Thorax Lateral Impact

ATD Serial No.: 274

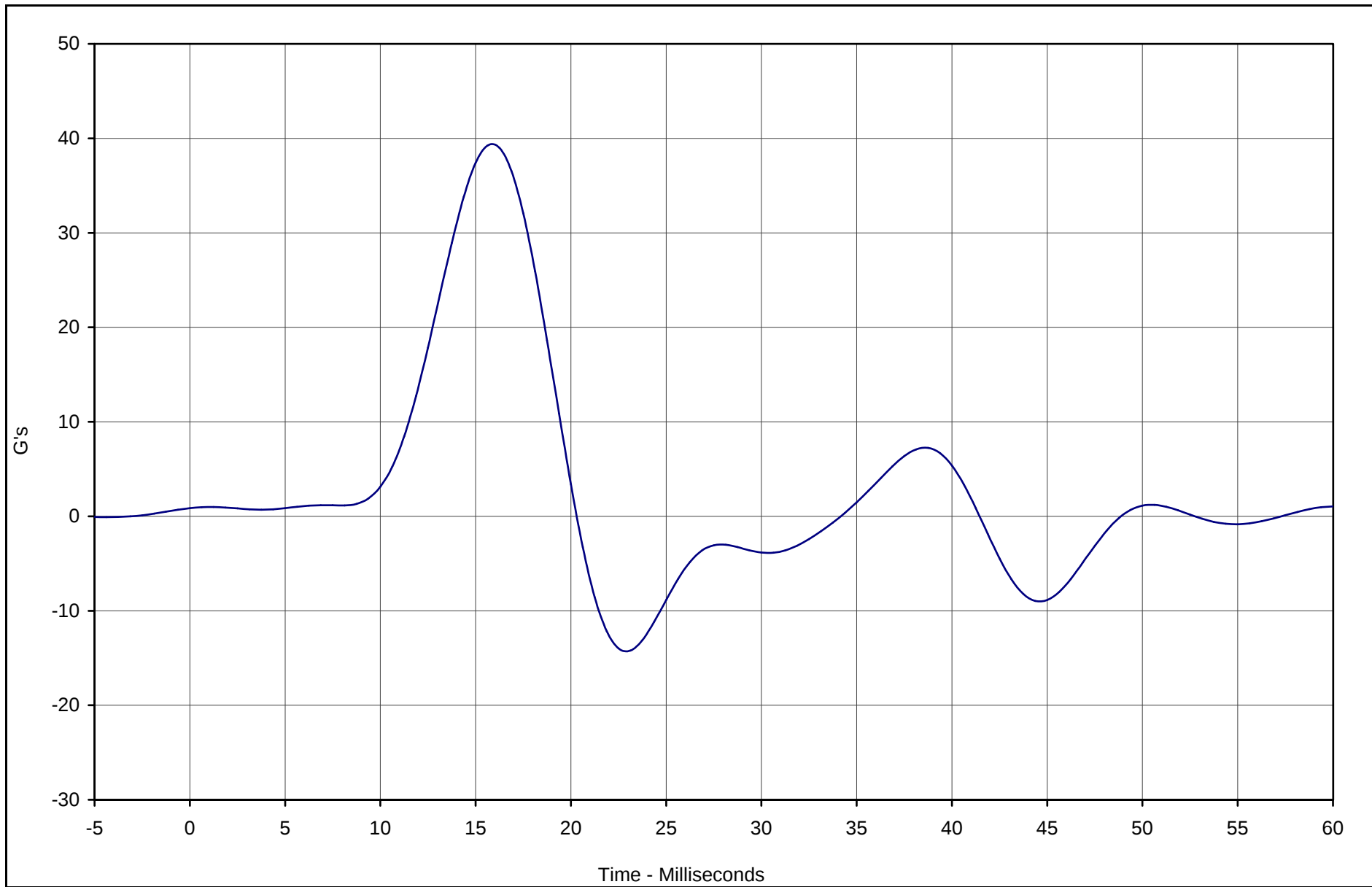
Test I.D.: TH10E

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.2	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	39.1	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.8	Pass
Overall Test Results				Pass

Laboratory Technician

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Upper Rib Y Acceleration	001	FIL	G's	39.2	15.6	-14.2	23.1	FIR100

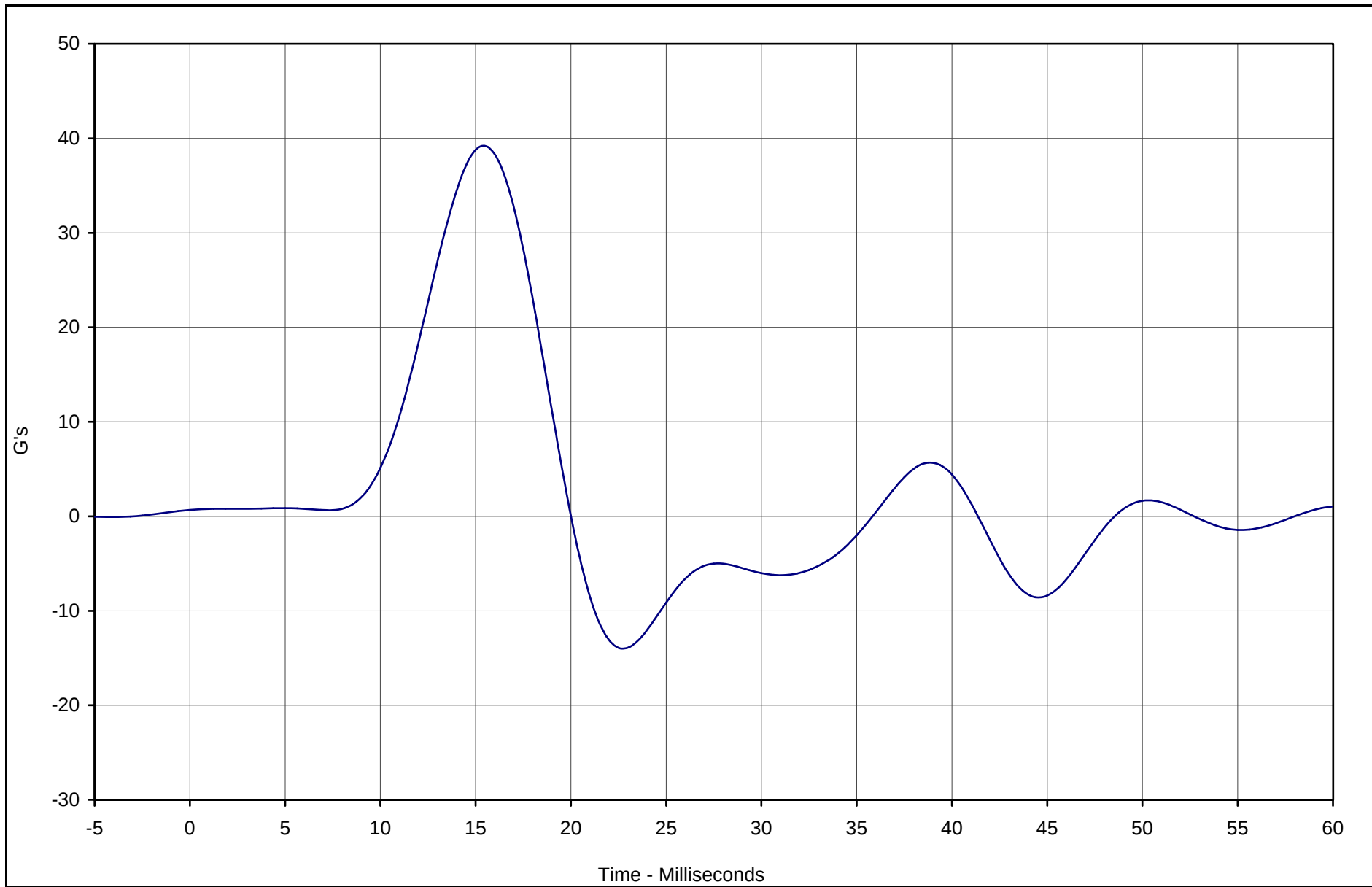


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 274

Test Date: 9/26/03

Test I.D.: TH10E



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Rib Y Acceleration	002	FIL	G's	39.1	15.6	-13.9	22.5	FIR100

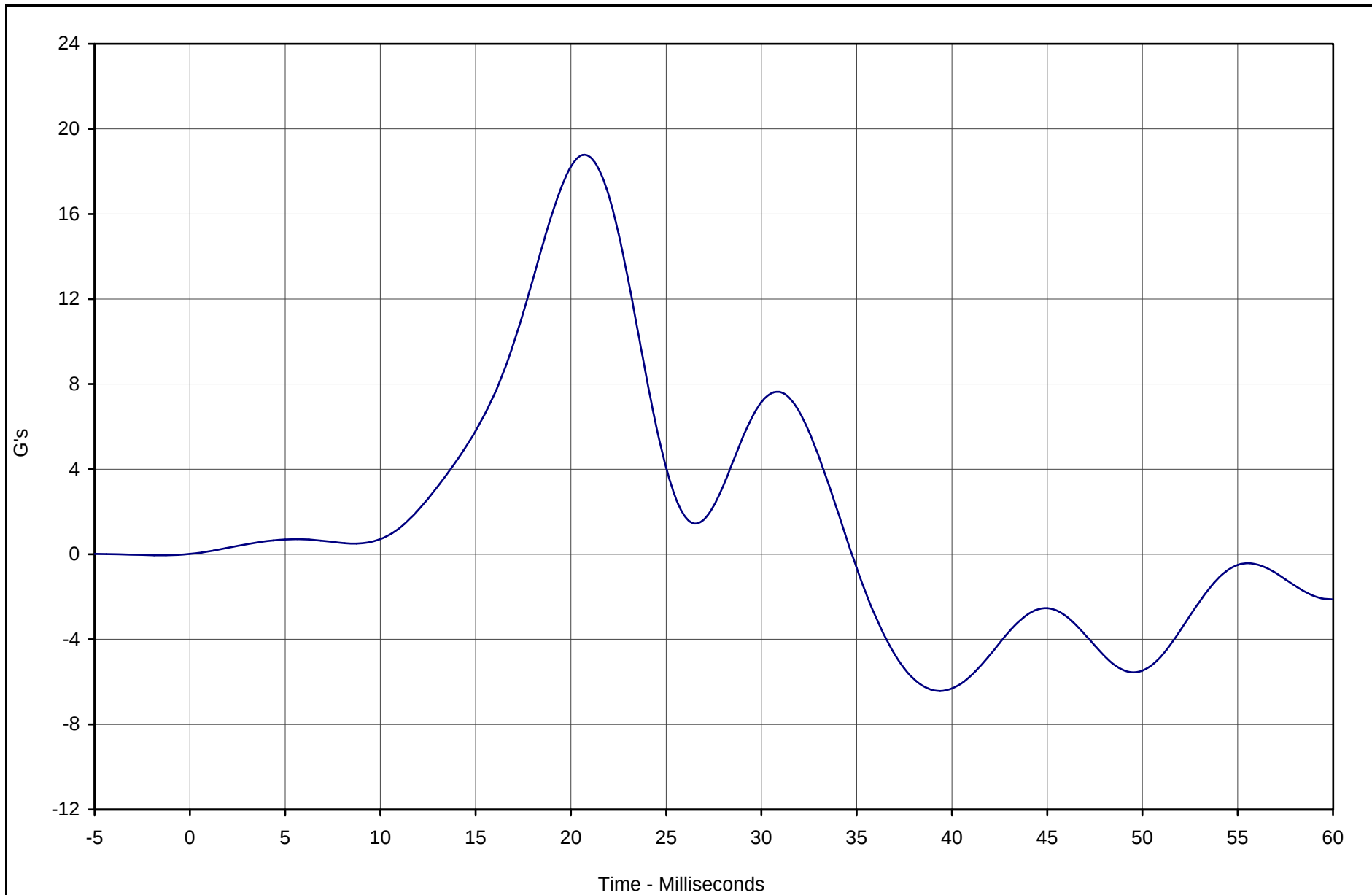


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 274

Test Date: 9/26/03

Test I.D.: TH10E



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Spine Y Acceleration	003	FIL	G's	18.8	20.6	-6.4	39.4	FIR100



Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 274

Test Date: 9/26/03

Test I.D.: TH10E



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Pelvis Lateral Impact

ATD Serial No.: 274

Test I.D.: PI10E

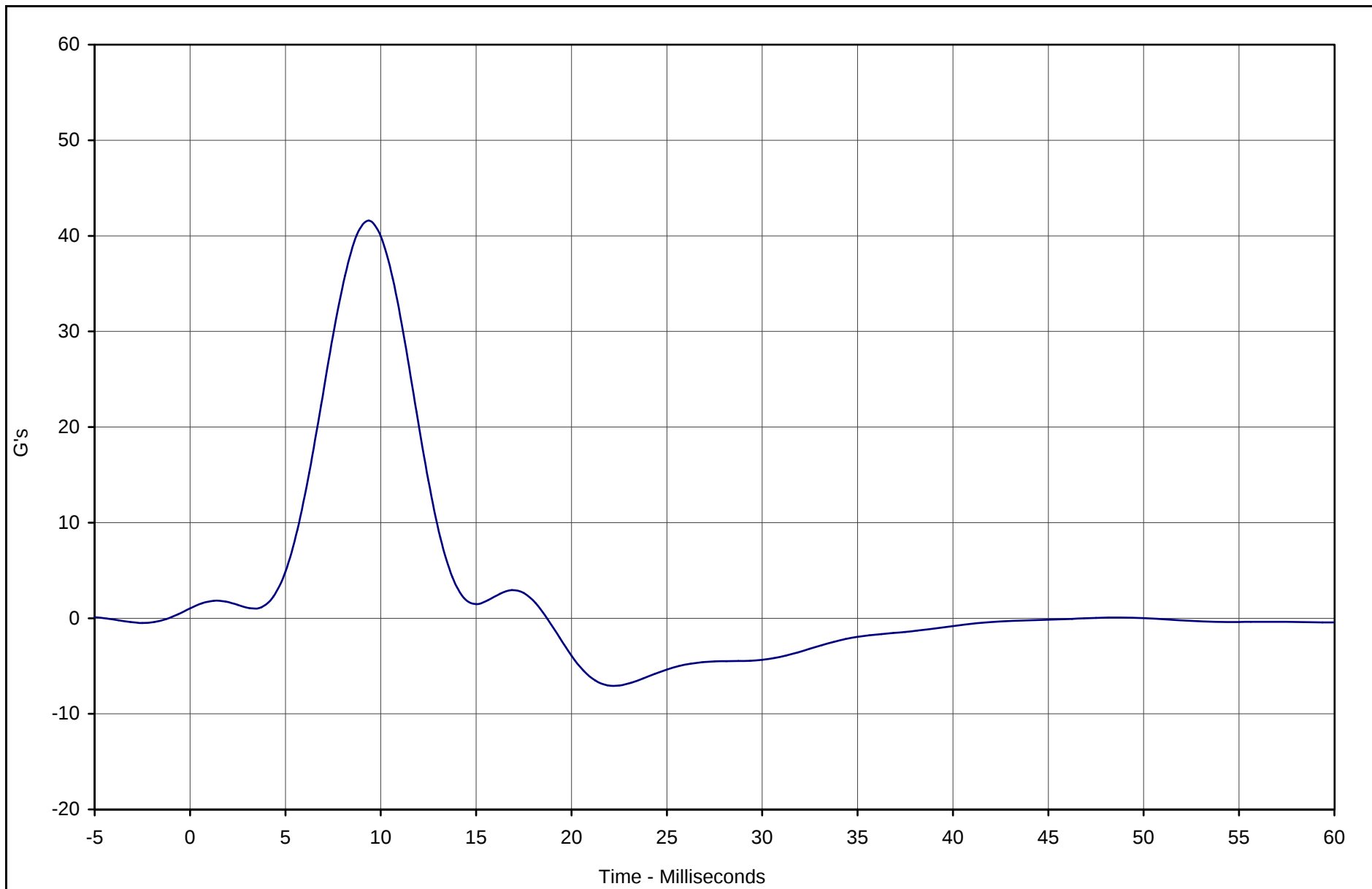
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.30	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.6	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	5.6	Pass
Overall Test Results				Pass

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Test Date



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pelvis Y Acceleration	001	FIL	G's	41.6	9.4	-7.0	22.5	FIR100



Test Vehicle: Side Impact Dummy (SID) Pelvis Lateral Impact

SID Serial No.: 274

Test Date: 9/26/03

Test I.D.: PI10E



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Head Drop Lateral Impact Test

ATD Serial No.: 274

Test I.D.: HD10E

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	123.6	Pass
Peak Longitudinal Acceleration	G's	≤15.0	3.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.7	Pass
Overall Test Results				Pass

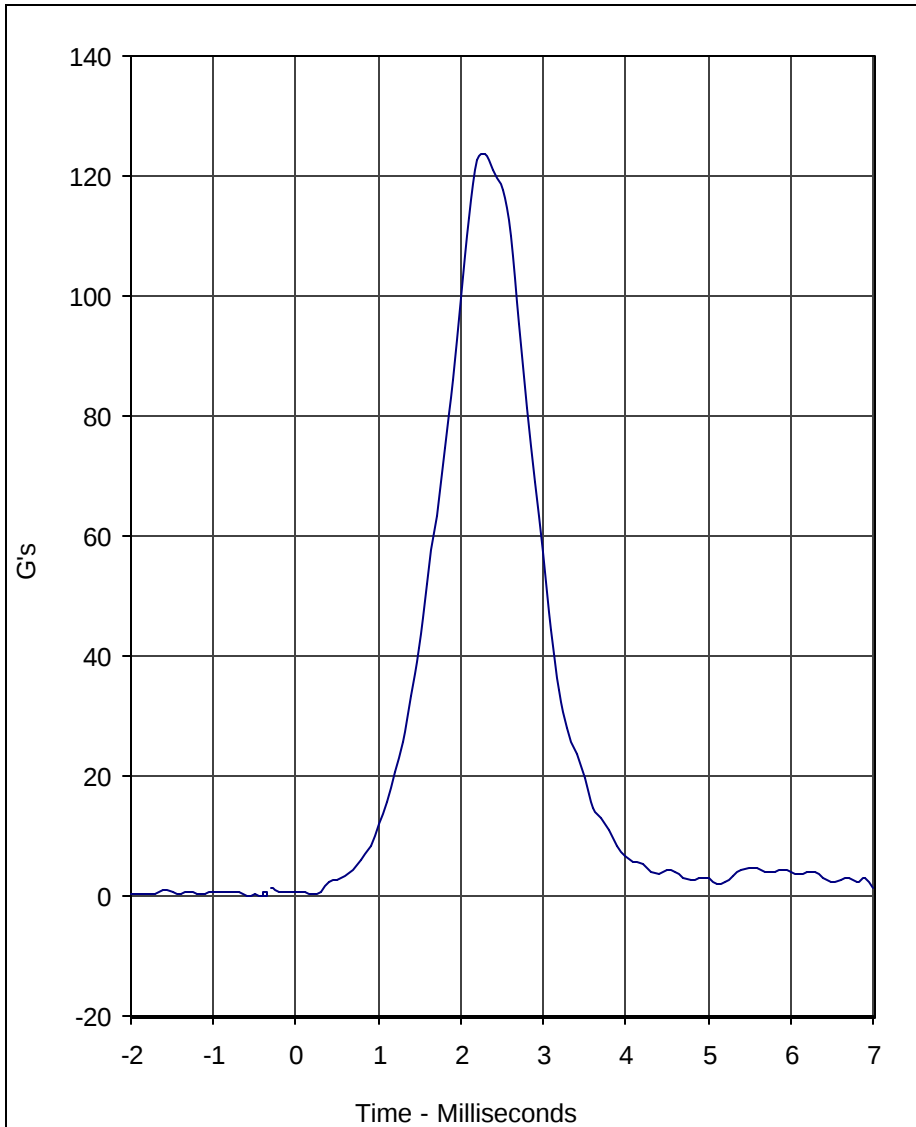
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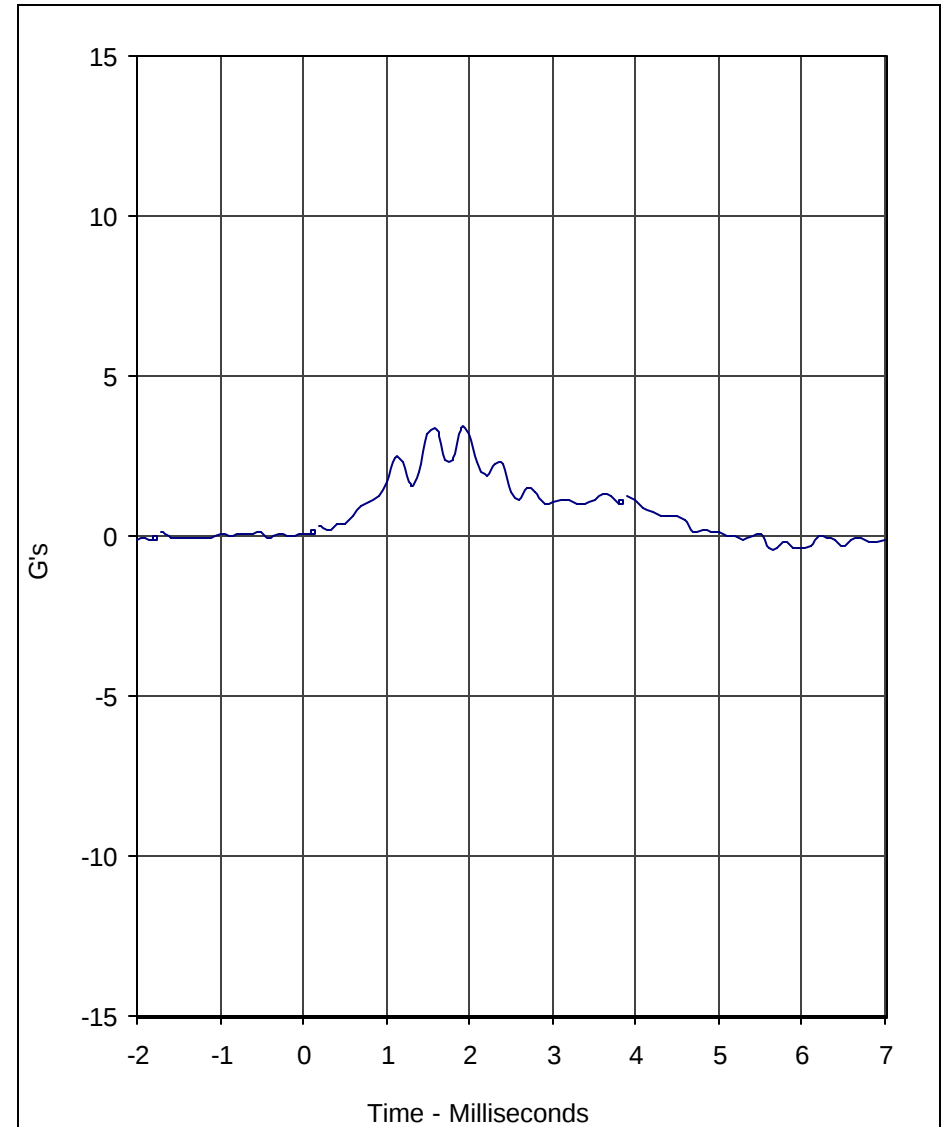
Laboratory Technician

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Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	123.6	2.3	0.1	-0.6	1000



Curve Description				CURNO	Type
Head X				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	3.4	1.9	-0.4	5.6	1000

Test Program: SID / HIII Head Drop Lateral Impact Test

Test Date: 9/26/03

A.T.D. Serial No.: 274

Test I.D.: HD10E





Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Neck Pendulum Lateral Test

ATD Serial No.: 274

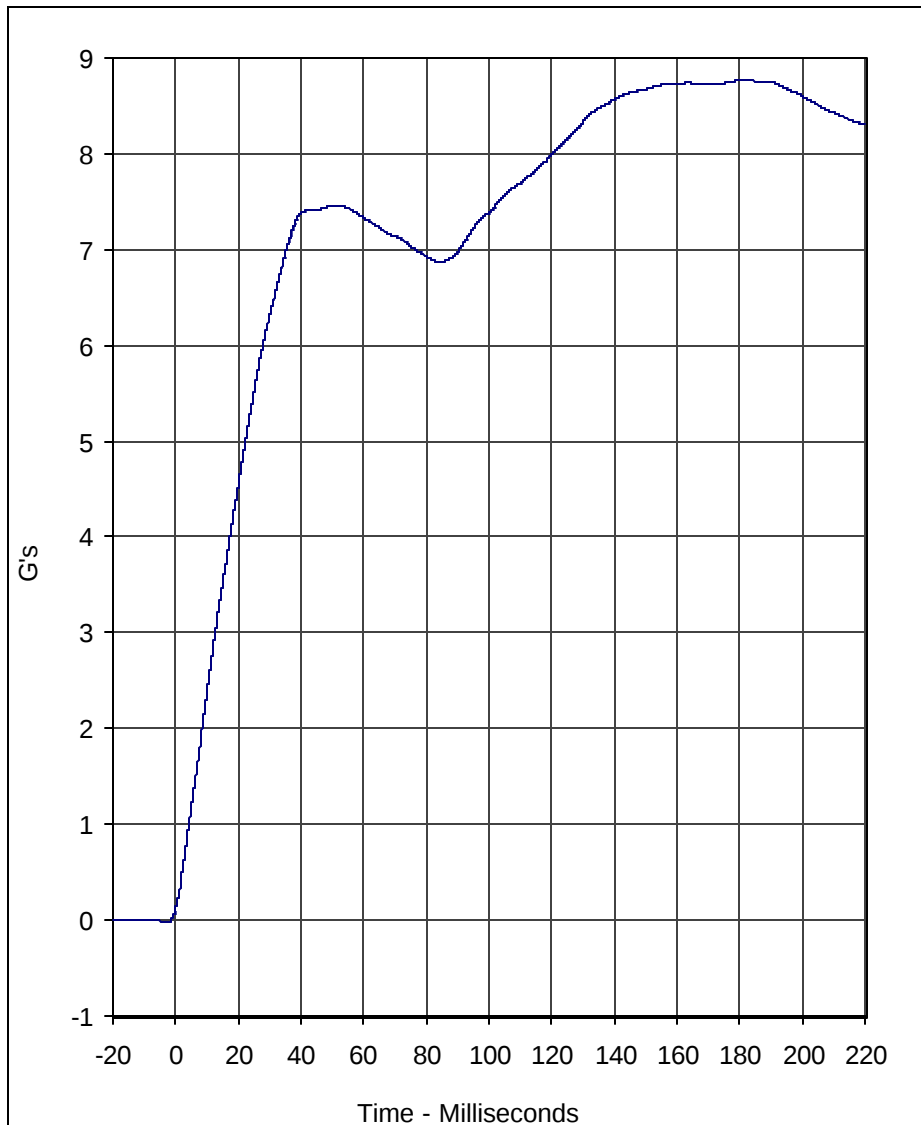
Test I.D.: NB10E

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10	Msec.	1.96 to 2.55	2.37	Pass
	20	Msec.	4.12 to 5.10	4.54	Pass
	30	Msec.	5.73 to 7.01	6.31	Pass
	40 to 70	Msec.	6.27 to 7.64	7.46	Pass
Maximum "D" Plane Rotation		Degrees	66.0 to 82.0	77.1	Pass
Maximum "D" Plane Rotation Time After Peak Moment		Msec.	2.0 to 15.0	7.1	Pass
"D" Plane Rotation Decay Time From Peak Angle to Zero Angle		Msec.	58.0 to 67.0	58.4	Pass
Calculated Moment About Occipital Condyle		N•m	73.0 to 88.0	79.4	Pass
Moment About Occipital Condyle Decay, Time From Positive Peak Value To 0 N•m		Msec.	49.0 to 64.0	52.3	Pass
Overall Test Results					Pass

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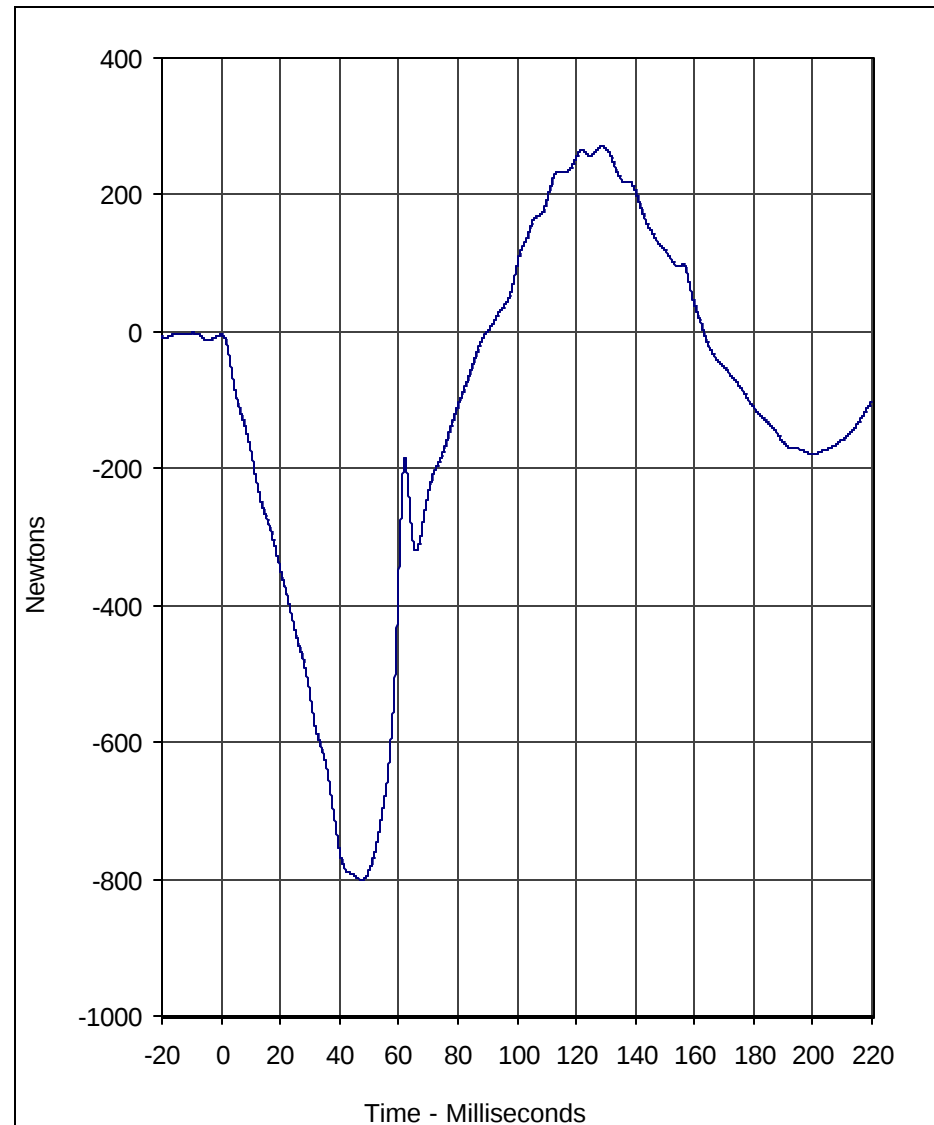
Test Date



Curve Description				CURNO	Type
Pendulum Velocity				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	8.8	181.6	0.0	-2.9	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/26/03

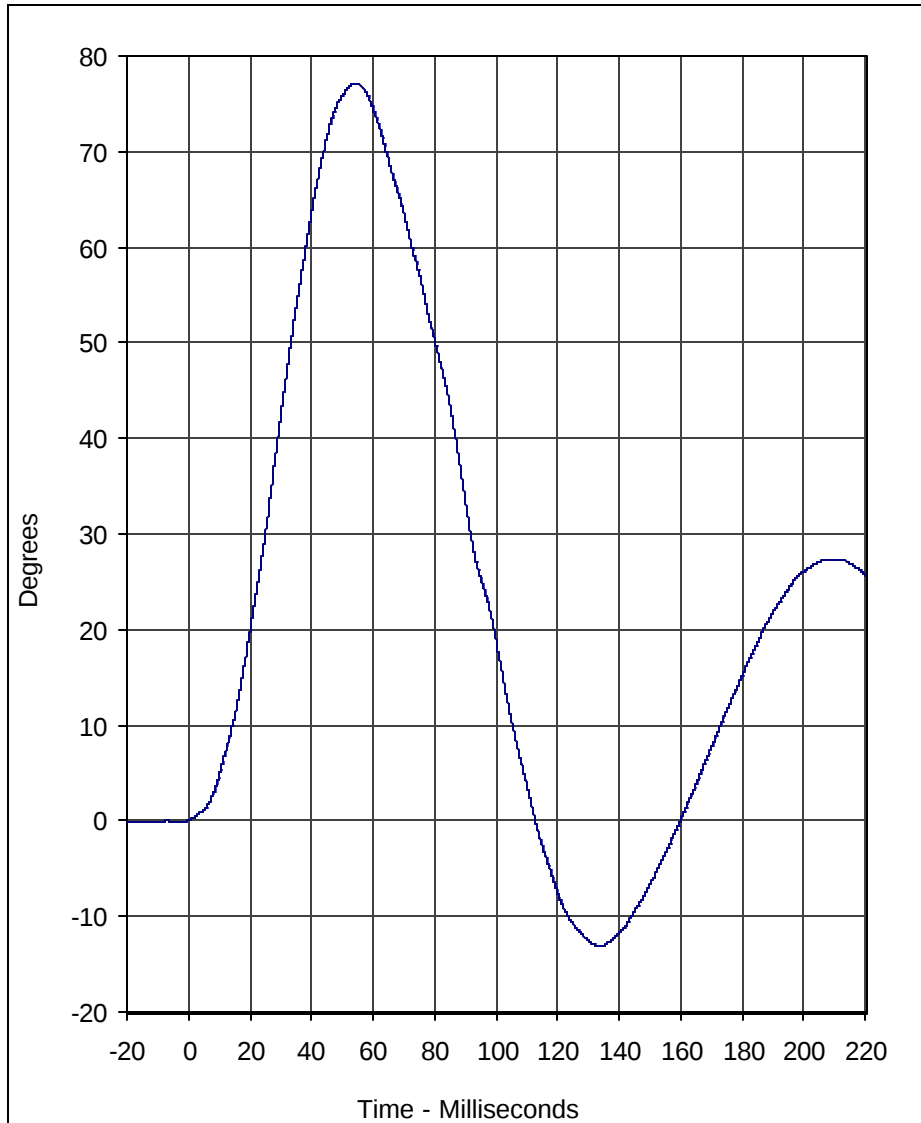


Curve Description				CURNO	Type
Neck Force Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	270.7	128.9	-801.5	47.5	60

A.T.D. Serial No.: 274

Test I.D.: NB10E

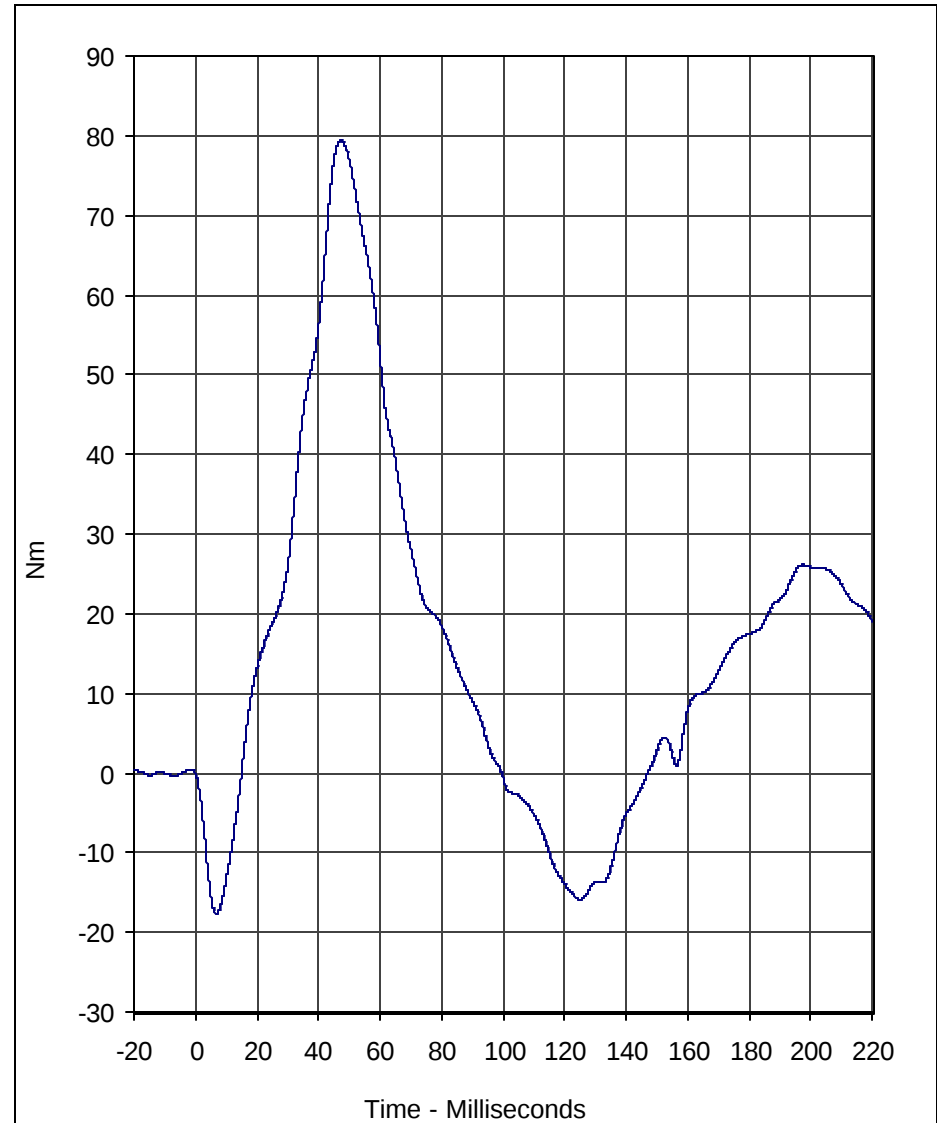




Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	77.1	54.4	-13.1	133.7	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/26/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	79.4	47.3	-17.7	6.8	60

A.T.D. Serial No.: 274

Test I.D.: NB10E





Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) External Measurements

ATD Serial No.: 275

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	500	Pass
HW- Hip Width	mm	356 to 391	370	Pass
Overall Test Results				Pass

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Laboratory Technician

September 29, 2003

Test Date



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Thorax Lateral Impact

ATD Serial No.: 275

Test I.D.: TH10F

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.30	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	42.5	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	44.1	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	19.6	Pass
Overall Test Results				Pass

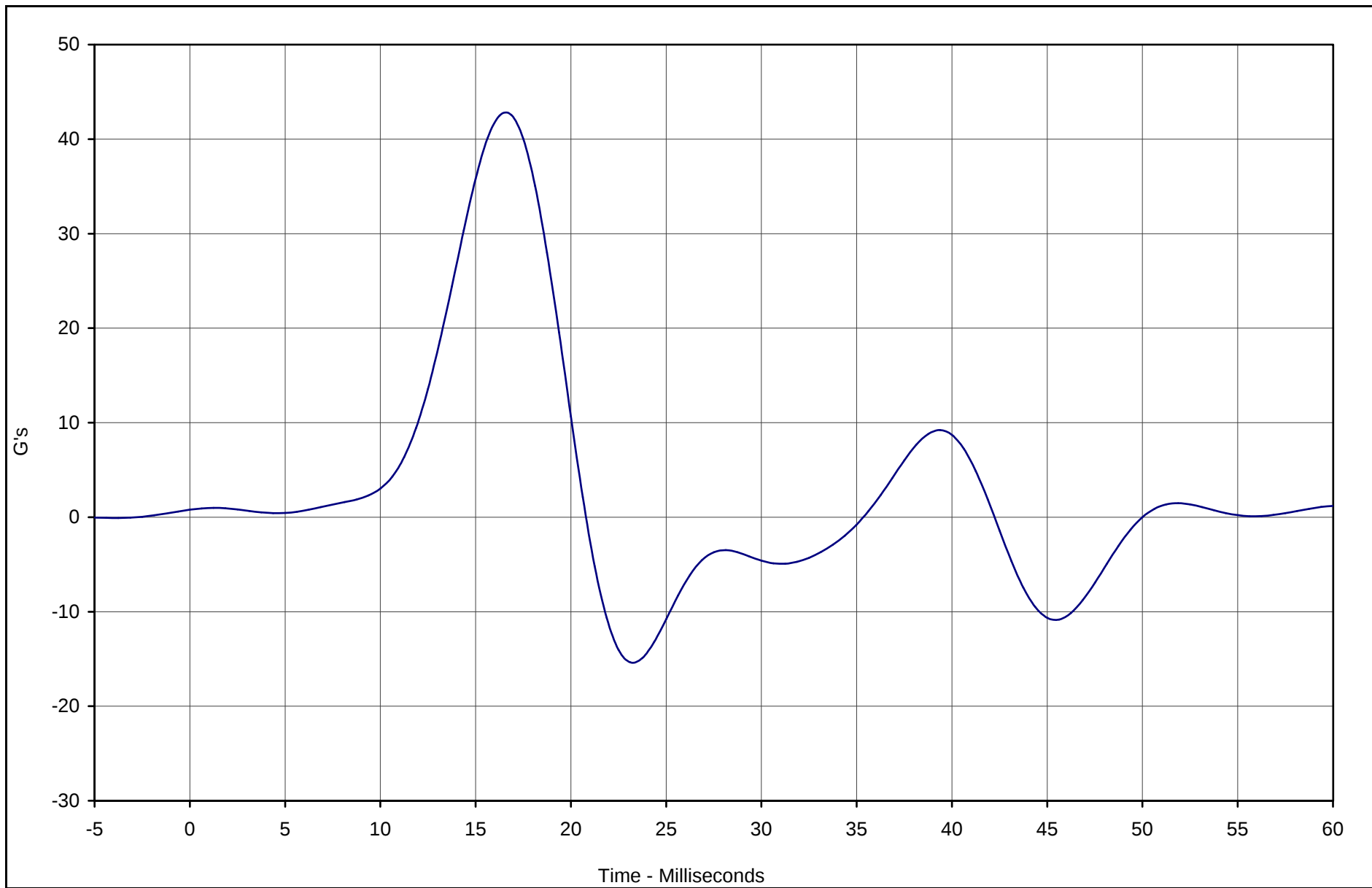
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Test Date



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Upper Rib Y Acceleration	001	FIL	G's	42.5	16.9	-15.4	23.1	FIR100

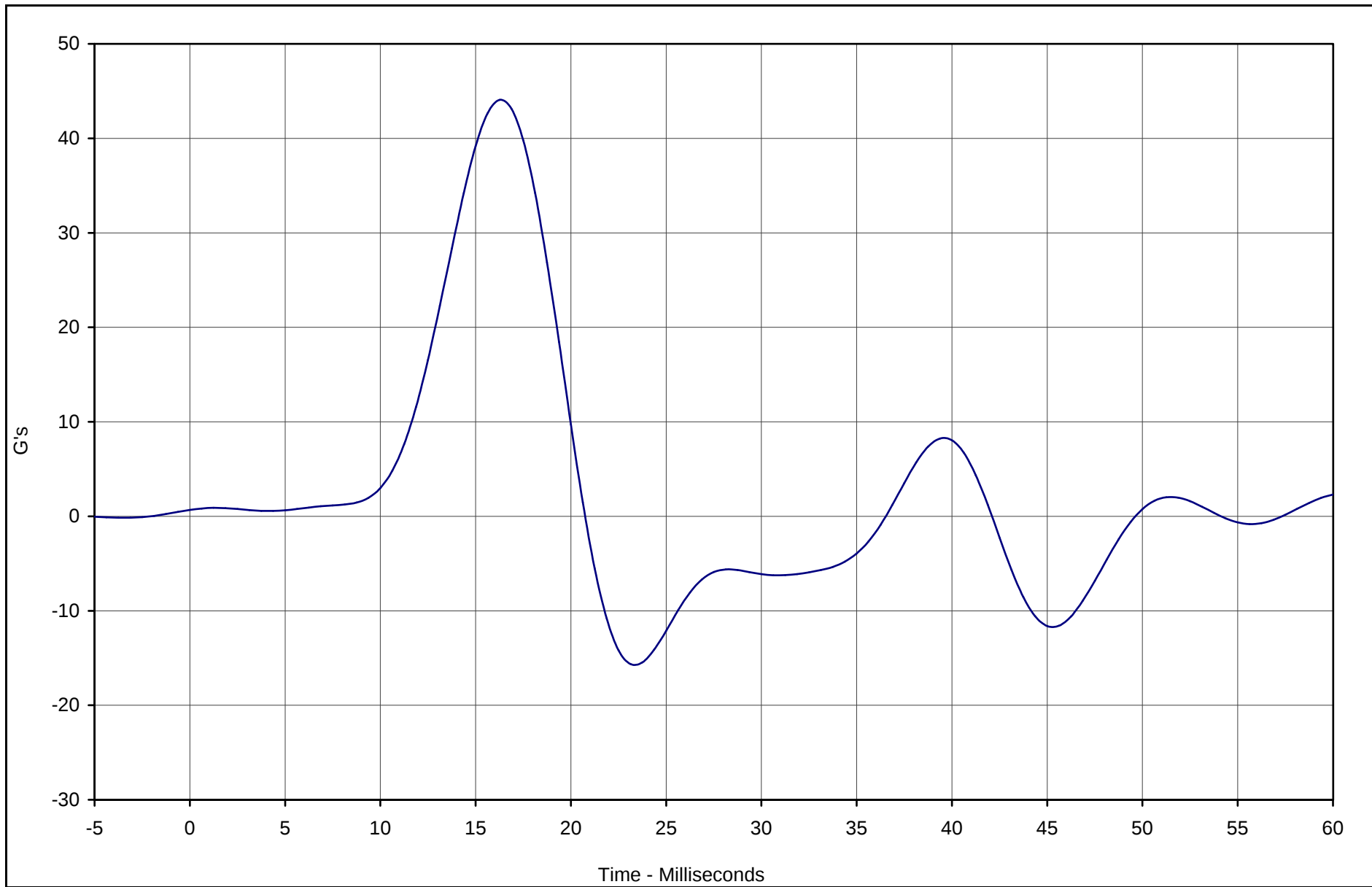


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 275

Test Date: 9/26/03

Test I.D.: TH10F



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Rib Y Acceleration	002	FIL	G's	44.1	16.3	-15.6	23.1	FIR100

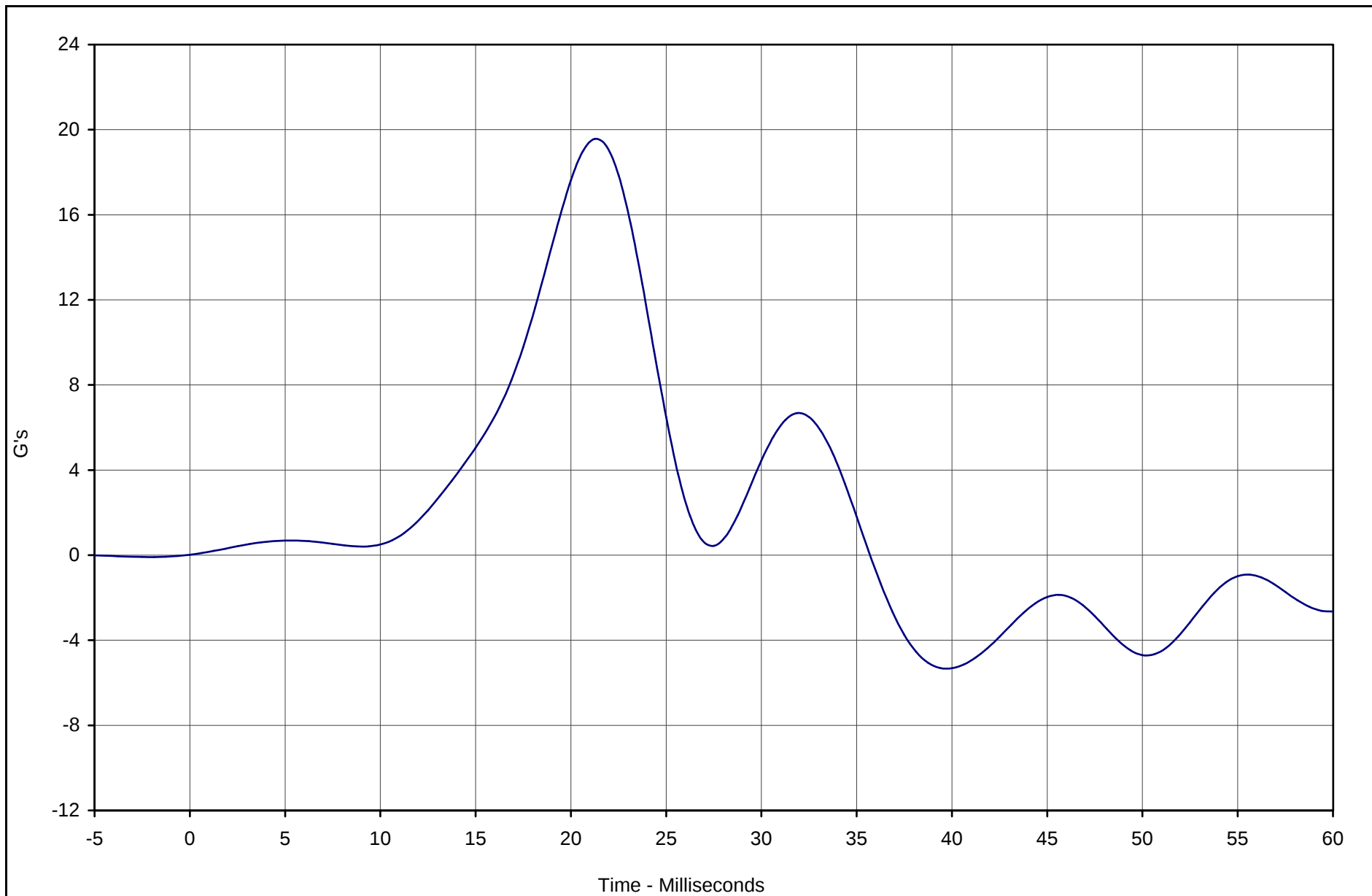


Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 275

Test Date: 9/26/03

Test I.D.: TH10F



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Lower Spine Y Acceleration	003	FIL	G's	19.6	21.3	-5.3	40.0	FIR100



Test Vehicle: SID / HIII Thorax Lateral Impact

SID Serial No.: 275

Test Date: 9/26/03

Test I.D.: TH10F



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Pelvis Lateral Impact

ATD Serial No.: 275

Test I.D.: PI10F

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.0	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.3	Pass
Overall Test Results				Pass

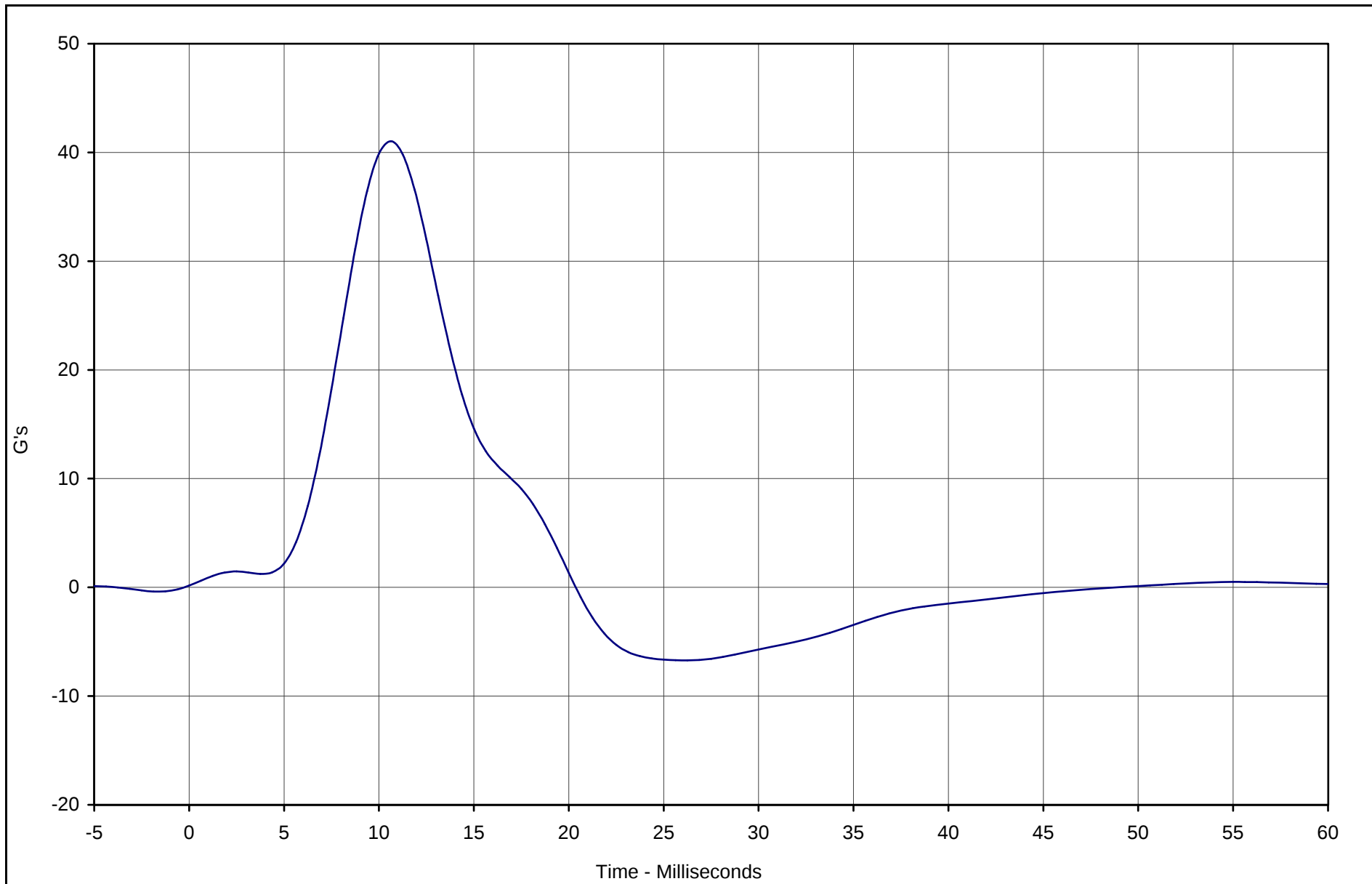
C-42

TR-P23003-08-NC

Laboratory Technician

September 26, 2003

Test Date



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pelvis Y Acceleration	001	FIL	G's	41.0	10.6	-6.7	26.3	FIR100



Test Vehicle: Side Impact Dummy (SID) Pelvis Lateral Impact

SID Serial No.: 275

Test Date: 9/26/03

Test I.D.: PI10F



Calibration Data Sheet

Side Impact Hybrid Dummy (SID/HIII)

Head Drop Lateral Impact Test

ATD Serial No.: 275

Test I.D.: HD10F

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	126.0	Pass
Peak Longitudinal Acceleration	G's	≤15.0	5.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.8	Pass
Overall Test Results				Pass

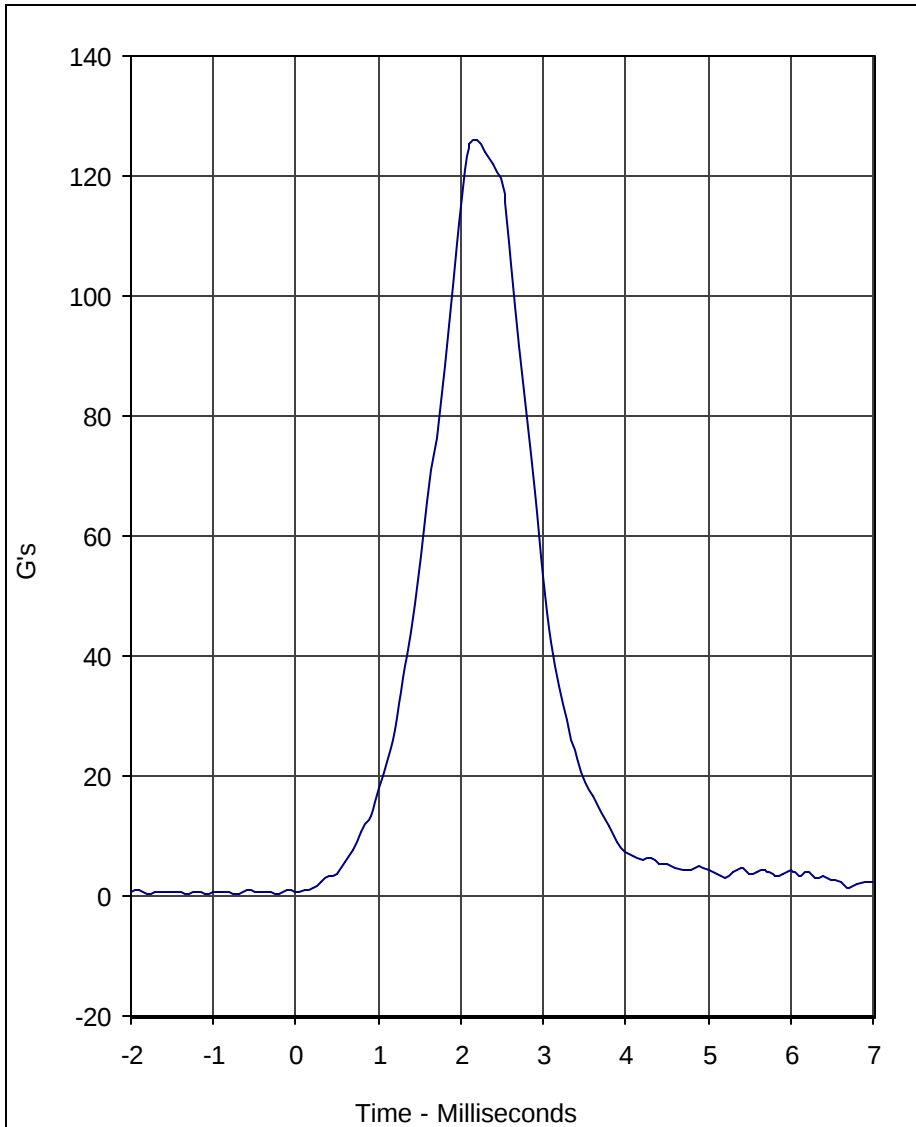
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TR-P23003-08-NC

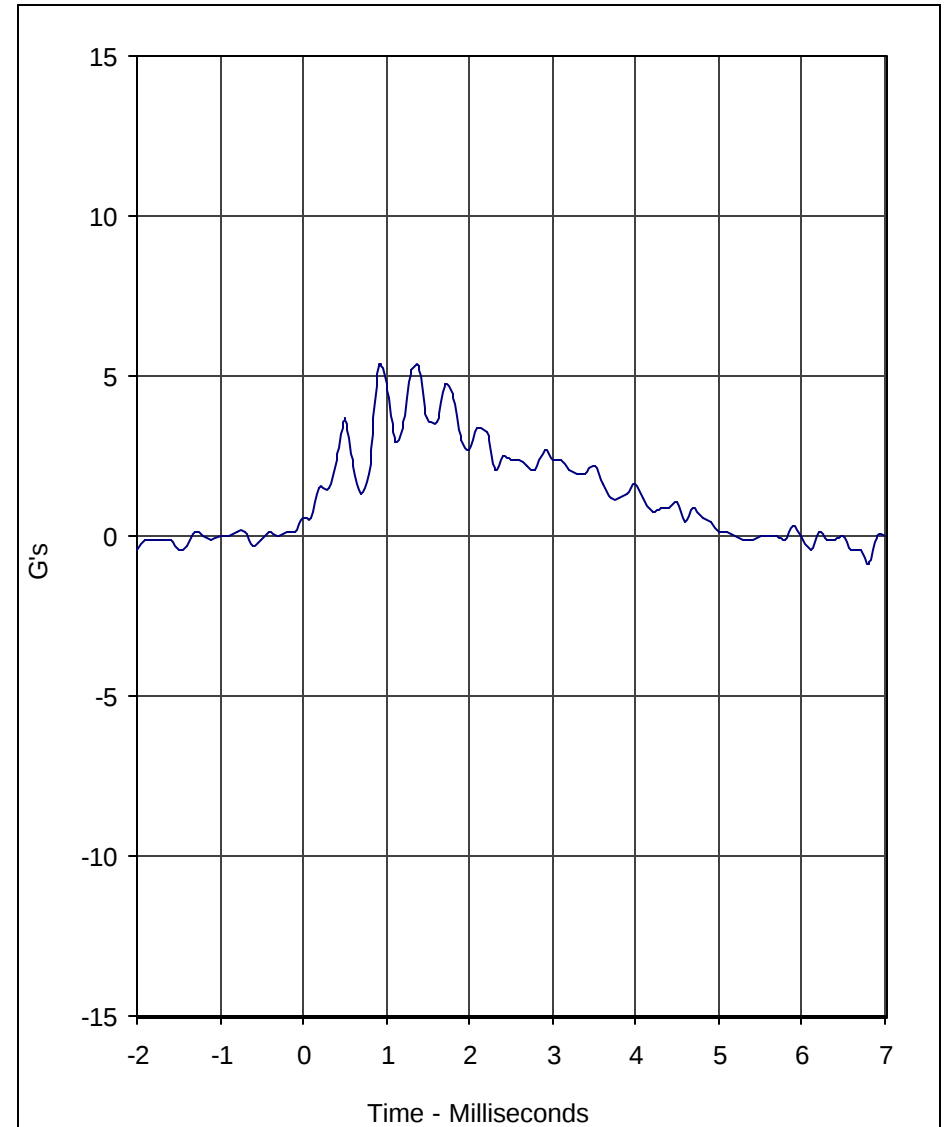
Laboratory Technician

September 26, 2003

Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	126.0	2.2	0.4	-1.8	1000



Curve Description				CURNO	Type
Head X				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	5.3	0.9	-0.9	6.8	1000

Test Program: SID / HIII Head Drop Lateral Impact Test

Test Date: 9/26/03

A.T.D. Serial No.: 275

Test I.D.: HD10F





Calibration Data Sheet Side Impact Hybrid Dummy (SID/HIII) Neck Pendulum Lateral Test

ATD Serial No.: 275

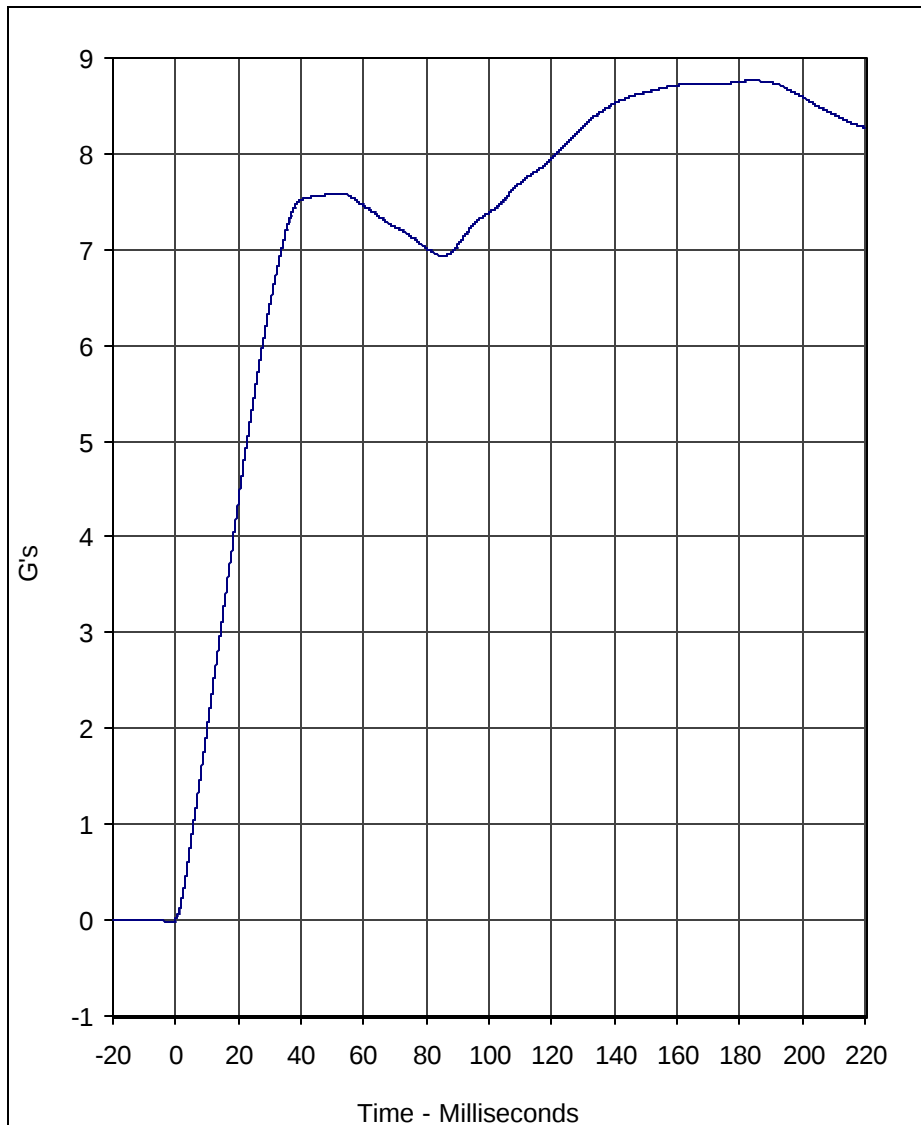
Test I.D.: NB10F

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.12	Pass
Pendulum Deceleration	10	Msec.	1.96 to 2.55	1.97	Pass
	20	Msec.	4.12 to 5.10	4.36	Pass
	30	Msec.	5.73 to 7.01	6.41	Pass
	40 to 70	Msec.	6.27 to 7.64	7.59	Pass
Maximum "D" Plane Rotation		Degrees	66.0 to 82.0	77.0	Pass
Maximum "D" Plane Rotation Time After Peak Moment		Msec.	2.0 to 15.0	4.9	Pass
"D" Plane Rotation Decay Time From Peak Angle to Zero Angle		Msec.	58.0 to 67.0	63.6	Pass
Calculated Moment About Occipital Condyle		N•m	73.0 to 88.0	85.3	Pass
Moment About Occipital Condyle Decay, Time From Positive Peak Value To 0 N•m		Msec.	49.0 to 64.0	63.4	Pass
Overall Test Results					Pass

Laboratory Technician

September 26, 2003

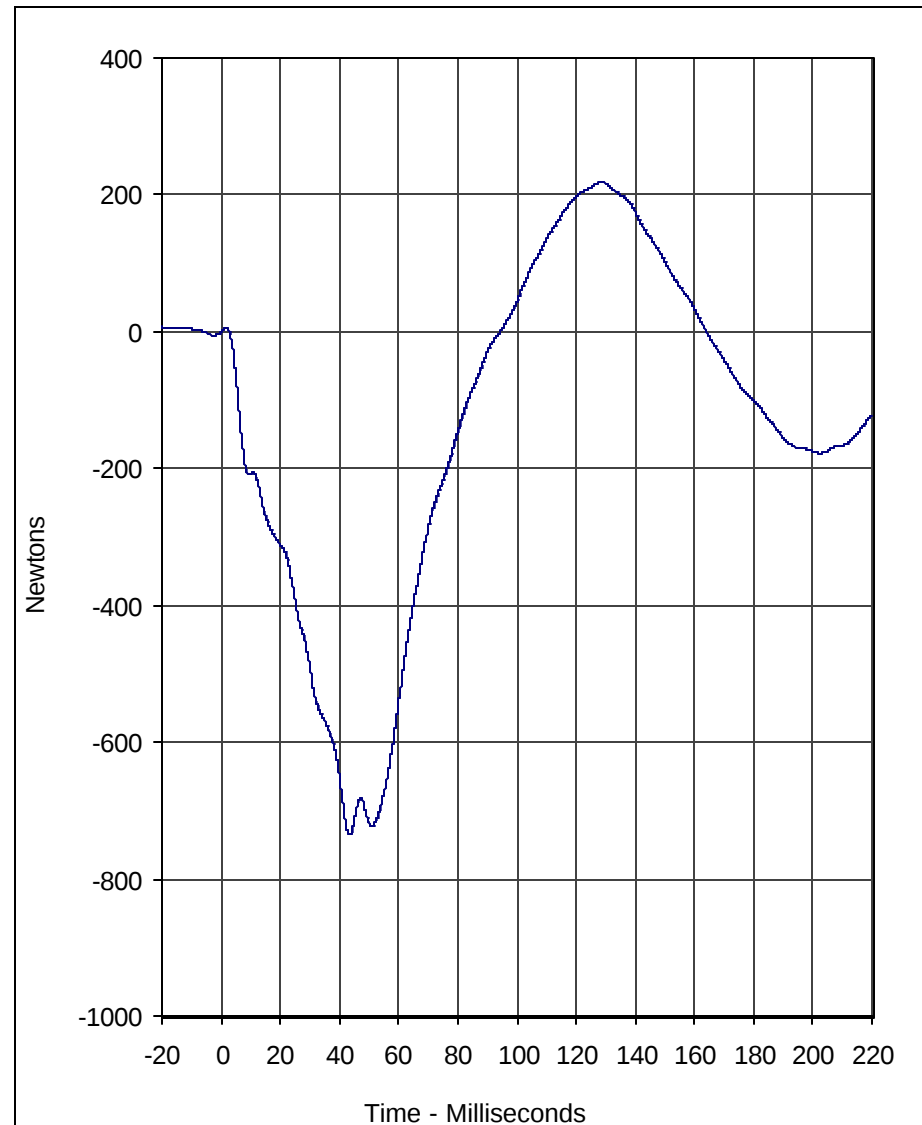
Test Date



Curve Description				CURNO	Type
Pendulum Velocity				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	8.8	184.0	0.0	-1.5	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/26/03

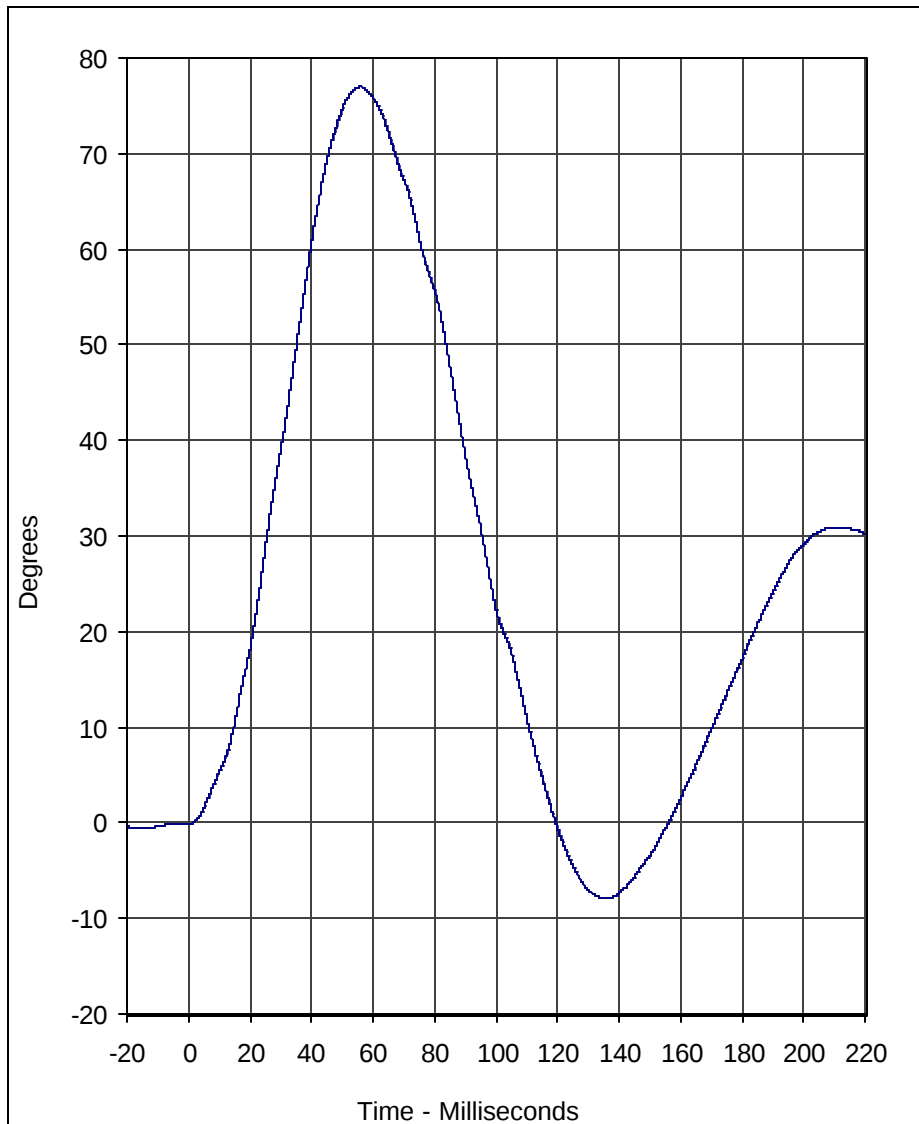


Curve Description				CURNO	Type
Neck Force Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	218.2	128.8	-735.2	43.4	60

A.T.D. Serial No.: 275

Test I.D.: NB10F

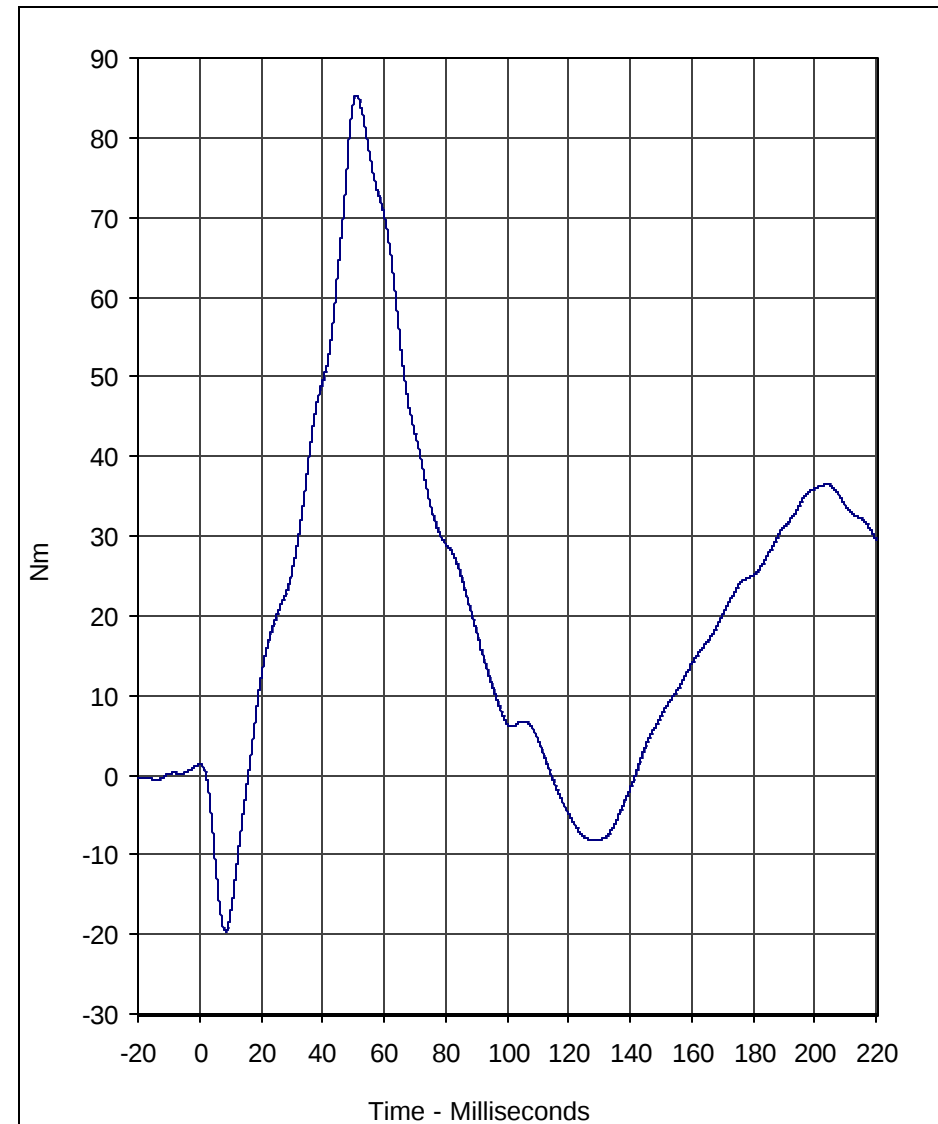




Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	77.0	55.9	-7.9	136.2	60

Test Program: SID / HIII Neck Pendulum Lateral Test

Test Date: 9/26/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	85.3	51.0	-19.6	8.4	60

A.T.D. Serial No.: 275

Test I.D.: NB10F



APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Driver SID/HIII Serial Number 275
9/25/03
2004 Hyundai XG350L 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	Head CG	X	KEAC069	Accel.,1/2 bridge	Endevco	7264-2000X	G
2	Head CG	Y	KEAC080	Accel.,1/2 bridge	Endevco	7264-2000Y	G
3	Head CG	Z	KEAC082	Accel.,1/2 bridge	Endevco	7264-2000Z	G
4	Head CG, Redundant	X	KEAC083	Accel.,1/2 bridge	Endevco	7264-2000X	G
5	Head CG, Redundant	Y	KEAC084	Accel.,1/2 bridge	Endevco	7264-2000Y	G
6	Head CG, Redundant	Z	KEAC085	Accel.,1/2 bridge	Endevco	7264-2000Z	G
7	Neck Force	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	Neck Force	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	Neck Force	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	Neck Moment	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	Neck Moment	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	Neck Moment	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	Upper Rib Primary	Y	KEAC066	Accel.,1/2 bridge	Endevco	7264-2000X	G
14	Lower Rib, Primary	Y	KEAC067	Accel.,1/2 bridge	Endevco	7264-2000Y	G
15	Lower Spine, Primary	Y	KEAC068	Accel.,1/2 bridge	Endevco	7264-2000Z	G
16	Pelvis, Primary	Y	KEAC079	Accel.,1/2 bridge	Endevco	7264-2000X	G
17	Upper Rib Redundant	Y	KEAC073	Accel.,1/2 bridge	Endevco	7264-2000X	G
18	Lower Rib, Redundant	Y	KEAC074	Accel.,1/2 bridge	Endevco	7264-2000Y	G
19	Lower Spine, Redundant	Y	KEAC075	Accel.,1/2 bridge	Endevco	7264-2000Z	G
20	Pelvis, Redundant	Y	KEAC081	Accel.,1/2 bridge	Endevco	7264-2000X	G
21	Thorax Contact	Y	T0	Contact Switch	Tapeswitch	8 oz. Grey	%
22	Pelvis Contact	Y	T0	Contact Switch	Tapeswitch	8 oz. Grey	%

55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Passenger SID/HIII Serial Number 274
9/25/03
2004 Hyundai XG350L 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
23	Head CG	X	KEAC086	Accel.,1/2 bridge	Endevco	7264-2000X	G
24	Head CG	Y	KEAC087	Accel.,1/2 bridge	Endevco	7264-2000Y	G
25	Head CG	Z	KEAC088	Accel.,1/2 bridge	Endevco	7264-2000Z	G
26	Head CG, Redundant	X	KEAC060	Accel.,1/2 bridge	Endevco	7264-2000	G
27	Head CG, Redundant	Y	KEAC061	Accel.,1/2 bridge	Endevco	7264-2000	G
28	Head CG, Redundant	Z	KEAC062	Accel.,1/2 bridge	Endevco	7264-2000	G
29	Neck Force	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
30	Neck Force	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
31	Neck Force	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
32	Neck Moment	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
33	Neck Moment	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
34	Neck Moment	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
35	Upper Rib Primary	Y	KEAC070	Accel.,1/2 bridge	Endevco	7264-2000X	G
36	Lower Rib, Primary	Y	KEAC071	Accel.,1/2 bridge	Endevco	7264-2000Y	G
37	Lower Spine, Primary	Y	KEAC072	Accel.,1/2 bridge	Endevco	7264-2000Z	G
38	Pelvis, Primary	Y	KEAC090	Accel.,Full bridge	Endevco	7264A-2000	G
39	Upper Rib Redundant	Y	KEAC076	Accel.,1/2 bridge	Endevco	7264-2000X	G
40	Lower Rib, Redundant	Y	KEAC077	Accel.,1/2 bridge	Endevco	7264-2000Y	G
41	Lower Spine, Redundant	Y	KEAC078	Accel.,1/2 bridge	Endevco	7264-2000Z	G
42	Pelvis, Redundant	Y	KEAC089	Accel.,1/2 bridge	Endevco	7264-2000X	G
43	Thorax Contact	N/A	T0	Contact Switch	Tapeswitch	8 oz. Grey	%
44	Pelvis Contact	N/A	T0	Contact Switch	Tapeswitch	8 oz. Grey	%

55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers

9/25/03

2004 Hyundai XG350L 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	Right at Sill Front Seat	X	KETX2A	Accel., Triax	I.C. Sensor	3031-200	G
46	Right at Sill Front Seat	Y	KETX2B	Accel., Triax	I.C. Sensor	3031-200	G
47	Right at Sill Front Seat	Z	KETX2C	Accel., Triax	I.C. Sensor	3031-200	G
48	Right at Sill Rear Seat	X	KETX3A	Accel., Triax	I.C. Sensor	3031-500	G
49	Right at Sill Rear Seat	Y	KETX3B	Accel., Triax	I.C. Sensor	3031-500	G
50	Right at Sill Rear Seat	Z	KETX3C	Accel., Triax	I.C. Sensor	3031-500	G
51	Rear Floorpan Above Axle	X	KETX4A	Accel., Triax	I.C. Sensor	3031-500	G
52	Rear Floorpan Above Axle	Y	KETX4B	Accel., Triax	I.C. Sensor	3031-500	G
53	Rear Floorpan Above Axle	Z	KETX4C	Accel., Triax	I.C. Sensor	3031-500	G
54	Left Sill at Rear Door	Y	KEVA012	Accel., Vehicle block	I.C. Sensor	3031-500	G
55	Left Sill at Front Door	Y	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
56	Left Front Door Centerline	Y	ICST004X	Accel., Triax	I.C. Sensor	3031-500	G
57	Rear Occupant Compartment	Y	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-500	G
58	Left Front Door Mid-Rear	Y	ICST004Y	Accel., Triax	I.C. Sensor	3031-500	G
59	Left Front Door Upper Centerline	Y	ICST004Z	Accel., Triax	I.C. Sensor	3031-500	G
60	Rear Door Mid-Rear	Y	ICST005X	Accel., Triax	I.C. Sensor	3031-500	G
61	Rear Door Upper Centerline	Y	ICST005Y	Accel., Triax	I.C. Sensor	3031-500	G
62	B-Post Lower	Y	KEBX2A	Accel., Biax	I.C. Sensor	3031-500	G
63	B-Post Middle	Y	KEBX2B	Accel., Biax	I.C. Sensor	3031-500	G
64	A-Post Lower	Y	KEBX1A	Accel., Biax	I.C. Sensor	3031-200	G
65	A-Post Middle	Y	KEBX1B	Accel., Biax	I.C. Sensor	3031-500	G
66	Front Seat Track	Y	KEIC008Y	Single	I.C. Sensor	3031-500	G
67	Rear Seat Structure	Y	N/A	N/A	N/A	N/A	N/A
68	Vehicle CG	X	KETX2A	Accel., Triax	I.C. Sensor	3031-200	G
69	Vehicle CG	Y	KETX2B	Accel., Triax	I.C. Sensor	3031-200	G
70	Vehicle CG	Z	KETX2C	Accel., Triax	I.C. Sensor	3031-200	G

**55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Moving Deformable Barrier
9/25/03
2004 Hyundai XG350L 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
71	MDB CG	X	ICST001X	Accel., Triax	I.C. Sensor	3031-500	G
72	MDB CG	Y	ICST001Y	Accel., Triax	I.C. Sensor	3031-500	G
73	MDB CG	Z	ICST001Z	Accel., Triax	I.C. Sensor	3031-500	G
74	MDB Rear Centerline	X	ICST002X	Accel., Triax	I.C. Sensor	3031-50	G
75	MDB Rear Centerline	Y	ICST002Y	Accel., Triax	I.C. Sensor	3031-50	G
76	Right Bumper Contact	N/A	T0	Contact Switch	Tapeswitch	40 oz. Grey	%