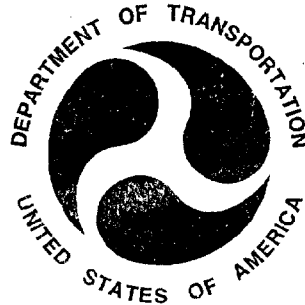


1997 LEXUS SC300
"EU 96/27/EC SIDE IMPACT TEST"

V2718
2073

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: September 25, 1997

Report Date: October 24, 1997

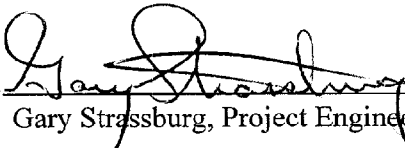
FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
VOLPE NATIONAL TRANSPORTATION SYSTEM CENTER
55 BROADWAY, KENDALL SQUARE
CAMBRIDGE, MA 02142

This Final Report was prepared for the U.S. Department of Transportation, Volpe National Transportation System Center, under Contract No. DTRS-57-95-C-00010.

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Approved By: 
Gary Strassburg, Project Engineer
Approval Date: 4-21-98

FINAL REPORT ACCEPTED BY (OVSC):

Accepted By: _____
Contract Technical Manager

Acceptance Date: _____

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SECTION 1
PURPOSE AND TEST PROCEDURE

This lateral impact test is part of Contract No. DTRS-57-97-C-00010, sponsored by the National Highway Traffic Safety Administration (NHTSA). The purpose of this test was to evaluate a 1997 Lexus SC300 2 Door when subjected to a 50 kph lateral impact was conducted in accordance with Directive 96/27/EC of the European Parliament and of the council of May 20, 1996.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes only.

SECTION 2

SUMMARY OF LATERAL IMPACT TEST

A 1997 Lexus SC300 2 Door was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward at a velocity of 31.2 mph (50.2 kph). The target vehicle was stationary and was positioned perpendicular to the line of forward motion of the moving deformable barrier. The lateral impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on September 25, 1997. Pre- and post-test photographs of the test vehicle, the MDB and the European Side Impact Dummies (EuroSID-1s) are included in Appendix A.

Two European Side Impact Dummies (EuroSID-1s) were placed in the driver and left rear designated seating positions according to instructions specified in the Lateral Impact Directive which is dated May 20, 1996. The lateral impact event was documented by 10 high speed cameras and one real-time camera. Camera locations and other pertinent camera information can be found in this report.

Appendix B contains the vehicle and dummy response data traces. A summary of the lateral impact dummy (EuroSID-1) configuration and performance verification test data is shown in Appendix D. Dummy and vehicle calibration data can be found in Appendix E of this report.

The following tables summarize the results of the Lateral Side Impact test:

		DRIVER	PASSENGER
(1) Head Performance Criteria			
≤ 1000	T ₁	No Contact	66.3
	T ₂		75.3
	HPC		308.6
(2) Thorax Performance Criteria			
(2.1) Chest Deflection ≤ 42 mm	Upper Rib Deflection	28.1 @ 52 msec.	10.4 @ 70 msec.
	Mid Rib Deflection	25.8 @ 48 msec.	7.6 @ 71 msec.
	Lower Rib Deflection	16.6 @ 49 msec.	7.4 @ 74 msec.
(2.2) Viscous Criteria ≤ 1.0	Upper Rib	.25 @ 38 msec.	.04 @ 64 msec.
	Middle Rib	.25 @ 42 msec.	.02 @ 66 msec.
	Lower Rib	.09 @ 38 msec.	.01 @ 64 msec.
(3) Abdominal Protection Criterion			
Sum ≤ 2500 N	Front Abdominal Force	139.8 @ 41 msec.	24.1 @ 97 msec.
	Mid Abdominal Force	578.5 @ 42 msec.	38.6 @ 98 msec.
	Rear Abdominal Force	691.3 @ 42 msec.	219.9 @ 62 msec.
	Sum of Abdominal Force	1408.6 @ 42 msec.	207.0 @ 61 msec.
(4) Pelvis Performance Criterion			
≤ 6000 N	Pubic Symphysis Force	2437 @ 47 msec.	2419 @ 56 msec.

HIC		DRIVER	PASSENGER
	T ₁	36.0	66.3
	T ₂	66.2	75.3
	T ₂ - T ₁	30.2	9.0
	HIC	44.1	308.6

FIR FILTERED	DRIVER	PASSENGER
UPPER RIB (g's)	54.5 @ 31 msec.	38.9 @ 61 msec.
MIDDLE RIB (g's)	58.8 @ 39 msec.	36.6 @ 62 msec.
LOWER RIB (g's)	67.2 @ 41 msec.	45.1 @ 63 msec.
LOWER SPINE (g's)	54.8 @ 42 msec.	30.4 @ 62 msec.
PELVIS (g's)	70.8 @ 39 msec.	31.2 @ 56 msec.
TTI (g's)	61.0	37.8
FILTERED AT SAE CLASS 180		
UPPER RIB (g's)	113.7 @ 74 msec.	41.2 @ 60 msec.
MID RIB (g's)	159.2 @ 68 msec.	36.8 @ 61 msec.
LOWER RIB (g's)	146.2 @ 69 msec.	45.2 @ 62 msec.
LOWER SPINE (g's)	60.0 @ 40 msec.	31.1 @ 61 msec.
PELVIS (g's)	72.0 @ 38 msec.	9.2 @ 65 msec.

CONTACTS	DRIVER	PASSENGER
HEAD (ms)	None	63.4 - 188.1
SHOULDER (ms)	22	37
UPPER RIB (ms)	52	None
MIDDLE RIB (ms)	36	None
LOWER RIB (ms)	36	None
ABDOMEN (ms)	28	None
PELVIS (ms)	30	None

TEST NOTES

As required by the test procedure (Annex II) the driver seat was placed in the vertical mid position. The H-Point was determined and the dummy installed. After installation, the dummy's head was touching the head liner. Per the test procedure (Annex II, 5.5.4) the driver seat was then lowered to provide 10 mm clearance between the head and head liner. Following this, the dummy was removed, H-Point determined, and re-installed according to the dummy positioning procedure.

SECTION 3
LATERAL IMPACT DUMMY (EUROSID-1) AND
VEHICLE TEST DATA

DATA SHEET NO. 1
GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door
VIN: JT8CD32Z3V0038696
Vehicle Body Color: Green Build Date: 10-96
Engine Data: 6 Cylinders; CID; 3.0 Liter; cc
Placement ☒ Longitudinal; ☐ Lateral
Transmission: 3 speed; Manual; ☒ Automatic; ☒ Overdrive
Final Drive: ☒ Rear Wheel Drive; Frt. Wheel Drive; Four Wheel Drive

Odometer Reading 899 miles
Options: ☒ A/C; ☒ Pwr. Steering; ☒ Pwr. Brakes; ☒ Pwr. Windows;
☒ Cruise Control; ☒ Tilt Wheel; ☒ Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT
32 Psi REAR
Recommended Tire Size: P225/55R16
Tires on Test Vehicle: P225/55R16 Manufacturer: Good Year

Vehicle Capacity Data:

Number of Occupants: 2 Front; 2 Rear; 3rd Seat 4 Total
Type of Front Seats: ☒ Bucket; ☐ Bench; ☐ Split Bench
Type of Front Seat Back: ☐ Fixed; ☒ Adjustable with ☒ Power
Vehicle Maximum Capacity Loading = 340.2 kg (A)
No. of Occupants x 68.04 kg. = 272.2 kg (B)
Cargo Capacity (A-B) = 68.0 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS AND FUEL:

Right Front	=	<u>424.6</u>	kg	Right Rear	=	<u>380.6</u>	kg
Left Front	=	<u>449.1</u>	kg	Left Rear	=	<u>385.6</u>	kg
TOTAL FRONT	=	<u>873.7</u>	kg	TOTAL REAR	=	<u>766.2</u>	kg
% of Total Vehicle Weight	=	<u>53</u>	%;	% of Total Weight	=	<u>47</u>	%
TOTAL WEIGHT	=	<u>1639.9</u>	kg				

WEIGHT OF TEST VEHICLE WITHOUT FUEL:

TOTAL WEIGHT = 1582.6 kg

WEIGHT OF FUEL:

TOTAL WEIGHT = 57.3 kg

WEIGHT OF TEST VEHICLE WITH 90% OF FUEL MASS (UNLADEN WEIGHT):

TOTAL WEIGHT = 1634.2 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Weight of Test Vehicle with 90% Fuel Mass (mass unladen) = 1634.2 kg

Weight of 2 EuroSID Dummies and Instrumentation = 200.0 kg

(100 kg allotted for each EuroSID-1 plus instrumentation per EU Directive 96/27/EC)

TEST VEHICLE TARGET WEIGHT = 1834.2 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES

Right Front = 443.6 kg

Right Rear = 481.8 kg

Left Front = 499.0 kg

Left Rear = 455.0 kg

TOTAL FRONT = 942.6 kg

TOTAL REAR = 876.8 kg

% of Total Weight = 55.0 %

% of Total Weight = 48.0 %

TOTAL TEST WEIGHT = 1819.4 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 687 mm Left Front 684 mm Right Rear 684 mm Left Rear 680 mm

TEST ATTITUDE:

Right Front 684 mm Left Front 668 mm Right Rear 663 mm Left Rear 654 mm

Test Vehicle Wheelbase: 2685 mm

C.G. As Tested = 1294 mm rearward of front wheel centerline

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

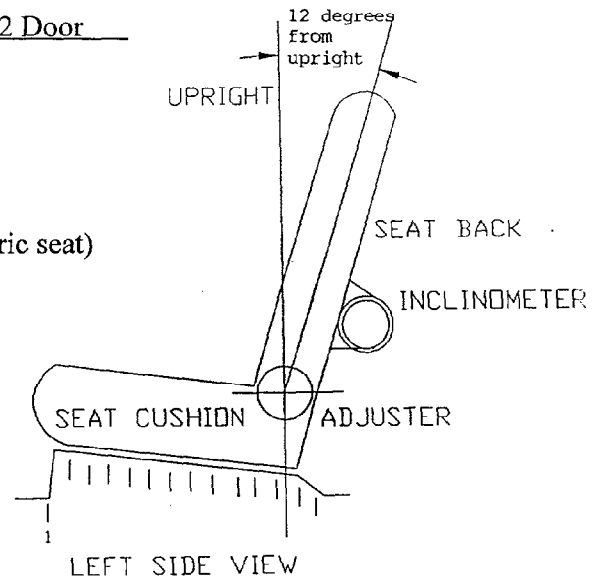
FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 240 mm (electric seat)

Test Position: 120 mm from foremost position

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 12° from most upright position
(electric seatback adjustment)



REAR SEAT: Contoured

Total Length of Fore/Aft Adjustment Travel: Non Adjustable

Seat Back Adjustment Position: Non Adjustable

ADJUSTABLE STEERING COLUMN POSITION: 22.6° with respect to the rocker
panel (mid position)

WINDOW POSITIONS: Left Front Closed Left Rear Closed
Right Front Open Right Rear Removed

AMOUNT OF WATER IN FUEL TANK:

Weight of full fuel = 57.3 kg

90% of fuel mass = 51.6 kg

Test mass added = 51.6 kg

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED (R Point):

Impact Point is 436 mm forward of striker (R Point)

1585 mm rearward of front spindle centerline

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

Overall Length of Vehicle = 4853 mm

Overall Width at B-Post = 1768 mm

WEIGHT AS TESTED:

Right Front = 443.6 kg Right Rear = 421.8 kg

Left Front = 499.0 kg Left Rear = 455.0 kg

TOTAL FRONT = 942.6 kg TOTAL REAR = 876.8 kg

% of Total Weight = 52.0 % % of Total Weight = 48.0 %

TOTAL VEHICLE WEIGHT = 1819.4 kg

Wheelbase = 2685 mm

Longitudinal C.G. from Center of Front Axle = 1294 mm

Impact Angle with Respect to Impactor = 90 degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (234 mm above ground) = 130 mm

2. LEVEL 2 (444 mm above ground) = 330 mm

3. LEVEL 3 (562 mm above ground) = 304 mm

4. LEVEL 4 (850 mm above ground) = 177 mm

5. LEVEL 5 (1228 mm above ground) = 37 mm

Maximum Post-Test Intrusion = 330 mm @ Level 2

OCCUPANTS:

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Type of Dummy	<u>EuroSID-1</u>	<u>EuroSID-1</u>
Restraints Used	<u>type II belt</u>	<u>type II belt</u>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

CAMERAS:

Number of Cameras: Onboard Vehicle	=	<u>3</u>
Offboard Vehicle	=	<u>6</u>
Deformable Barrier	=	<u>1</u>
TOTAL	=	<u>10</u>

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 0°

MDB DETAILS:

Wheelbase of Framework Carriage	= <u>2998 mm</u>
Track width (Front & Rear)	= <u>1499 mm</u>
C.G. Location Rearward of Front Axle	= <u>1003 mm</u>
C.G. Location From Center Line	= <u>-1.5 mm</u>
C.G. Location Above Ground Level	= <u>501 mm</u>

MDB WEIGHT:

Left Front	= <u>340.2 kg</u>	Left Rear	= <u>145.6 kg</u>
Right Front	= <u>305.3 kg</u>	Right Rear	= <u>178.7 kg</u>
TOTAL FRONT	= <u>645.5 kg</u>	TOTAL REAR	= <u>324.3 kg</u>
TOTAL MDB WEIGHT = <u>969.8 kg</u>			

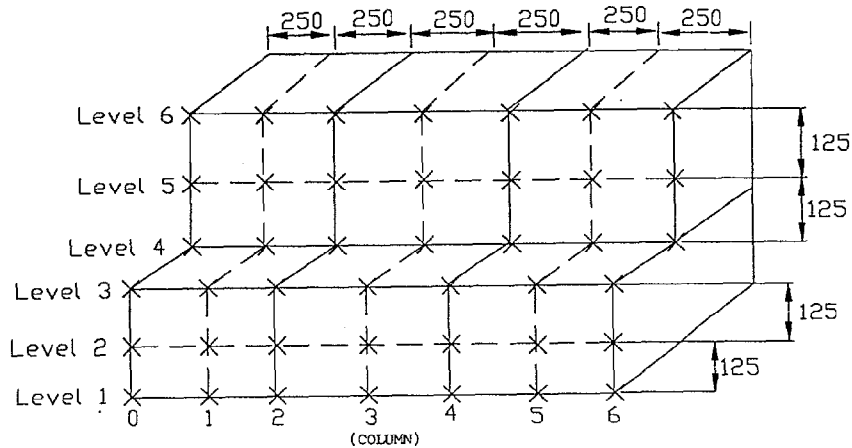
Impact Angle (MDB C/L to Target Vehicle C/L) = 90° degrees

Impact Speed = Primary: 50.2 kph Secondary: 50.2 kph

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

Level 1	Column 0	= <u>391</u> mm
Level 2	Column 0	= <u>380</u> mm
Level 3	Column 6	= <u>338</u> mm
Level 4	Column 6	= <u>294</u> mm
Level 5	Column 6	= <u>329</u> mm
Level 6	Column 6	= <u>361</u> mm

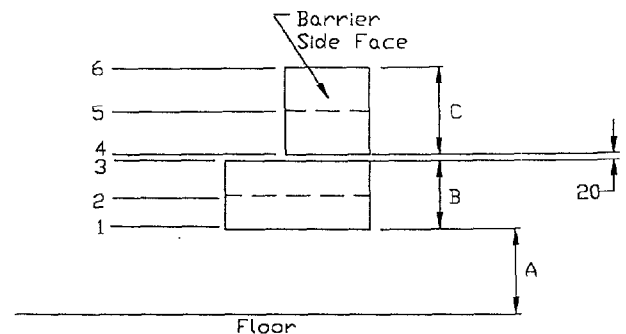


INSTRUMENTATION:

Number of MDB Data Channels = 11

BARRIER FACE MEASUREMENTS POSITIONED AGAINST VEHICLE

	Dimensions in (mm)		Dimensions in mm
	Right	Left	Right Side/Left Side
(A)	298	304	
(B)	242	240	
(C)	242	243	



DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT EUROSID-1</u>	<u>LEFT REAR EUROSID-1</u>
Head	<u>None</u>	<u>to C Post</u>
Arm	<u>to upper mid door</u>	<u>to side trim panel</u>
Upper rib	<u>to door trim panel</u>	<u>to side trim panel</u>
Mid Rib	<u>to door trim panel</u>	<u>to side trim panel</u>
Lower Rib	<u>to door trim panel</u>	<u>to side trim panel</u>
Abdomen	<u>to door</u>	<u>to side trim panel</u>
Pelvis	<u>to door</u>	<u>to side trim panel</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>remained closed</u>	<u>remained closed</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 0 mm forward Vertical: 4 mm high

ARM REST LOCATIONS:

Front: 270 mm from bottom of window
Rear: 335 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 9 mm Front Seat Cushion: 114 mm

Left Rear Seat Back: 34 mm Rear Seat Cushion: 18 mm

GLAZING DAMAGE:

Impact side windows

PILLAR PERFORMANCE:

No separation

SILL SEPARATION:

None

OTHER NOTABLE IMPACT EFFECTS:

Driver and front passenger frontal airbags did not deploy

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5
LATERAL IMPACT DUMMY (EUROSID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

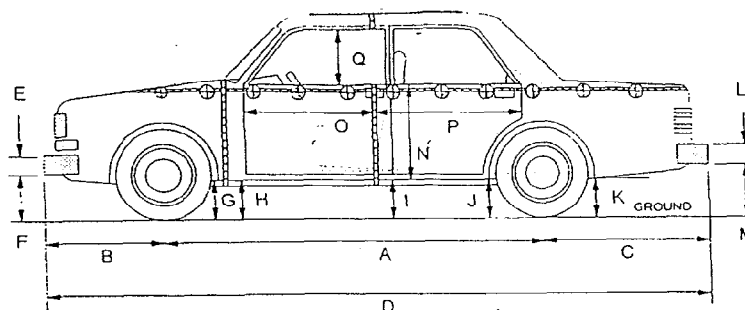
FIR FILTERED

	Front EuroSID-1 ID #E1-169				Rear EuroSID-1 ID #E1-213			
	Pos. Direct.		Neg. Direct		Pos. Direct.		Neg. Direct	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y	54.5	31	30.7	61	38.9	61	2.7	116
Left Middle Rib (LMR) Y	58.8	39	24.1	63	36.6	62	2.1	197
Left Lower Rib (LLR) Y	67.2	41	21.6	64	45.1	63	1.3	119
SPINE ACCELERATIONS								
Lower Lateral Y	54.8	42	14.0	84	30.4	62	3.0	180
PELVIS ACCELERATIONS								
Lateral Y	70.7	39	26.7	71	31.2	56	3.7	173

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

EuroSID-1 Manufacture Dates: E1-169 - 4/19/96
E1-213 - 5/12/96

DATA SHEET NO. 6
VEHICLE PRE AND POST-TEST MEASUREMENTS



LEFT SIDE VIEW

D = Length at Centerline

R = Right Side Length

S = Left Side Length

T = Width at B Post

E & L = Bumper Thickness

J1 = To Pinch Weld

J2 = To Sill

ALL MEASUREMENTS IN (mm)

	PRE-TEST	POST-TEST	Δ CHANGE
A	2685	2660	25
B	1000	1015	15
C	1168	1164	4
D	4853	4839	14
E	150	150	0
F	147	NR	---
G	158	152	6
H	164	153	11
I	160	142	18
J1/J2	160/160	154/141	6/19
K	195	200	5
L	240	240	0
M	358	379	21
N	600	554	46
O	653	630	23
P	825	792	33
Q	350	315	35
R	4465	4517	52
S	4465	4465	0
T	1768	1604	164

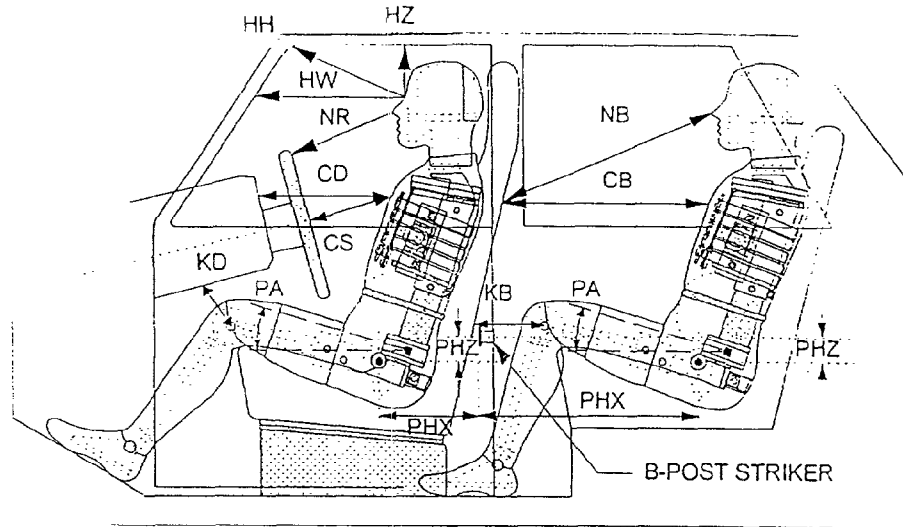
NR = Not Recorded

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997



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

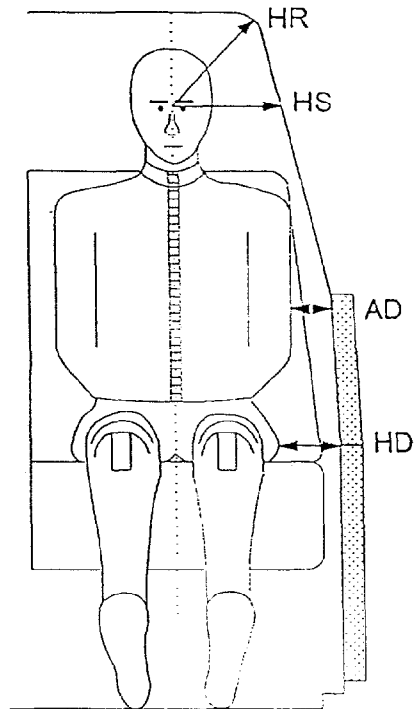
	FRONT EuroSID-1 ID # E1-169		REAR EuroSID-1 ID #E1-213
HH	369	HZ	105
HW	546	NB	473
HZ	96	CB	405
NR	466	KBL (KBA)	113 (0.0°)
CD	561	KBR (KBA)	112 (0.0°)
CS	376	PA°	N/A
KDL (KDA°)	180 (12.7°)	PHX	-285
KDR (KDA°)	185 (15.8°)	PHZ	-228
PA°	N/A		
PHX	527		
PHZ	-228		

NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle use the B-post striker as reference point.

DATA SHEET NO. 8
SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997



NOTE: All dimensions are in mm

	FRONT EuroSID-1 ID #E1-169	REAR EuroSID-1 ID #E1-213
HR	158	206
HS	282	248
AD	123	106
HD*	248	170
KK	300	272

* To inside of map pocket

DATA SHEET NO. 9
DUMMY POSITIONING - DRIVER

Driver H-Point

HP to Striker X = 546

HP to Striker Z = 220

Driver Dummy Position

HP to Striker X = 527

HP to Striker Z = 228

H-Point Machine

Left Knee = 121°

Right Knee = 121°

Left Foot = 90°

Right Foot = 90°

Left Leg = 130 mm

Right Leg = 120 mm

Hip Angle = 96°

Back Angle = 24°

DATA SHEET NO. 9 (Cont'd)
DUMMY POSITIONING - LEFT REAR PASSENGER

Left Rear Passenger H-Point

Left Rear Passenger Position

HP to Striker X = 266

HP to Striker X = 285

HP to Striker Z = 216

HP to Striker Z = 228

H-Point Machine

Left Knee = 81°

Right Knee = 81°

Left Foot = 112°

Right Foot = 110°

Left Leg = 200 mm

Right Leg = 80 mm

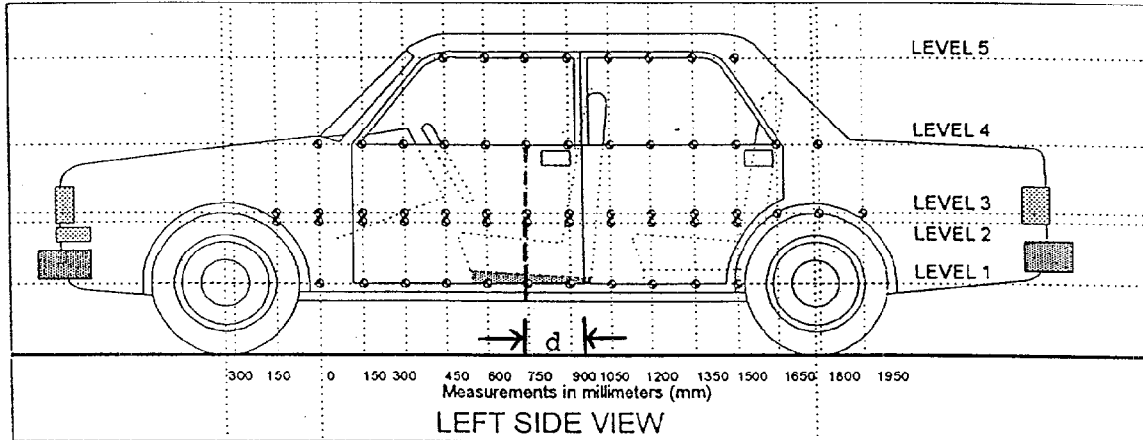
Hip Angle = 83°

Back Angle = 26°

DATA SHEET NO. 10
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997



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

Lateral Impact Line
d = 436 mm forward of door striker

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED"
CONFIGURATION

MEASUREMENTS ALONG THE VERTICAL IMPACT LINE

Level 1 @ Axle Centerline Height

(or Sill Top Height) = 234 mm

Level 2 @ Occupant H-Point = 444 mm

Level 3 @ Mid Door = 562 mm

Level 4 @ Window Sill = 850 mm

Level 5 @ Window Top = 1228 mm

Vehicle Pitch Angle: .2° (measured at the left side sill)

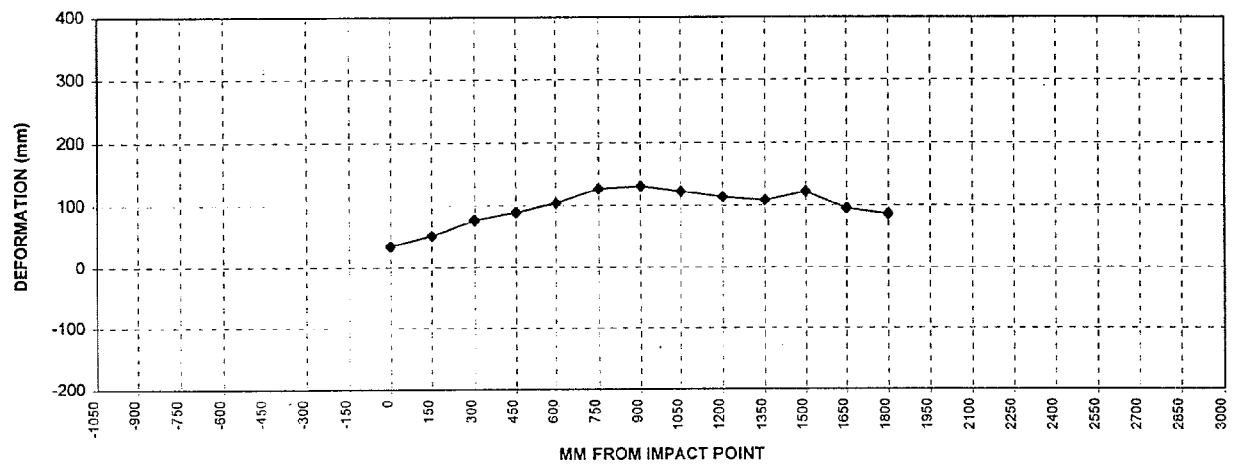
Vehicle Roll Angle: .1° left side down (measured at the center of hood)

DATA SHEET NO. 11
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	611	646	35
150	623	675	52
300	626	703	77
450	626	715	89
600	625	729	104
750	624	750	126
900	624	754	130
1050	624	746	122
1200	625	738	113
1350	624	732	108
1500	623	744	121
1650	622	717	95
1800	617	703	86
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



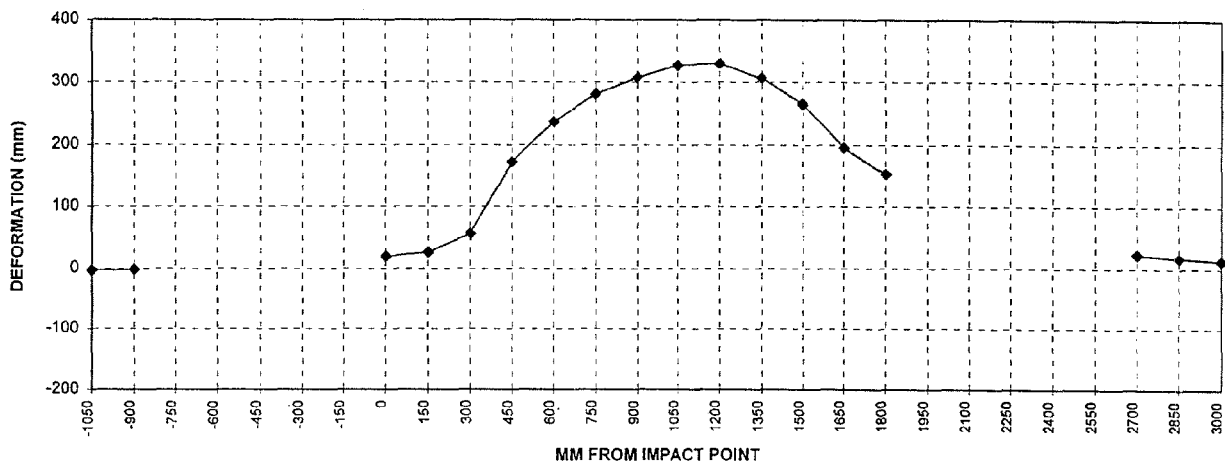
LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 2 - Occupant H Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050	650	647	-3
-900	605	603	-2
-750			
-600			
-450			
-300			
-150			
0 (impact point)	580	599	19
150	582	608	26
300	584	640	56
450	584	757	173
600	585	822	237
750	585	866	281
900	585	892	307
1050	584	911	327
1200	584	914	330
1350	585	891	306
1500	584	850	266
1650	582	778	196
1800	579	733	154
1950			
2100			
2250			
2400			
2550			
2700	573	596	23
2850	589	606	17
3000	610	623	13

Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



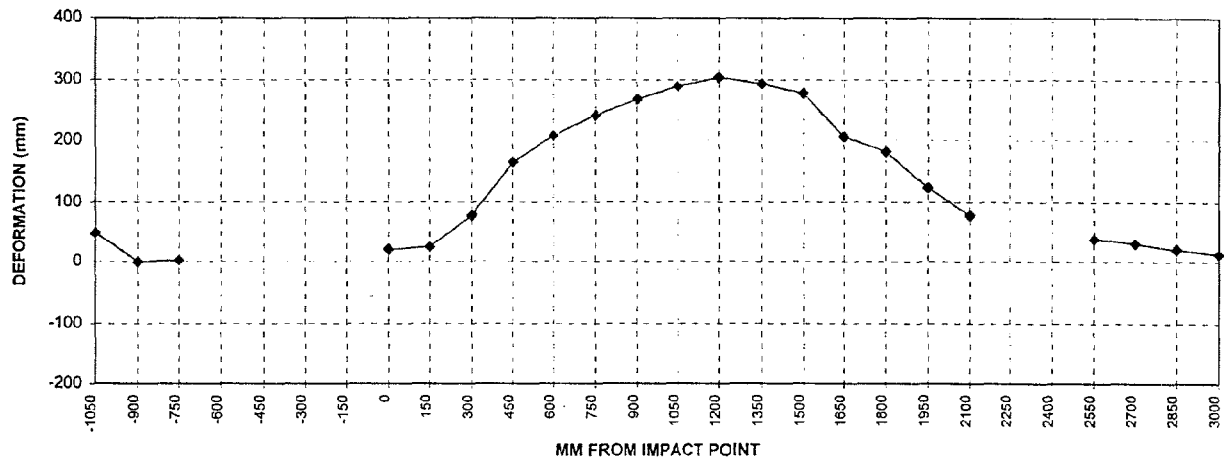
LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050	650	698	48
-900	602	601	-1
-750	568	570	2
-600			
-450			
-300			
-150			
0 (impact point)	572	592	20
150	573	597	24
300	574	652	78
450	575	740	165
600	576	783	207
750	577	818	241
900	577	845	268
1050	577	866	289
1200	577	881	304
1350	577	870	293
1500	578	855	277
1650	577	783	206
1800	575	757	182
1950	568	692	124
2100	565	643	78
2250			
2400			
2550	563	601	38
2700	579	609	30
2850	598	618	20
3000	622	634	12

Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



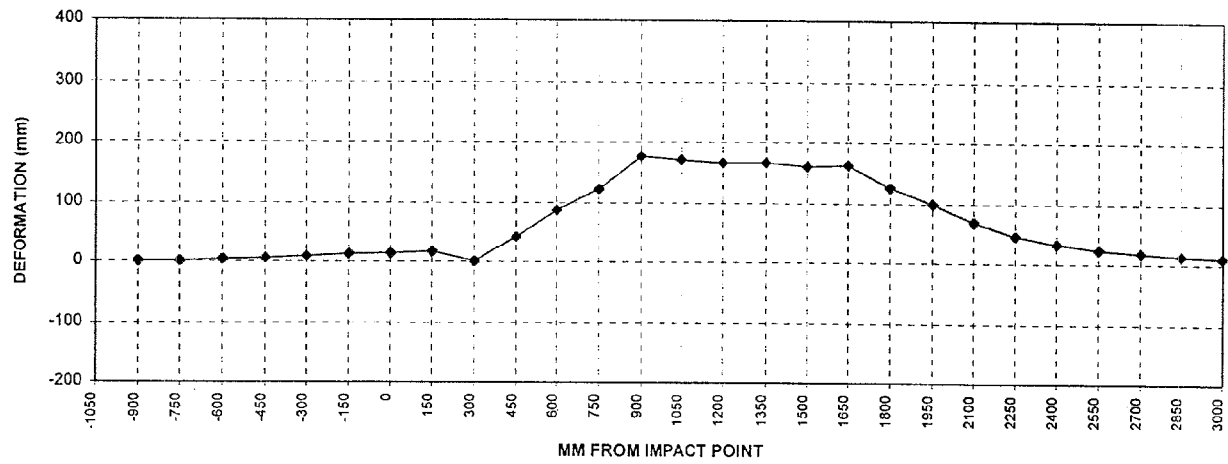
LEVEL 3 - MID DOOR

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	713	714	1
-750	693	694	1
-600	676	680	4
-450	670	676	6
-300	662	671	9
-150	657	670	13
0 (impact point)	653	667	14
150	650	667	17
300	648	649	1
450	647	690	43
600	644	732	88
750	646	768	122
900	646	823	177
1050	646	817	171
1200	646	812	166
1350	646	813	167
1500	646	807	161
1650	645	808	163
1800	643	769	126
1950	641	741	100
2100	643	713	70
2250	645	692	47
2400	651	684	33
2550	659	682	23
2700	672	690	18
2850	689	702	13
3000	715	725	10

Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



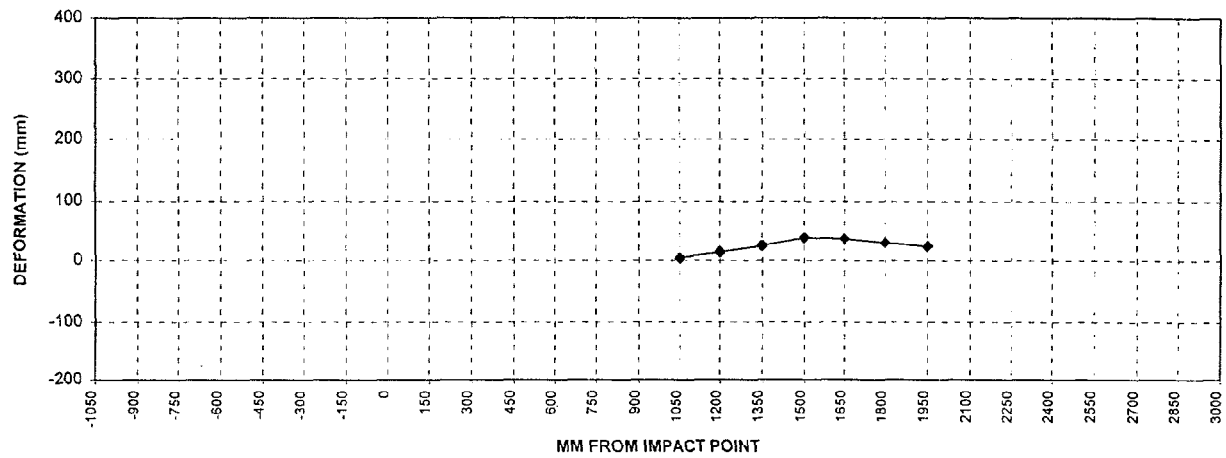
LEVEL 4 - WINDOW SILL

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750			
900			
1050	882	886	4
1200	882	896	14
1350	882	906	24
1500	881	918	37
1650	879	914	35
1800	881	910	29
1950	892	915	23
2100			
2250			
2400			
2550			
2700			
2850			
3000			

Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



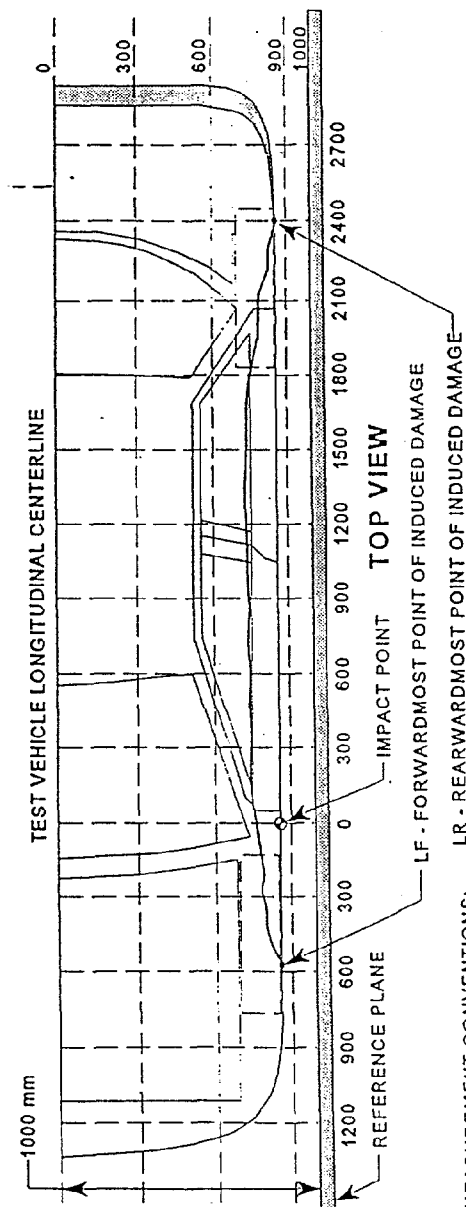
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 12
VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

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



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (toward rear of vehicle) is considered positive (+).

Maximum Crush Level: 2 mm Location: 1120 mm Depth: 335 mm

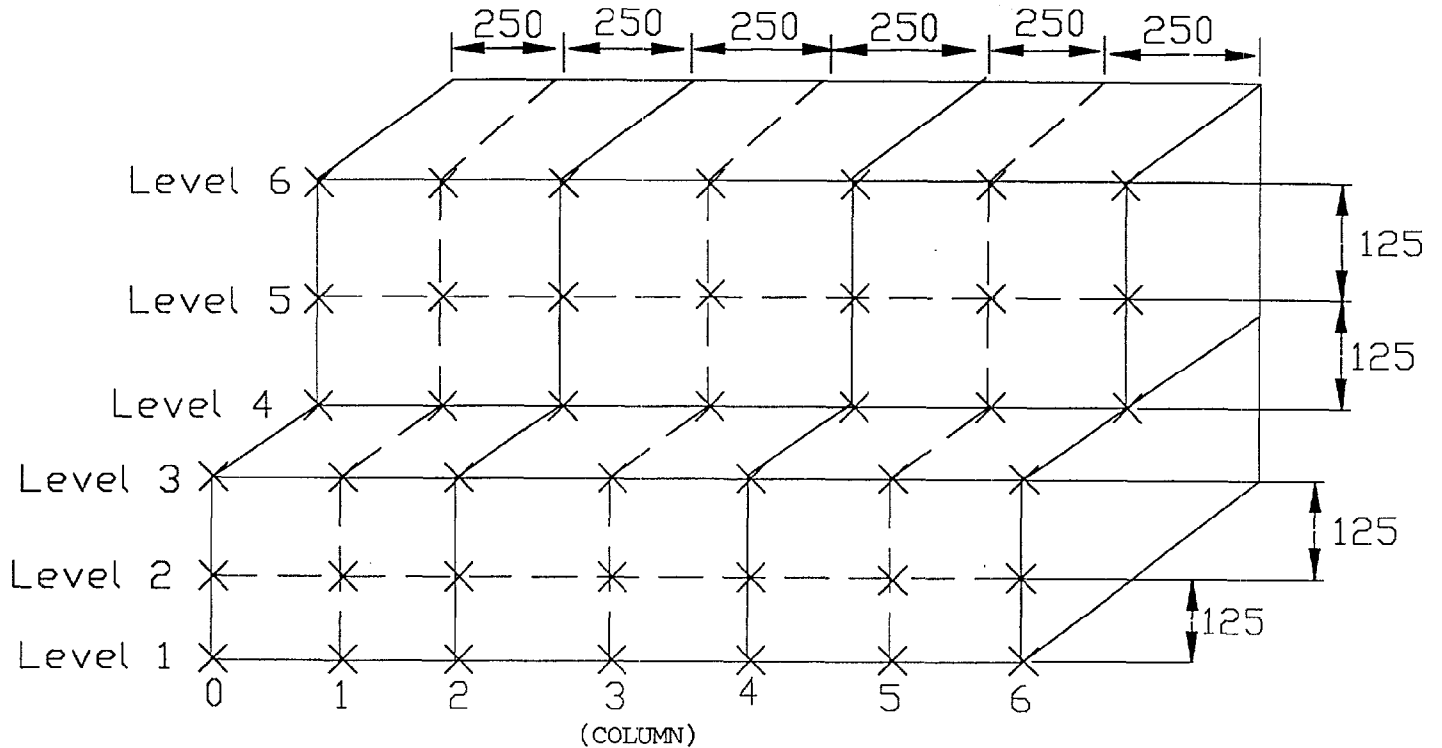
LEVEL	DPD MEASUREMENTS	STATIC CRUSH (mm)
4	1. (LF = -750 mm)	0
4	2. 15 mm	15
2	3. 790 mm	292
2 1/2	4. 1585 mm	260
4	5. 2375 mm	35
4	6. (LR = 3150 mm)	0

DATA SHEET NO. 13

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997



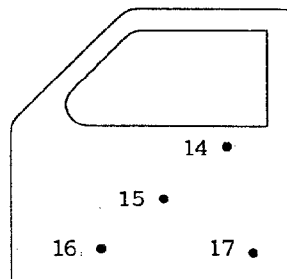
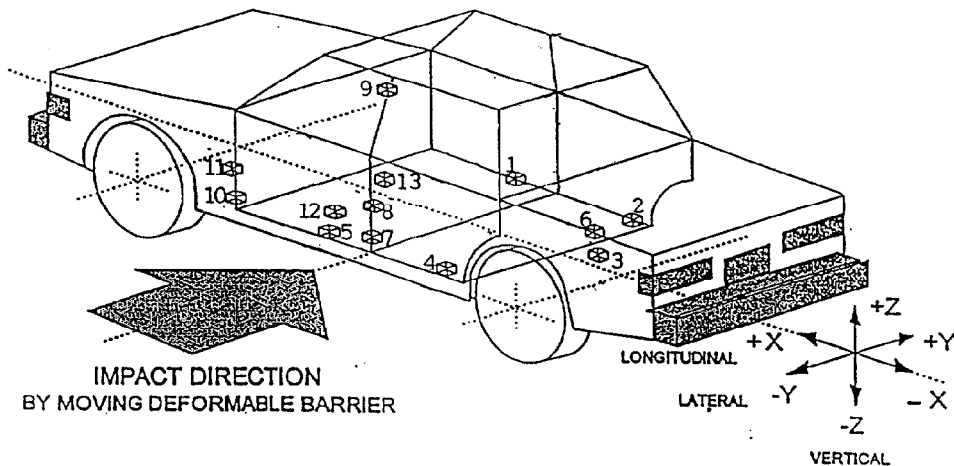
Post-Test Static Deformation (mm)

LEVEL	COLUMN						
	0	1	2	3	4	5	6
6	244	196	141	119	117	239	361
5	235	216	114	83	121	198	329
4	263	224	206	71	115	189	294
3	328	288	148	115	167	232	338
2	380	302	169	114	135	199	338
1	391	343	339	181	204	233	252

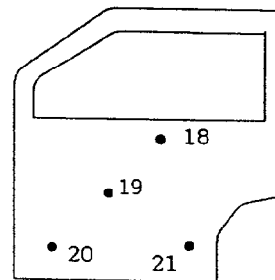
DATA SHEET 14
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997



Front



Rear

- | | | |
|----------------------------------|---------------------------------|---------------------------|
| 1 - Right Side Sill @ Front Seat | 10 - Left Lower A Post | 18 - Left Rear Door Upper |
| 2 - Right Side Sill @ Rear Seat | 11 - Left Mid A Post | 19 - Left Rear Door Mid |
| 3 - Rear Floorpan Above Axle | 12 - Driver Seat Track | 20 - Left Rear Door Lower |
| 4 - Left Side Sill @ Rear Seat | 13 - Vehicle C.G. | |
| 5 - Left Side Sill @ Front Seat | 14 - Left Front Door Upper | |
| 6 - Right Rear Occ. Compartment | 15 - Left Front Door Mid | |
| 7 - Left Lower B Post | 16 - Left Front Door Lower | |
| 8 - Left Mid B Post | 17 - Left Front Door Rear Lower | |
| 9 - Left Upper B Post | | |

DATA SHEET NO. 14
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY
 Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door
 Test Date: September 25, 1997

Accel. No.	Description	Coordinates (mm)*			Long. (X) Maximums (g's)		Lat. (Y) Maximums (g's)		Vert. (Z) Maximums (g's)		Resultant (g's)
		X	Y	Z	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
1	Right Side Sill @ Front Seat	2953	675	191	2.7	1.1	11.4	1.6	4.3	3.4	11.5
2	Right Side Sill @ Rear Seat	1863	670	193	2.7	1.7	13.8	1.8	2.1	3.2	14.0
3	Rr. Floorpan Above Axle	930	0	367	3.6	2.4	15.4	2.3	2.5	6.3	15.6
4	Left Side Sill @ Rr. Seat	1911	-670	190	---	---	19.6	2.1	---	---	---
5	Left Side Sill @ Frt. Seat	2998	-675	186	---	---	18.0	16.4	---	---	---
6	Right Rear Occupant Compartment	1873	365	297			13.9	2.0	---	---	---
7	Left Lower B Post	1829	-734	560	---	---	49.7	19.0	---	---	---
8	Left Mid B Post	1844	-723	790	---	---	55.9	29.4	---	---	---
9	Left Upper B Post	1927	-562	1284	---	---	25.9	7.3	---	---	---
10	Left Lower A Post	3221	-732	304	---	---	15.9	2.6	---	---	---
11	Left Mid A Post	3153	-823	834	---	---	11.0	1.3	---	---	---
12	Driver Left Seat Track	2257	-620	200	---	---	39.1	11.0	---	---	---
13	Vehicle CG	2584	0	430	2.9	2.6	22.7	9.3	7.2	9.8	23.1
14	Left Front Door Upper	2166	-773	850	---	---	177.1	79.4	---	---	---
15	Left Front Door Mid	2245	-802	641	---	---	215.6	72.1	---	---	---
16	Left Front Door Lower	2377	-776	433	---	---	115.9	63.6	---	---	---
17	Left Front Door Rear Lower	1946	-768	440	---	---	55.8	28.8	---	---	---
18	Left Rear Door Upper	1295	-730	827	---	---	28.3	18.8	---	---	---
19	Left Rear Door Mid	1437	-738	676	---	---	24.4	5.4	---	---	---
20	Left Rear Door Lower	1582	-740	508	---	---	54.0	12.1	---	---	---

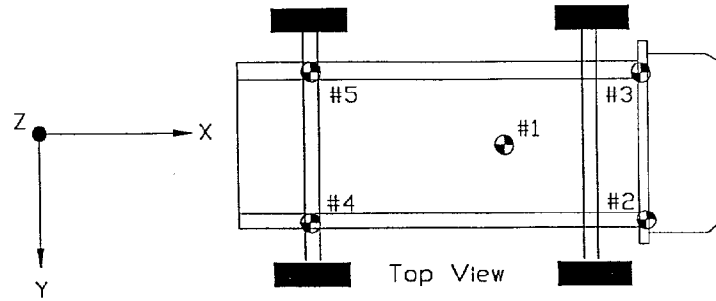
*Reference: X - Rear Bumper (+ Forward)
 Y - Vehicle Centerline (- To right)
 Z - Ground Level (+ Up)

DATA SHEET NO. 15

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997



Acce l. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	2220	0	462				
	Longitudinal (X)	---	---	---	.6	-20	18.8	49
	Lateral (Y)	---	---	---	4.1	67	.9	21
	Vertical (Z)	---	---	---	2.5	52	2.8	43
	Resultant (R)	---	---	---	18.9	49	---	---
2	Right Rear Frame Member	215	595	670				
	Right Longitudinal (X)	---	---	---	1.2	128	20.6	40
	Right Lateral (Y)	---	---	---	2.7	90	2.2	54
3	Left Rear Frame Member	230	-525	670				
	Left Longitudinal (X)	---	---	---	0.9	146	18.6	42
	Left Lateral (Y)	---	---	---	2.5	89	3.0	64
4	Front Face Member	3650	765	770				
	Right Face (X)	---	---	---	1.7	-10	20.7	51
	Right Face (Y)	---	---	---	4.4	69	1.8	32
5	Left Front Face Member	3655	-780	770				
	Left Face (X)	---	---	---	1.3	-10	21.2	31
	Left Face (Y)	---	---	---	2.5	69	5.0	31

*Reference: X - Rear of Cart (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 16
HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 1997/Lexus/SC300/2 Door

Test Date: September 25, 1997

View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
	X	Y	Z			
Real Time					13	
Left Overall	120	-6560	1680	90°	13	635
Left Impact Oblique	-4040	-9000	1105		25	800
Left Impact Pointer	-1560	-2270	710		35	702
Onboard Hood					13	870
Onboard Hood Angle					13	NR
Onboard Rear					13	NR
Right Overall	-100	7760	1580	90°	13	1005
Right Impact Oblique	-6200	7870	965		25	1010
Top Overall	-250	0	5000		8	NR
Top Impact	-730	0	5000		13	1176
Cart					13	NR

* Reference: (from impact point)
 +X = Forward
 +Y = To Right
 +Z = Upward from floor level

NR = Not recorded

APPENDIX A - PHOTOGRAPHS

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Photo No. A-42 - Right Rear Attitude Point	A-24
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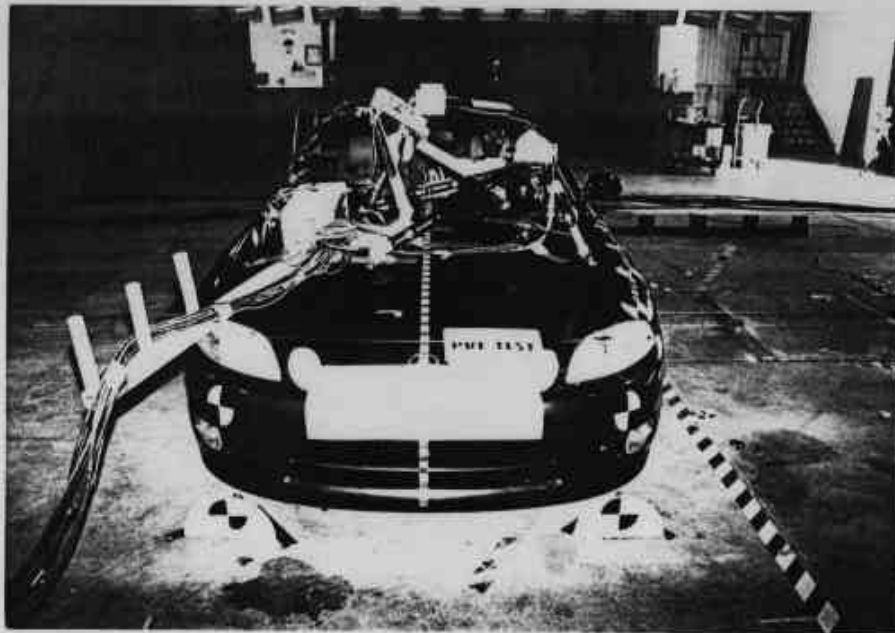


Photo No. A-1 - Pre-Test Front View of Test Vehicle



Photo No. A-2 - Post-Test Front View of Test Vehicle

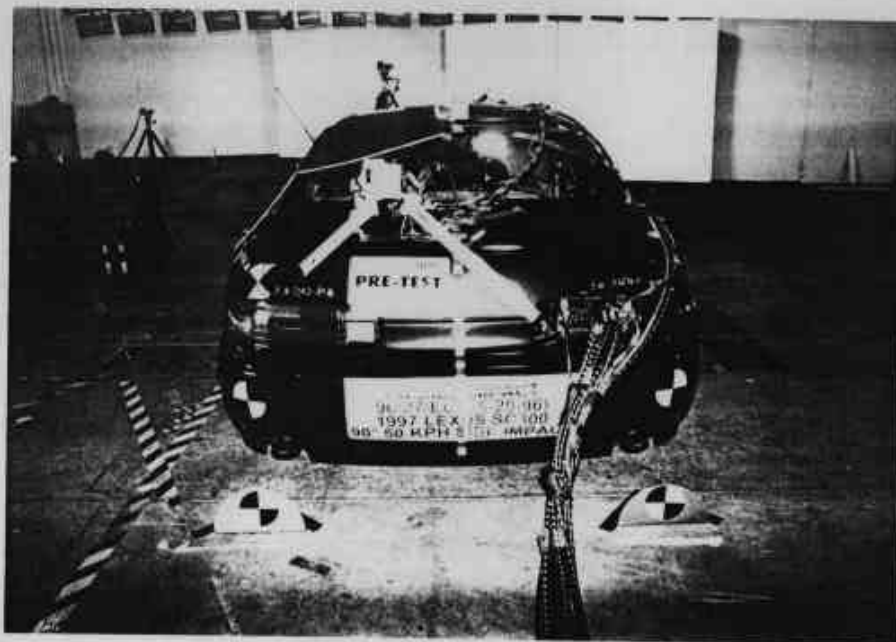


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



Photo No. A-4 - Post-Test Rear View of Test Vehicle

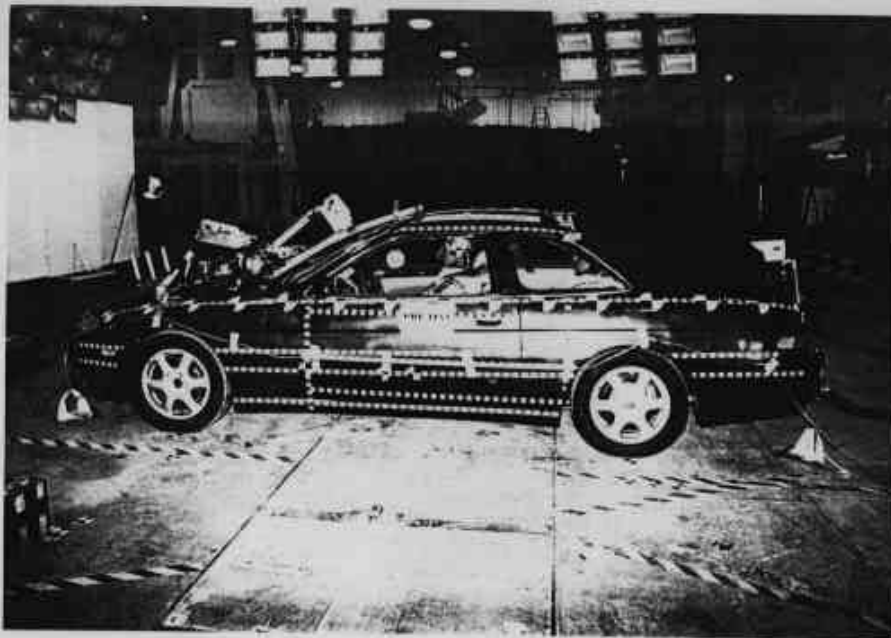


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

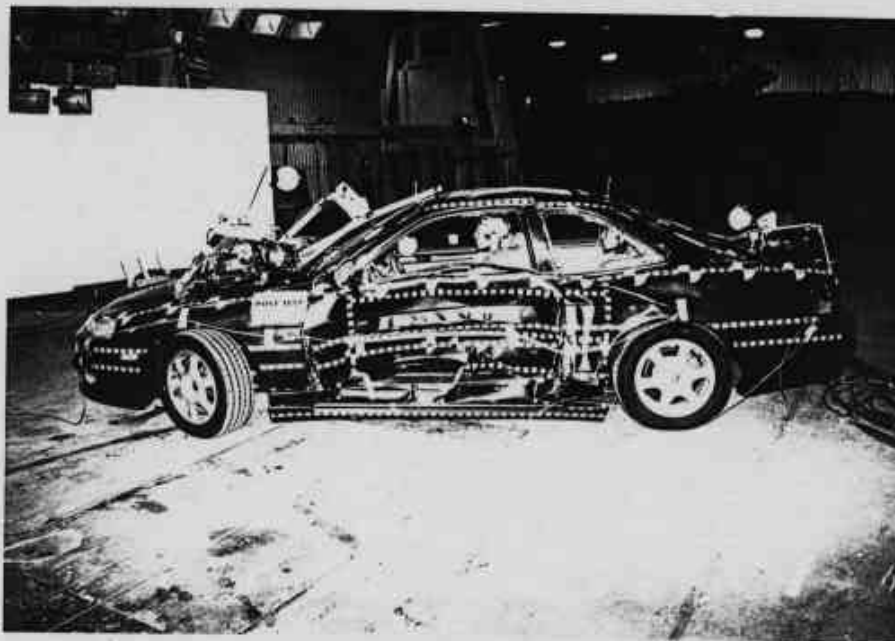


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

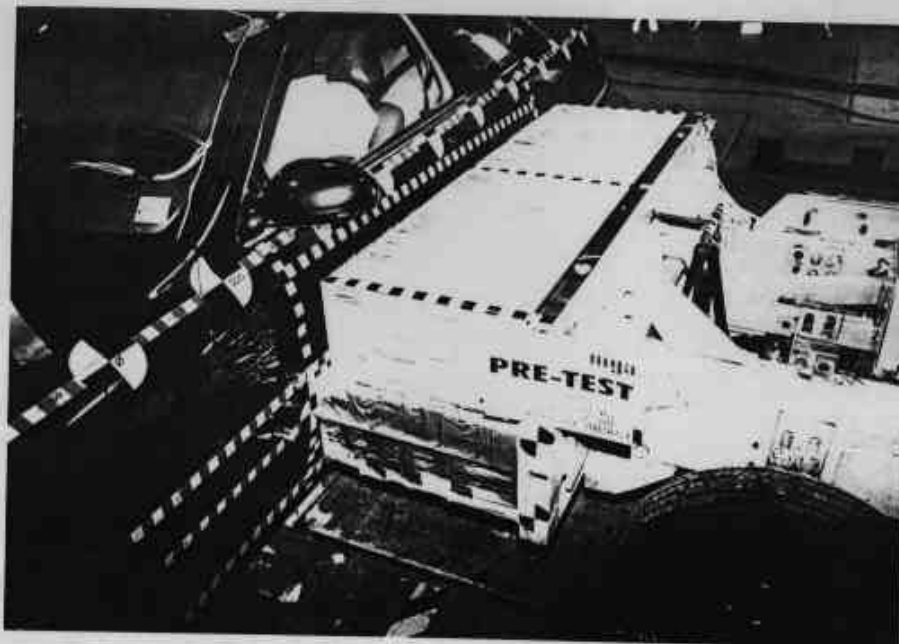


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

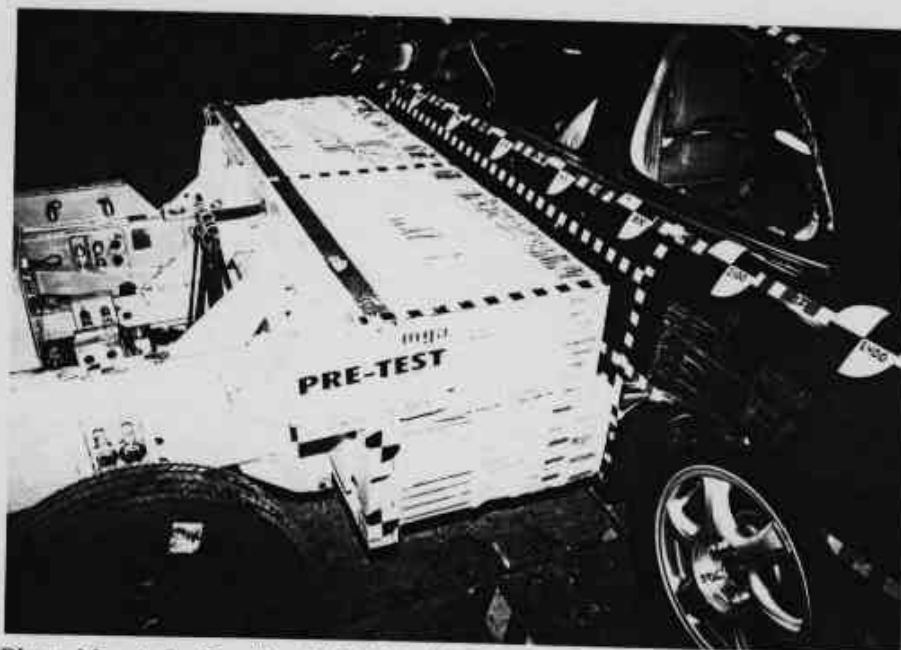


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

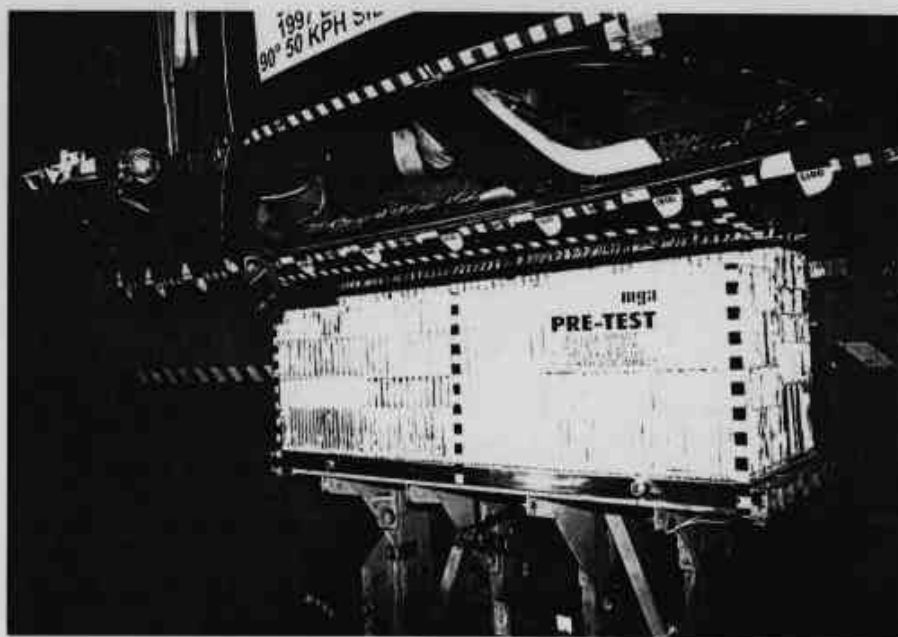


Photo No. A-9 - Pre-Test MDB Position Against Vehicle Overhead View

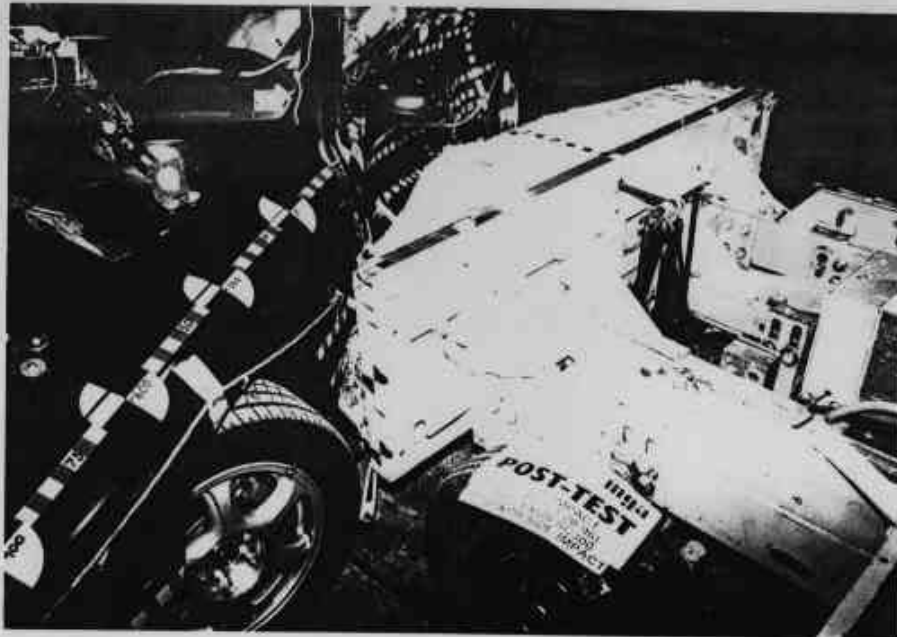


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

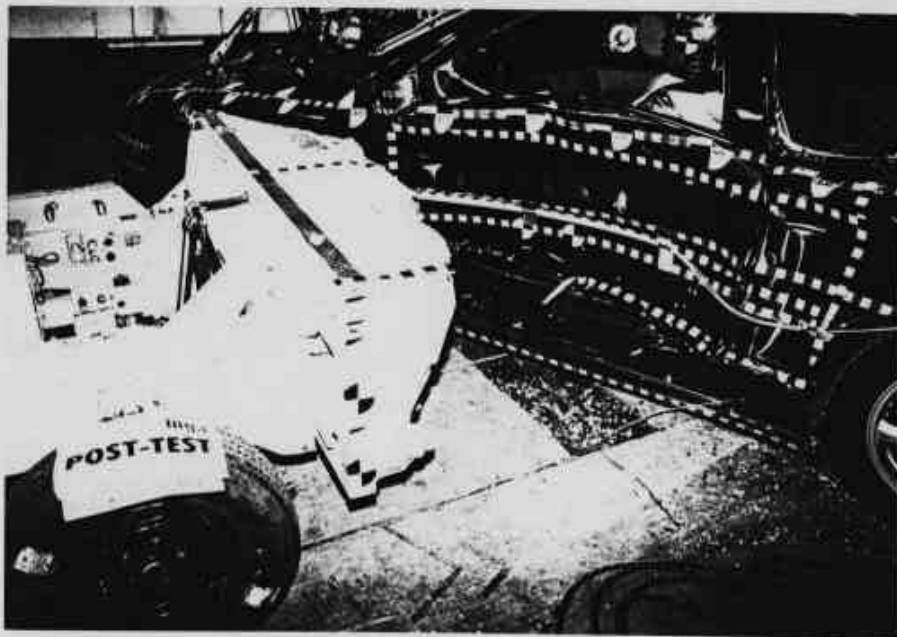


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

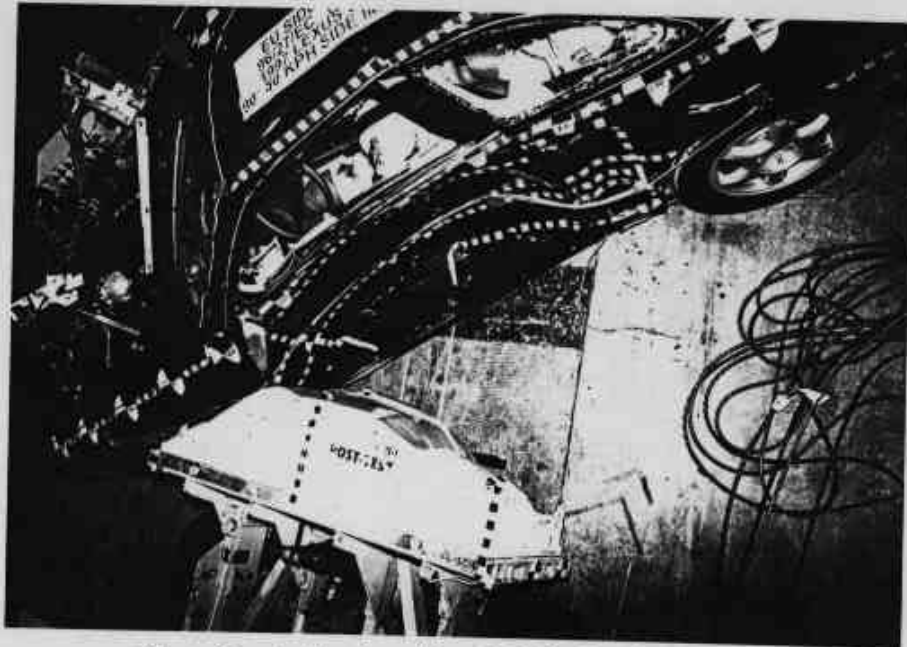


Photo No. A-12 - Post-Test Vehicle Overhead View

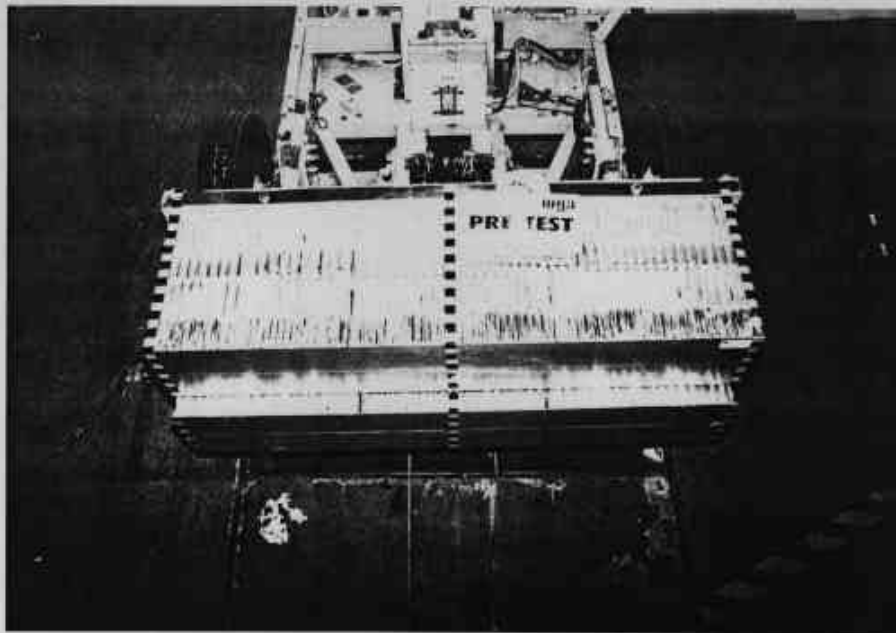


Photo No. A-13 - Pre-Test MDB Top View

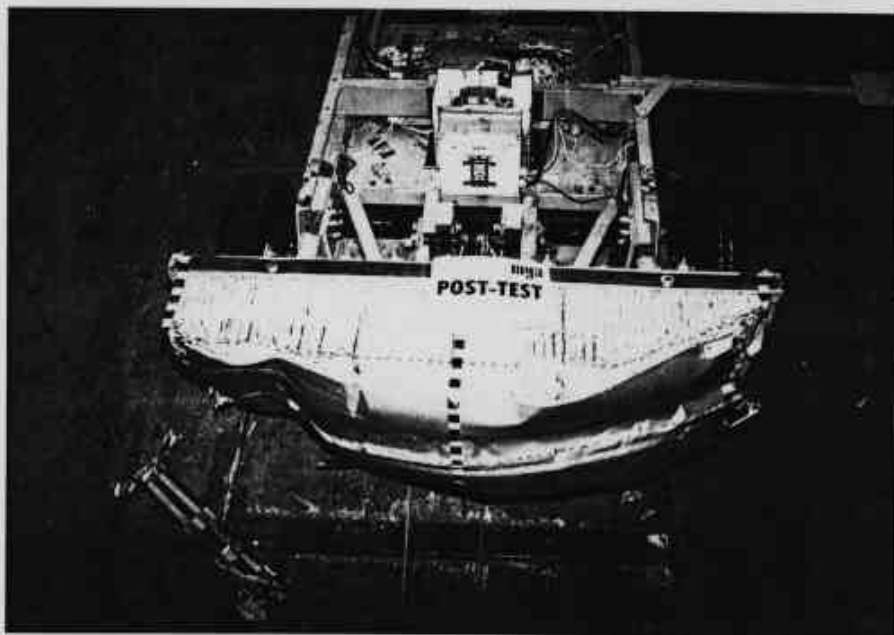


Photo No. A-14 - Post-Test MDB Top View

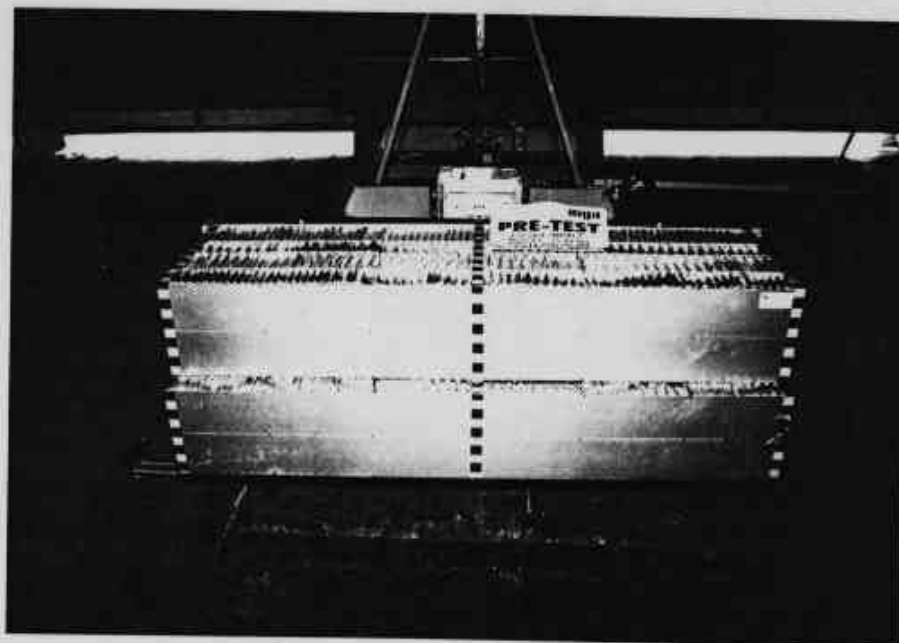


Photo No. A-15 - Pre-Test MDB Front View

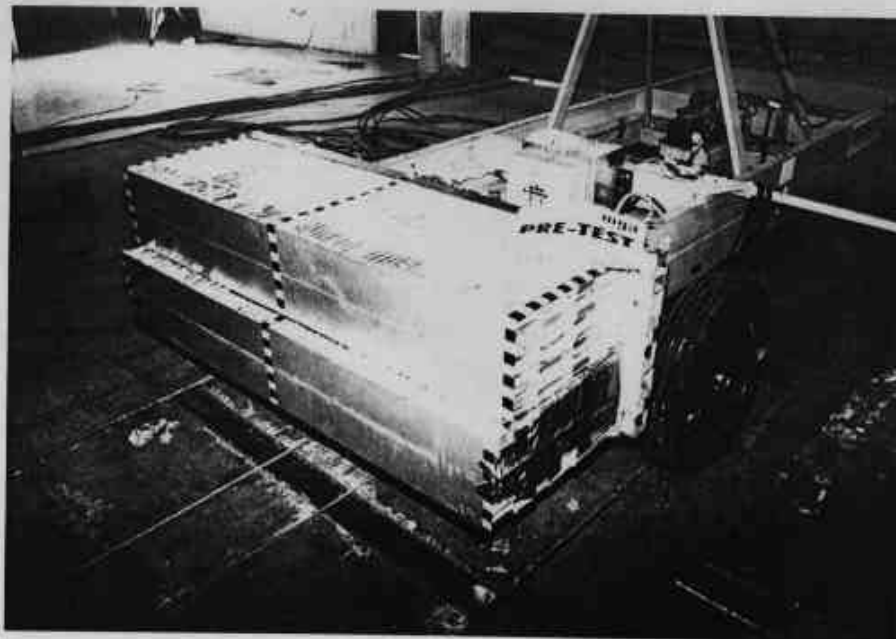


Photo No. A-16 - Pre-Test MDB Left Side View



Photo No. A-17 - Post-Test MDB Left Side View

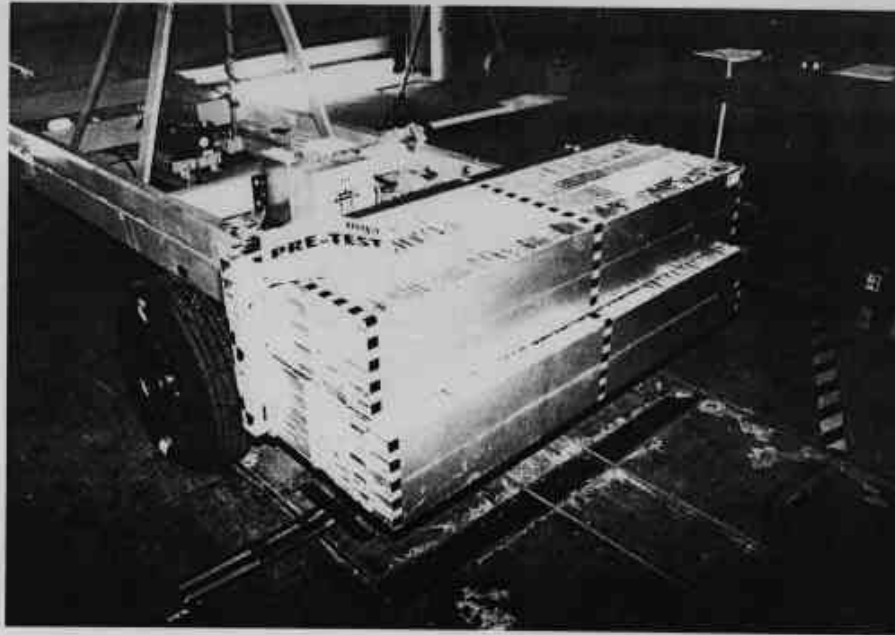


Photo No. A-18 - Pre-Test MDB Right Side View



Photo No. A-19 - Post-Test MDB Right Side View

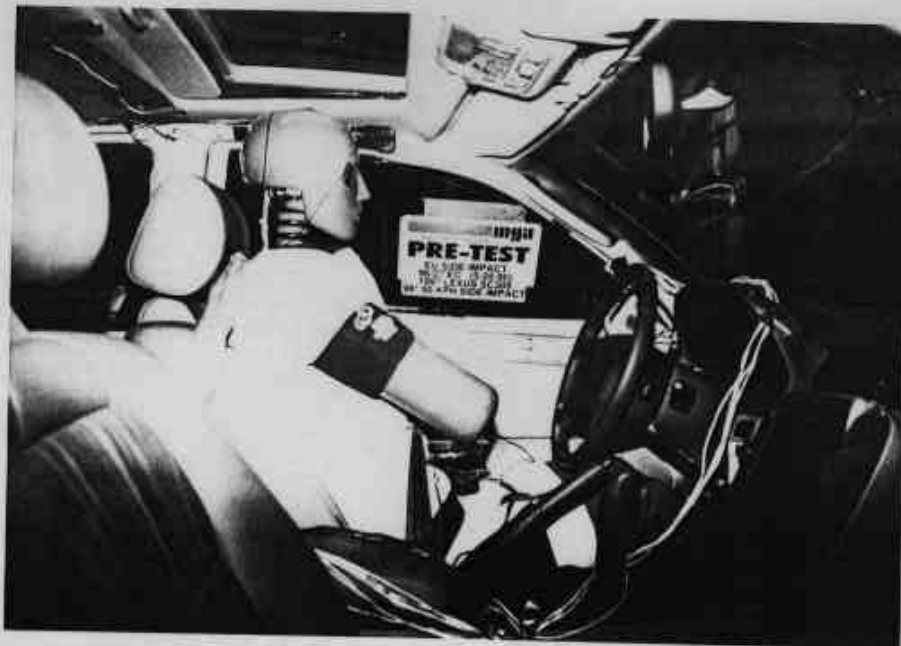


Photo No. A-20 - Pre-Test Driver Dummy Right Side View



Photo No. A-21 - Post-Test Driver Dummy Right Side View

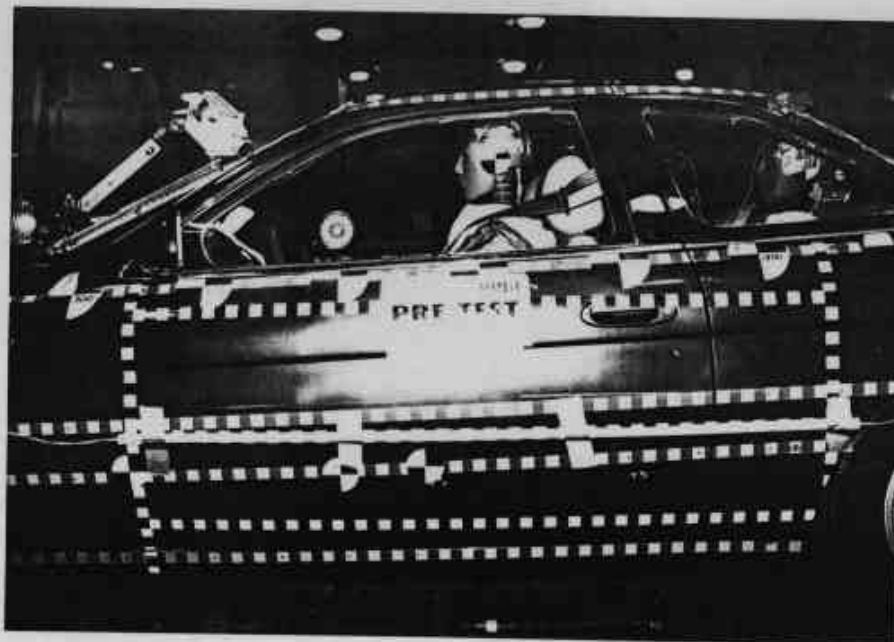


Photo No. A-22 - Pre-Test Driver Dummy Left Side View

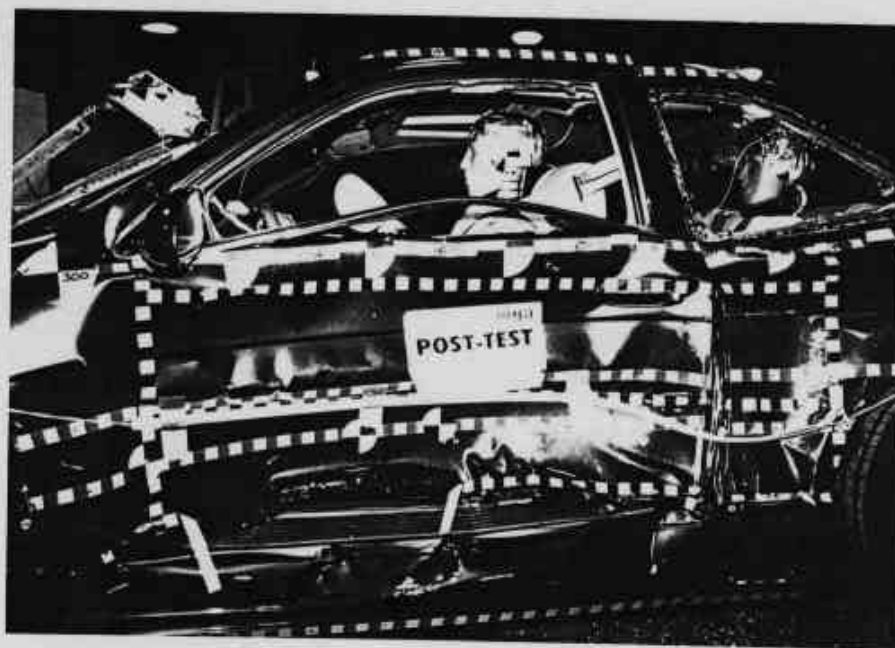


Photo No. A-23 - Post-Test Driver Dummy Left Side View

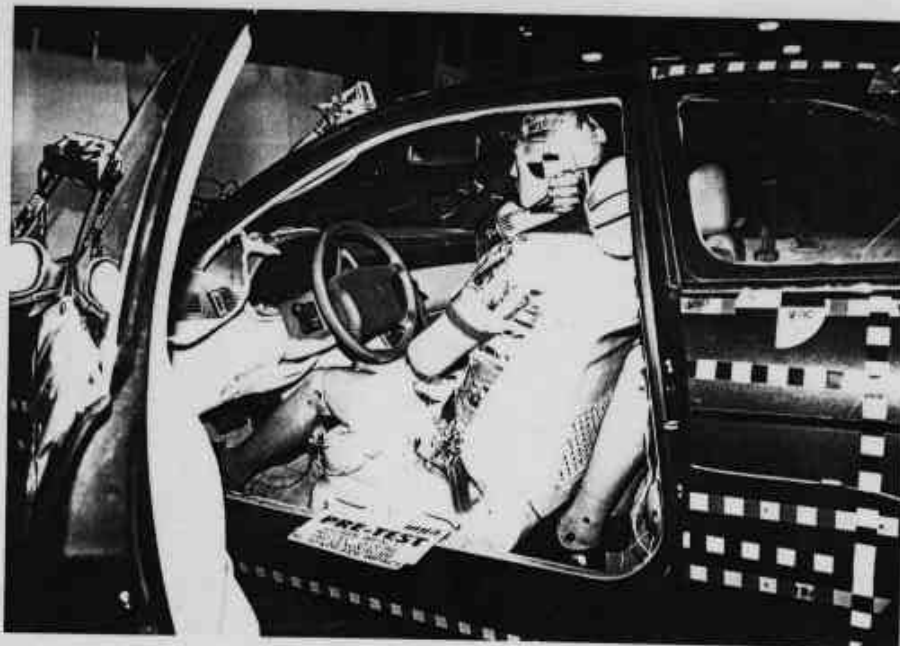


Photo No. A-24 - Pre-Test Driver Dummy Left Side View (Door Open)



Photo No. A-25 - Pre-Test Driver Shoulder and Door Top View

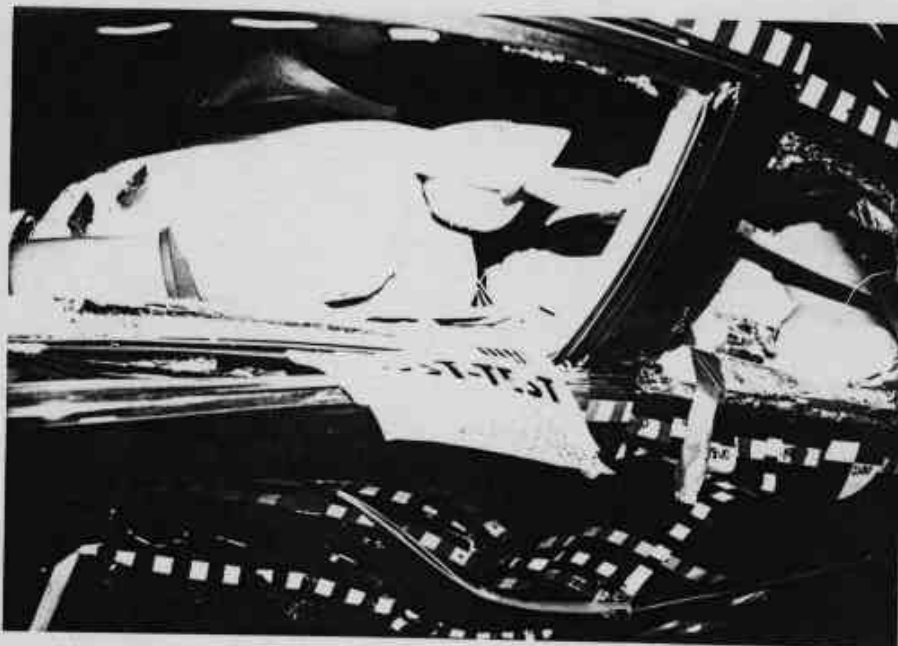


Photo No. A-26 - Post-Test Driver Shoulder and Door Top View



Photo No. A-27 - Post-Test Driver Dummy Contact

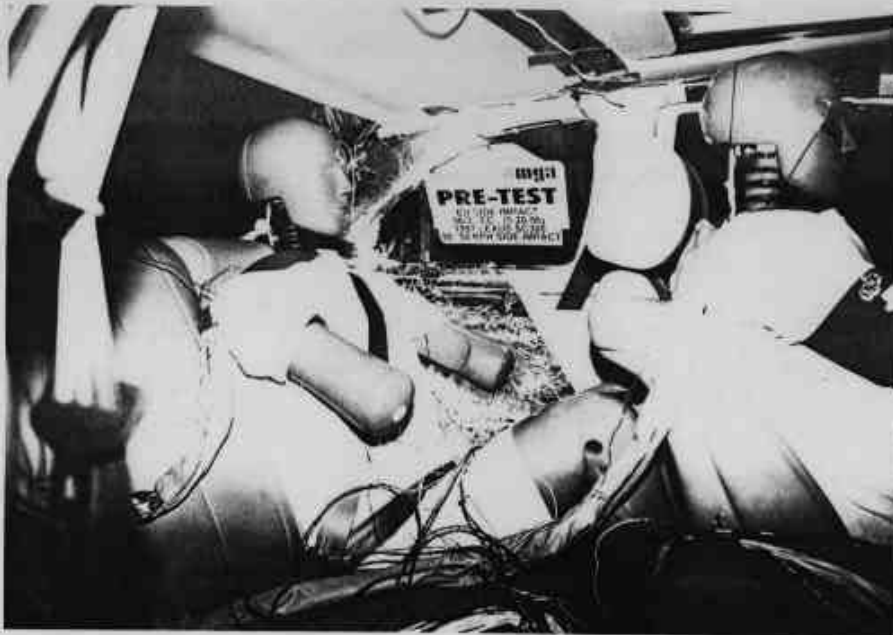


Photo No. A-28 - Pre-Test Left Rear Passenger Dummy Right Side View



Photo No. A-29 - Post-Test Left Rear Passenger Dummy Right Side View



Photo No. A-30 - Pre-Test Left Rear Passenger Dummy Left Side View

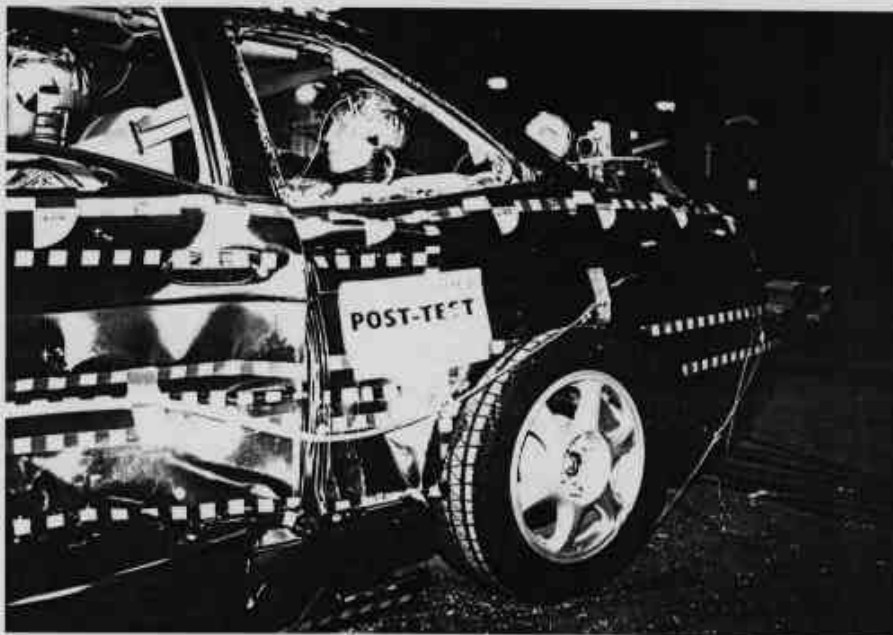


Photo No. A-31 - Post-Test Left Rear Passenger Dummy Left Side View



Photo No. A-32 - Pre-Test Left Rear Passenger Dummy Shoulder View



Photo No. A-33 - Post-Test Left Rear Passenger Dummy Shoulder View



Photo No. A-34 - Post-Test Left Rear Passenger Dummy Contact



Photo No. A-35 - Post-Test Left Rear Passenger Dummy Head Contact

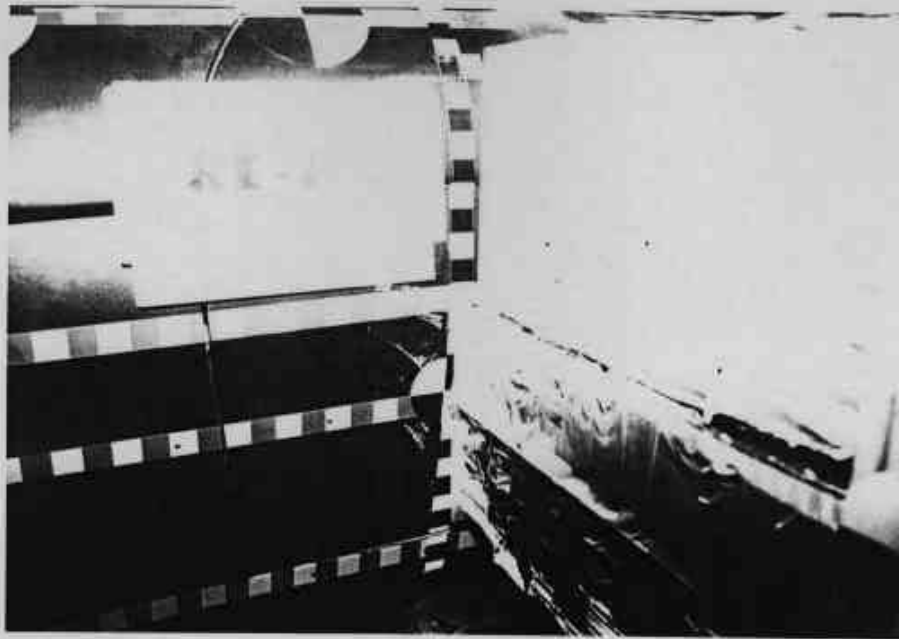


Photo No. A-36 - Pre-Test Left Front Impact Point on Vehicle



Photo No. A-37 - Post-Test Left Front Impact Point on Vehicle

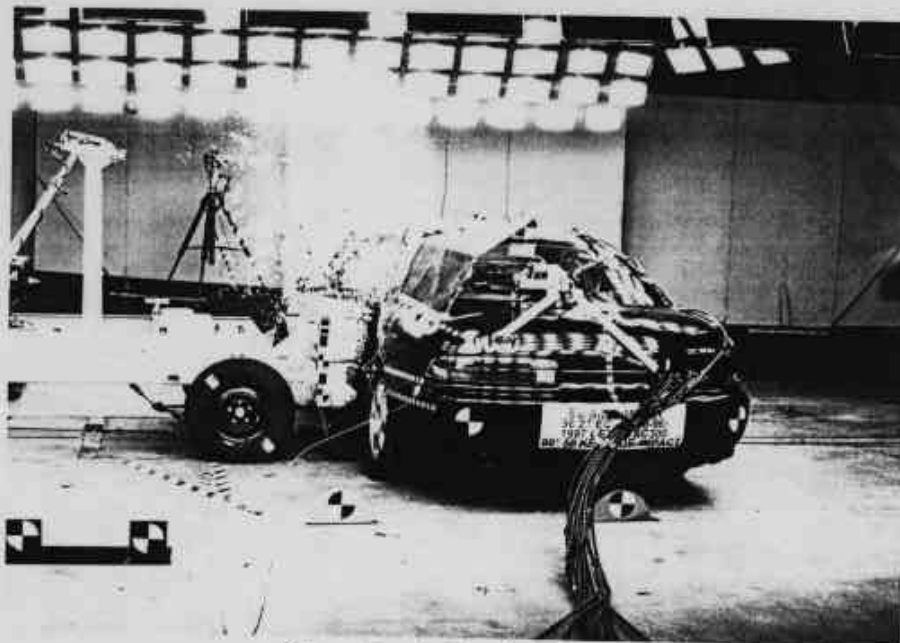


Photo No. A-38 - Impact



Photo No. A-39 - Left Front Attitude Point



Photo No. A-40 - Right Front Attitude Point



Photo No. A-41 - Left Rear Attitude Point



Photo No. A-42 - Right Rear Attitude Point

APPENDIX B - VEHICLE AND EUROSID-1 RESPONSE DATA

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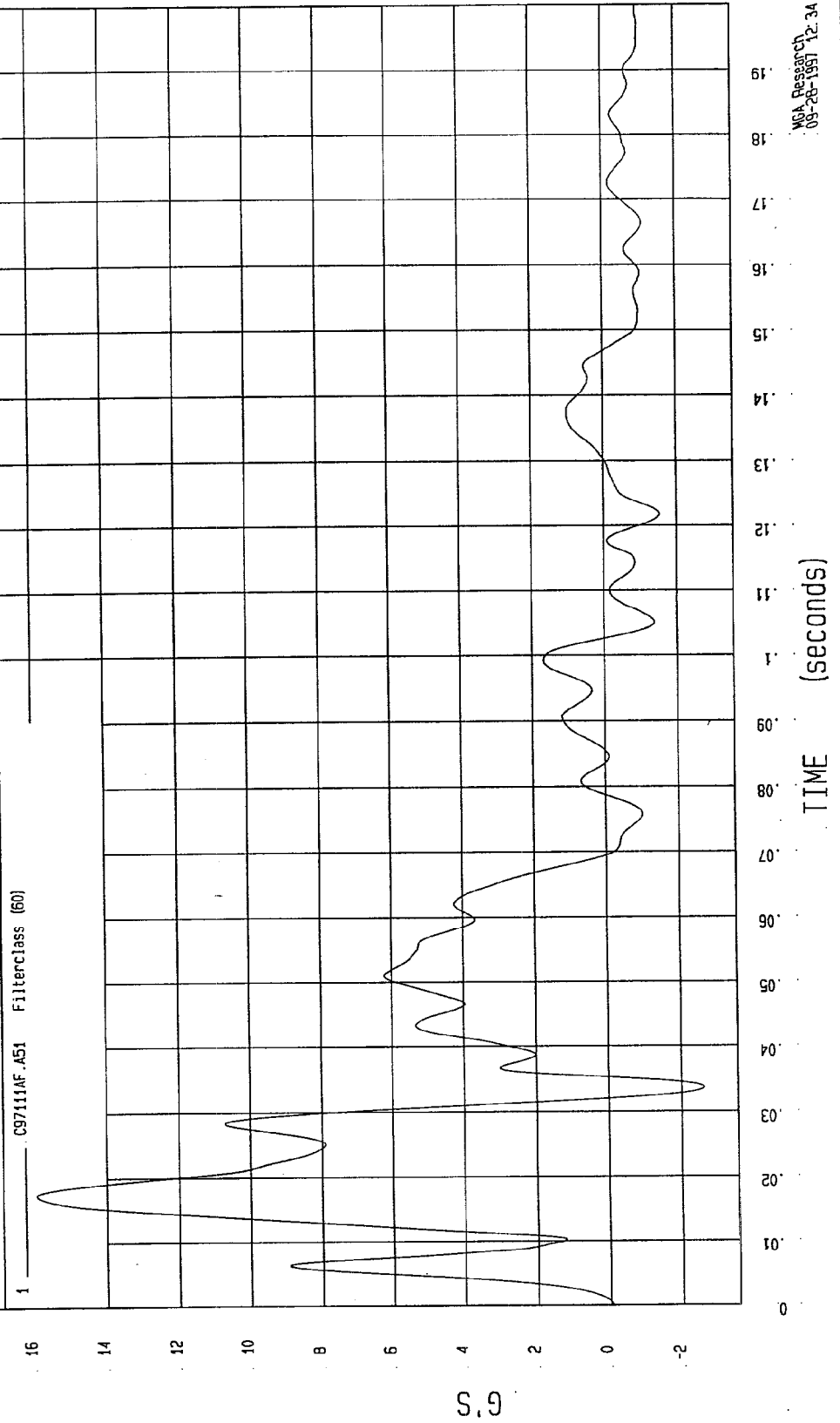
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COMPONENT: 1997 LEXUS SC300

Minimum = -2.61 G'S at 34 msec

Maximum = 15.93 G'S at 17 msec

LEFT LOWER A-POST Y ACCELERATION



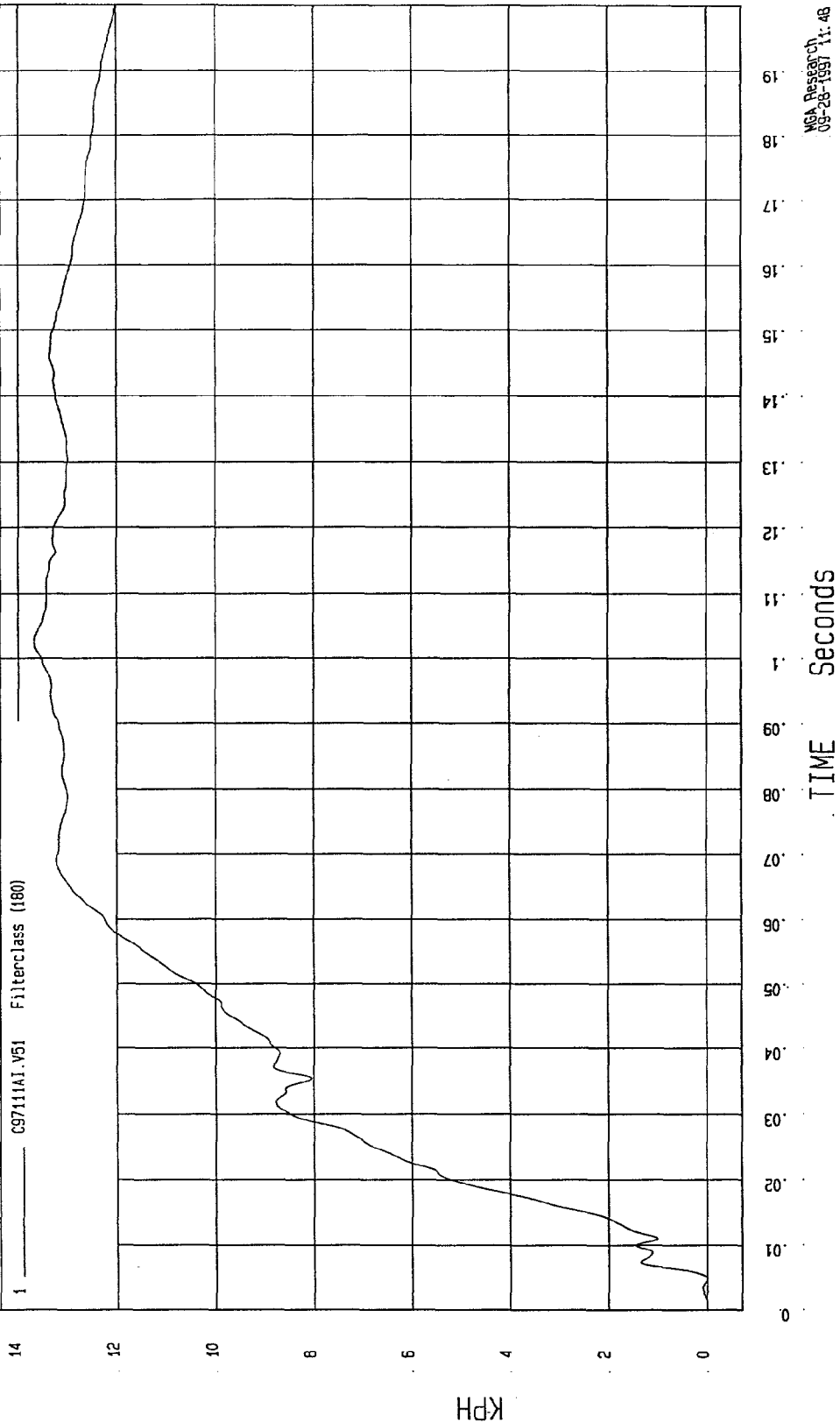
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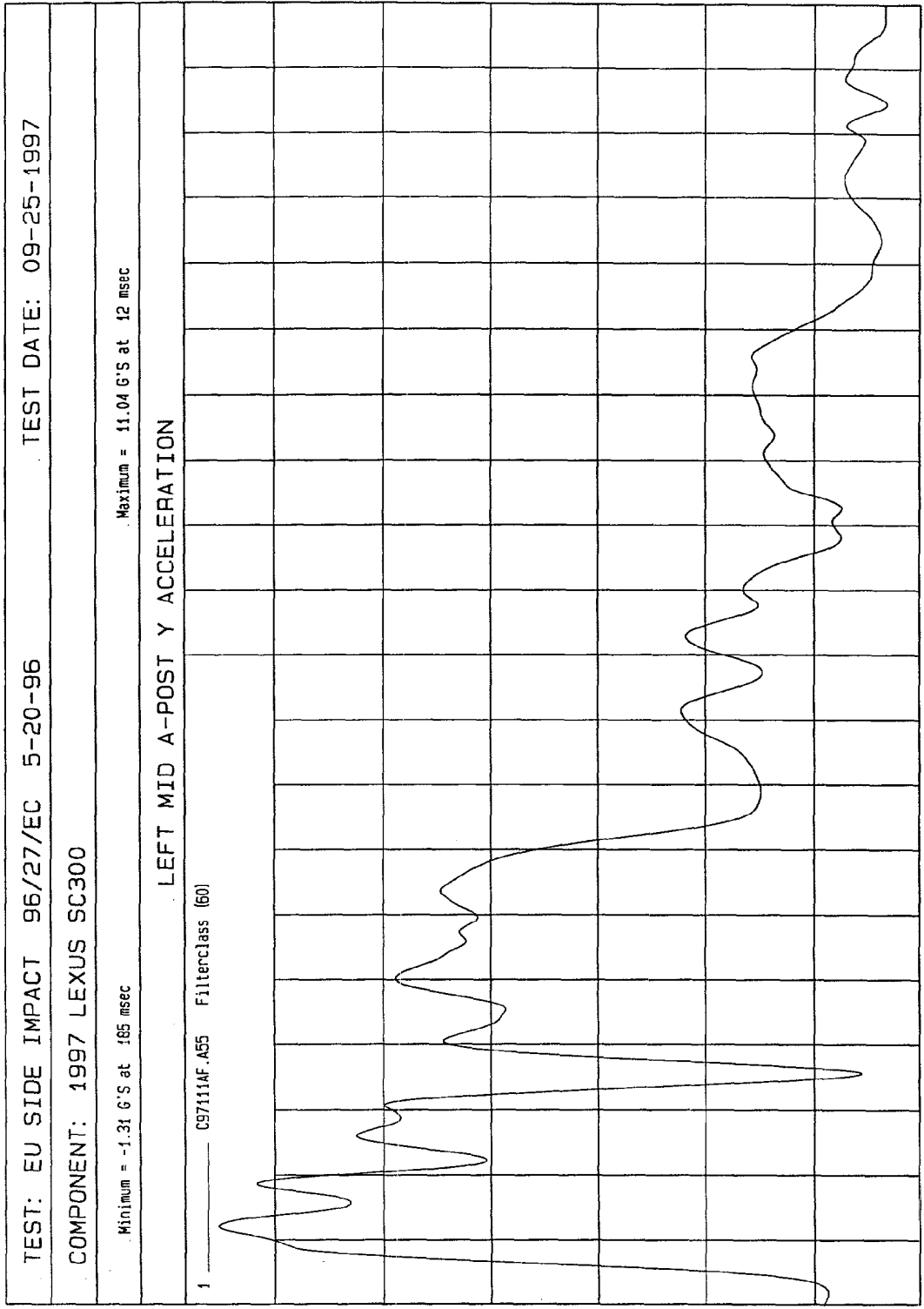
COMPONENT: 1997 LEXUS SC300

Minimum = -1.39E-02 KPH at -6 msec

Maximum = 13.68 KPH at 103 msec

LEFT LOWER A-POST Y VELOCITY





MSA Research
09-28-1997 12:34

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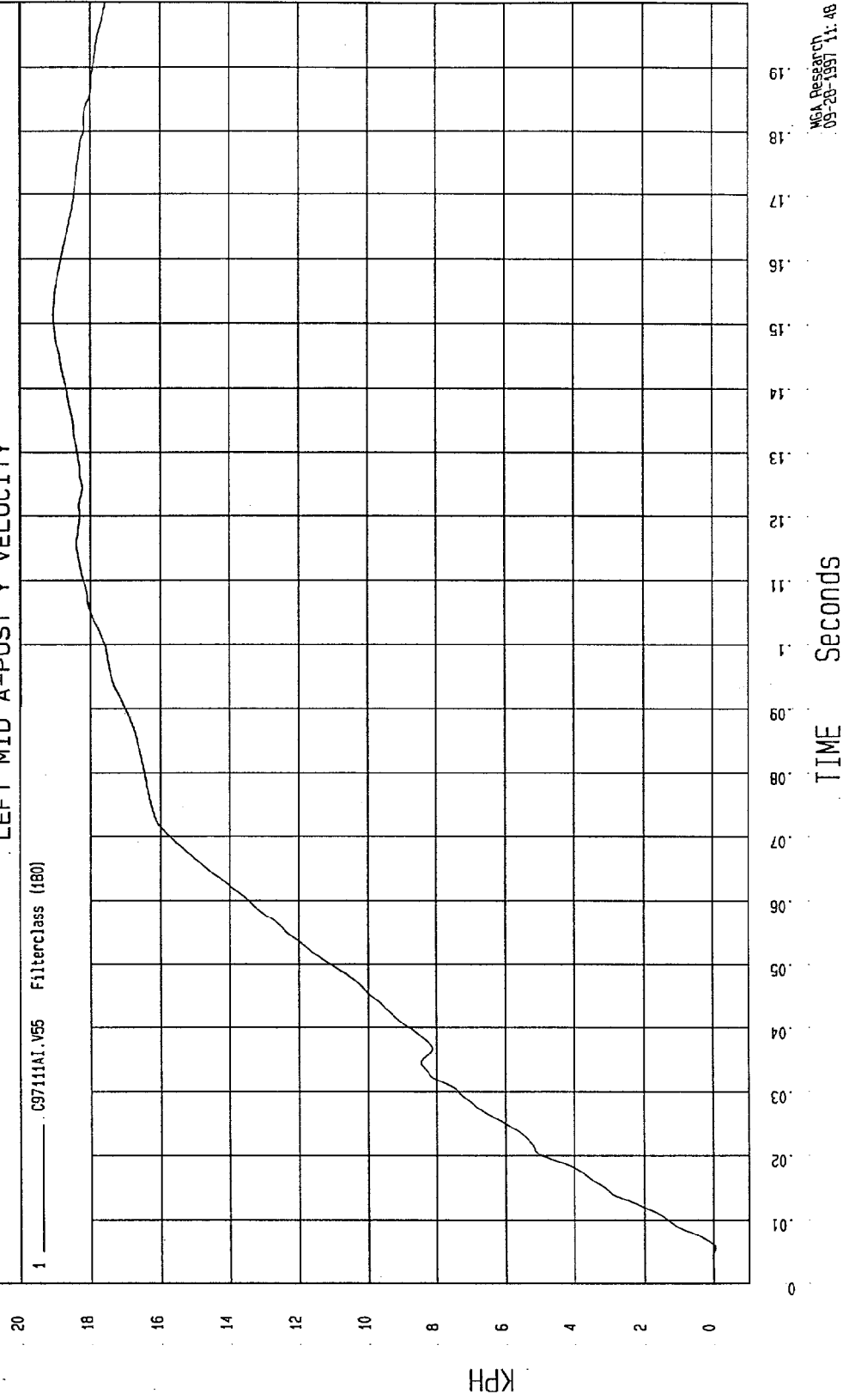
COMPONENT: 1997 LEXUS SC300

Minimum = -5.39E-02 KPH at 6 msec

Maximum = 19.07 KPH at 151 msec

LEFT MID A-POST Y VELOCITY

1 C97111A1.V55 Filterclass (180)



MSA Research
09-26-1997 11:48

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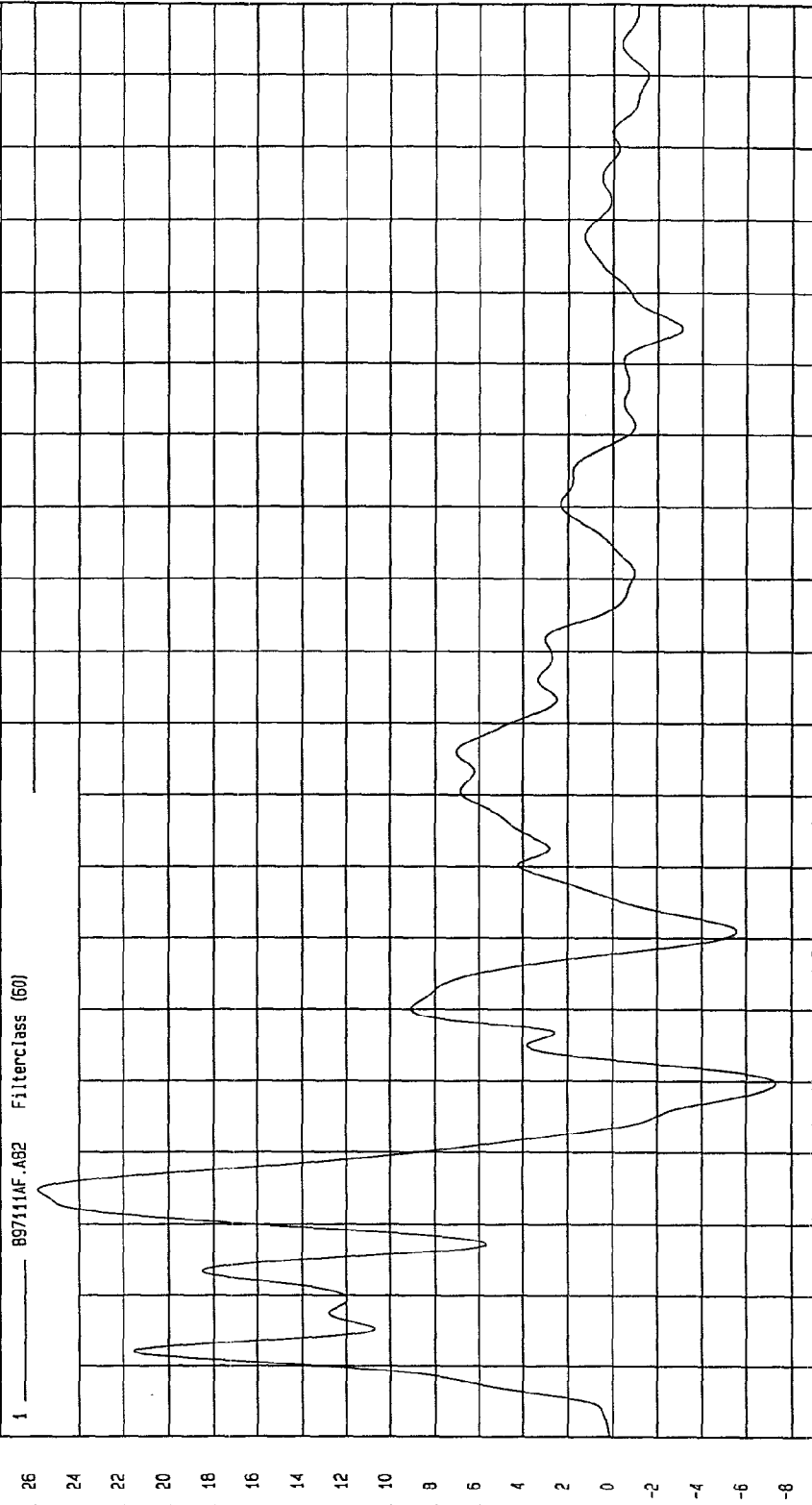
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COMPONENT: 1997 LEXUS SC300

Maximum = 25.86 G'S at 35 msec

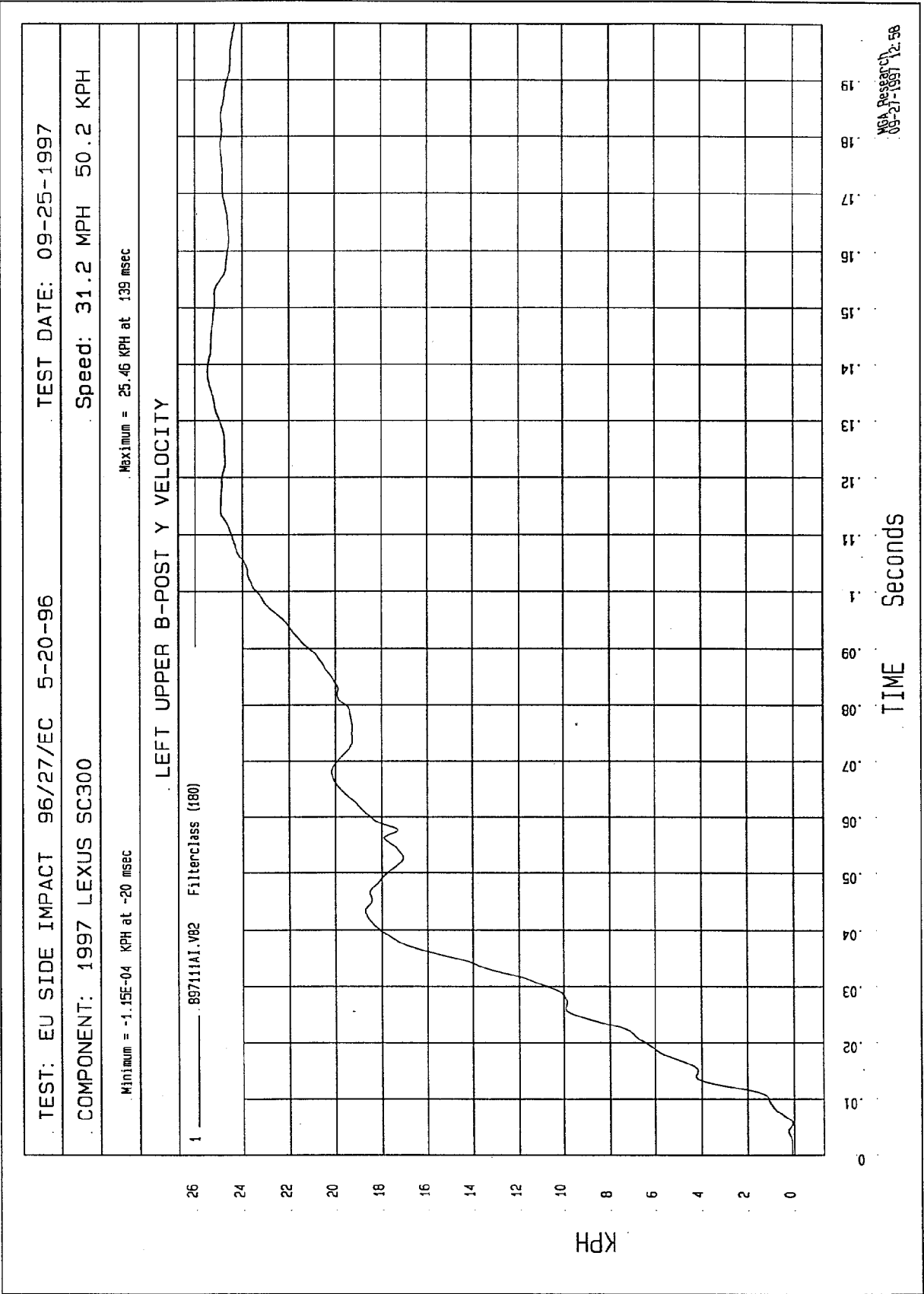
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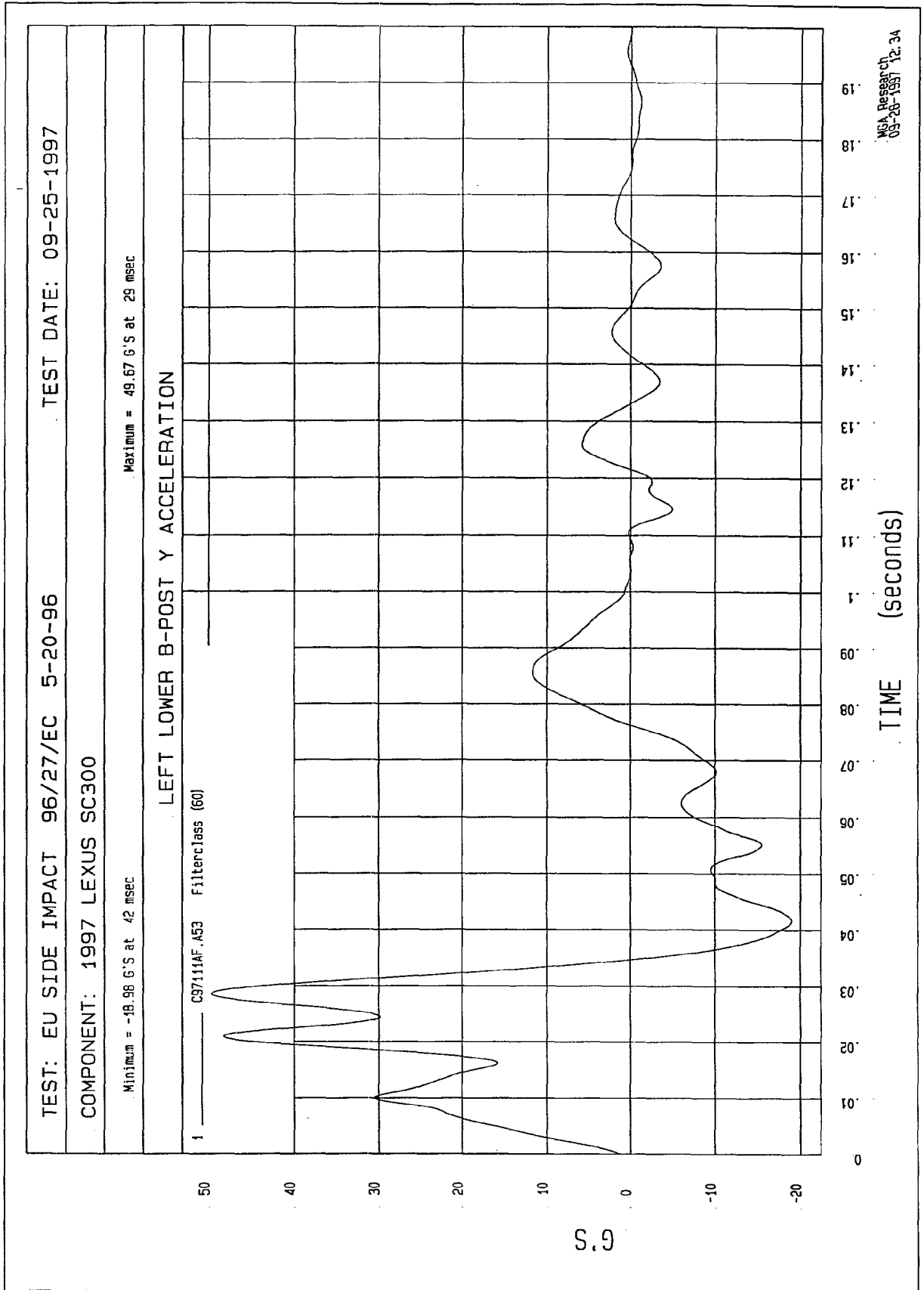
LEFT UPPER B-POST Y ACCELERATION



TIME (SECONDS)

MGA Research
09-27-1997 12:58





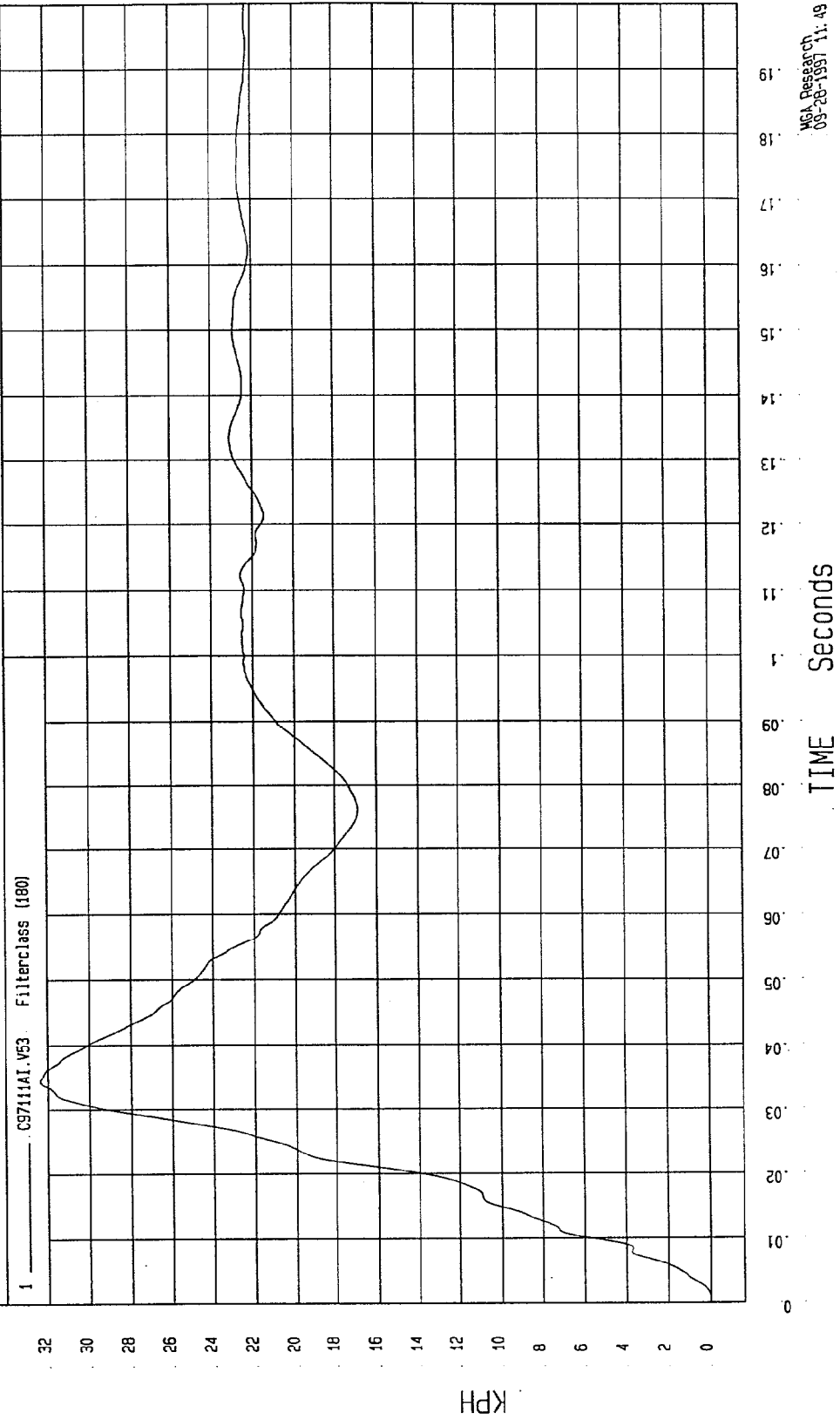
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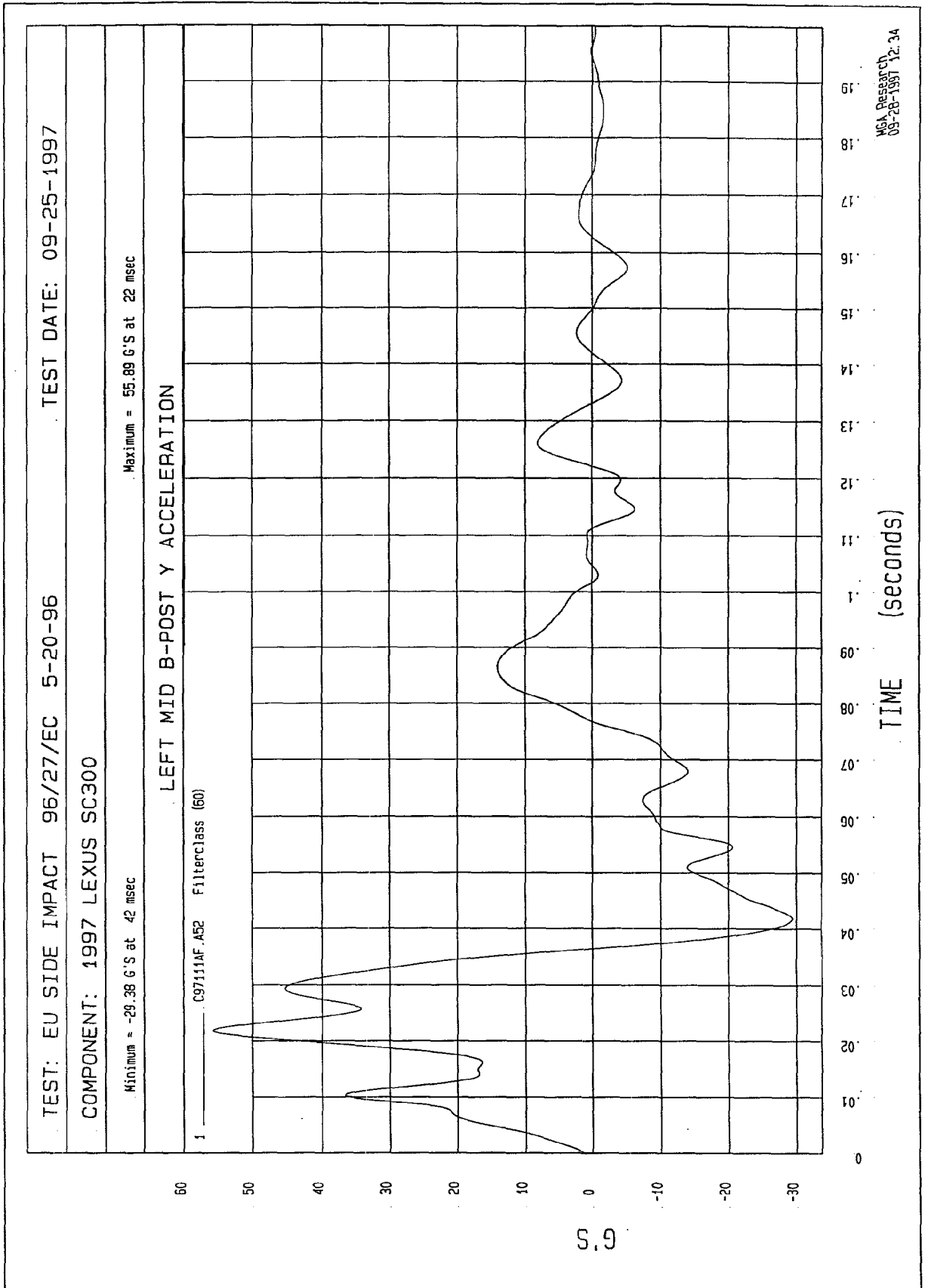
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Maximum = 32.35 KPH at 34 msec

LEFT LOWER B-POST Y VELOCITY





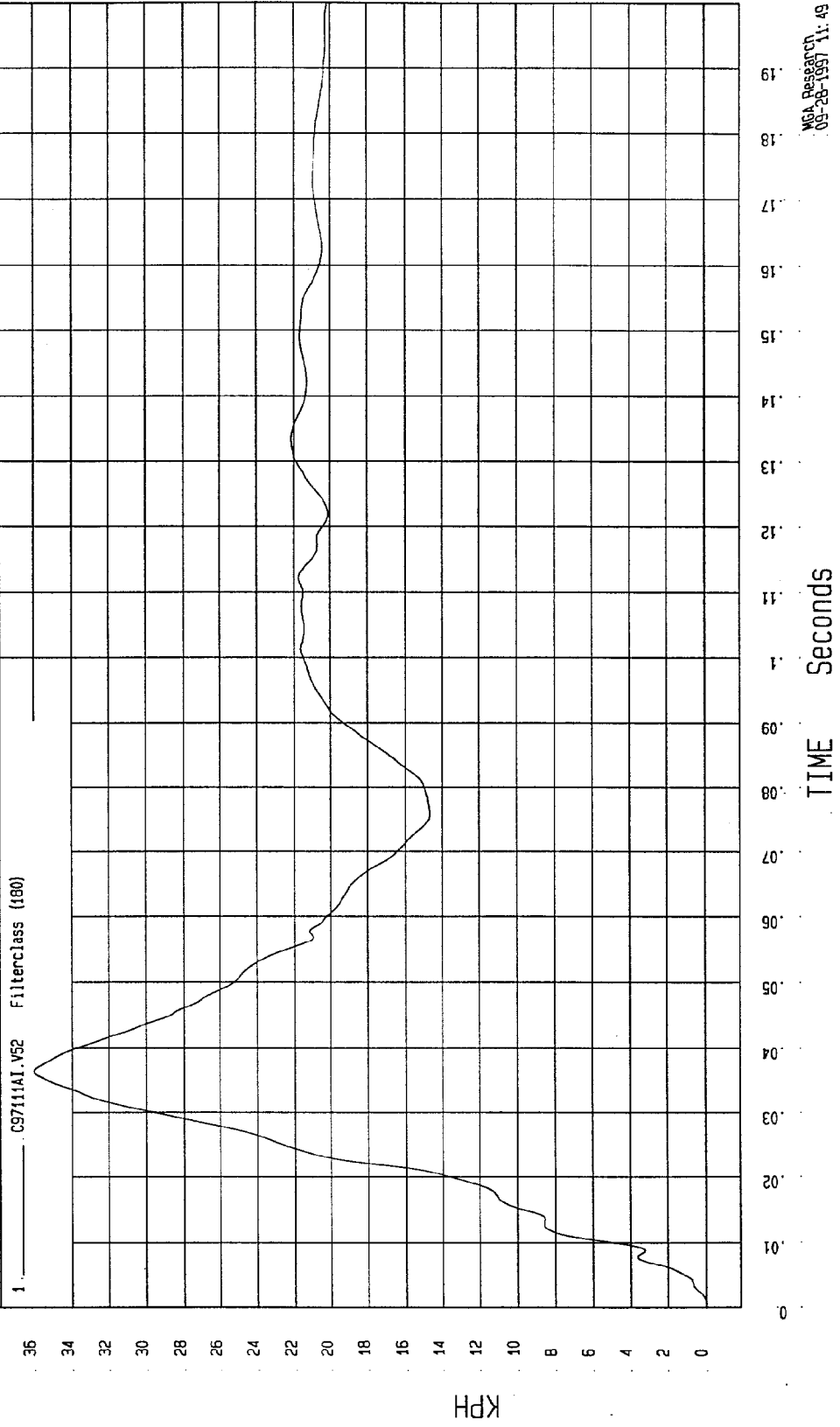
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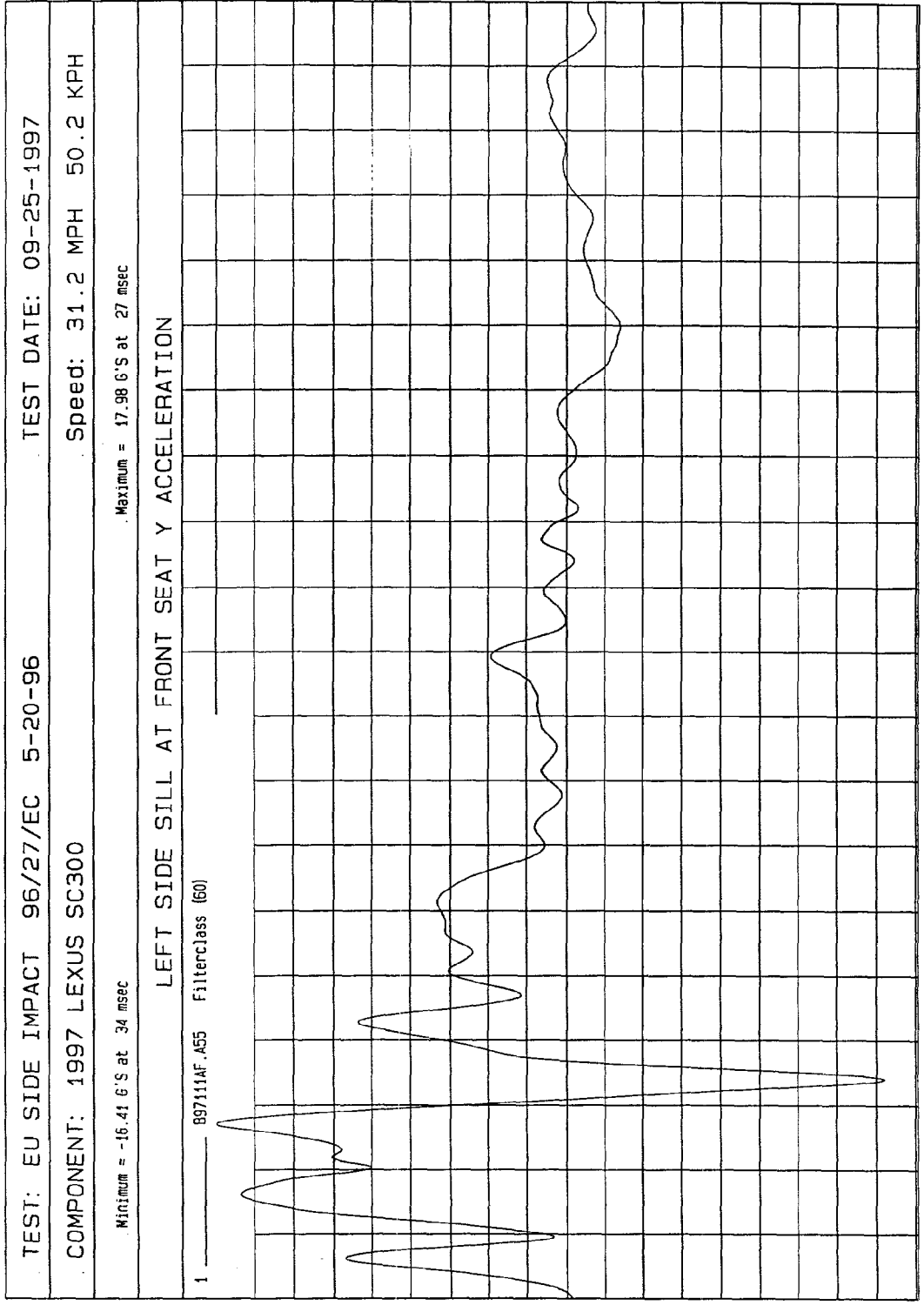
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Maximum = 36.01 KPH at 36 msec

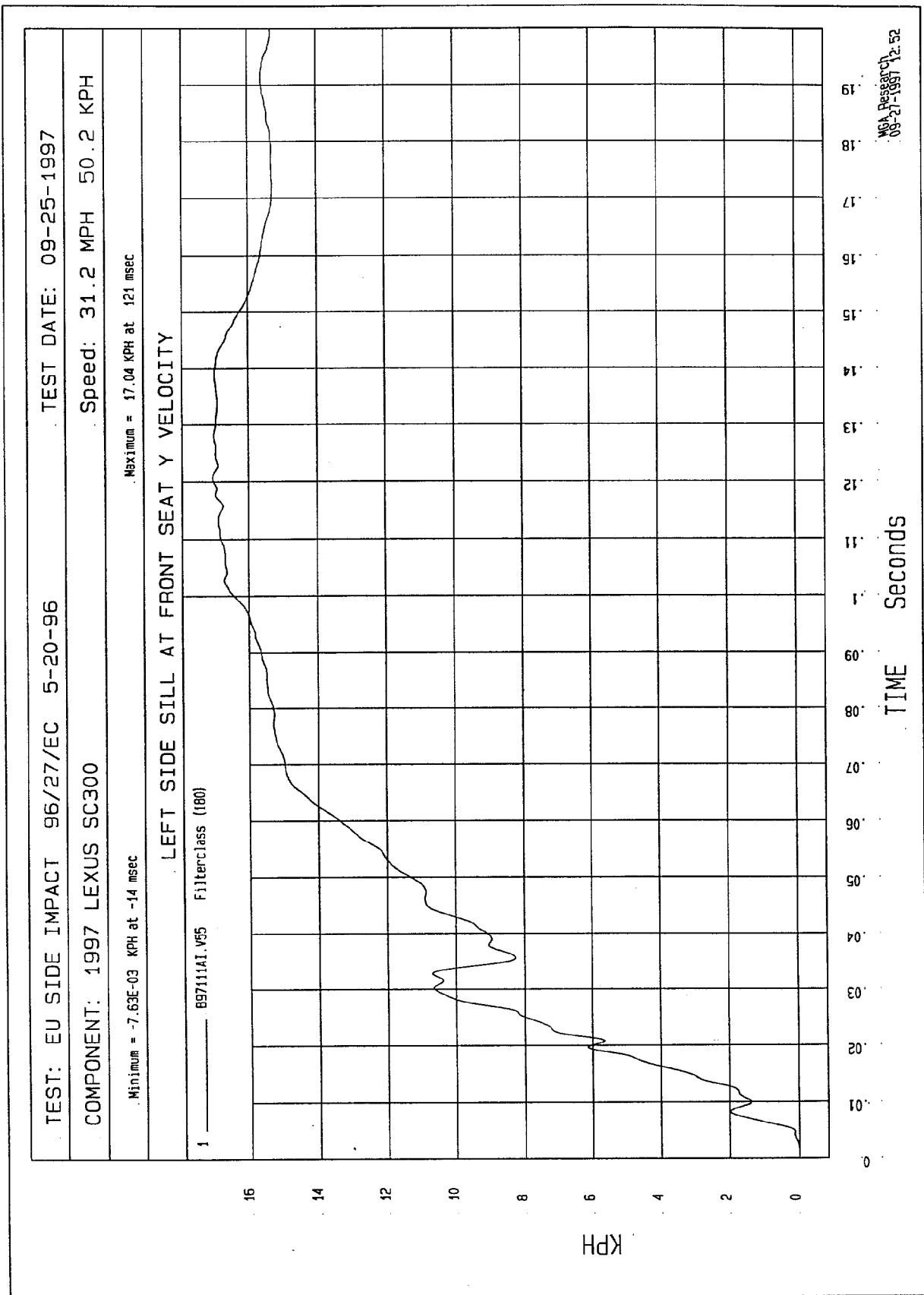
LEFT MID B-POST Y VELOCITY

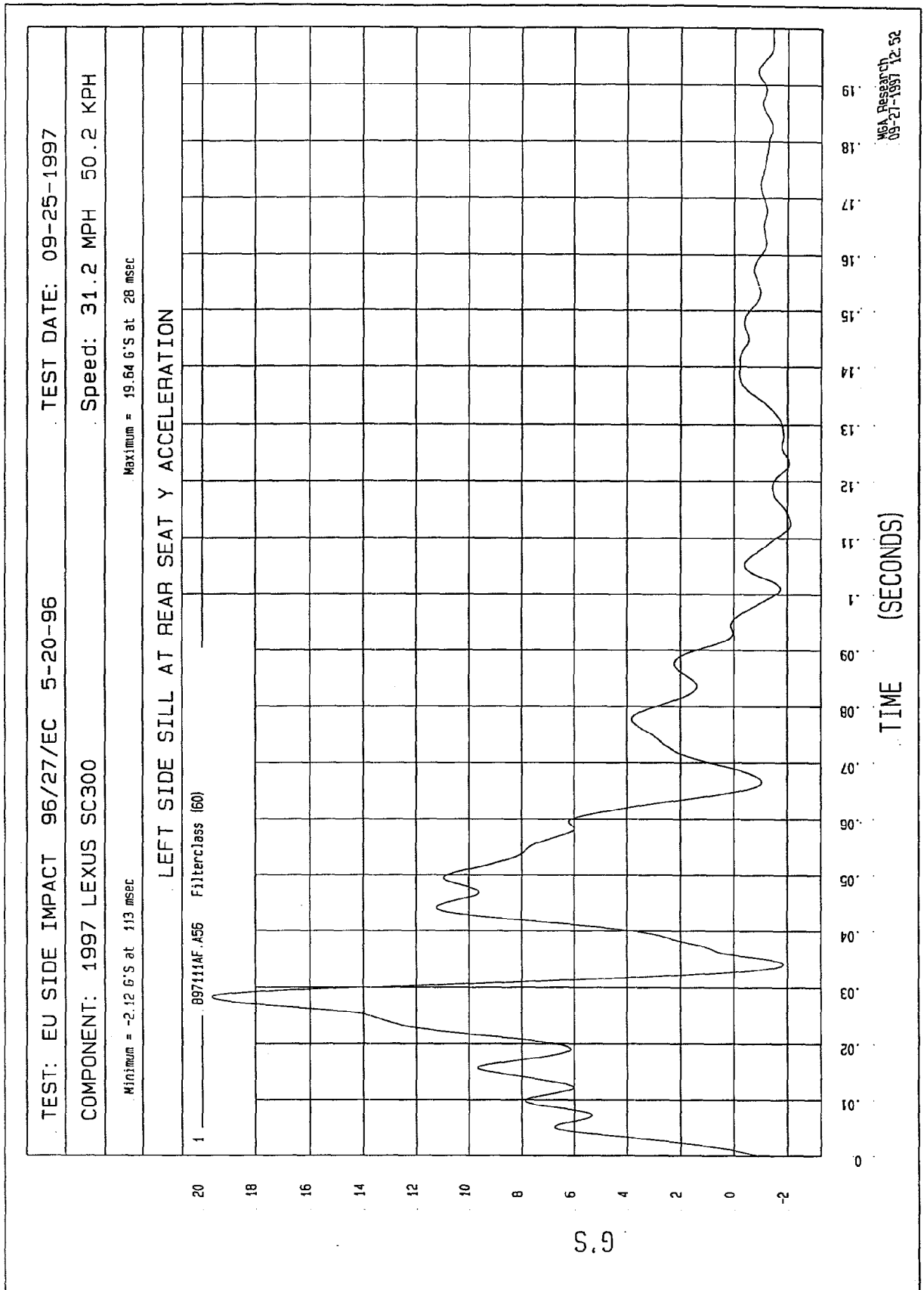


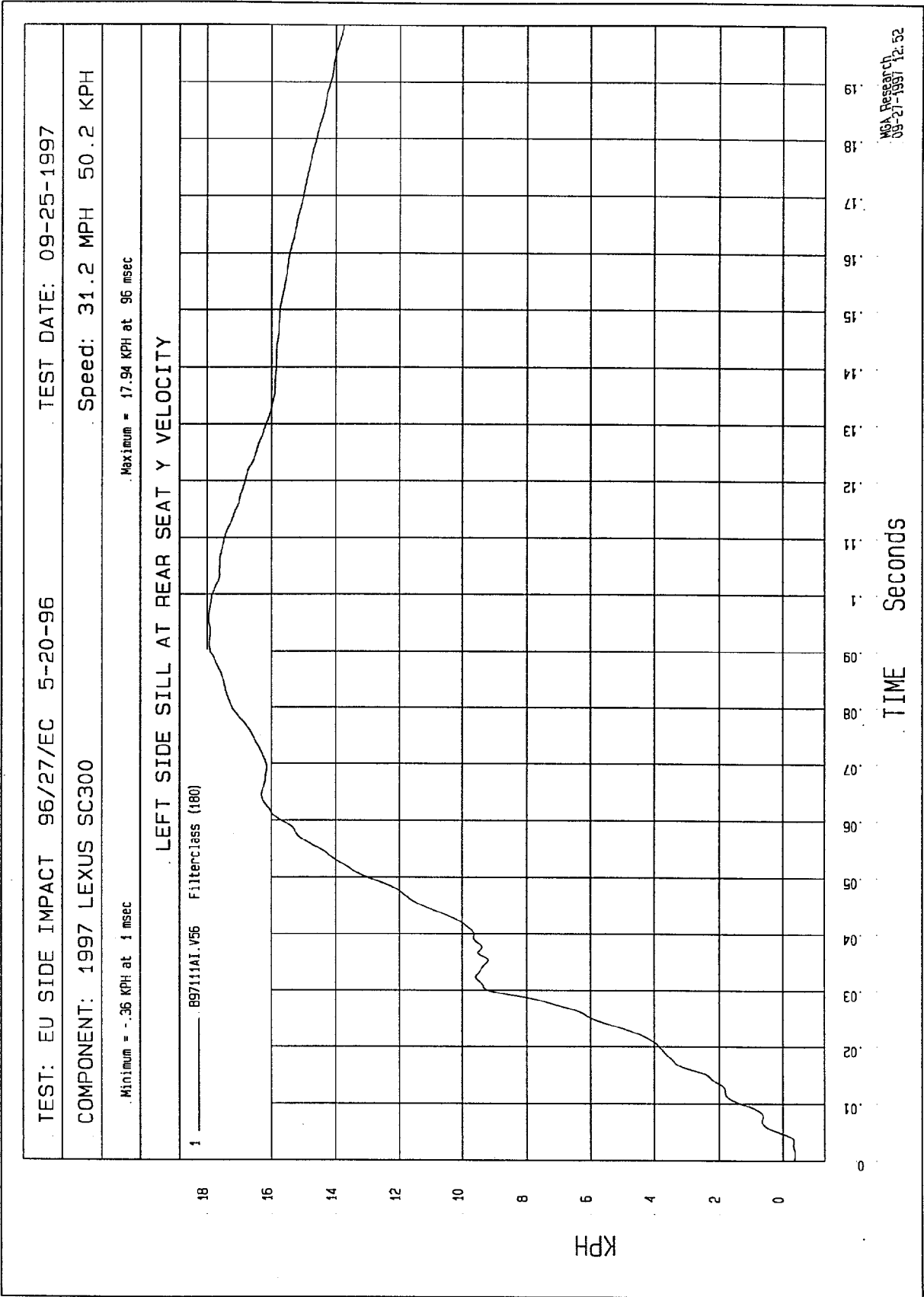


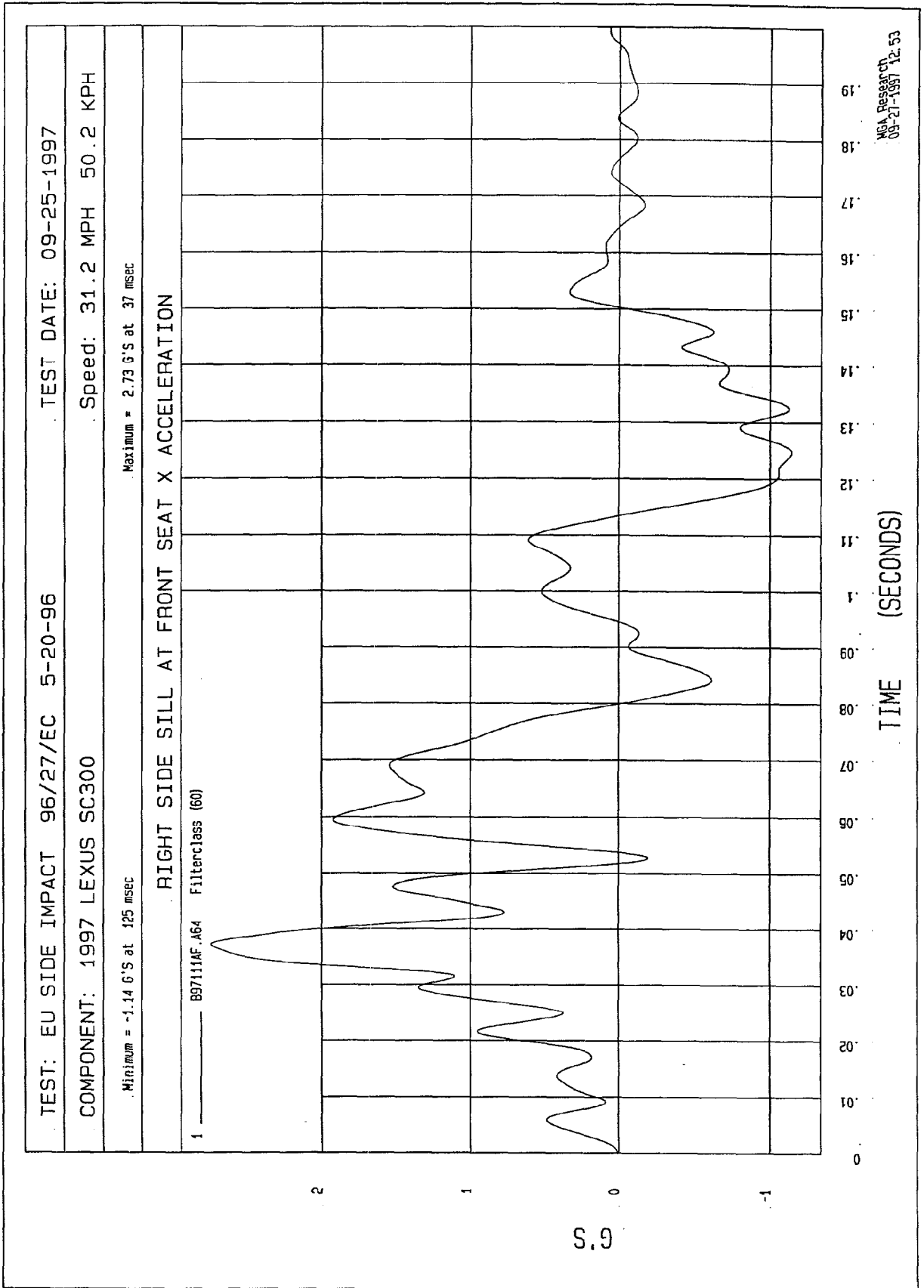
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09-27-1997 12:52

TIME (SECONDS)









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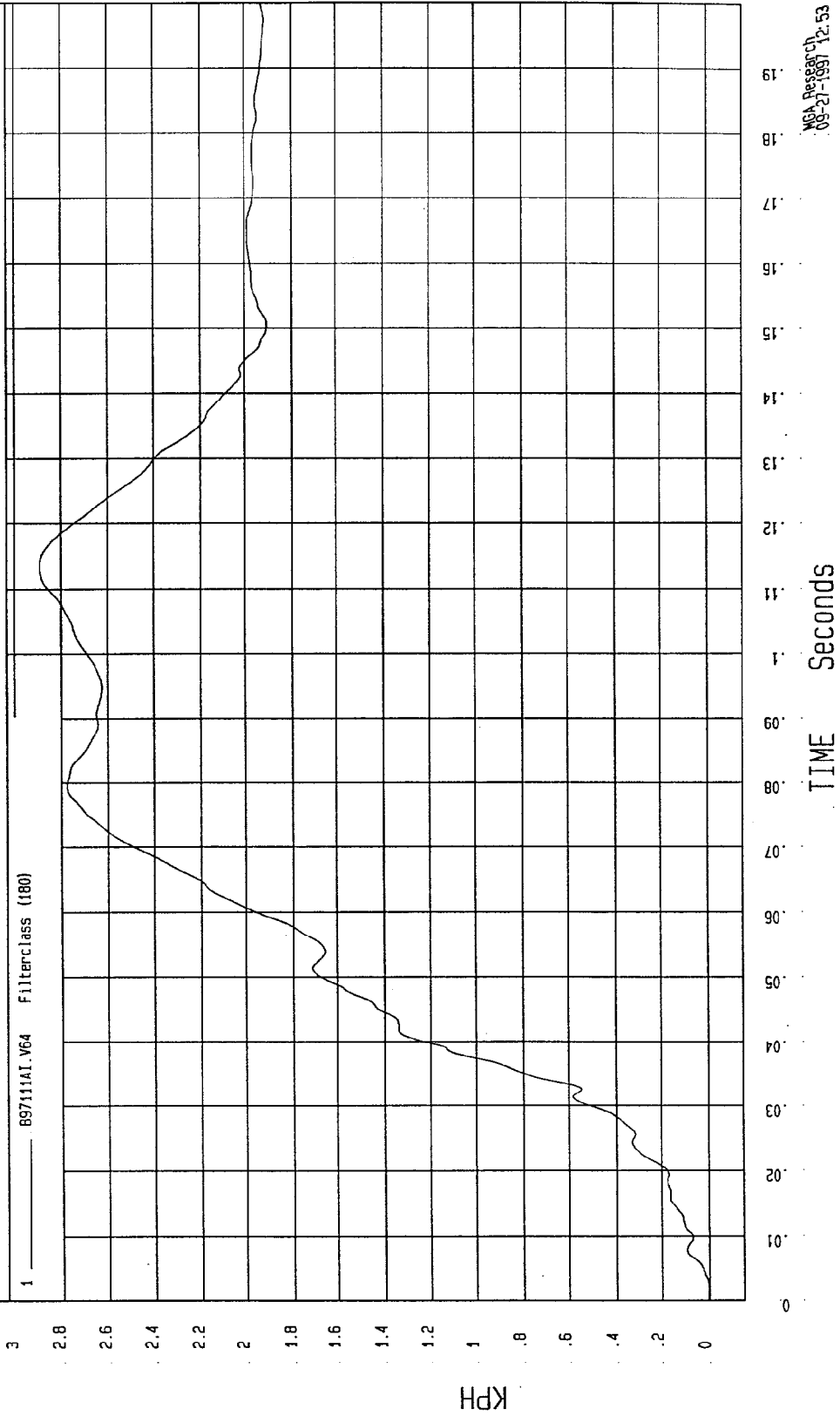
SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

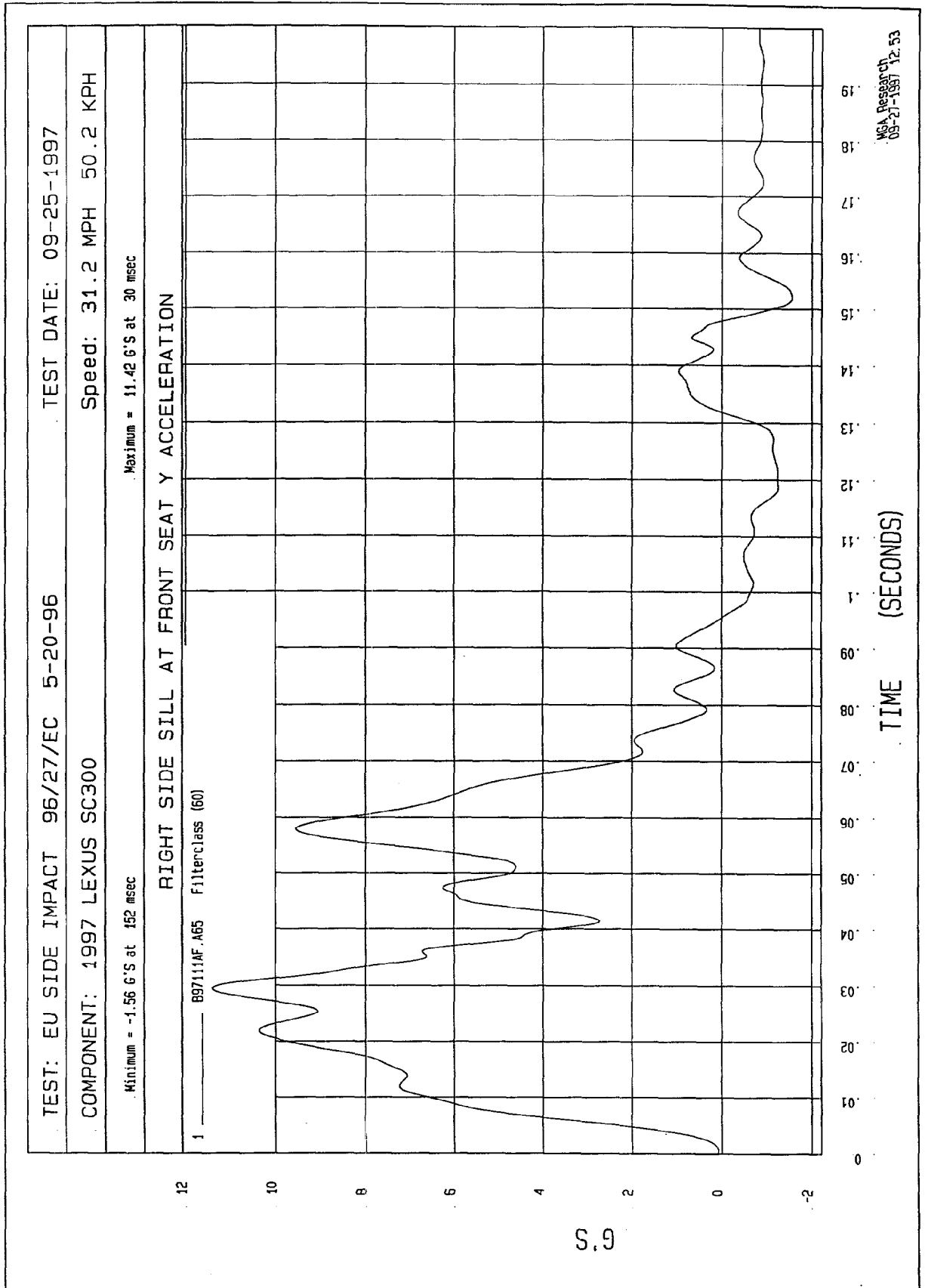
Minimum = -3.00E-03 KPH at -8 msec

Maximum = 2.88 KPH at 114 msec

RIGHT SIDE SILL AT FRONT SEAT X VELOCITY



MECA Research
09-27-1997 12:53

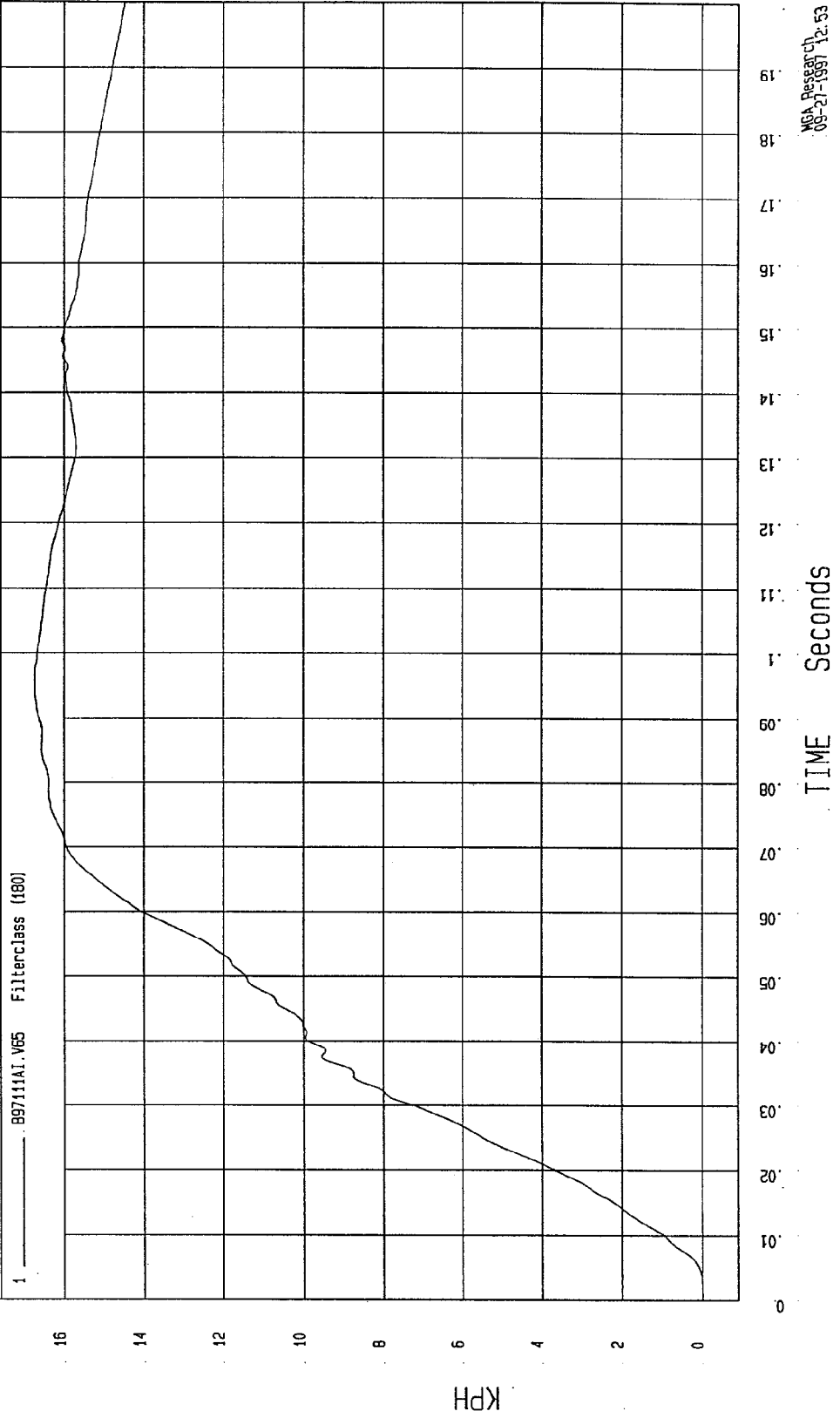


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -4.16E-02 KPH at -7 msec
Maximum = 16.74 KPH at 97 msec

RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY

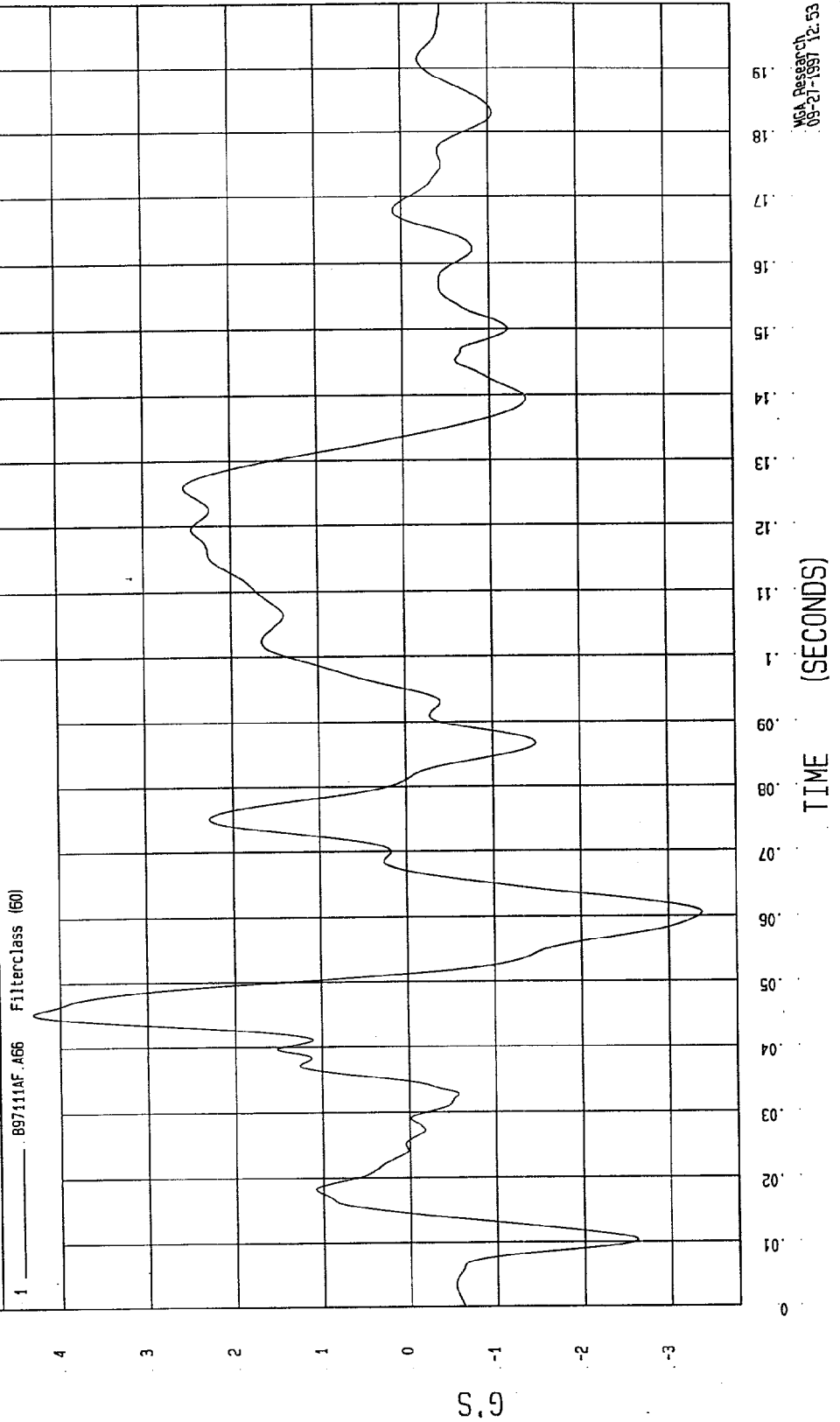


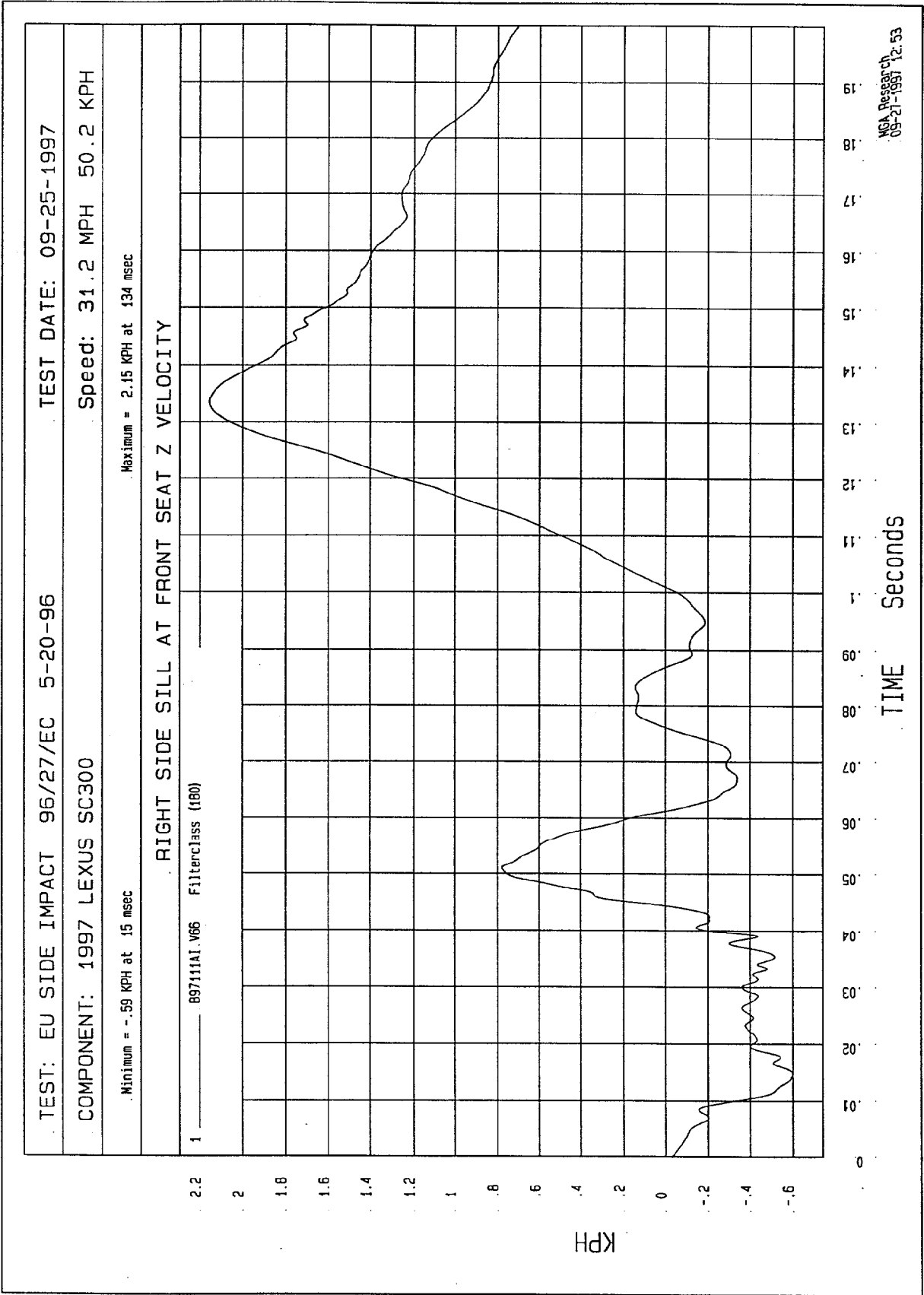
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

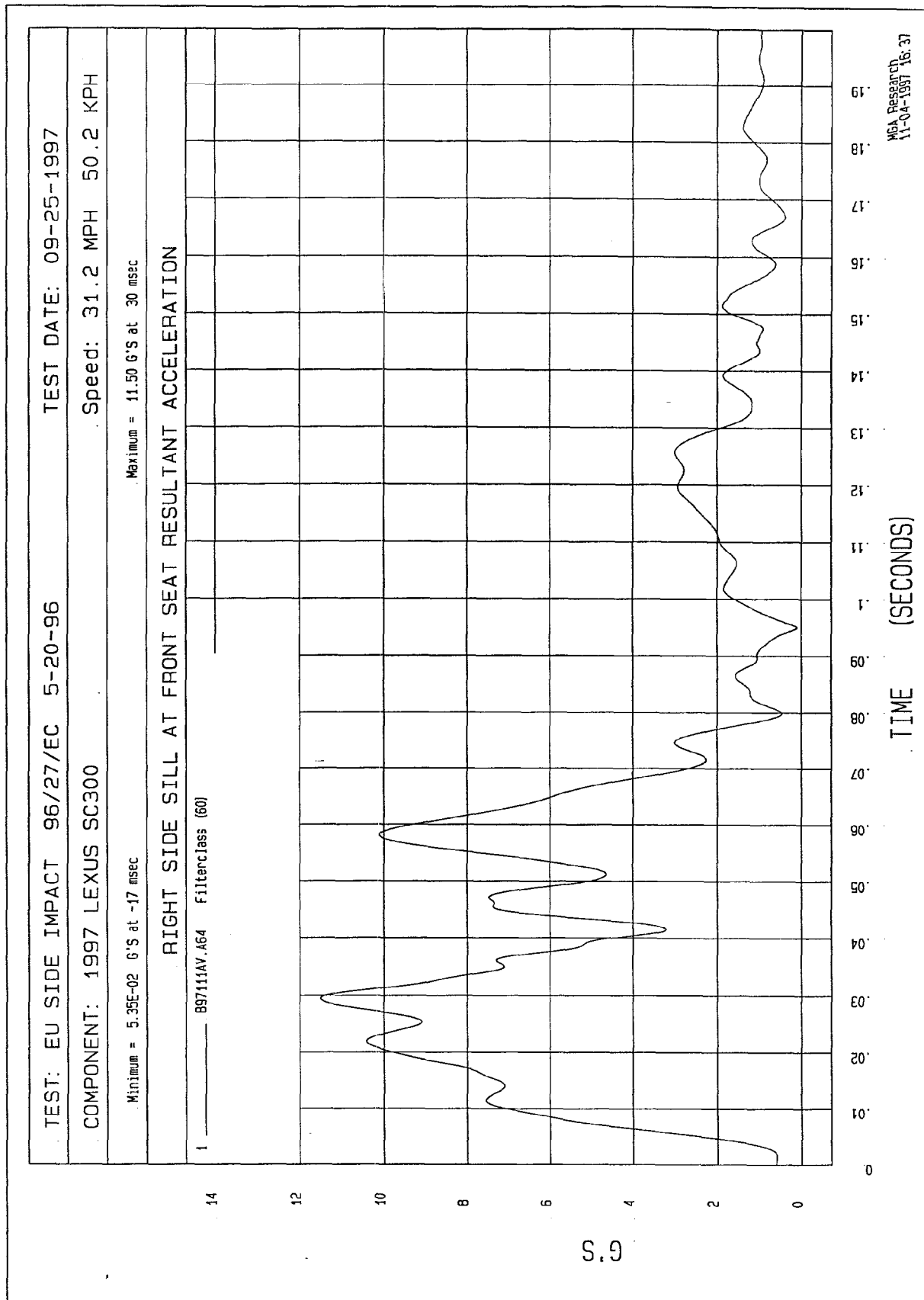
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

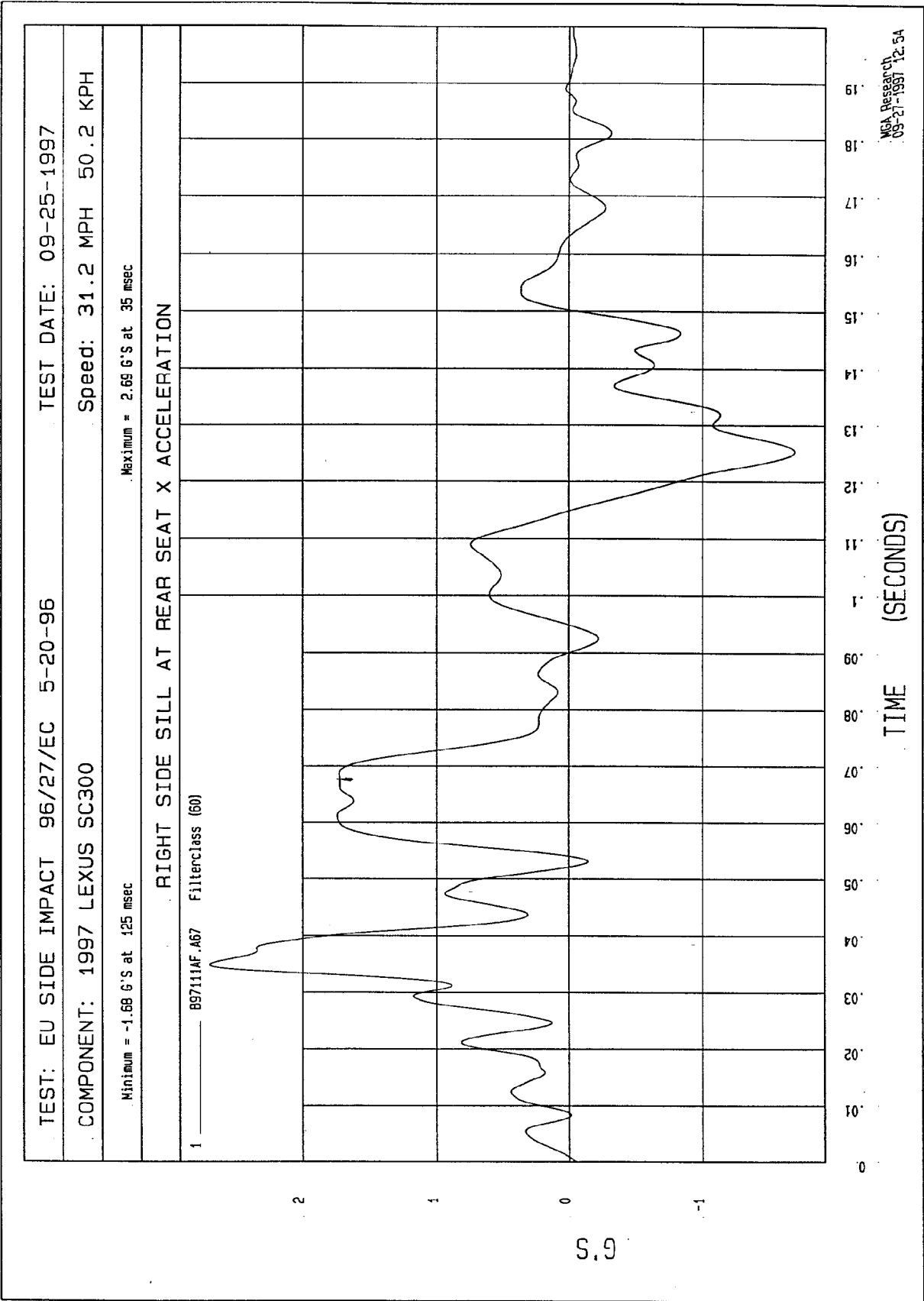
Minimum = -3.38 G'S at 60 msec Maximum = 4.30 G'S at 45 msec

RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION







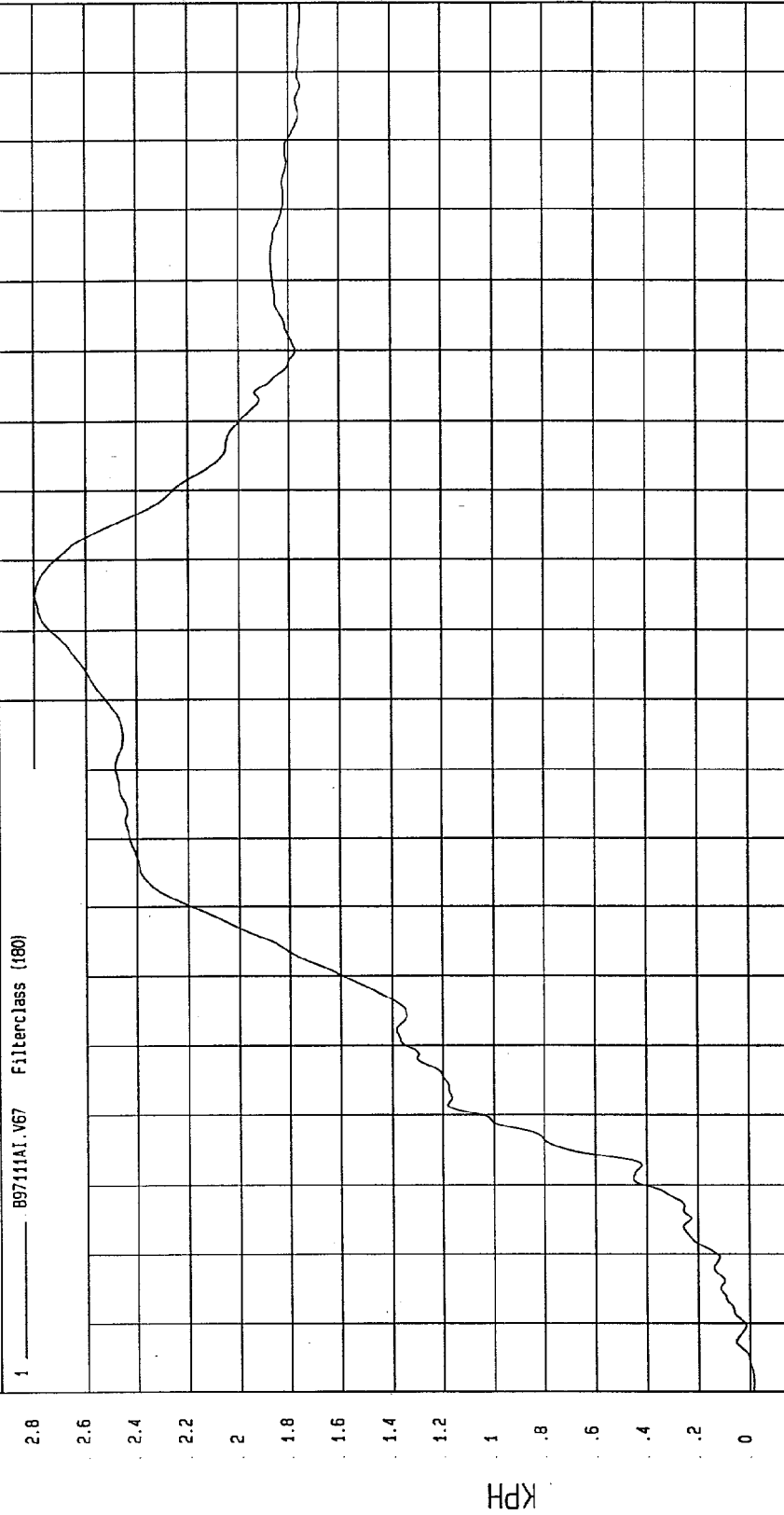


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

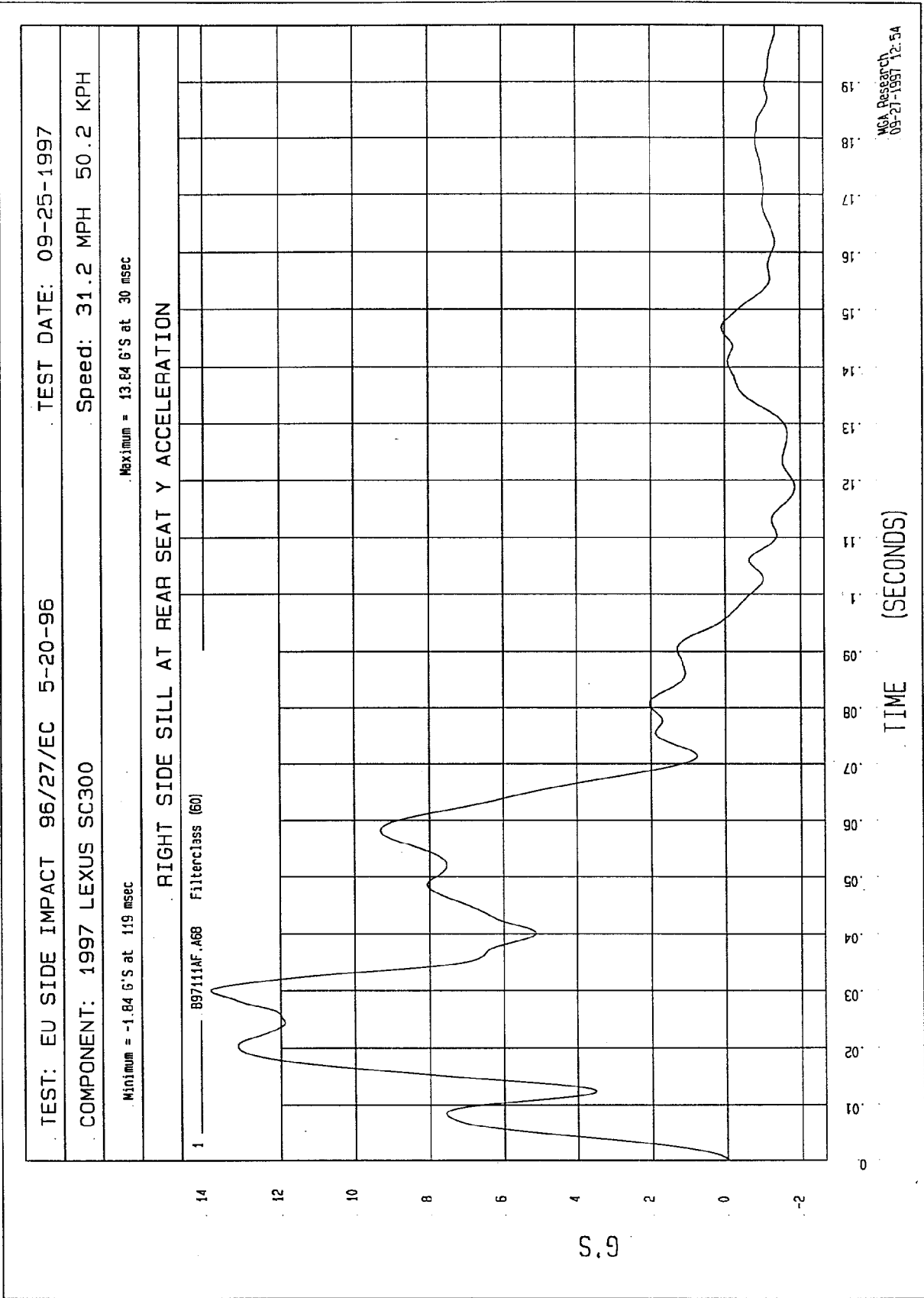
Minimum = -1.67E-02 KPH at 2 msec Maximum = 2.79 KPH at 115 msec

RIGHT SIDE SILL AT REAR SEAT X VELOCITY



TIME Seconds

MECA Research
09-27-1997 12:54

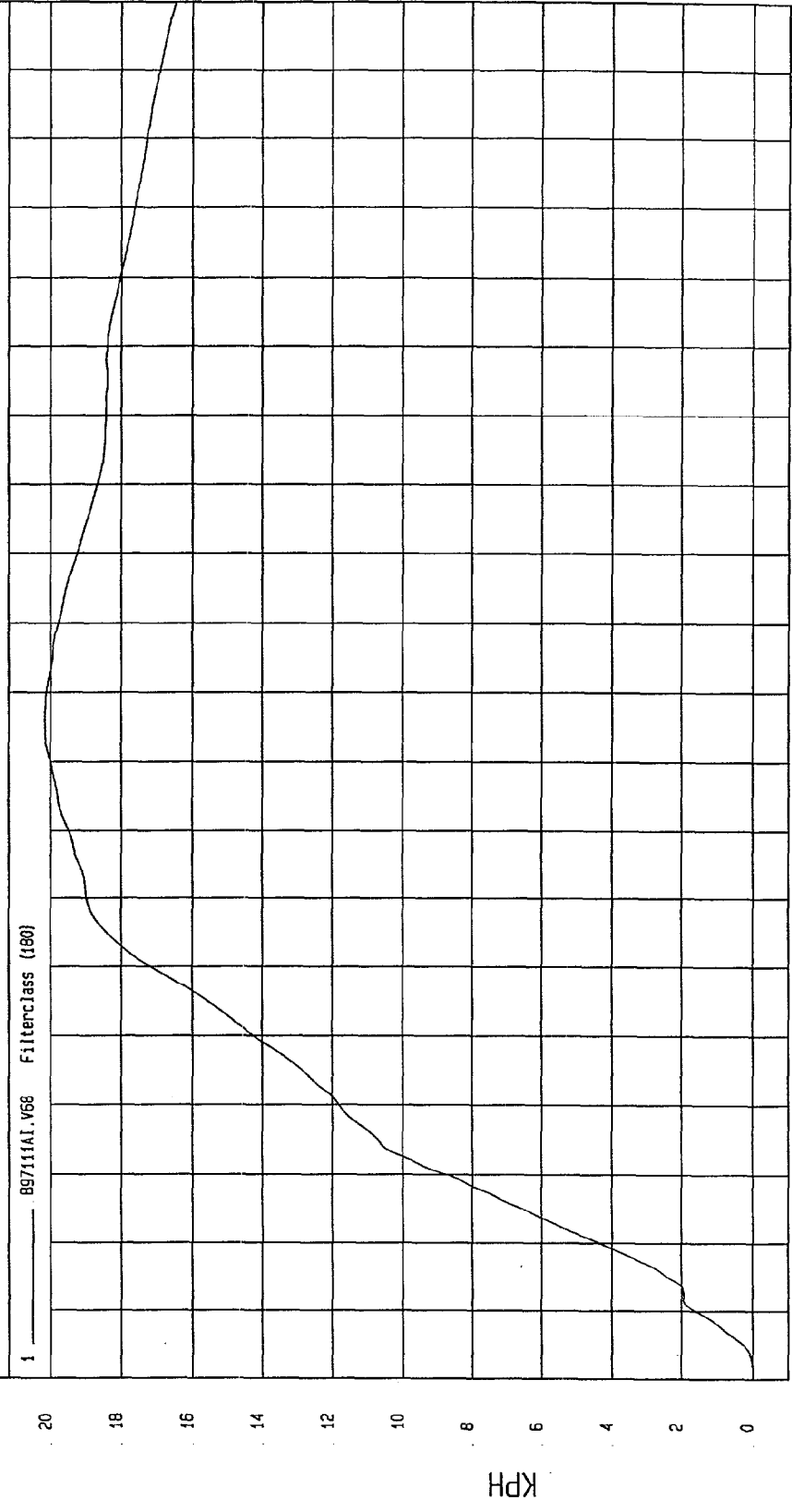


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

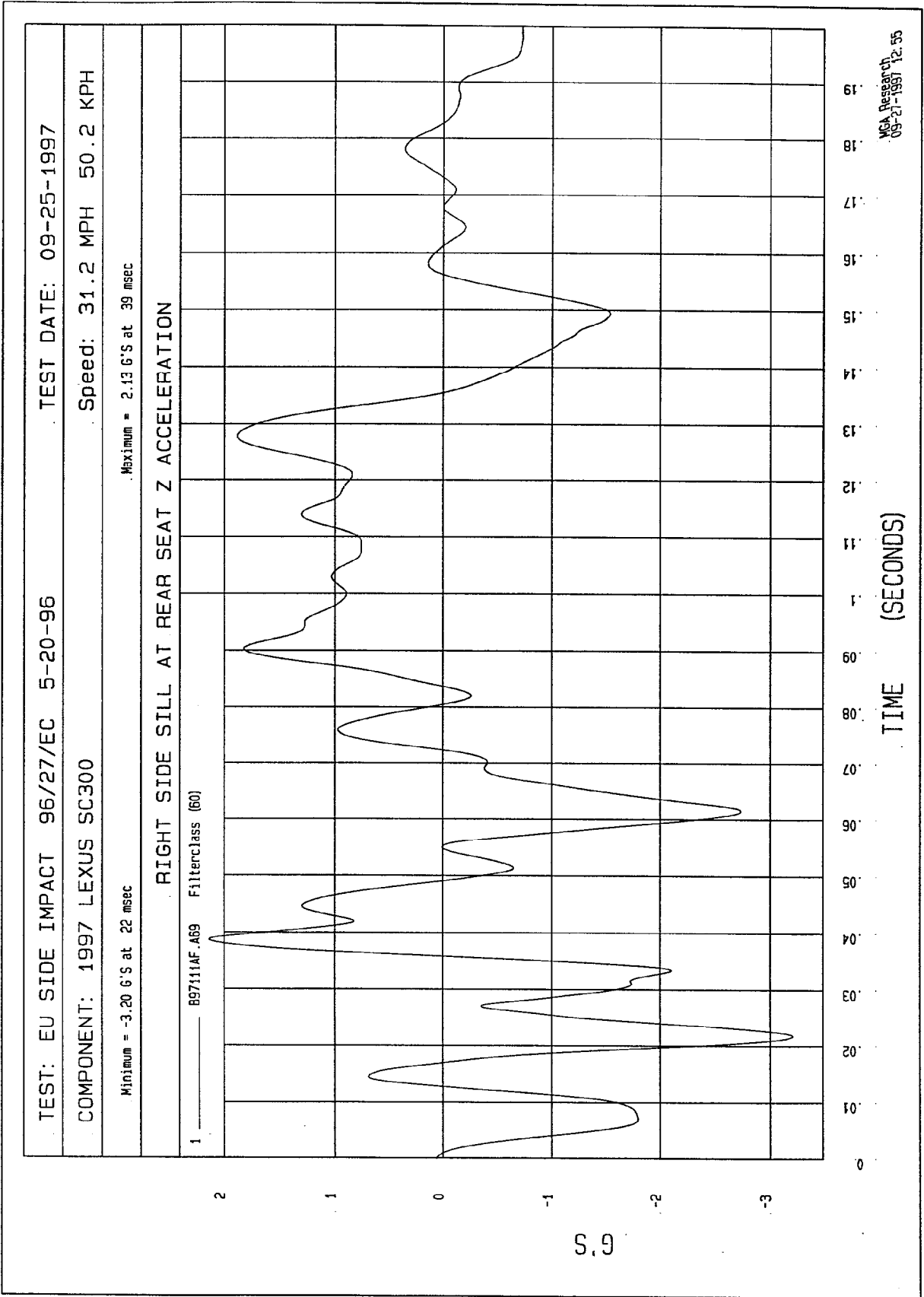
Minimum = -8.57E-03 KPH at -11 msec Maximum = 20.16 KPH at 96 msec

RIGHT SIDE SILL AT REAR SEAT Y VELOCITY



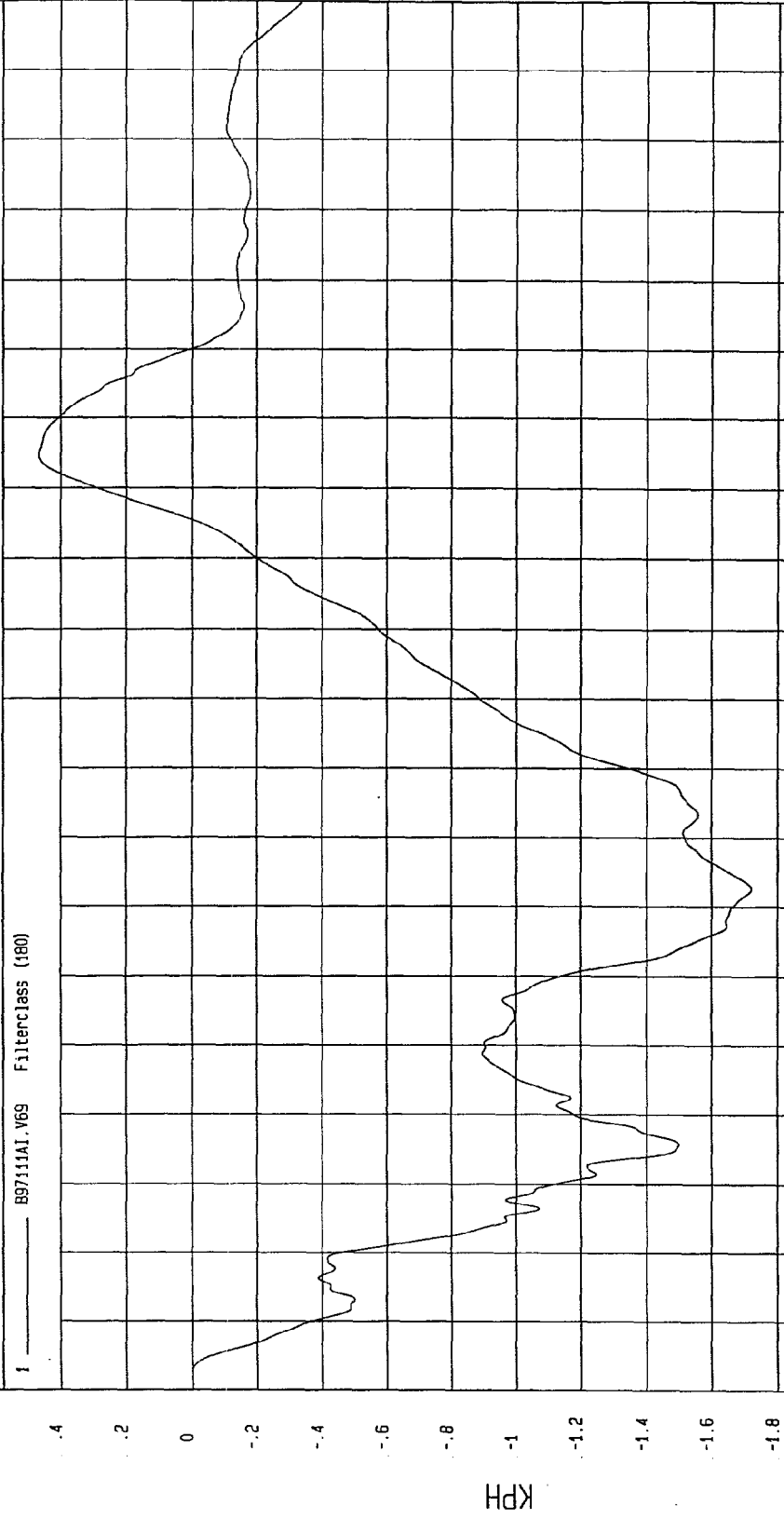
TIME Seconds

MGA Research
09-27-1997 12:54



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH
Minimum = -1.72 KPH at 73 msec Maximum = .46 KPH at 135 msec

RIGHT SIDE SILL AT REAR SEAT Z VELOCITY



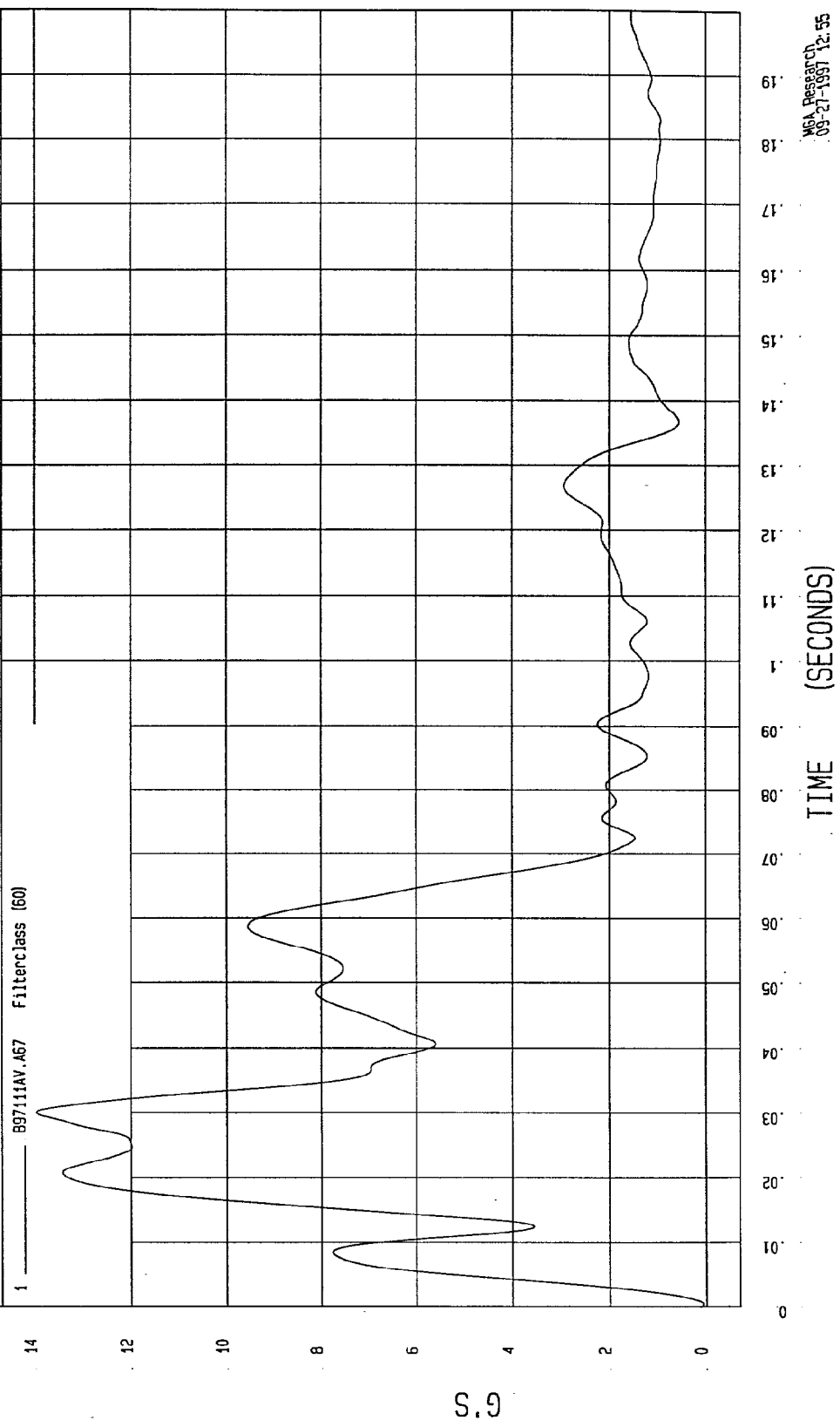
NSA Research
09-27-1997 12:55

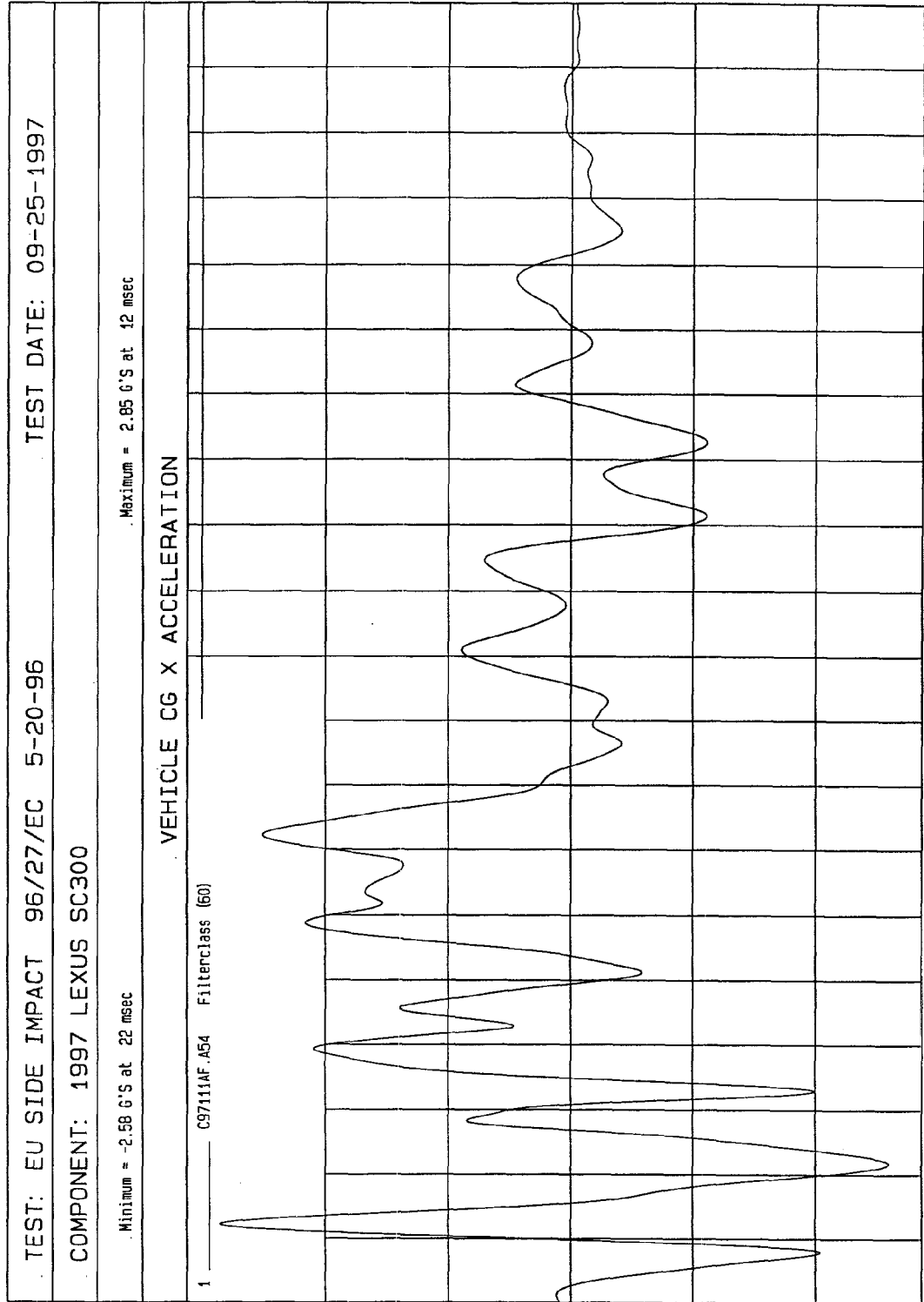
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = 8.42E-03 G's at -17 msec
Maximum = 13.97 G's at 30 msec

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION





MCA Research
09-28-1997 12:35

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

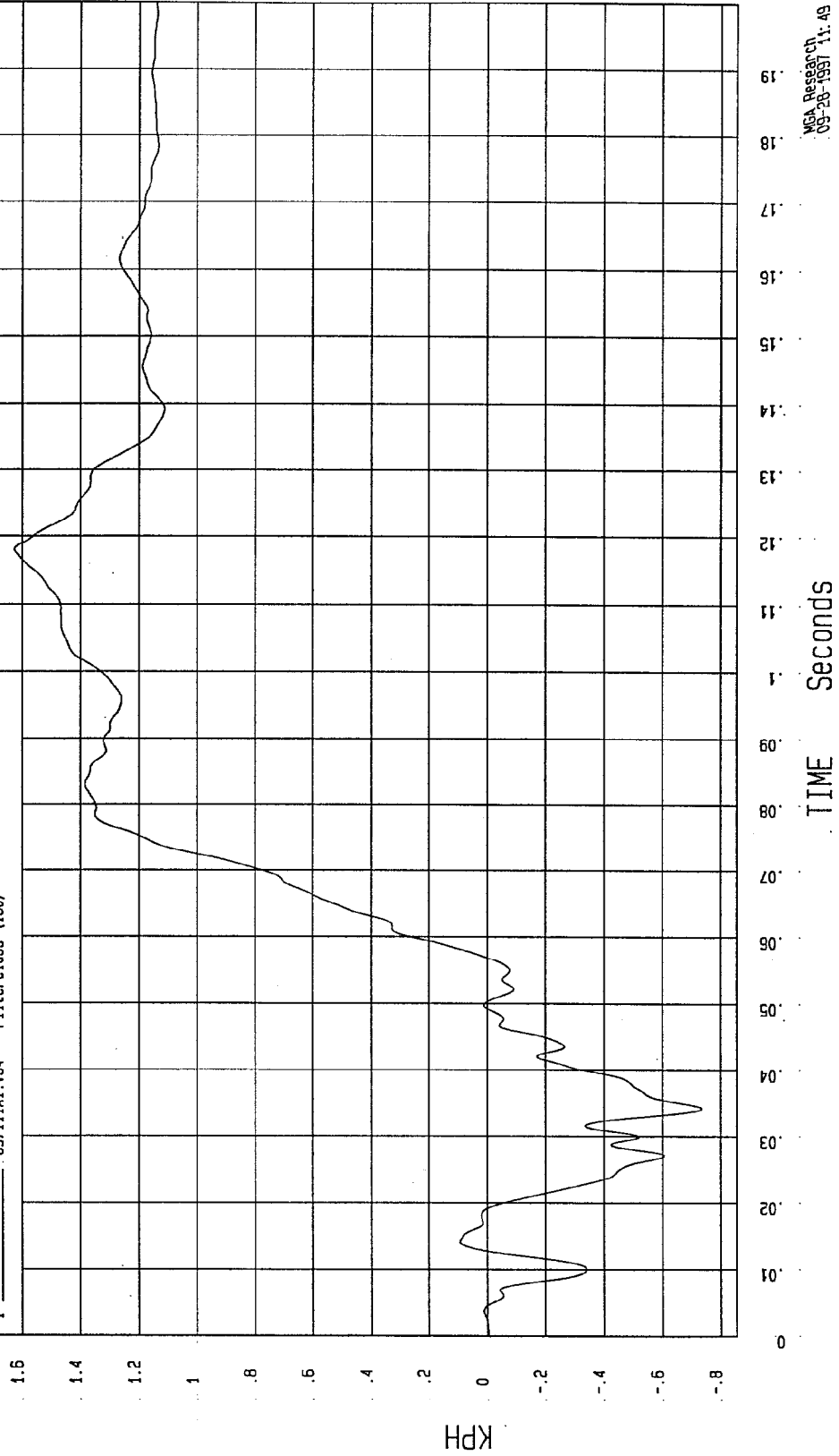
COMPONENT: 1997 LEXUS SC300

Minimum = -.73 KPH at 34 msec

Maximum = 1.62 KPH at 118 msec

VEHICLE CG X VELOCITY

1 — C97111A1.V54 Filterclass (180)



NCA Research
09-25-1997 11:49

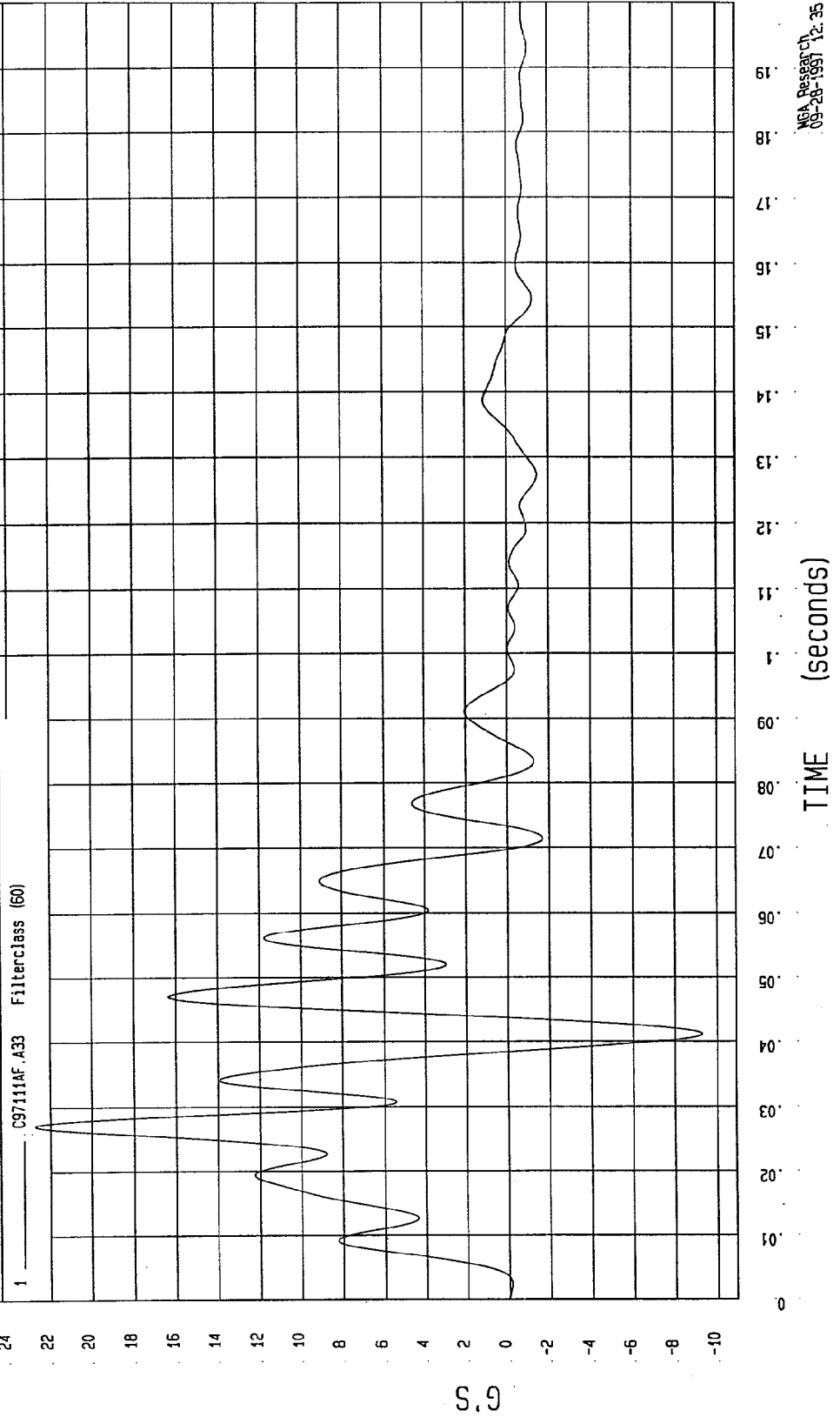
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300

Minimum = -9.29 G'S at 41 msec

Maximum = 22.73 G'S at 27 msec

VEHICLE CG Y ACCELERATION



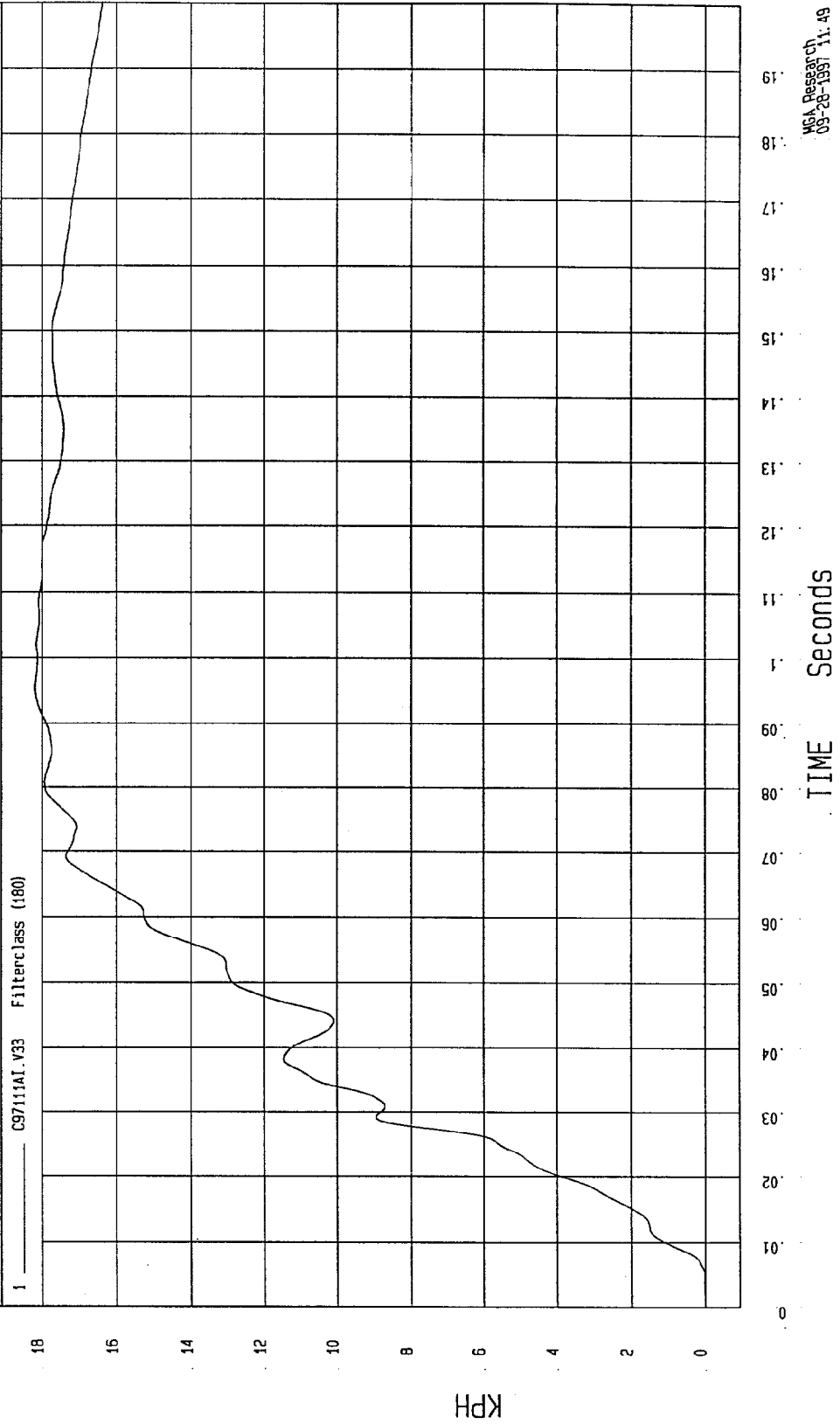
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300

Minimum = -8.03E-03 KPH at -6 msec

Maximum = 18.13 KPH at 95 msec

VEHICLE CG Y VELOCITY



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

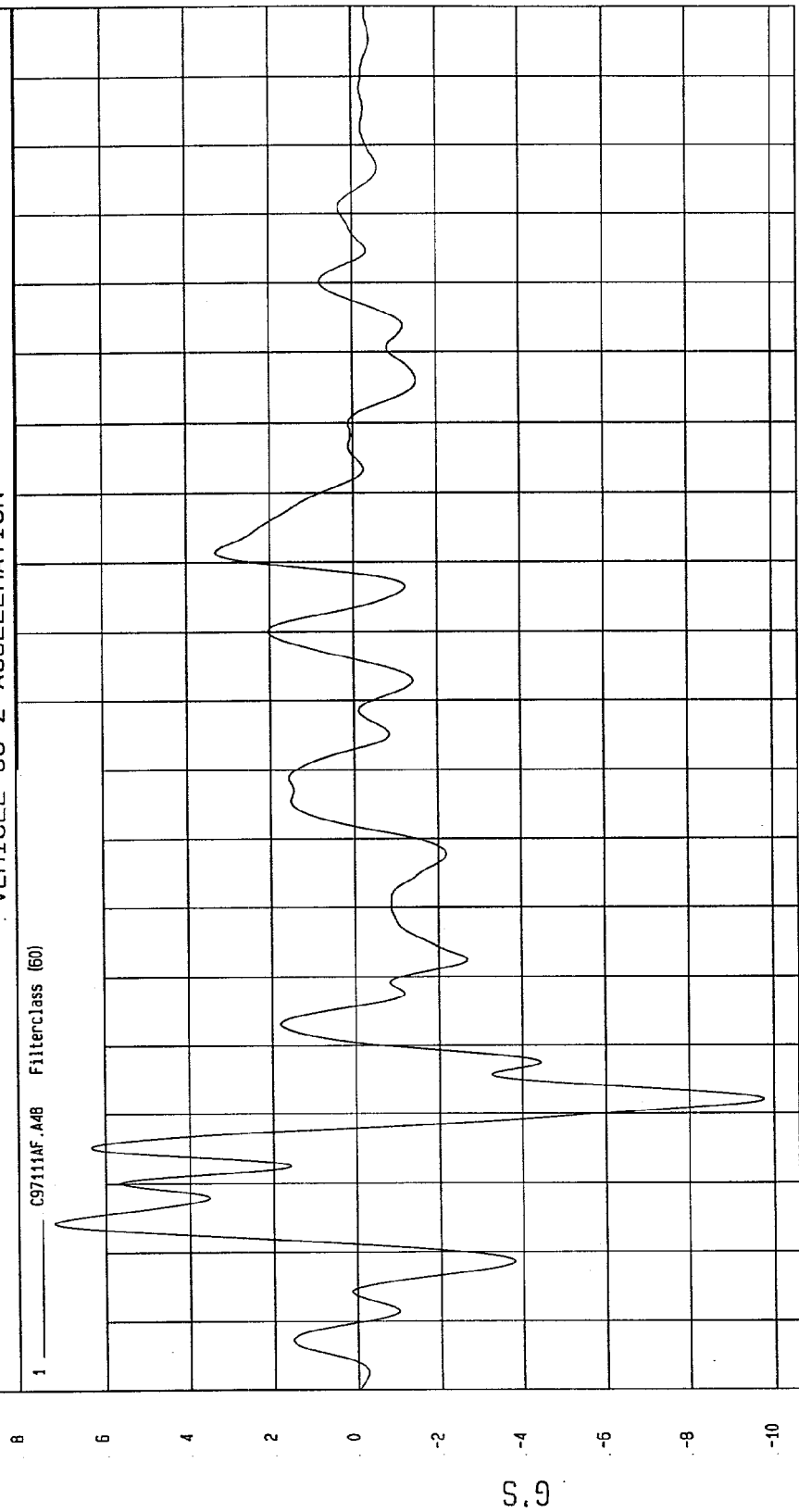
COMPONENT: 1997 LEXUS SC300

Minimum = -9.75 G'S at 42 msec

Maximum = 7.19 G'S at 24 msec

VEHICLE CG Z ACCELERATION

1 C97111AF.A48 FilterClass (60)



MEA Research
09-28-1997 12:35

TIME (seconds)

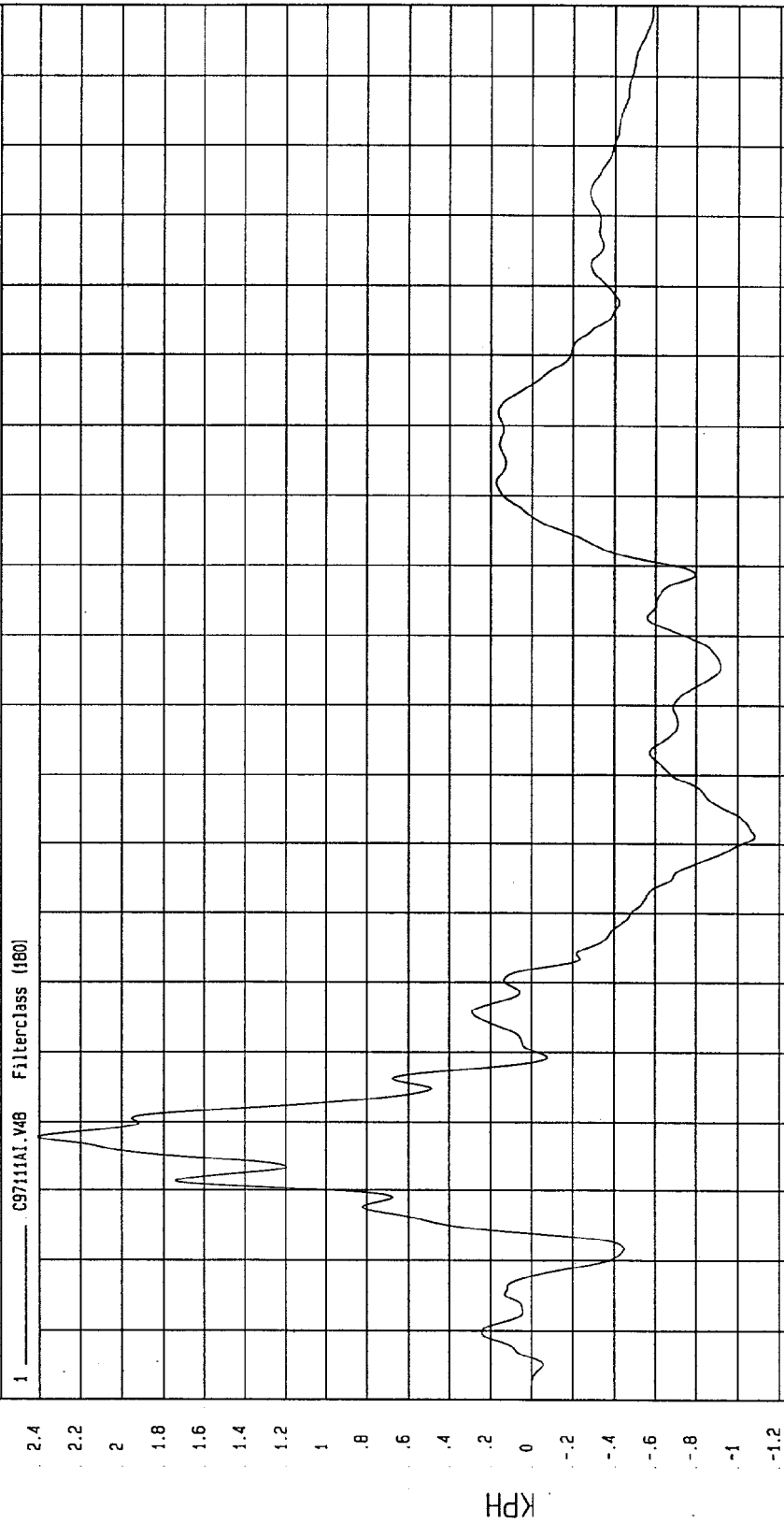
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300

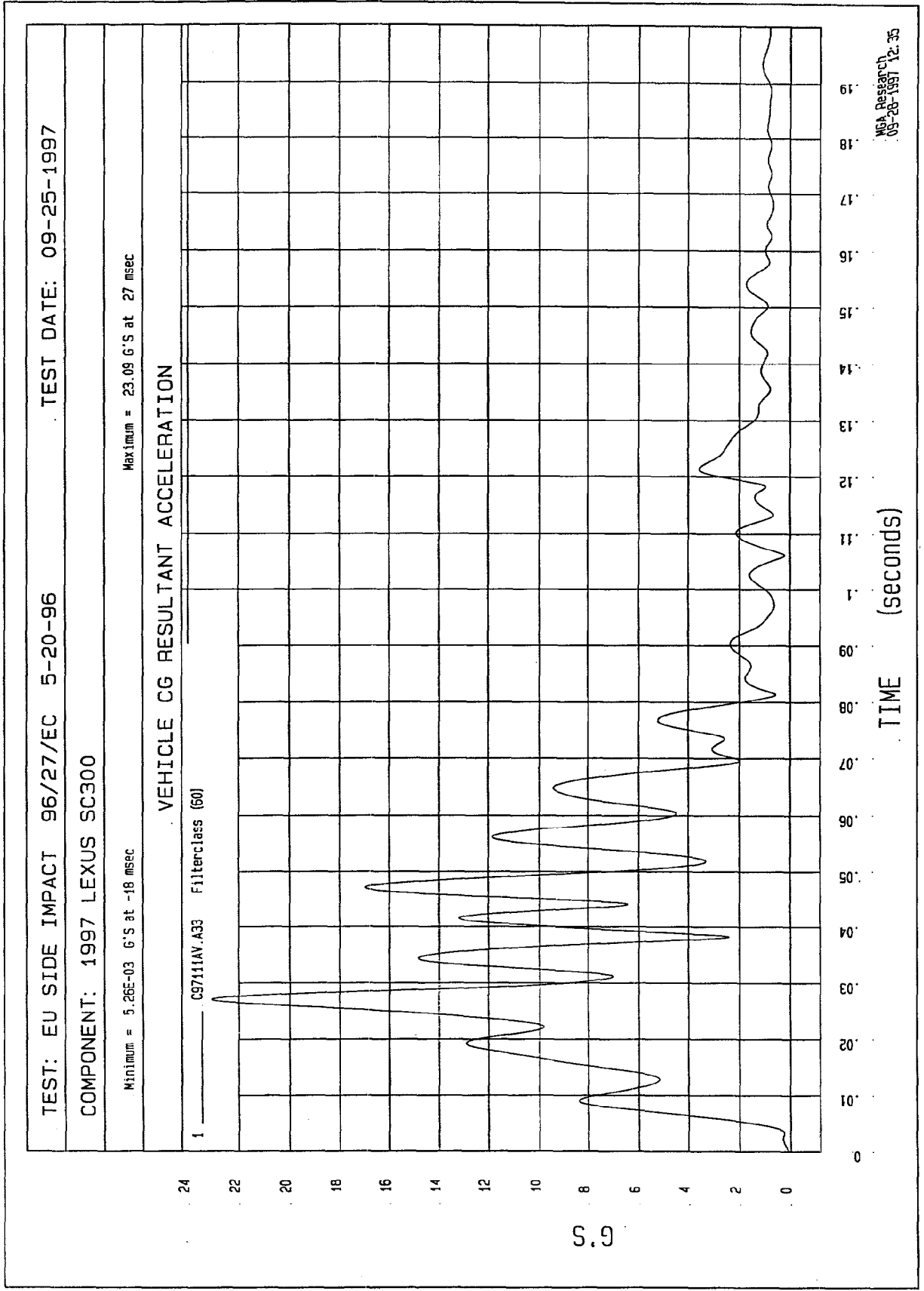
Minimum = -1.08 KPH at 81 msec

Maximum = 2.41 KPH at 38 msec

VEHICLE CG Z VELOCITY



NSA Research
09-28-1997 11:49



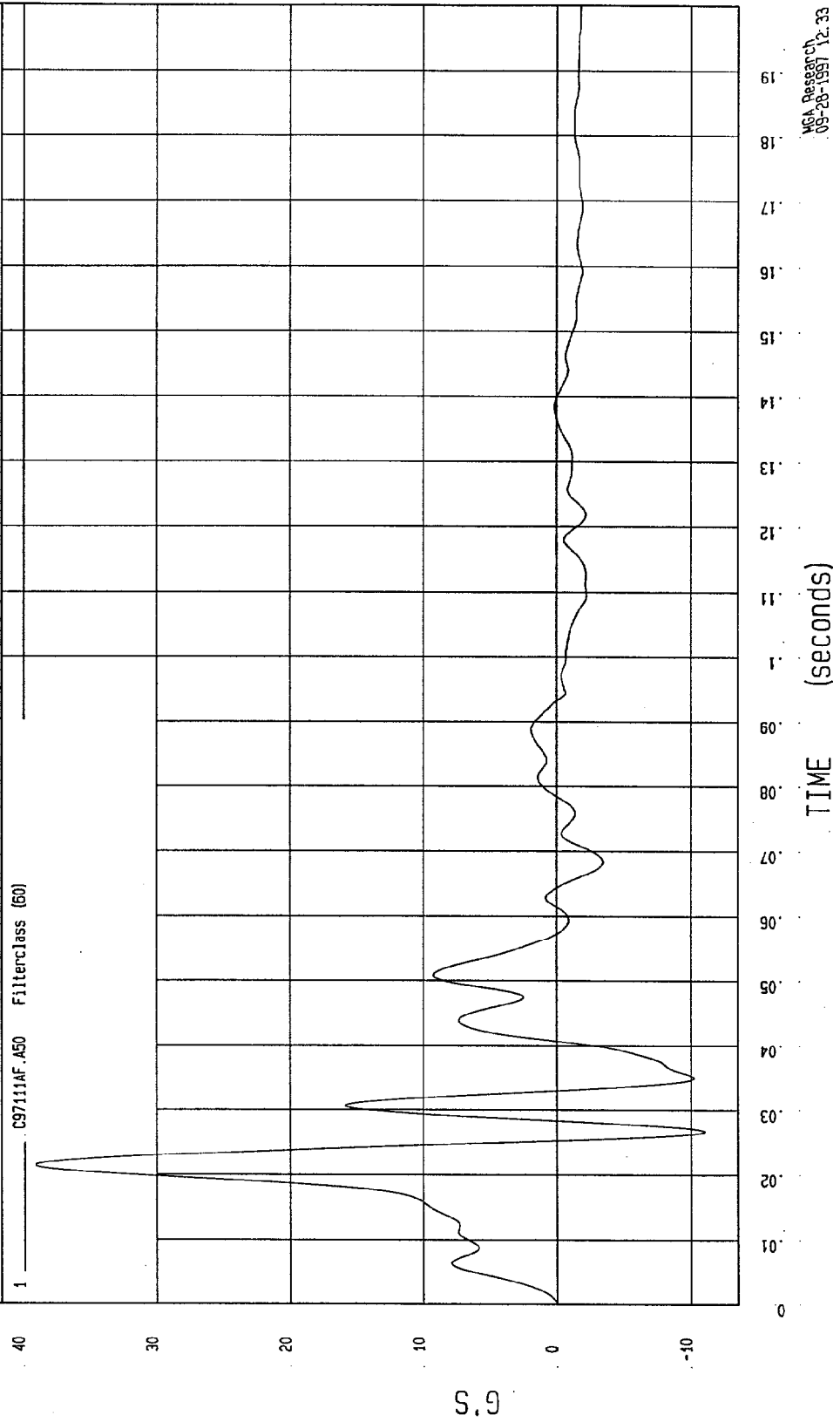
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300

Minimum = -11.03 G'S at 27 msec

Maximum = 39.10 G'S at 21 msec

LEFT DRIVER SEAT TRACK Y ACCELERATION



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

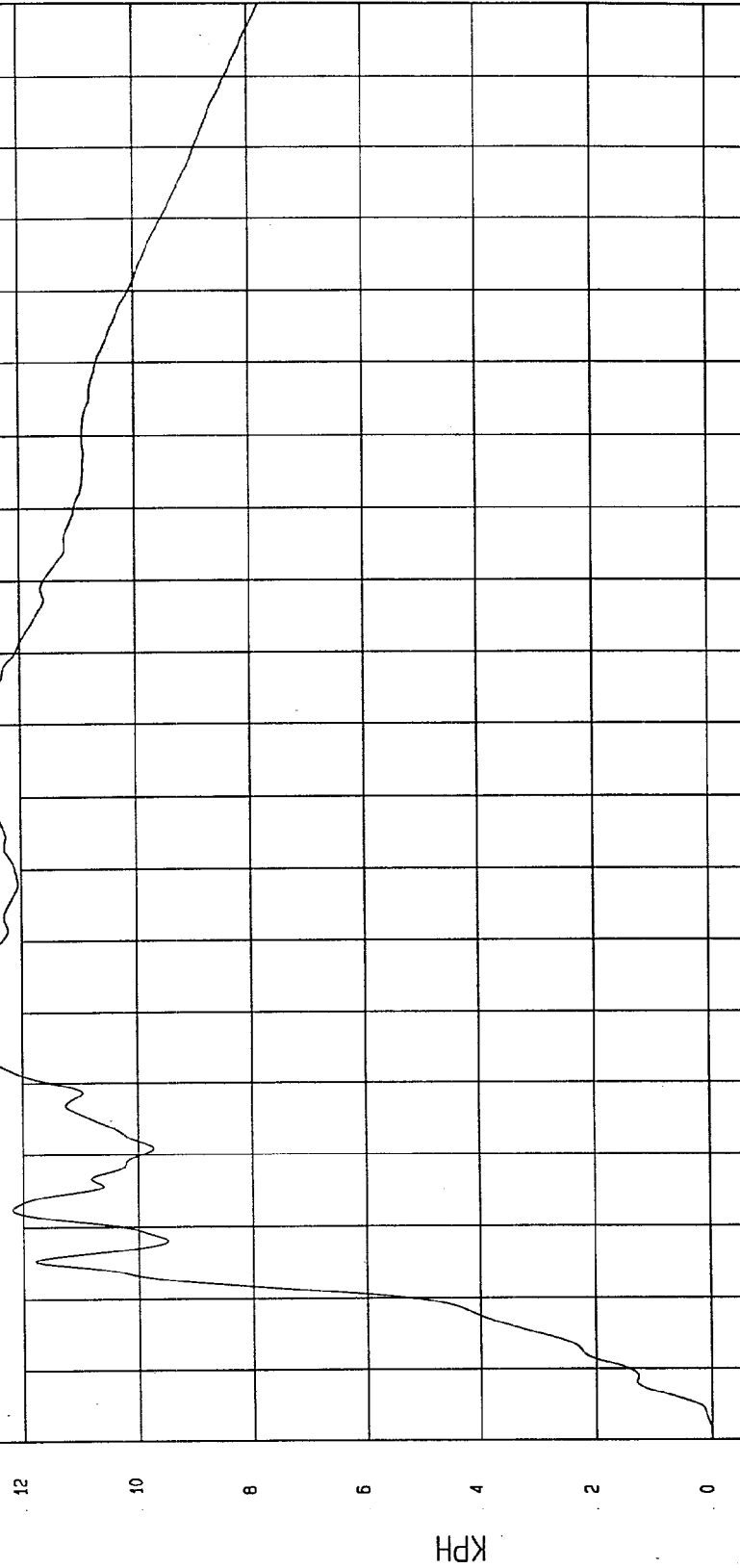
COMPONENT: 1997 LEXUS SC300

Minimum = -9.34E-03 KPH at -6 msec

Maximum = 12.91 KPH at 57 msec

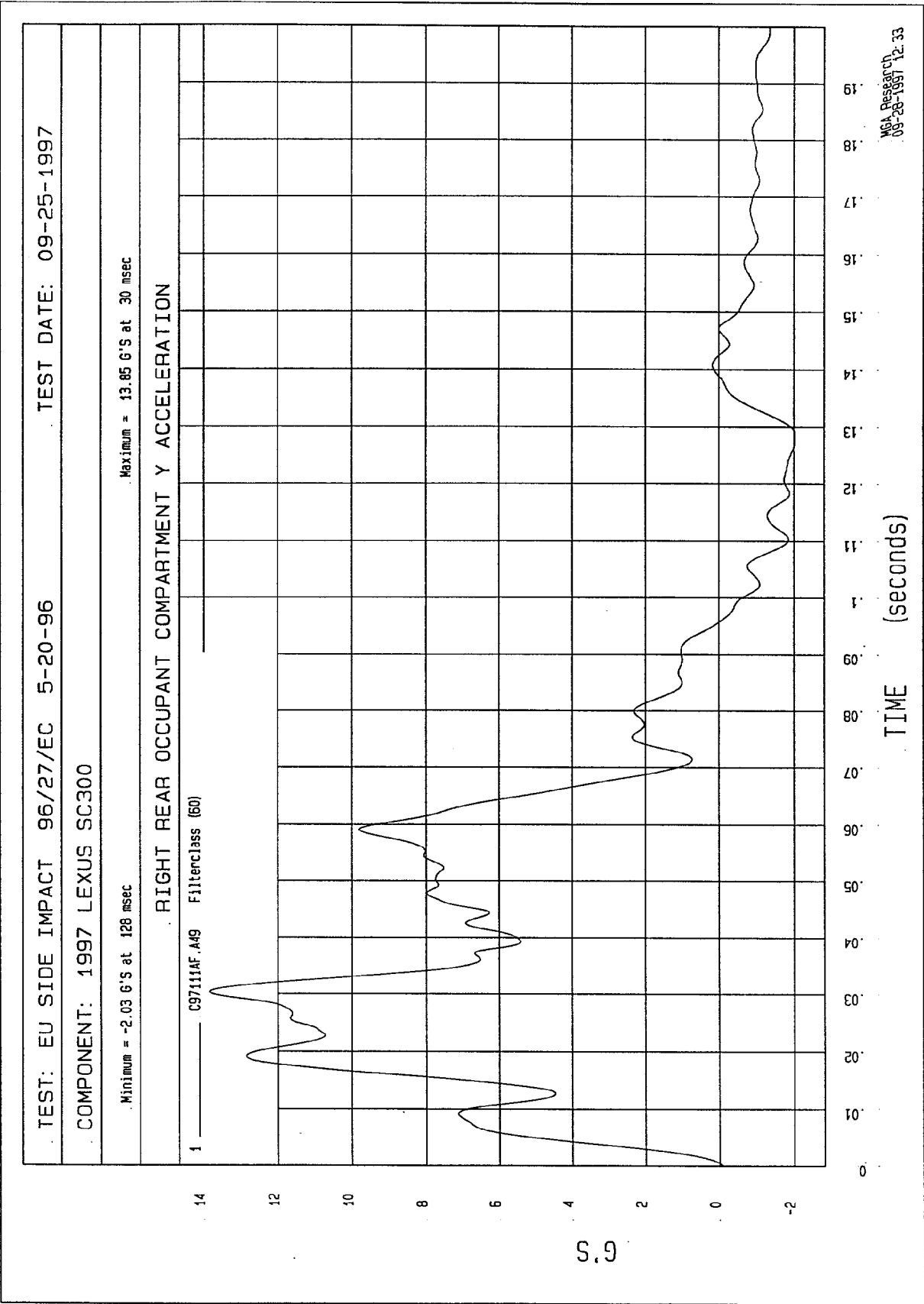
LEFT DRIVER SEAT TRACK Y VELOCITY

1 C97111A1.V50 Filterclass (180)



TIME Seconds

MCA Research
09-28-1997 11:49



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

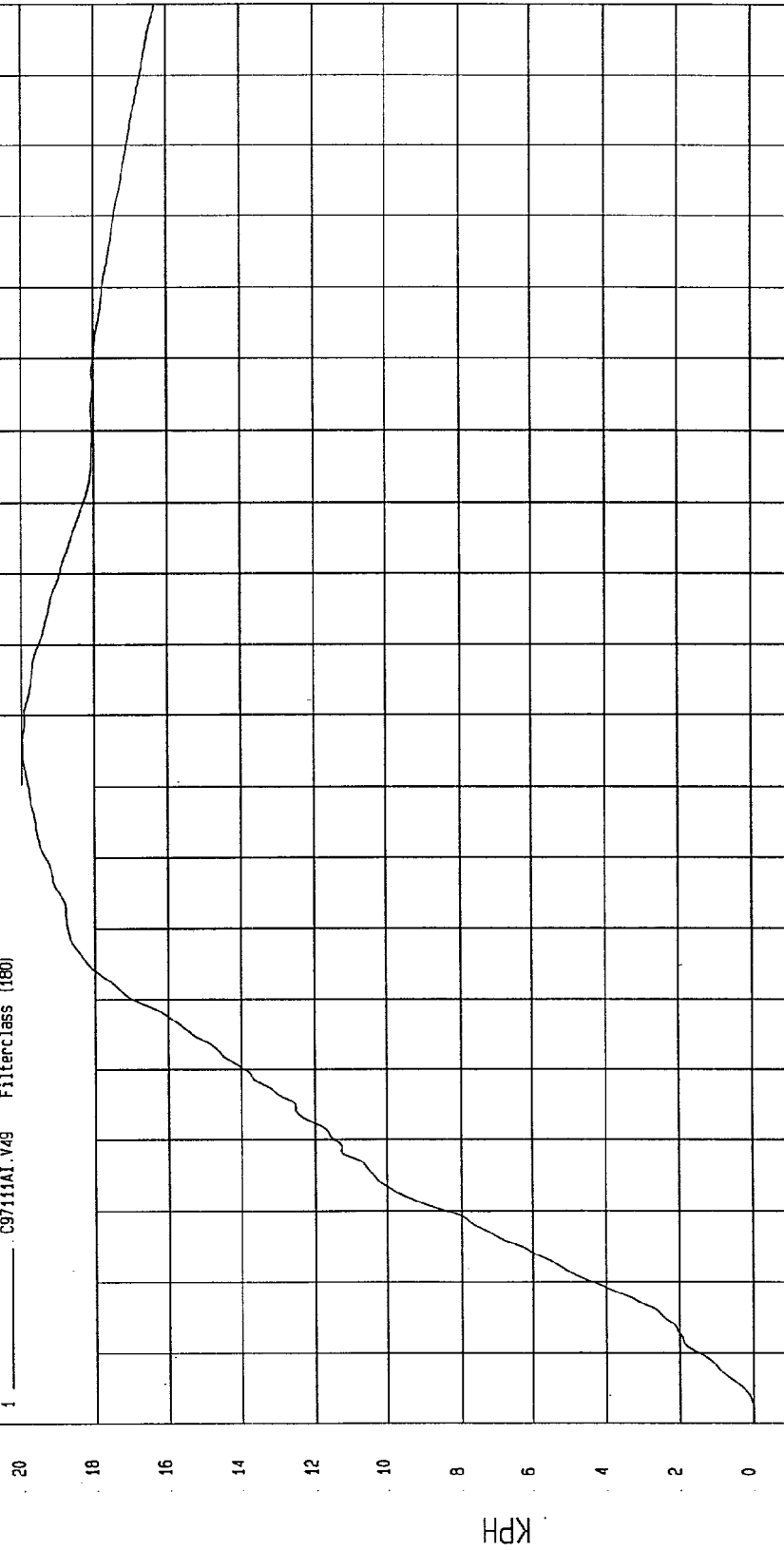
COMPONENT: 1997 LEXUS SC300

Minimum = -7.63E-03 KPH at -14 msec

Maximum = 19.95 KPH at 96 msec

RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY

1 C97111AI.V49 Filterclass (180)



NSA Research
09-28-1997 11:49

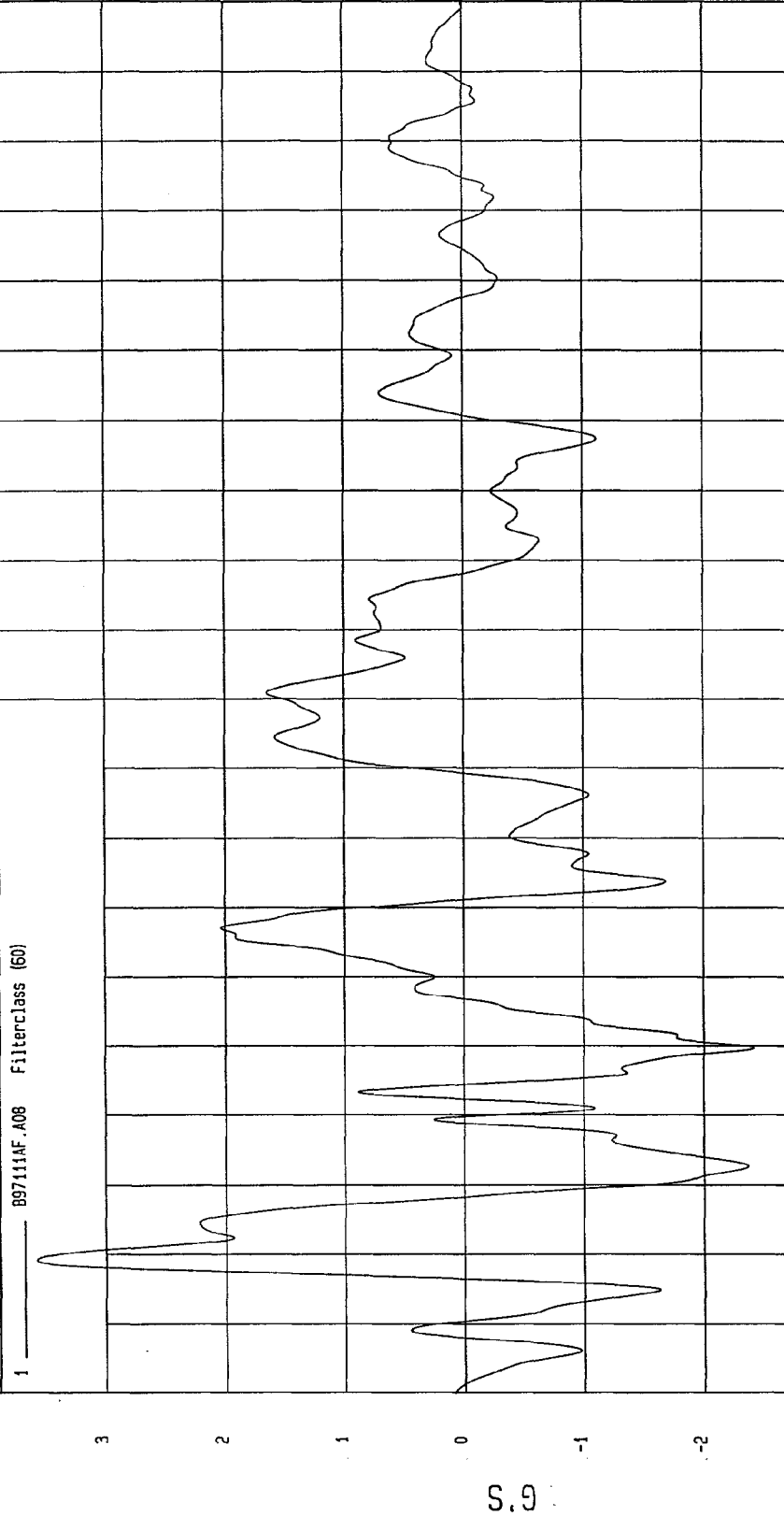
TIME Seconds

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -2.41 G's at 50 msec Maximum = 3.57 G's at 19 msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION



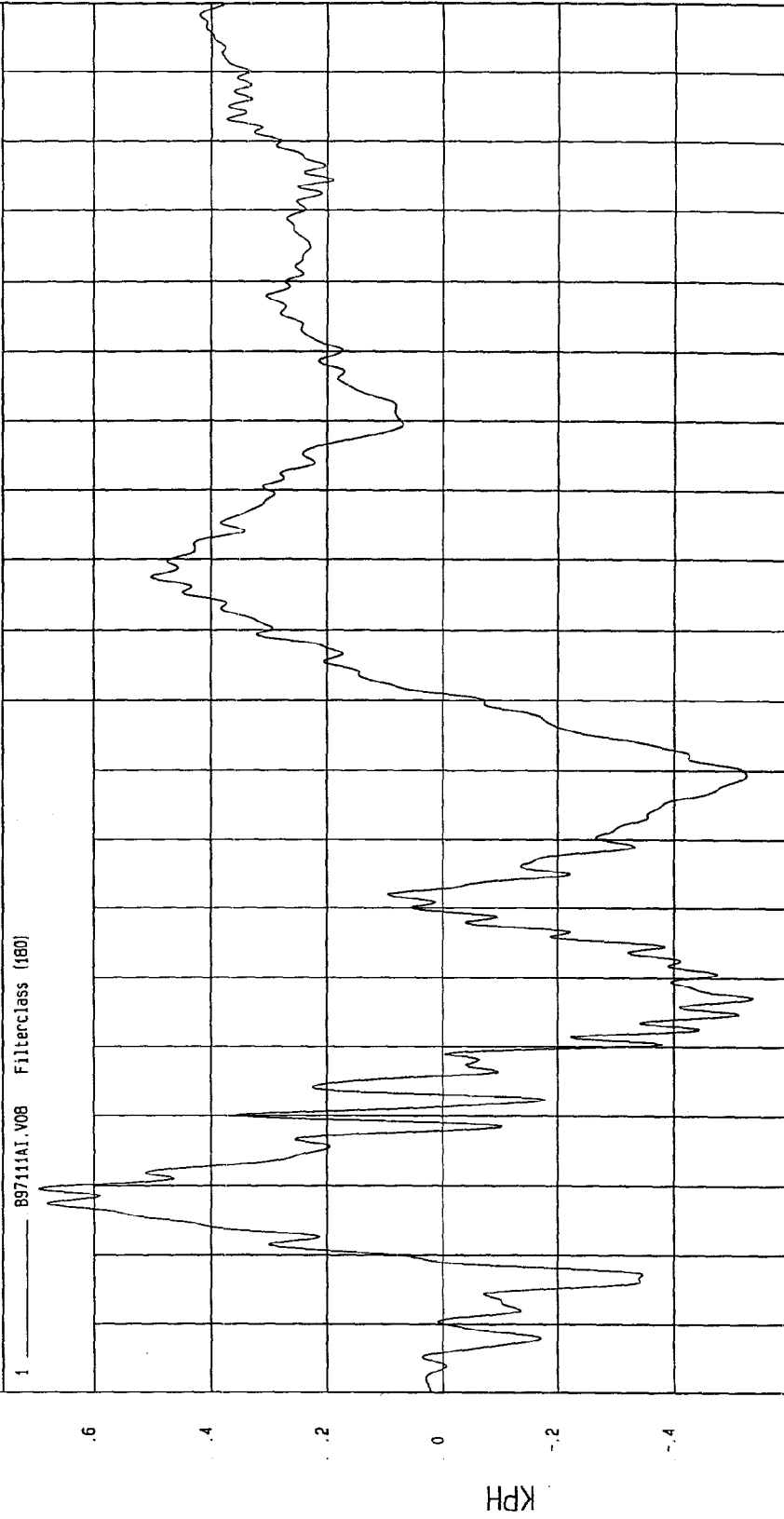
MEGA Research
09-27-1997 12:55

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

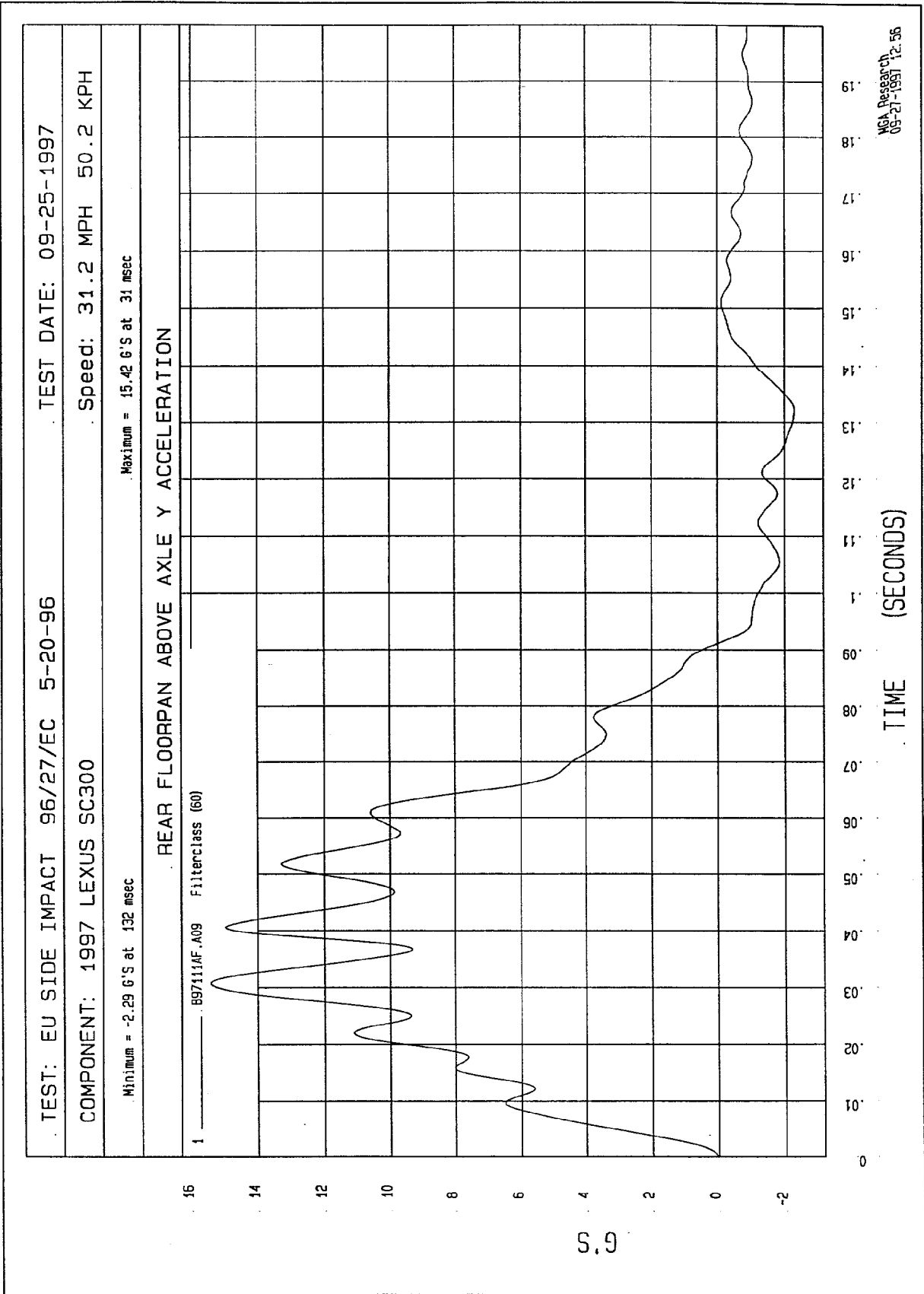
Minimum = -.53 KPH at 57 msec Maximum = .69 KPH at 30 msec

REAR FLOORPAN ABOVE AXLE X VELOCITY



TIME Seconds

MCA Research
09-27-1997 12:55

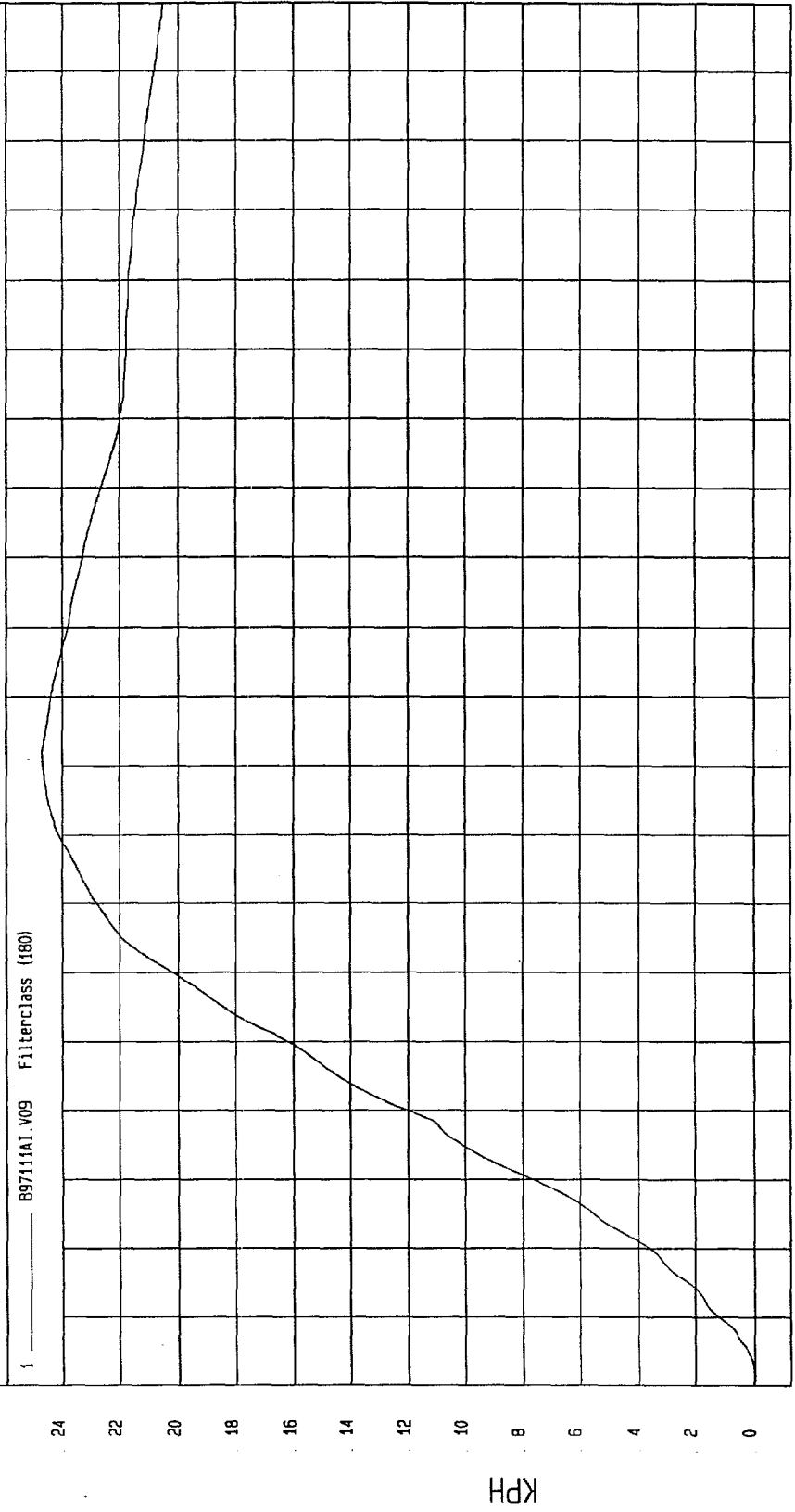


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = 0 KPH at -20 msec Maximum = 24.69 KPH at 92 msec

REAR FLOORPAN ABOVE AXLE Y VELOCITY



TIME Seconds

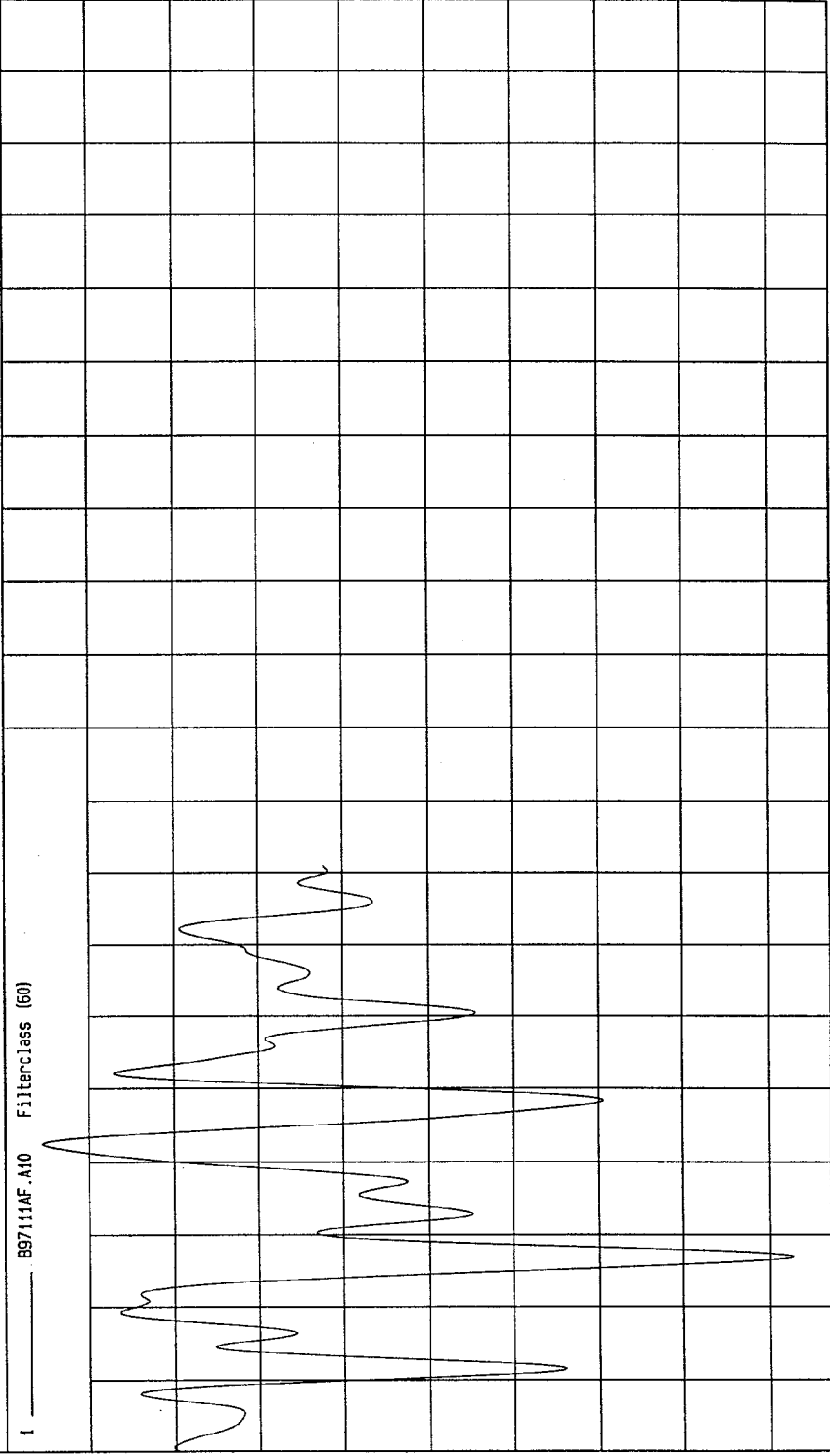
WCA Research
09-21-1997 12:56

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -6.28 G'S at 27 msec Maximum = 2.54 G'S at 42 msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION



TIME (SECONDS)

19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

MEA Research
12-16-1997 15:00

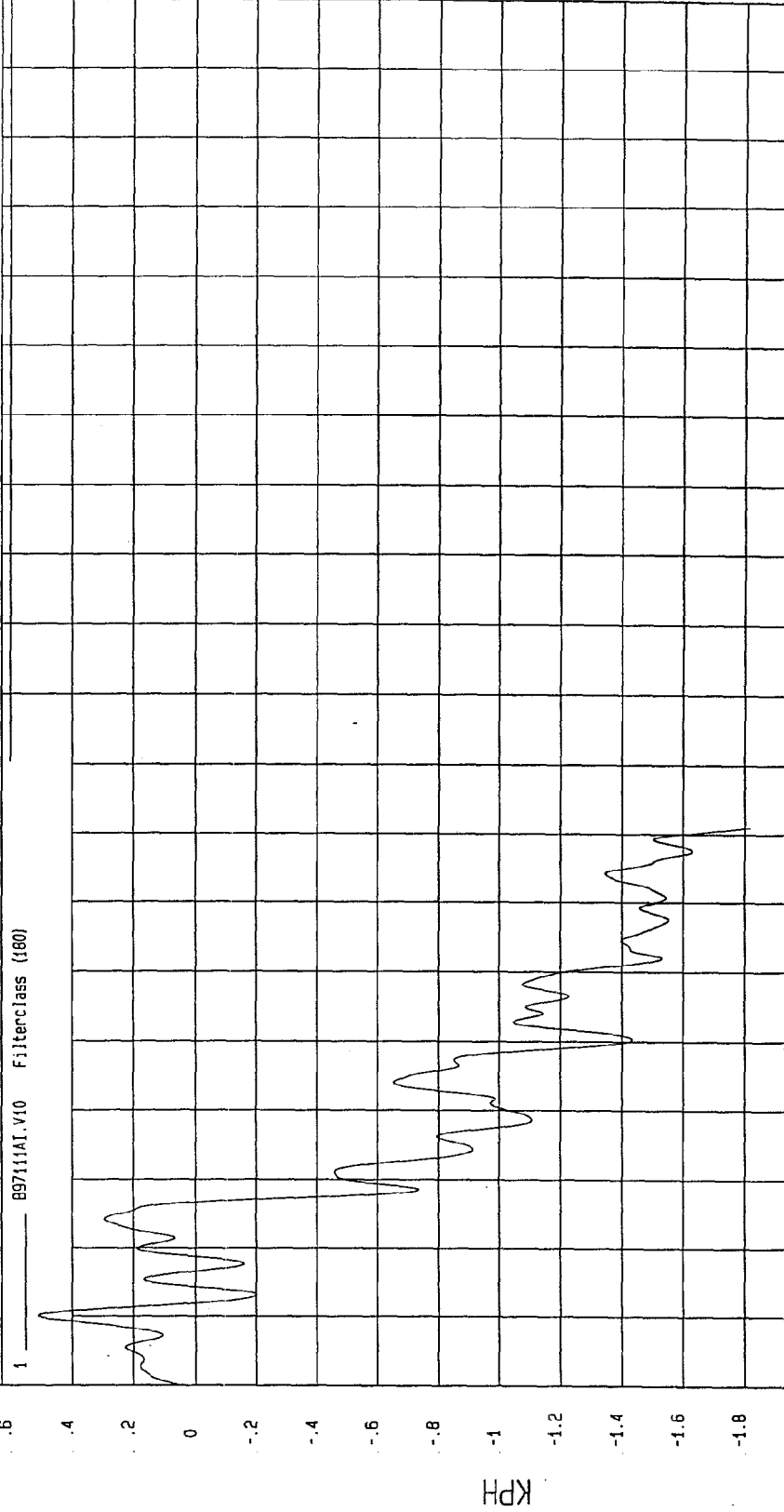
G

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.81 KPH at 81 msec
Maximum = .51 KPH at 10 msec

REAR FLOORPAN ABOVE AXLE Z VELOCITY



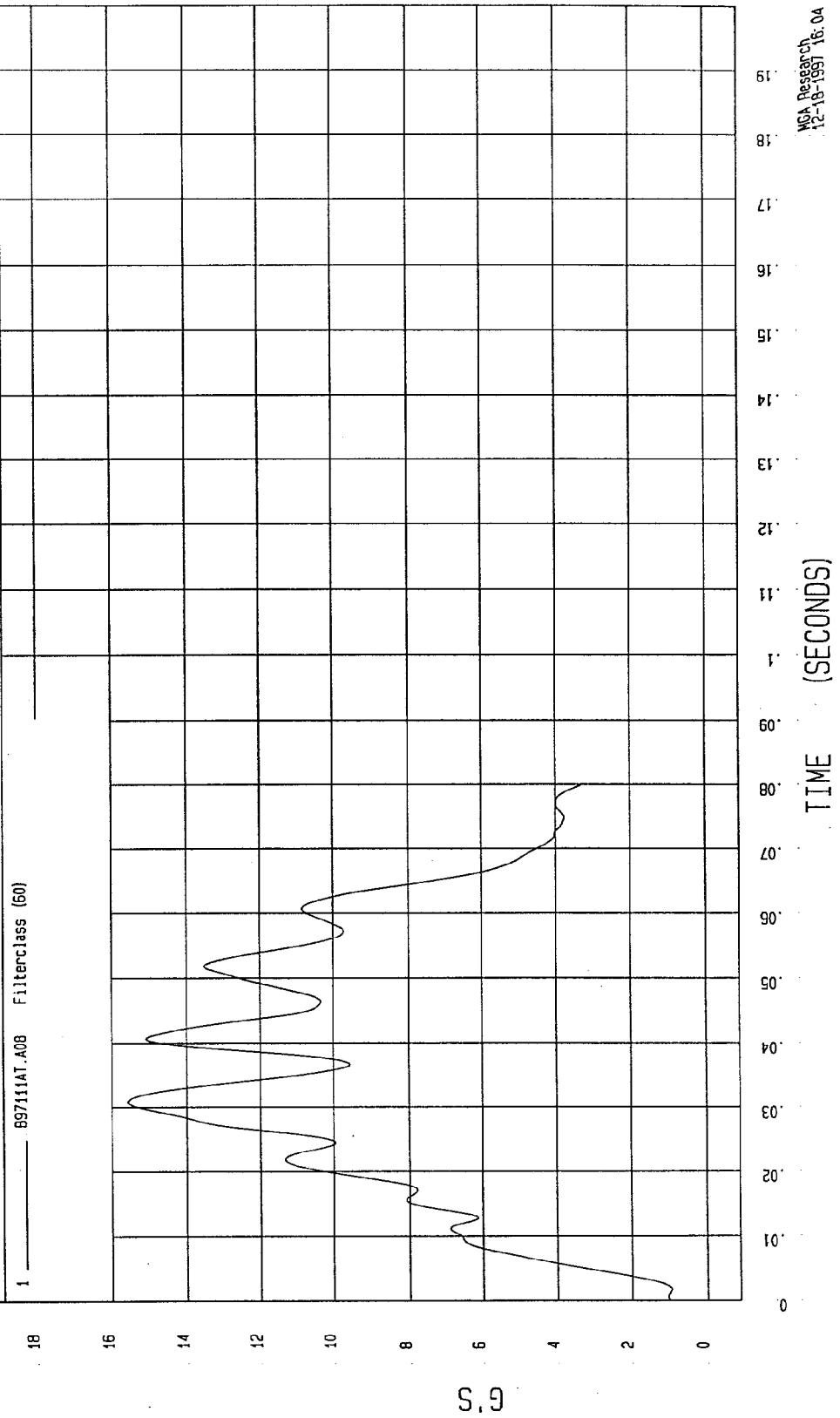
MSA Research
12-18-1997 16:00

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = 5.65E-03 G'S at -11 msec Maximum = 15.57 G'S at 31 msec

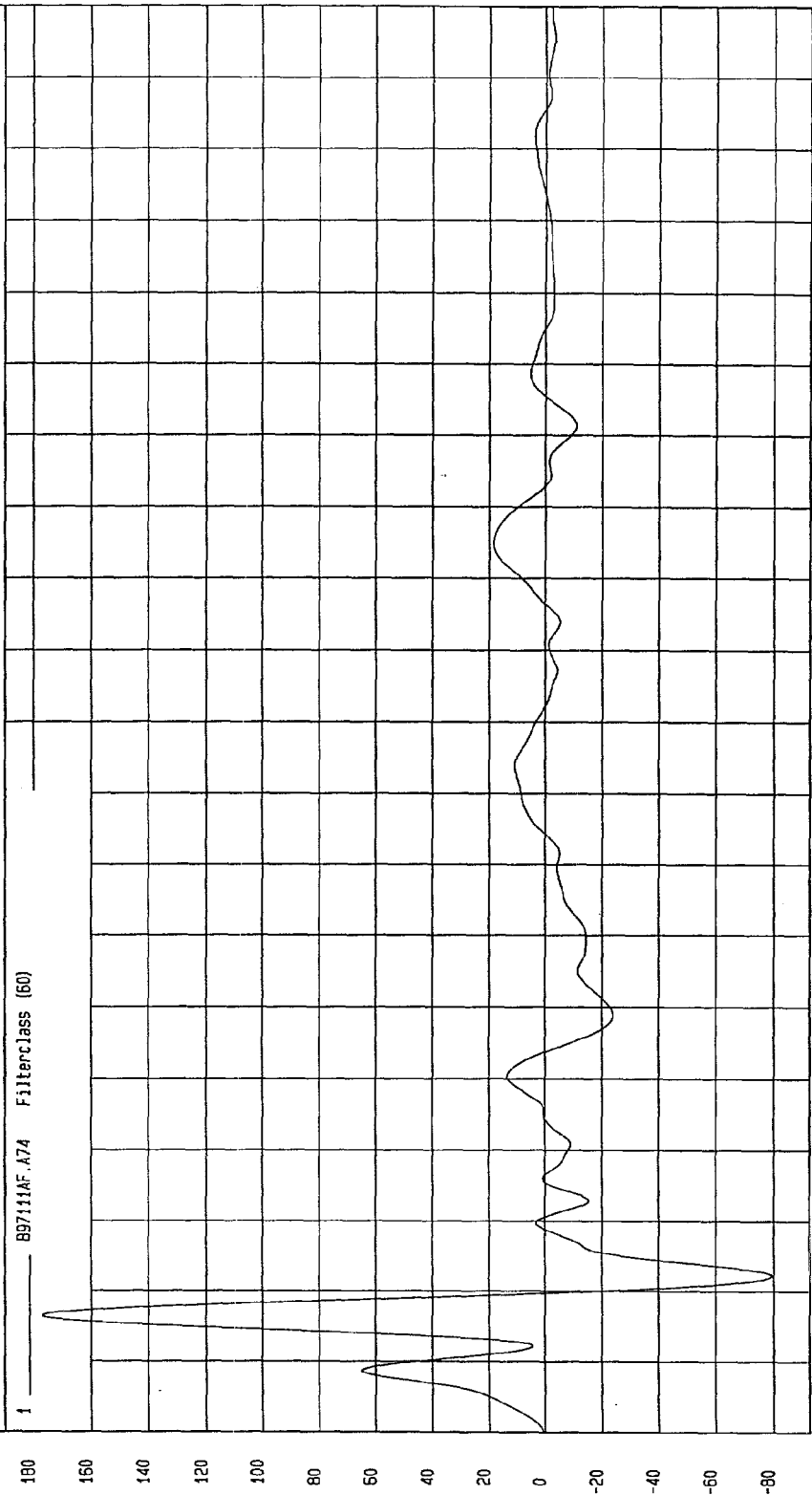
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION



MCA Research
12-18-1997 16: 04

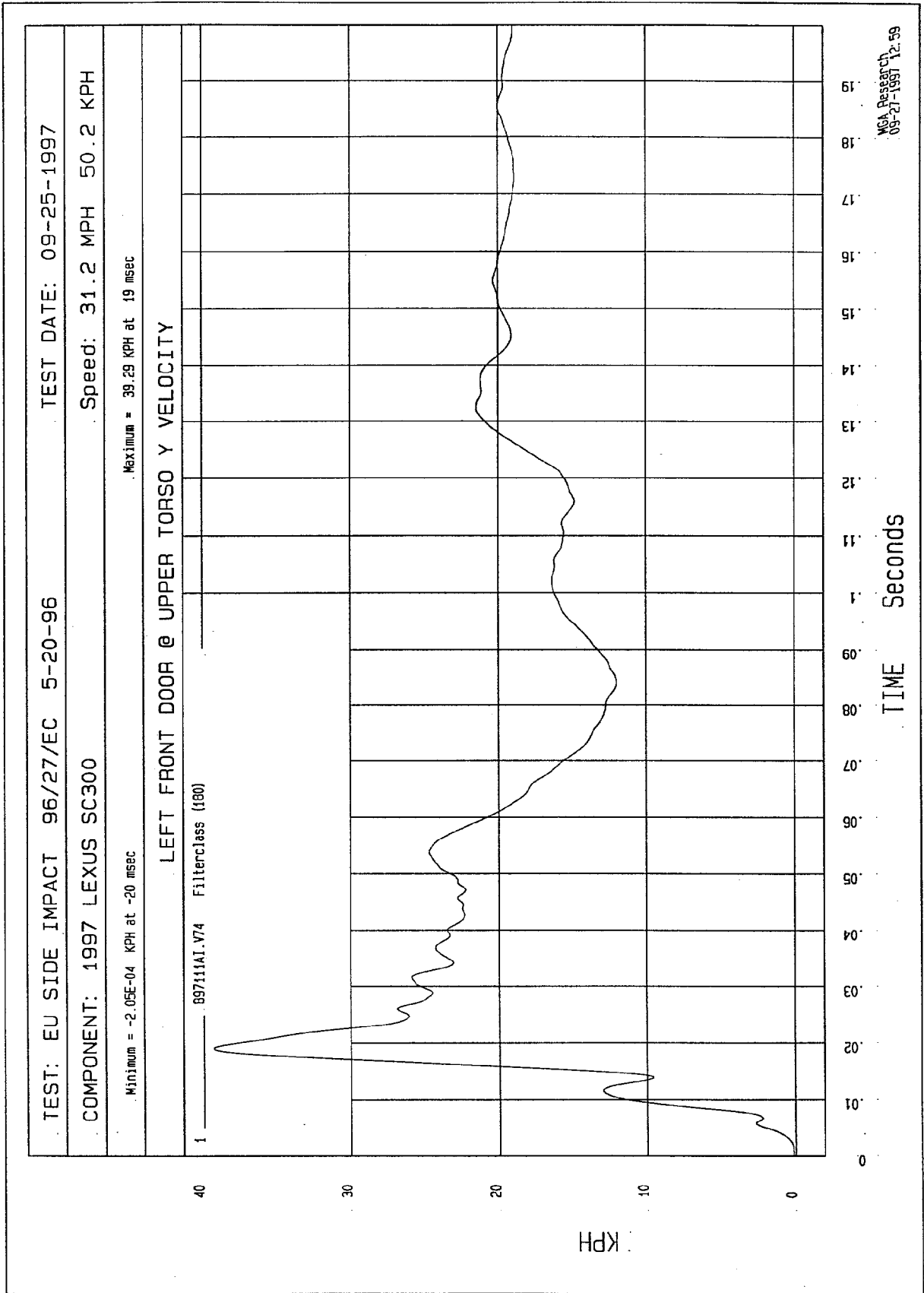
TEST: EU SIDE IMPACT 96/27/EC 5-20-96	TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300	Speed: 31.2 MPH 50.2 KPH
Minimum = -79.44 G'S at 22 msec	Maximum = 177.07 G'S at 16 msec

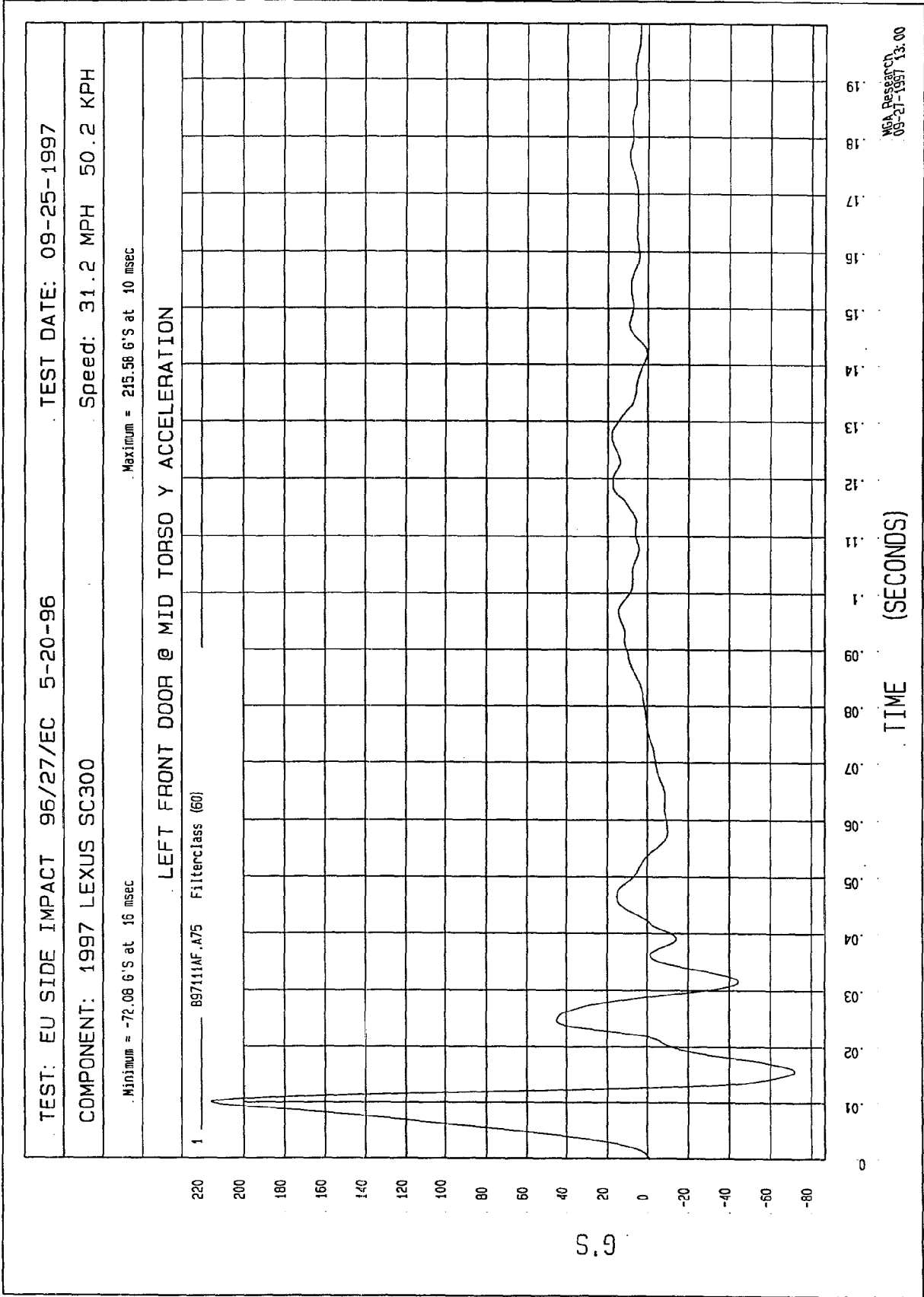
LEFT FRONT DOOR @ UPPER TORSO Y ACCELERATION

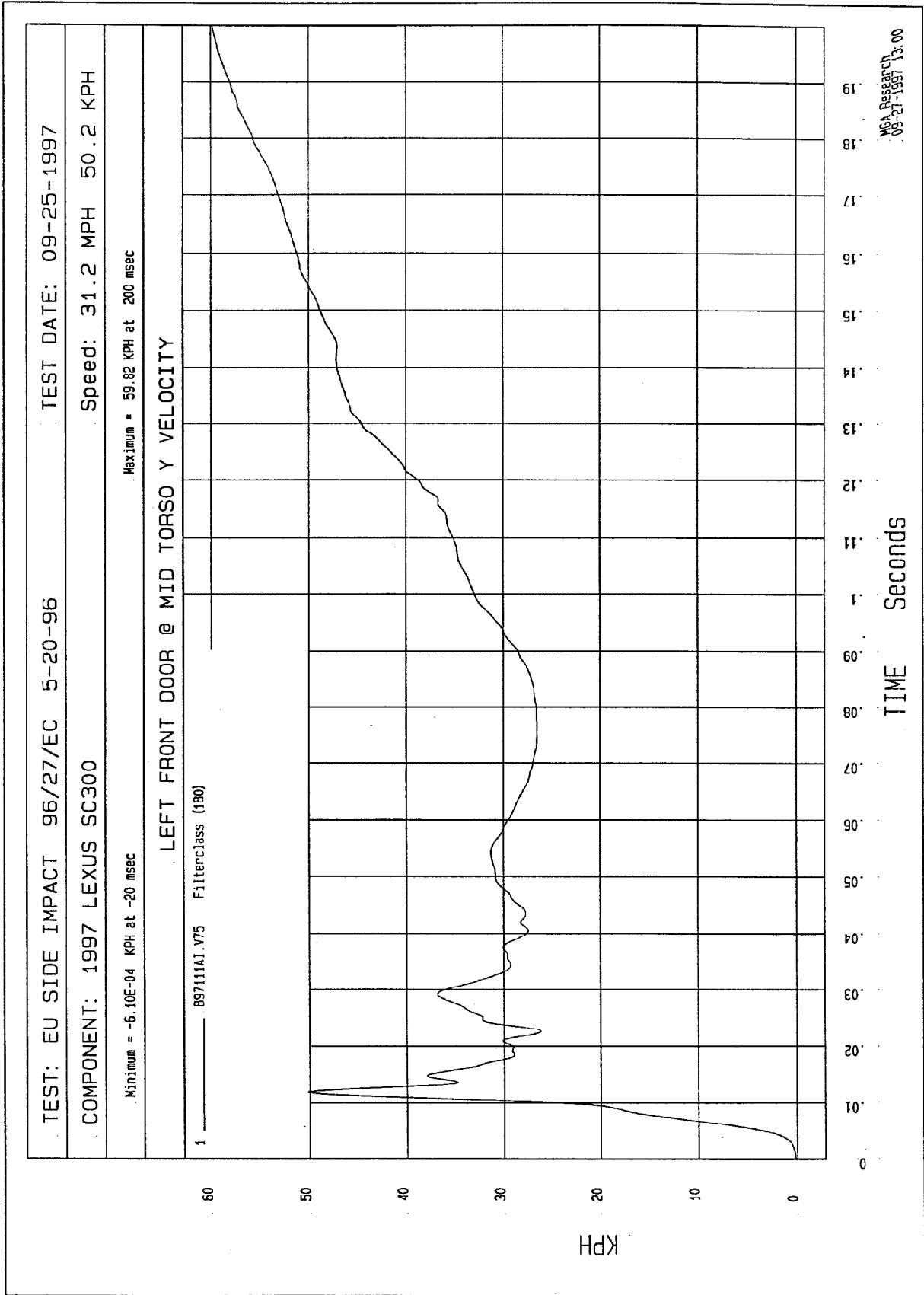


TIME (SECONDS)

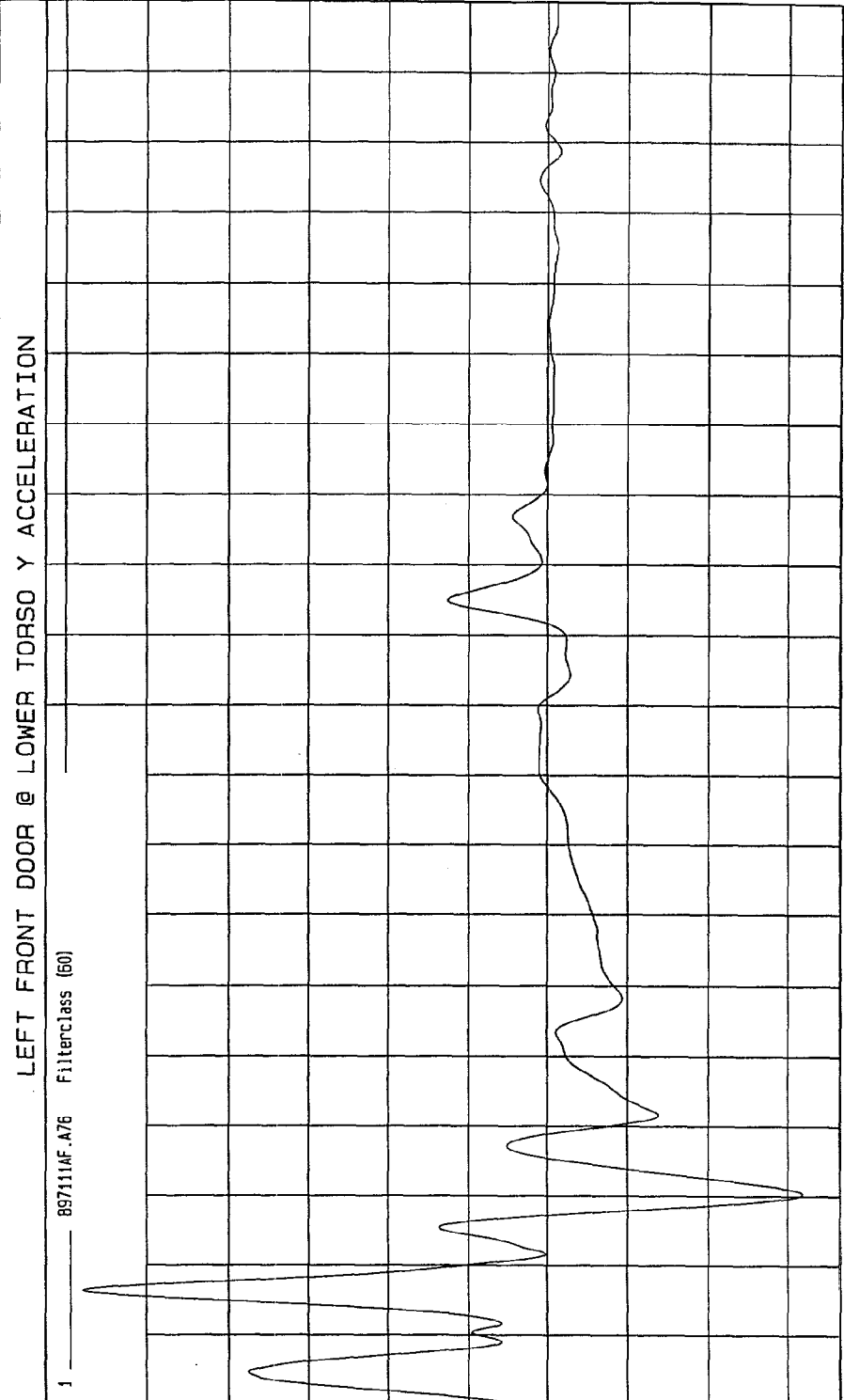
NSA Research
09-21-1997 12:59







TEST: EU SIDE IMPACT 96/27/EC 5-20-96	TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300	Speed: 31.2 MPH 50.2 KPH
Minimum = -63.57 G'S at 30 msec	Maximum = 115.93 G'S at 16 msec



TIME (SECONDS)

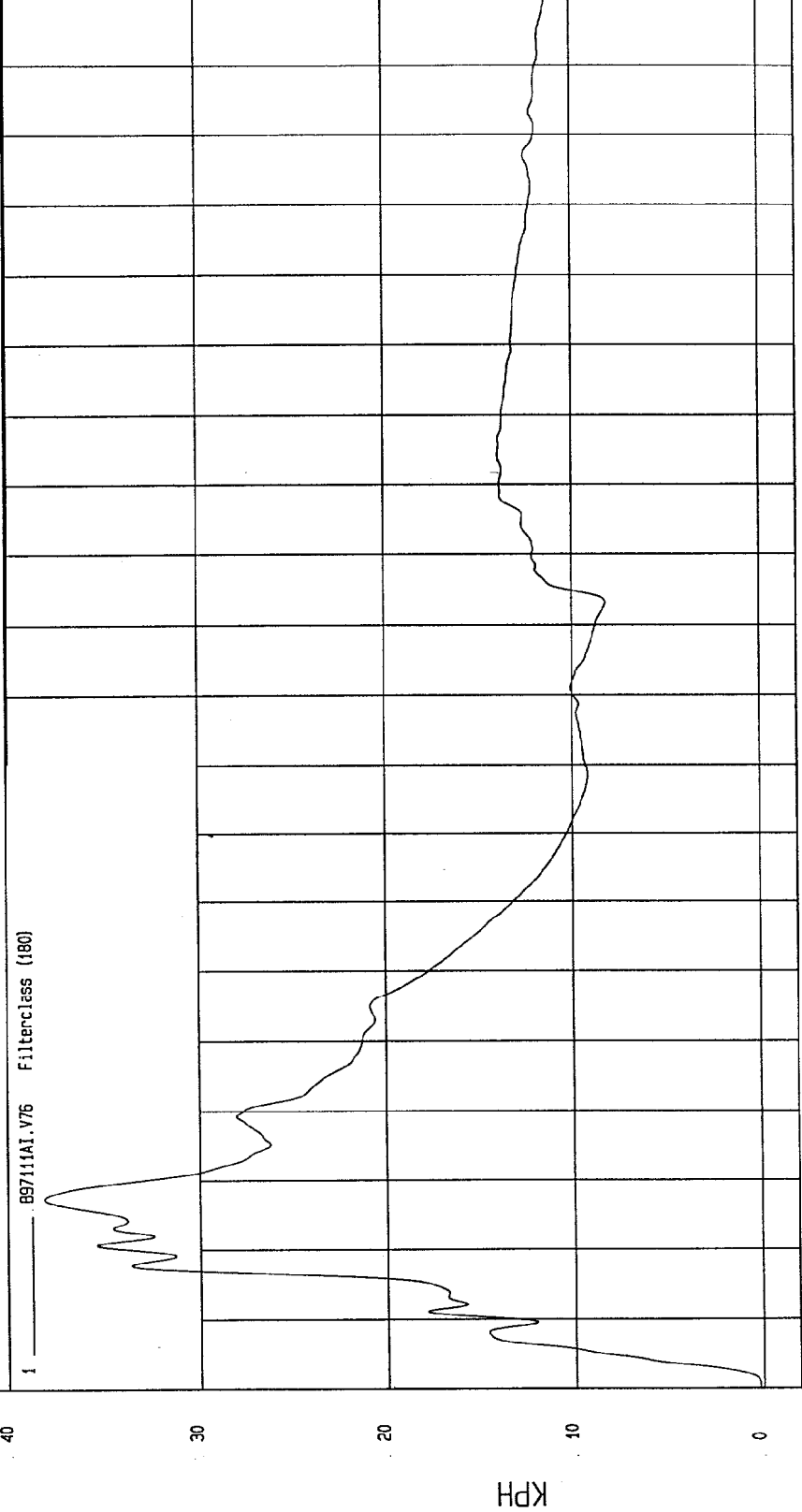
NSA Research
09-27-1997 13:00

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

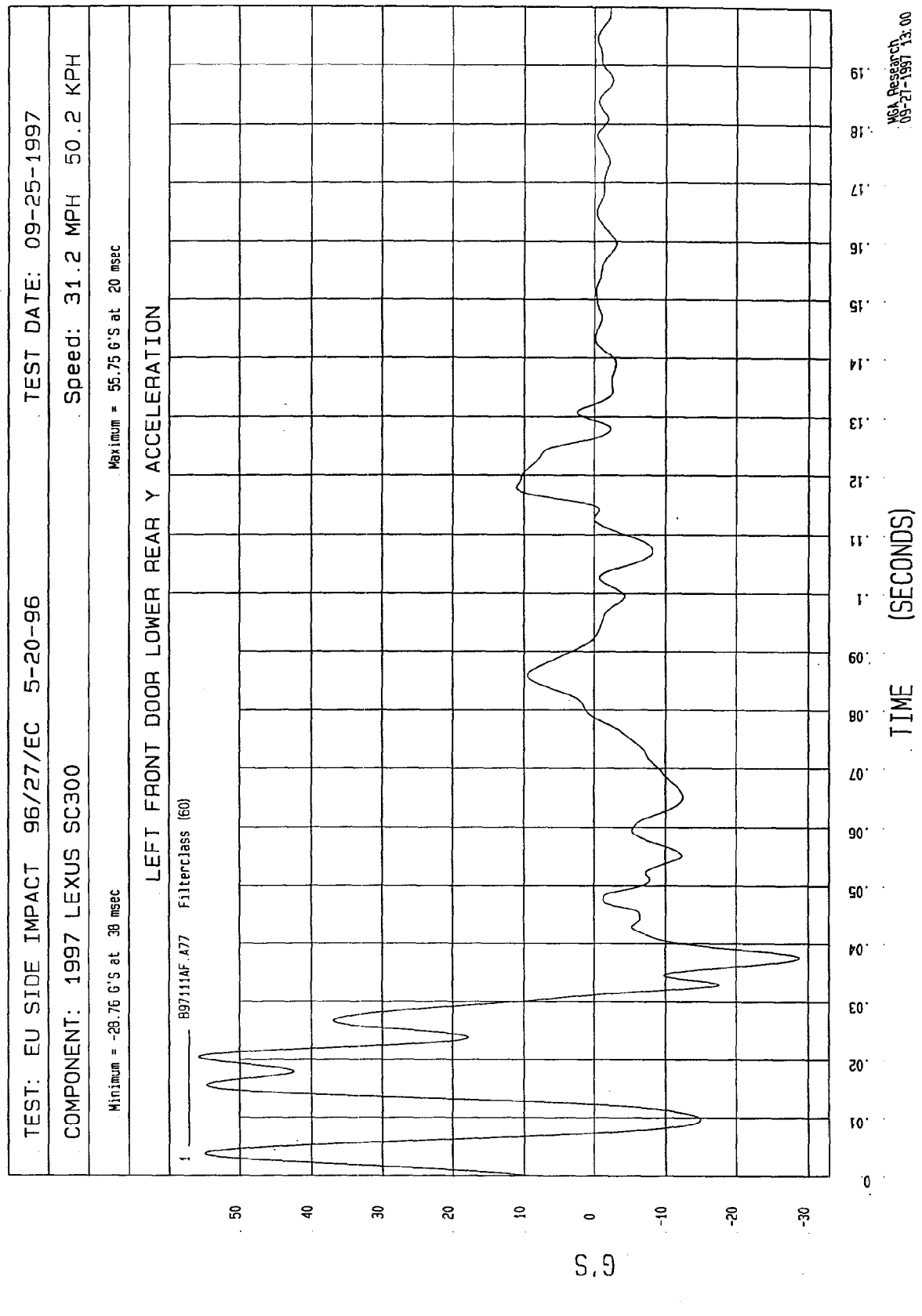
Minimum = 0 KPH at -20 msec Maximum = 38.19 KPH at 27 msec

LEFT FRONT DOOR @ LOWER TORSO Y VELOCITY



TIME Seconds

MECA Research
09-27-1997 13:00

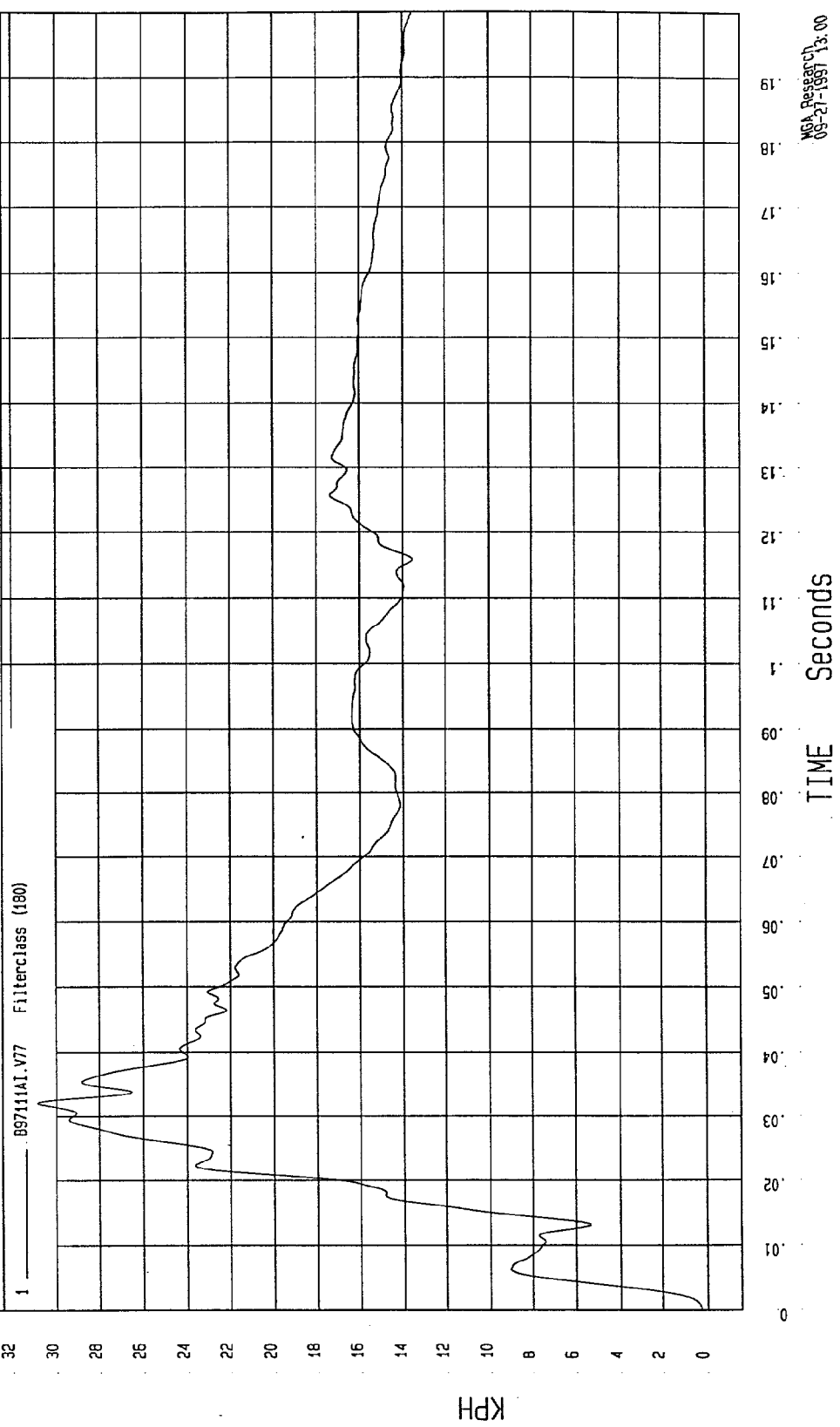


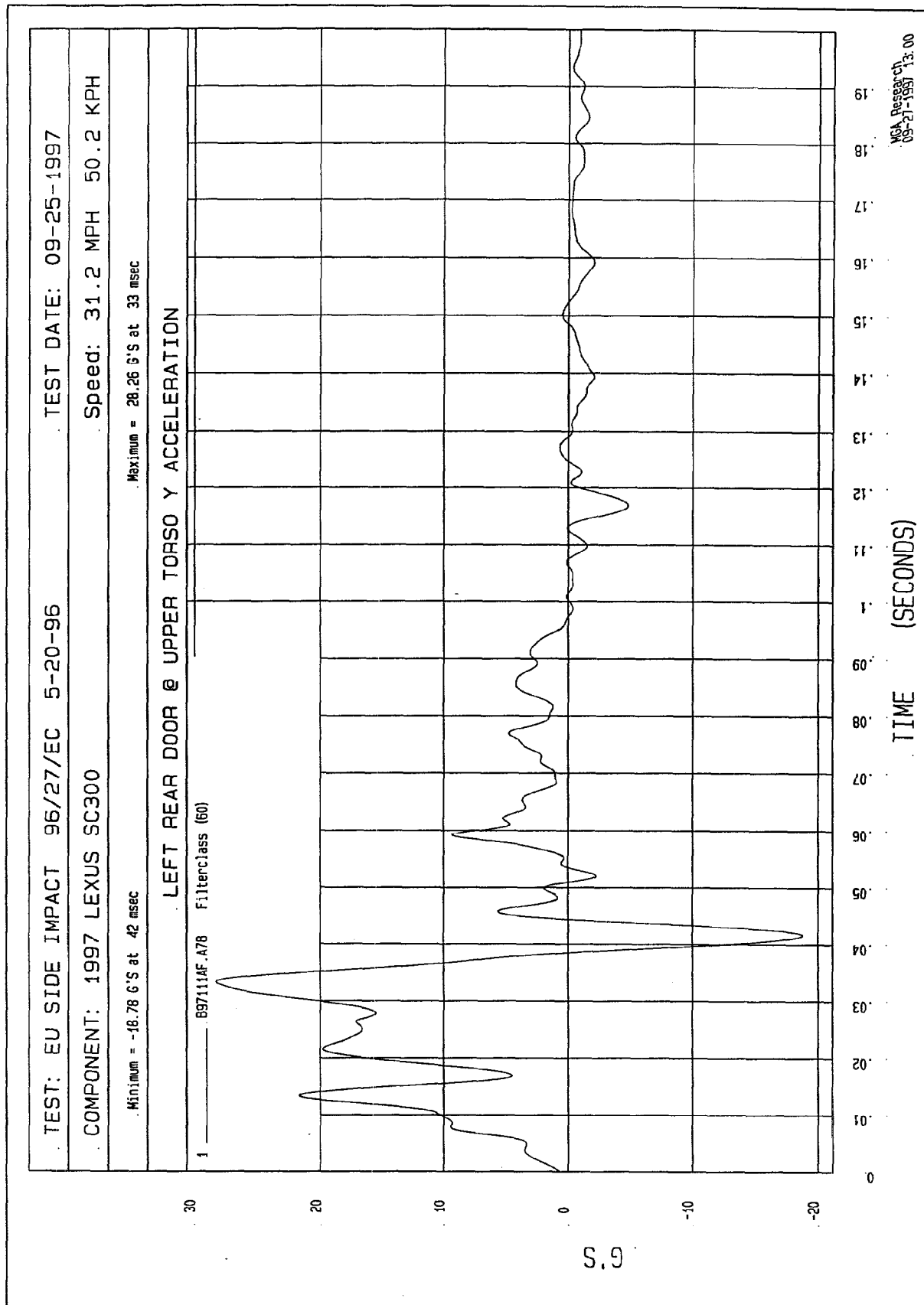
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = 0 KPH at -20 msec Maximum = 30.88 KPH at 32 msec

LEFT FRONT DOOR LOWER REAR Y VELOCITY





TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

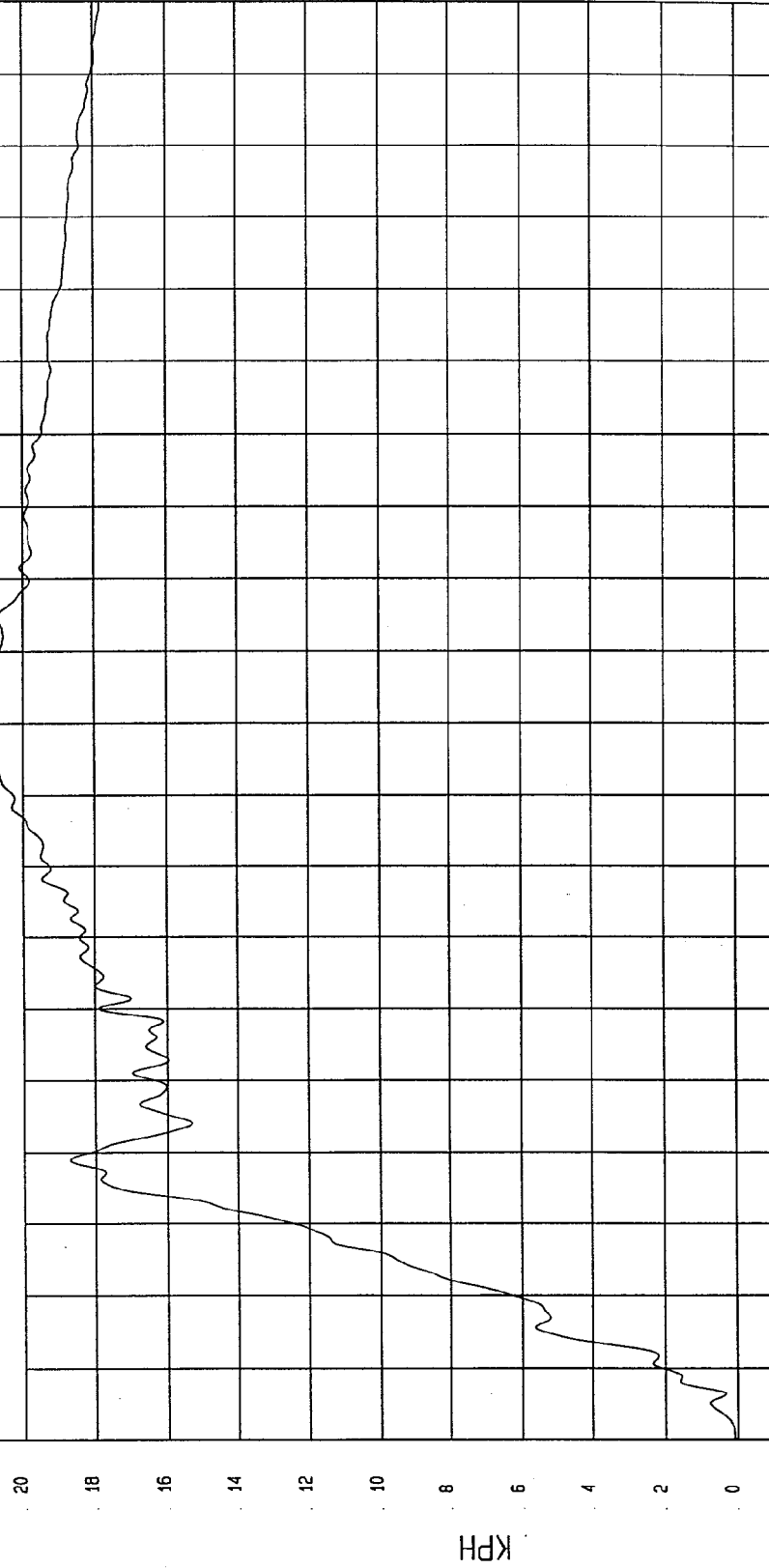
COMPONENT: 1997 LEXUS SC300

Minimum = 0 KPH at -20 msec

Maximum = 20.88 KPH at 98 msec

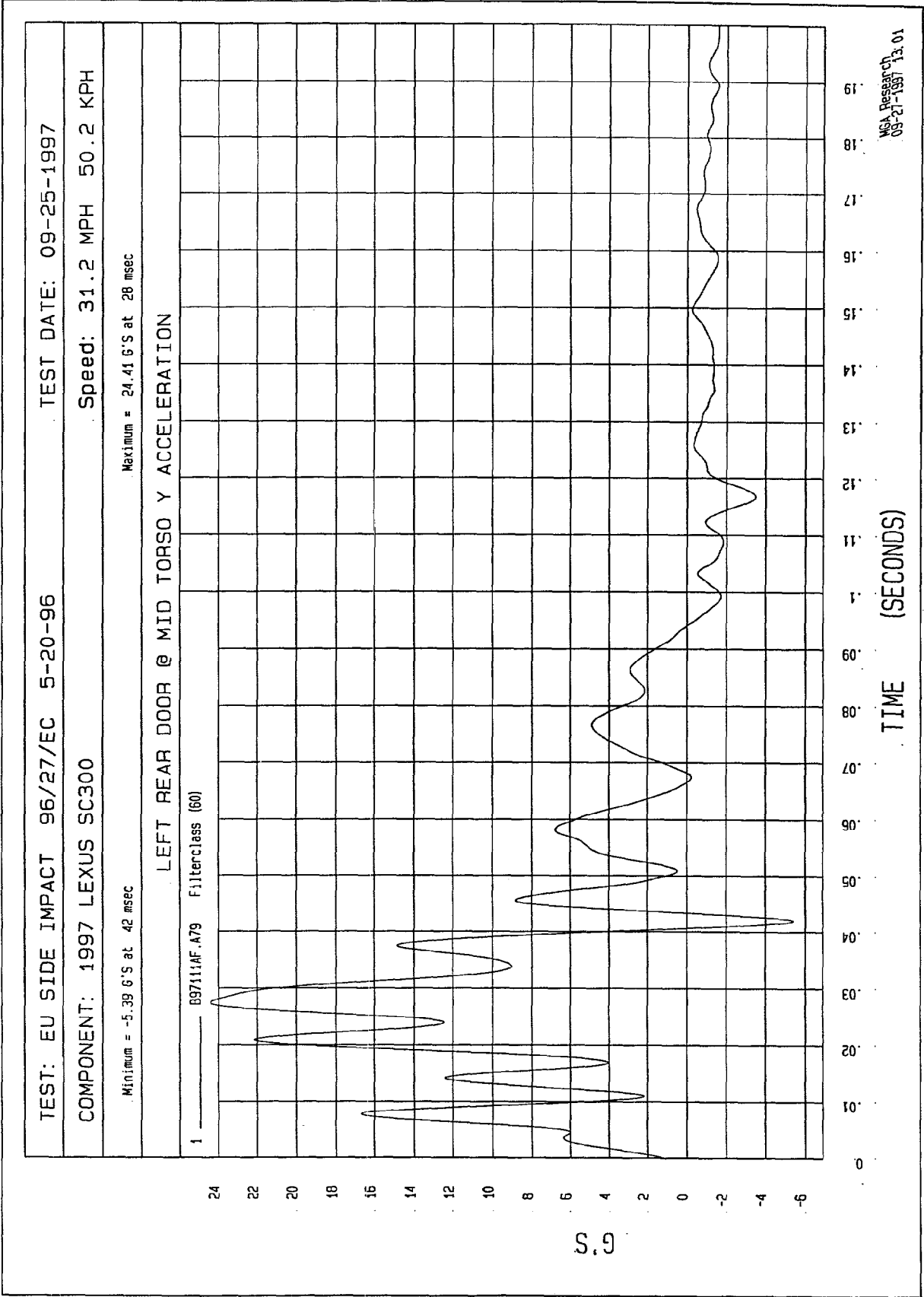
LEFT REAR DOOR @ UPPER TORSO Y VELOCITY

1 — .897111A1.V78 Filterclass (180)



MEA Research
09-27-1997 13:01

TIME Seconds



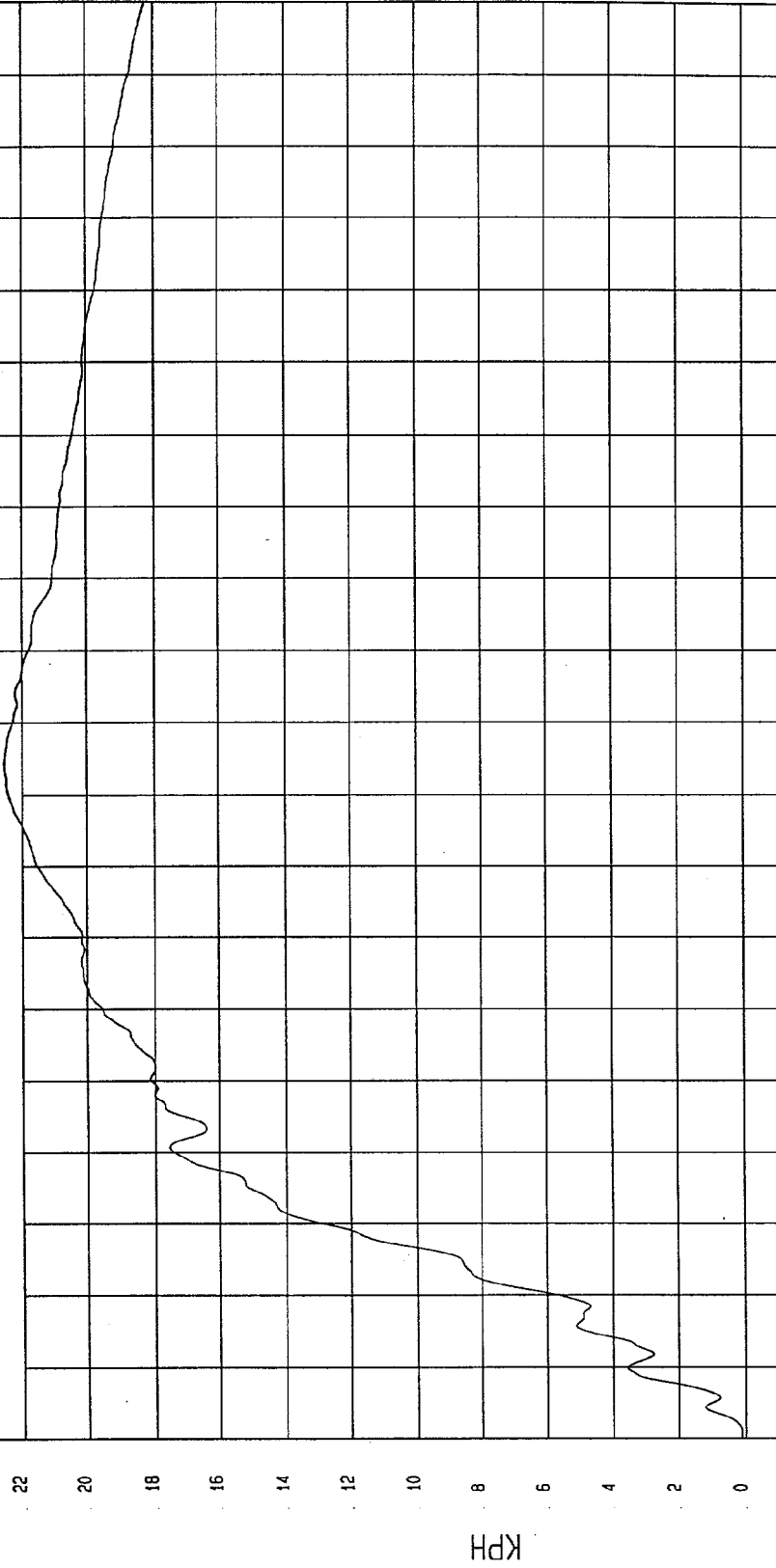
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -3.50E-04 KPH at -20 msec
Maximum = 22.53 KPH at 94 msec

LEFT REAR DOOR @ MID TORSO Y VELOCITY

1 B97111A1.V79 Filterclass (180)



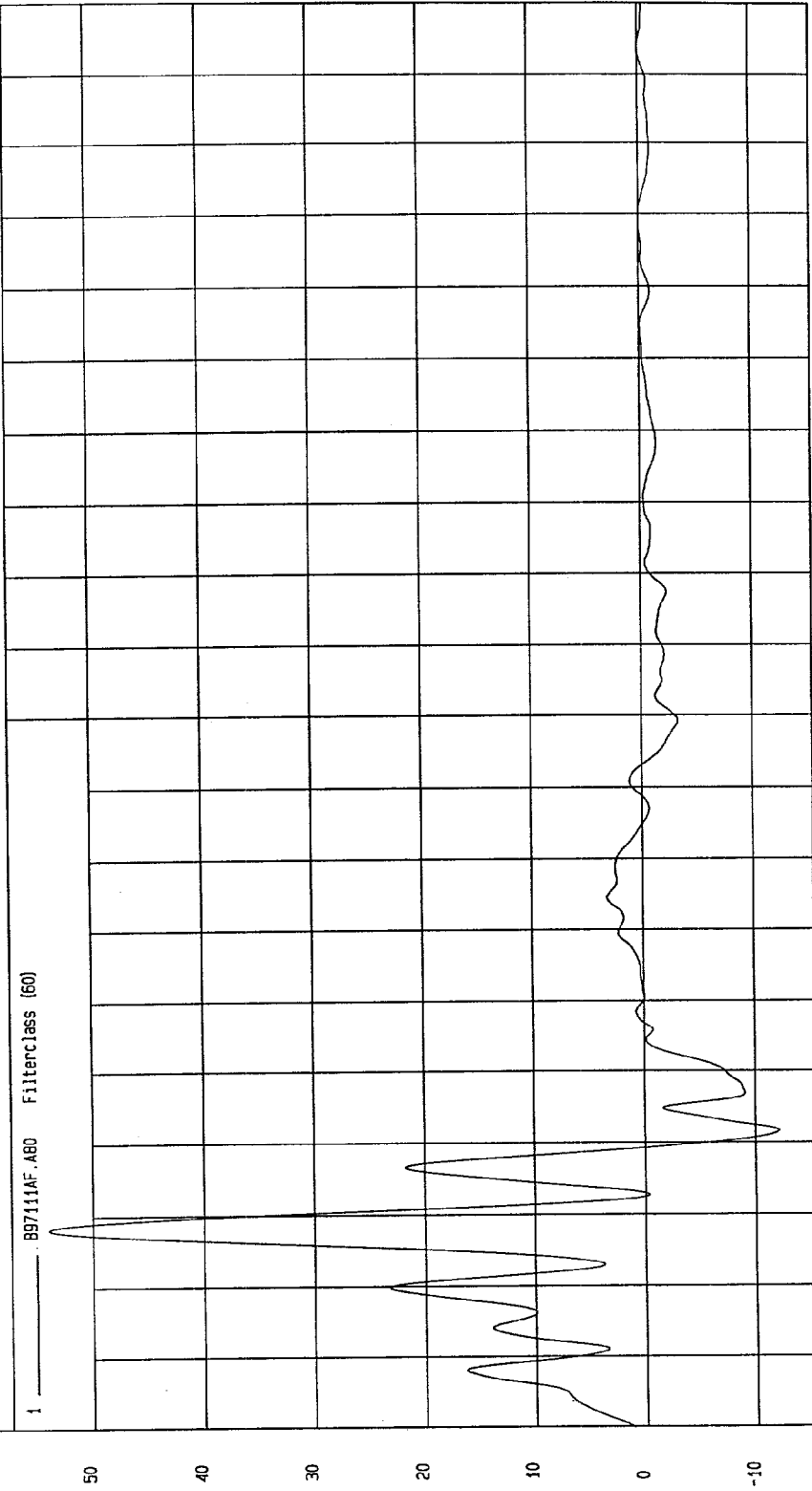
MCA Research
09-27-1997 13:01

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -12.12 G'S at 42 msec Maximum = 53.97 G'S at 28 msec

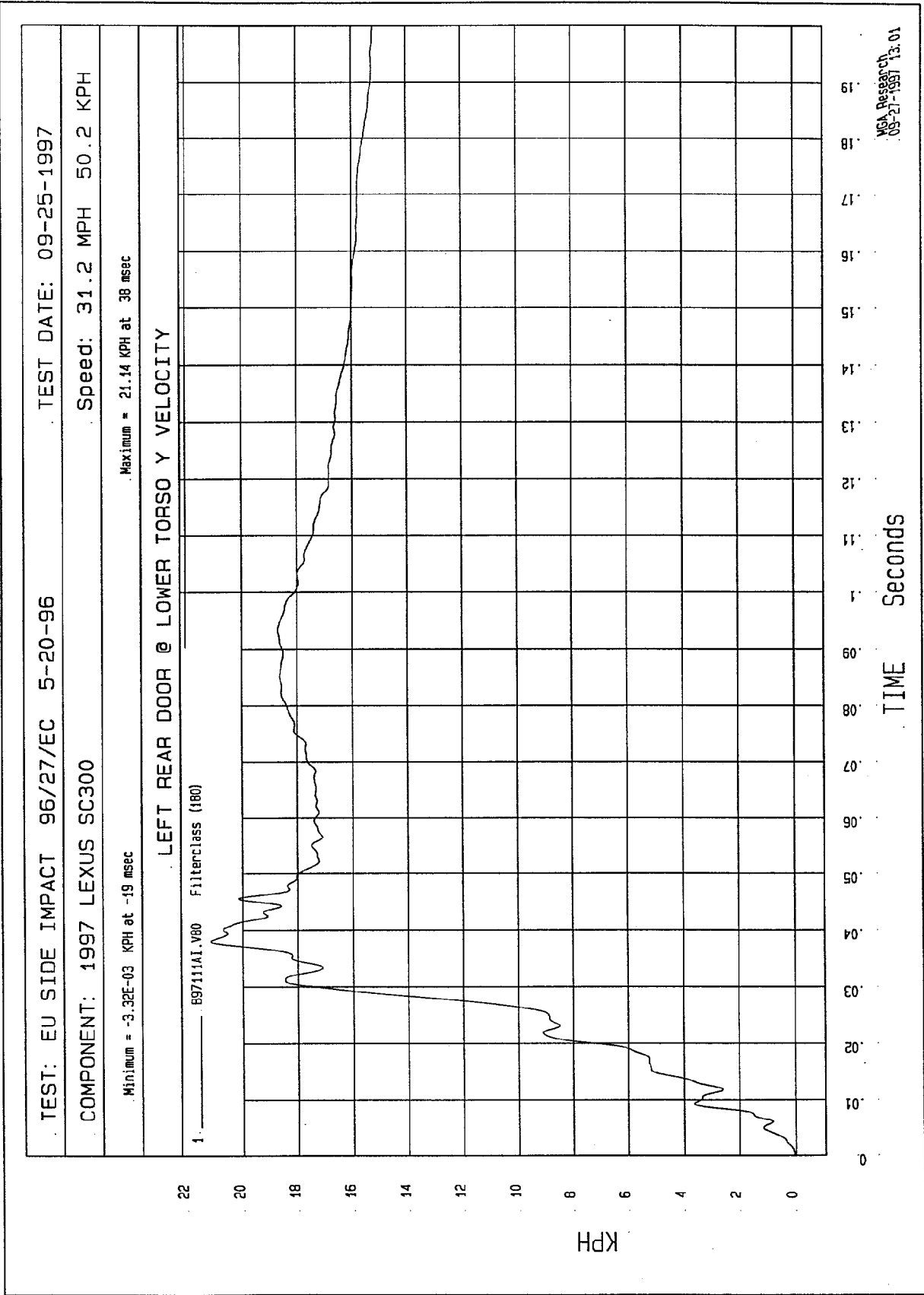
LEFT REAR DOOR @ LOWER TORSO Y ACCELERATION



TIME (SECONDS)

19
18
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WCA Research
09-21-1997 13:01

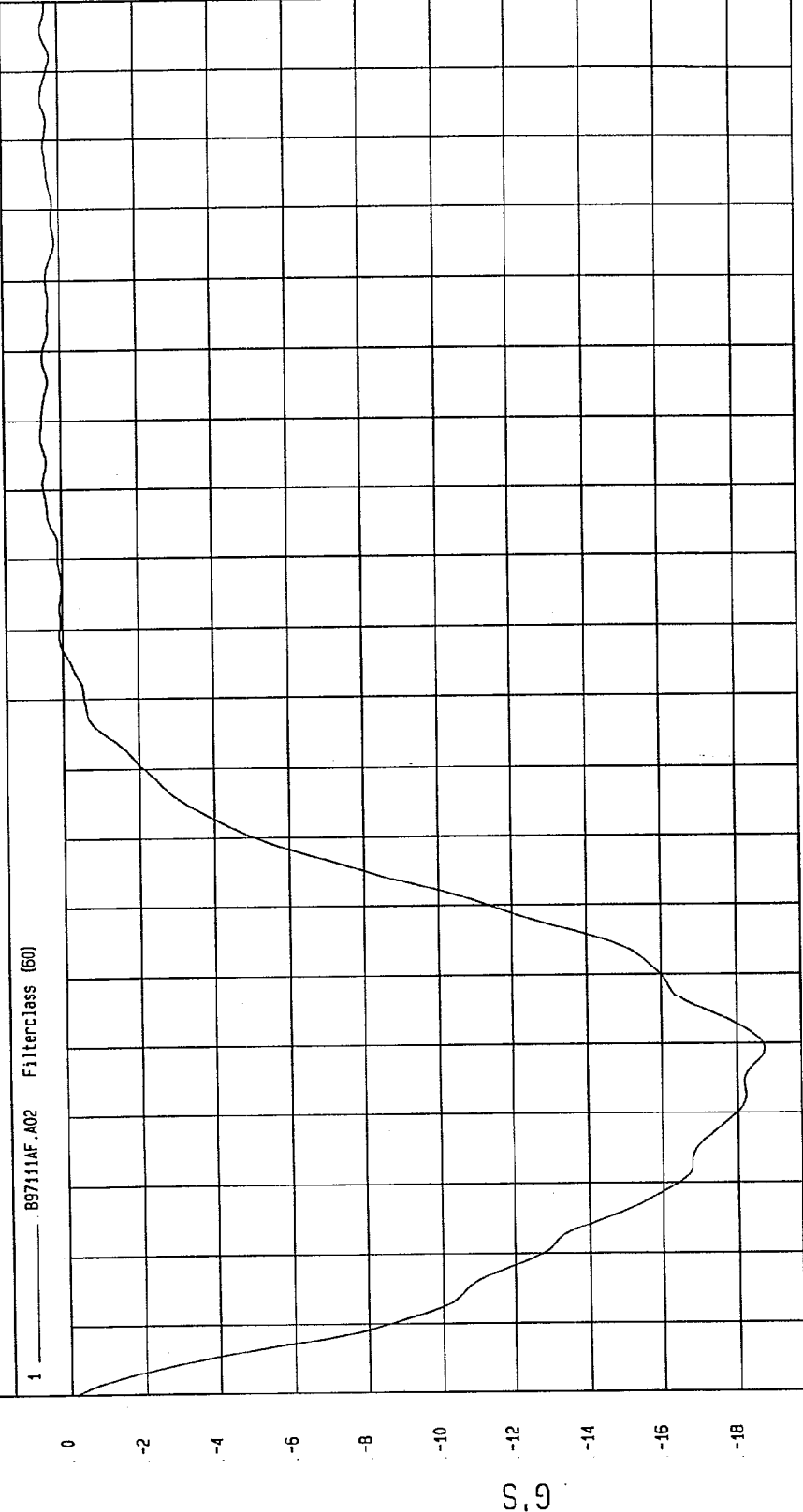


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -18.75 G'S at 49 msec Maximum = .56 G'S at -20 msec

MOVING BARRIER CG X ACCELERATION



NGA Research
09-27-1997 13:01

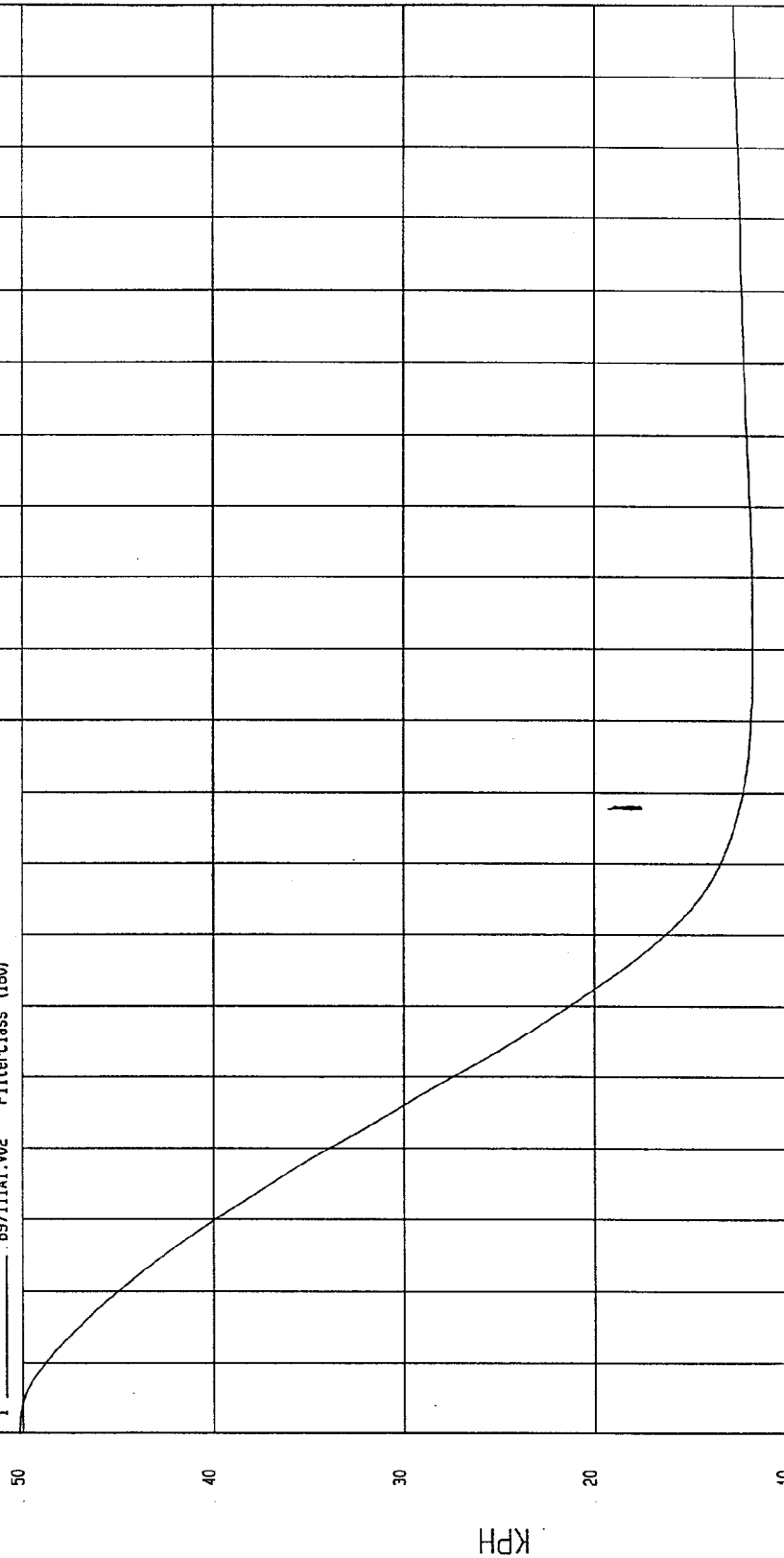
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

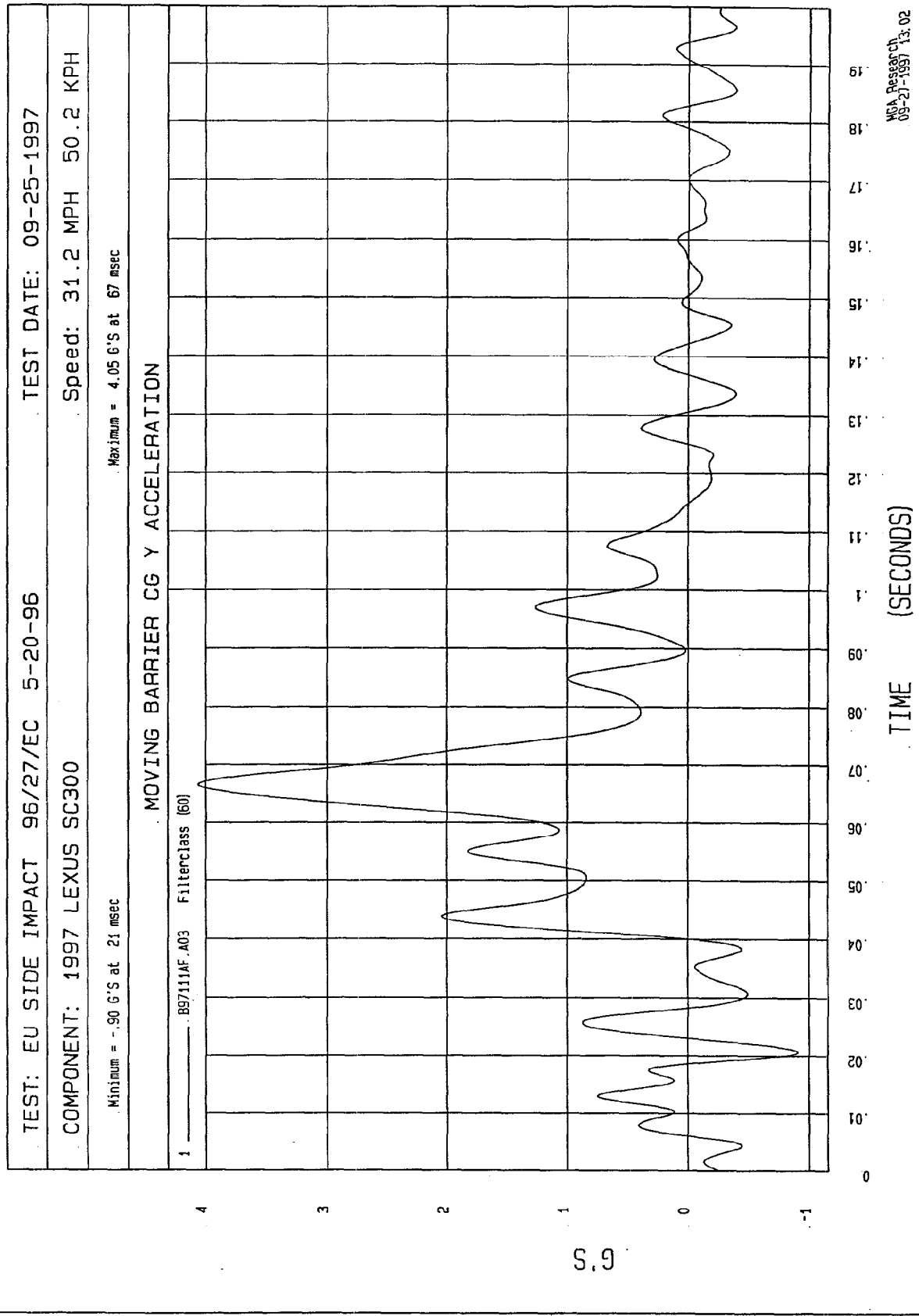
Minimum = 11.79 KPH at 106 msec

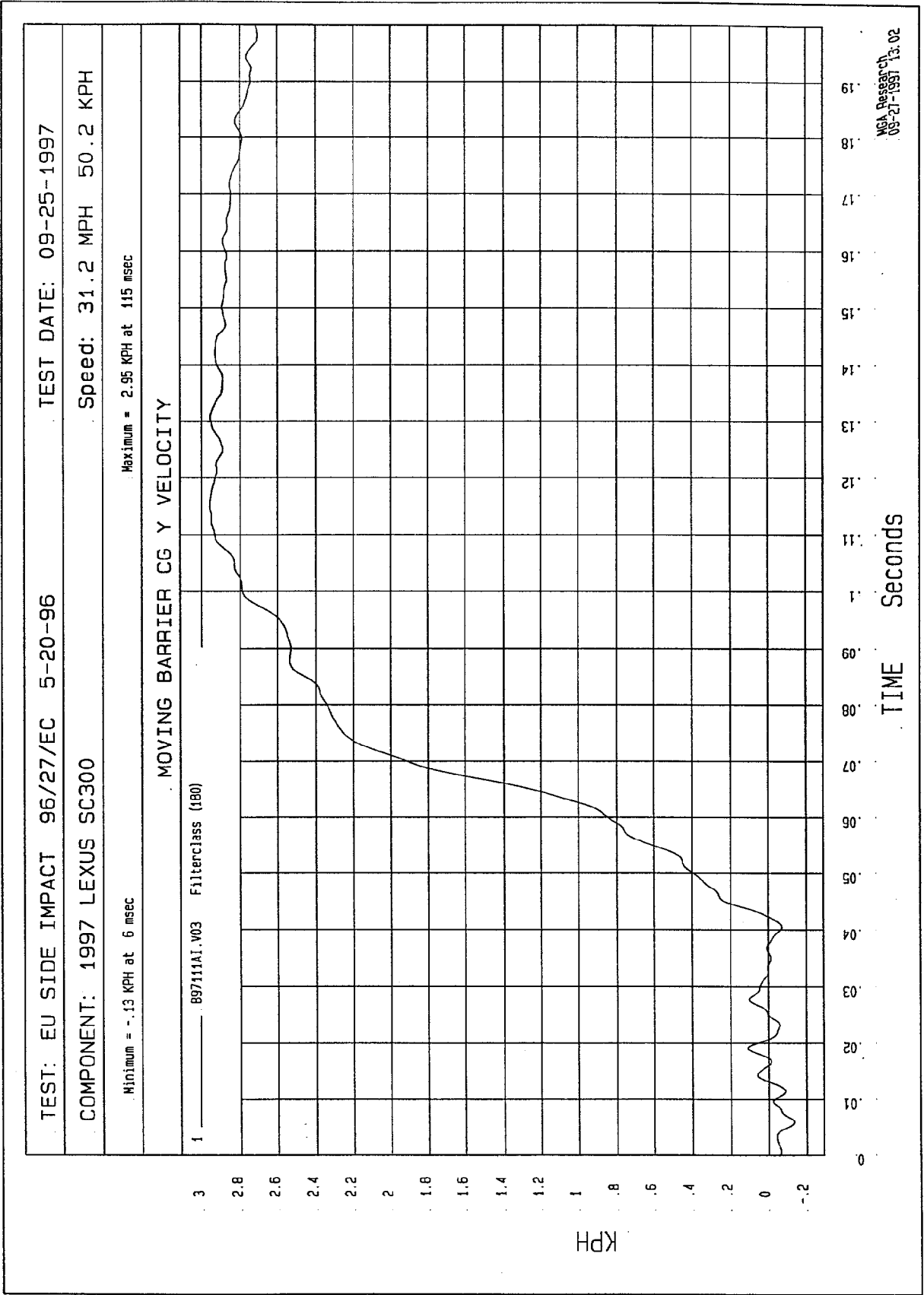
MOVING BARRIER CG X VELOCITY

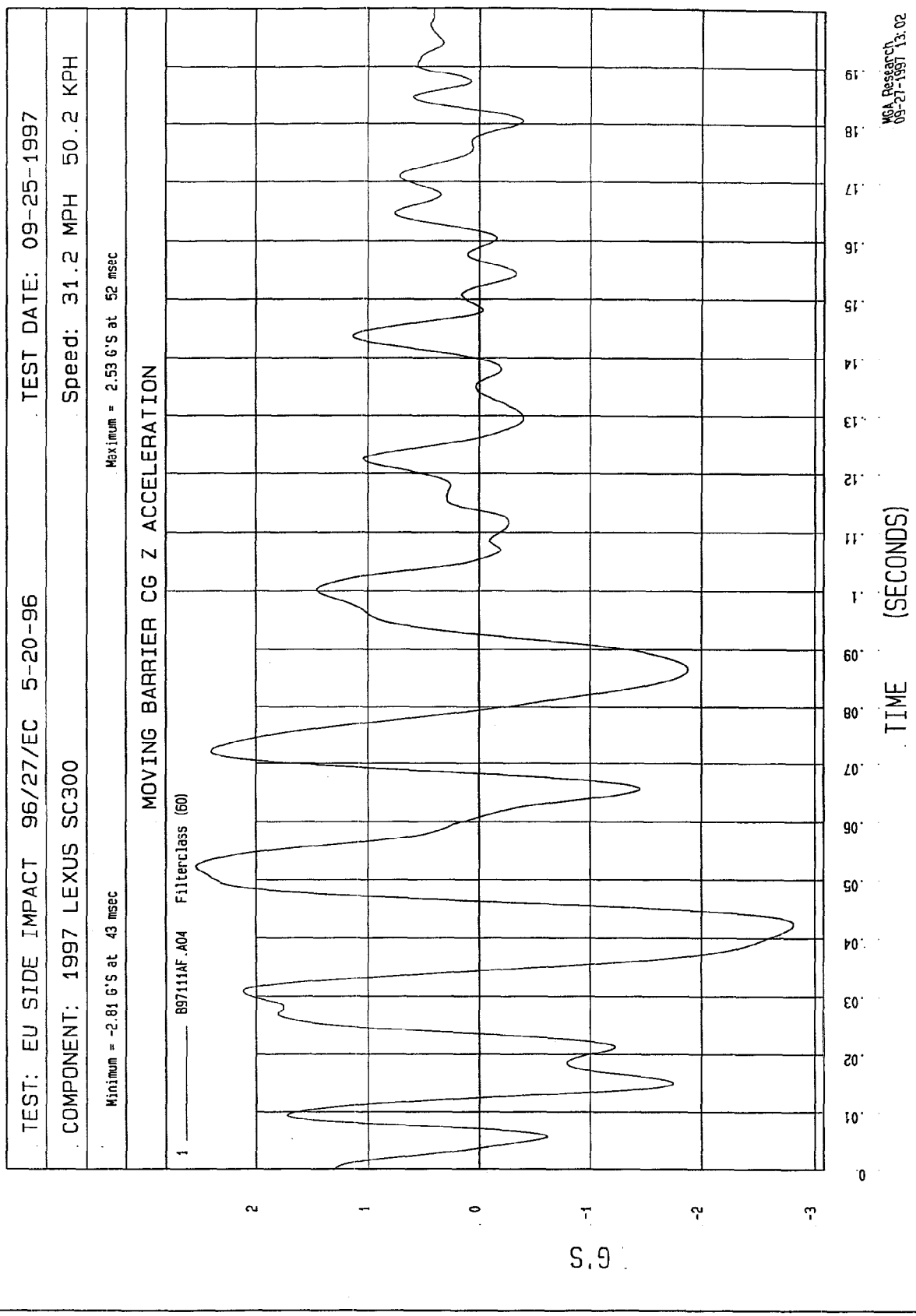
1 897111A1.V02 Filterclass (180)



NSA Research
09-21-1997 13:02





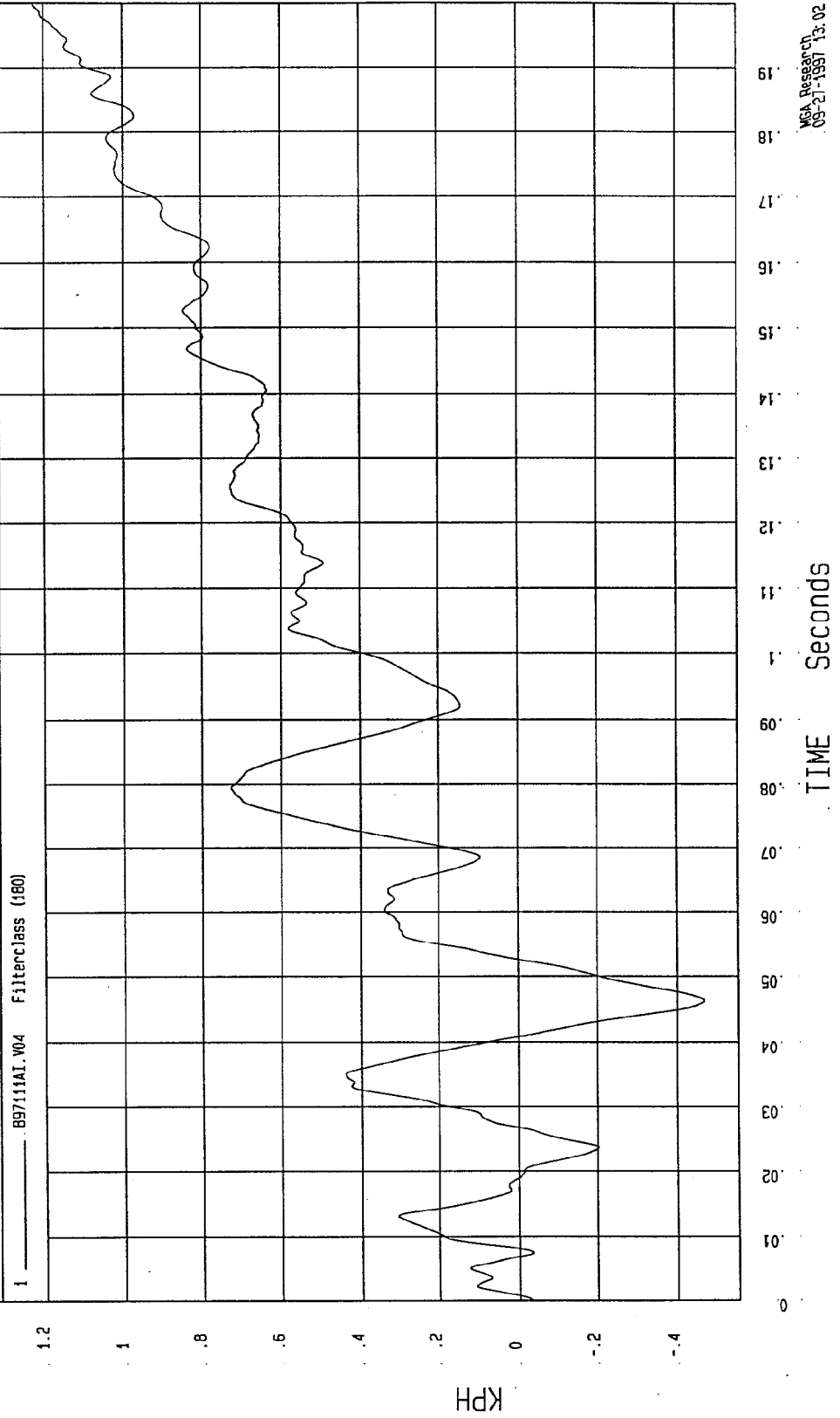


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.47 KPH at 46 msec
Maximum = 1.22 KPH at 200 msec

MOVING BARRIER CG Z VELOCITY



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

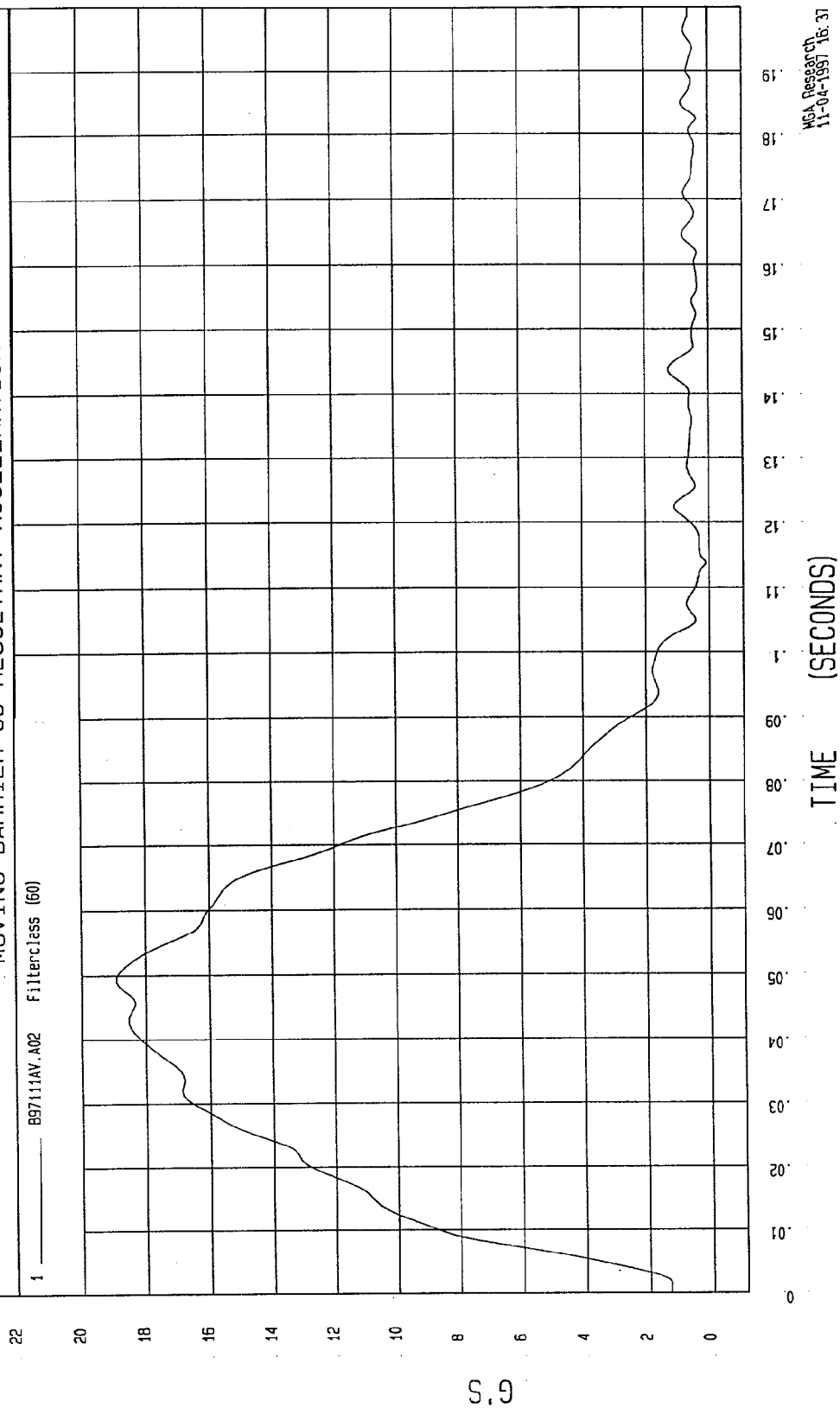
Speed: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

Maximum = 18.91 G'S at 49 msec

Minimum = 2.87E-02 G'S at -12 msec

MOVING BARRIER CG RESULTANT ACCELERATION



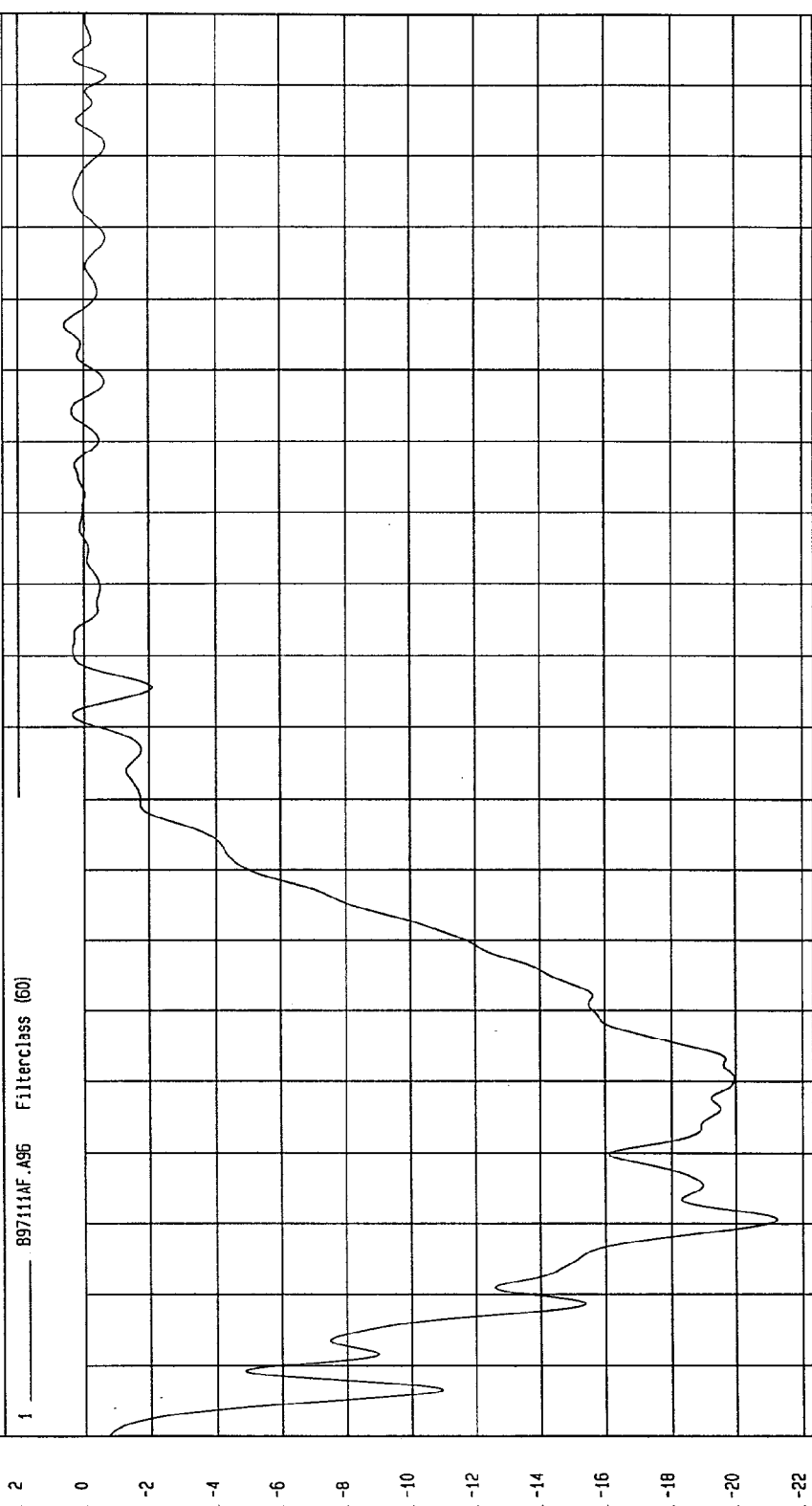
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

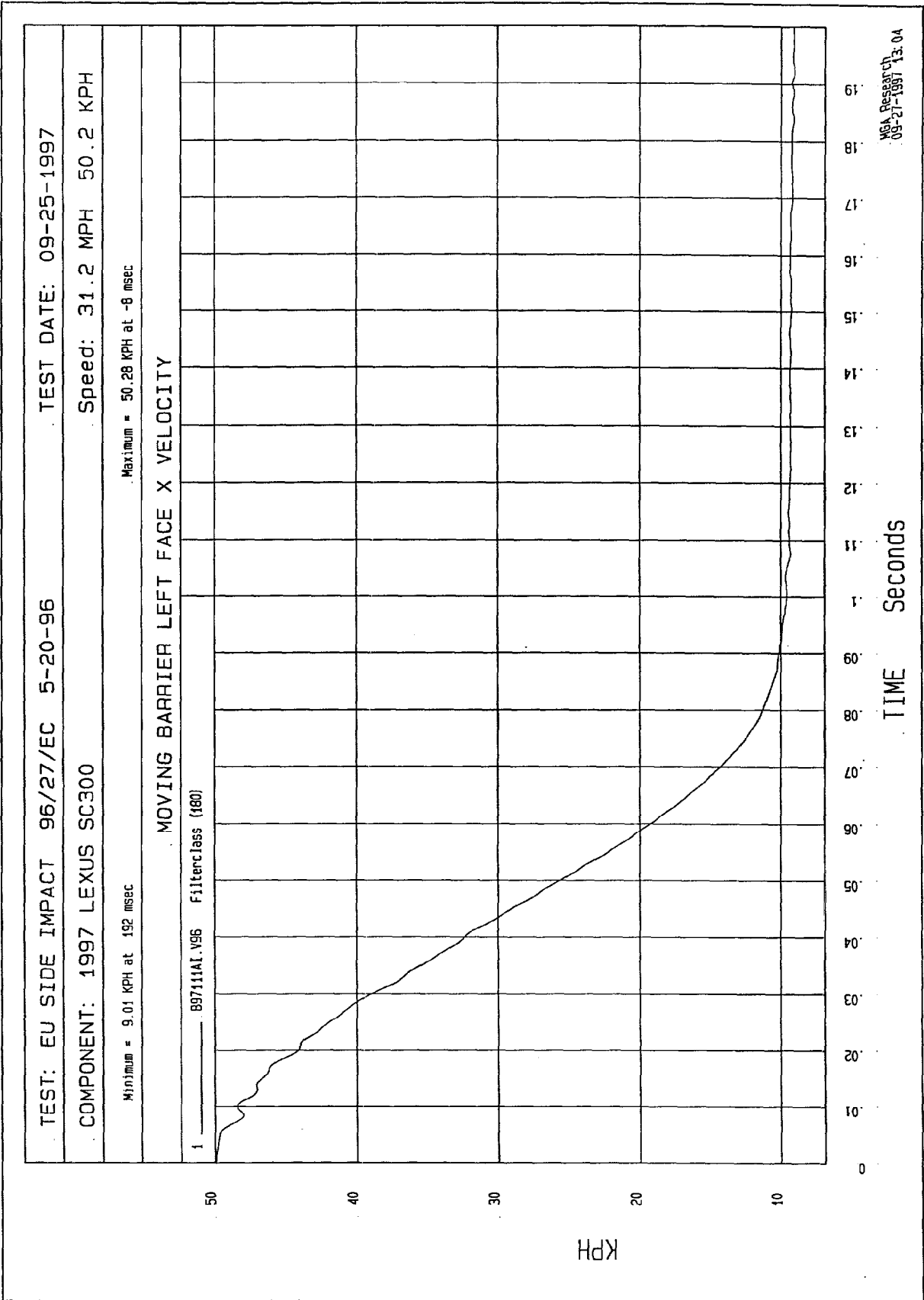
Minimum = -21.21 G'S at 31 msec

MOVING BARRIER LEFT FACE X ACCELERATION

1 897111AF.A96 Filterclass (60)



NSA Research
09-27-1997 13:04



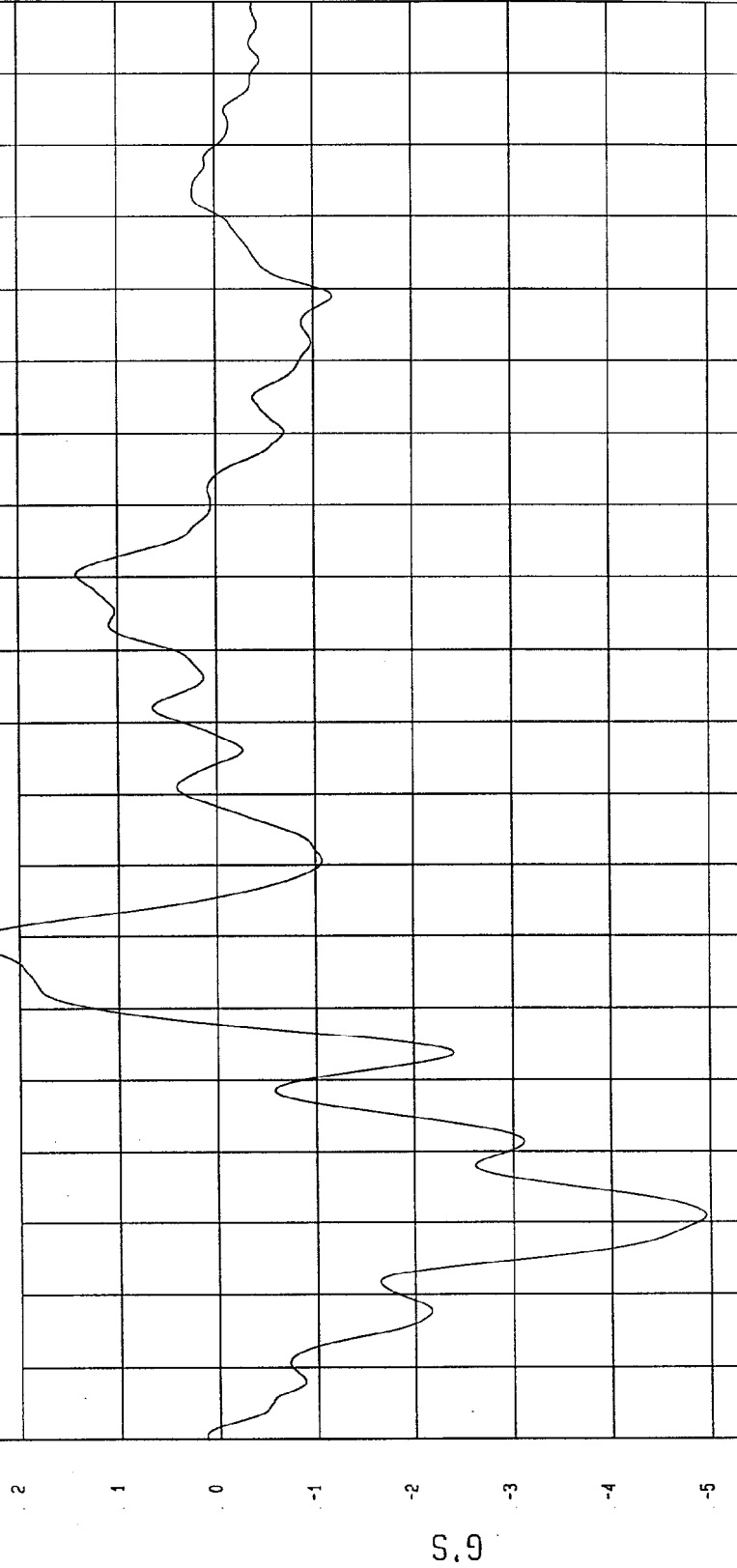
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

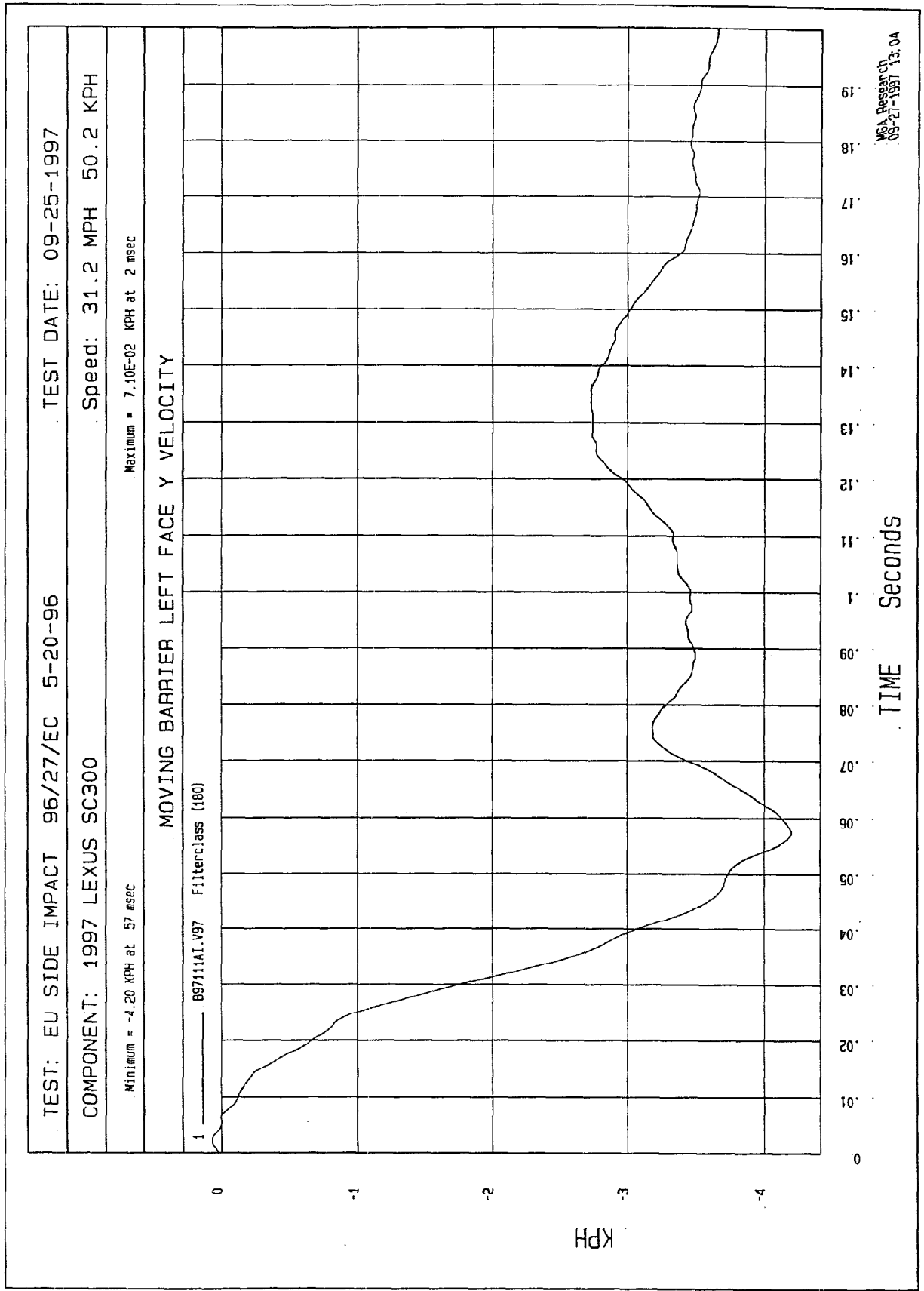
Minimum = -4.95 G'S at 31 msec
Maximum = 2.54 G'S at 69 msec

MOVING BARRIER LEFT FACE Y ACCELERATION

1 _____ B97111AF.A97 Filterclass (60)



MCA Research
09-27-1997 13:04



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

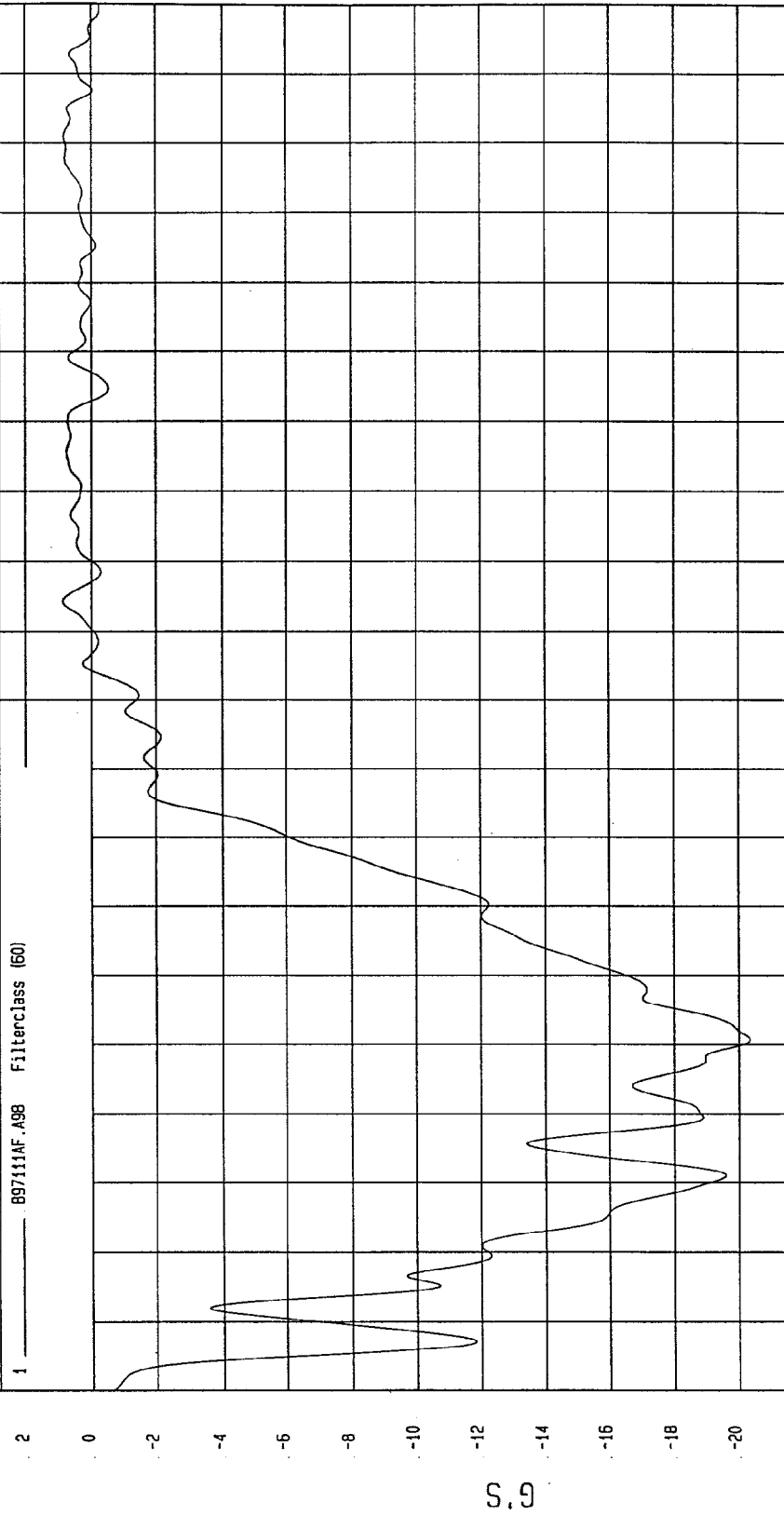
COMPONENT: 1997 LEXUS SC300

Minimum = -20.33 G'S at 51 msec

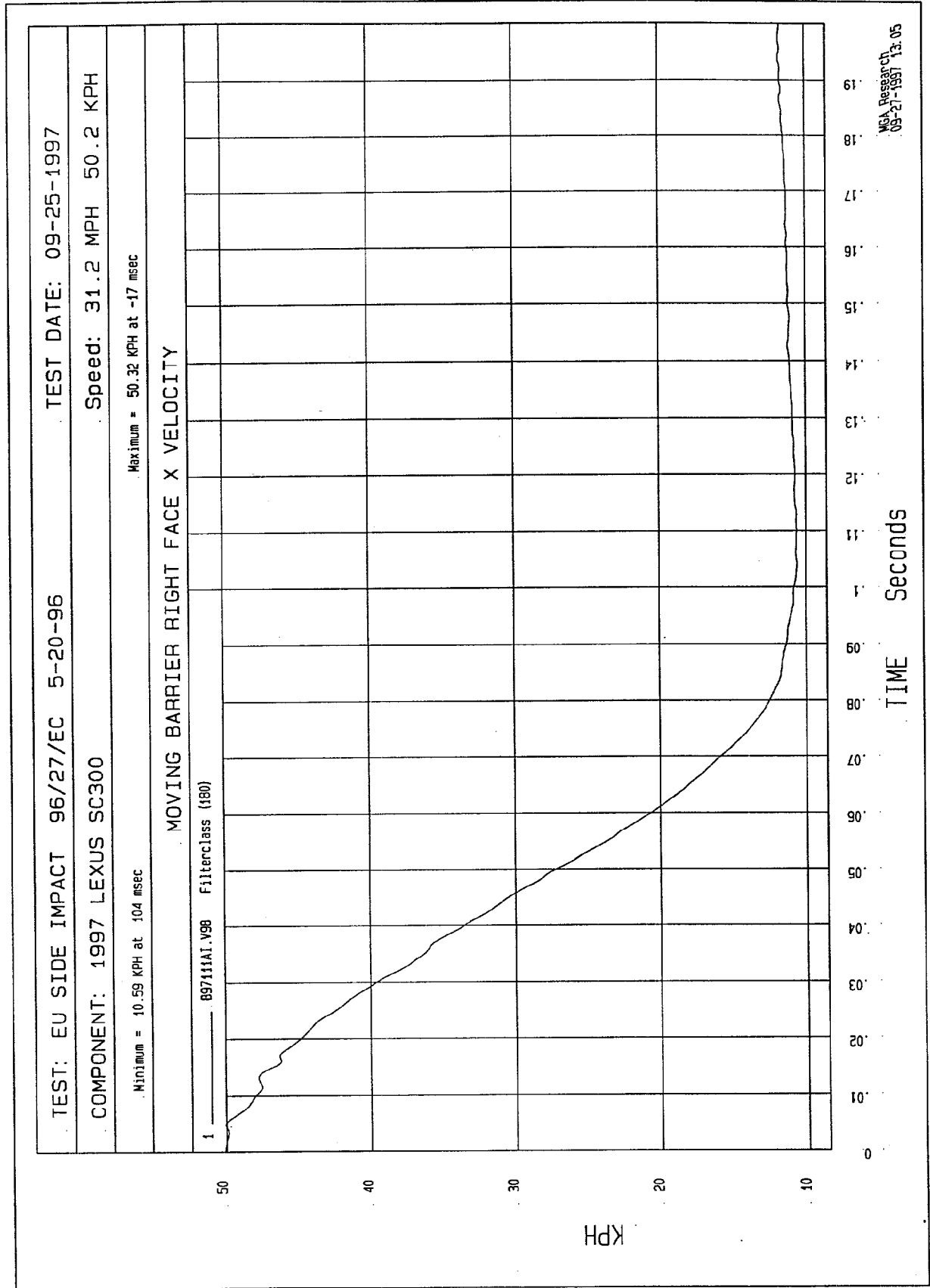
Maximum = 1.72 G'S at -10 msec

MOVING BARRIER RIGHT FACE X ACCELERATION

1 ——— 897111AF.A98 Filterclass (60)



MCA Research
09-27-1997 13:04



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

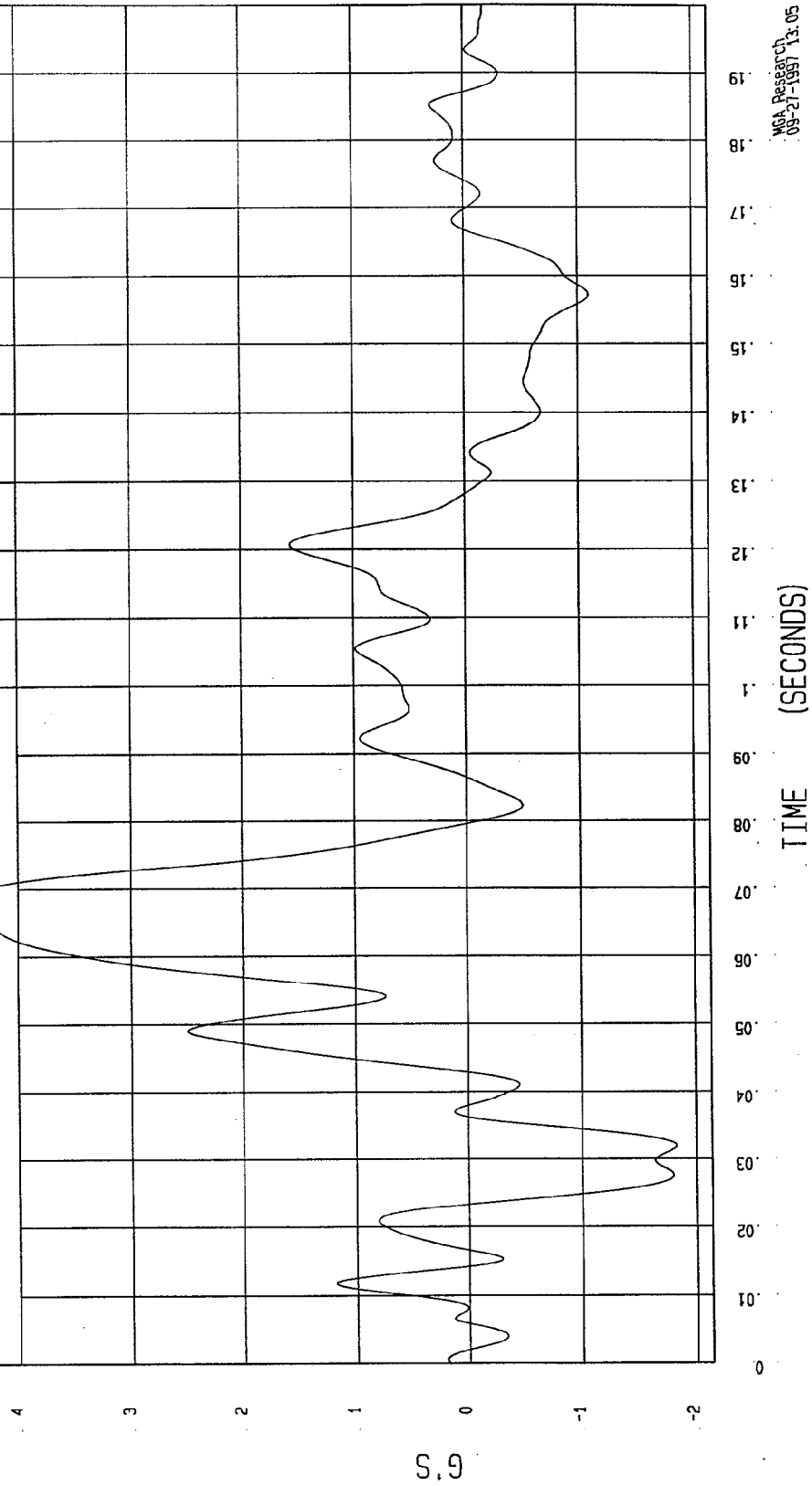
COMPONENT: 1997 LEXUS SC300

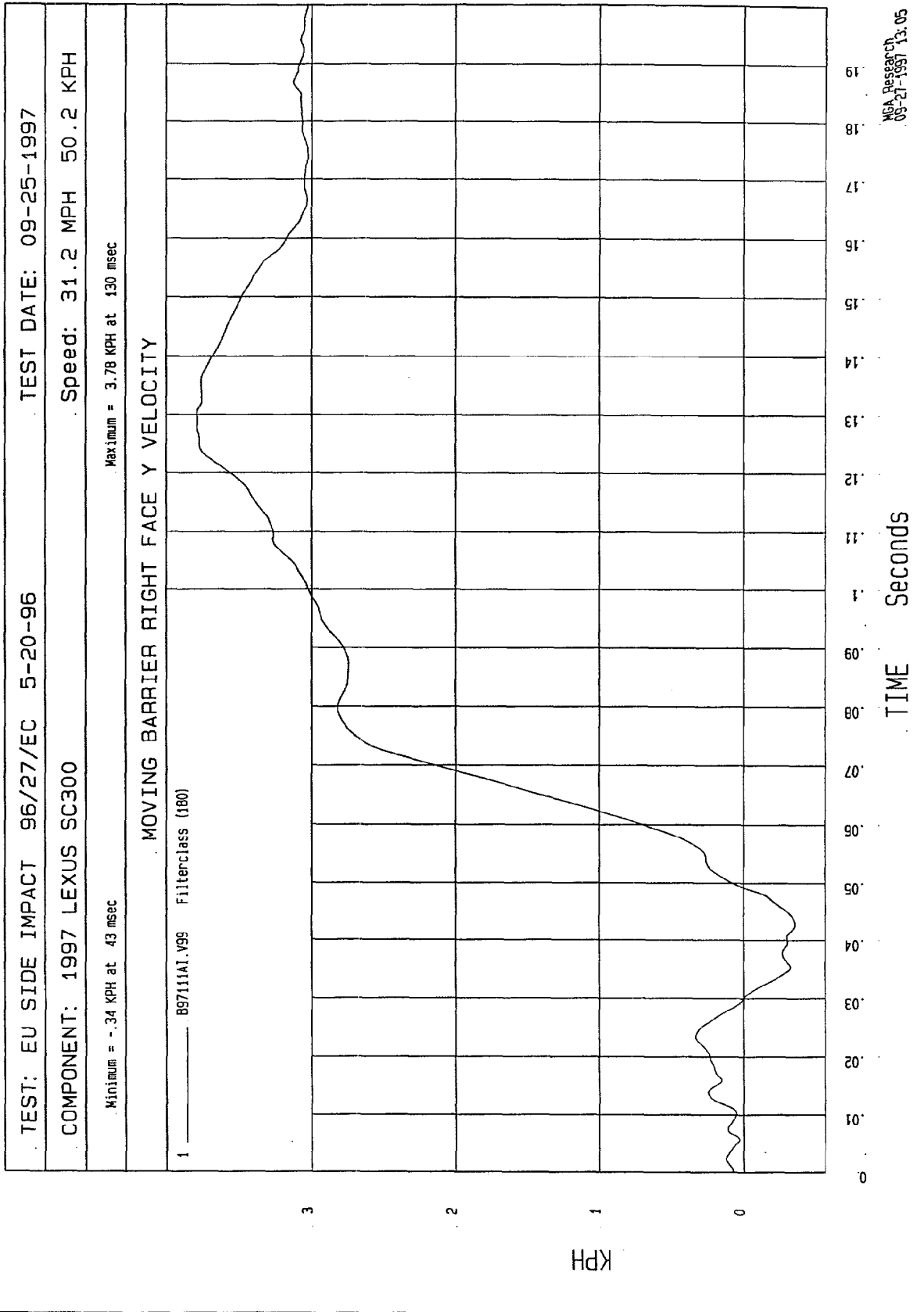
Maximum = 4.40 G'S at 69 msec

Minimum = -1.82 G'S at 32 msec

MOVING BARRIER RIGHT FACE Y ACCELERATION

1 897111AF.A99 Filterclass (60)





TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

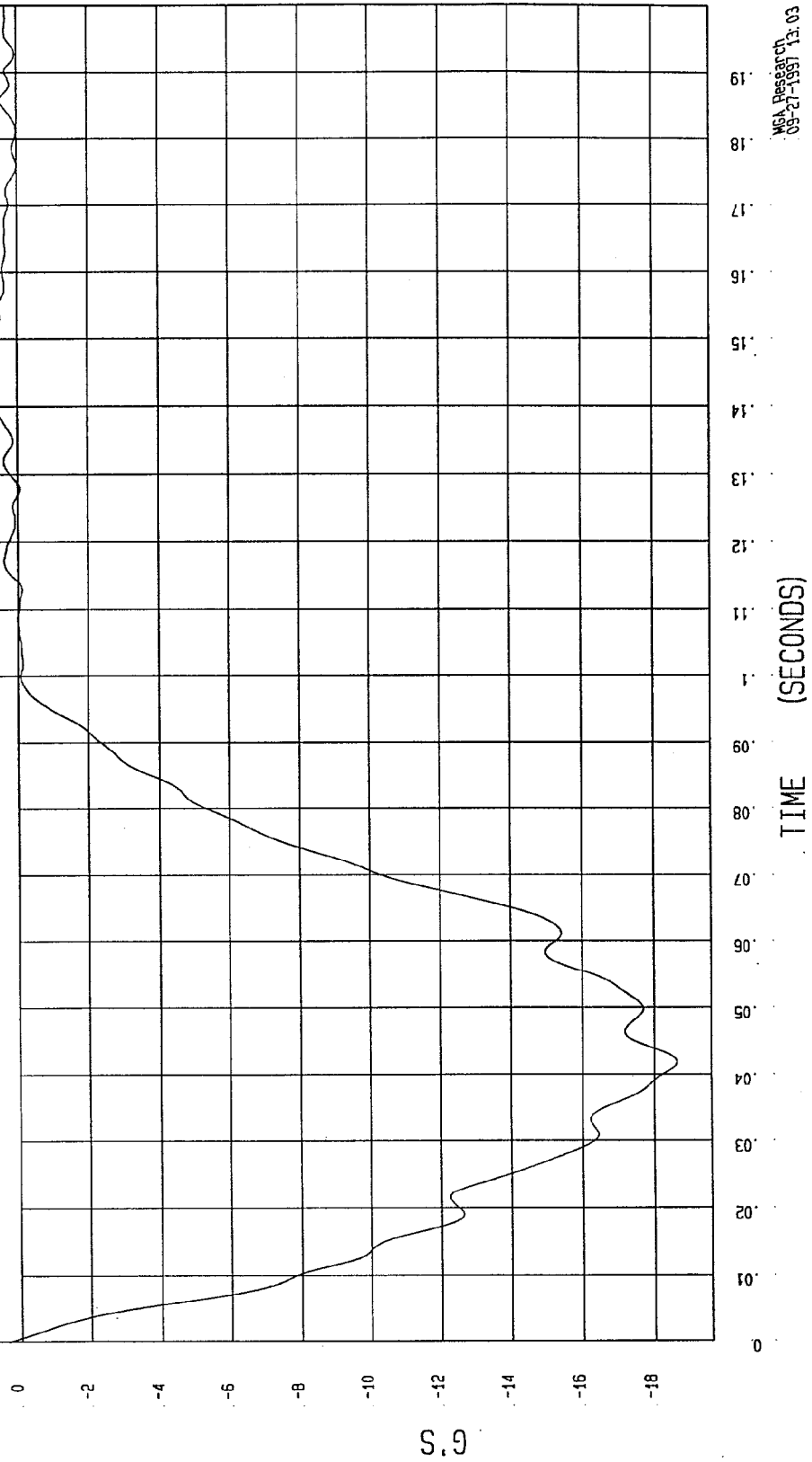
COMPONENT: 1997 LEXUS SC300

Maximum = .90 G'S at 146 msec

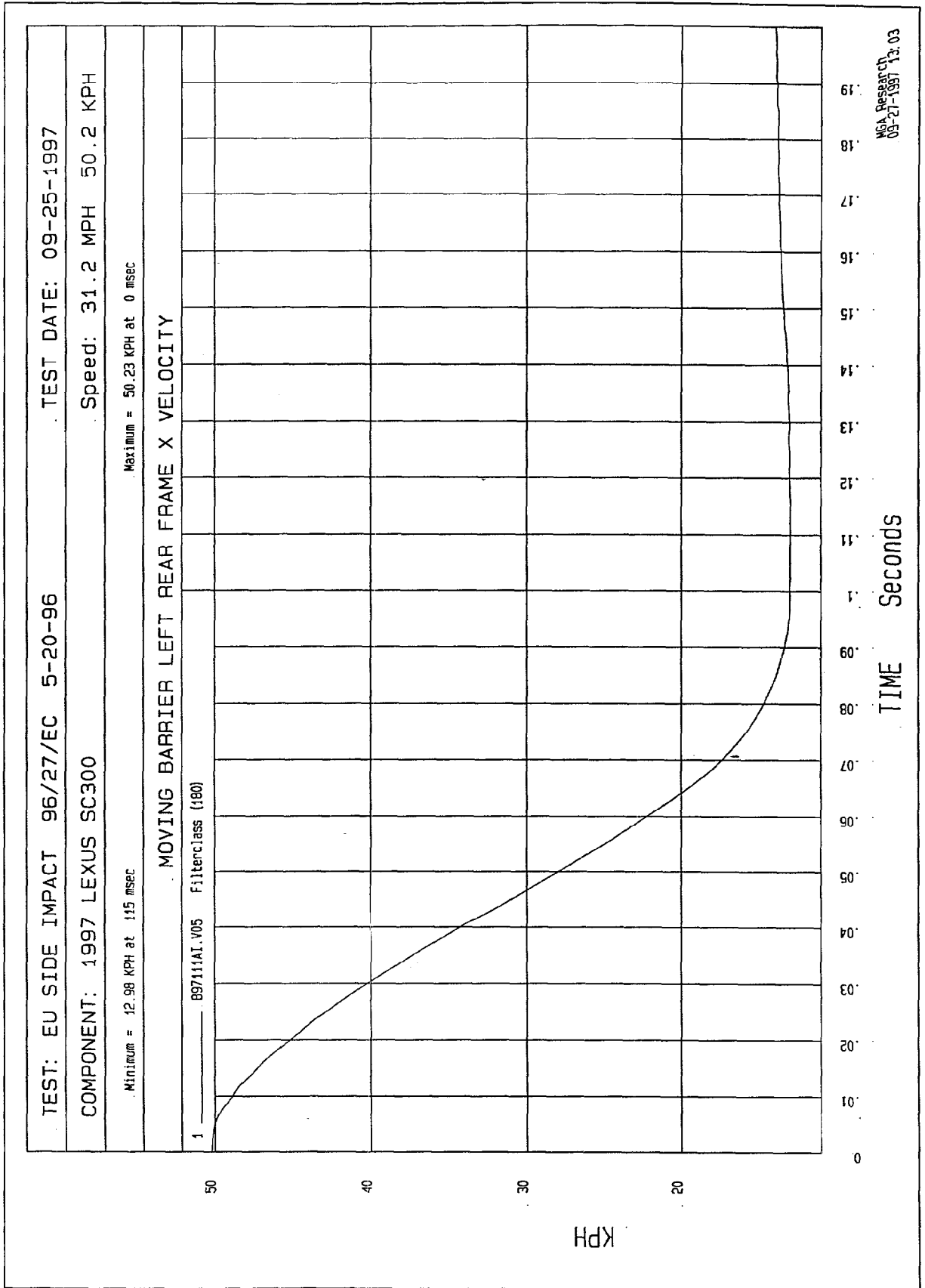
Minimum = -18.63 G'S at 42 msec

MOVING BARRIER LEFT REAR FRAME X ACCELERATION

1 897111AF.A05 Filterclass (60)



MSA Research
09-27-1997 13:03



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

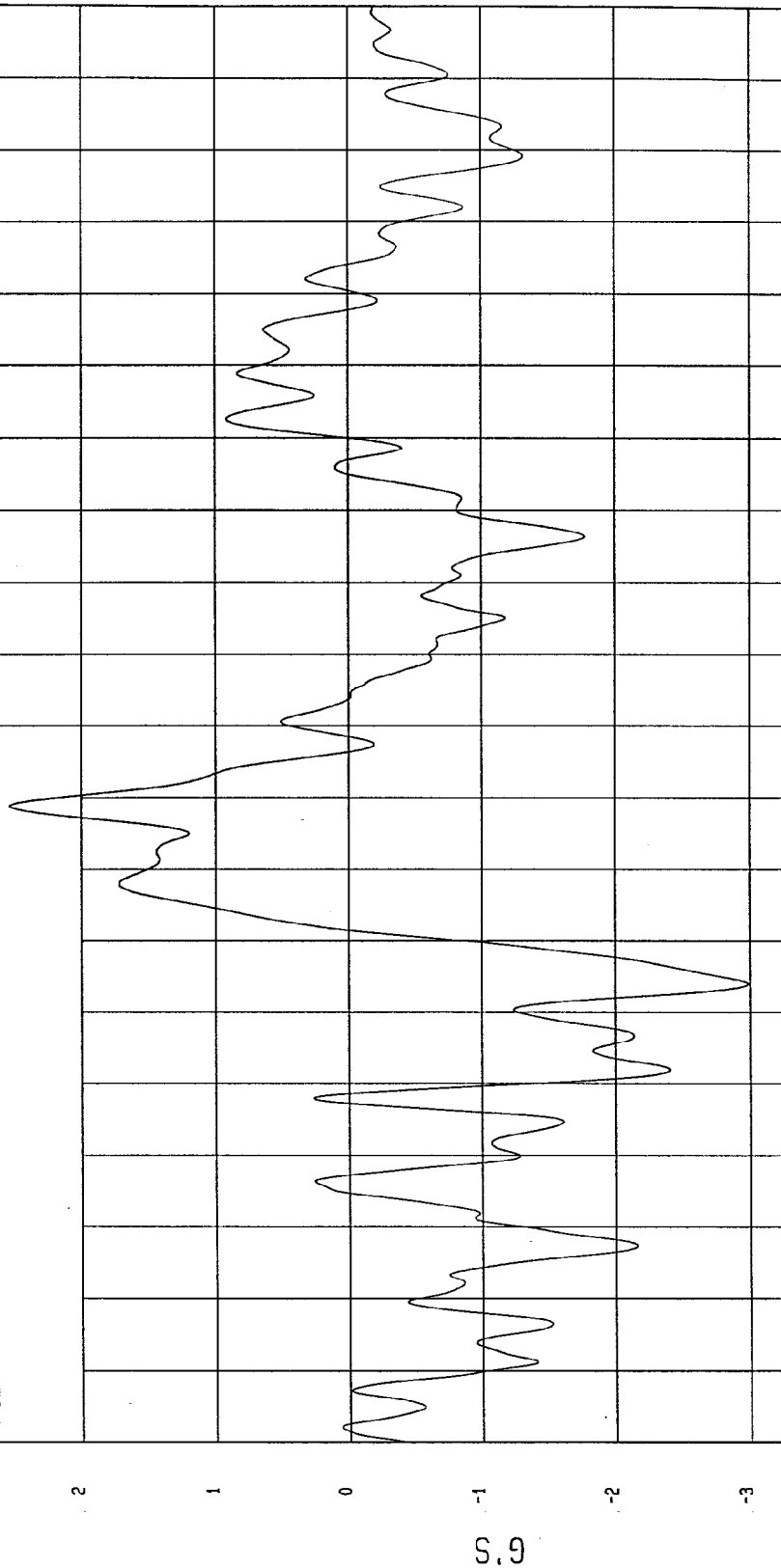
COMPONENT: 1997 LEXUS SC300

Maximum = 2.52 G'S at 88 msec

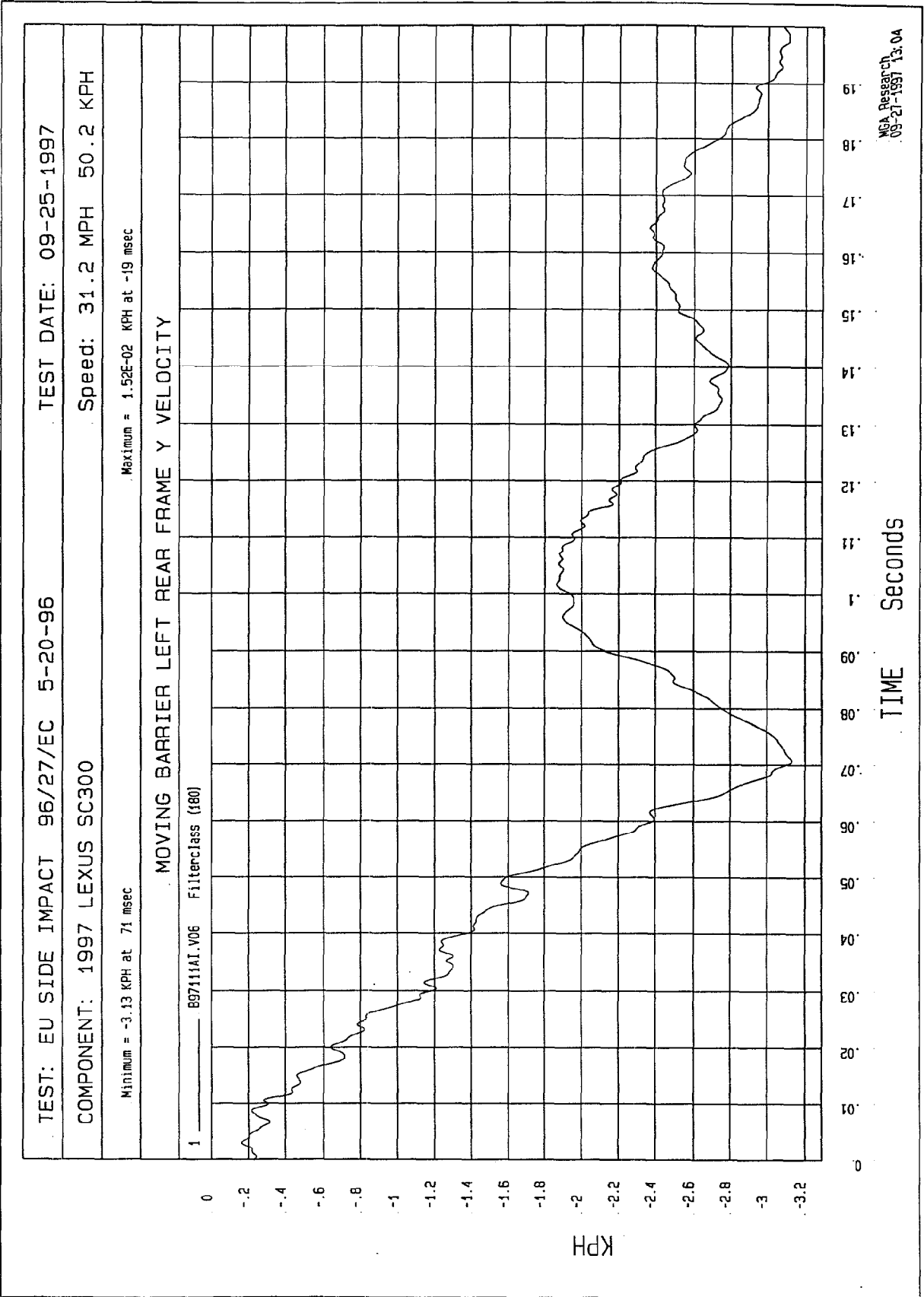
Minimum = -2.98 G'S at 64 msec

MOVING BARRIER LEFT REAR FRAME Y ACCELERATION

1 ——— B97111AF.A06 Filterclass (60)



MCA Research
09-27-1997 13:03

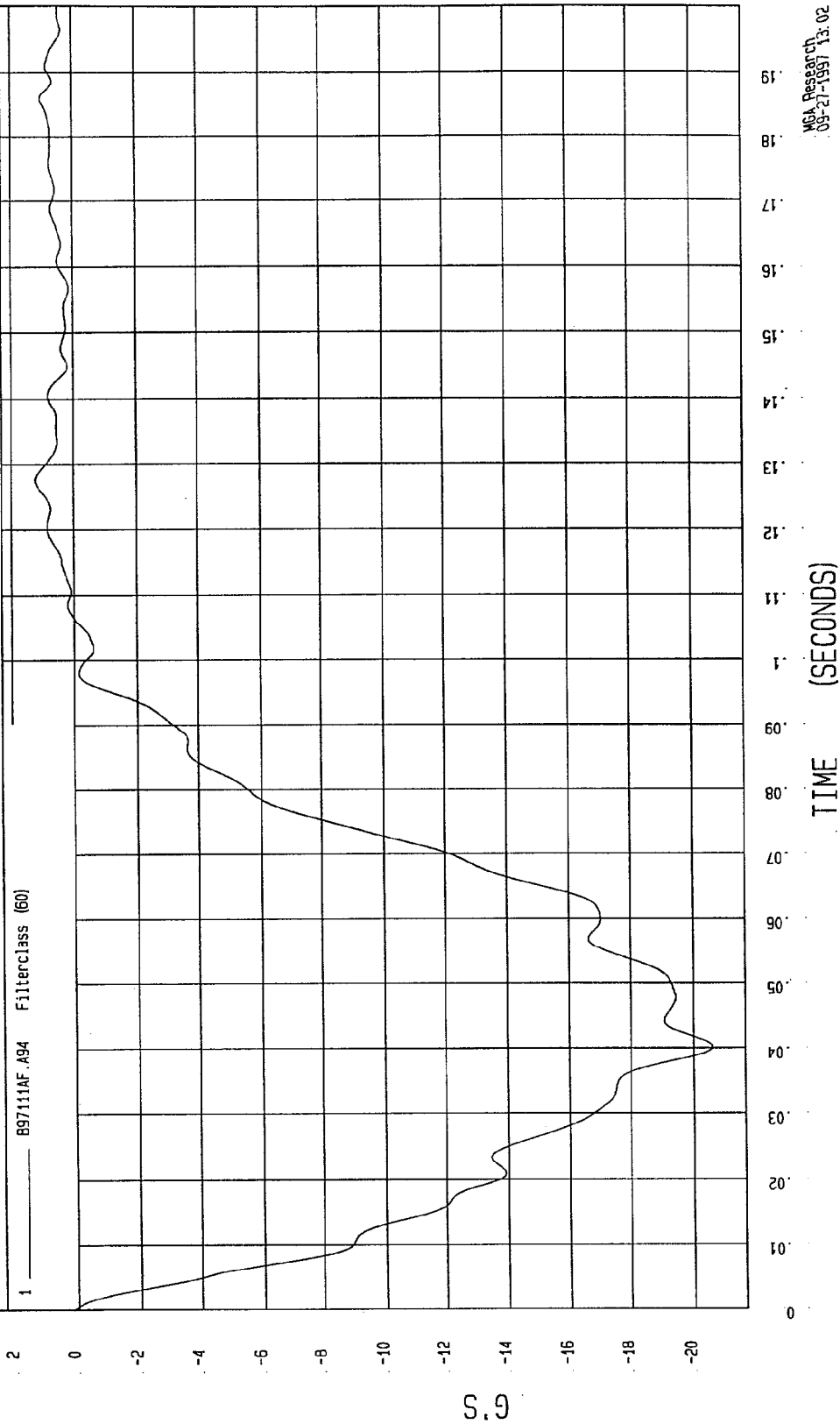


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -20.60 G'S at 40 msec Maximum = 1.23 G'S at 128 msec

MOVING BARRIER RIGHT REAR FRAME X ACCELERATION

1 897111AF.A94 Filterclass (60)



MCA Research
09-27-1997 13:02

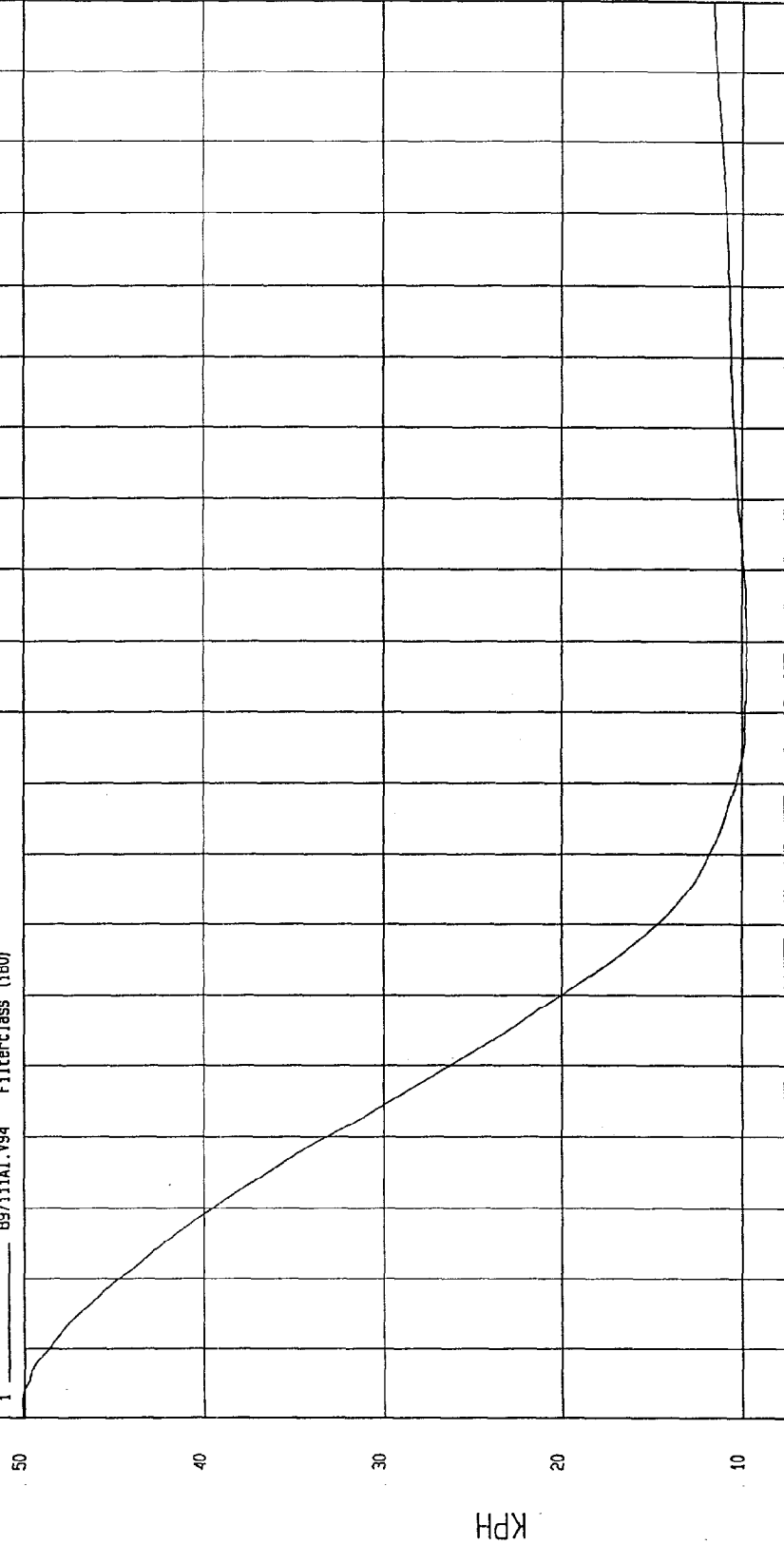
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = 9.72 KPH at 105 msec Maximum = 50.20 KPH at -16 msec

MOVING BARRIER RIGHT REAR FRAME X VELOCITY

1 ——— B97111A1.V94 Filterclass (160)



MSA Research
09-27-1997 13:03

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

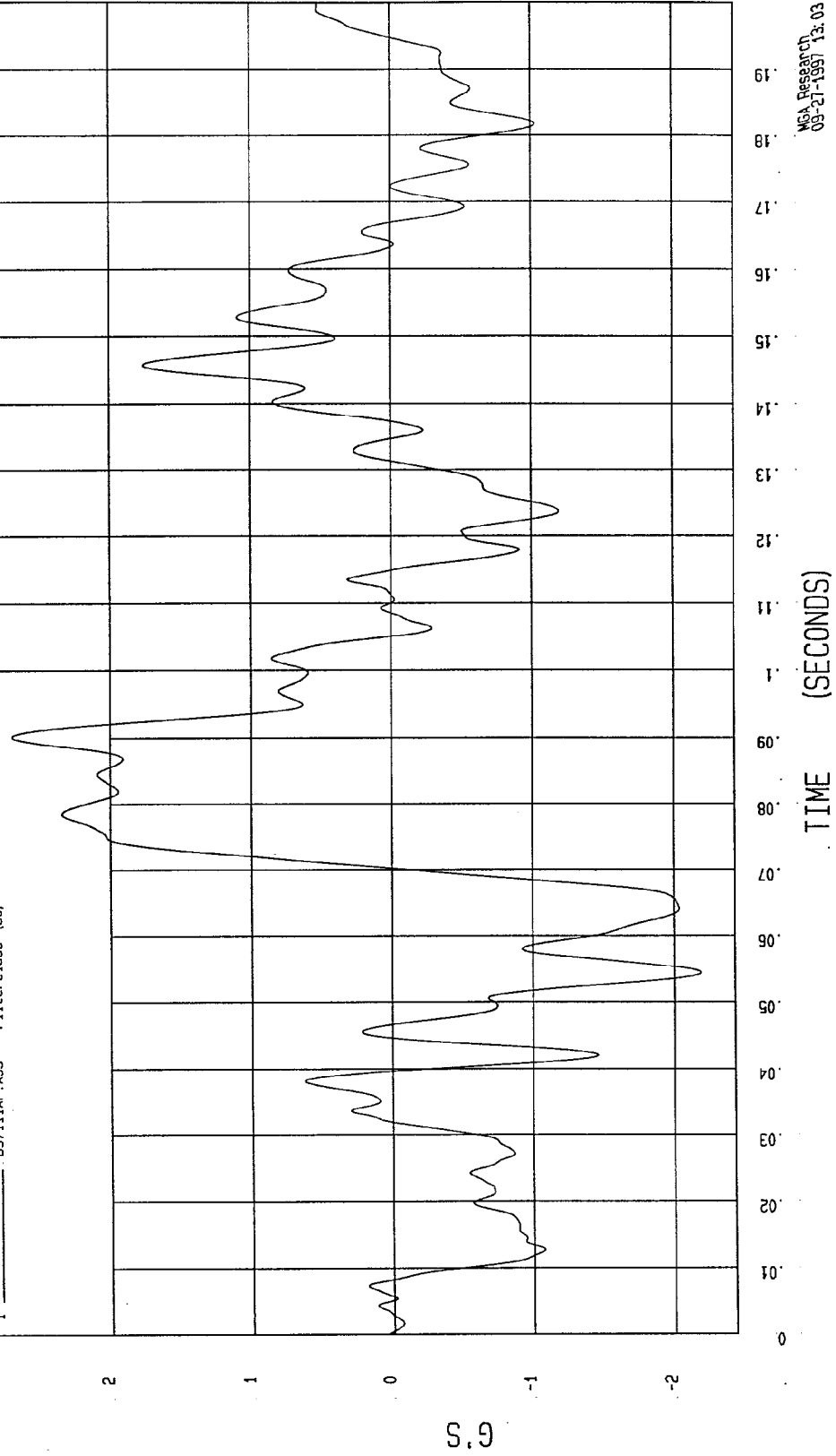
COMPONENT: 1997 LEXUS SC300

Minimum = -2.19 G'S at 54 msec

Maximum = 2.69 G'S at 90 msec

MOVING BARRIER RIGHT REAR FRAME Y ACCELERATION

1 ——— 897111AF.A95 Filterclass (60)

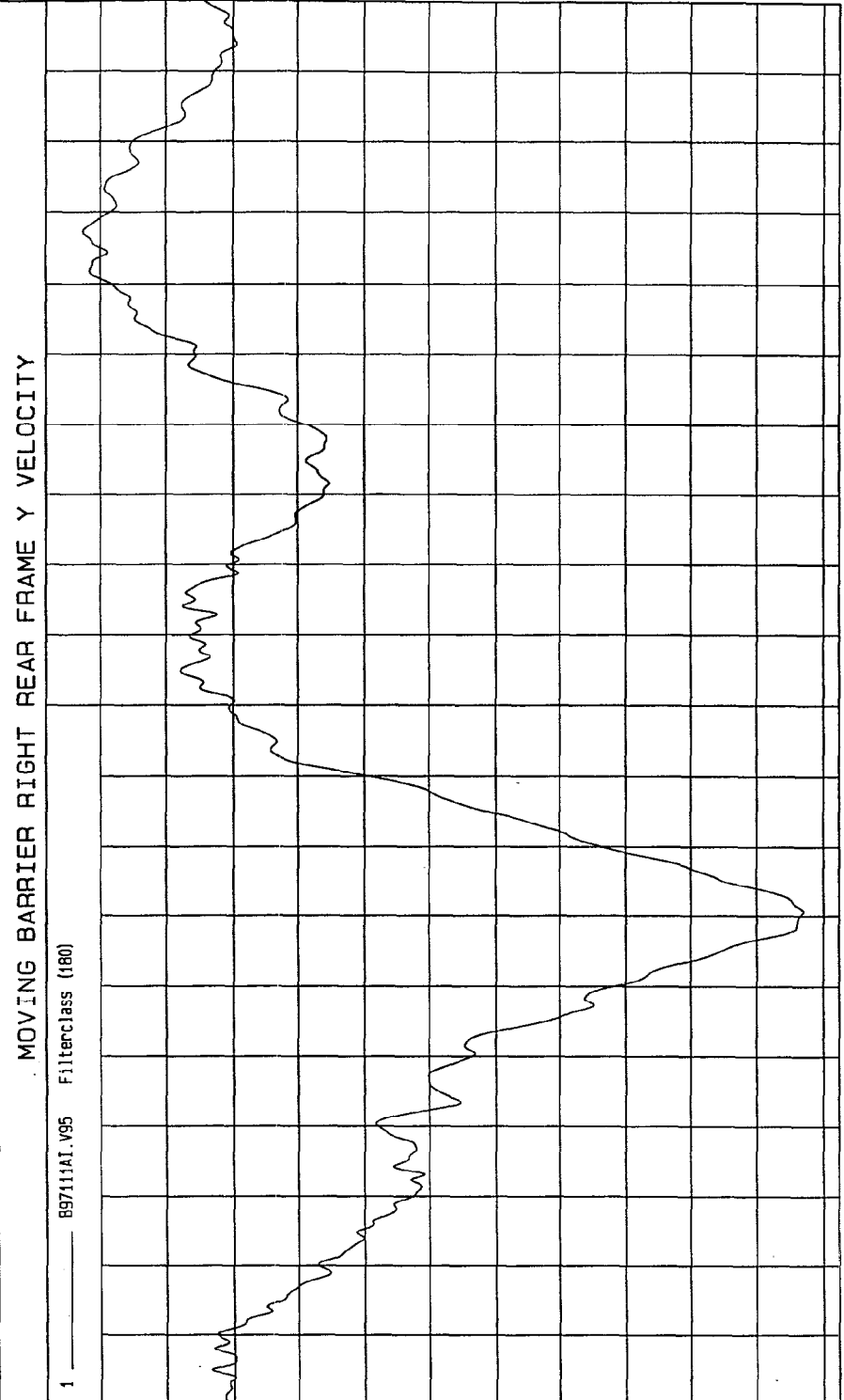


WCA Research
09-27-1997 13:03

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.73 KPH at 71 msec Maximum = .45 KPH at 167 msec



TIME Seconds

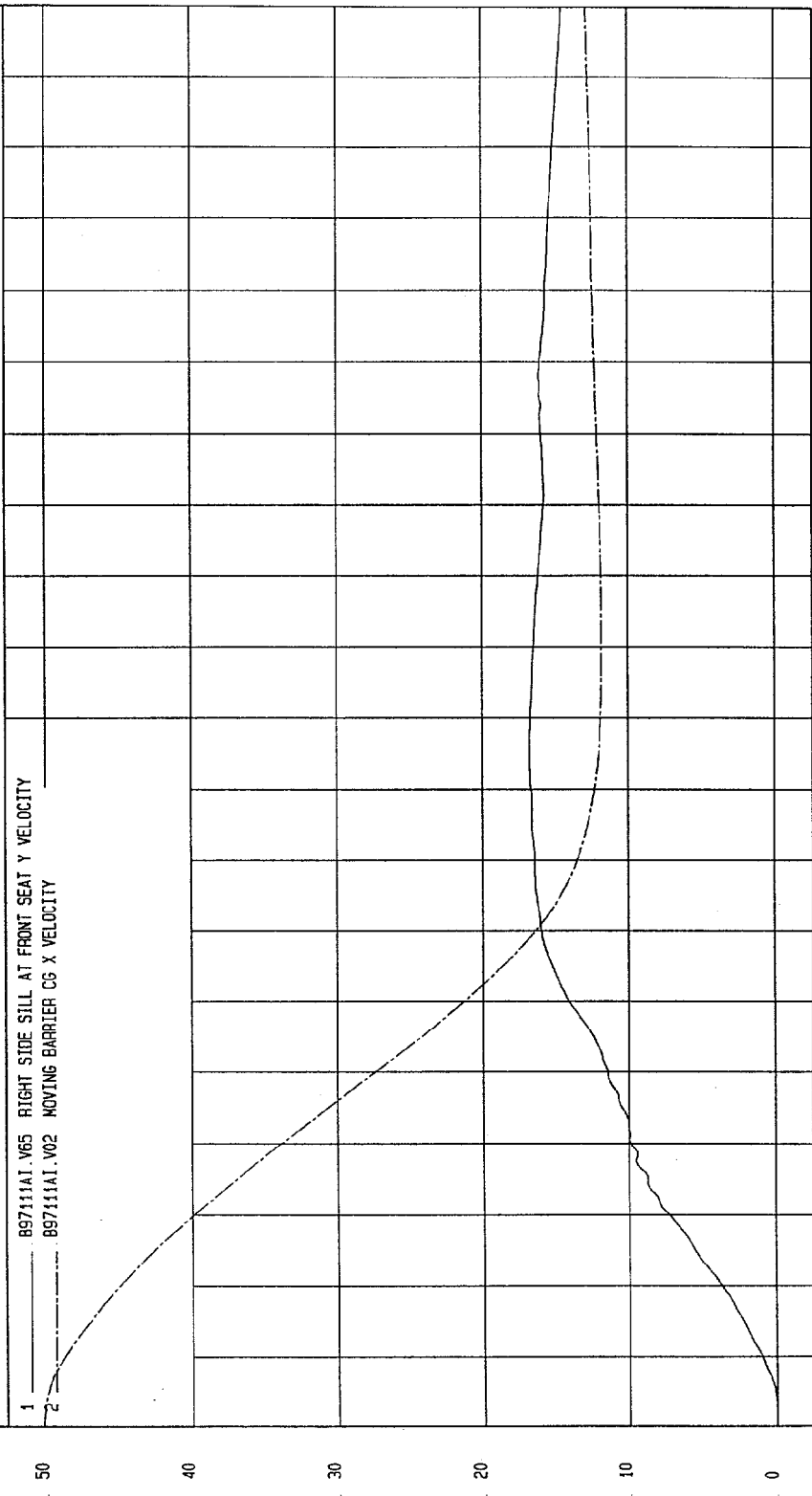
MCA Research
09-27-1997 13:03

TEST: EU SIDE IMPACT 96/27/EC 5-20-98 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

MDB CG X AND VEHICLE RIGHT SILL Y VELOCITY



WCA Research
11-06-1997 14:56

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

MDB CG X AND VEHICLE RIGHT SILL Y DISPLACEMENT

1 ——— B97111A1.D065 RIGHT SIDE SILL AT FRONT SEAT Y DISPLACEMENT
2 - - - - - B97111A1.D02 MOVING BARRIER CG X DISPLACEMENT

1200

1000

800

600

400

200

0

MM

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0

TIME
Seconds

MECA Research
11-06-1997 14:56

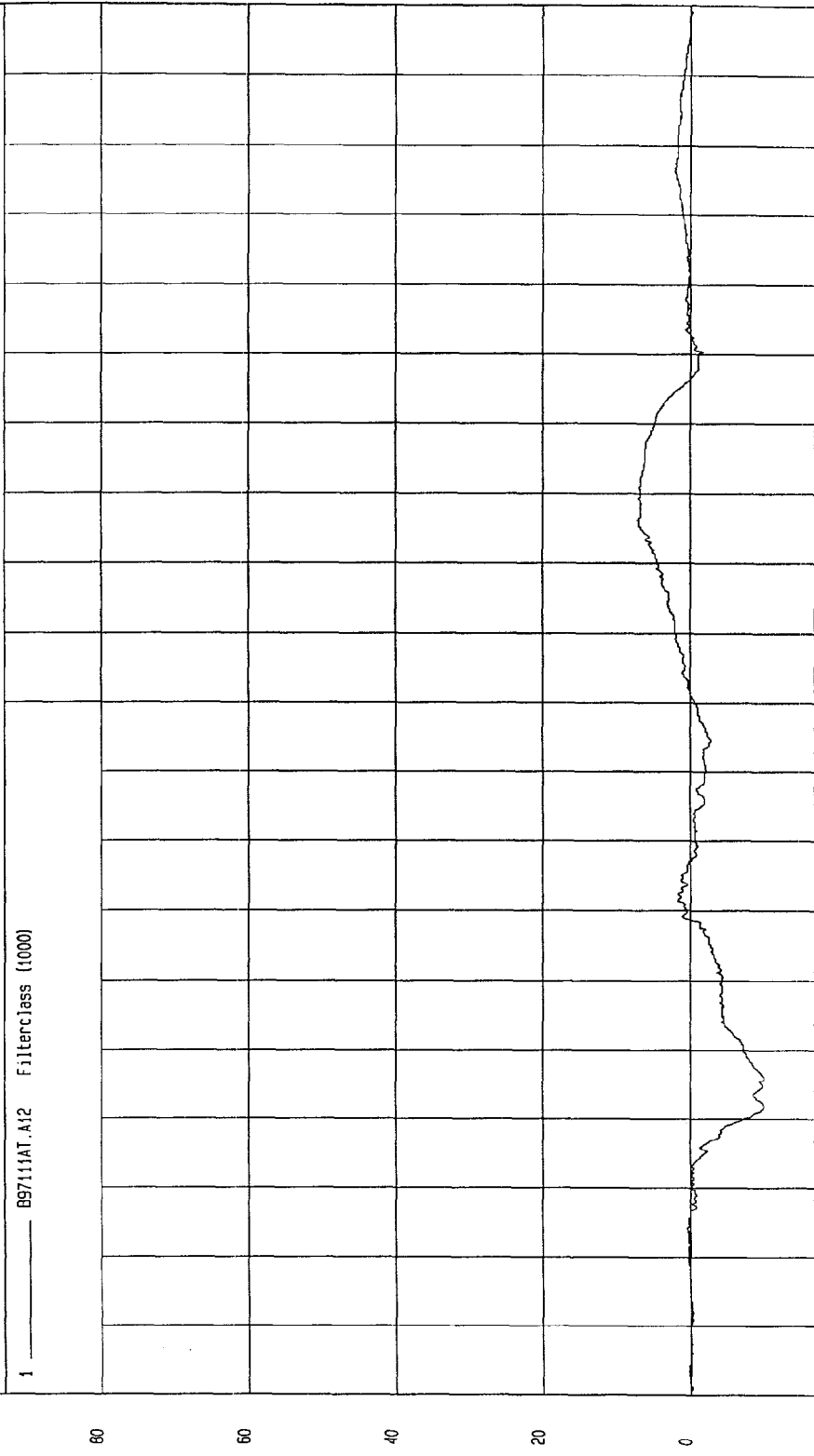
OCCUPANT DATA

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

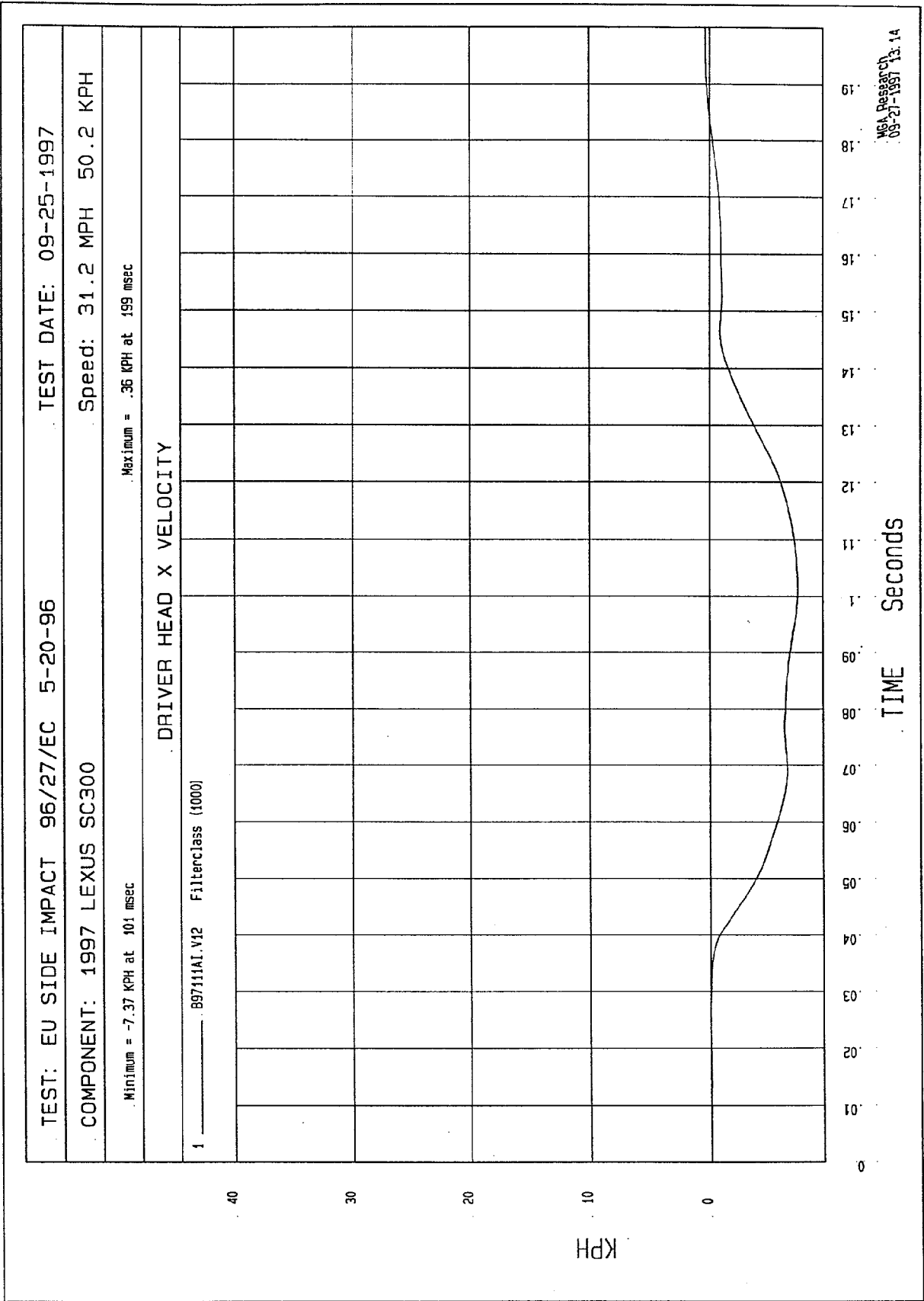
Minimum = -9.98 G'S at 42 msec Maximum = 7.28 G'S at 126 msec

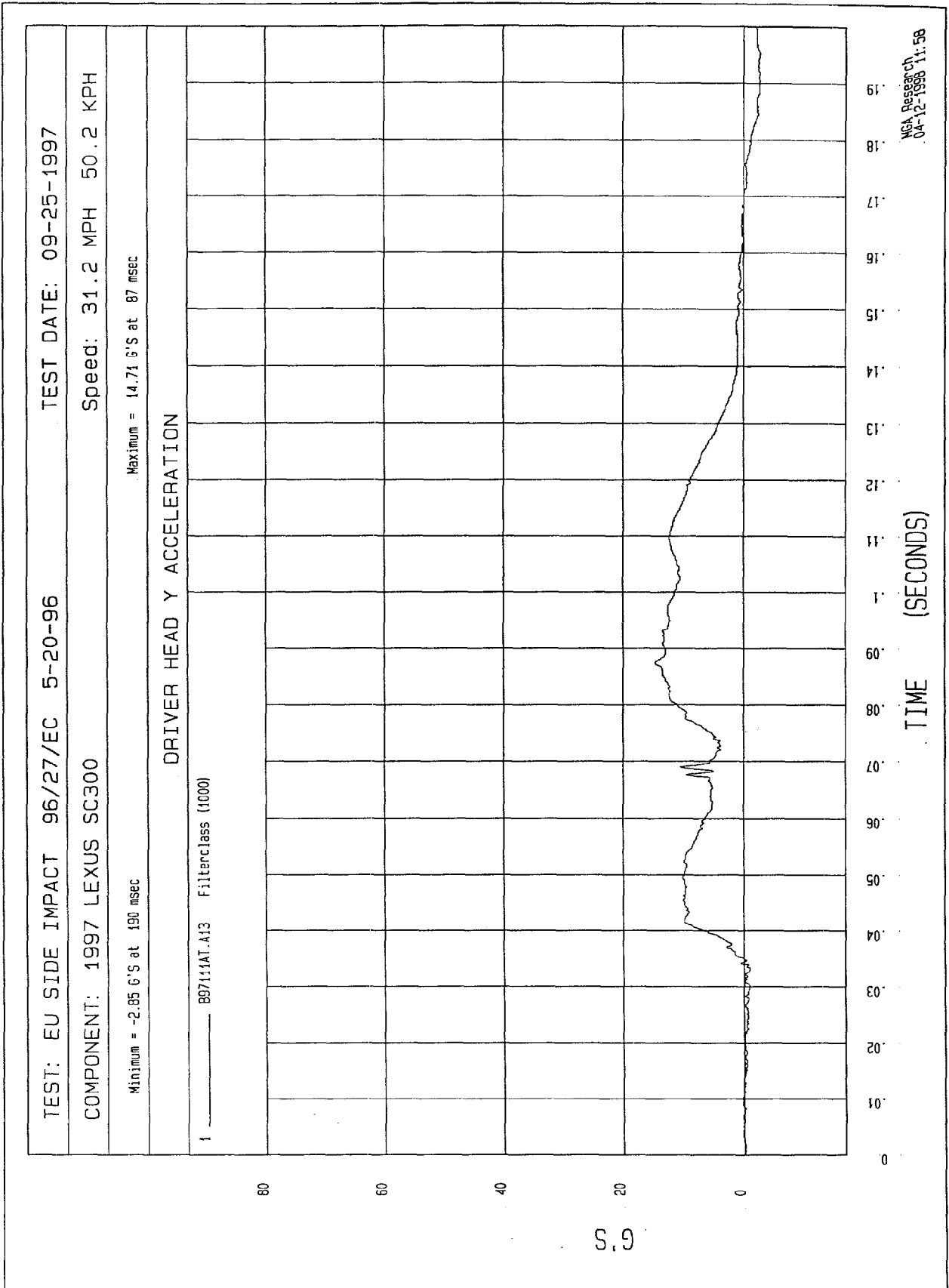
DRIVER HEAD X ACCELERATION



TIME (SECONDS)

WCA Research
04-12-1998 11:58





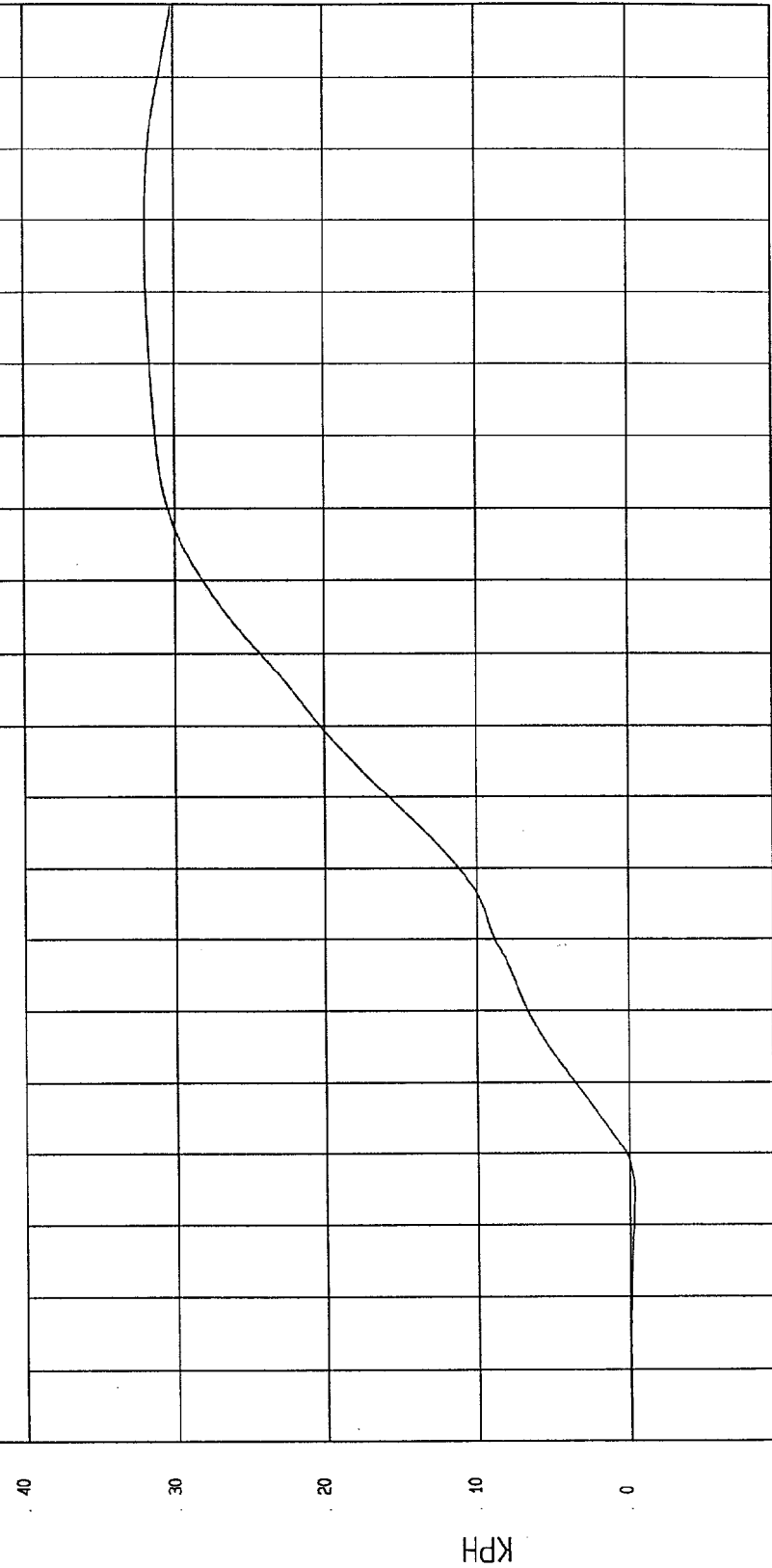
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -31 KPH at 34 msec Maximum = 31.98 KPH at 170 msec

DRIVER HEAD Y VELOCITY

1 B97111AT.V13 Filterclass (1000)



TIME Seconds

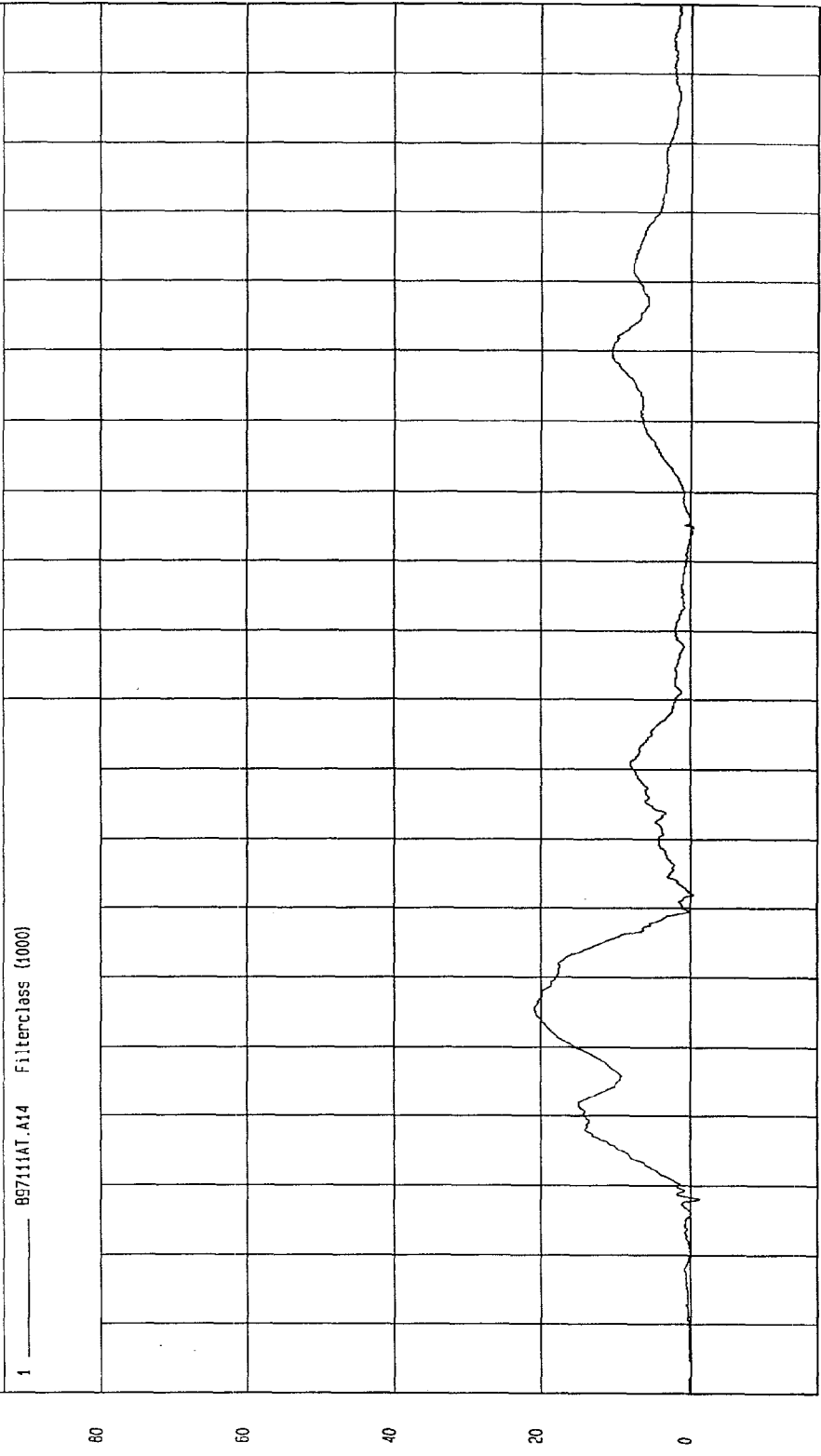
WCA Research
09-27-1997 13:15

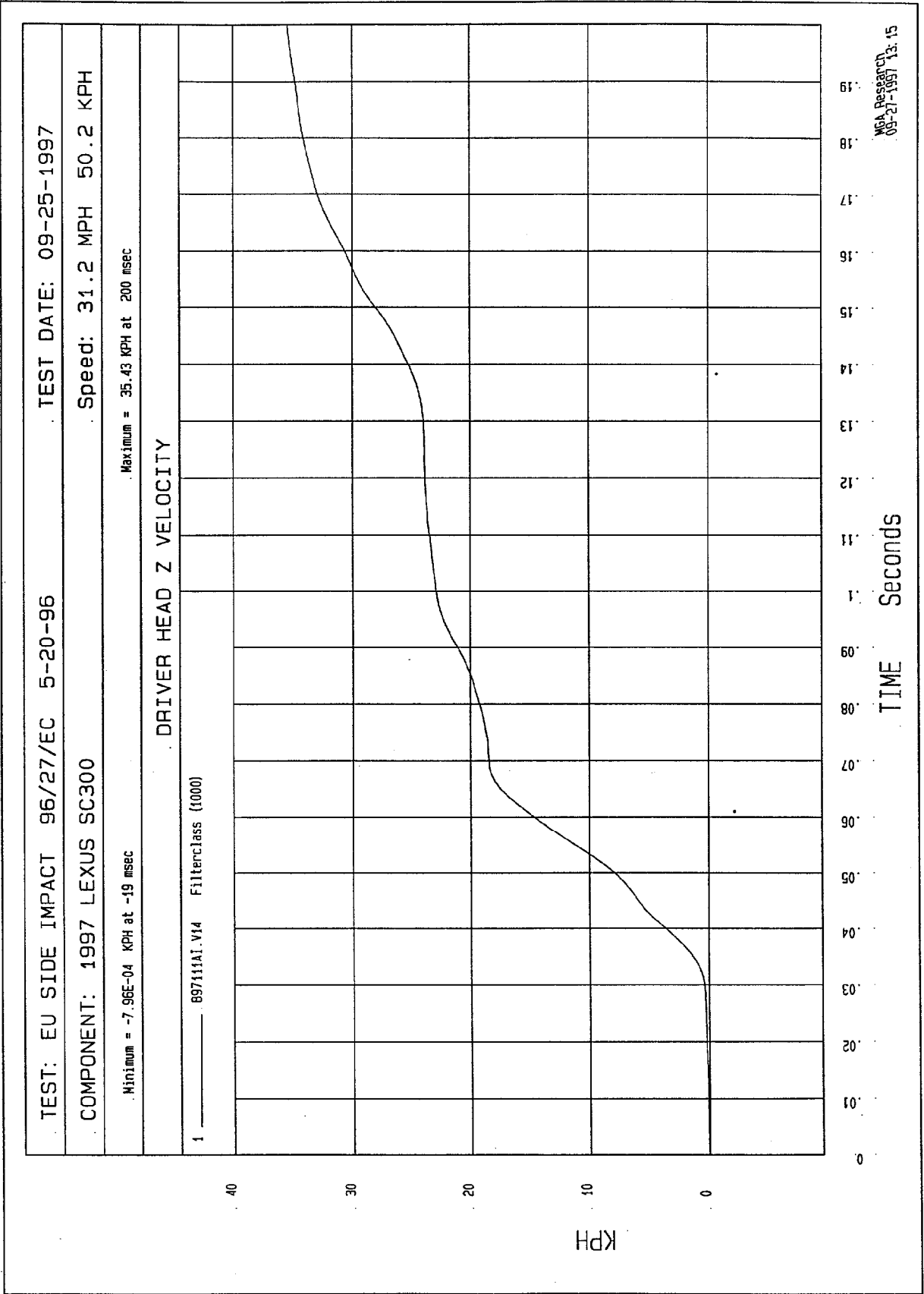
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.22 G'S at 28 msec Maximum = 20.87 G'S at 55 msec

DRIVER HEAD Z ACCELERATION



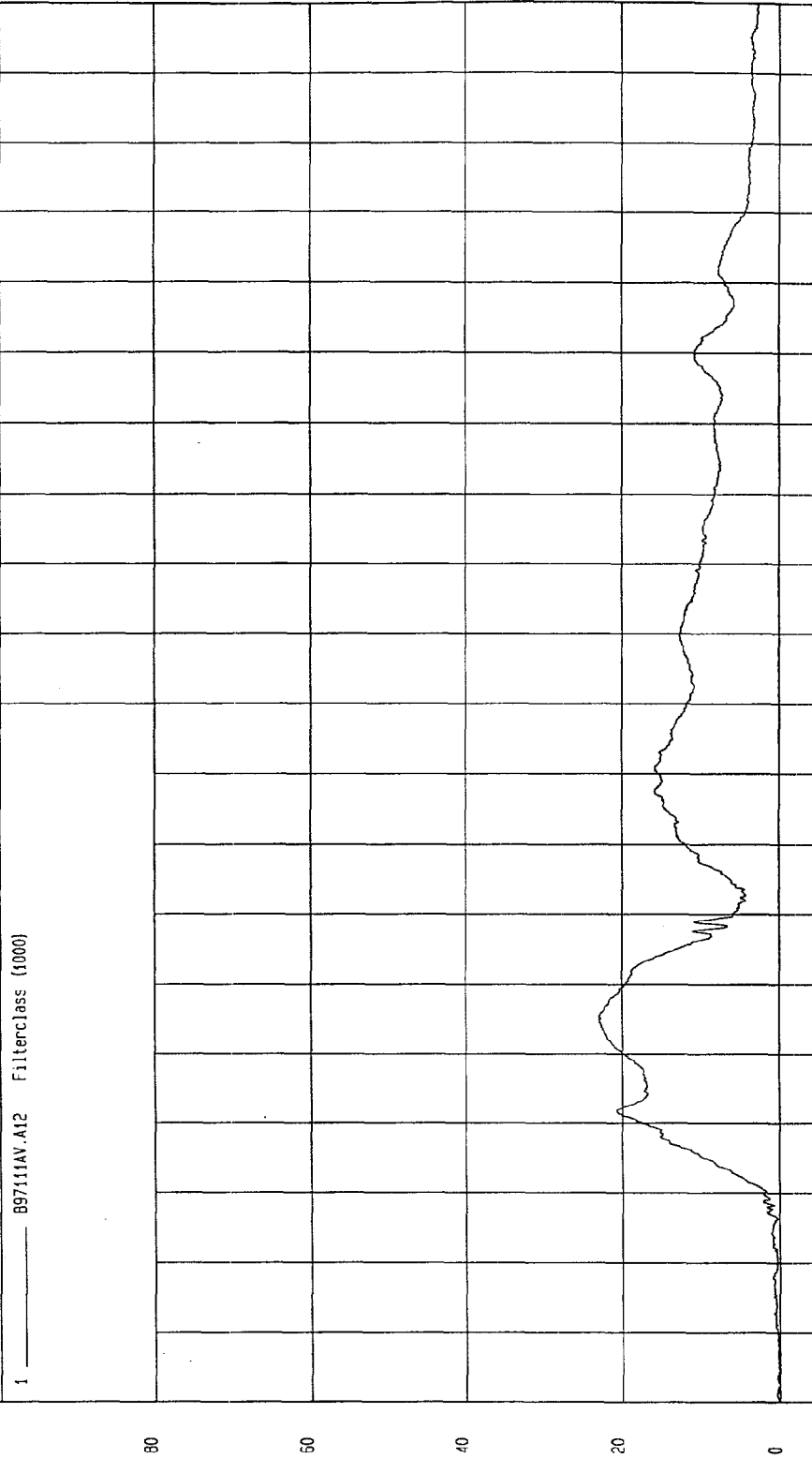


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

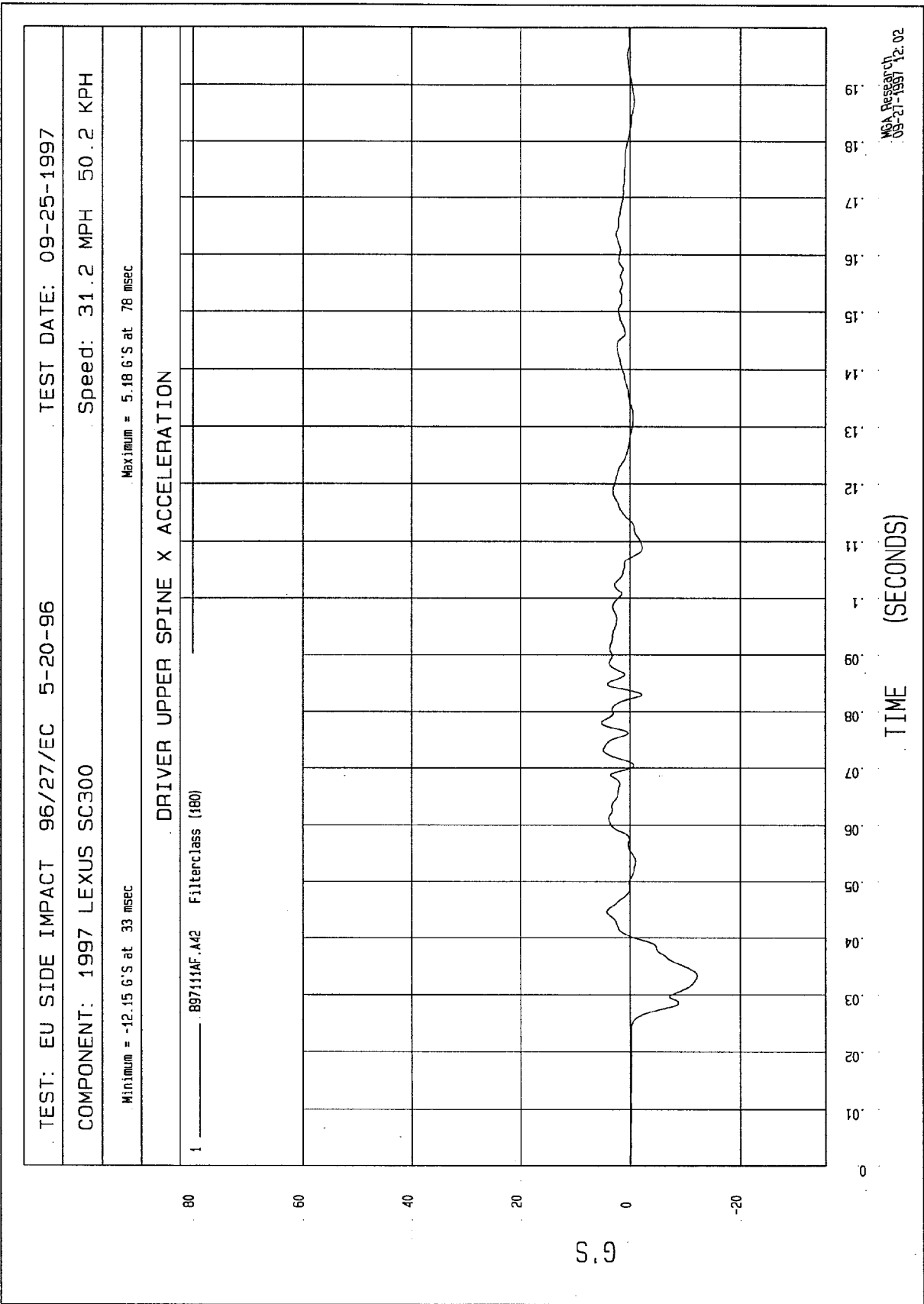
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

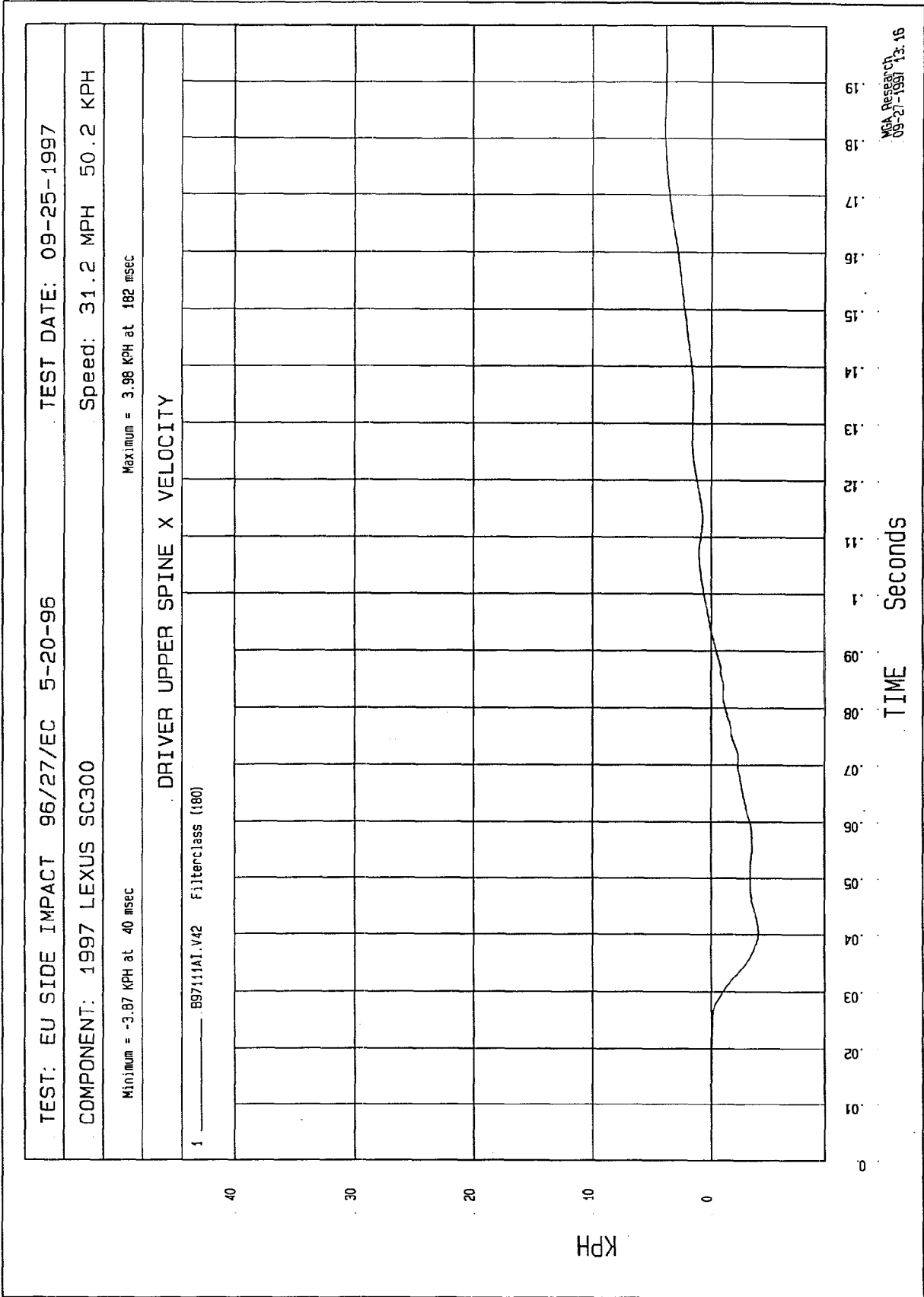
Minimum = 1.95E-02 G'S at -20 msec Maximum = 23.06 G'S at 55 msec

DRIVER HEAD RESULTANT ACCELERATION



MCA Research
04-12-1998 11:58



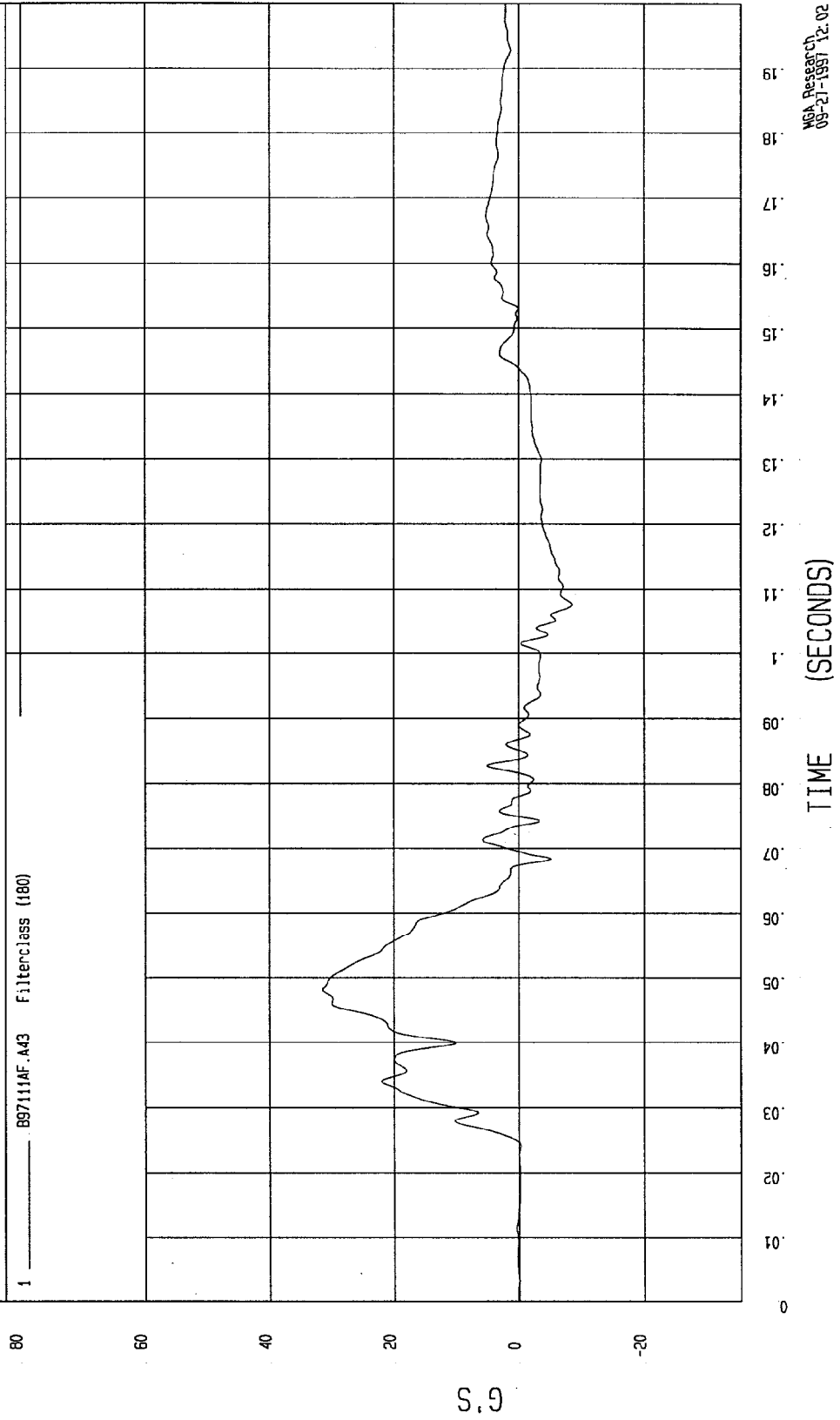


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -8.63 G'S at 108 msec Maximum = 31.56 G'S at 48 msec

DRIVER UPPER SPINE Y ACCELERATION

1 B97111AF.A43 Filterclass (180)

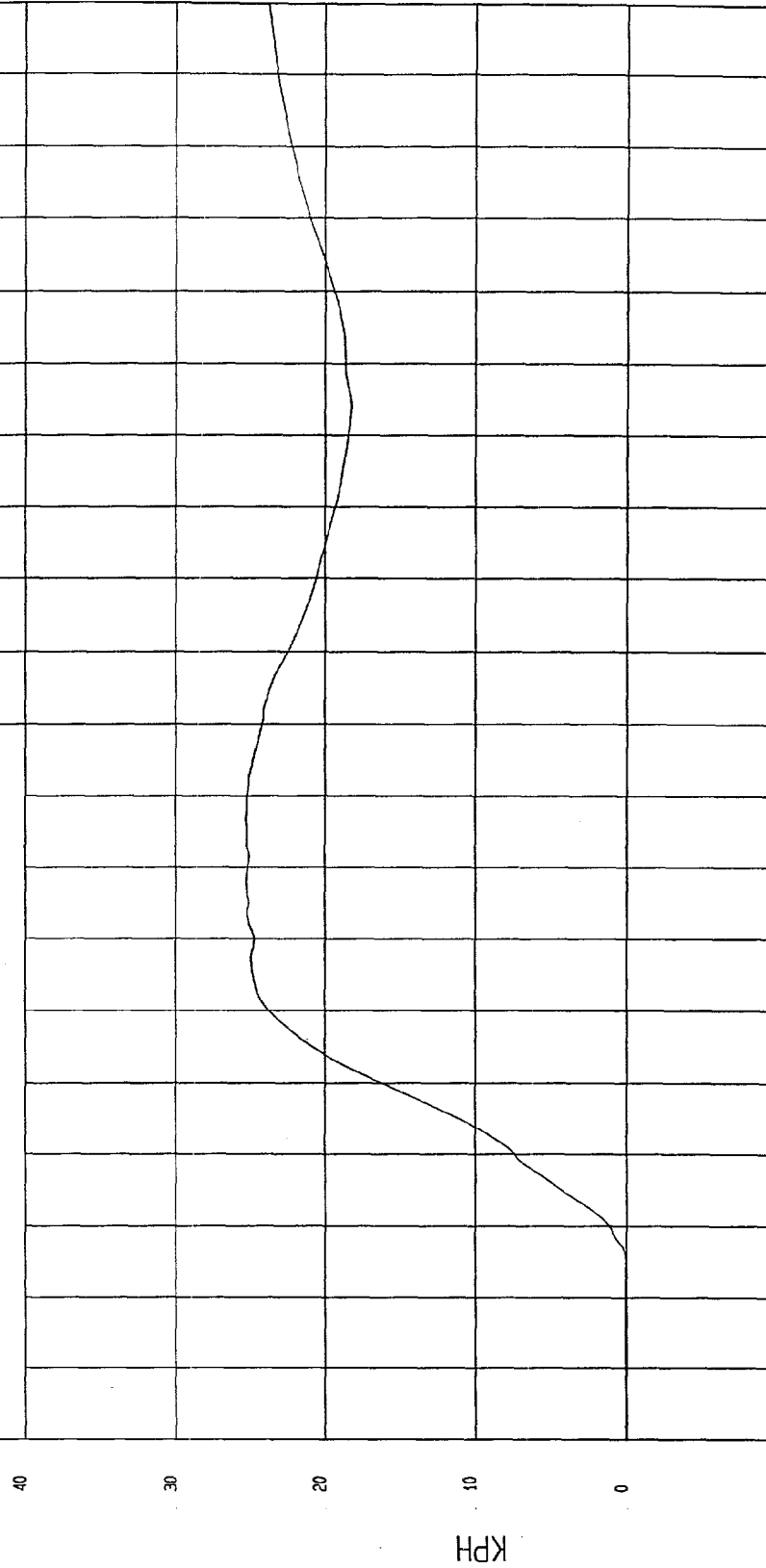


NGA Research
09-27-1997 12:02

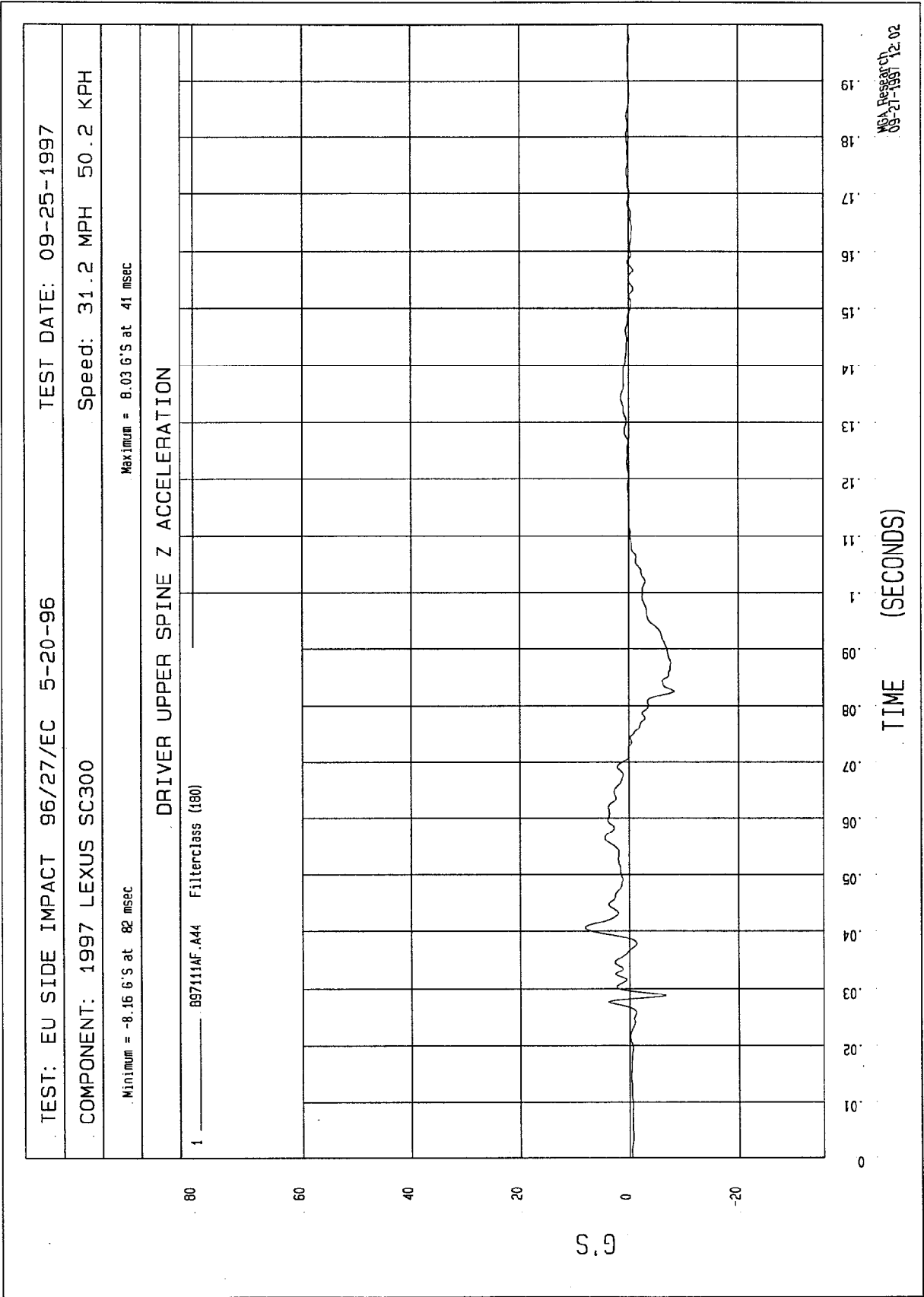
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
 COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH
 Minimum = -2.33E-03 KPH at -12 msec Maximum = 25.42 KPH at 87 msec

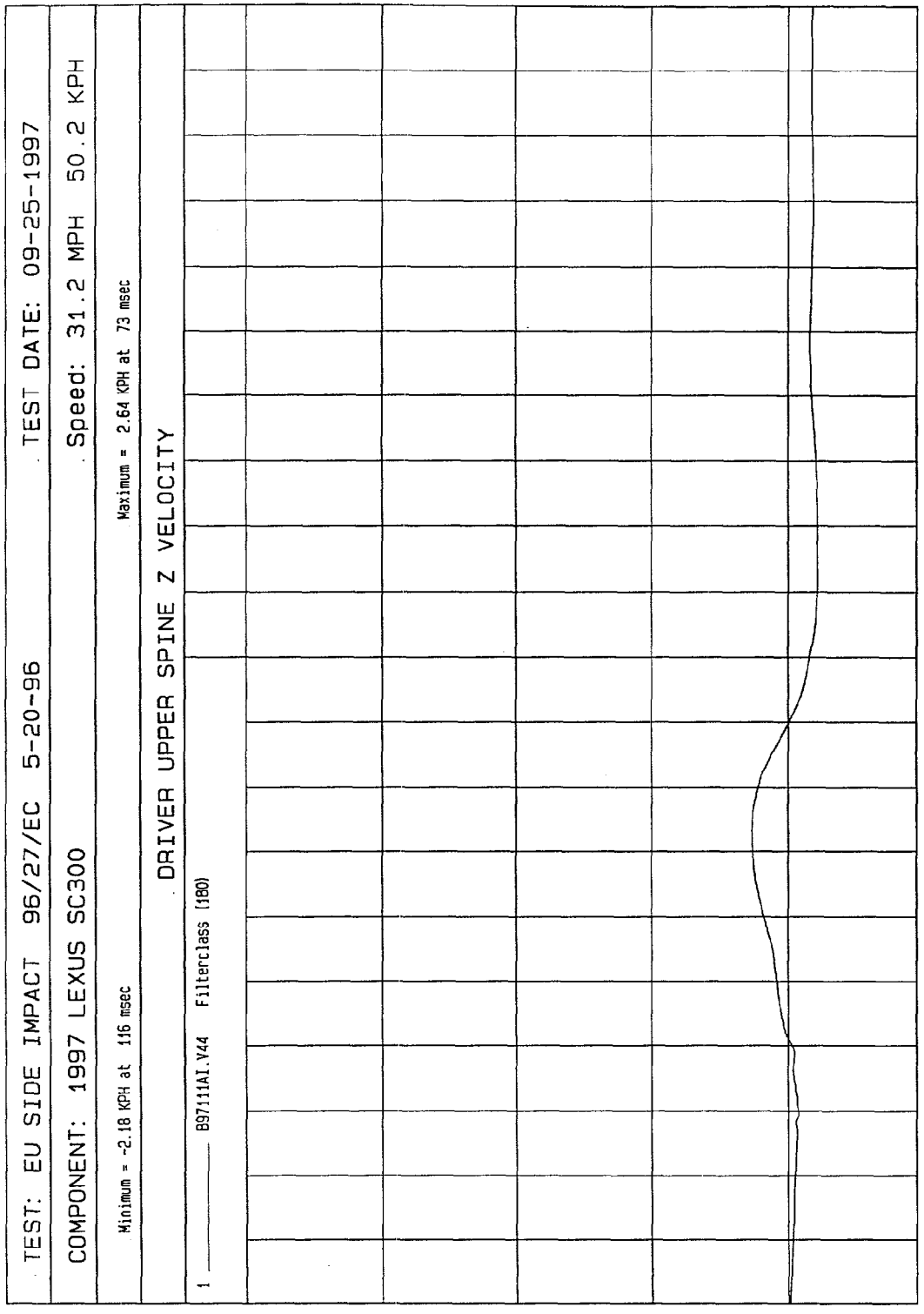
DRIVER UPPER SPINE Y VELOCITY

1 B971111A1.V43 Filterclass (480)



TIME Seconds
 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19
 NSA Research
 09-27-1997 13:16





0 10 20 30 40 KPH

0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

TIME Seconds

MCA Research
09-27-1997 13:16

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

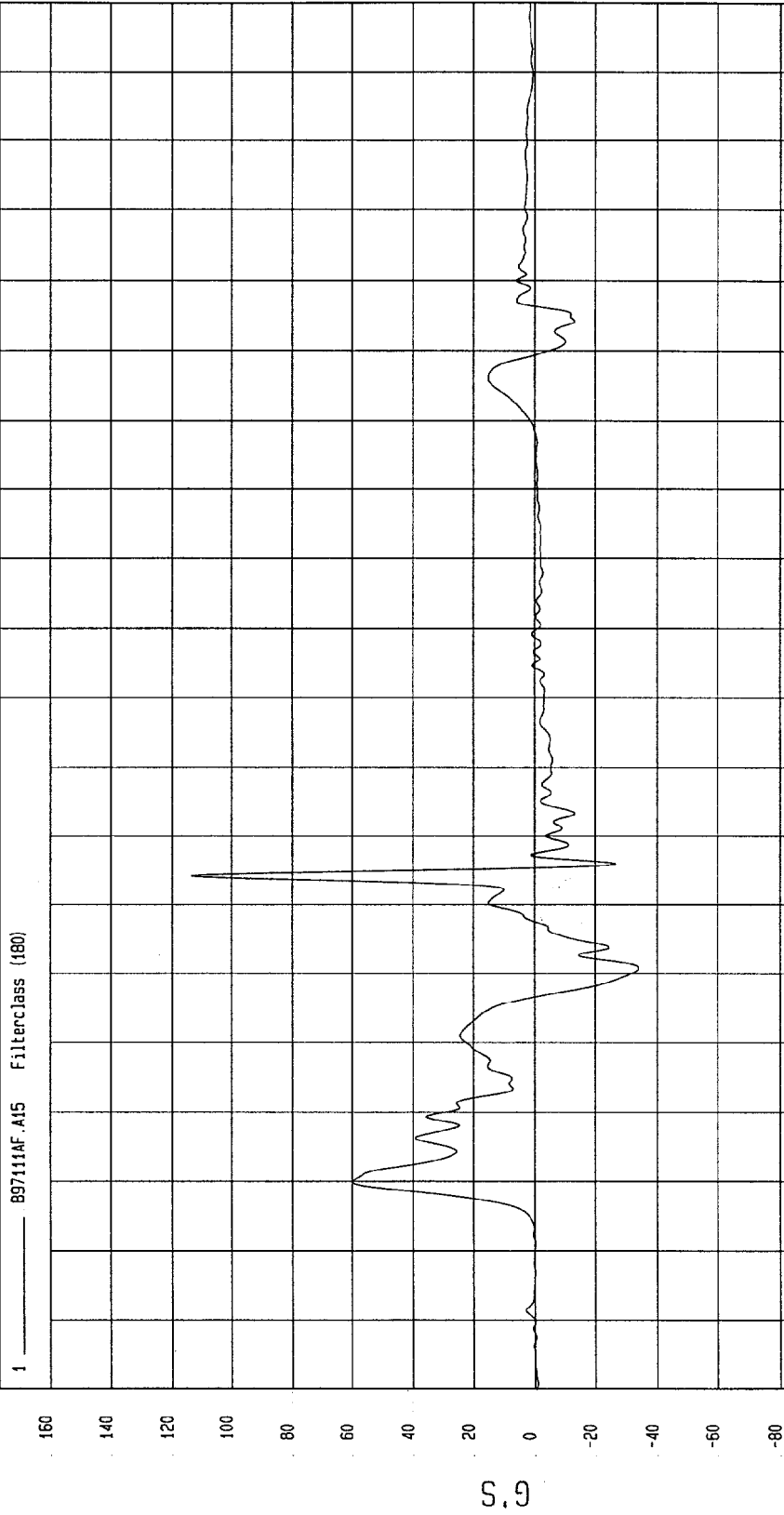
COMPONENT: 1997 LEXUS SC300

Maximum = 113.69 G'S at 74 msec

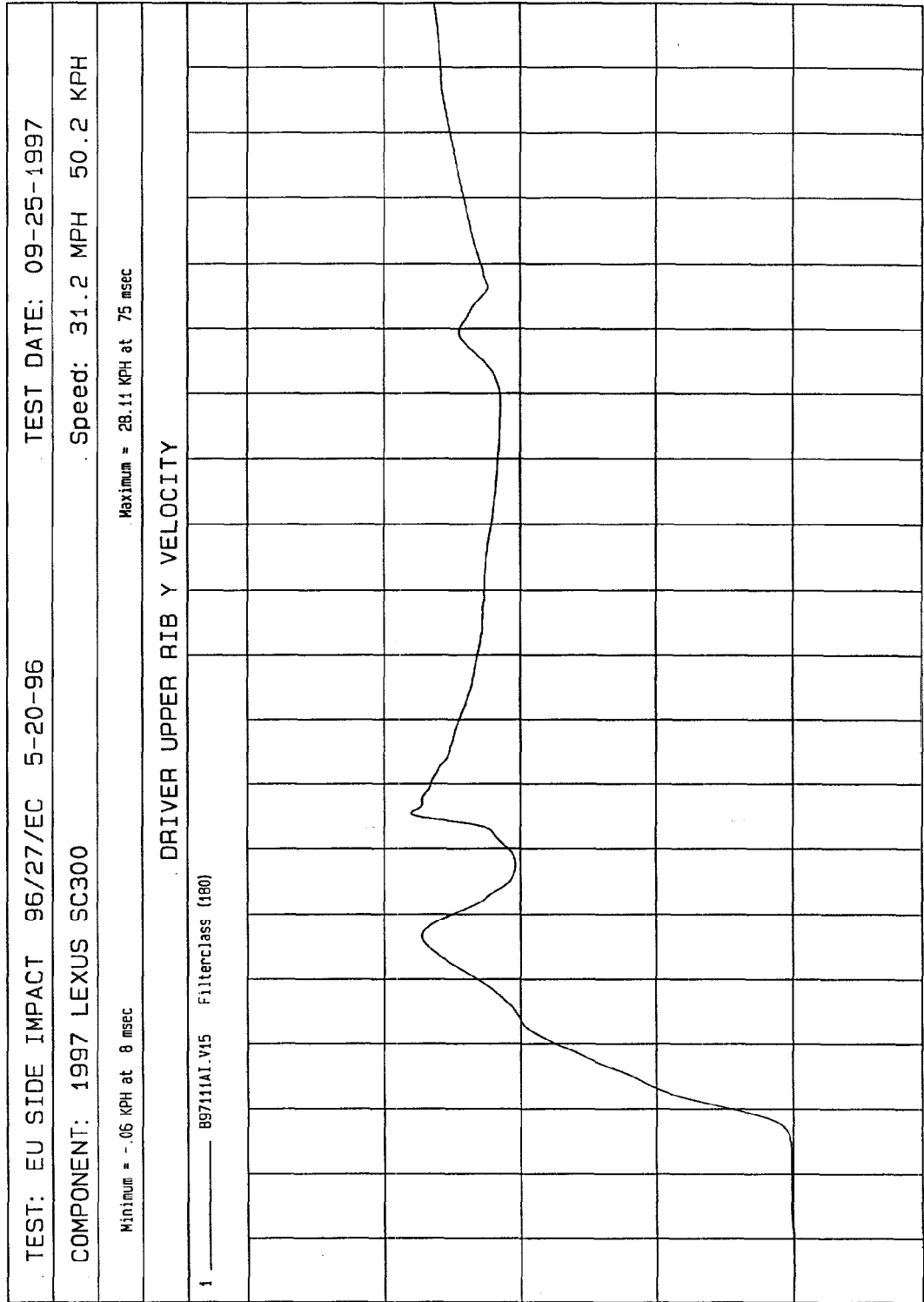
Minimum = -33.96 G'S at 61 msec

DRIVER UPPER RIB Y ACCELERATION

1 ——— 897111AF.A15 Filterclass (180)



MGA Research
09-27-1997 11:50



TIME Seconds

NCA Research
09-27-1997 13:15

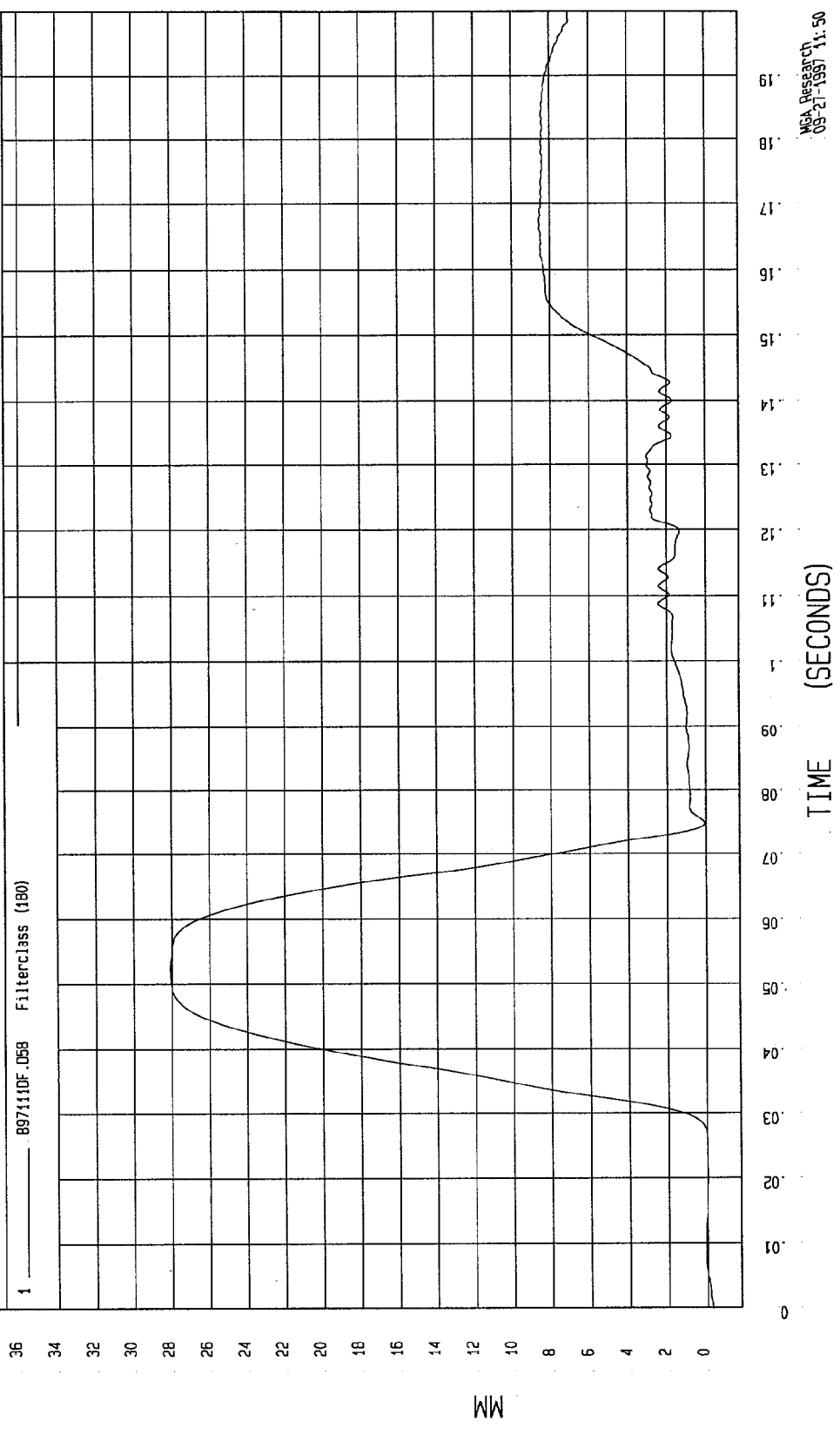
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

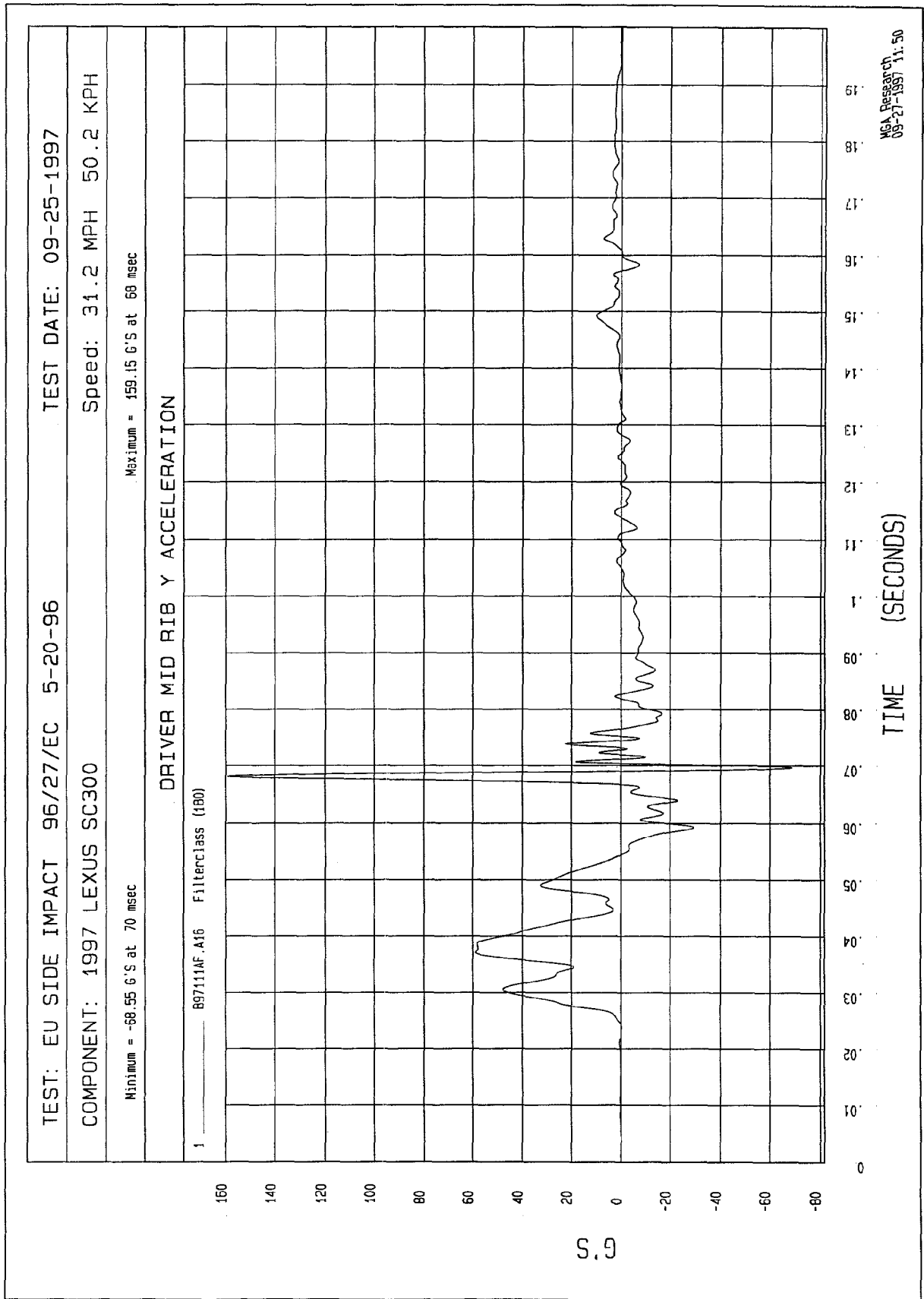
SPEED: 31.2 MPH 50.2 KPH

Maximum = 28.09 MM at 52 msec

Minimum = -29 MM at -1 msec

DRIVER UPPER RIB Y DISPLACEMENT



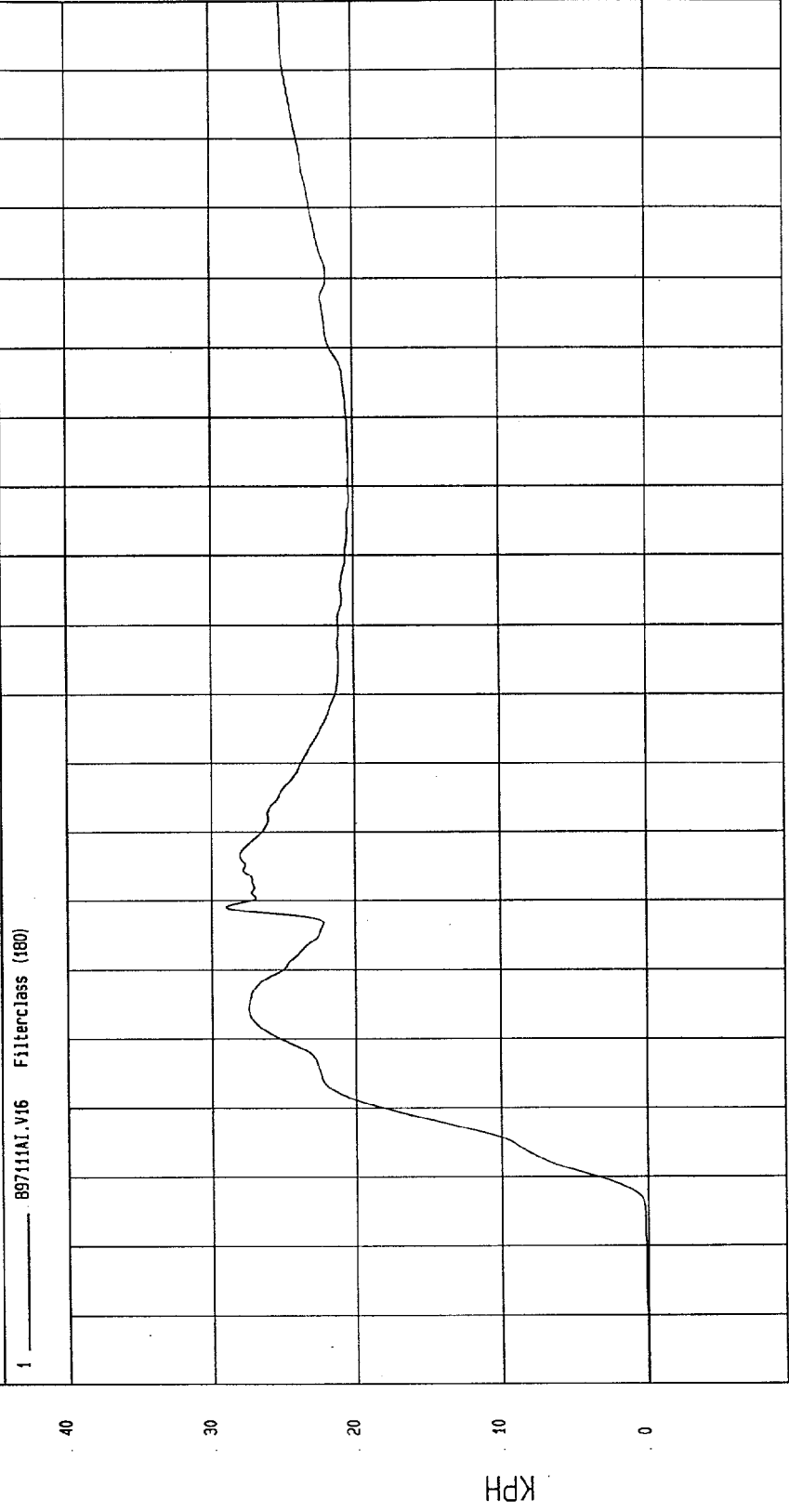


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -2.67E-03 KPH at -18 msec Maximum = 29.00 KPH at 69 msec

DRIVER MID RIB Y VELOCITY



TIME Seconds

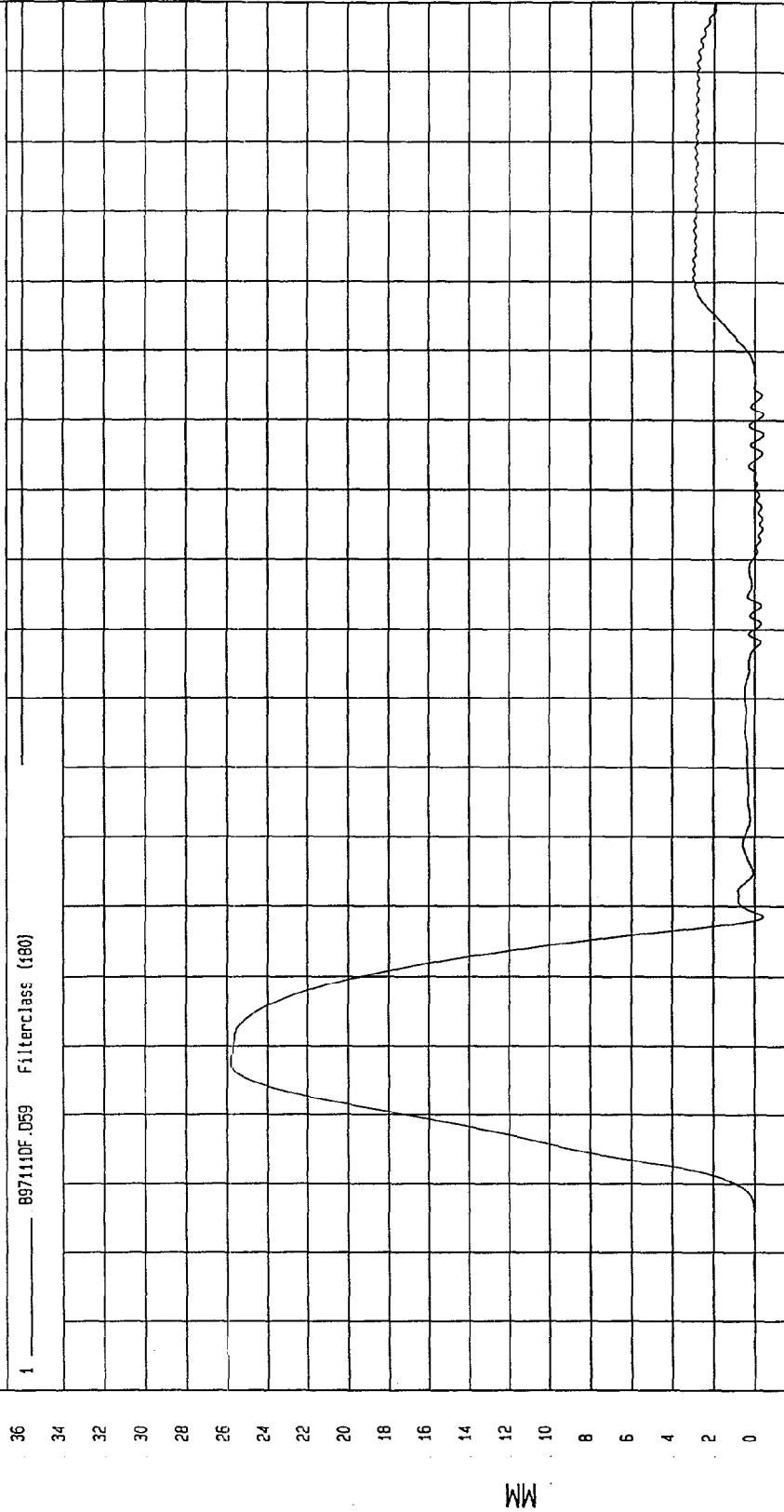
VEA Research
09-25-1997 13:15

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.42 MM at 138 msec Maximum = 25.84 MM at 48 msec

DRIVER MID RIB Y DISPLACEMENT



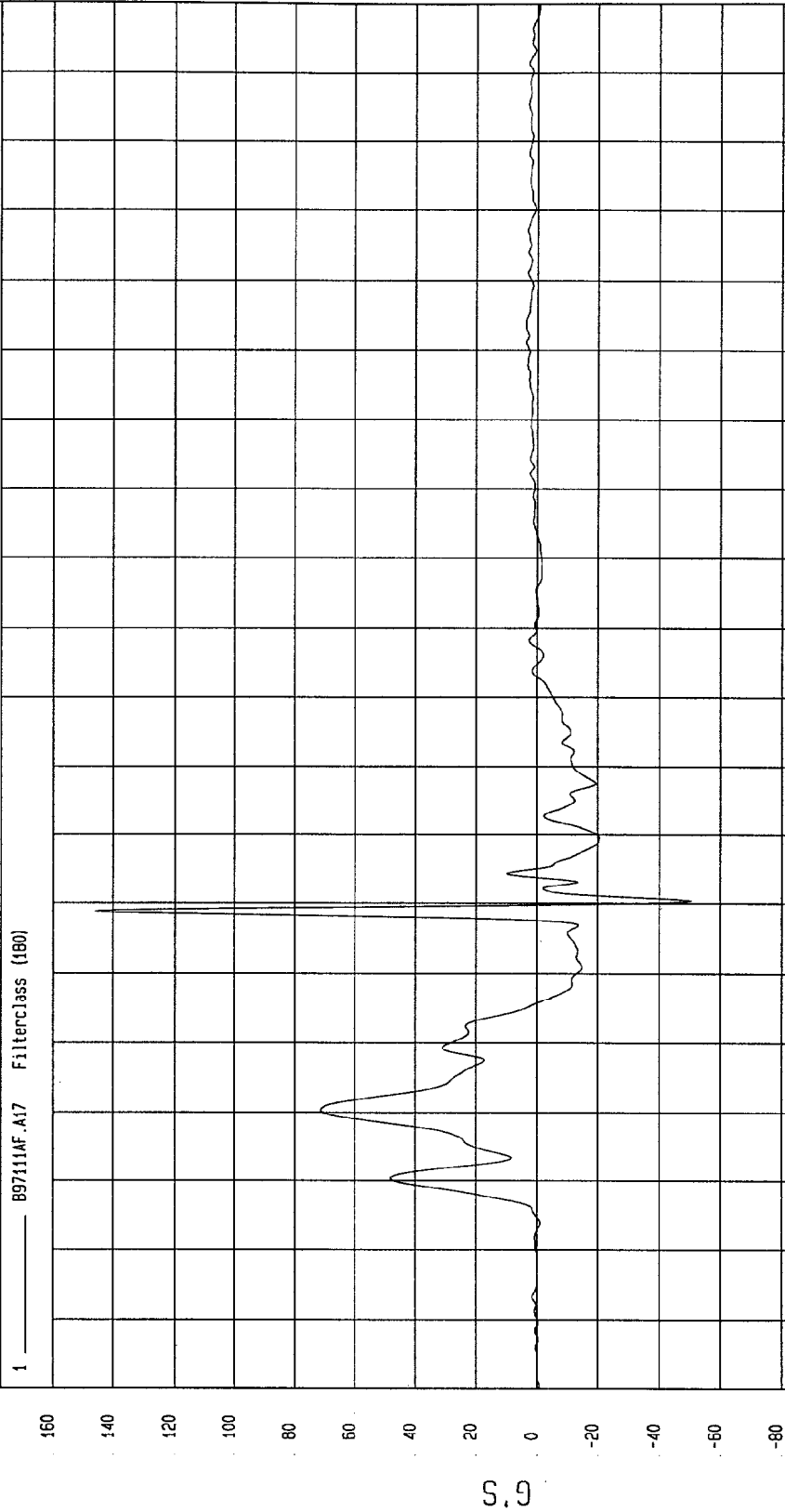
MGA Research
09-21-1997 11:50

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -50.46 G's at 70 msec Maximum = 146.20 G's at 69 msec

DRIVER LOWER RIB Y ACCELERATION

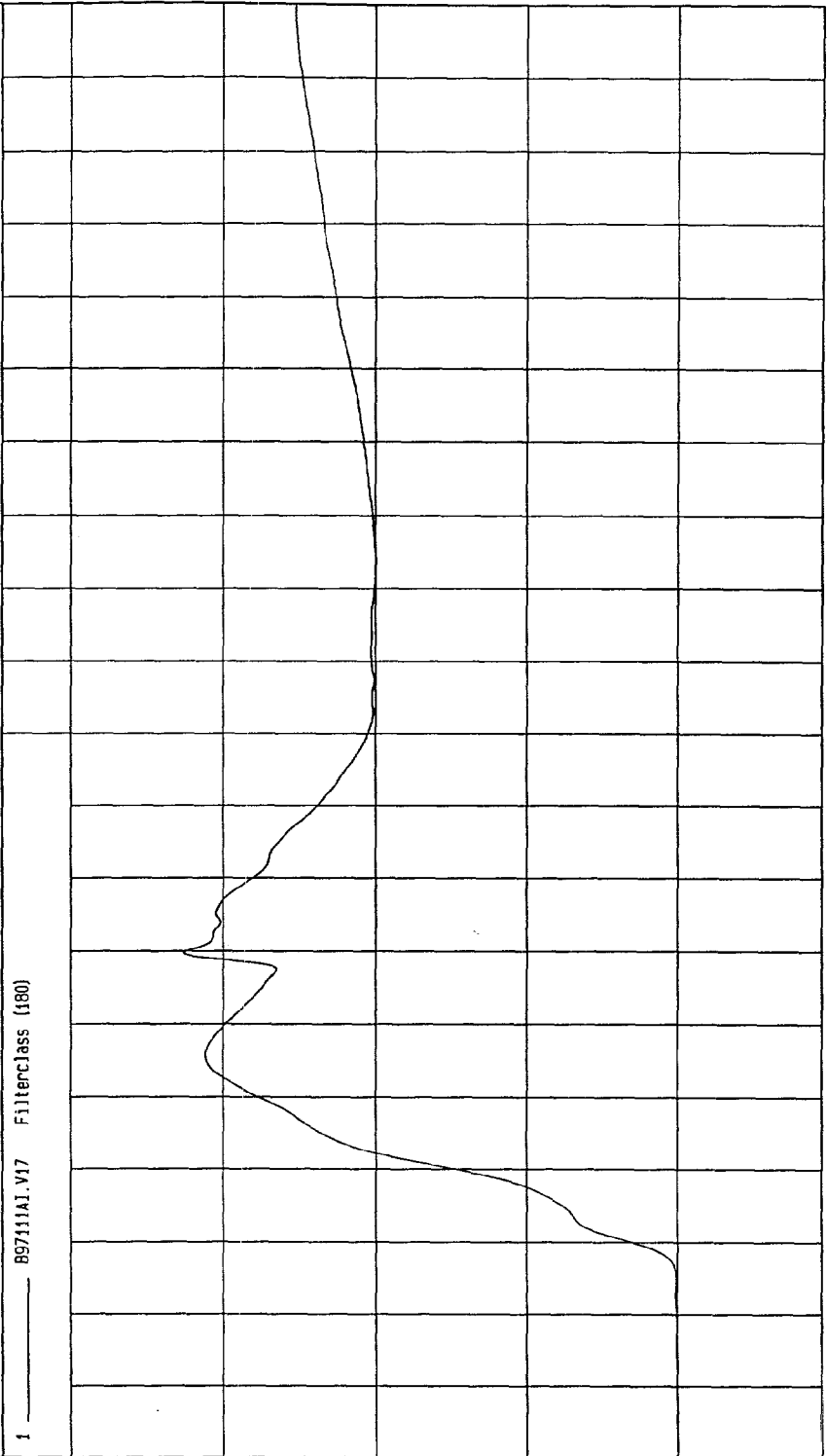
1 ——— B97111AF.A17 Filterclass (180)



MSA Research
09-27-1997 11:50

TEST: EU SIDE IMPACT 96/27/EC 5-20-96	TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300	Speed: 31.2 MPH 50.2 KPH
Minimum = -2.97E-02 KPH at 5 msec	Maximum = 32.67 KPH at 70 msec

DRIVER LOWER RIB Y VELOCITY



TIME Seconds

0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

KPH

0 10 20 30 40

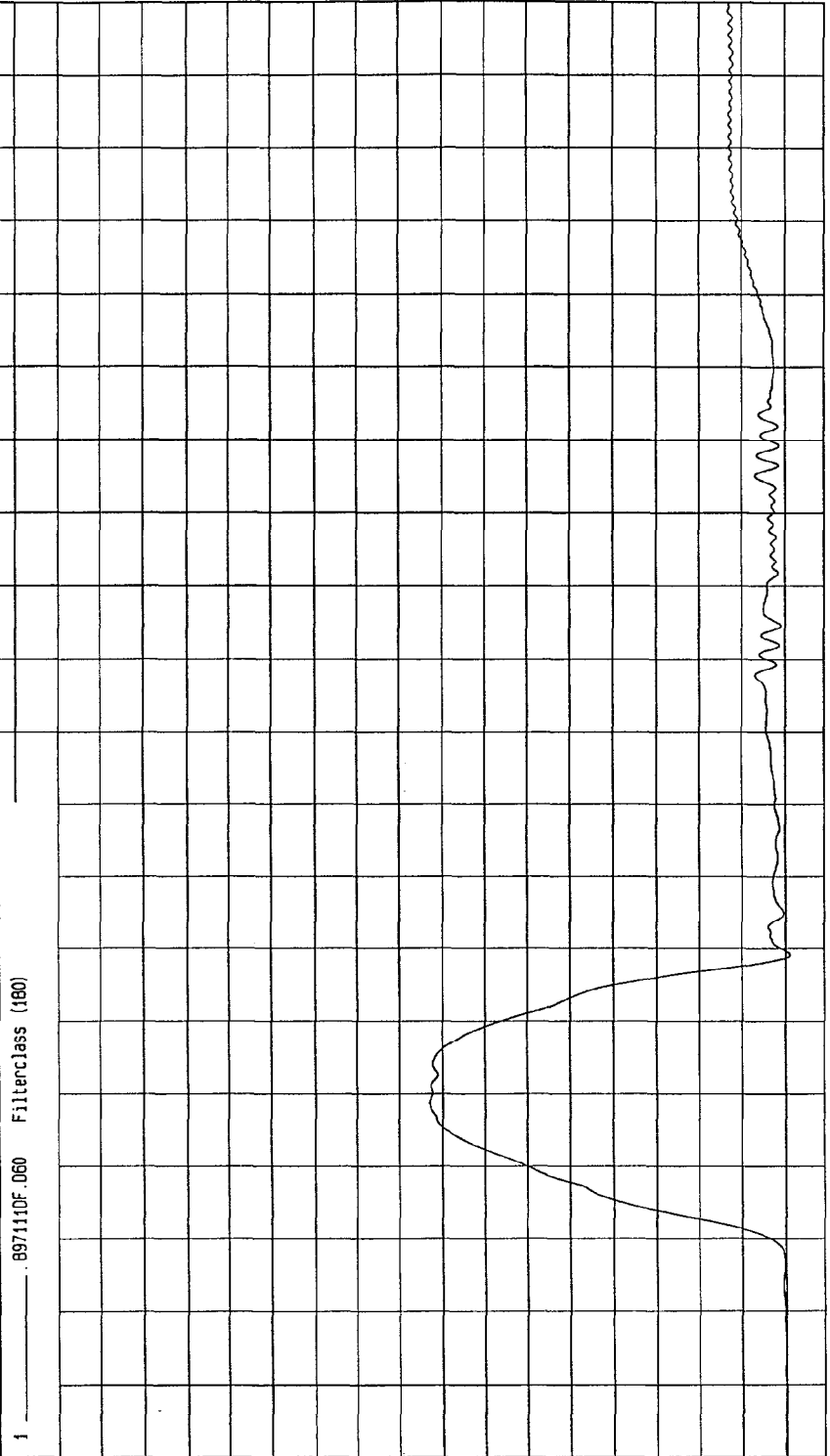
NCA Research
09-27-1997 13:15

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.20 MM at 69 msec Maximum = 16.60 MM at 49 msec

DRIVER LOWER RIB Y DISPLACEMENT

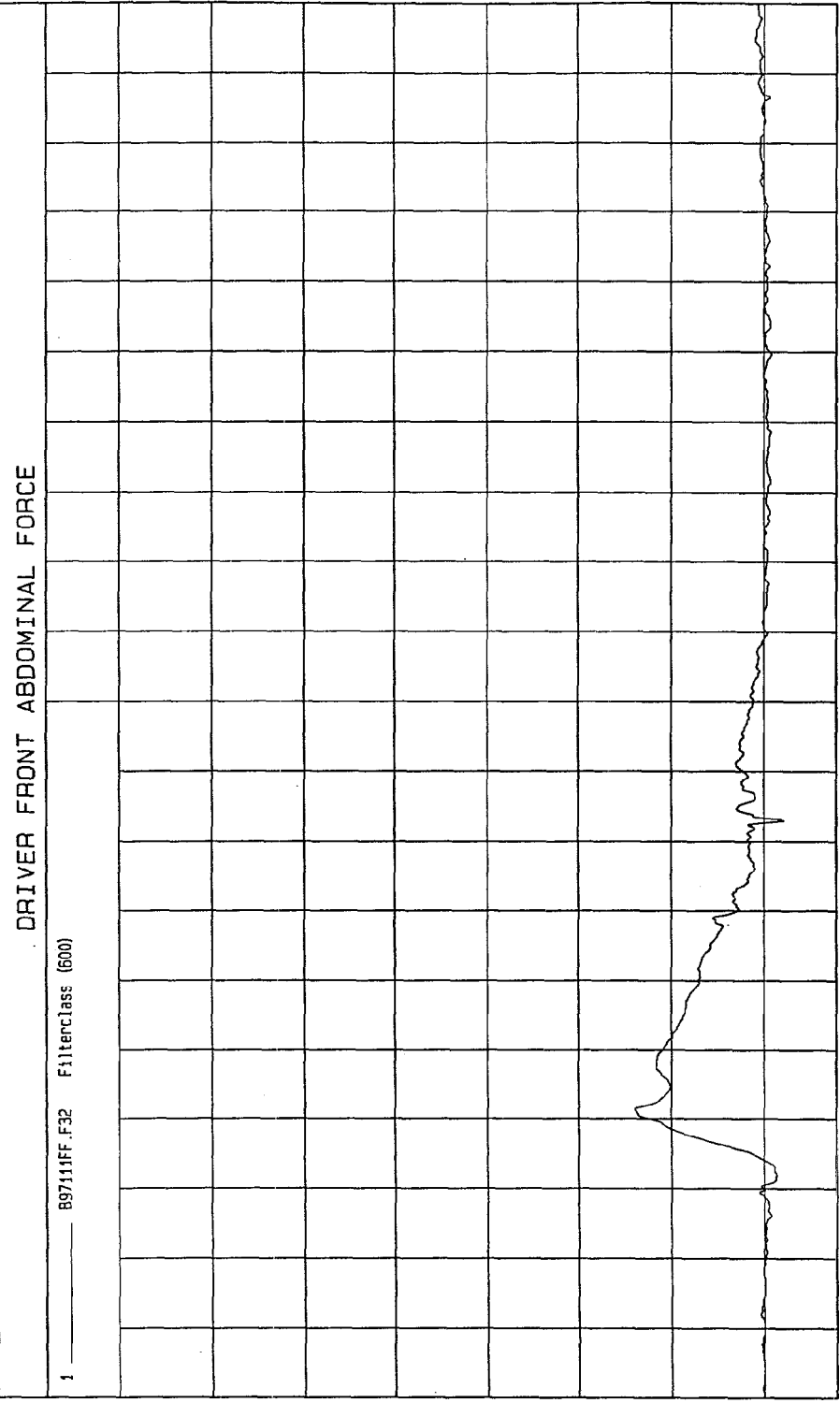


MM

TIME (SECONDS)

MGA Research
09-27-1997 11:50

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH
Minimum = -21.04 N at 83 msec Maximum = 139.83 N at 41 msec



TIME (SECONDS)

0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

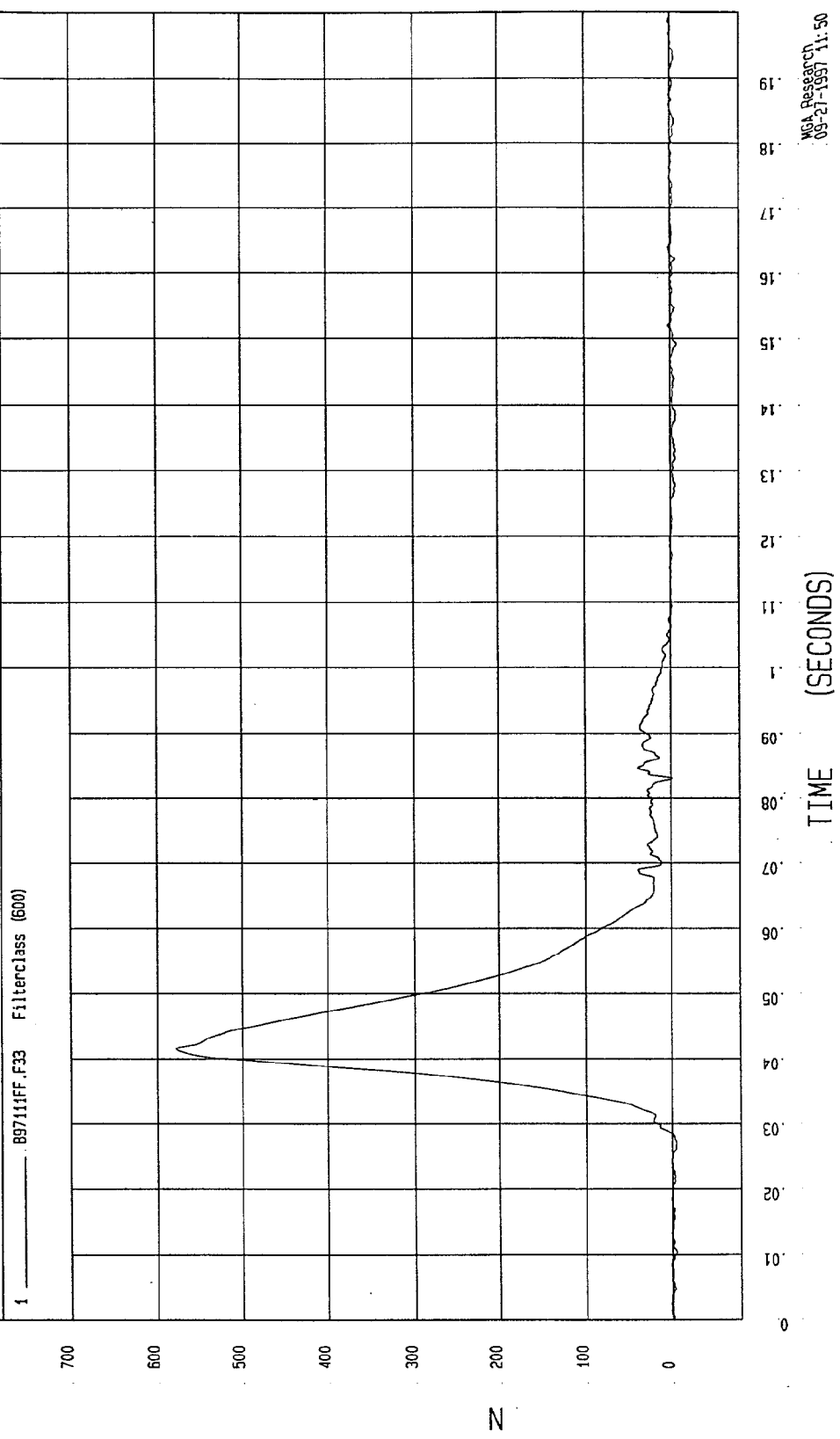
MCA Research
09-27-1997 11:50

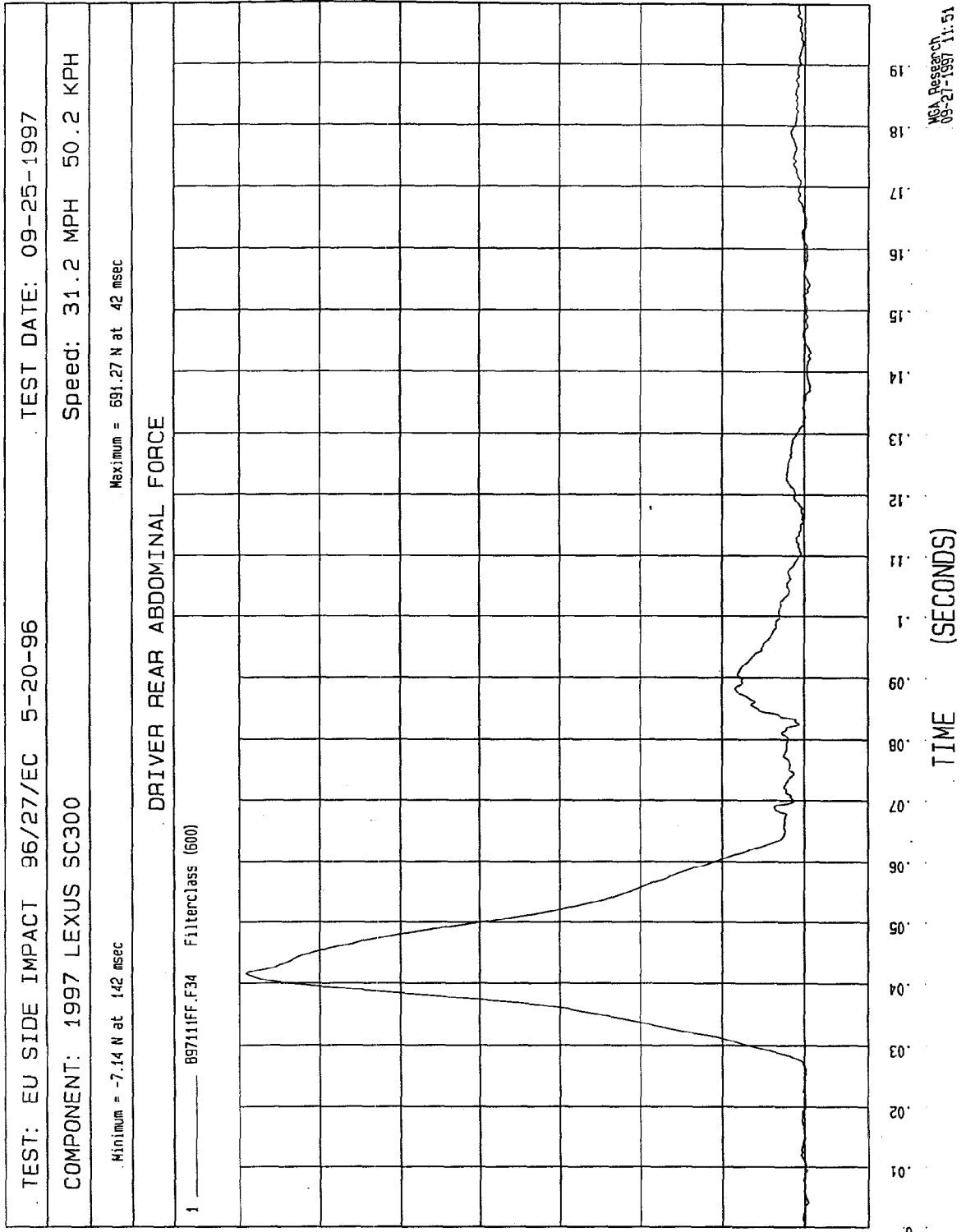
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -7.22 N at 149 msec
Maximum = 578.53 N at 42 msec

DRIVER MID ABDOMINAL FORCE



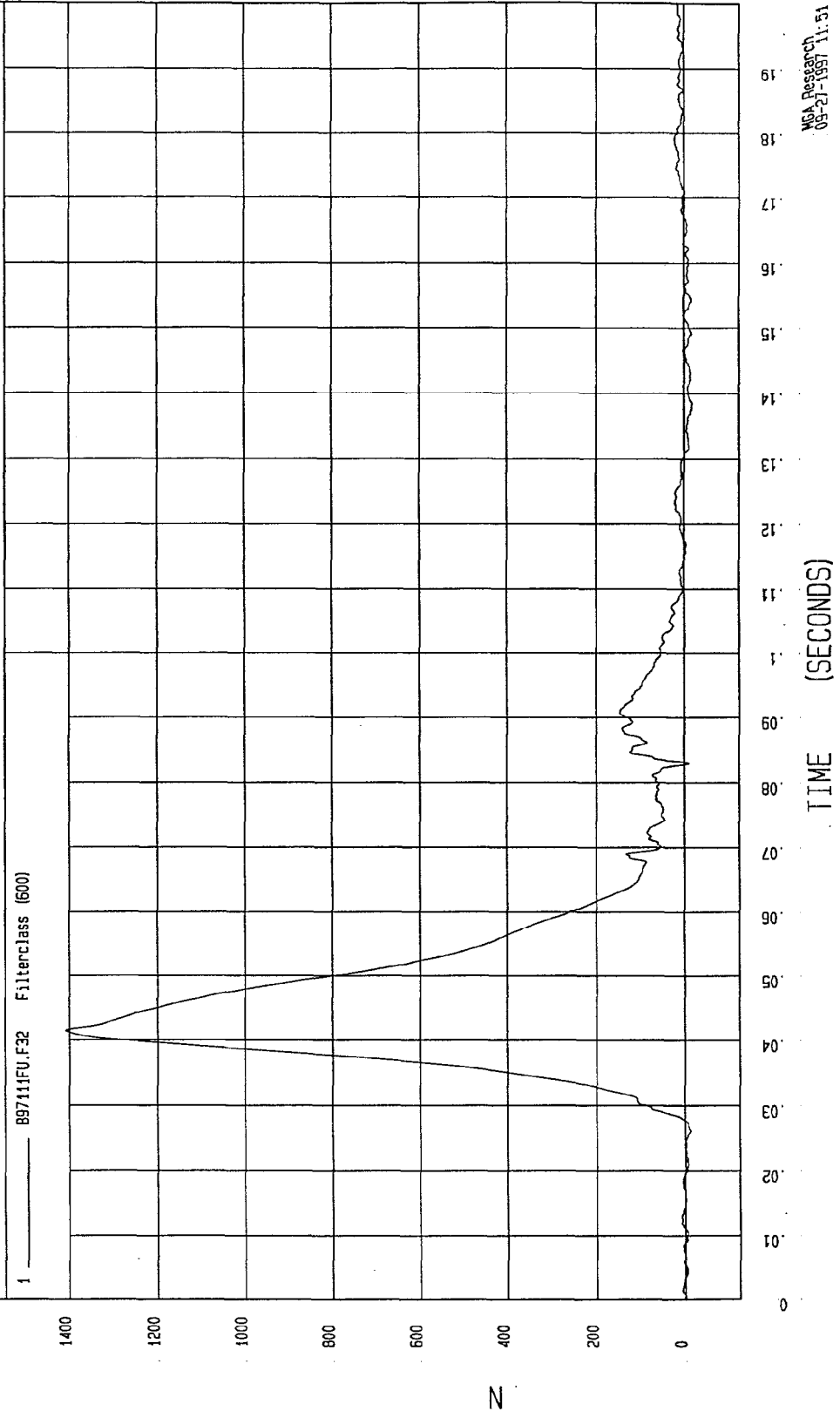


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -18.40 N at 138 msec Maximum = 1408.64 N at 42 msec

SUM OF DRIVER ABDOMINAL FORCES

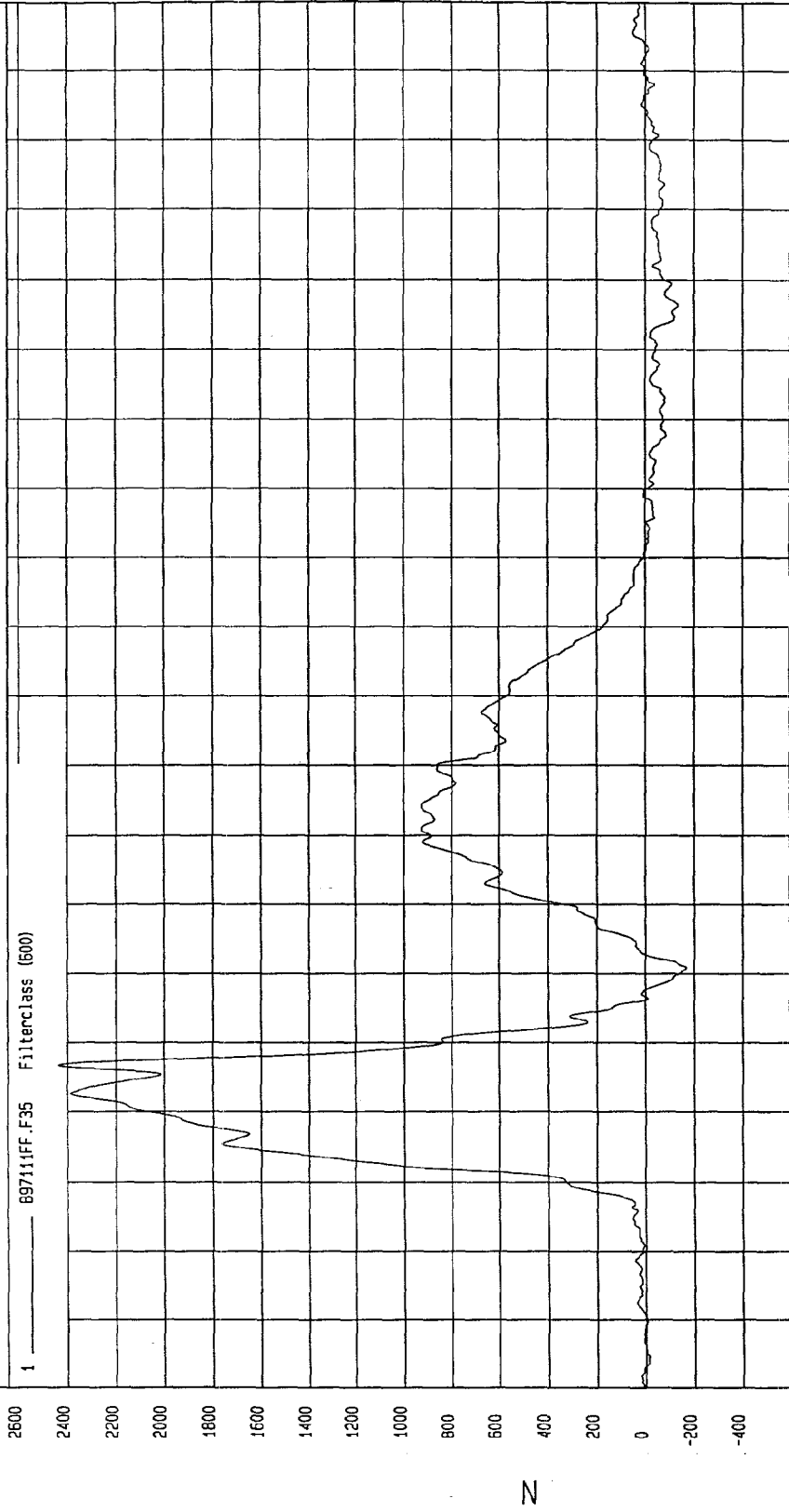


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

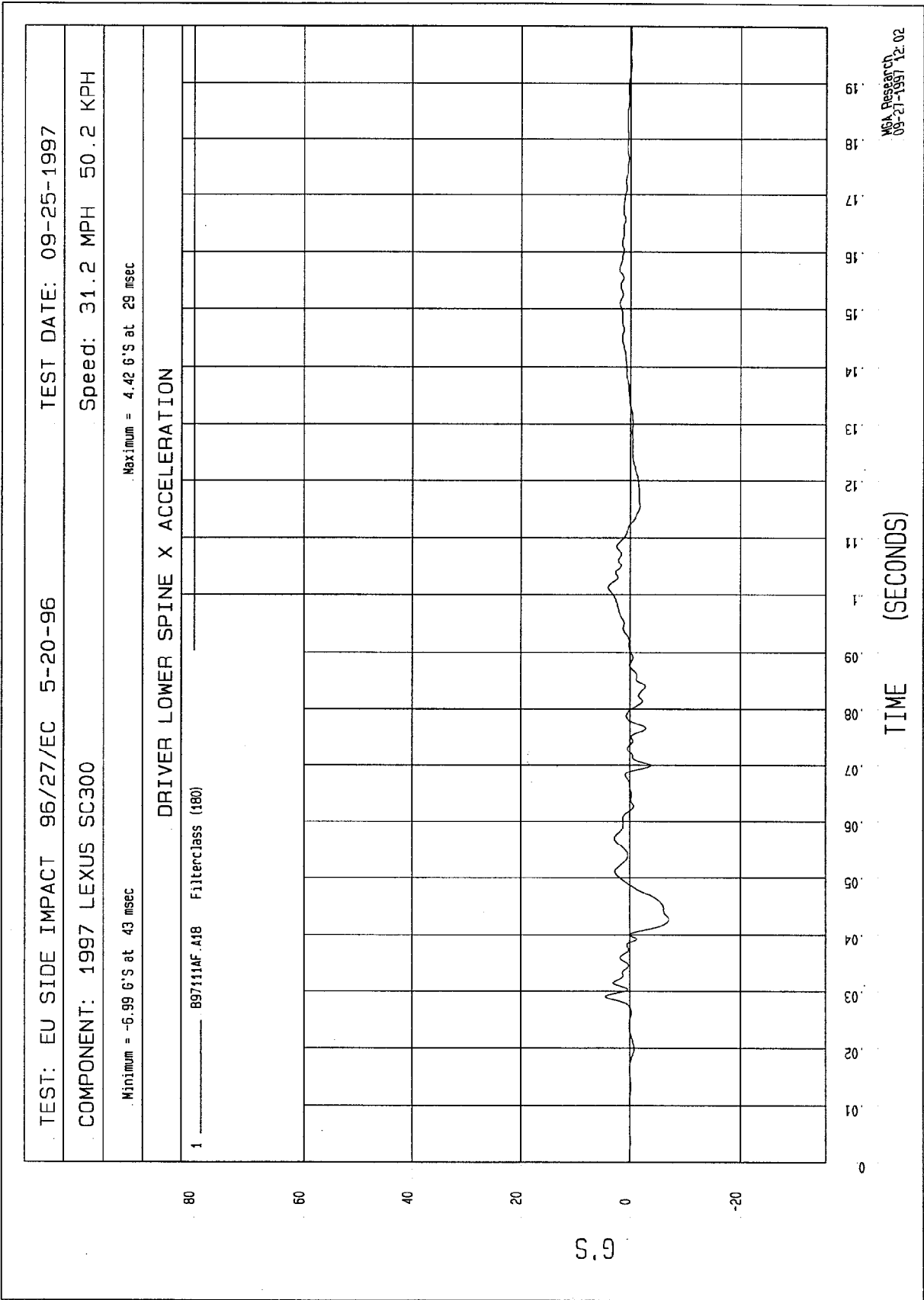
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

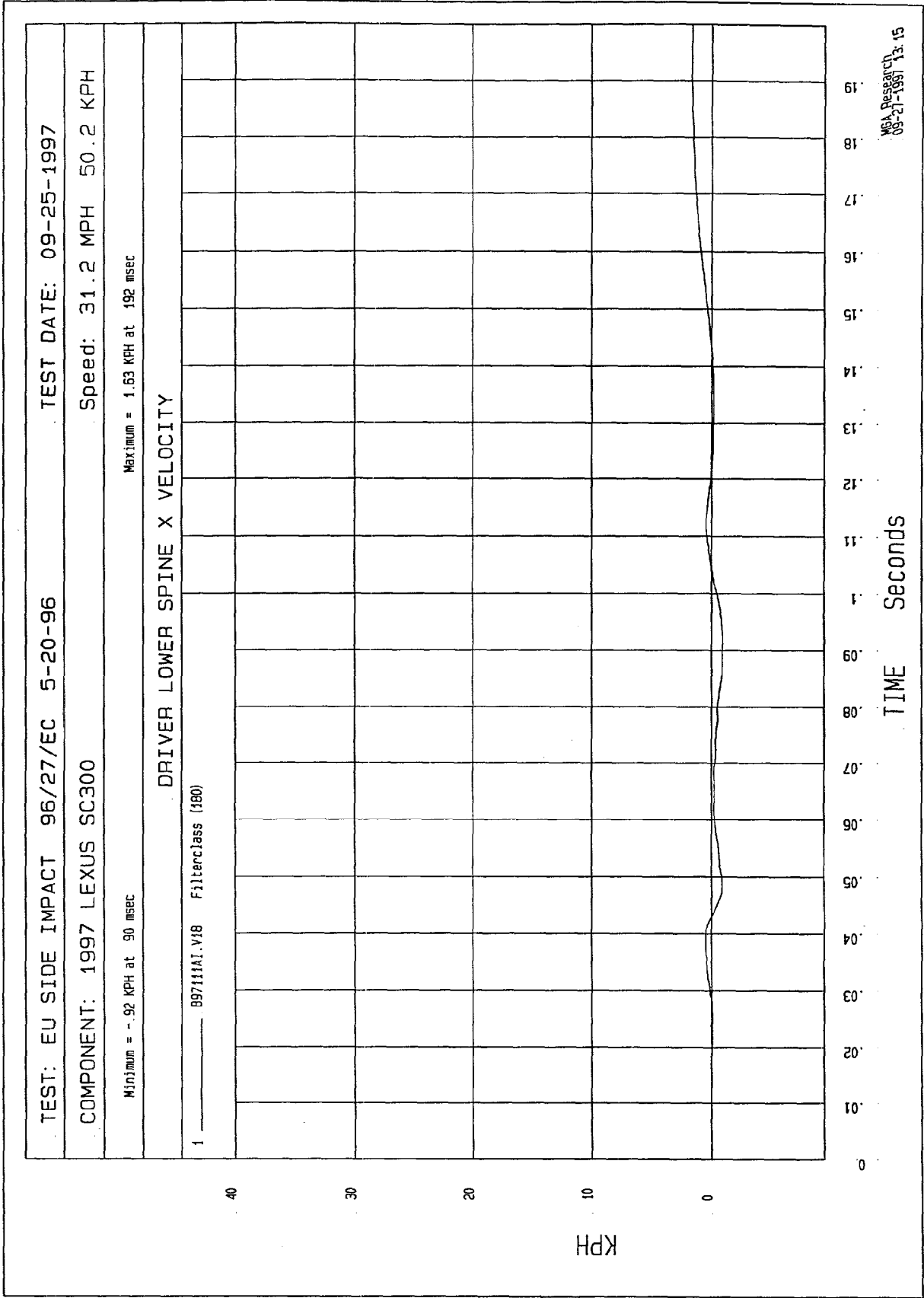
Minimum = -167.83 N at 61 msec Maximum = 2436.47 N at 47 msec

DRIVER PUBIC SYMPHYSIS FORCE



MGA Research
09-27-1997 11:51



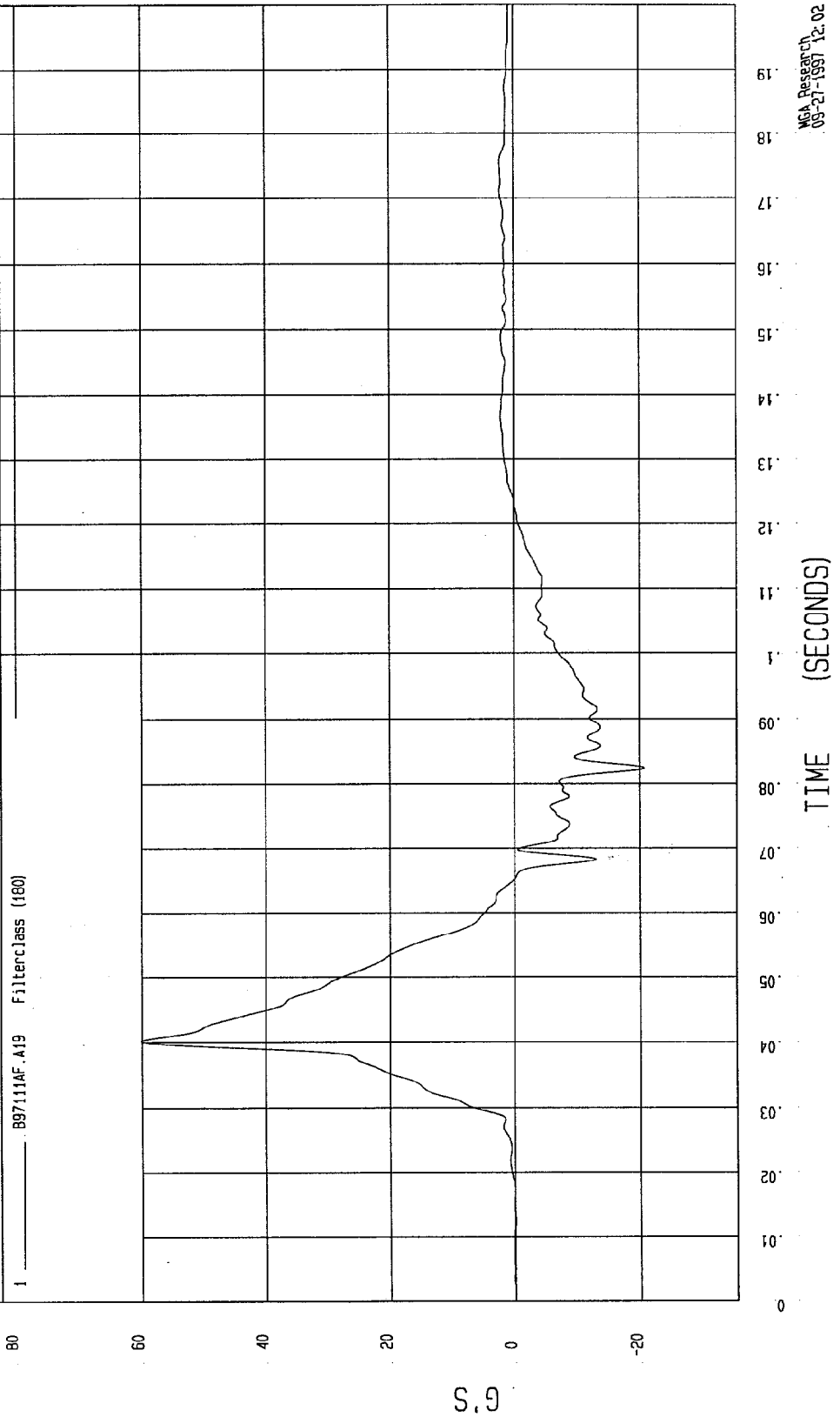


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -20.69 G'S at 82 msec Maximum = 60.15 G'S at 40 msec

DRIVER LOWER SPINE Y ACCELERATION

1 B97111AF.A19 FilterClass (180)



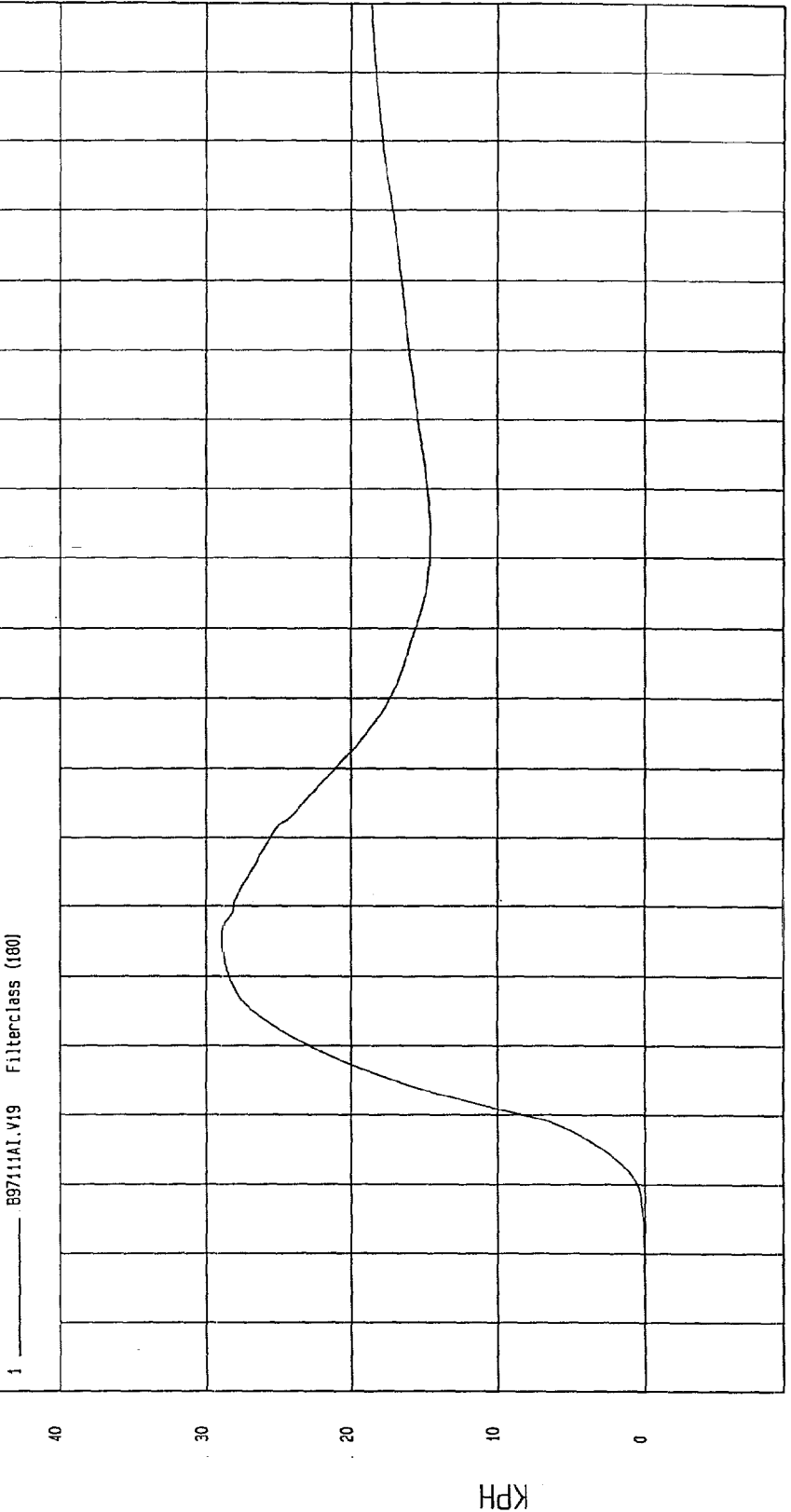
MGA Research
09-21-1997 12:02

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

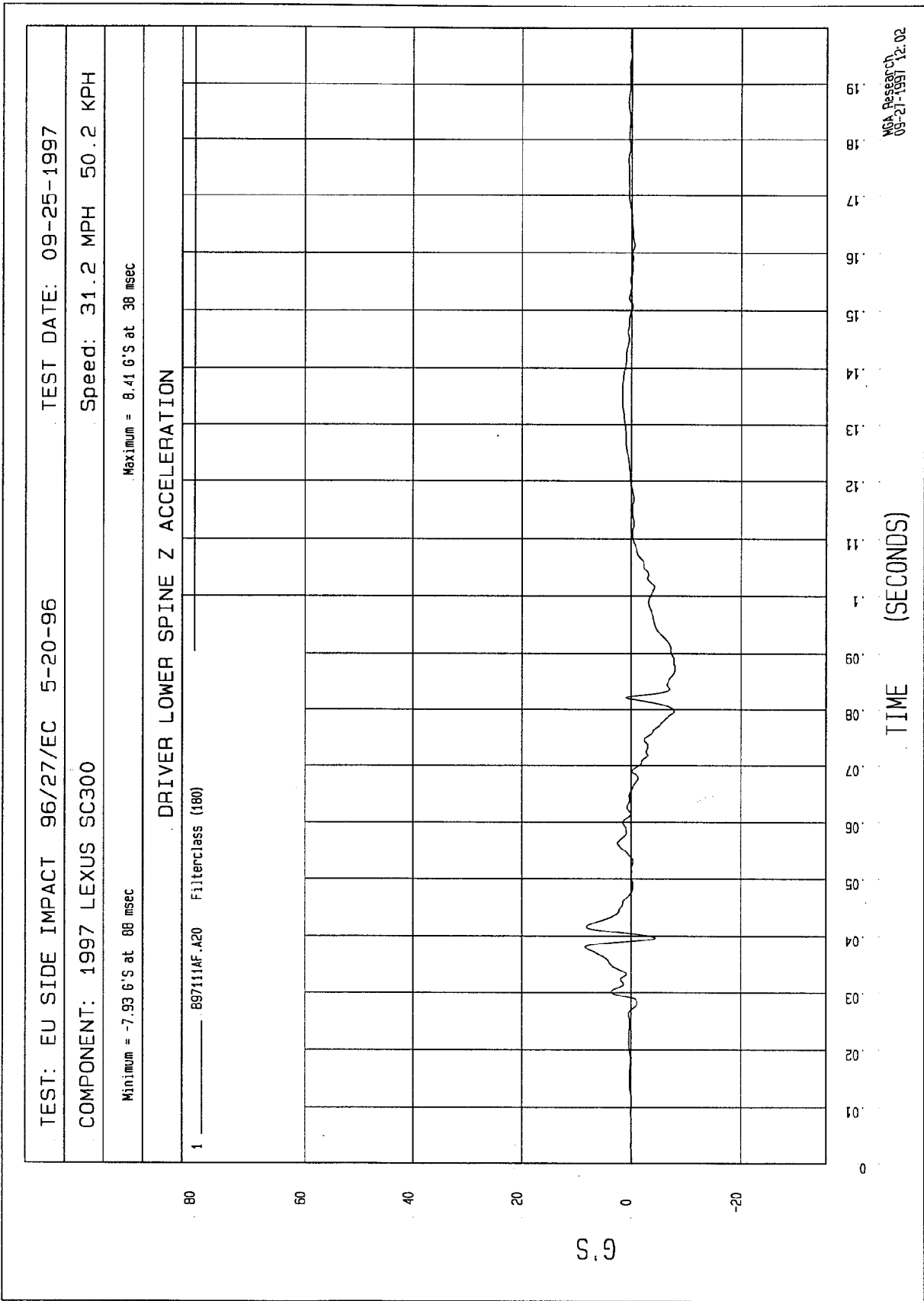
Minimum = -2.19E-02 KPH at 2 msec Maximum = 28.87 KPH at 65 msec

DRIVER LOWER SPINE Y VELOCITY



TIME Seconds

MCA Research
09-27-1997 13:15

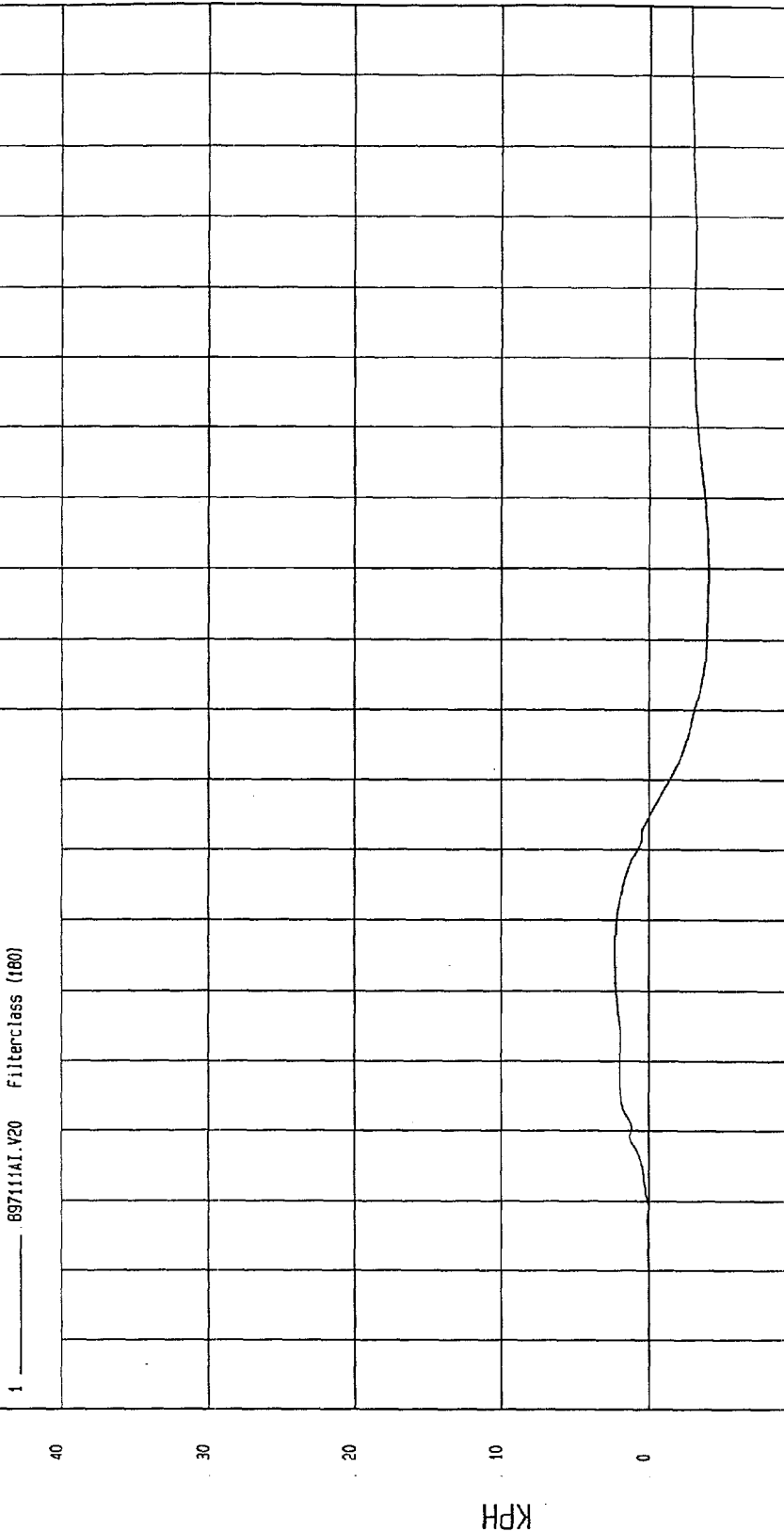


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -4.05 KPH at 119 msec Maximum = 2.30 KPH at 65 msec

DRIVER LOWER SPINE Z VELOCITY



MOA Research
09-27-1997 13:15

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

Maximum = 10.68 G'S at 54 msec

Minimum = -11.95 G'S at 48 msec

DRIVER PELVIS X ACCELERATION

1 097111AF.A45 Filterclass (180)

80

60

40

20

0

-20

G

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

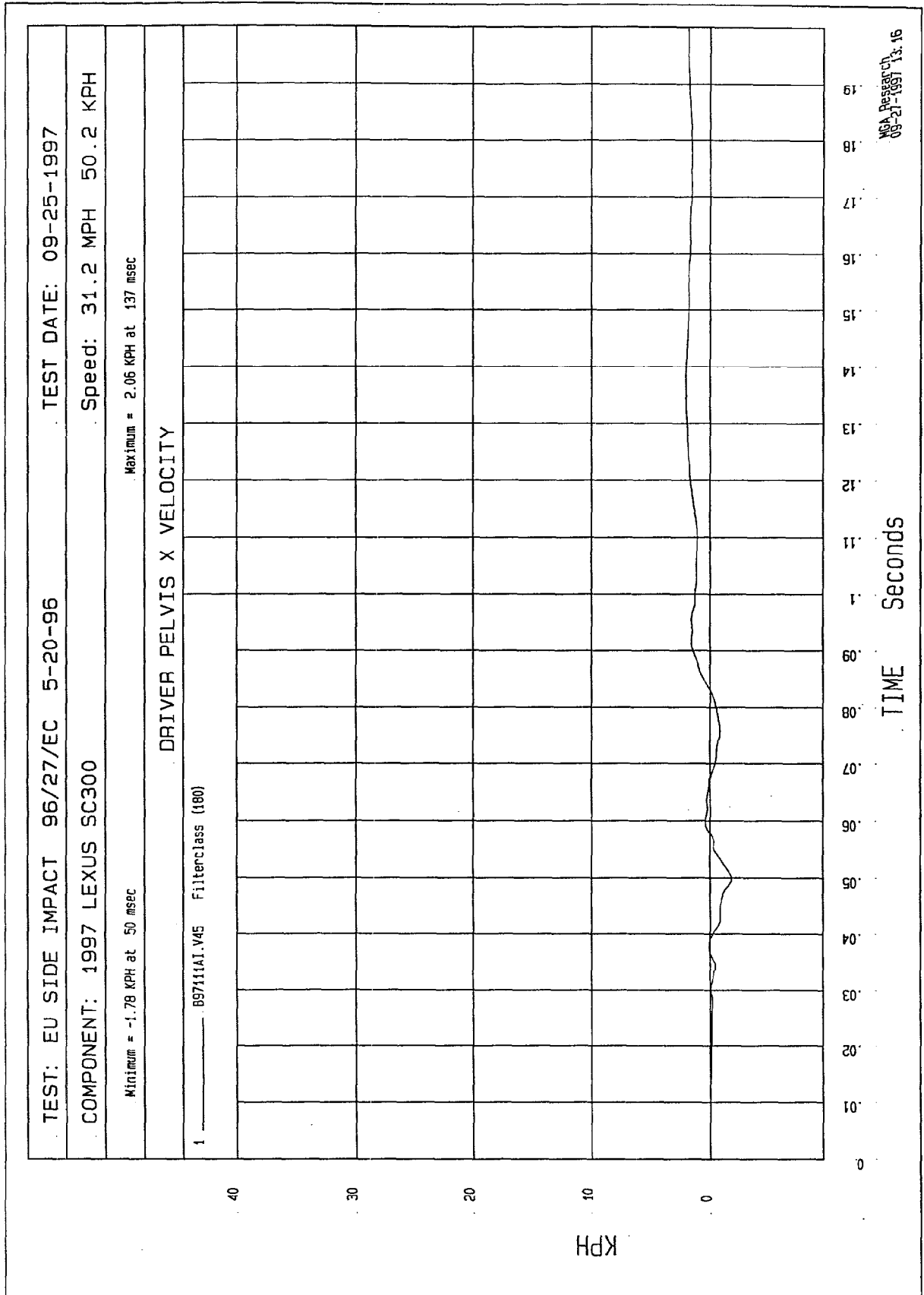
02

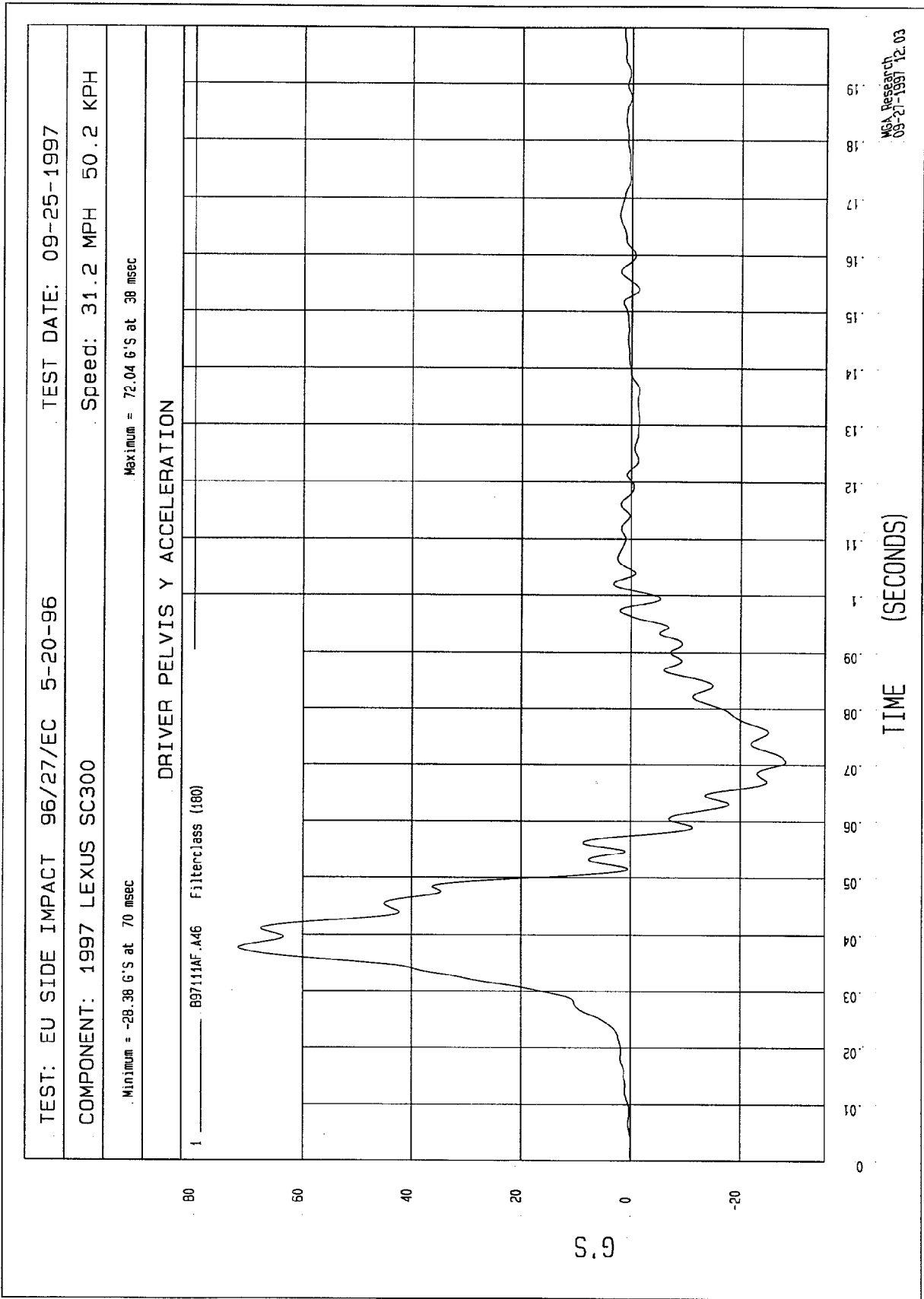
01

0

TIME (SECONDS)

MCA Research
09-21-1997 12:02





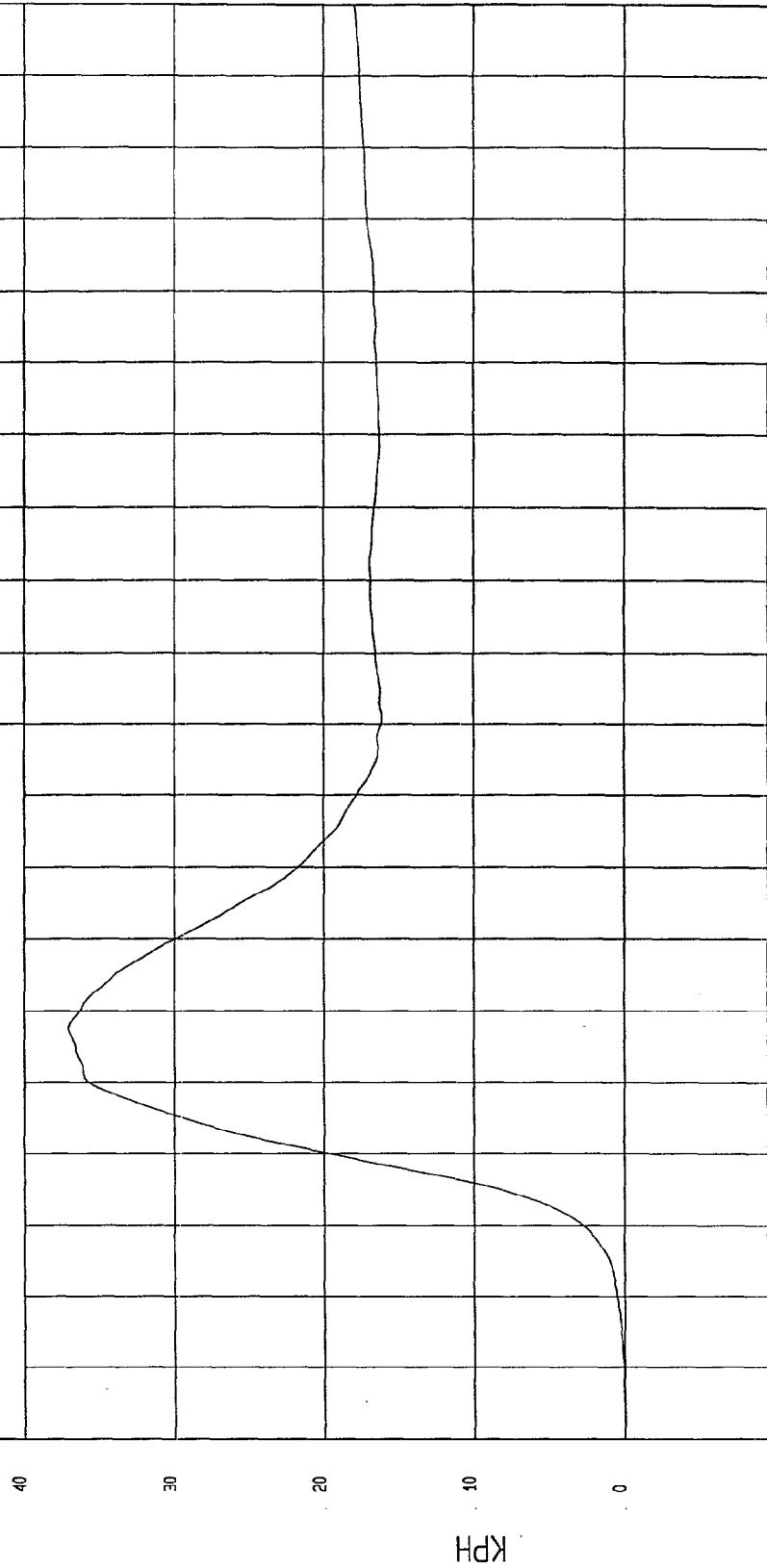
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.50E-03 KPH at -6 msec Maximum = 37.08 KPH at 57 msec

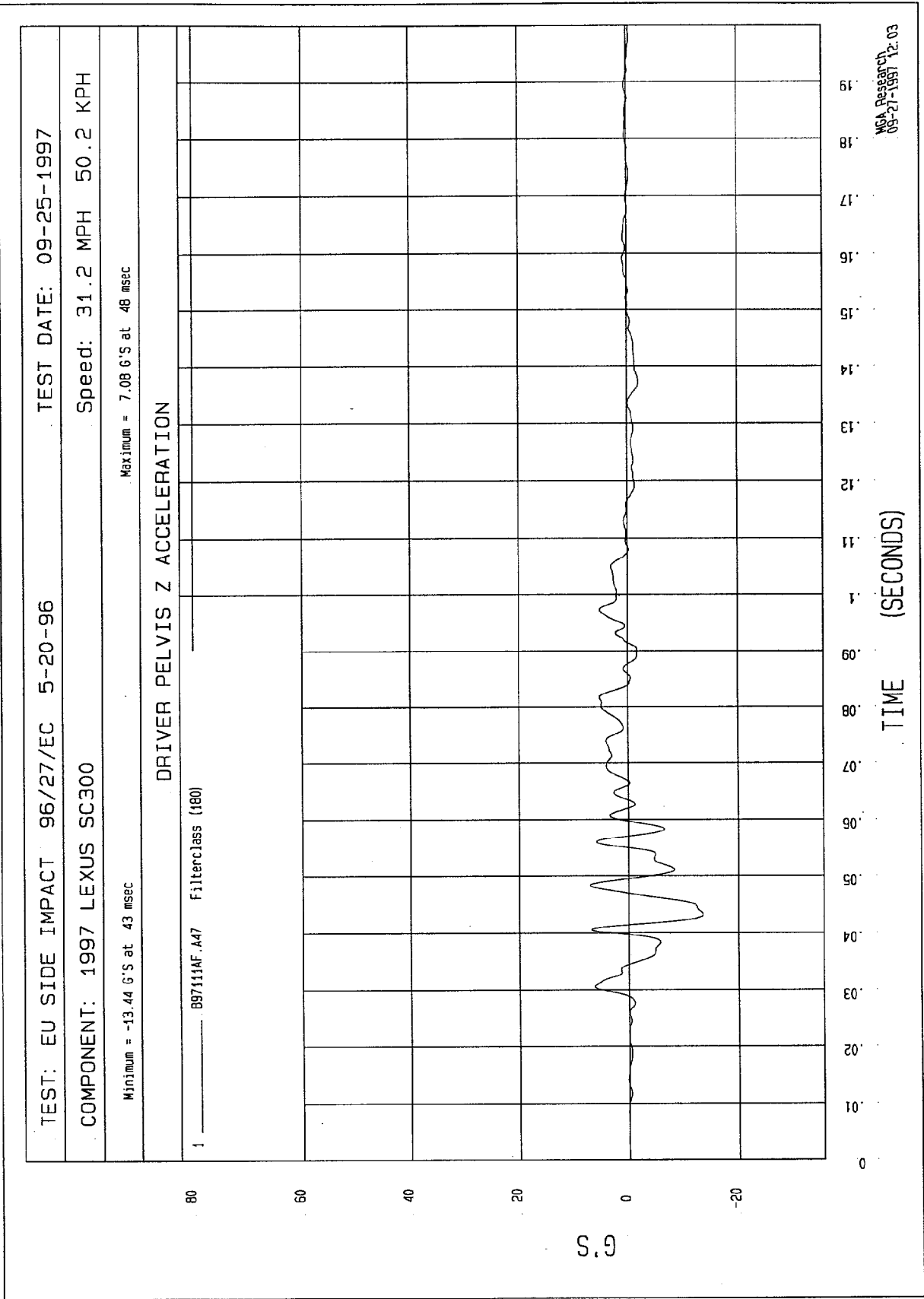
DRIVER PELVIS Y VELOCITY

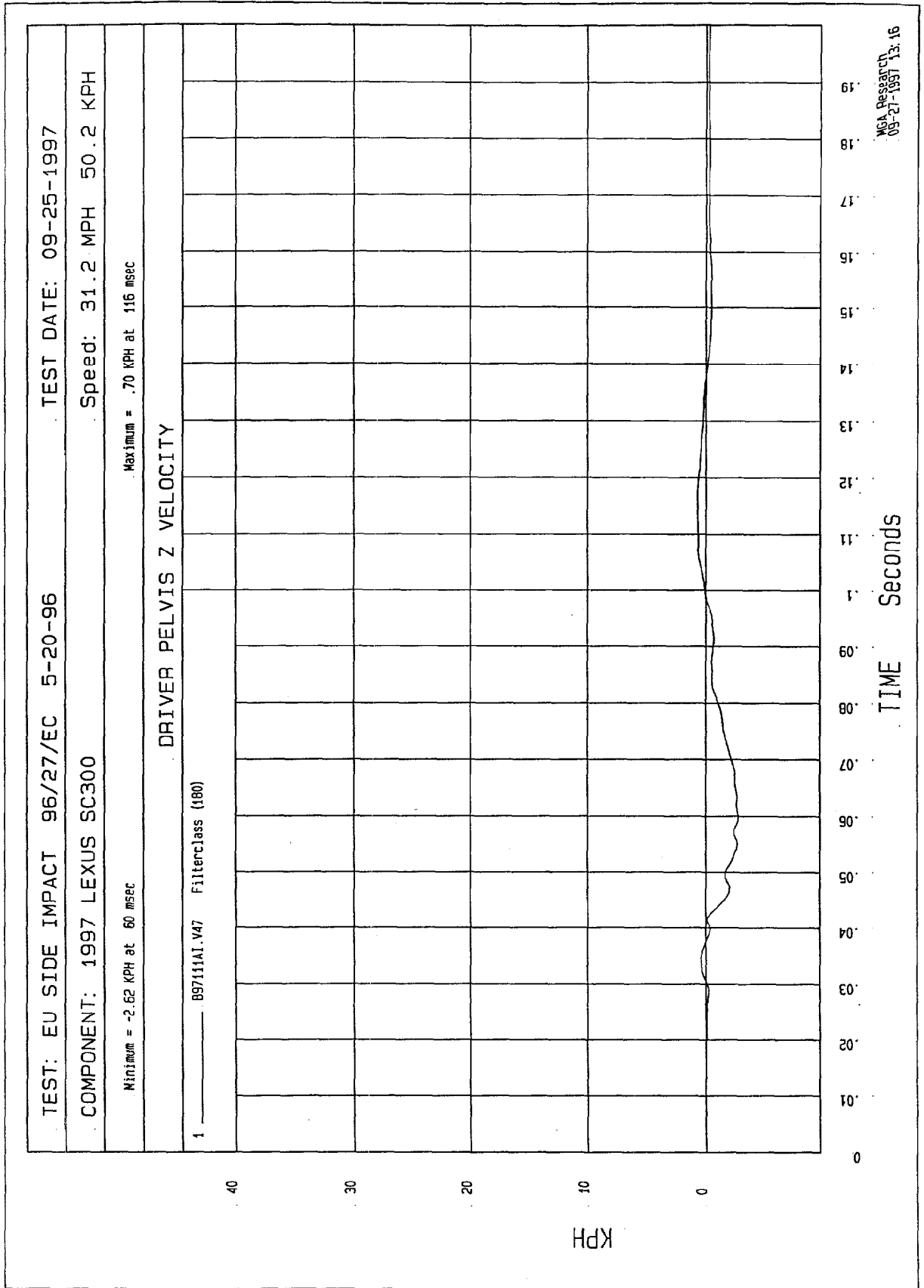
1 897111A1.V46 Filterclass (180)



TIME Seconds

WGA Research
09-27-1997 13:16





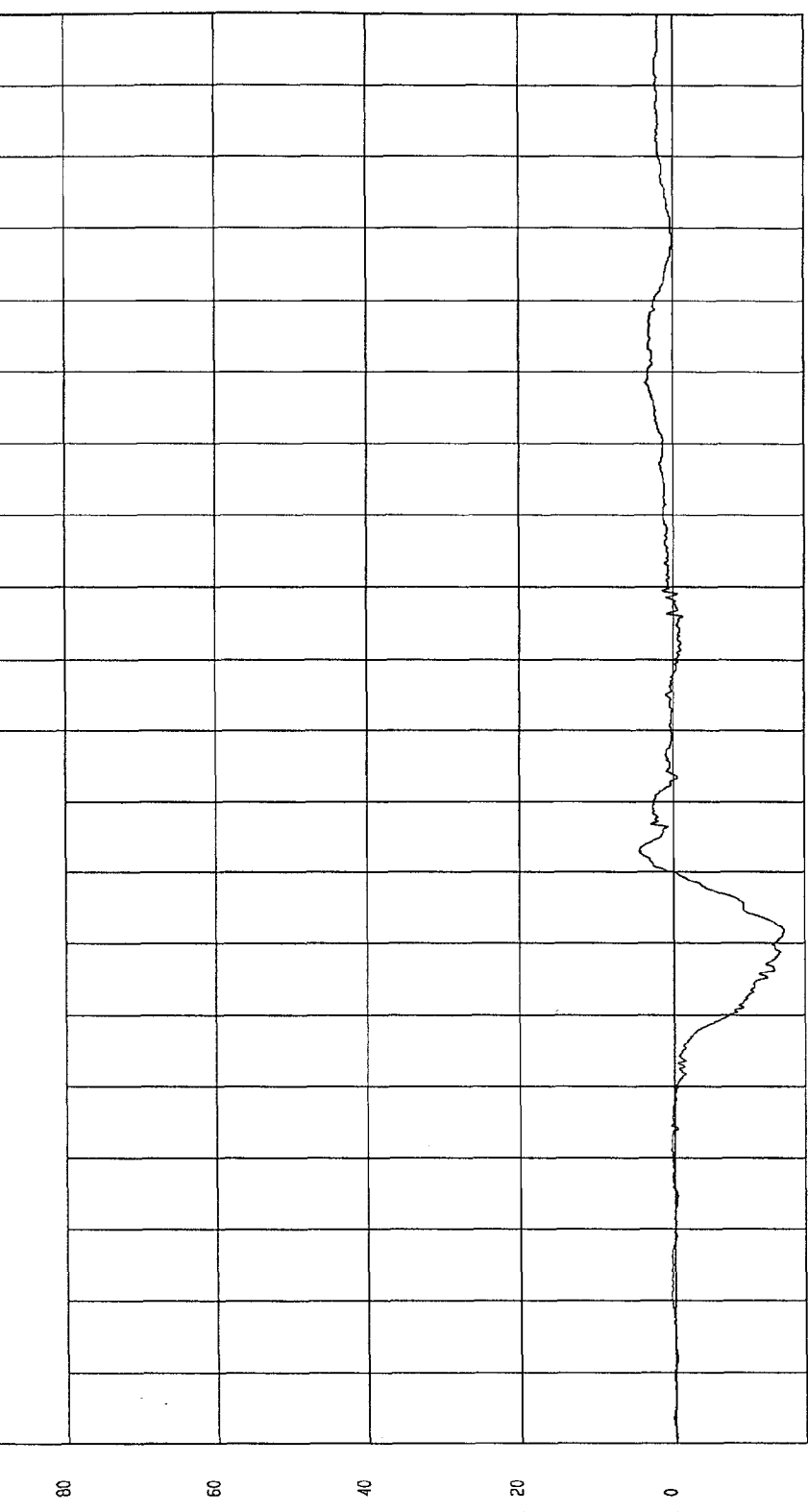
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -14.30 G'S at 72 msec Maximum = 4.39 G'S at 83 msec

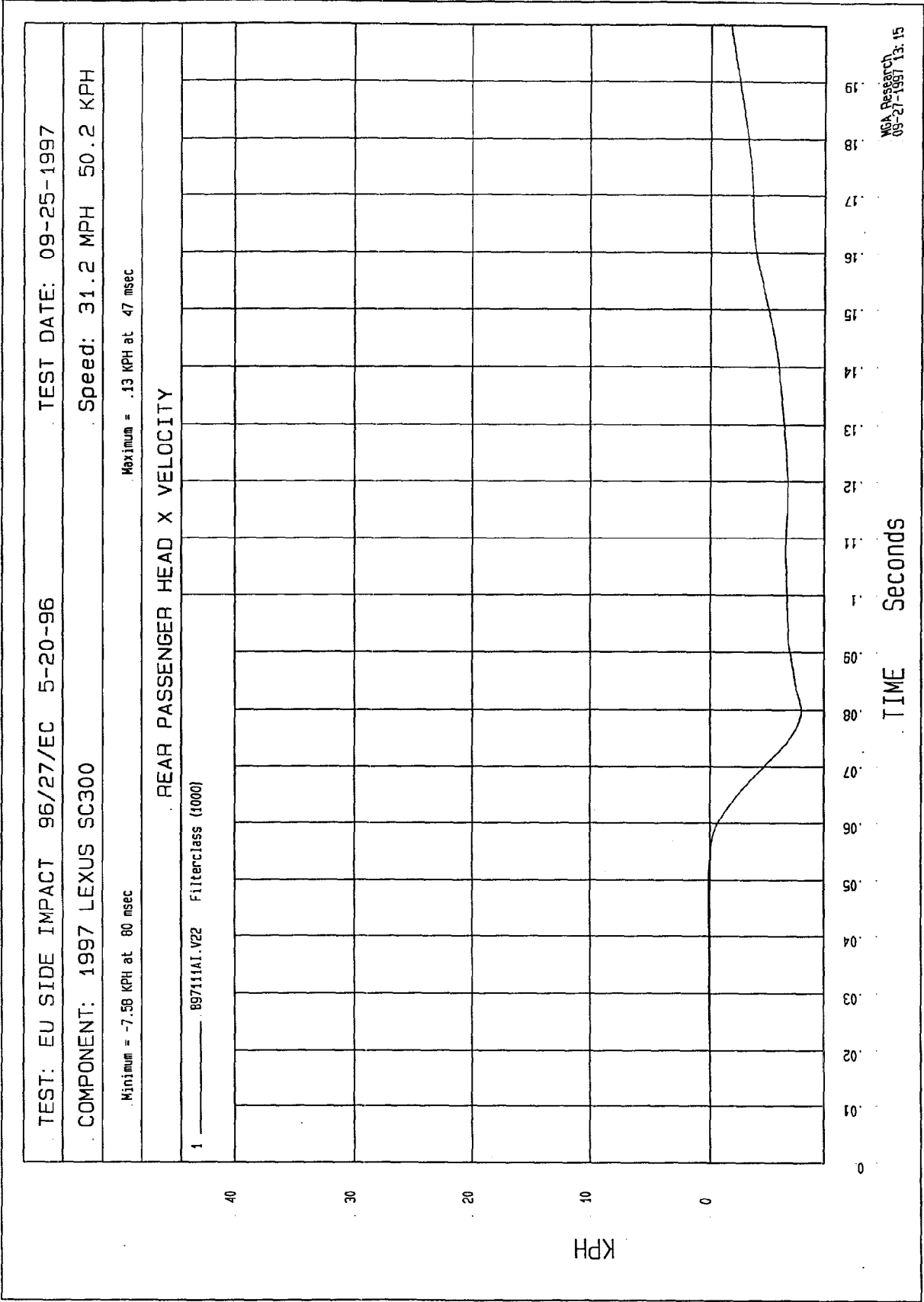
PASSENGER HEAD X ACCELERATION

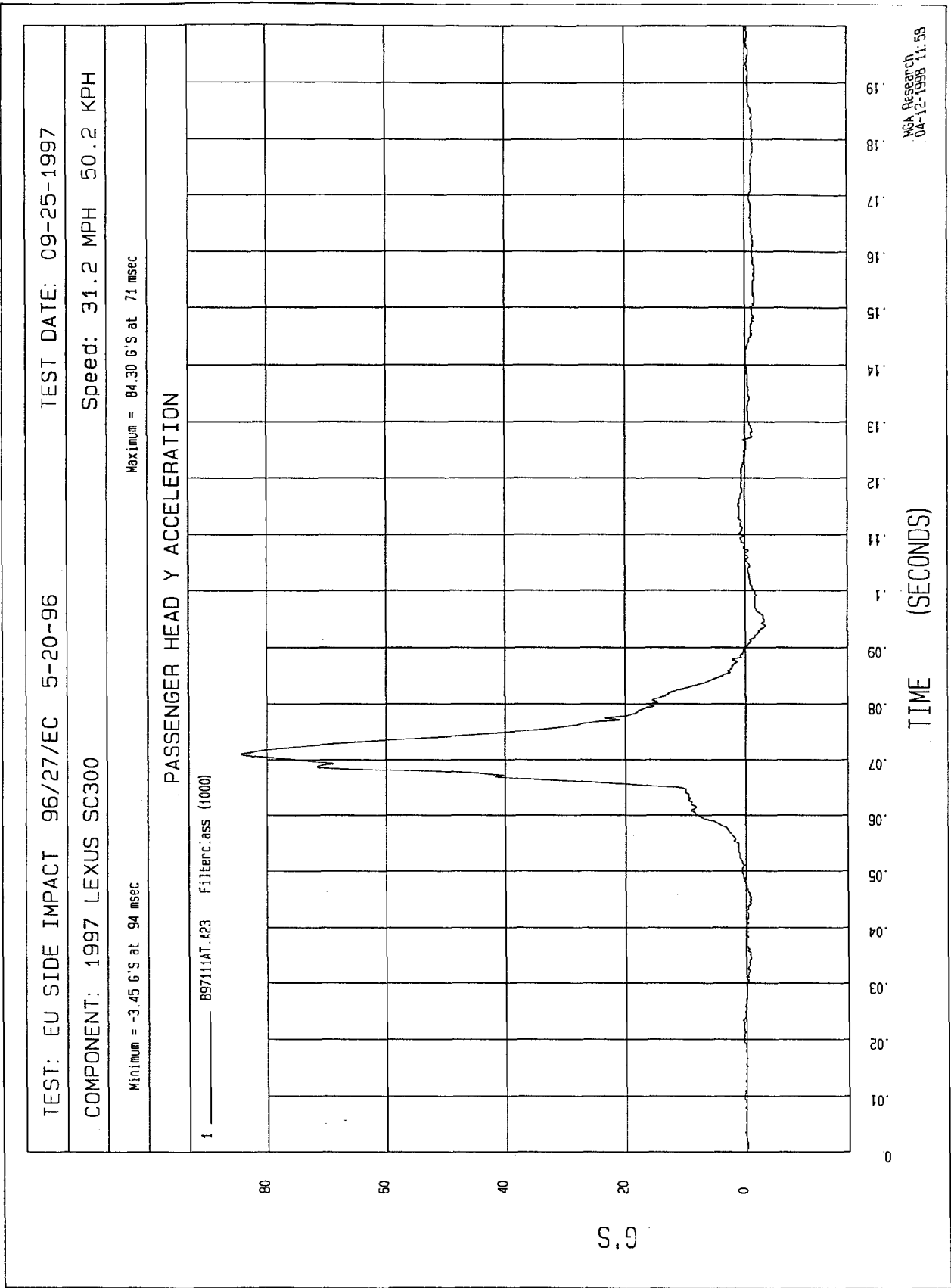
1 B97111AT.A22 Filterclass (4000)



TIME (SECONDS)

MCA Research
04-12-1998 11:58





TEST: EU SIDE IMPACT 96/27/EC 5-20-96

TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

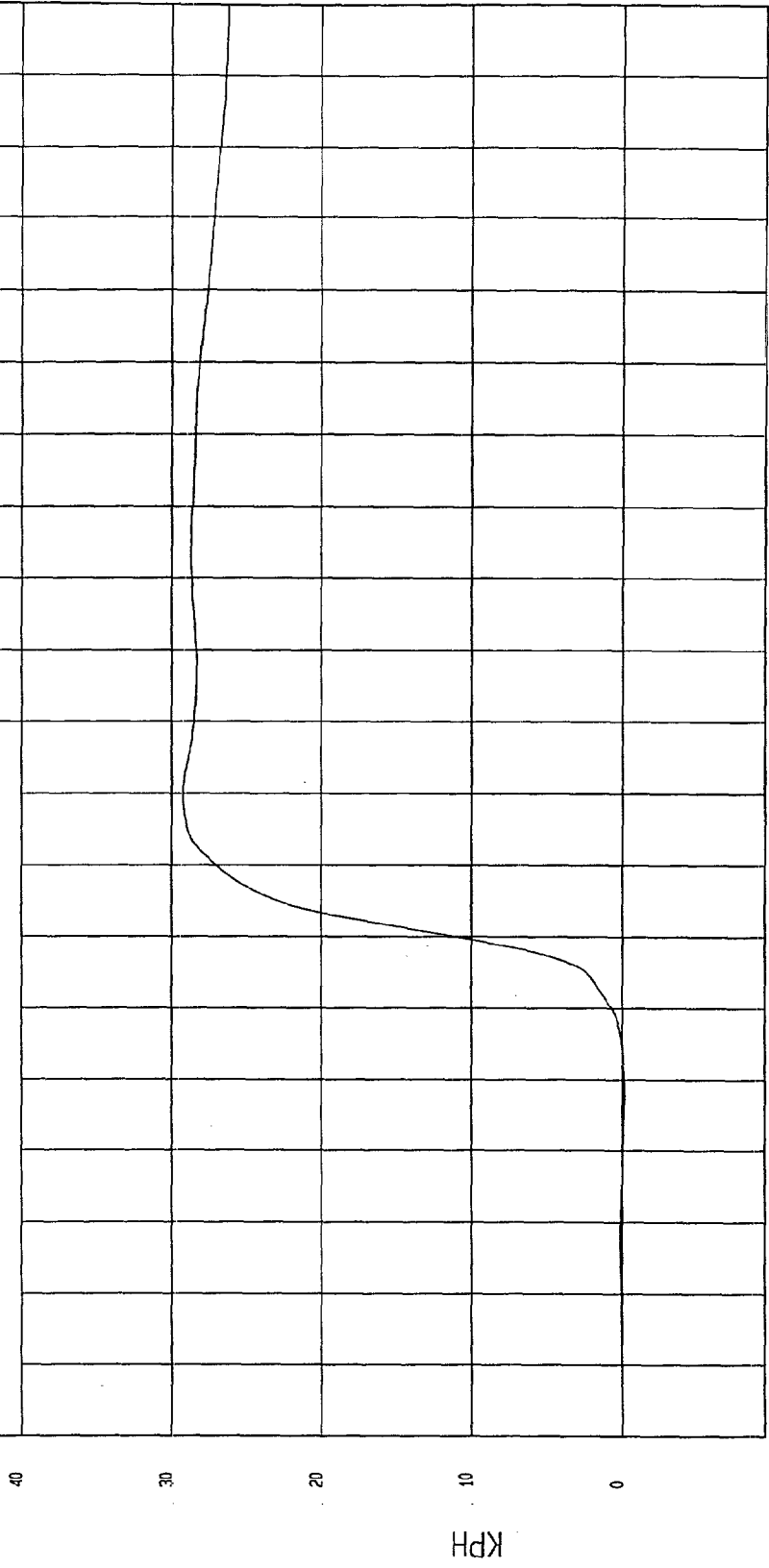
COMPONENT: 1997 LEXUS SC300

Maximum = 29.26 KPH at 90 msec

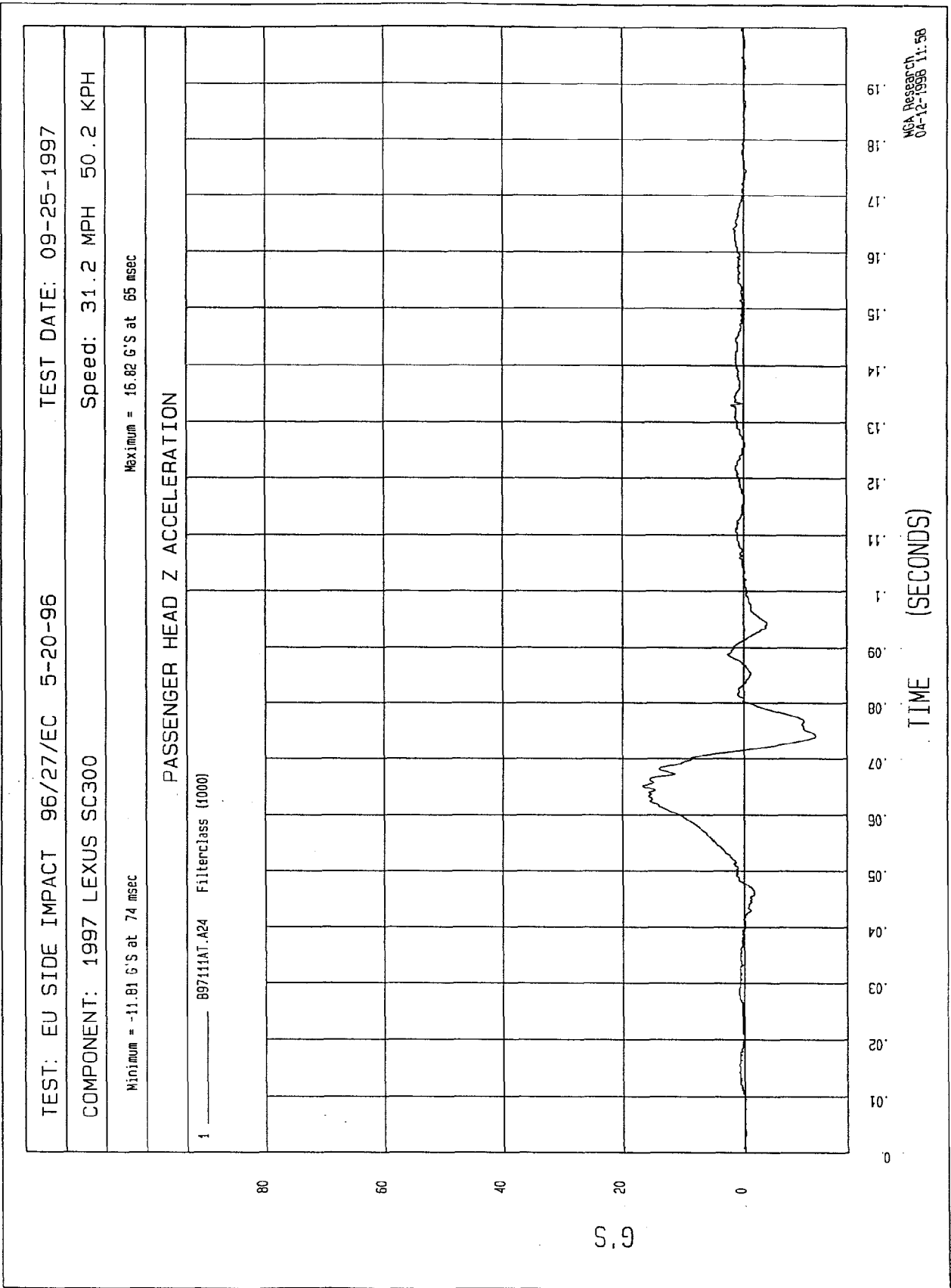
Minimum = -14 KPH at 48 msec

REAR PASSENGER HEAD Y VELOCITY

1 ——— B97111A1.V23 Filterclass (1000)



NSA Research
09-27-1997 13:15



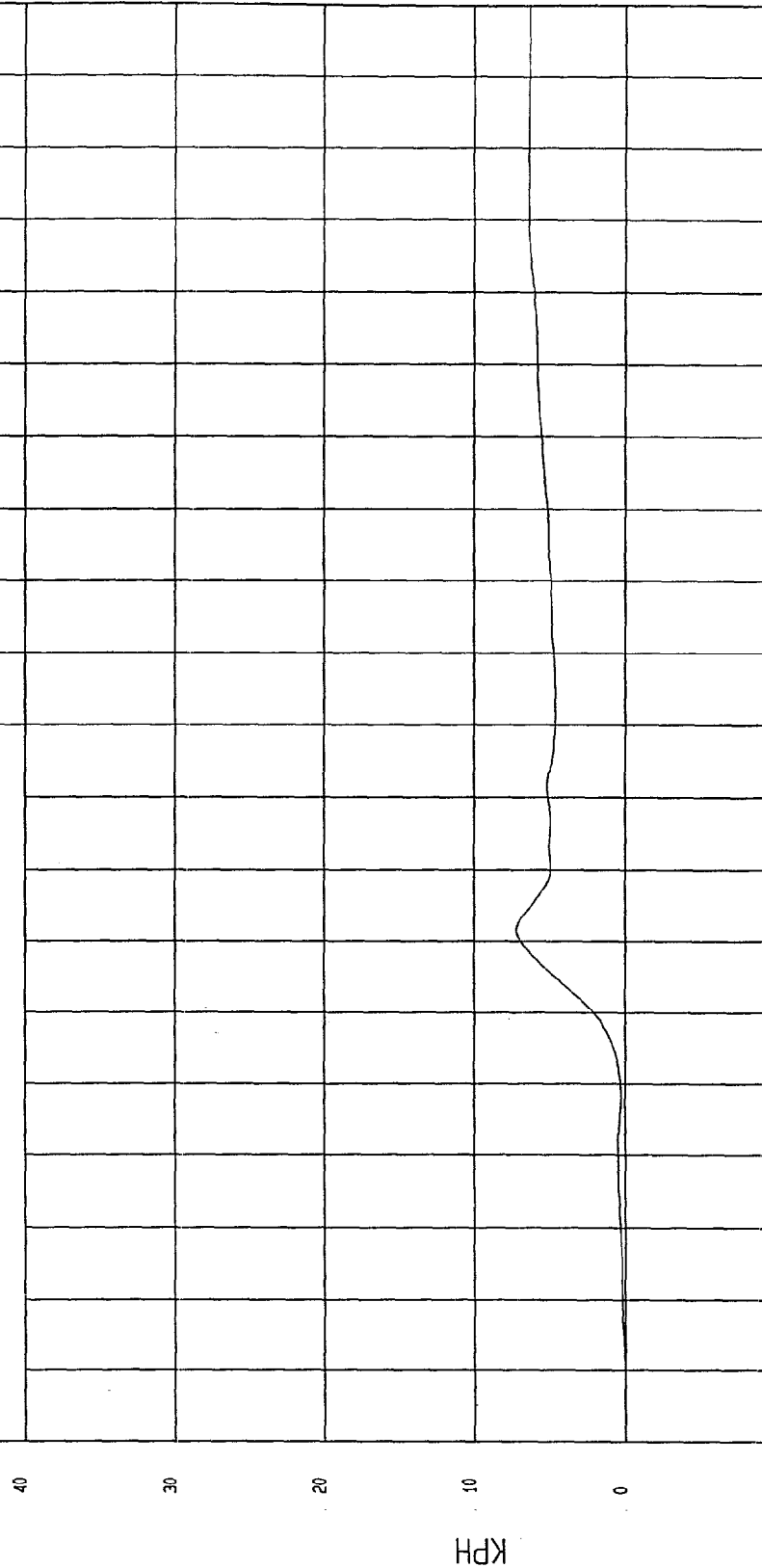
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.65E-03 KPH at -6 msec Maximum = 7.21 KPH at 72 msec

REAR PASSENGER HEAD Z VELOCITY

1 89711A1.V24 Filterclass (1000)



TIME Seconds

MCA Research
09-27-1997 13:15

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH
Minimum = 6.88E-02 G'S at -20 msec Maximum = 85.57 G'S at 71 msec

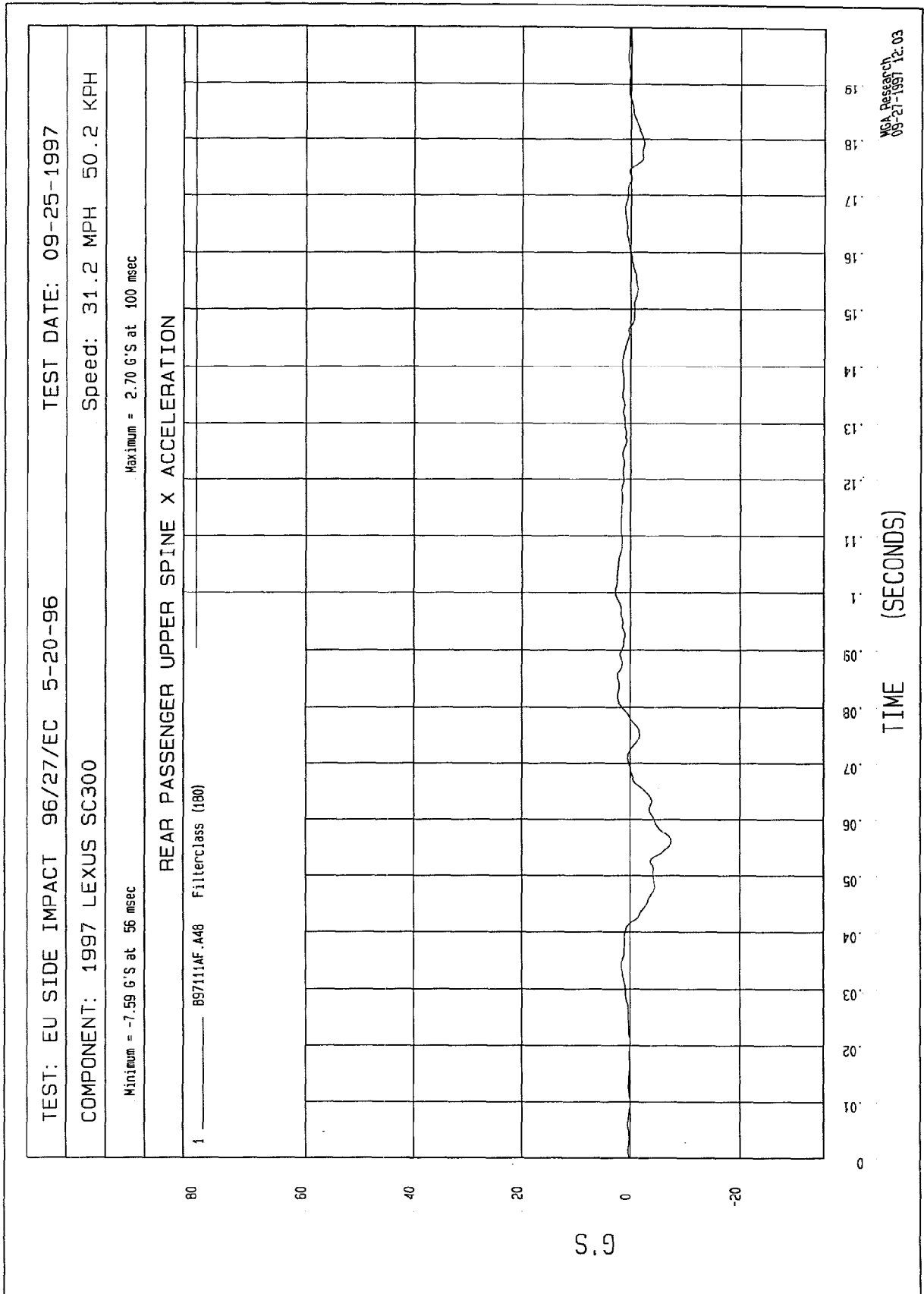
PASSENGER HEAD RESULTANT ACCELERATION

1 — 897111AV.A22 Filterclass (1000)

80
60
40
20
0

G.S

TIME (SECONDS)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9
MCA Research
04-12-1998 11:58

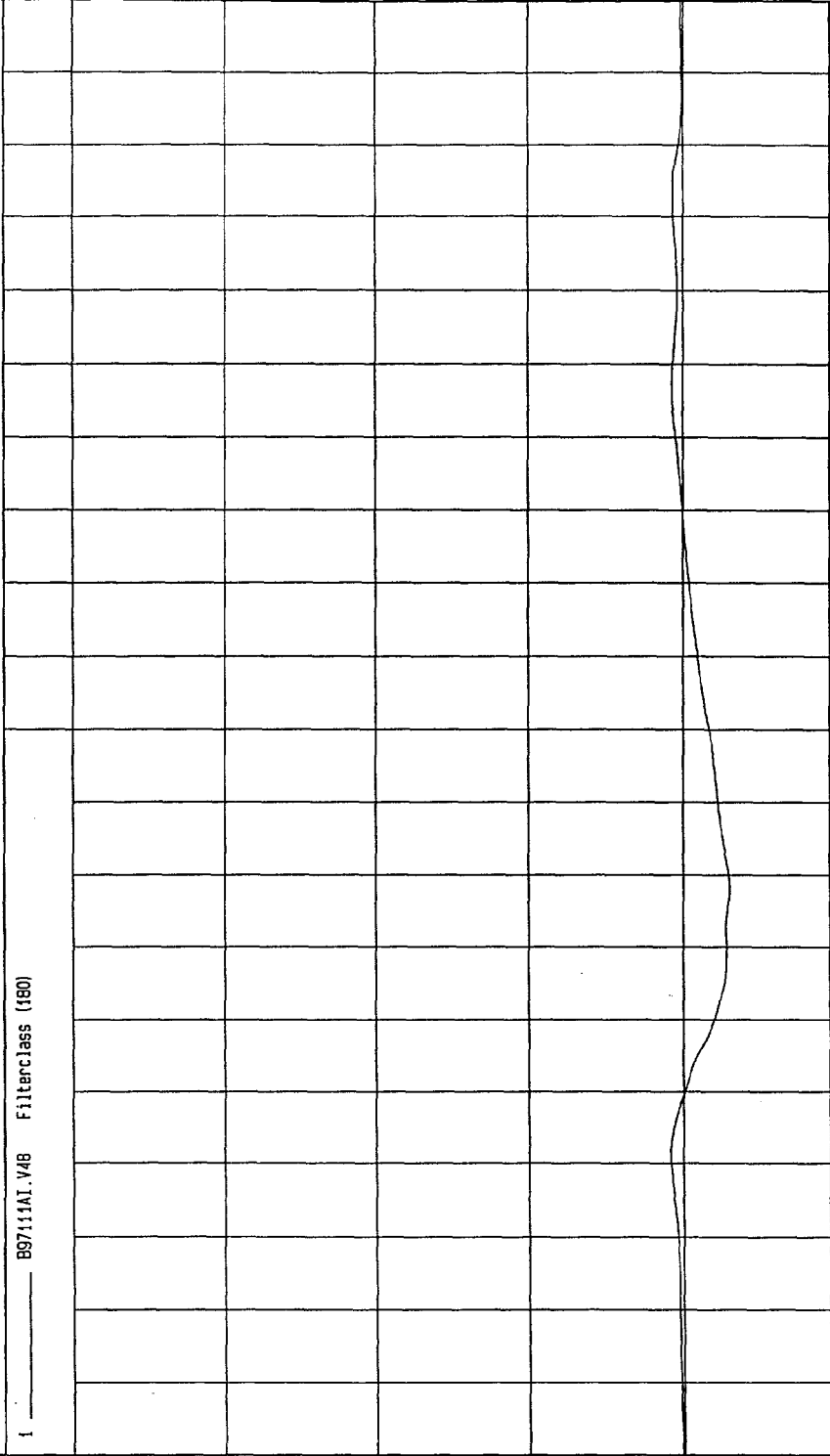


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -2.97 KPH at 78 msec Maximum = .83 KPH at 42 msec

PASSENGER UPPER SPINE X VELOCITY



KPH

TIME Seconds

0 10 20 30 40

0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

WCA Research
09-27-1997 13.17

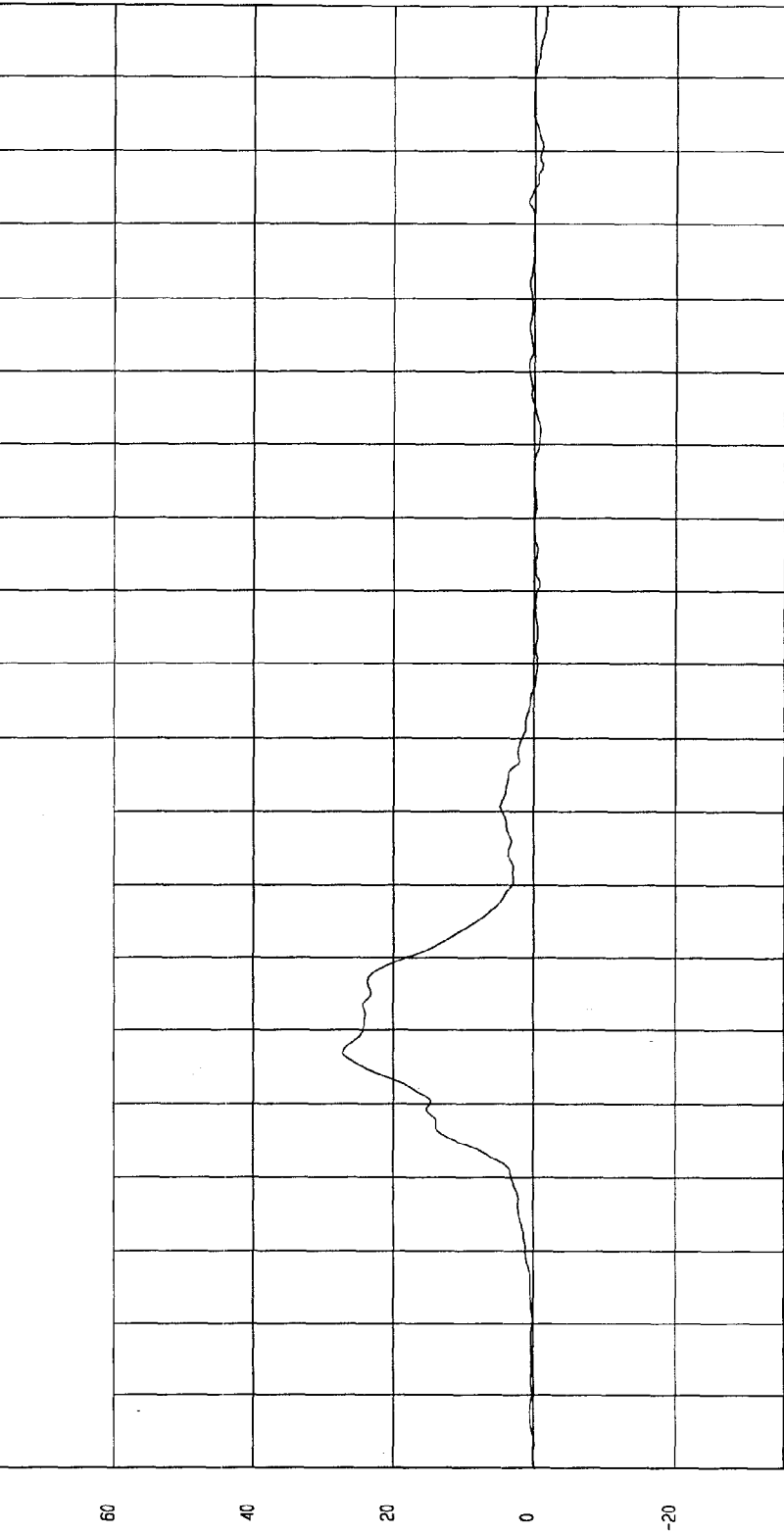
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.59 G'S at 199 msec Maximum = 27.11 G'S at 57 msec

REAR PASSENGER UPPER SPINE Y ACCELERATION

1 B97111AF.A49 Filterclass (180)



TIME (SECONDS)

MOA Research
09-21-1997 12:03

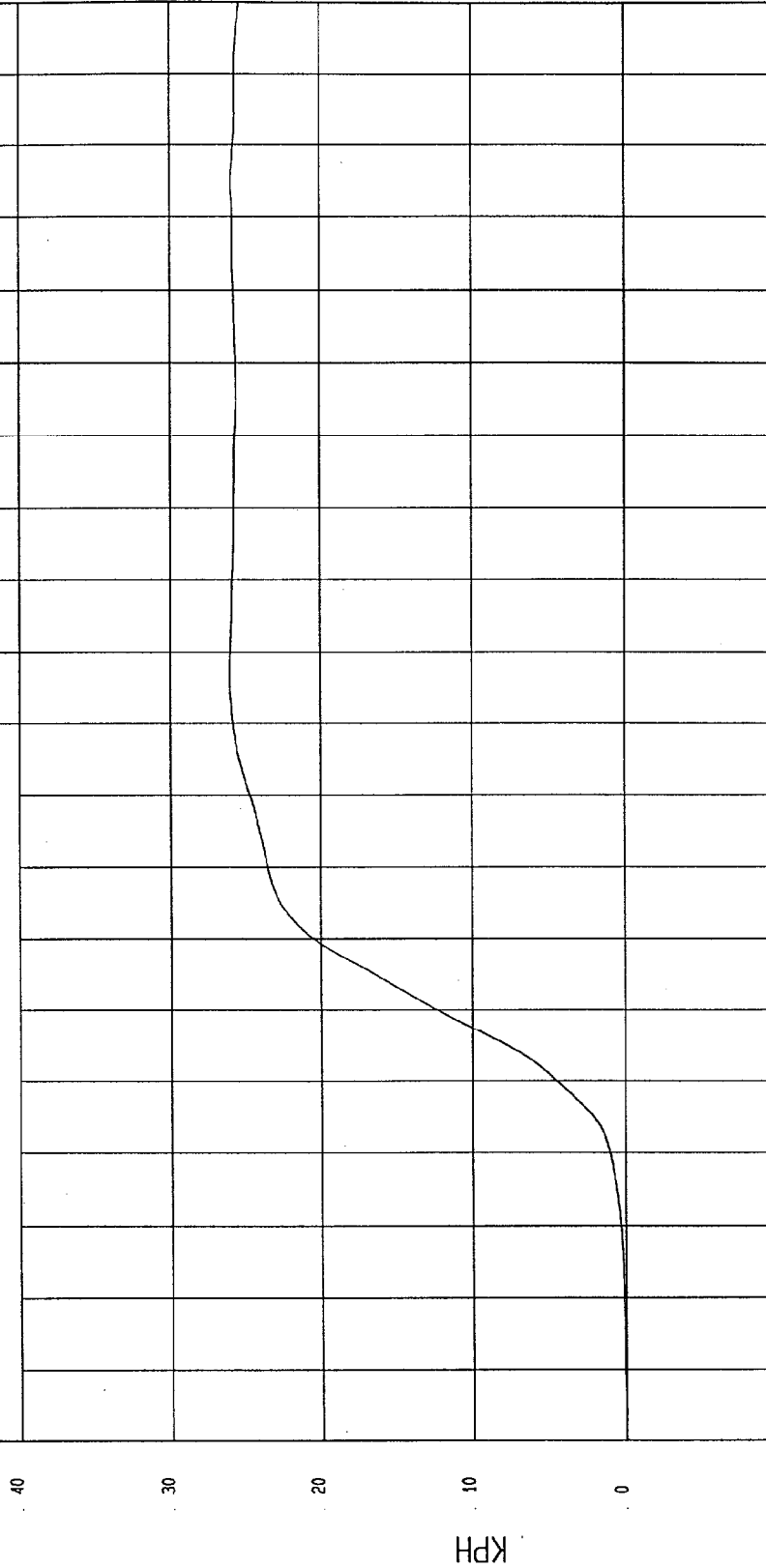
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

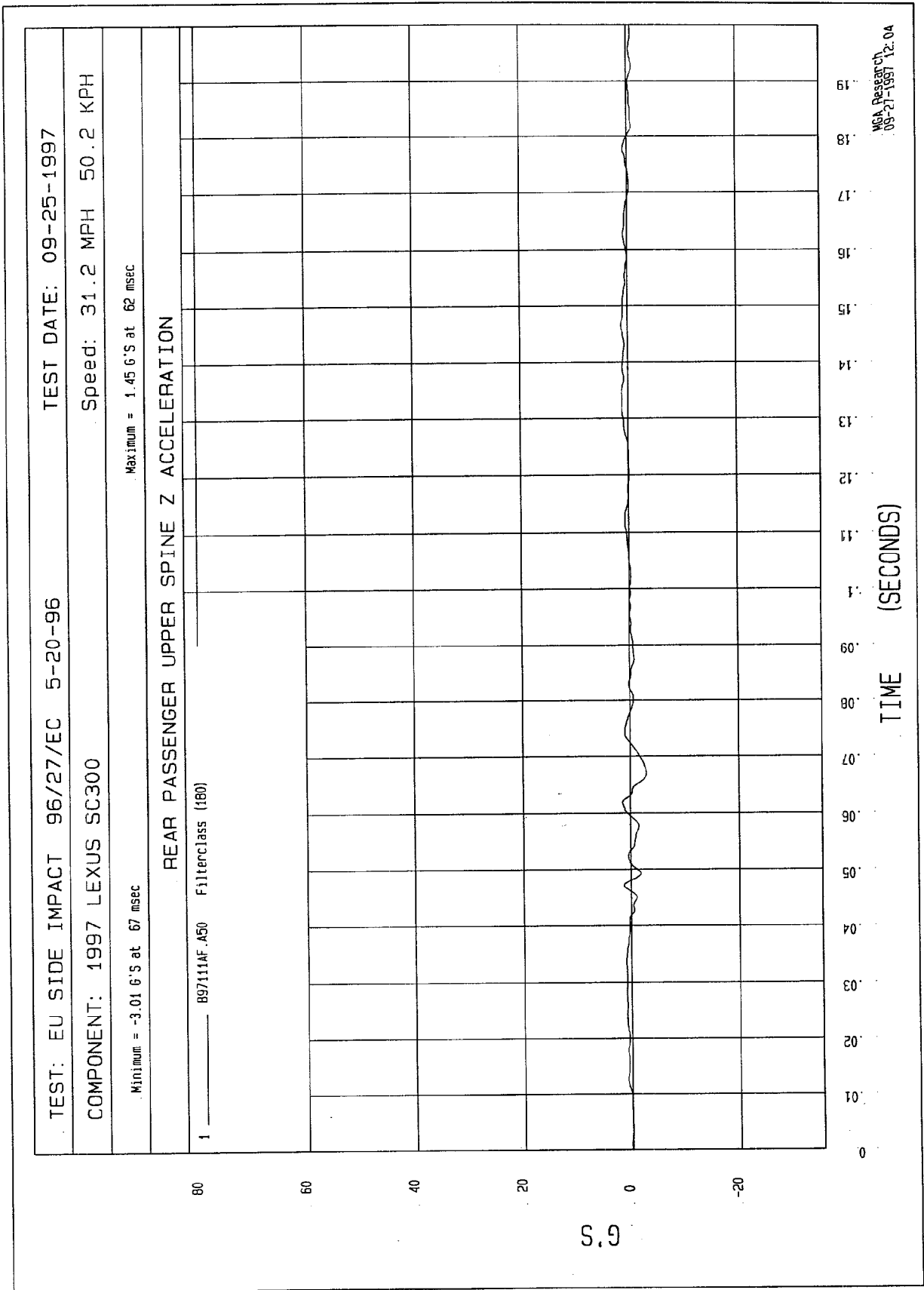
Minimum = -.01 KPH at 4 msec Maximum = 26.10 KPH at 107 msec

PASSENGER UPPER SPINE Y VELOCITY

1 B97111A1.V49 Filterclass (180)



MGA Research
09-21-1997 13:17



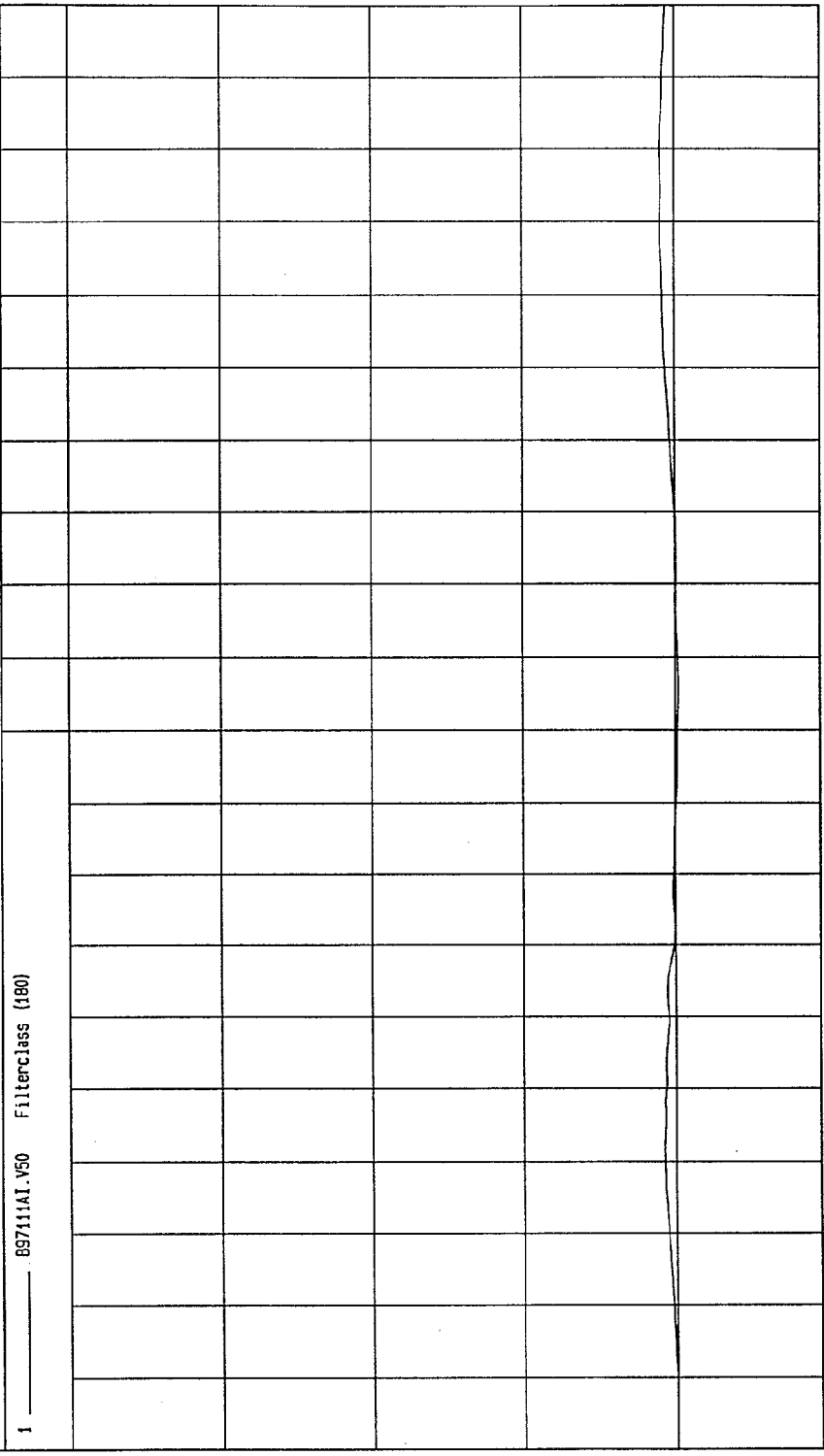
MSA Research
09-27-1997 12:04

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.19 KPH at .105 msec
Maximum = .96 KPH at .180 msec

PASSENGER UPPER SPINE Z VELOCITY



TIME Seconds

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0

KPH

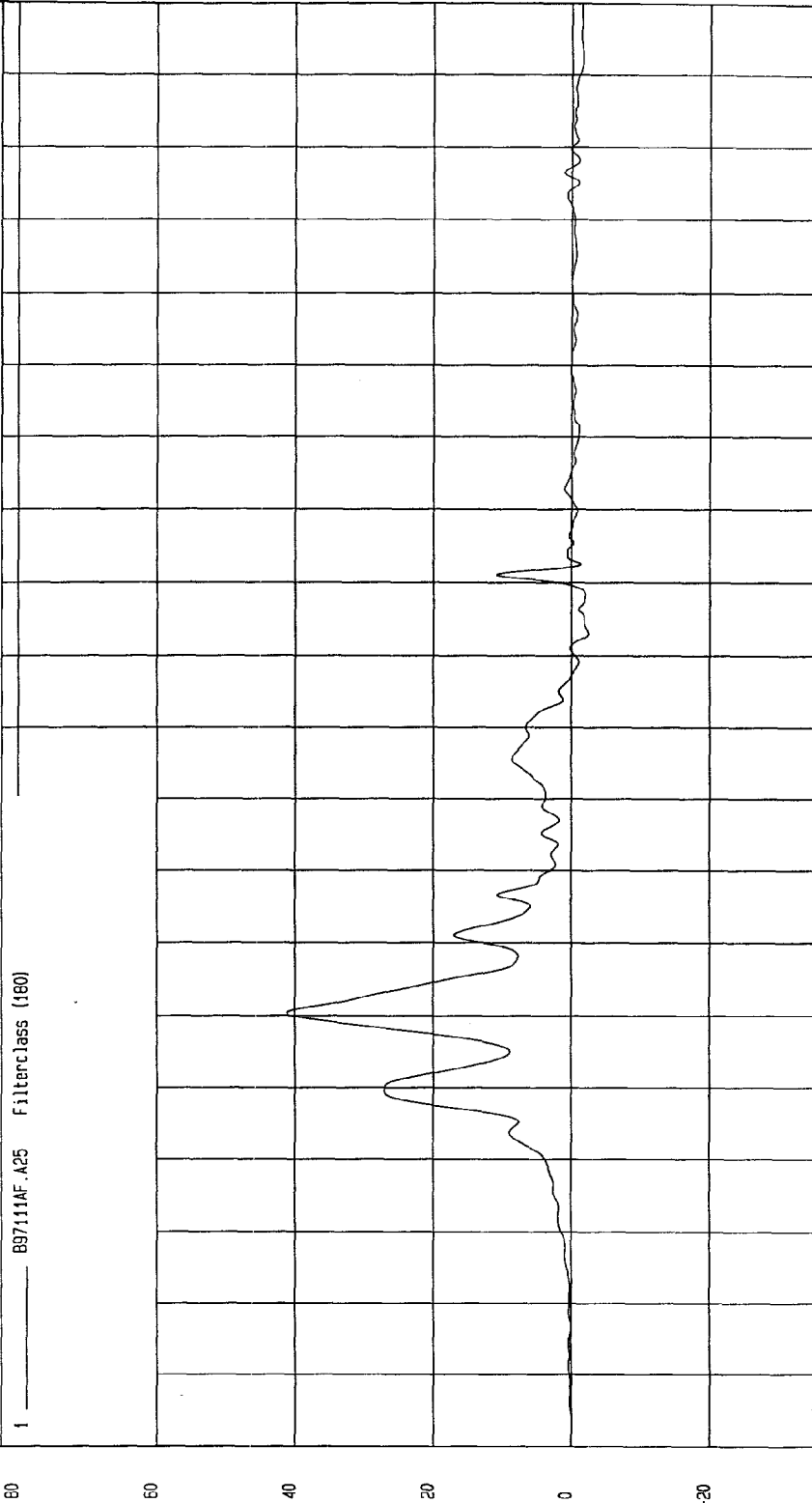
MCA Research
09-27-1997 13:18

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

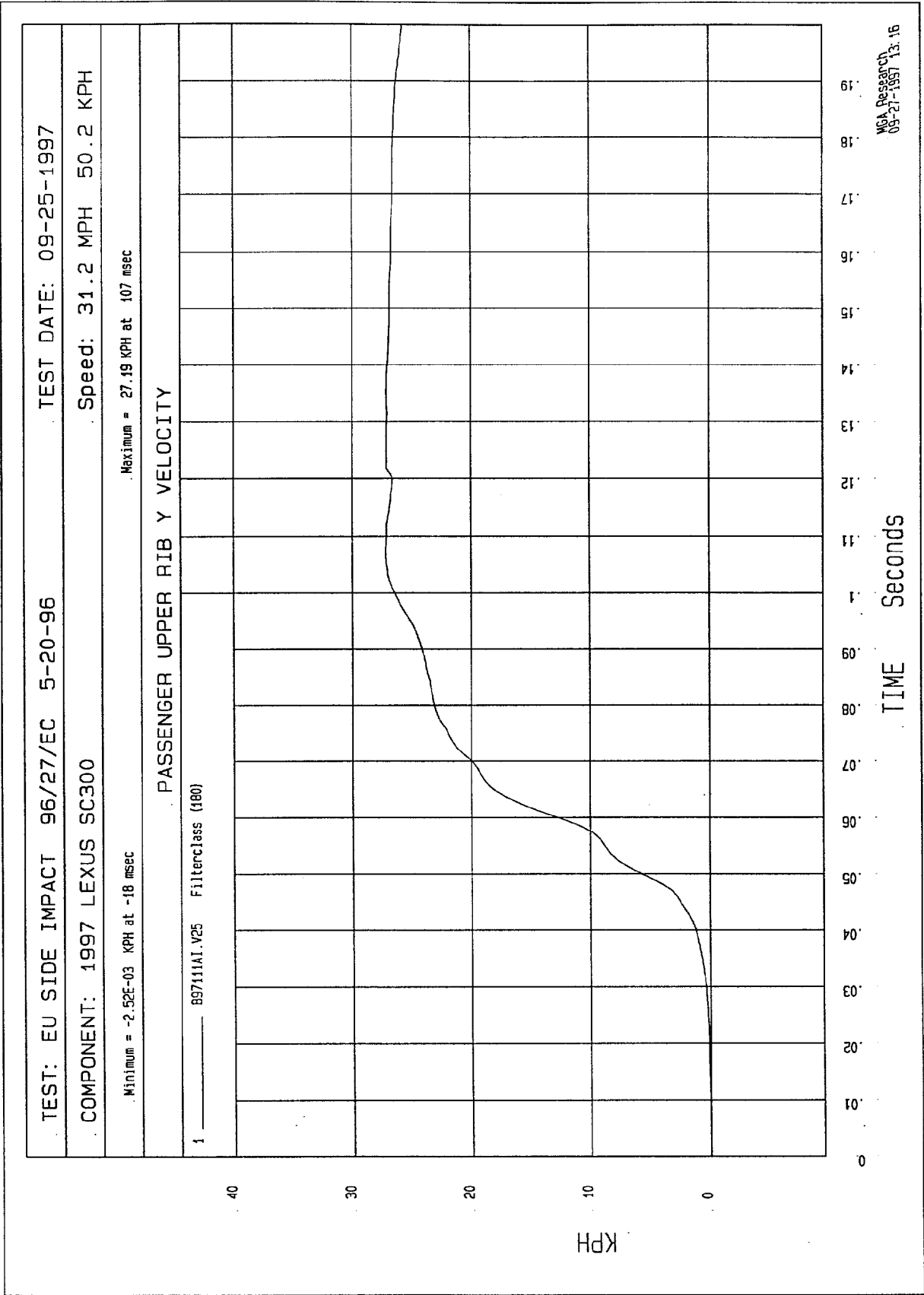
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -2.53 G'S at 113 msec Maximum = 41.17 G'S at 60 msec

PASSENGER UPPER RIB Y ACCELERATION



MCA Research
09-21-1997 11:51

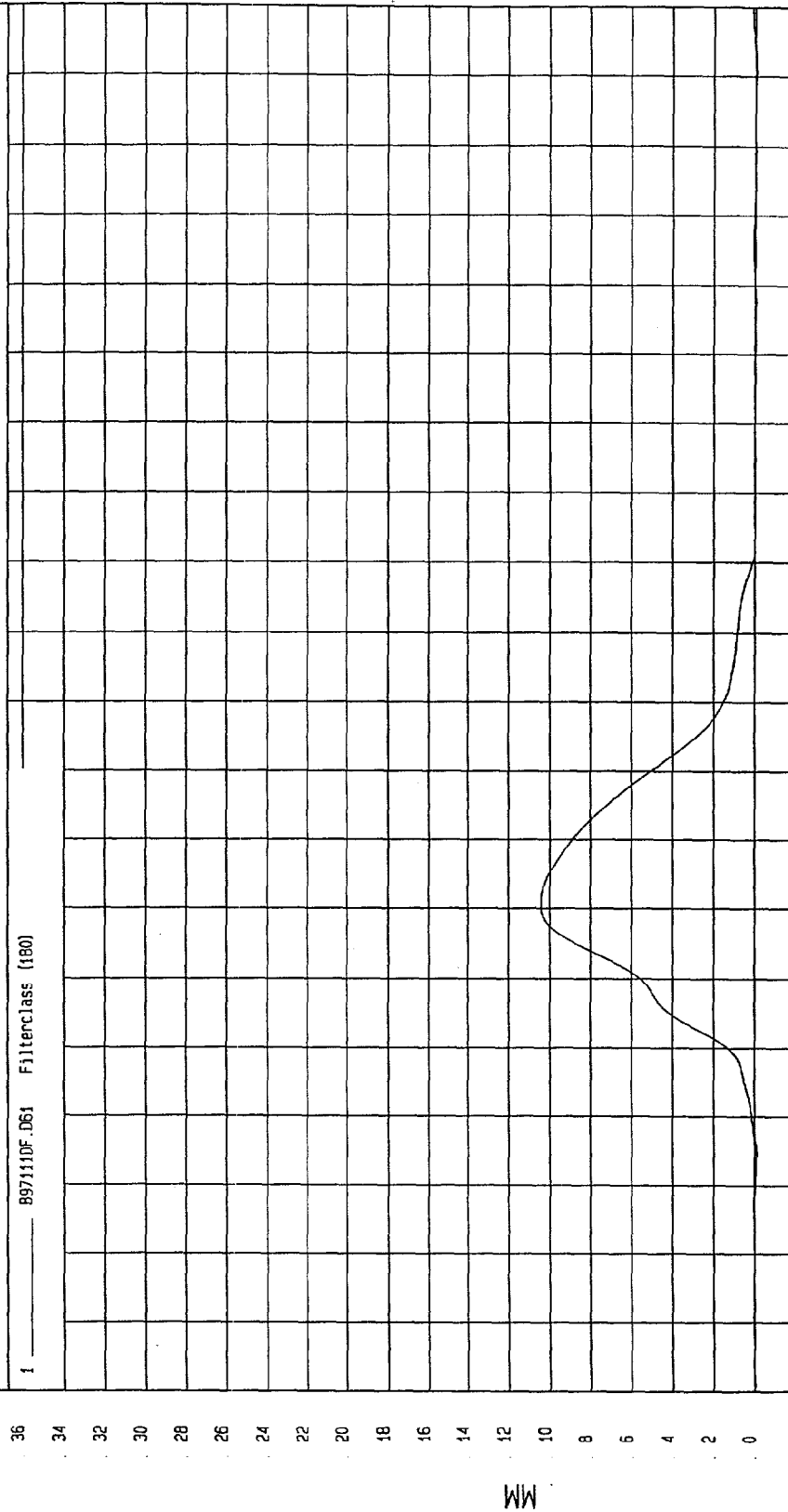


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

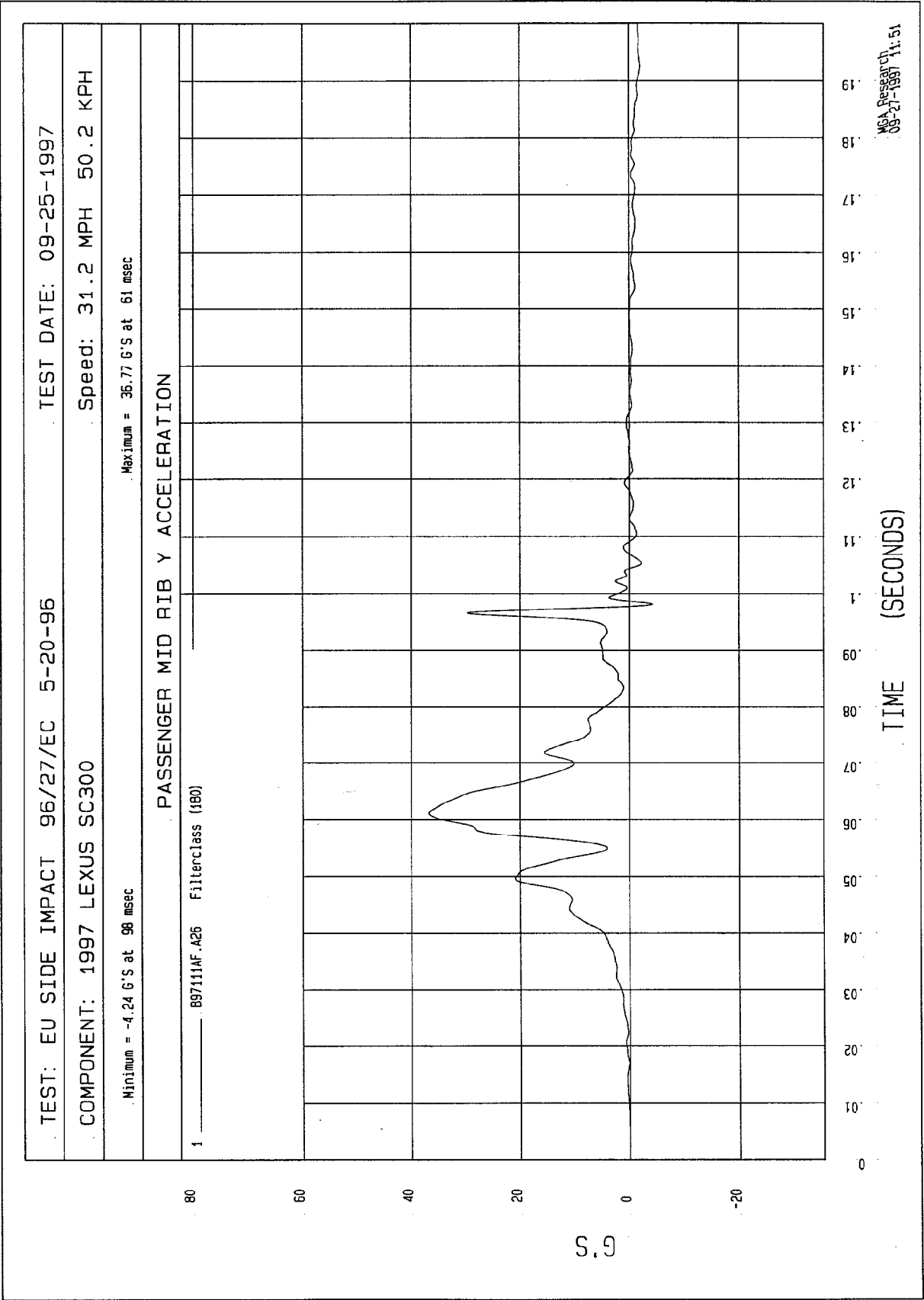
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.11 MM at 35 msec Maximum = 10.44 MM at 70 msec

PASSENGER UPPER RIB Y DISPLACEMENT



MCA Research
09-27-1997 11:51

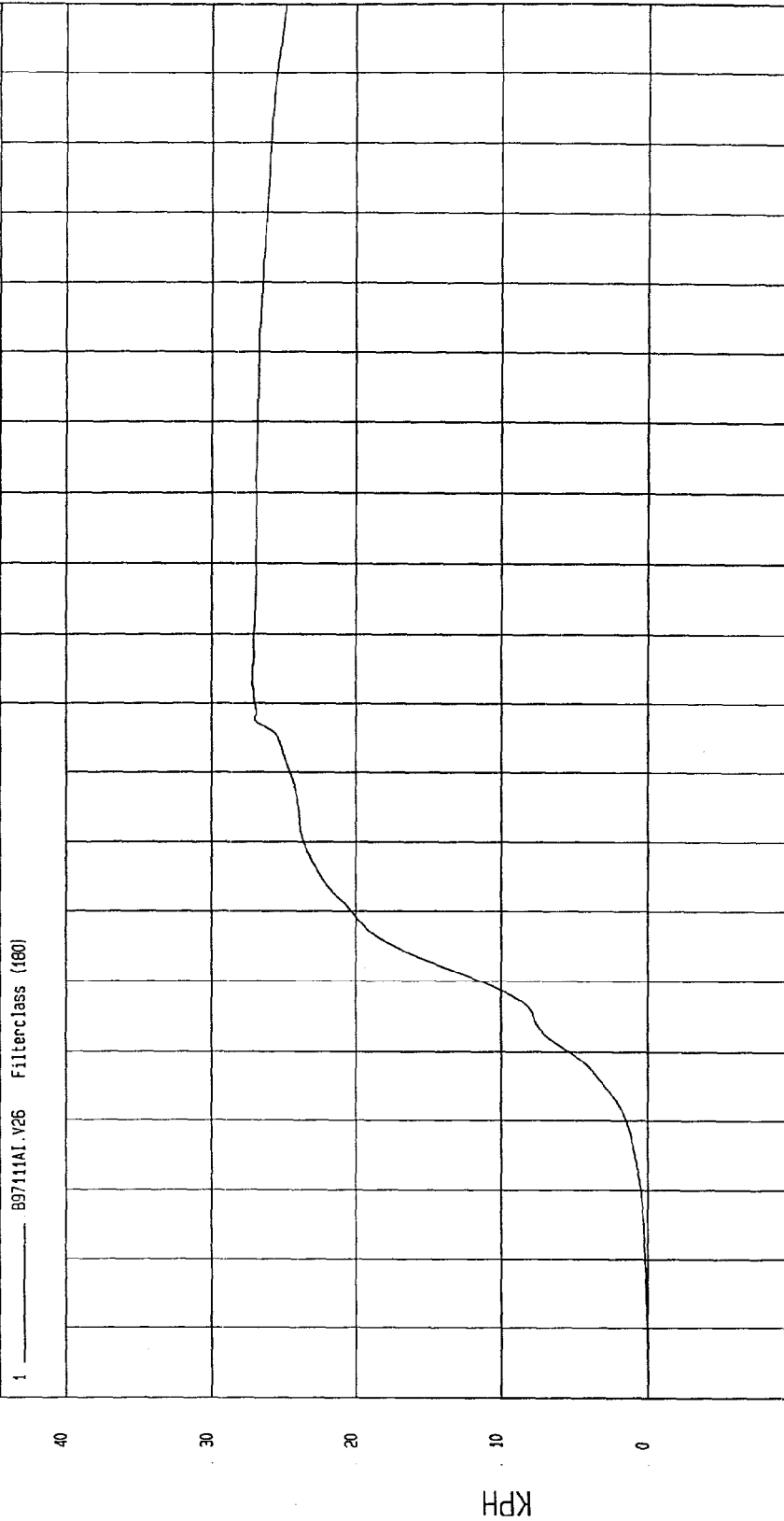


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -9.53E-04 KPH at -6 msec Maximum = 27.23 KPH at 104 msec

PASSENGER MID RIB Y VELOCITY



TIME Seconds

MSA Research
09-27-1997 13:16

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

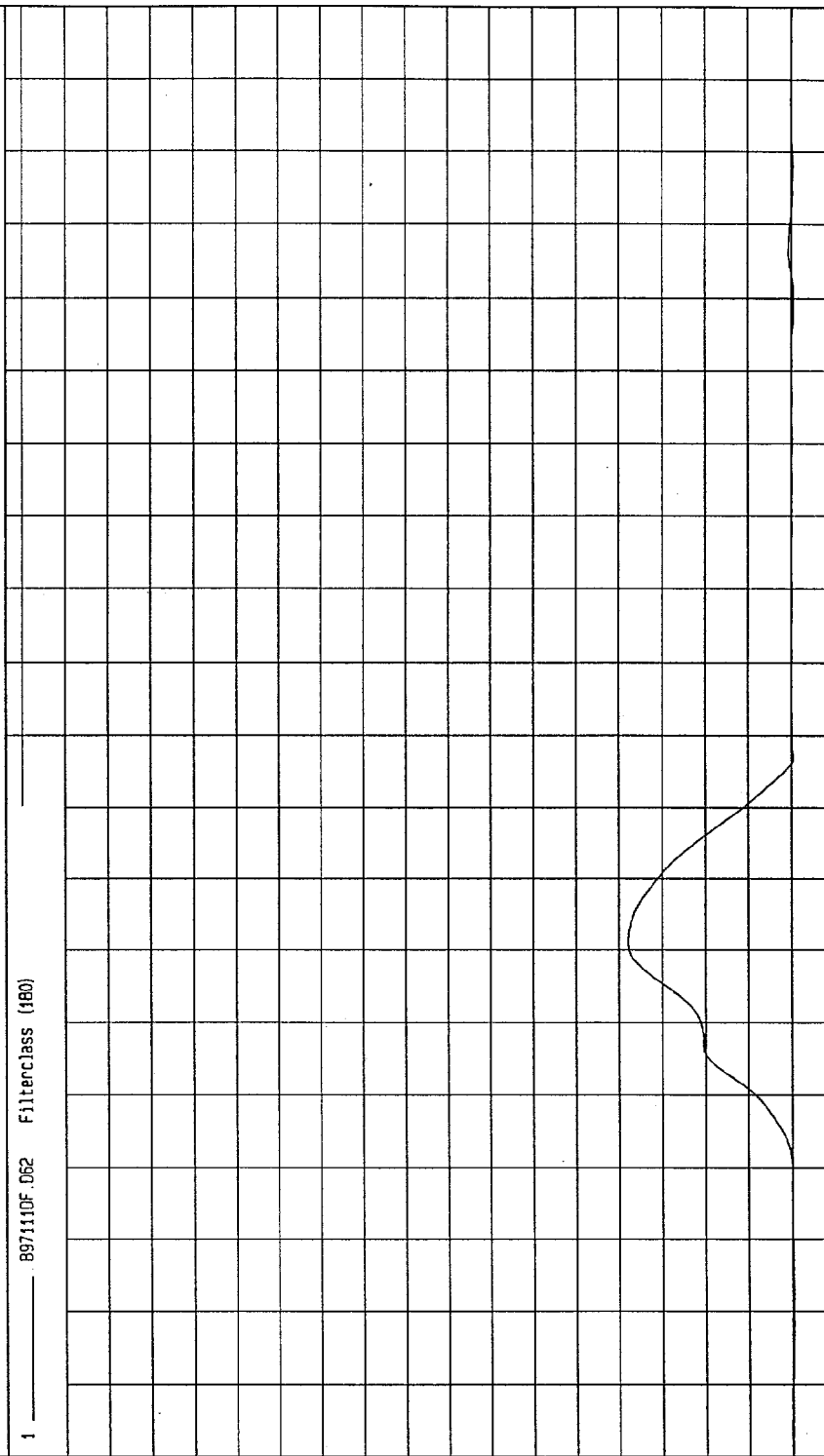
Minimum = -.13 MM at -.15 msec

Maximum = 7.58 MM at 71 msec

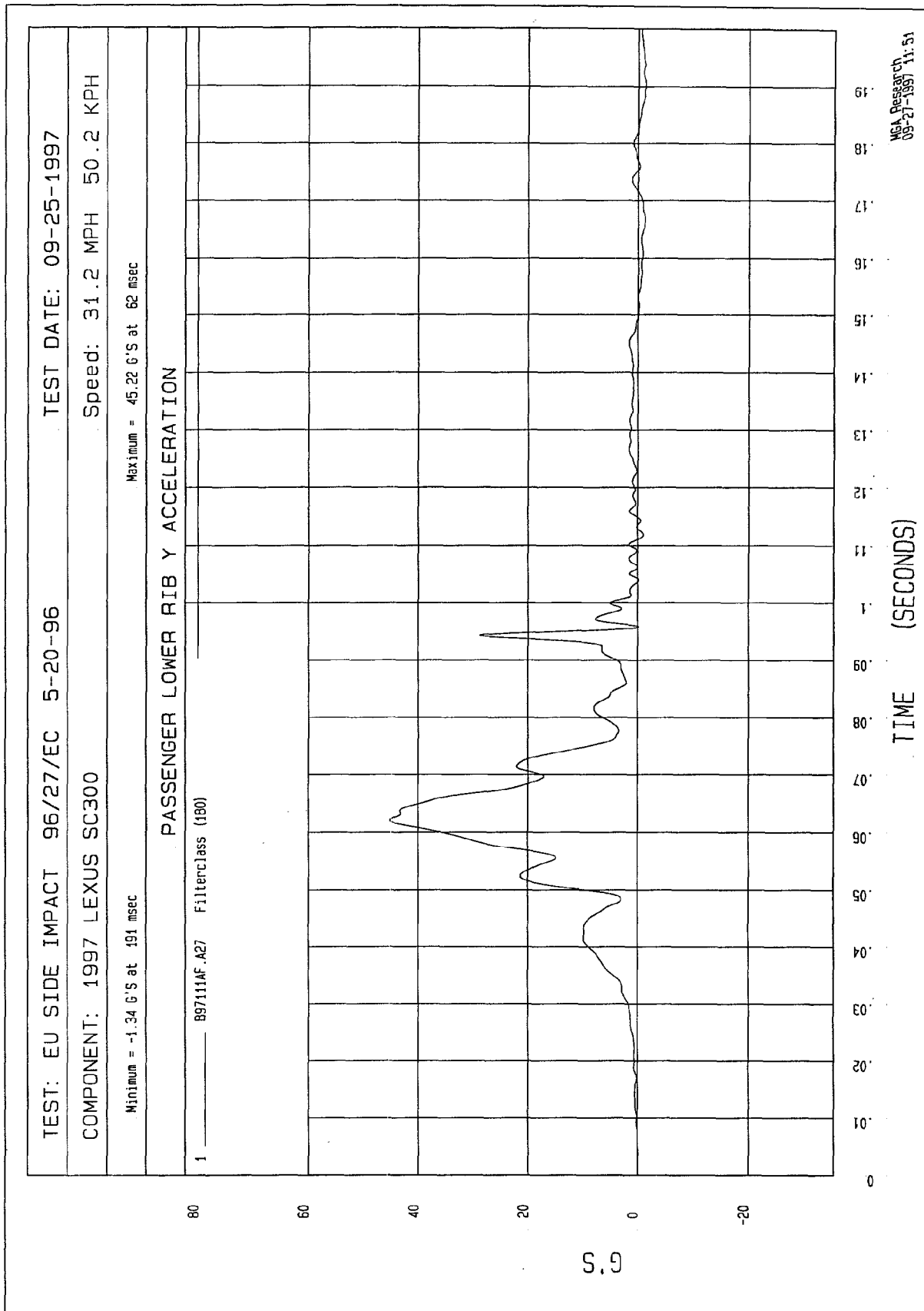
PASSENGER MID RIB Y DISPLACEMENT

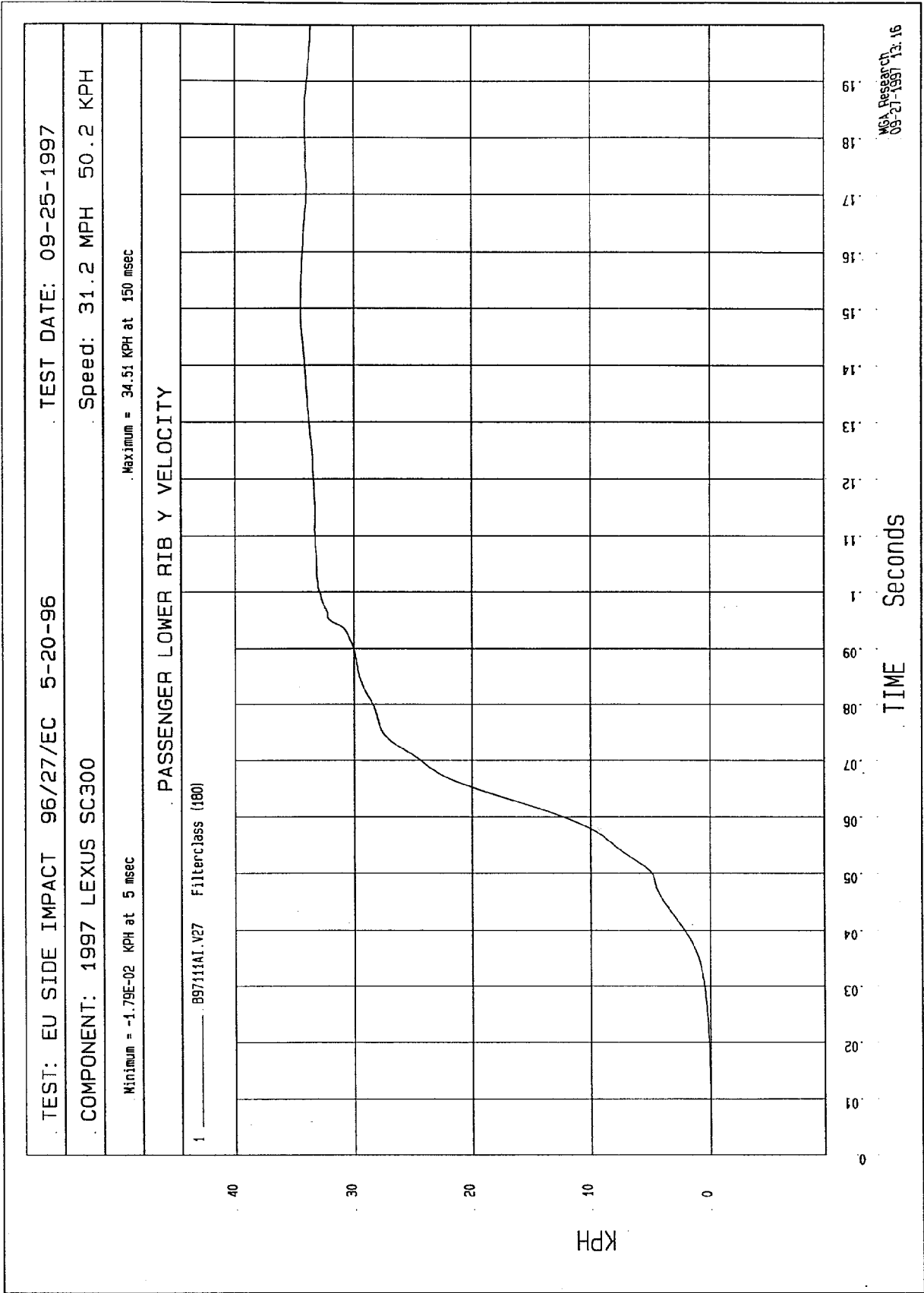
1 8971110F.D62 Filterclass (480)

MM



WCA Research
09-27-1997 11:51



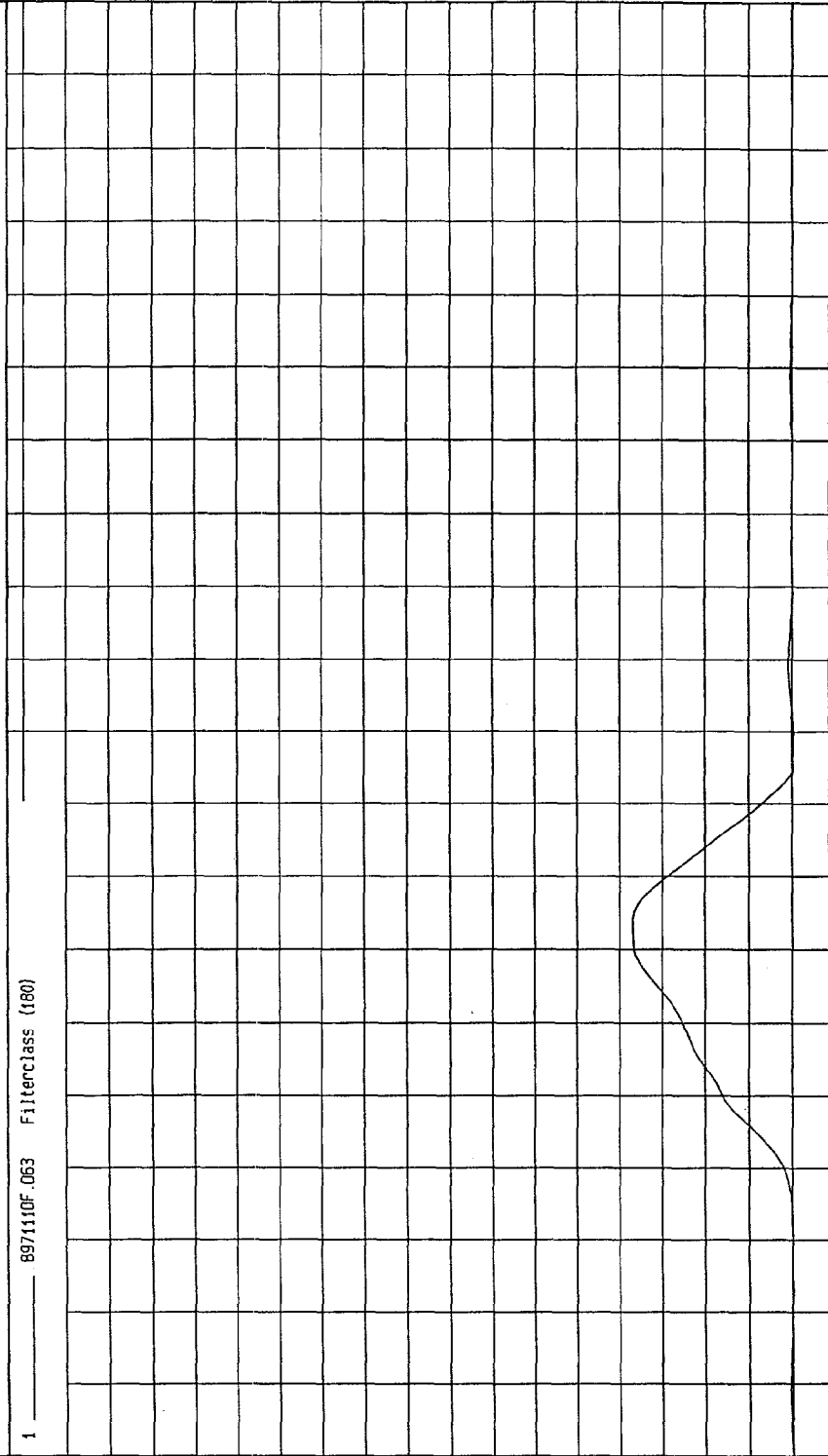


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.07 MM at 100 msec Maximum = 7.38 MM at 74 msec

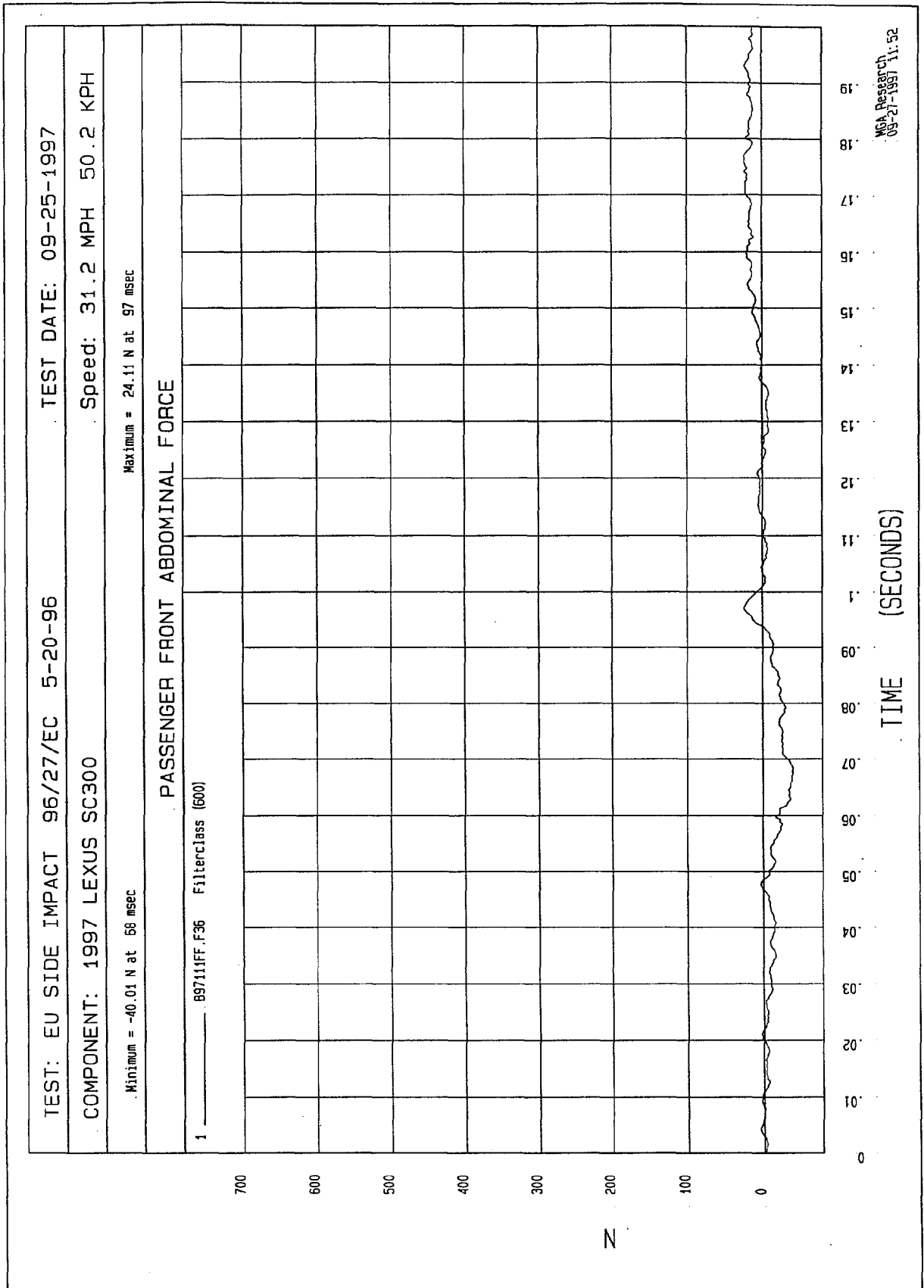
PASSENGER LOWER RIB Y DISPLACEMENT



MM

TIME (SECONDS)

WCA Research
09-27-1997 11:51

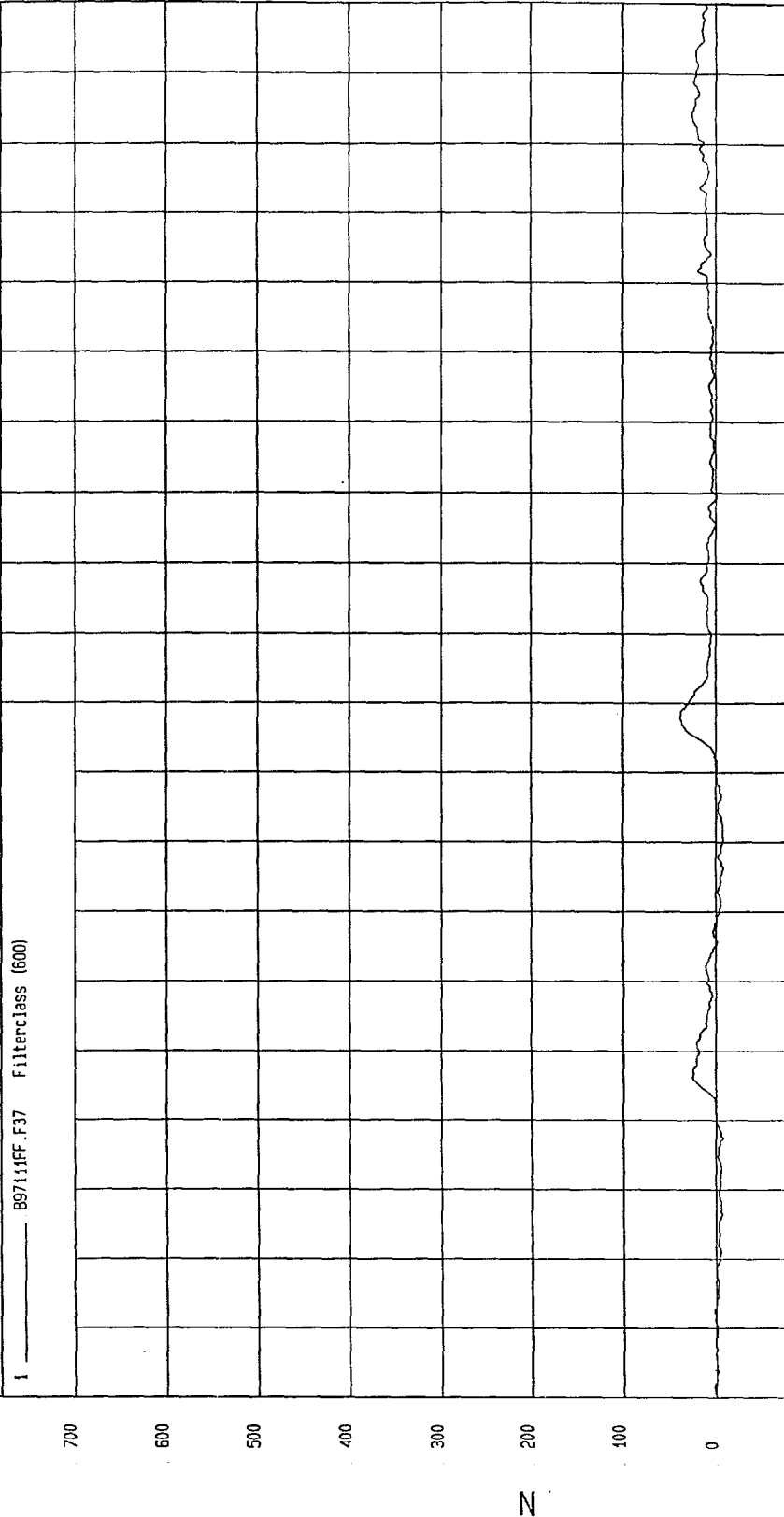


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

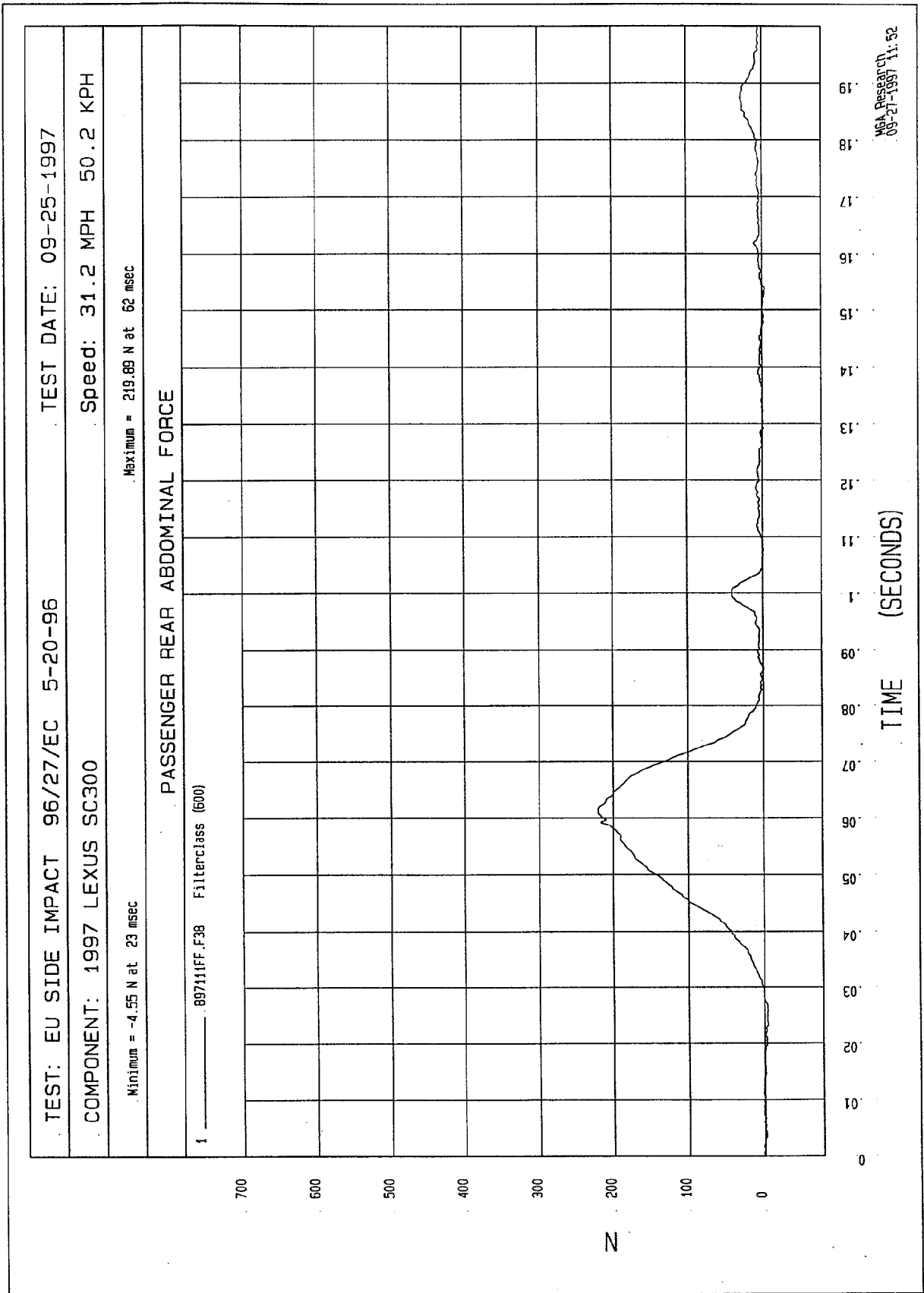
Minimum = -8.29 N at 76 msec Maximum = 38.58 N at 98 msec

PASSENGER MID ABDOMINAL FORCE



TIME (SECONDS)

WCA Research
09-27-1997 11:52

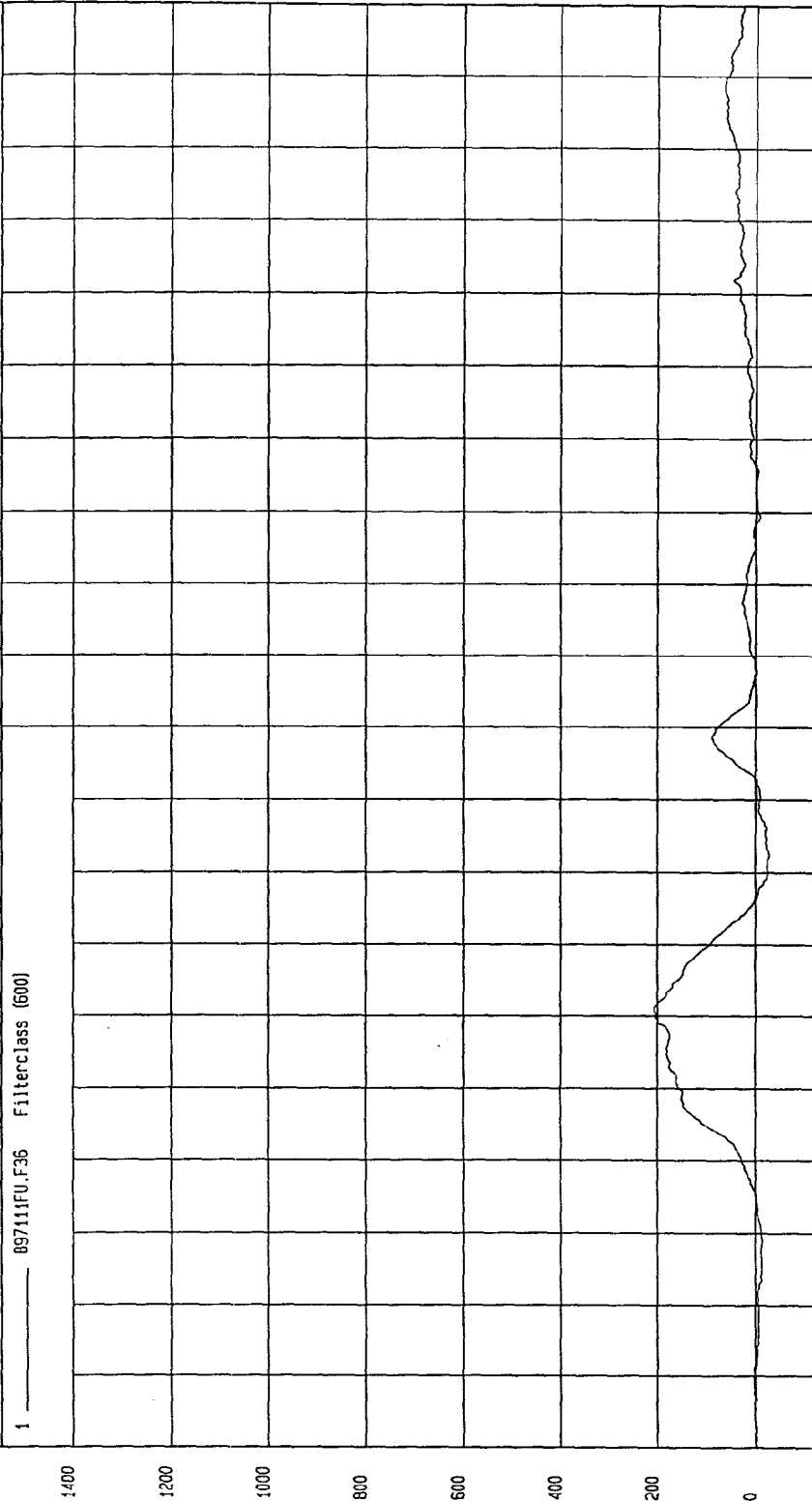


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -27.75 N at 82 msec Maximum = 207.31 N at 61 msec

SUM OF PASSENGER ABDOMINAL FORCES



MSA Research
09-27-1997 11:52

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

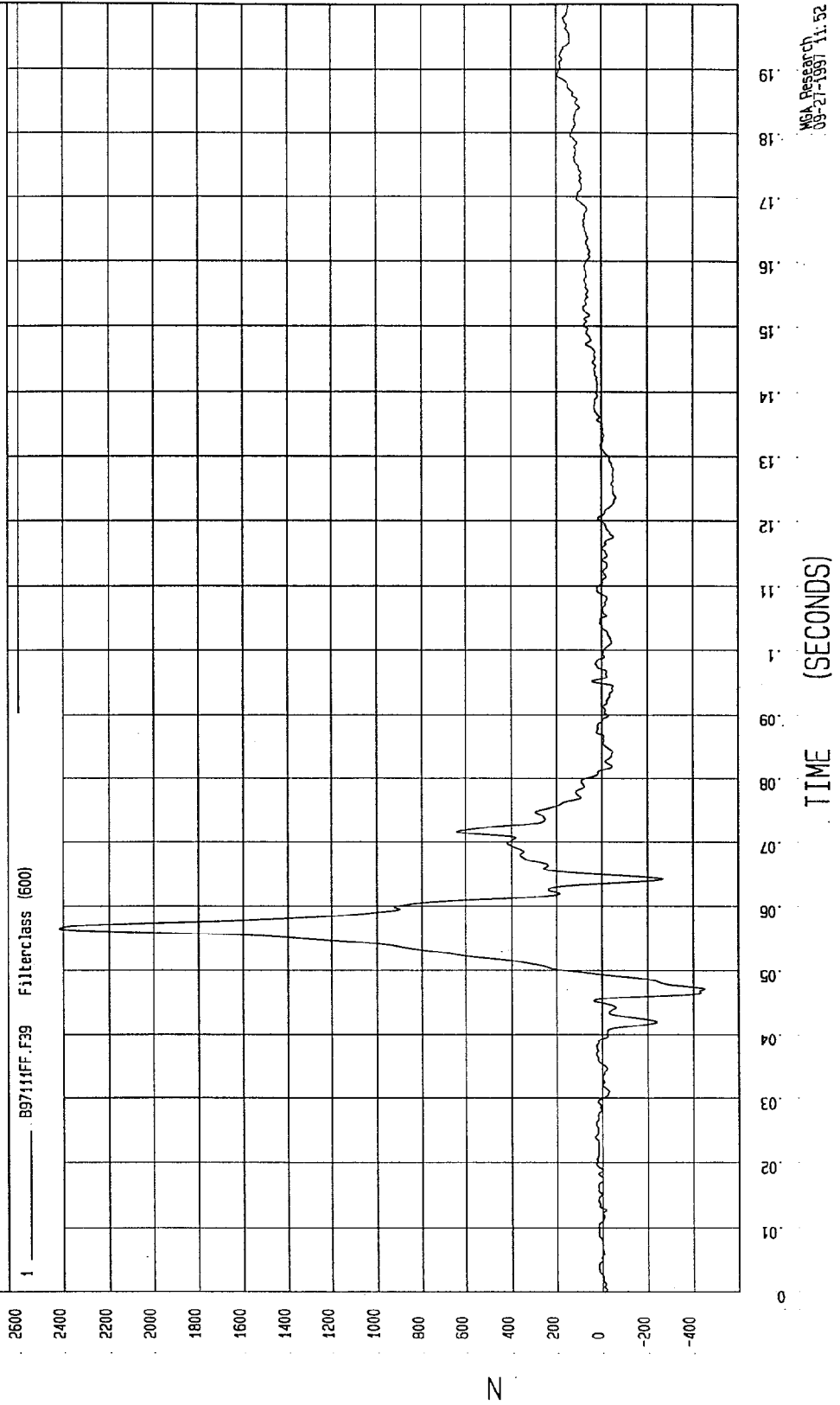
SPEED: 31.2 MPH 50.2 KPH

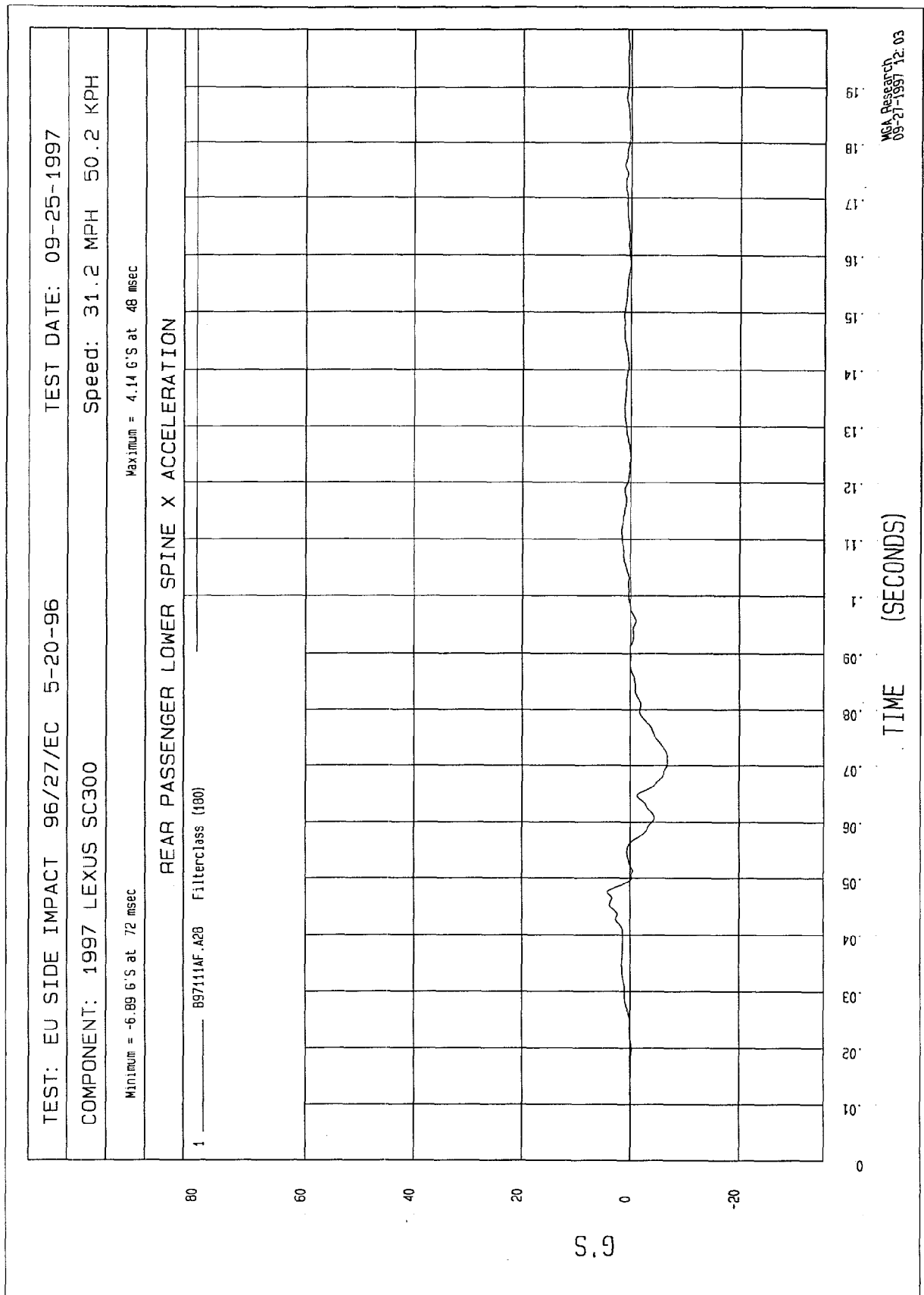
COMPONENT: 1997 LEXUS SC300

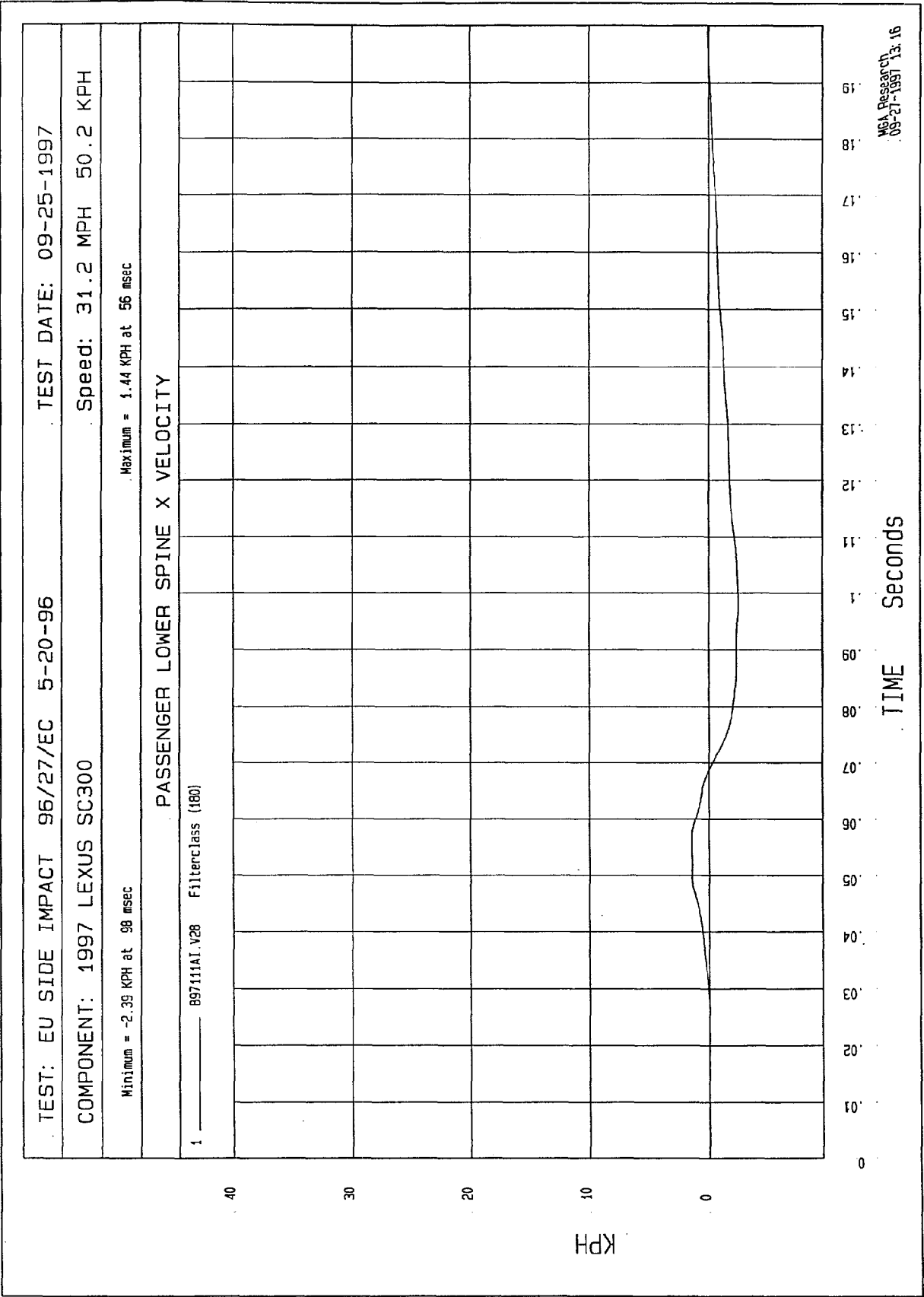
Minimum = -452.61 N at 47 msec

Maximum = 2419.08 N at 56 msec

PASSENGER SYMPHYSIS PUBIC FORCE







TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

Minimum = -3.09 G'S at 179 msec

Maximum = 31.14 G'S at 61 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 B97111AF.A29 FilterClass (180)

80

60

40

20

0

-20

G'S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

TIME (SECONDS)

MGA Research
09-27-1997 12:03

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

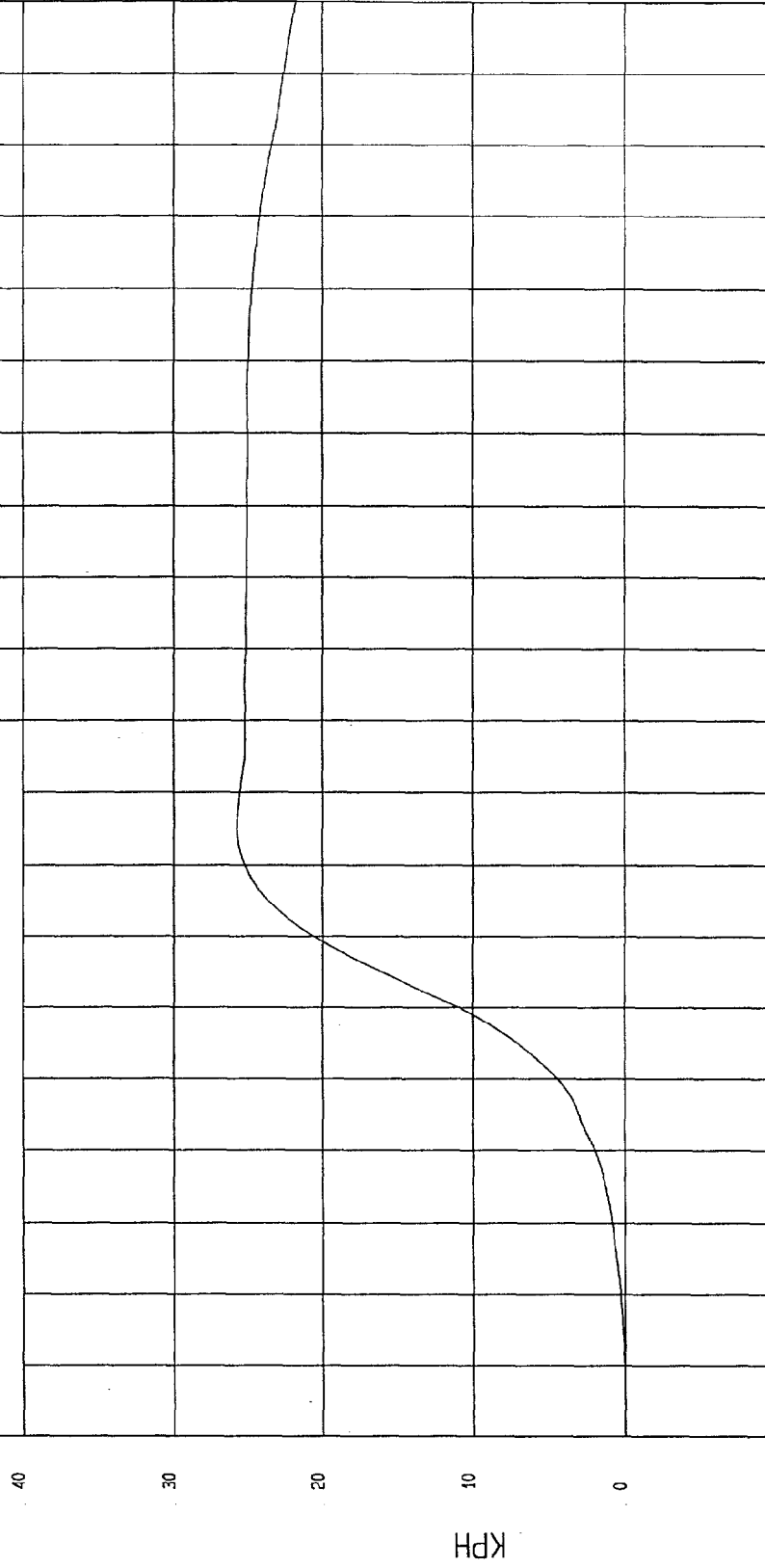
SPEED: 31.2 MPH 50.2 KPH

Maximum = 25.77 KPH at 86 msec

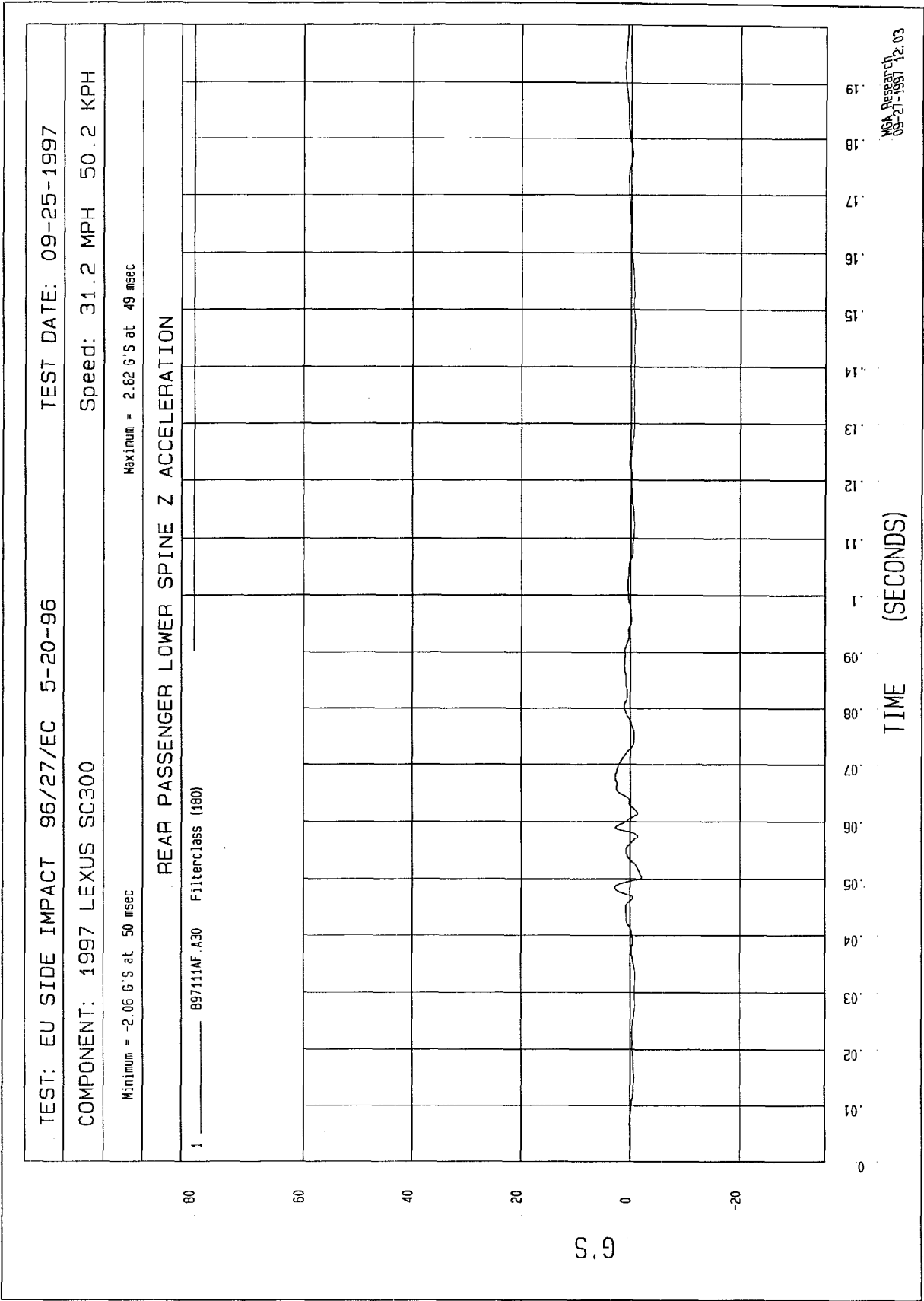
Minimum = -1.25E-02 KPH at 2 msec

PASSENGER LOWER SPINE Y VELOCITY

1 B97111AT.V29 Filterclass (180)



MCA Research
09-27-1997 13:16



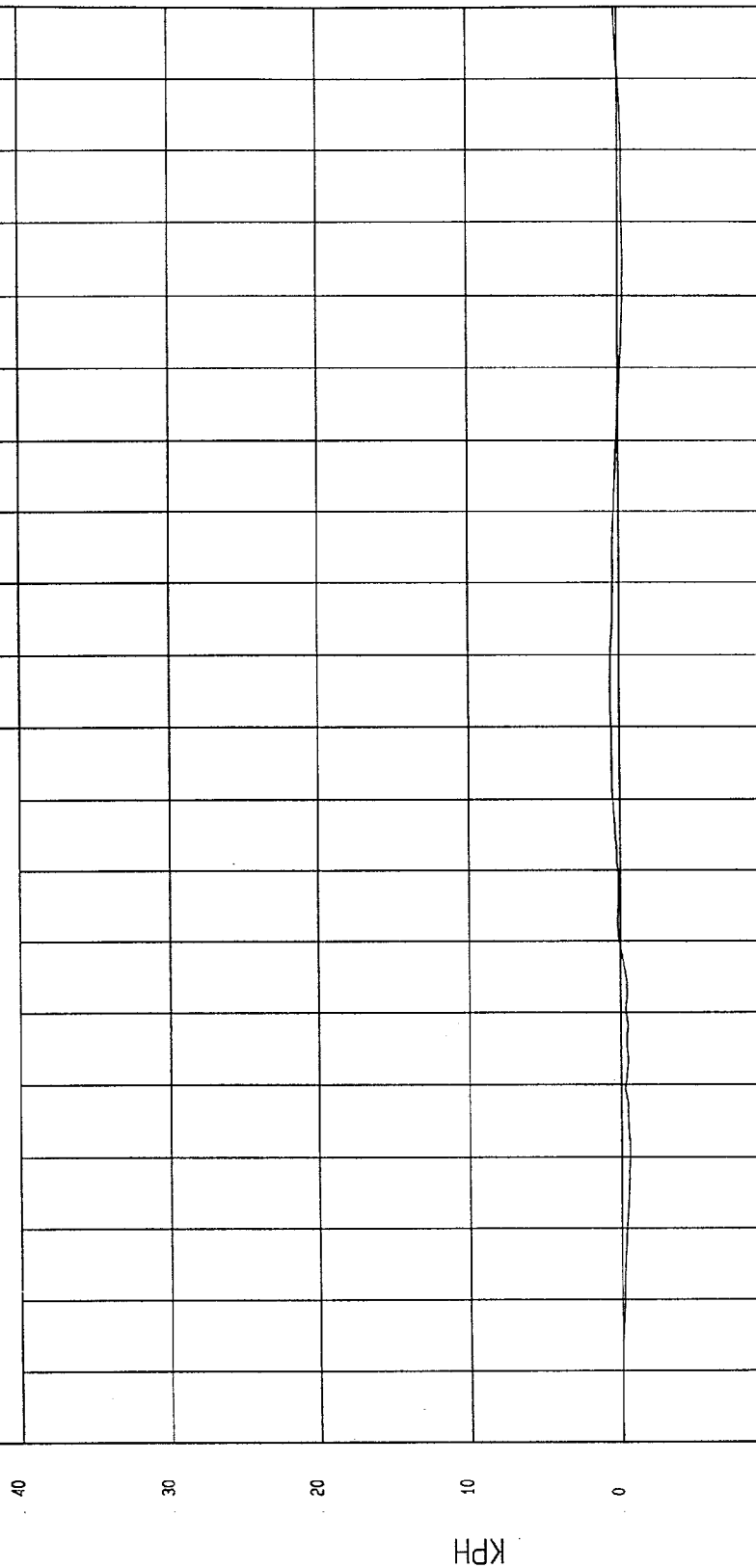
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.55 KPH at 41 msec Maximum = .61 KPH at 106 msec

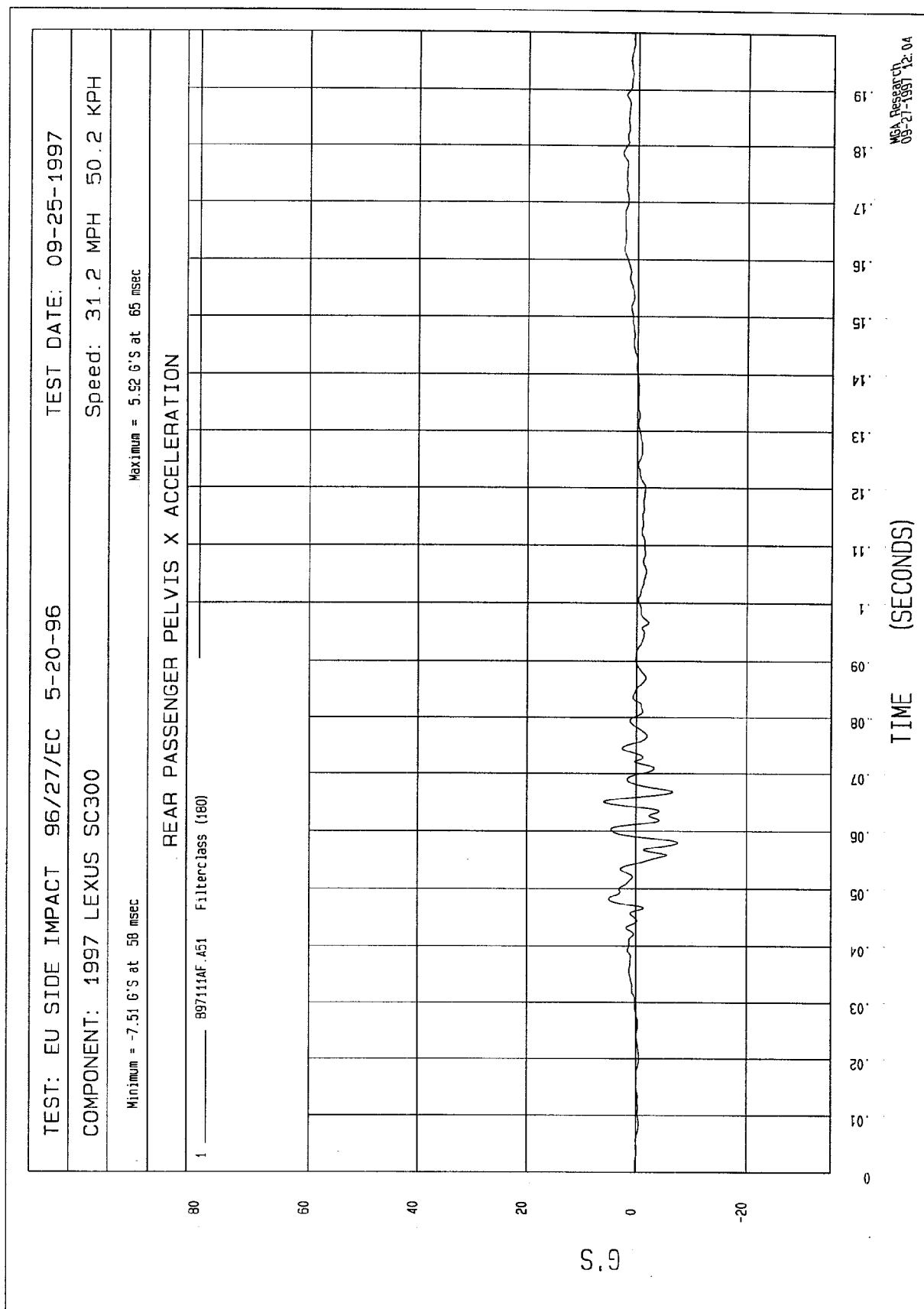
PASSENGER LOWER SPINE Z VELOCITY

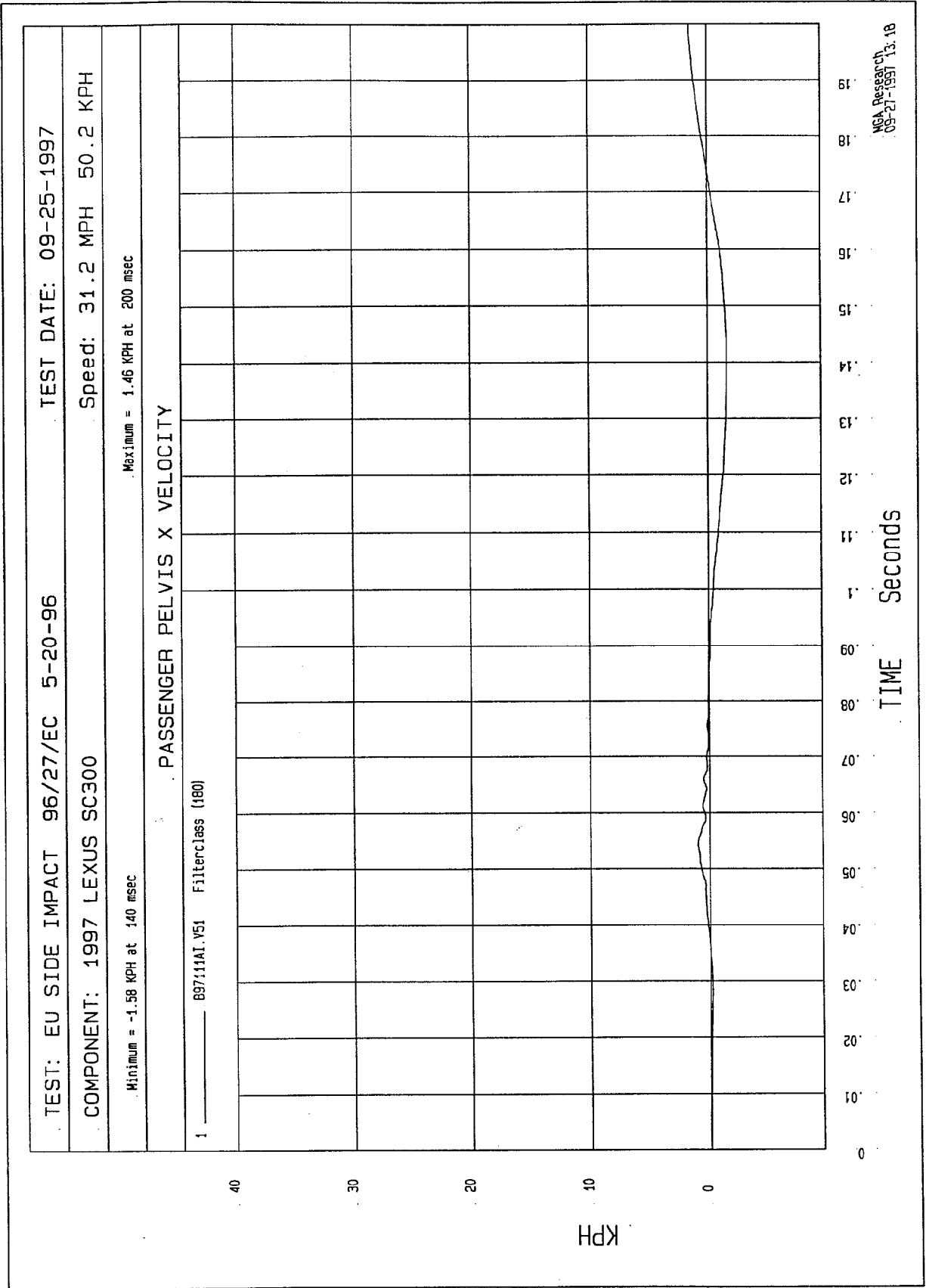
1 897111A1.V30 Filterclass (100)

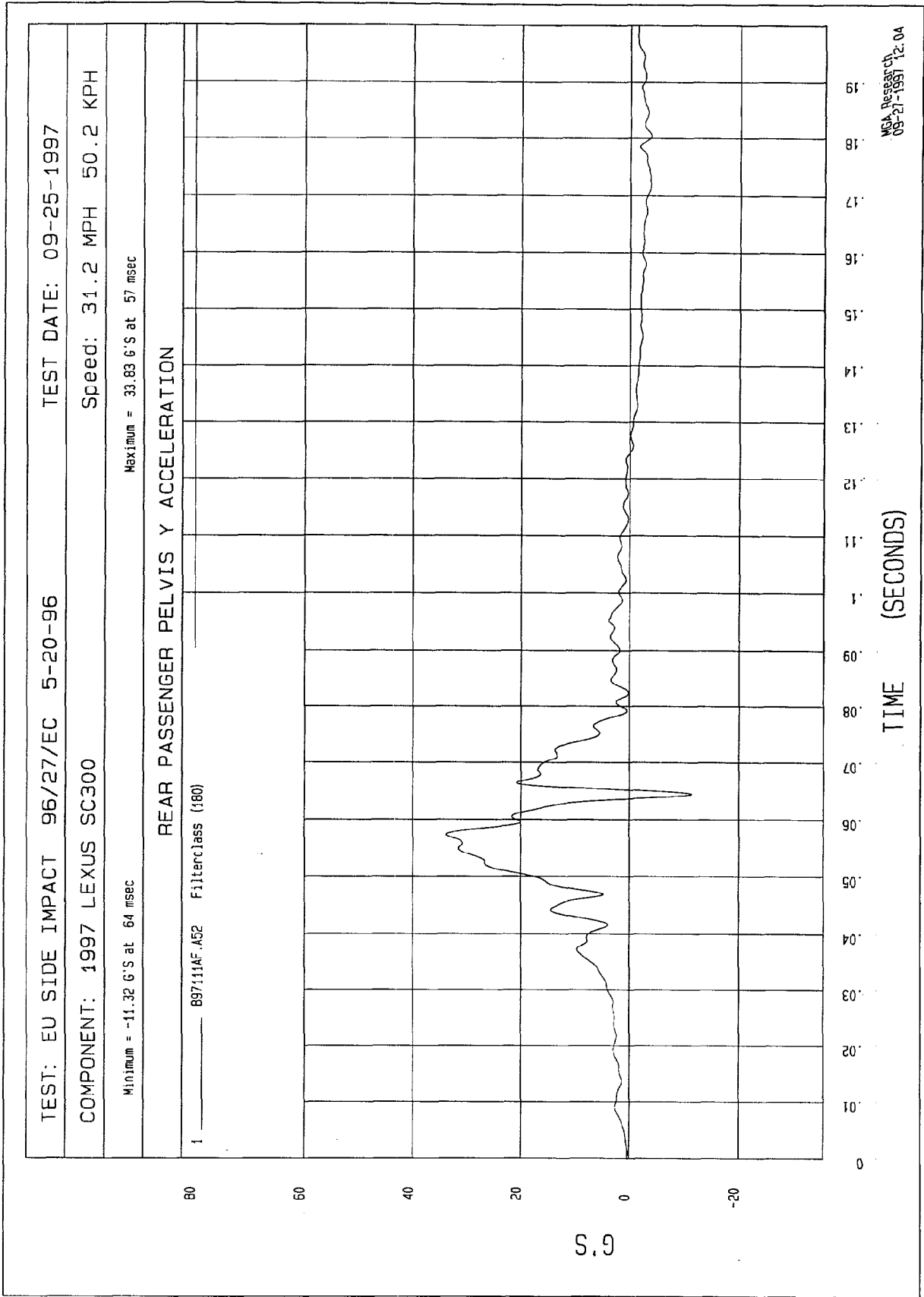


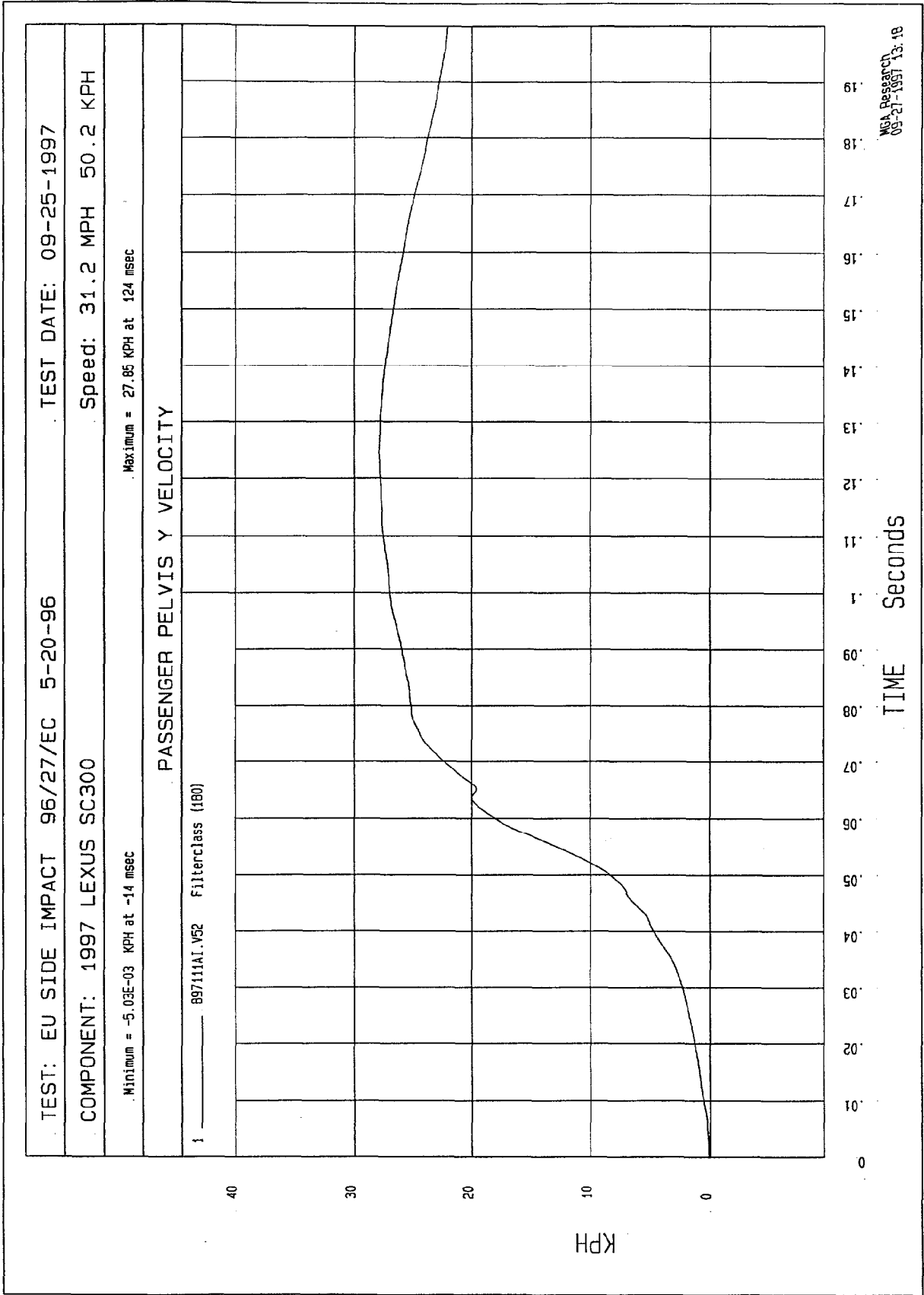
TIME Seconds 0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

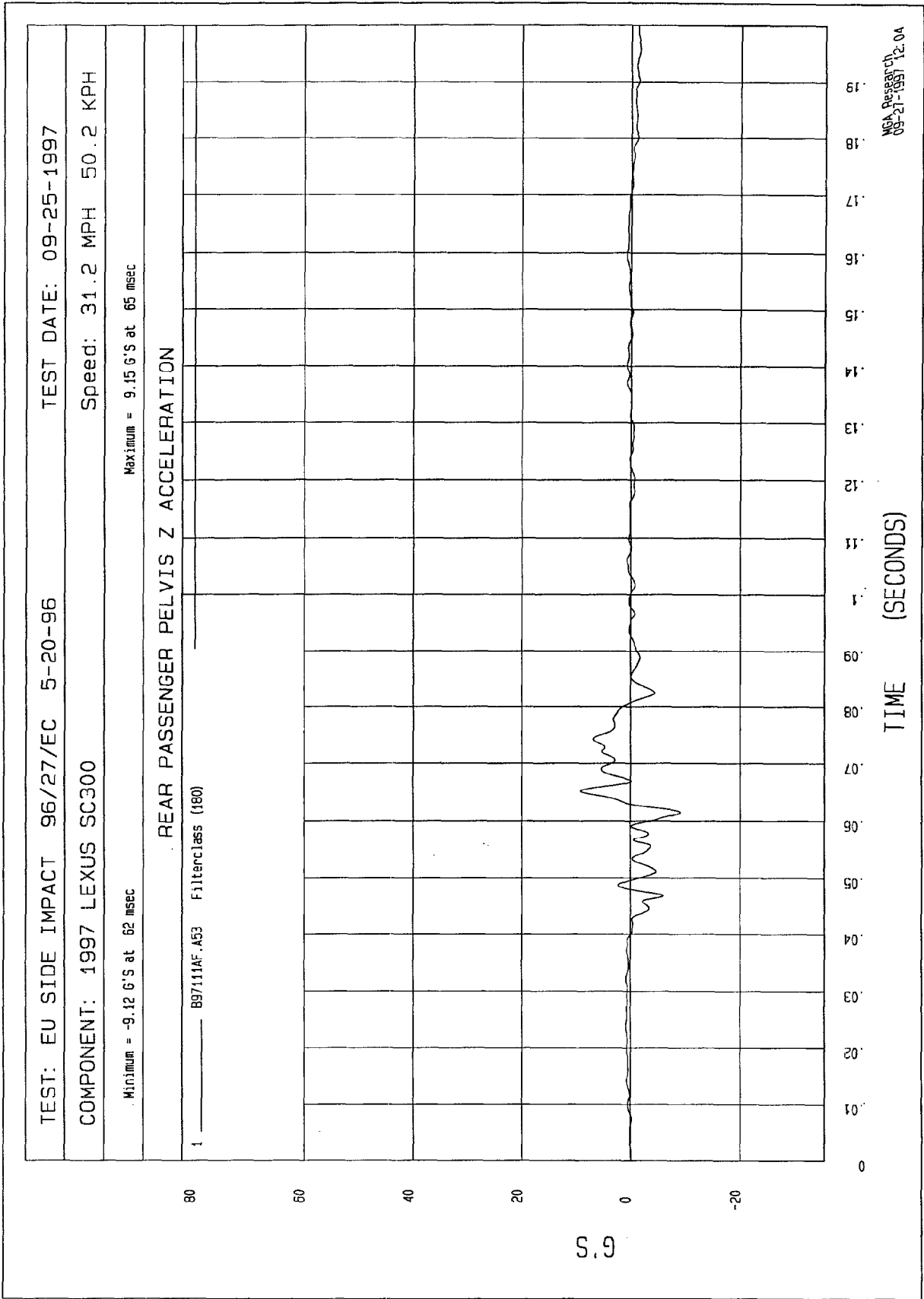
MSA Research
09-27-1997 13.16

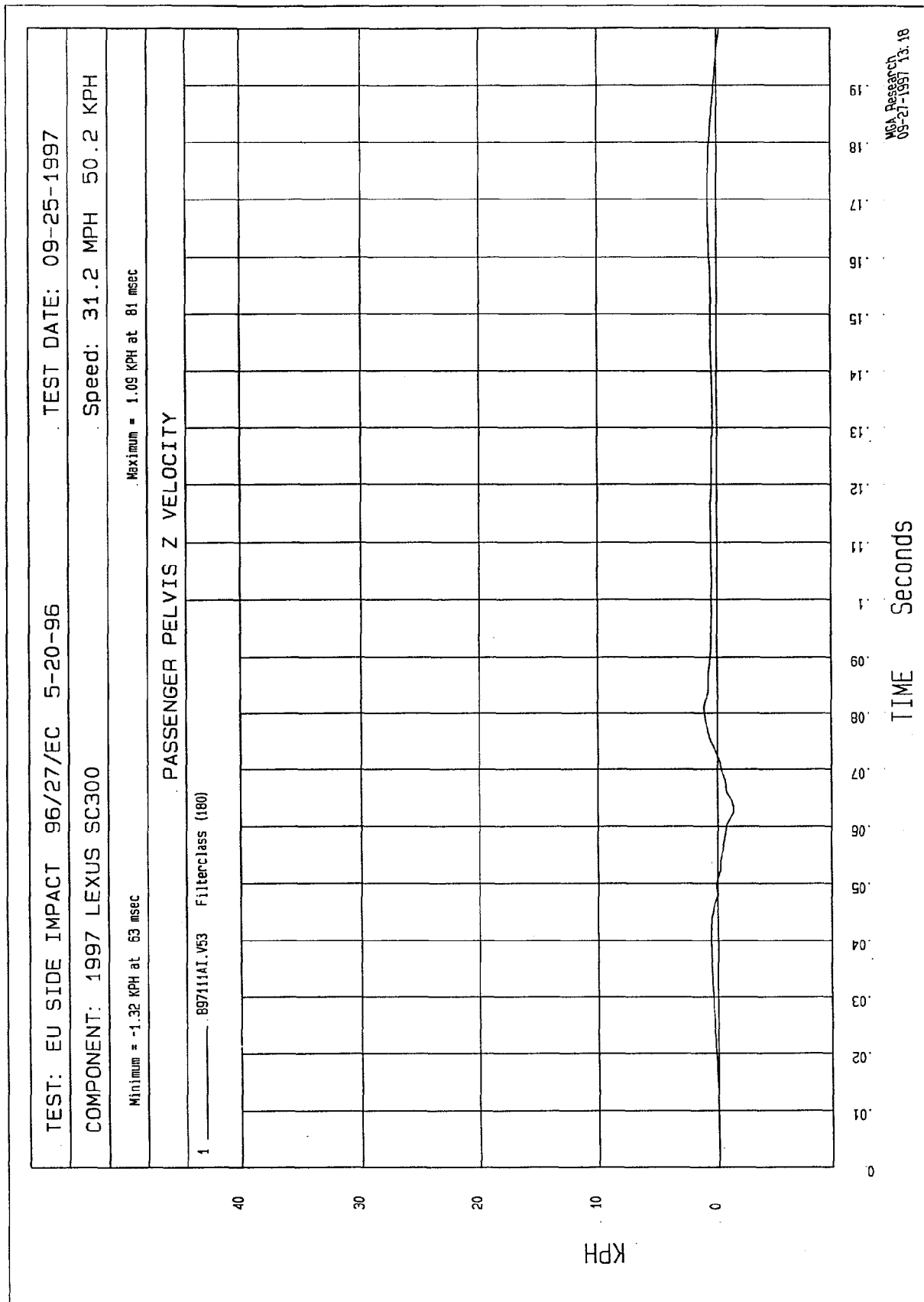












FIR FILTERED DATA

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -11.48 G'S at 33 msec Maximum = 3.63 G'S at 44 msec

DRIVER UPPER SPINE X ACCELERATION

1 ——— 097111FI.R42 Filterclass (FIR Filtered)

80

60

40

20

0

-20

G'S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

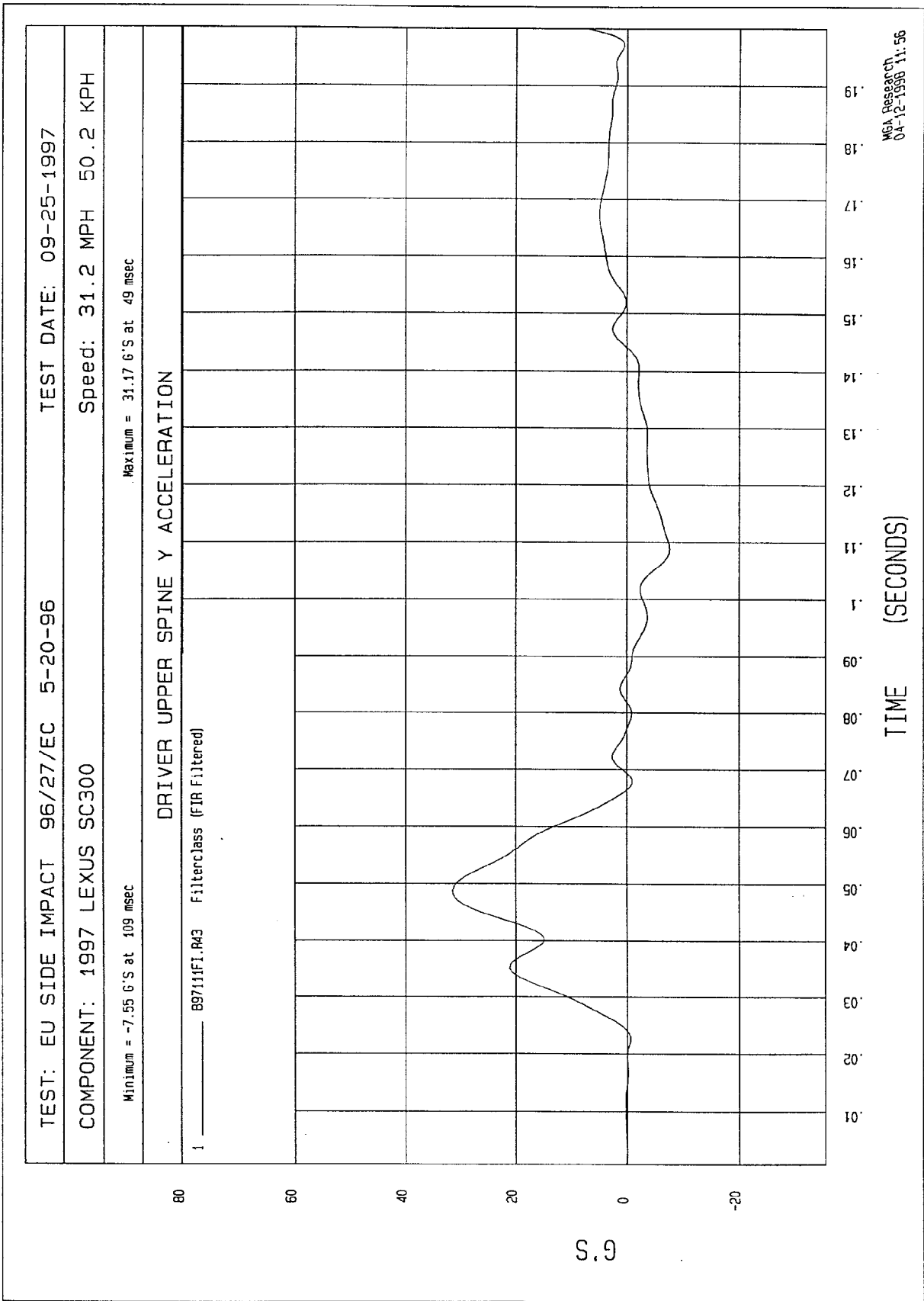
03

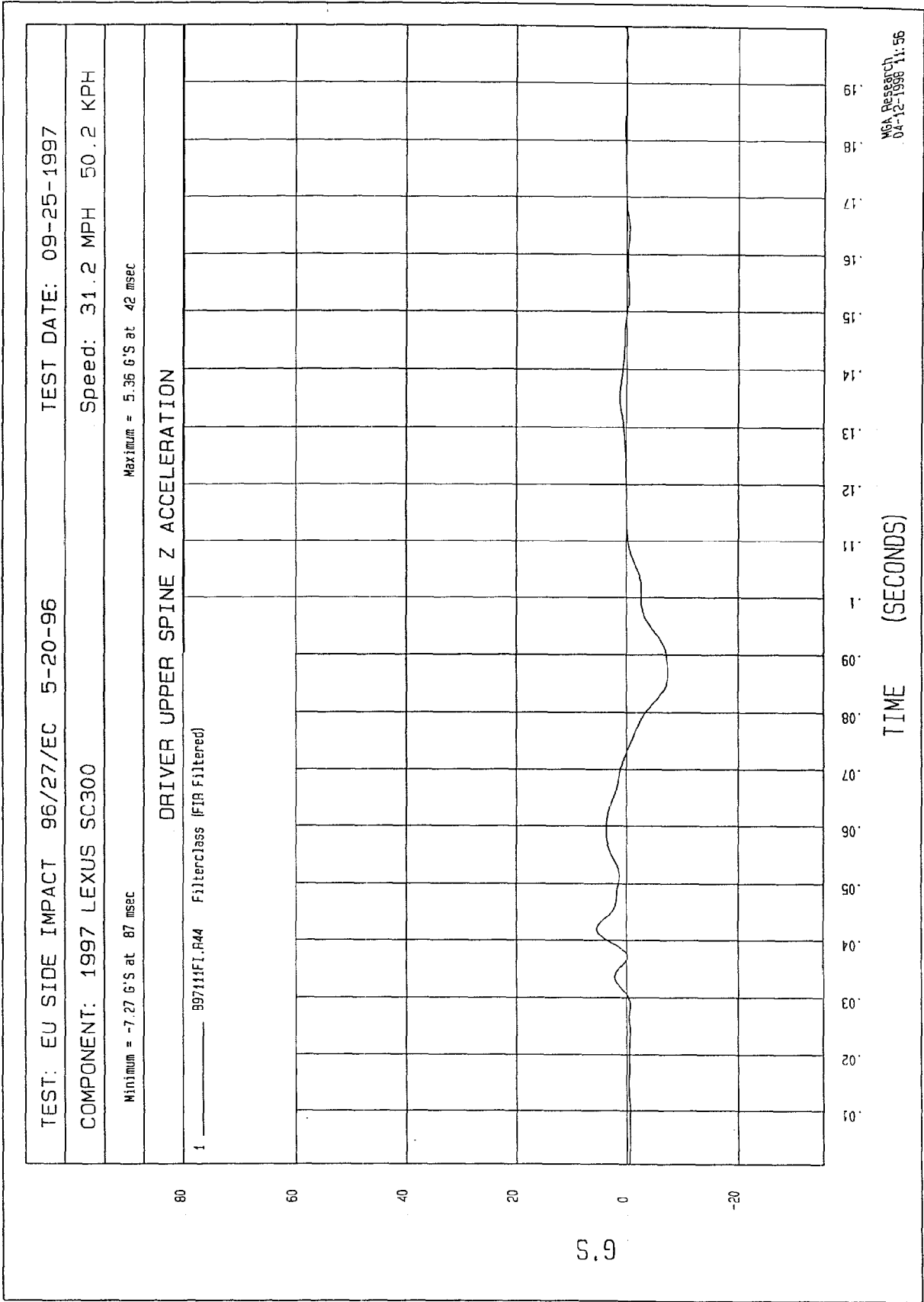
02

01

TIME (SECONDS)

NSA Research
04-12-1998 11:56





TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

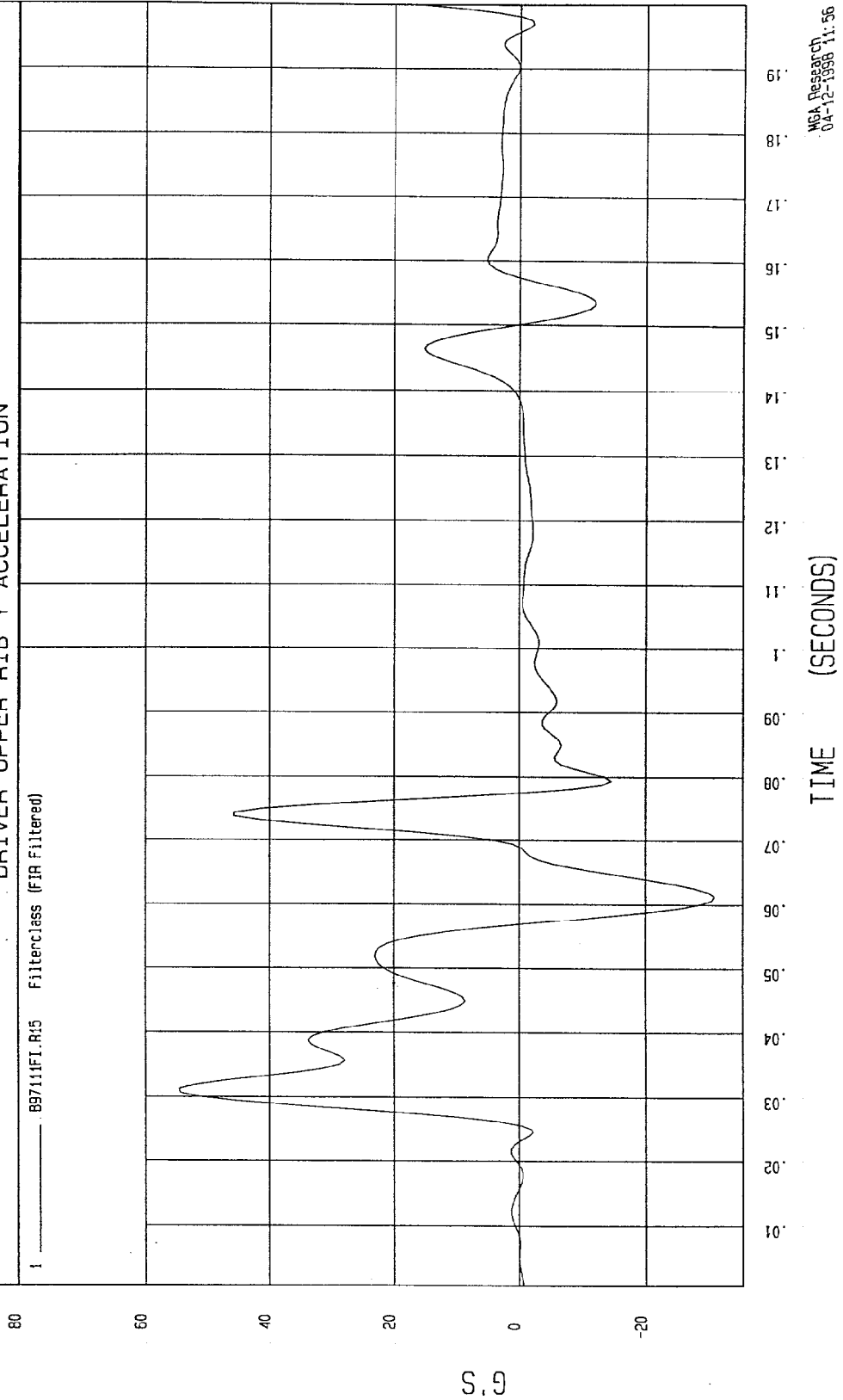
SPEED: 31.2 MPH 50.2 KPH

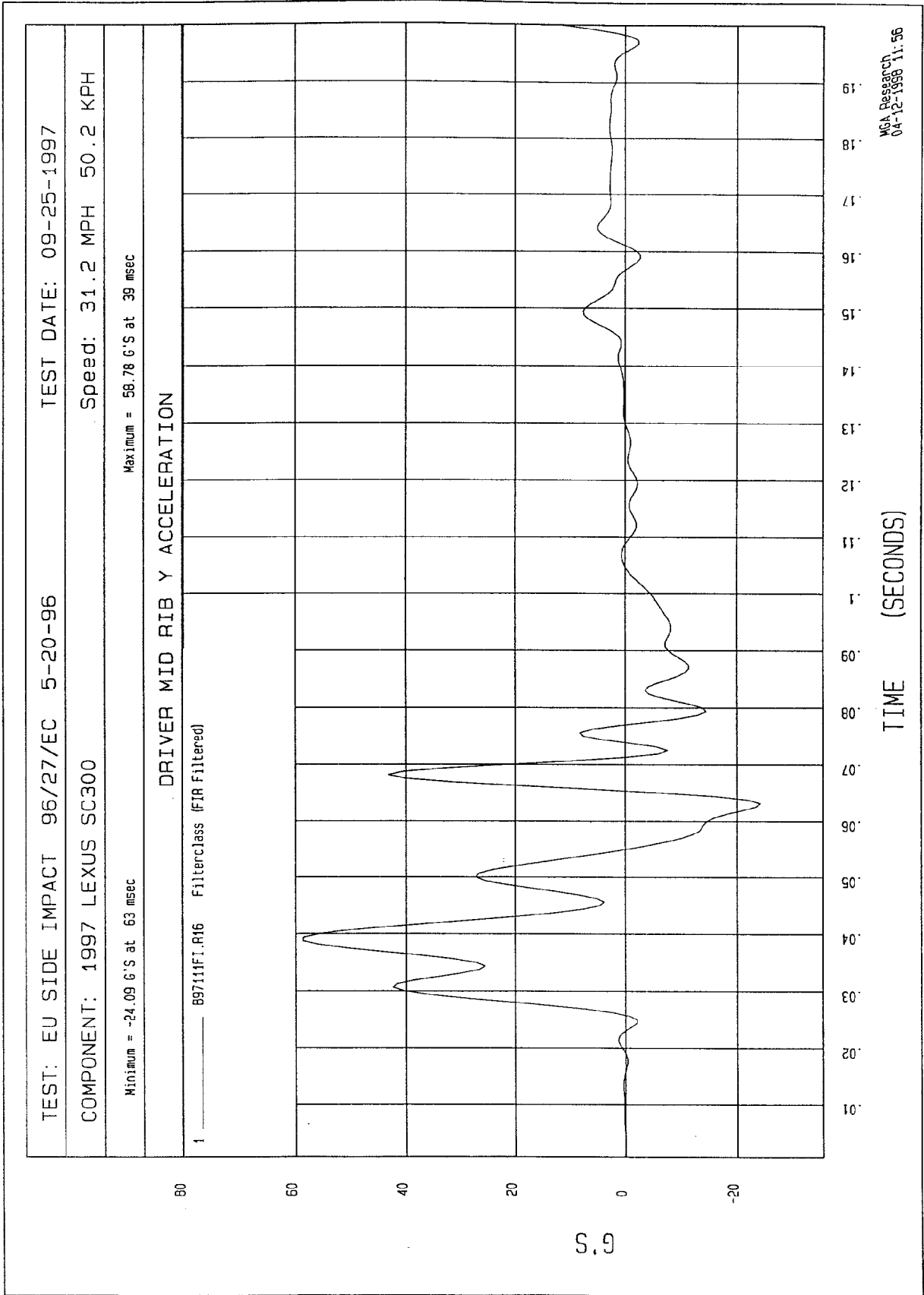
COMPONENT: 1997 LEXUS SC300

Maximum = 54.53 G'S at 31 msec

Minimum = -30.74 G'S at 61 msec

DRIVER UPPER RIB Y ACCELERATION





TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

Maximum = 67.23 G'S at 41 msec

Minimum = -24.58 G'S at 64 msec

DRIVER LOWER RIB Y ACCELERATION

1 ——— B9711F1.R17 Filterclass (FIR Filtered)

80

60

40

20

0

-20

G'S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

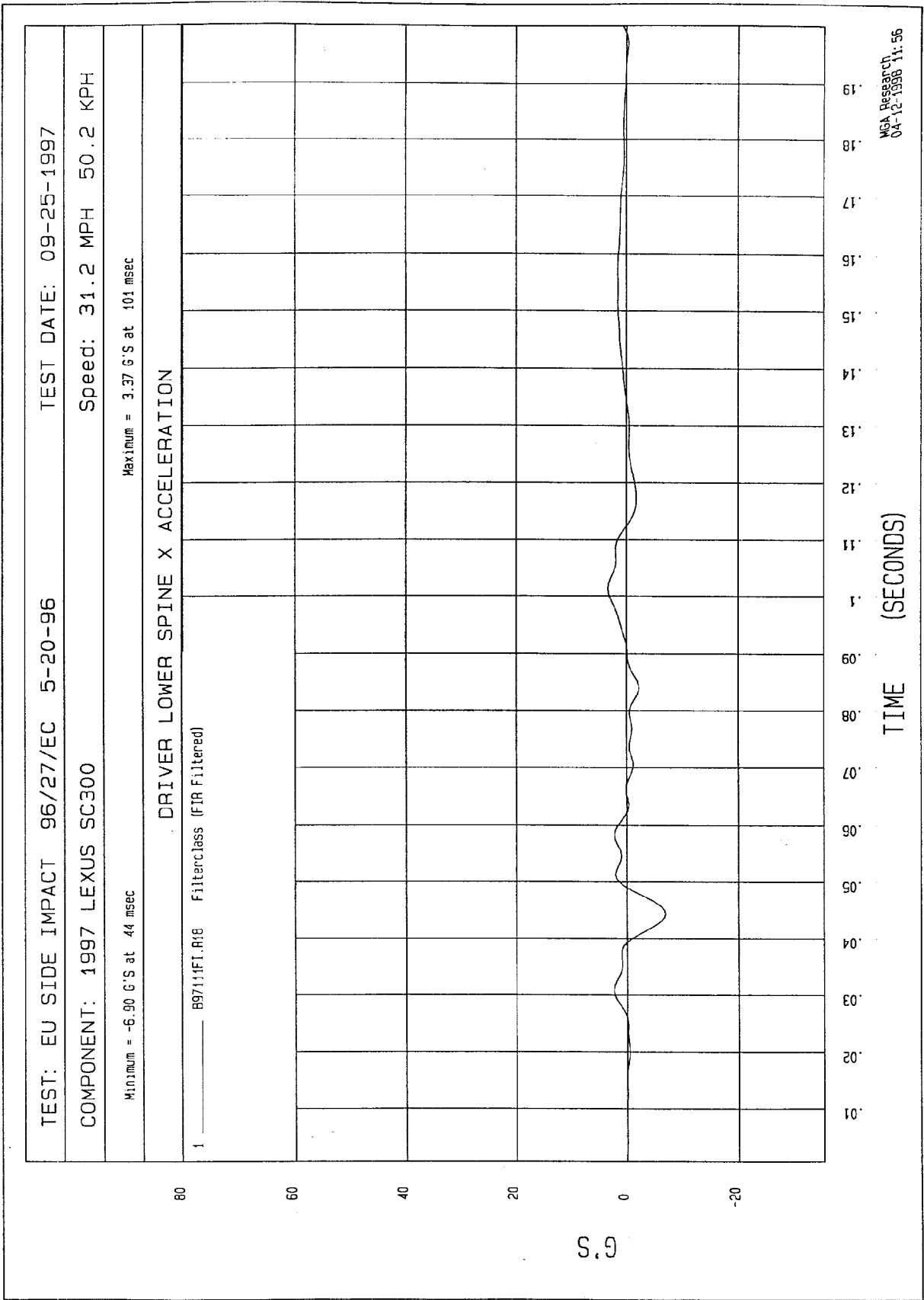
03

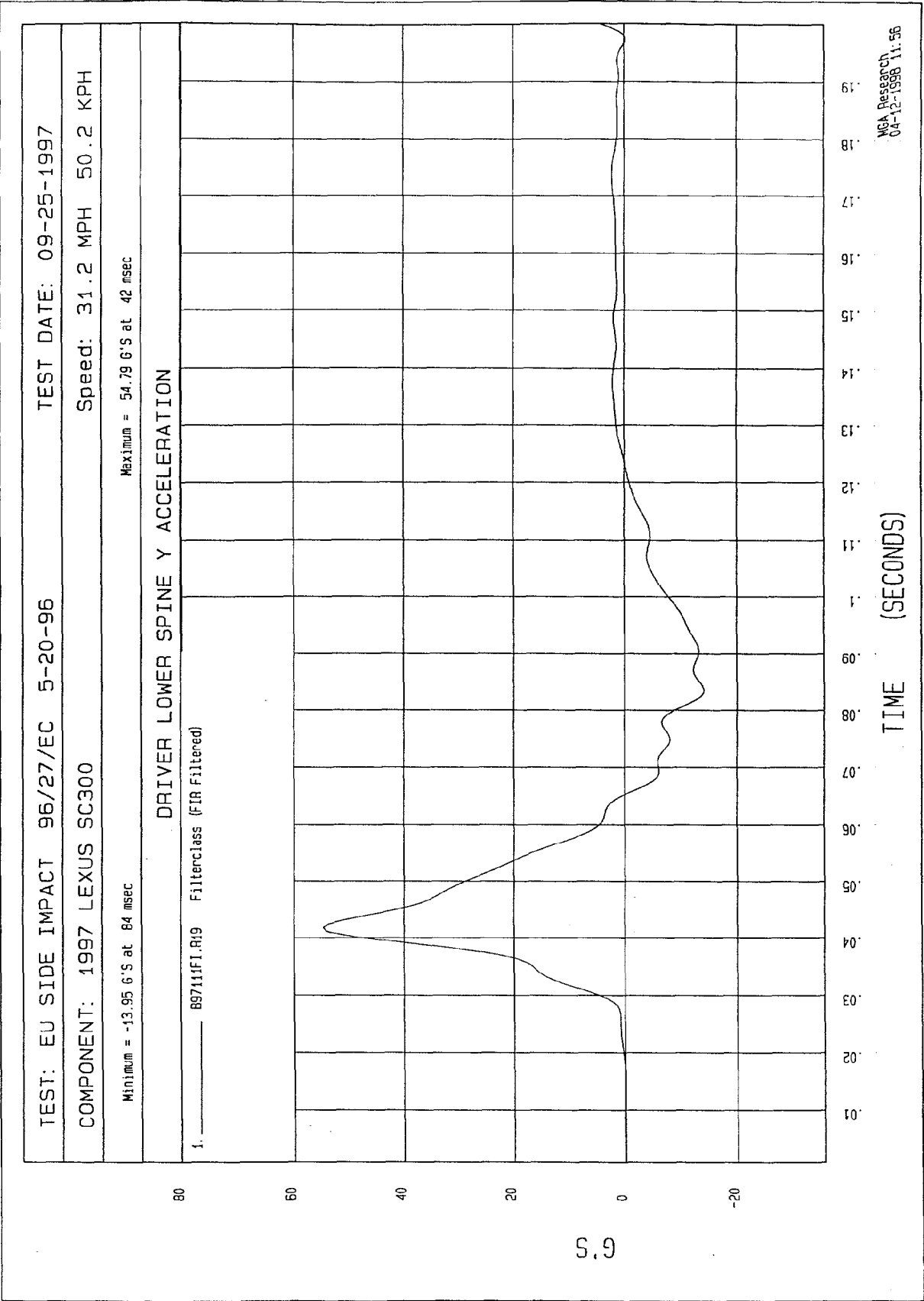
02

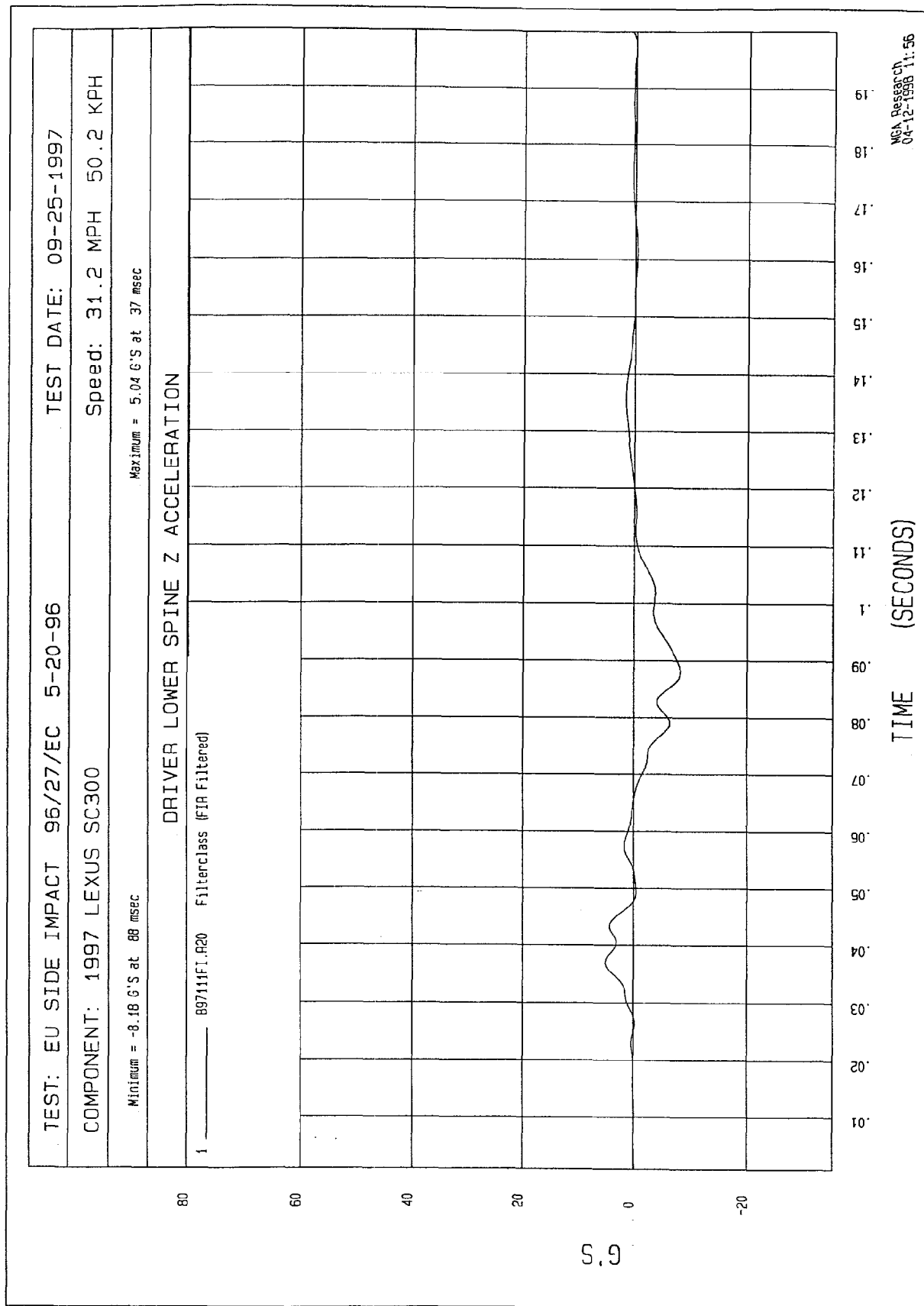
01

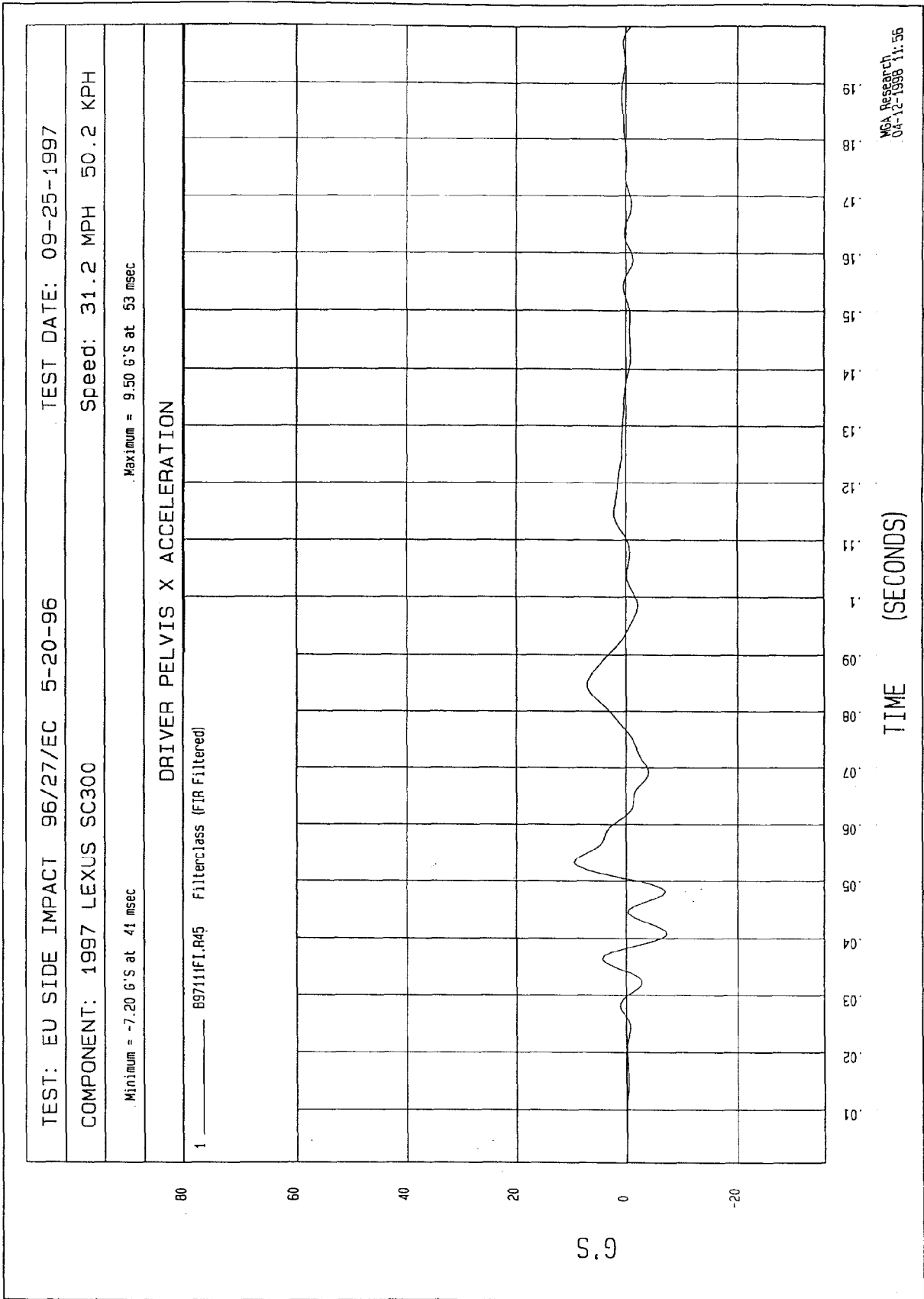
TIME (SECONDS)

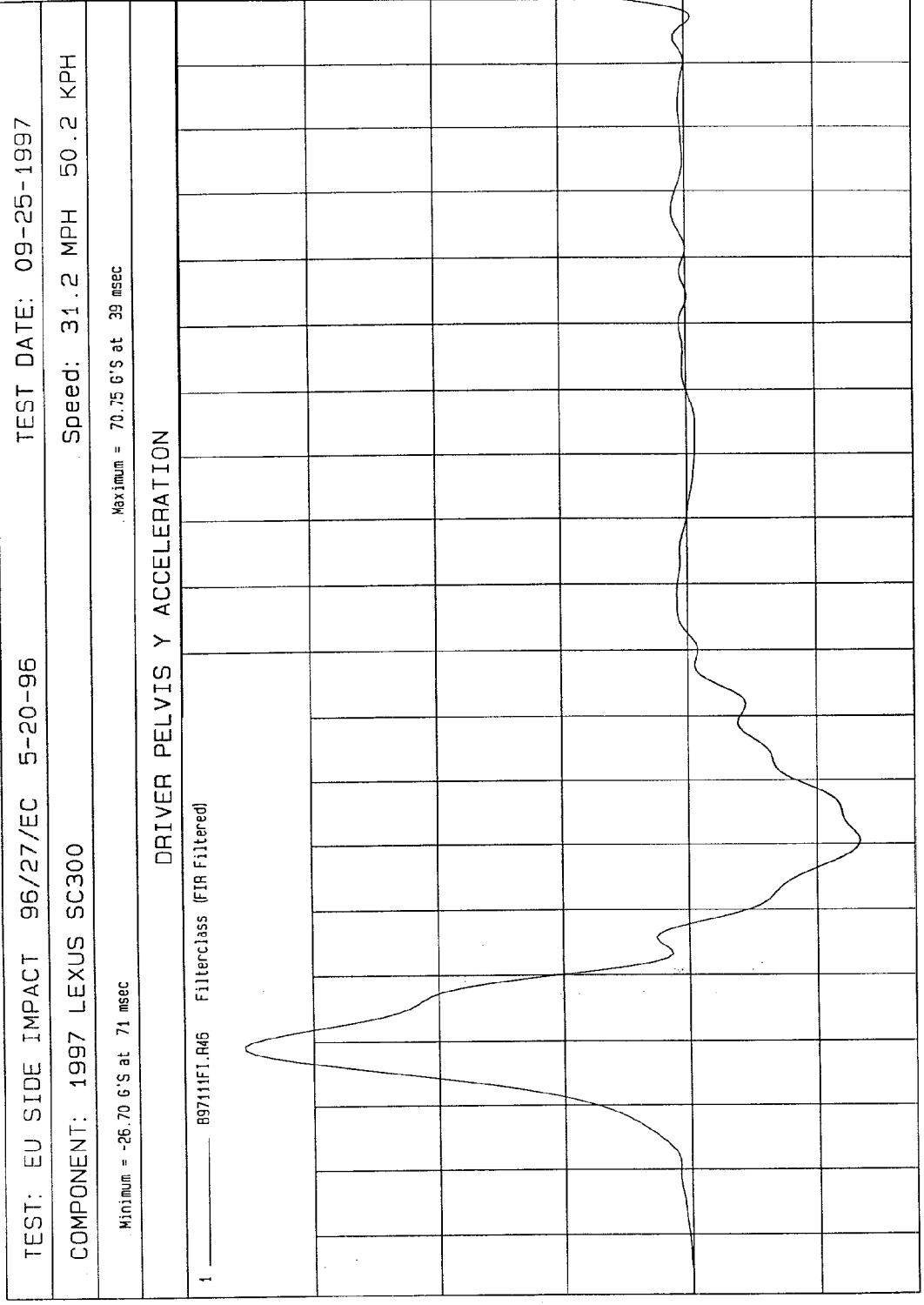
MCA Research
04-12-1998 11:56





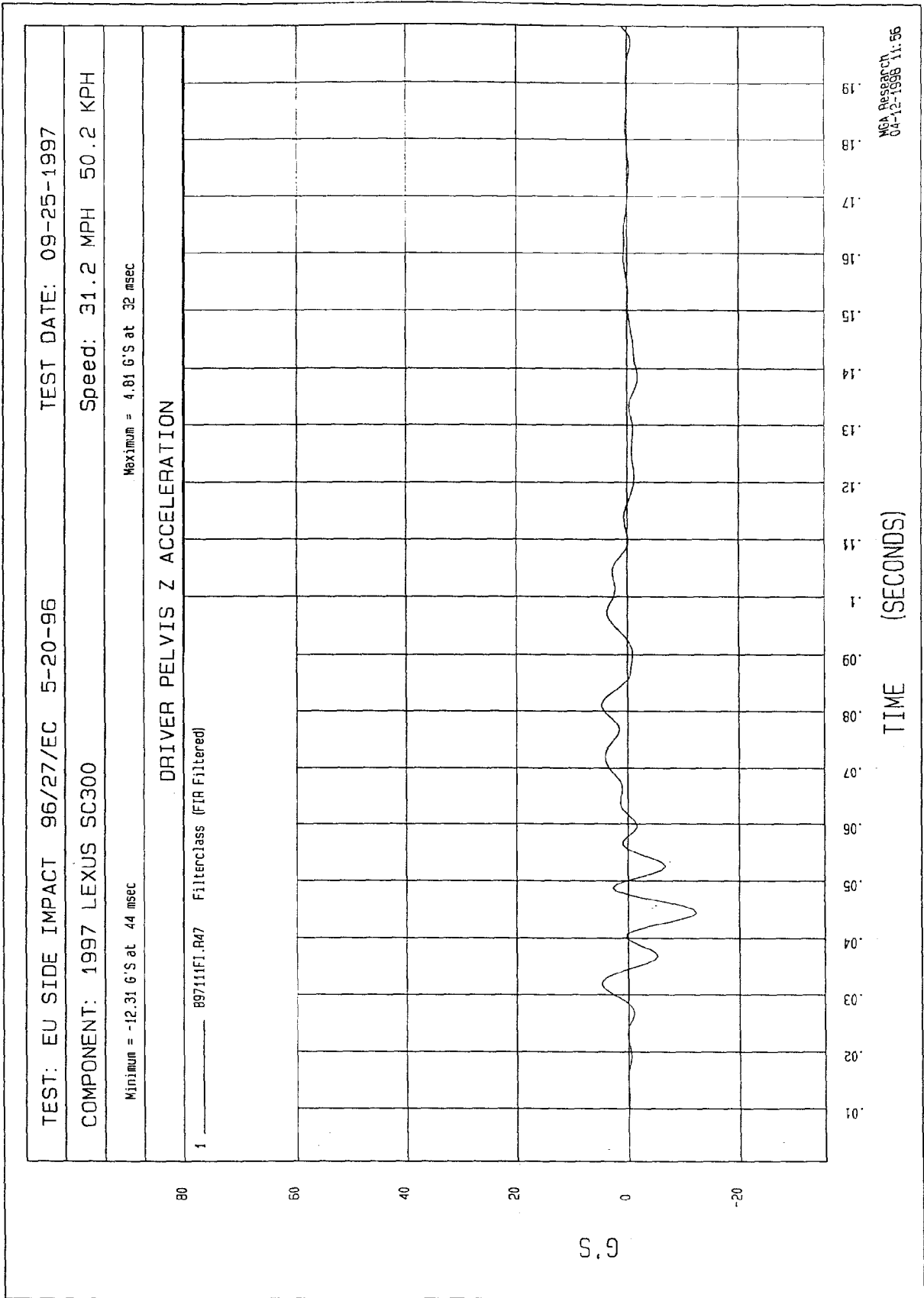


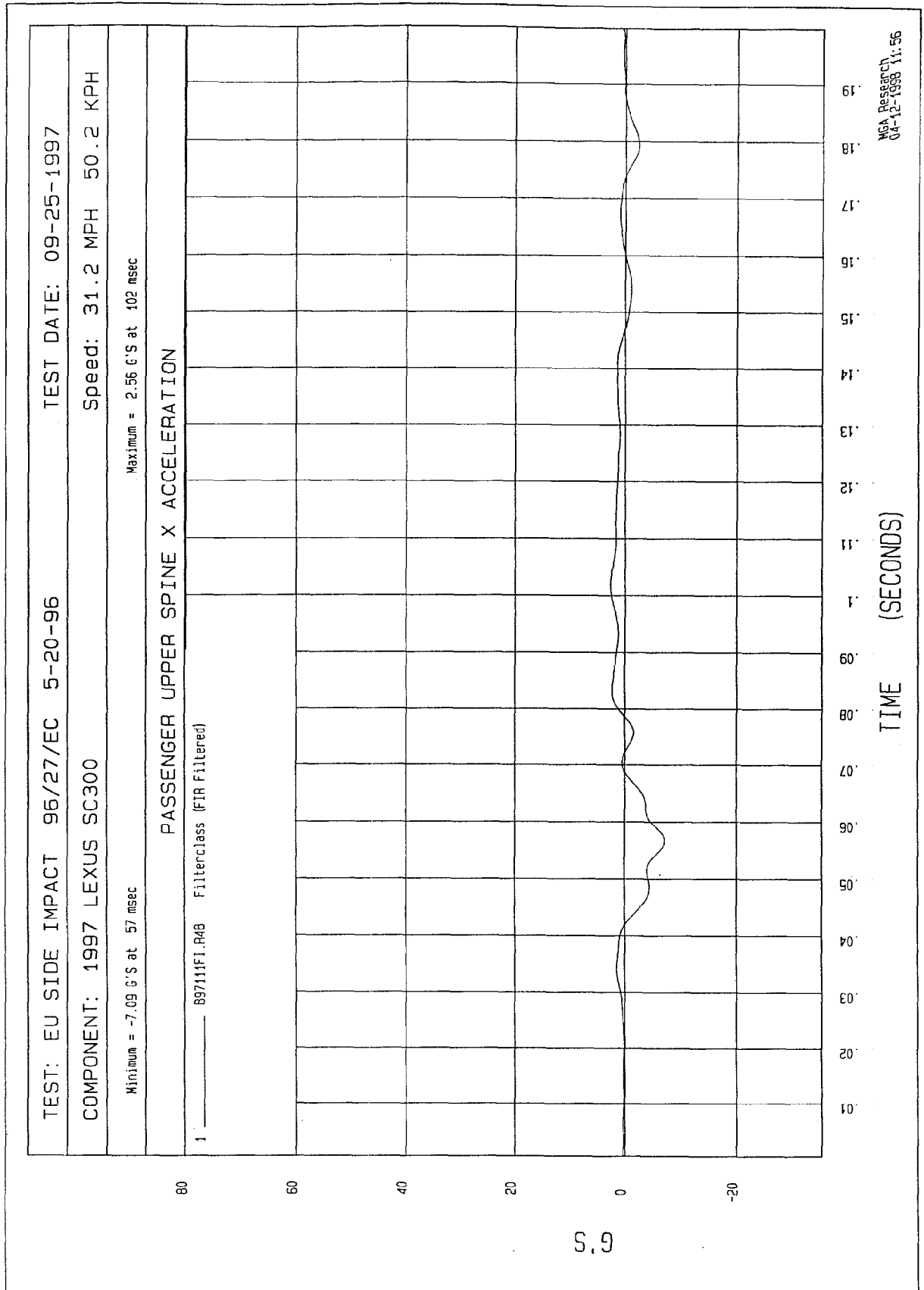


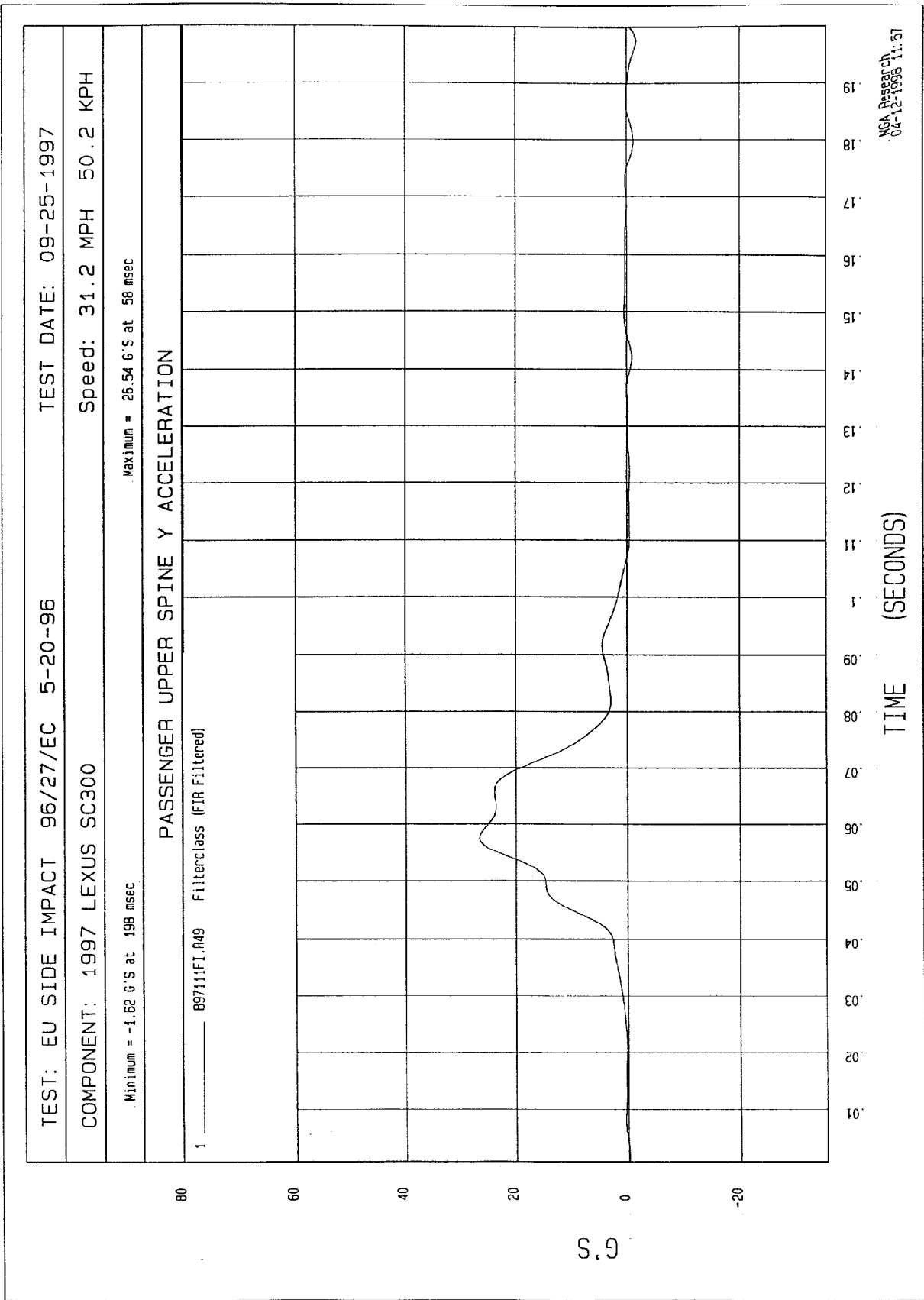


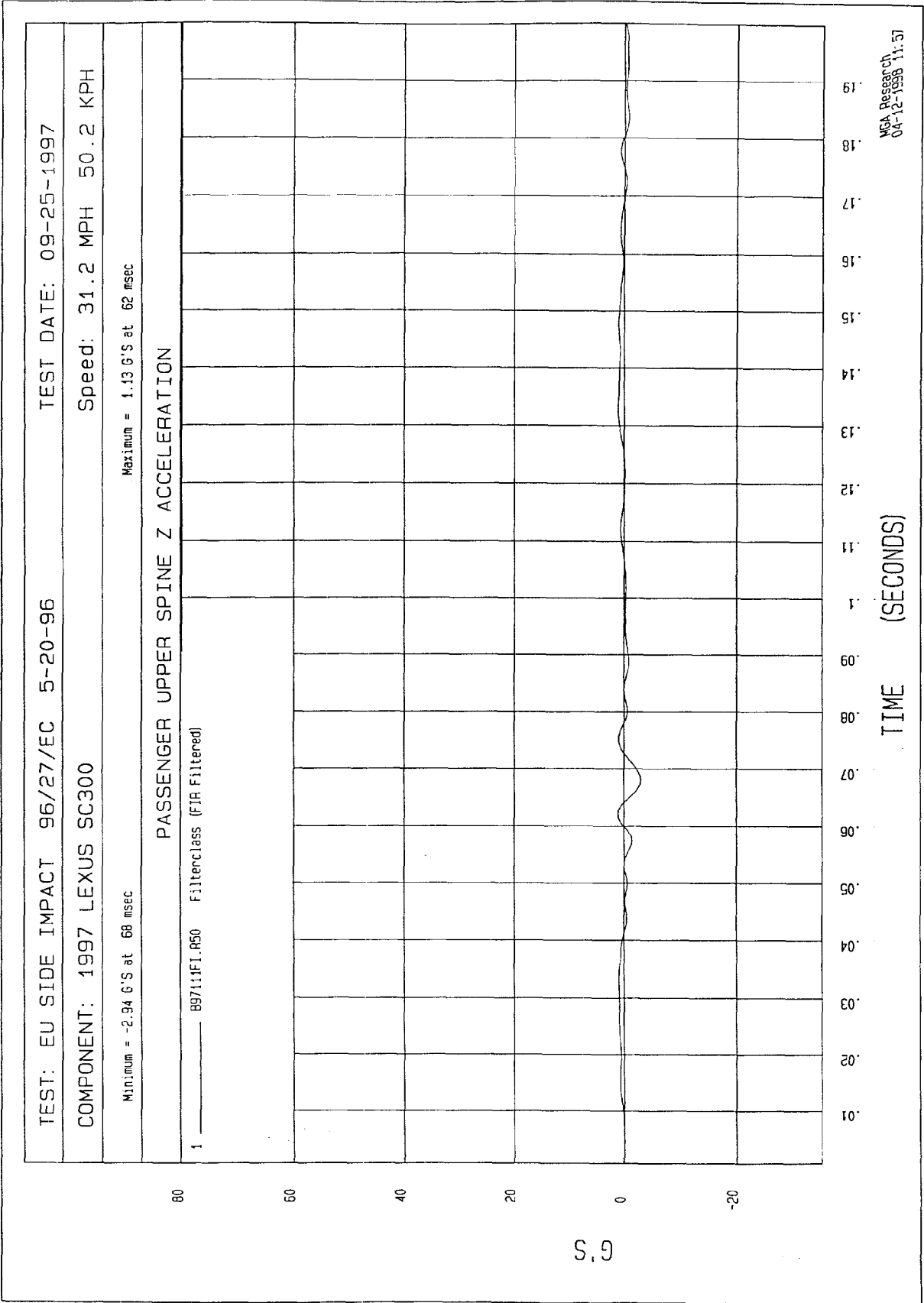
TIME (SECONDS)

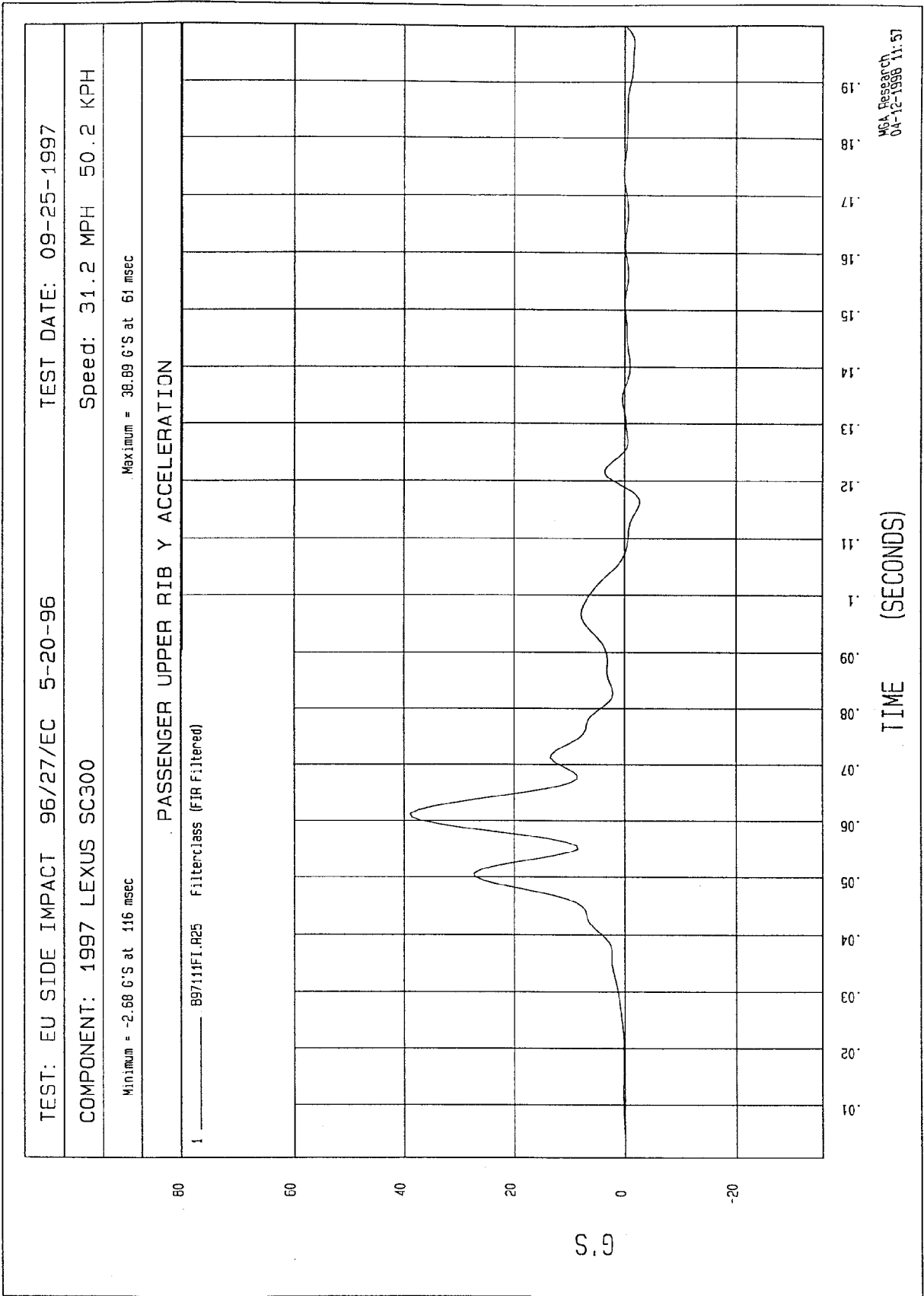
WEA Research
04-12-1998 11:56

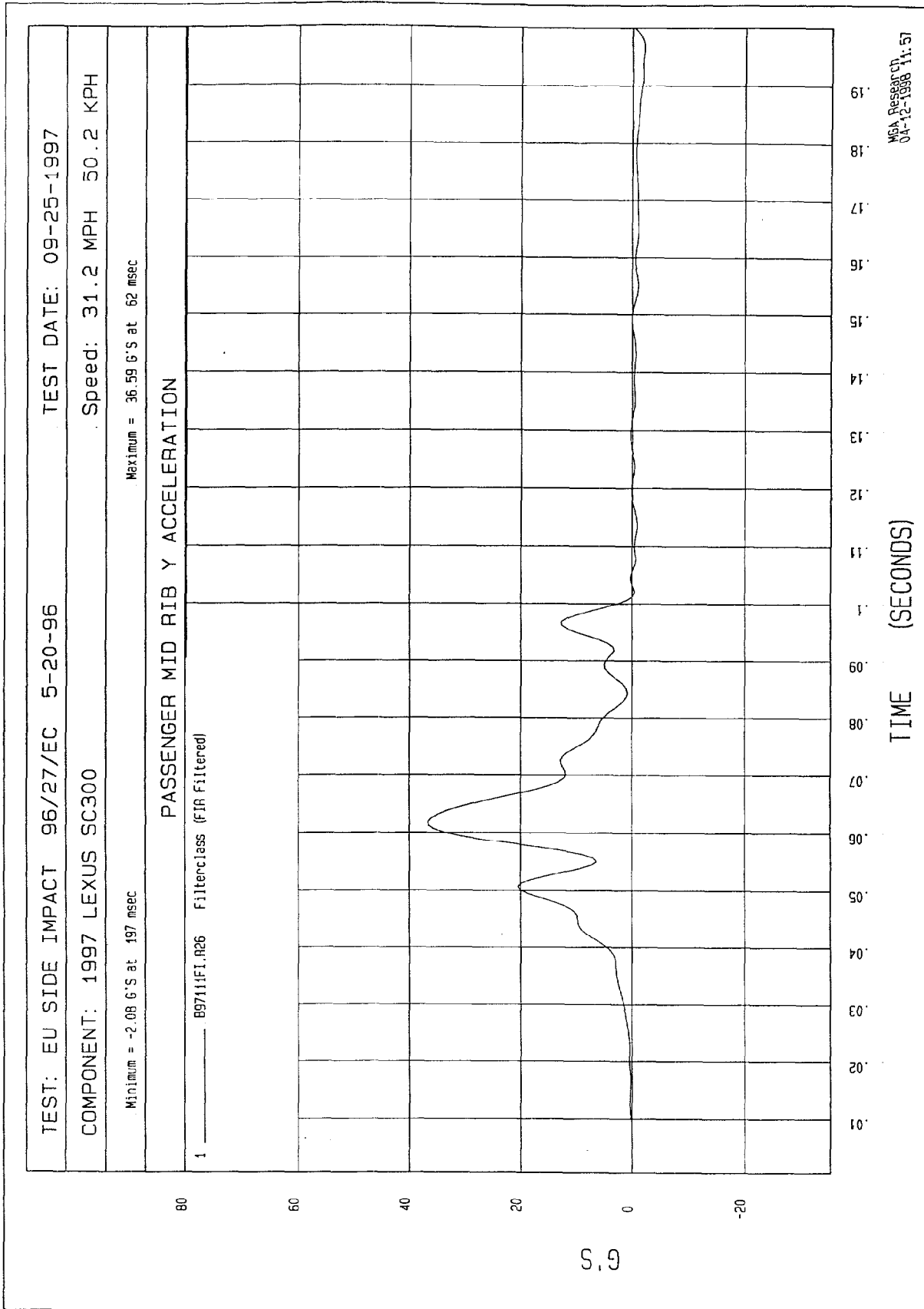












TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

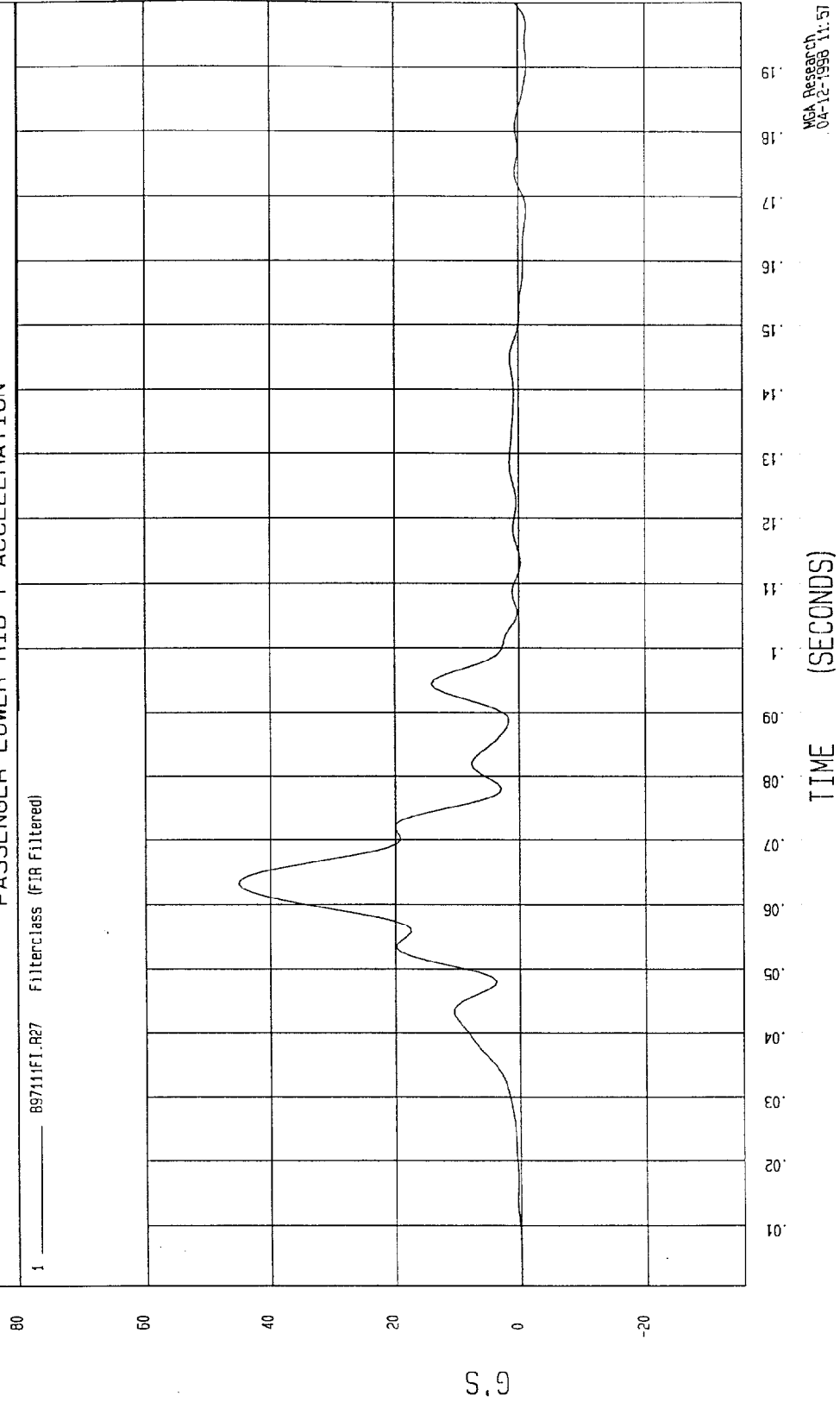
COMPONENT: 1997 LEXUS SC300

Minimum = -1.28 G'S at 191 msec

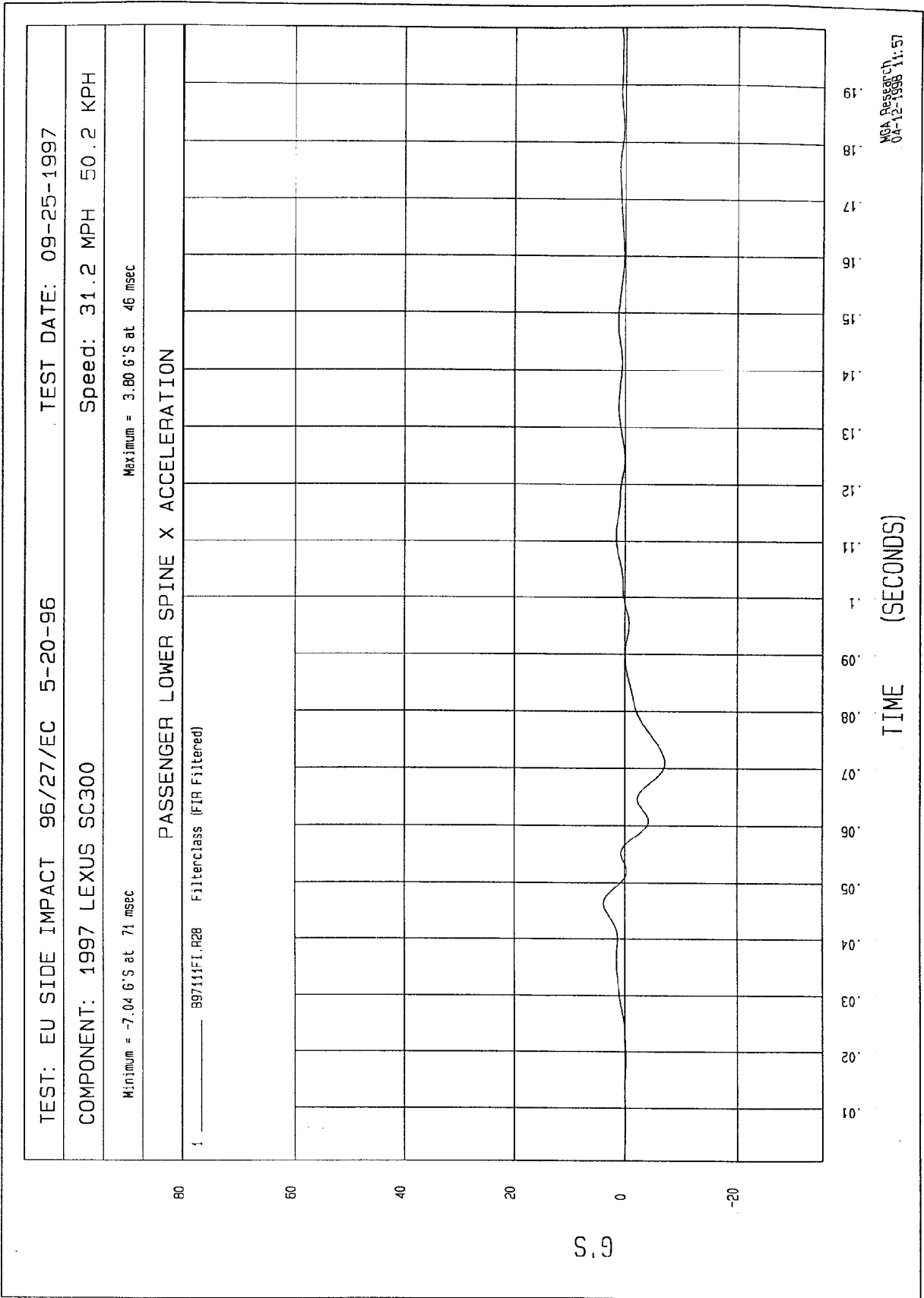
Maximum = 45.07 G'S at 63 msec

PASSENGER LOWER RIB Y ACCELERATION

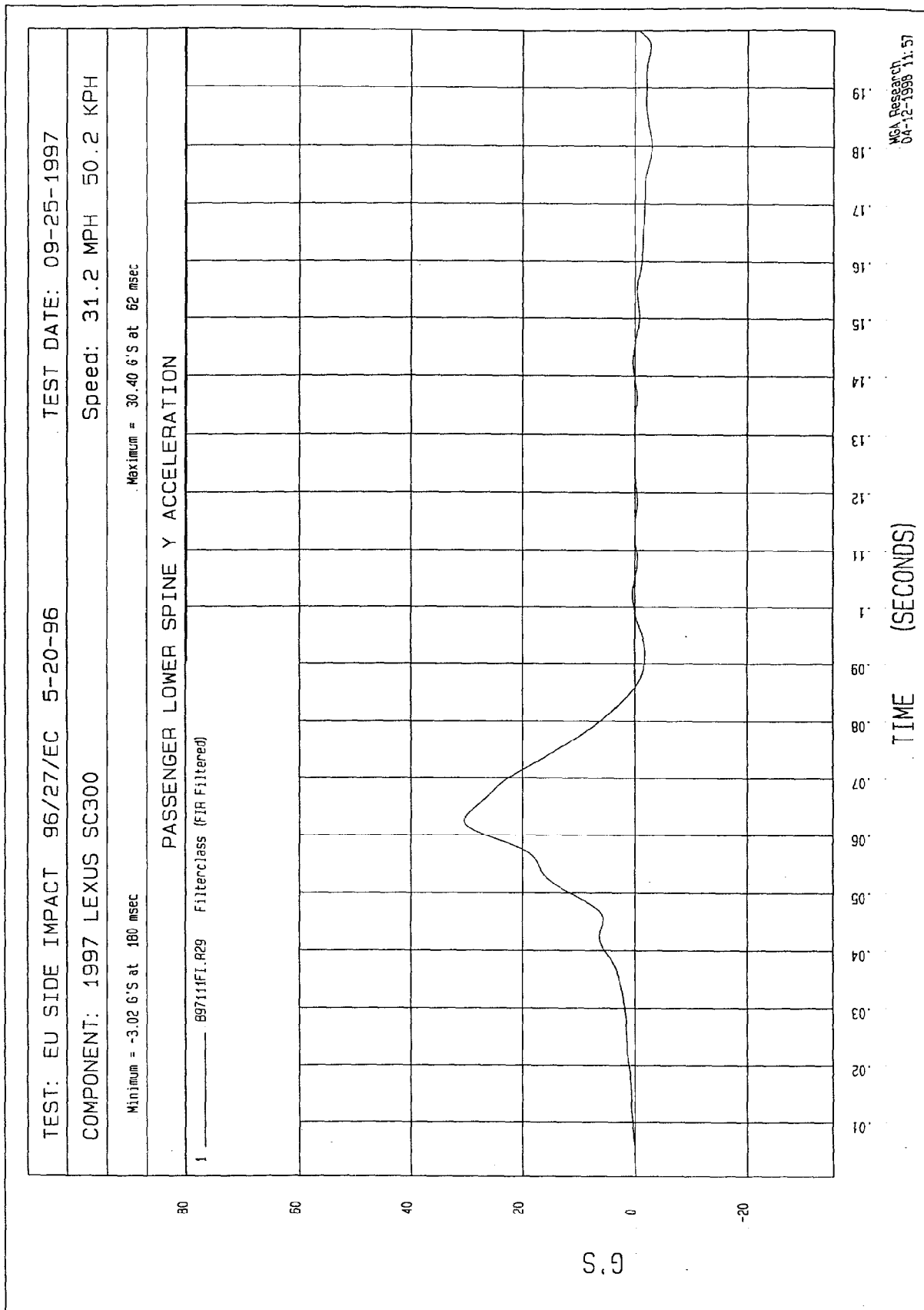
1 897111F1.R27 Filterclass (FIR Filtered)

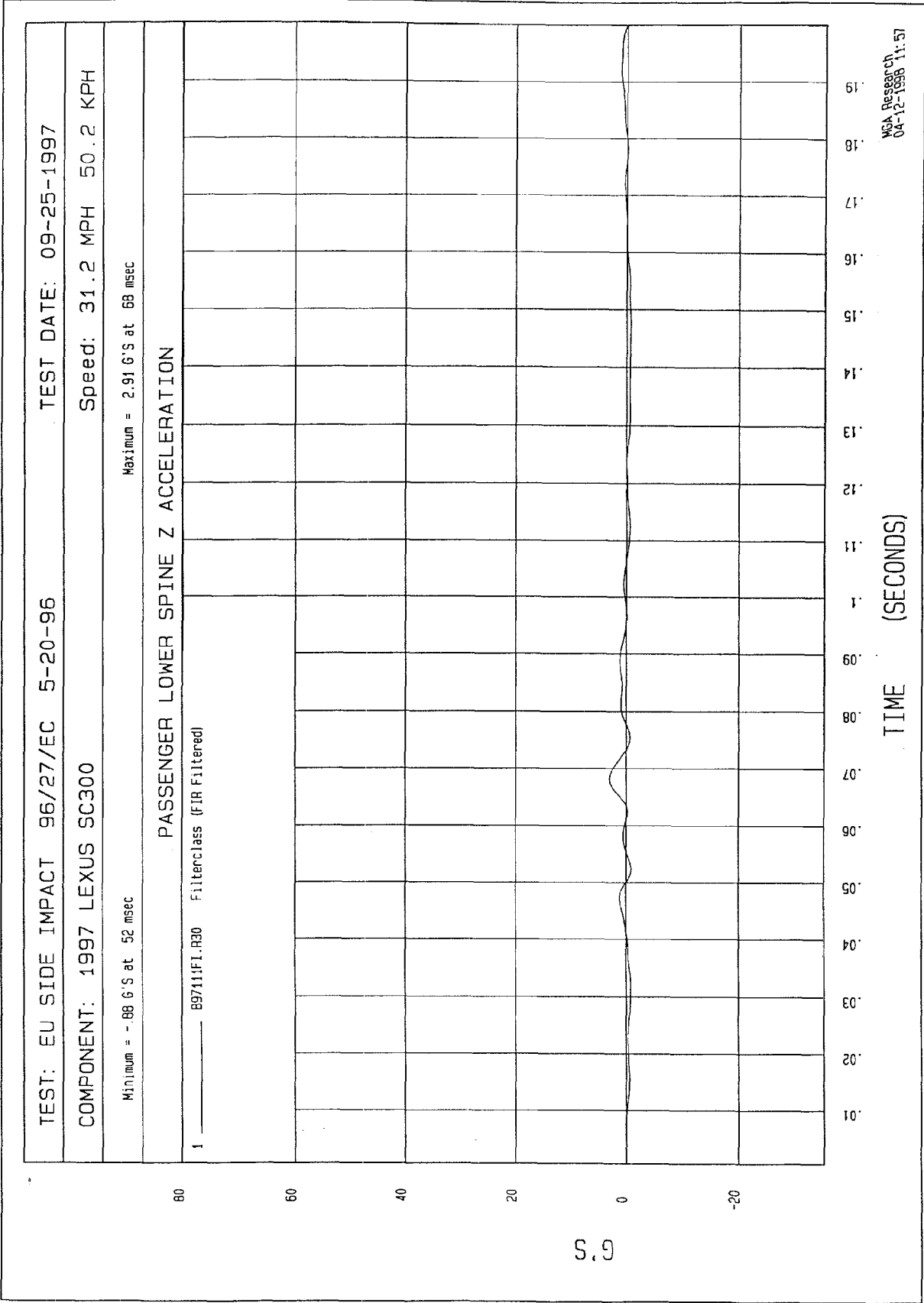


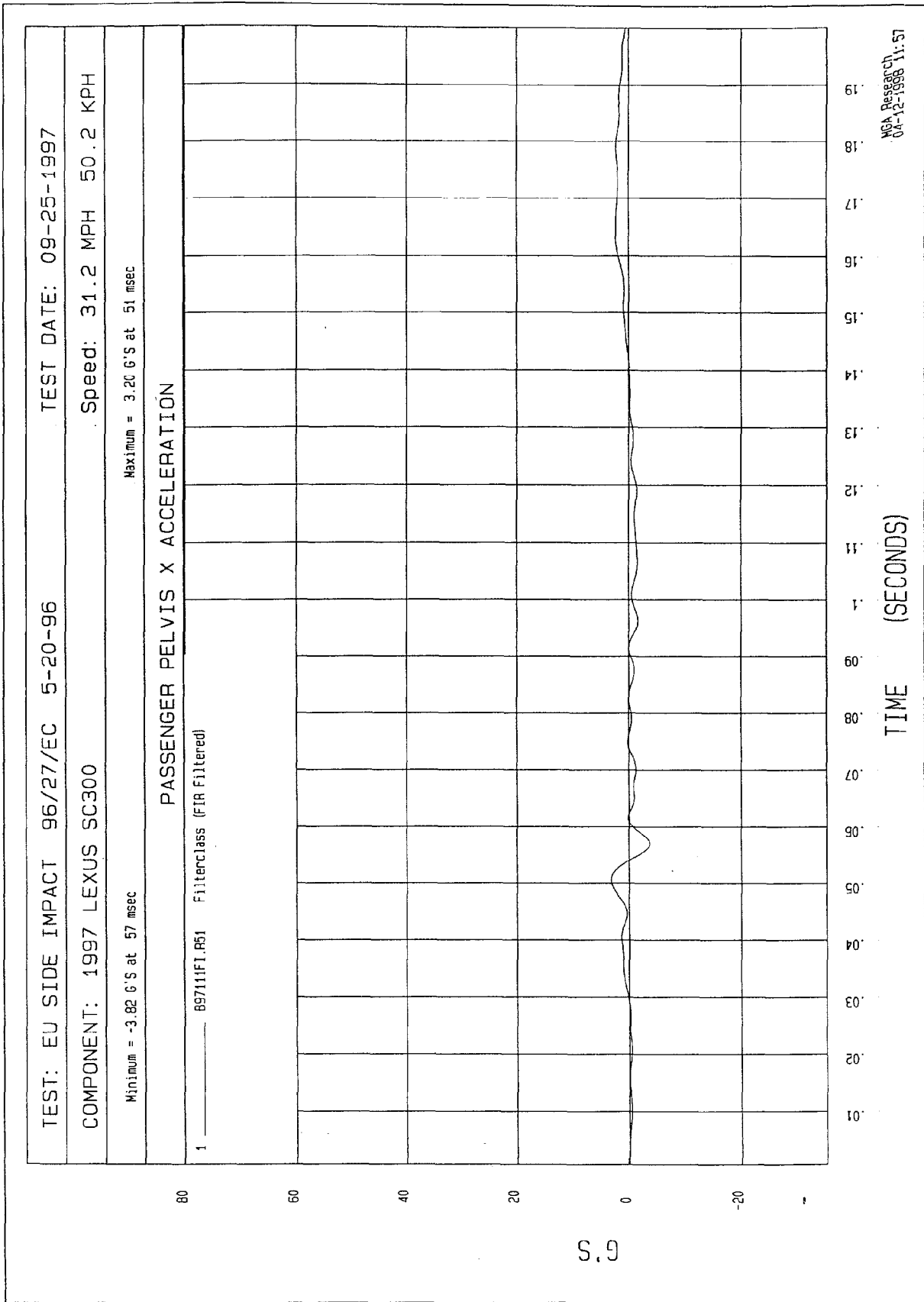
MCA Research
04-12-1998 11:57

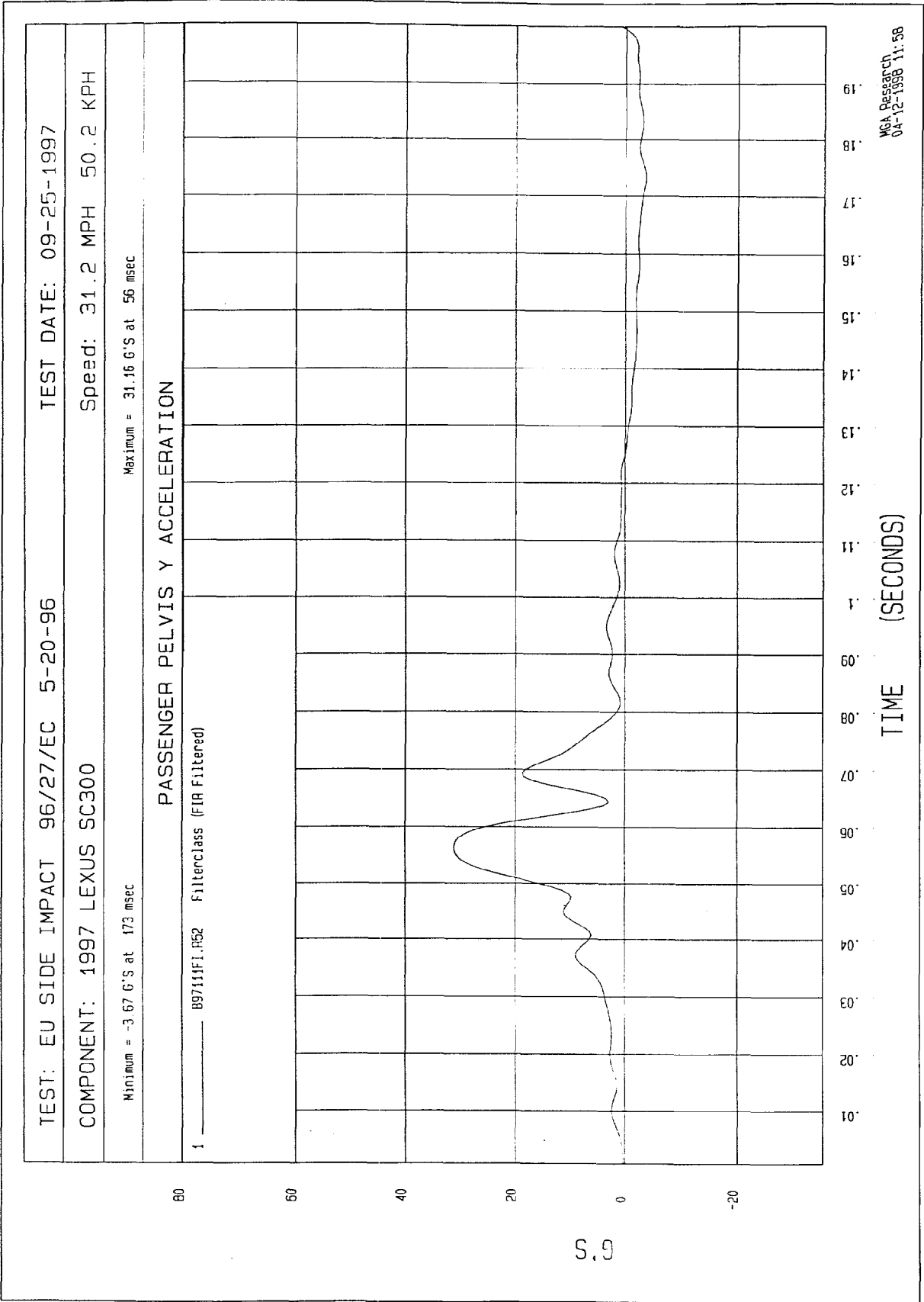


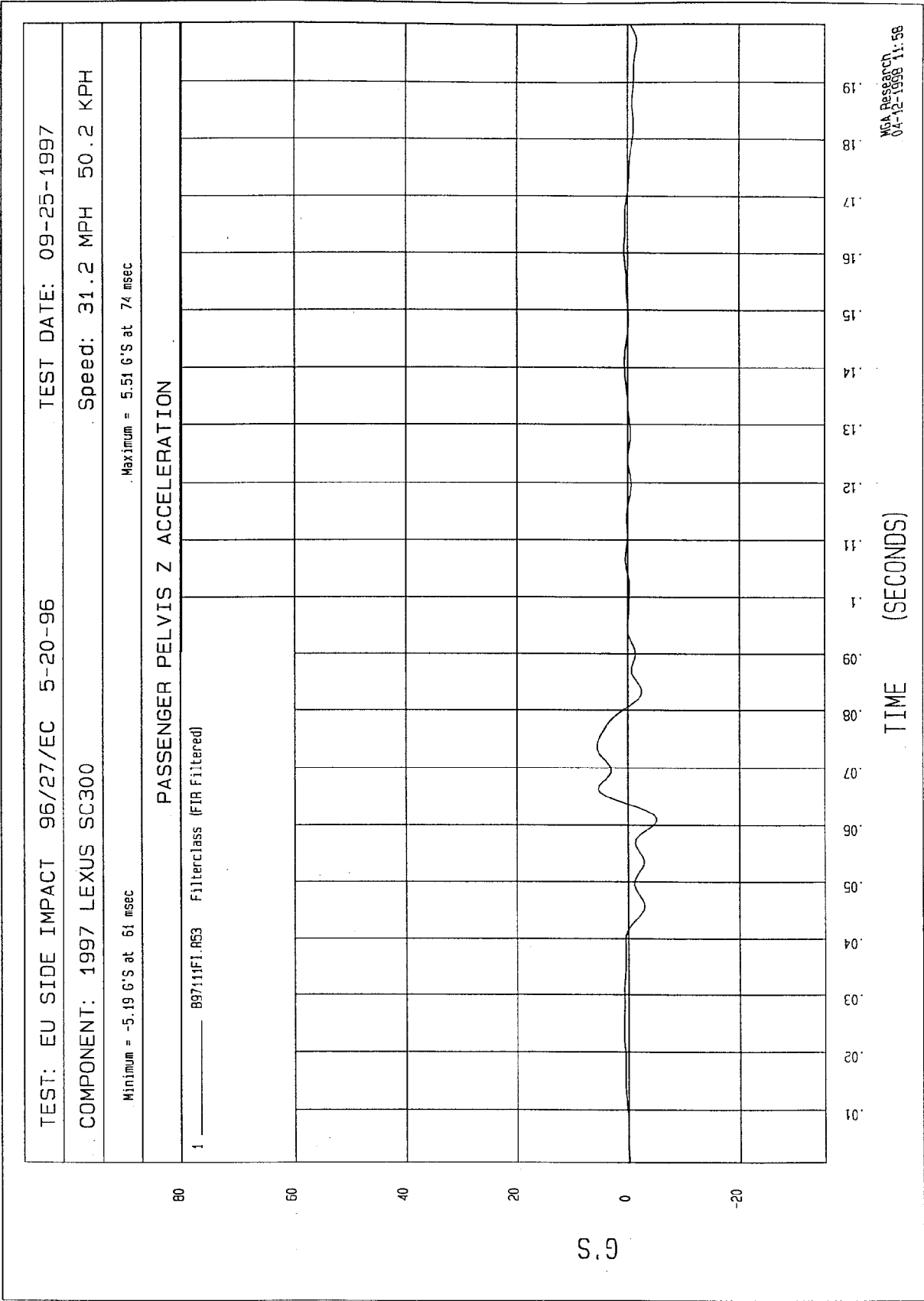
NCA Research
09-12-1998 11:57



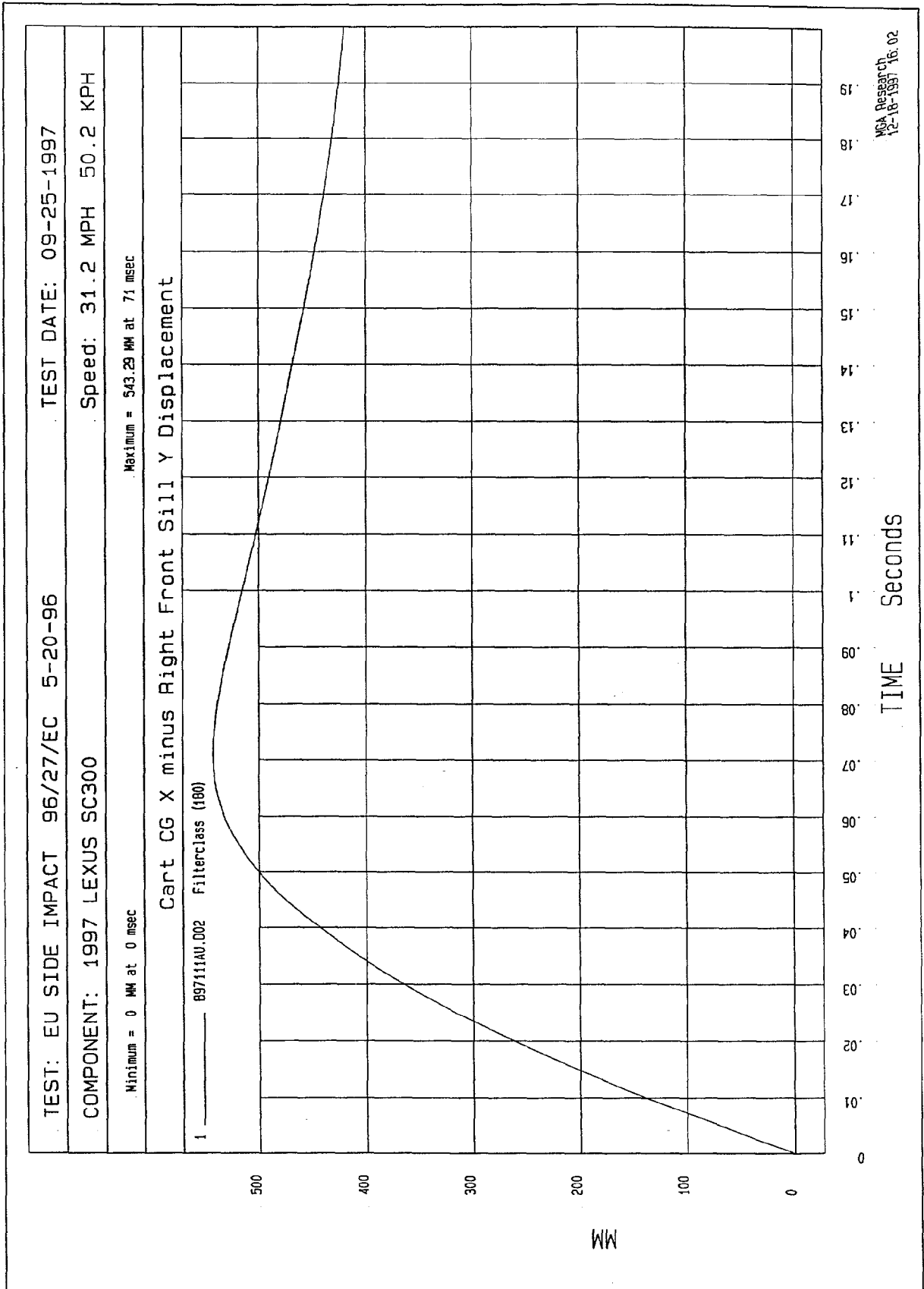


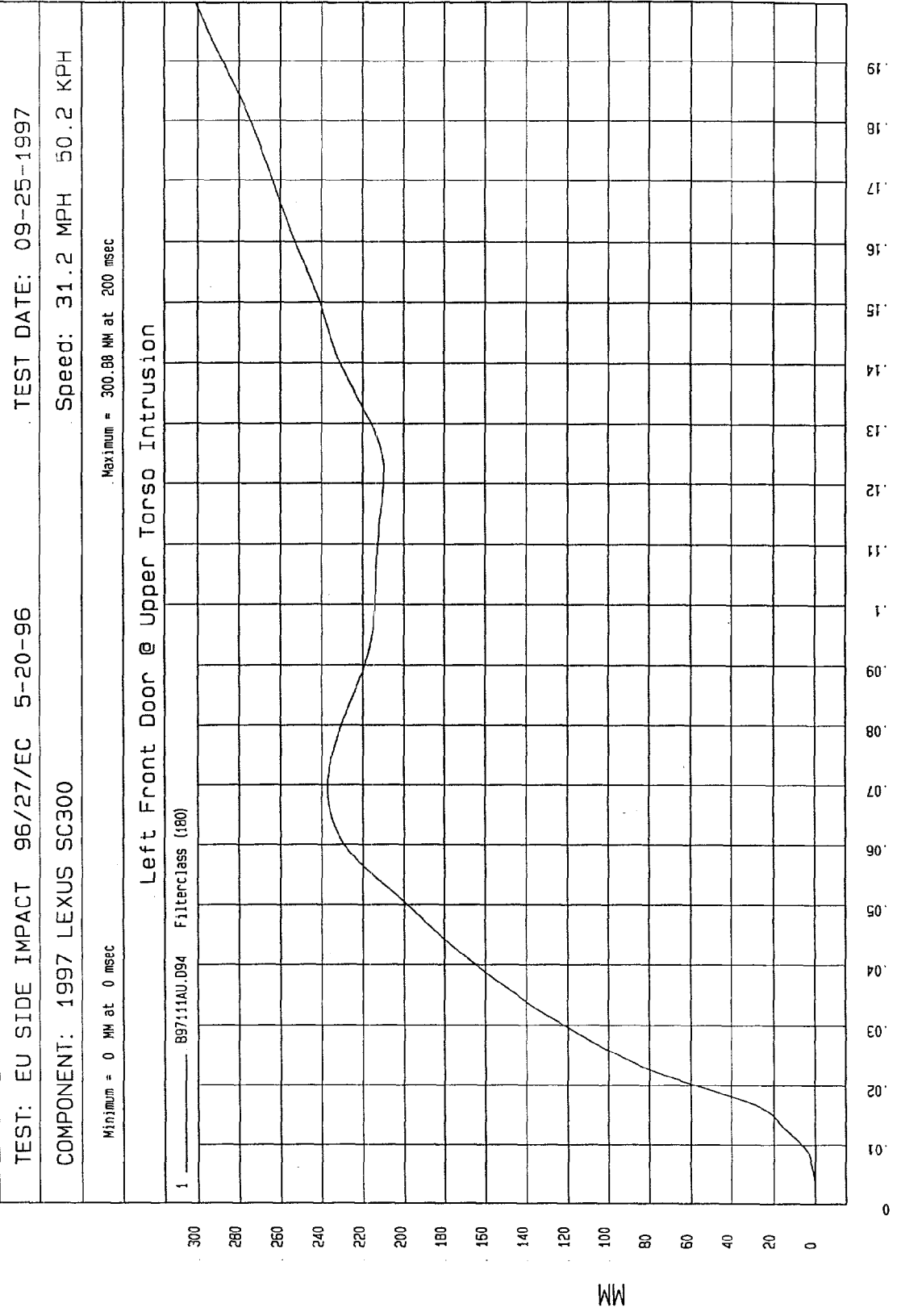




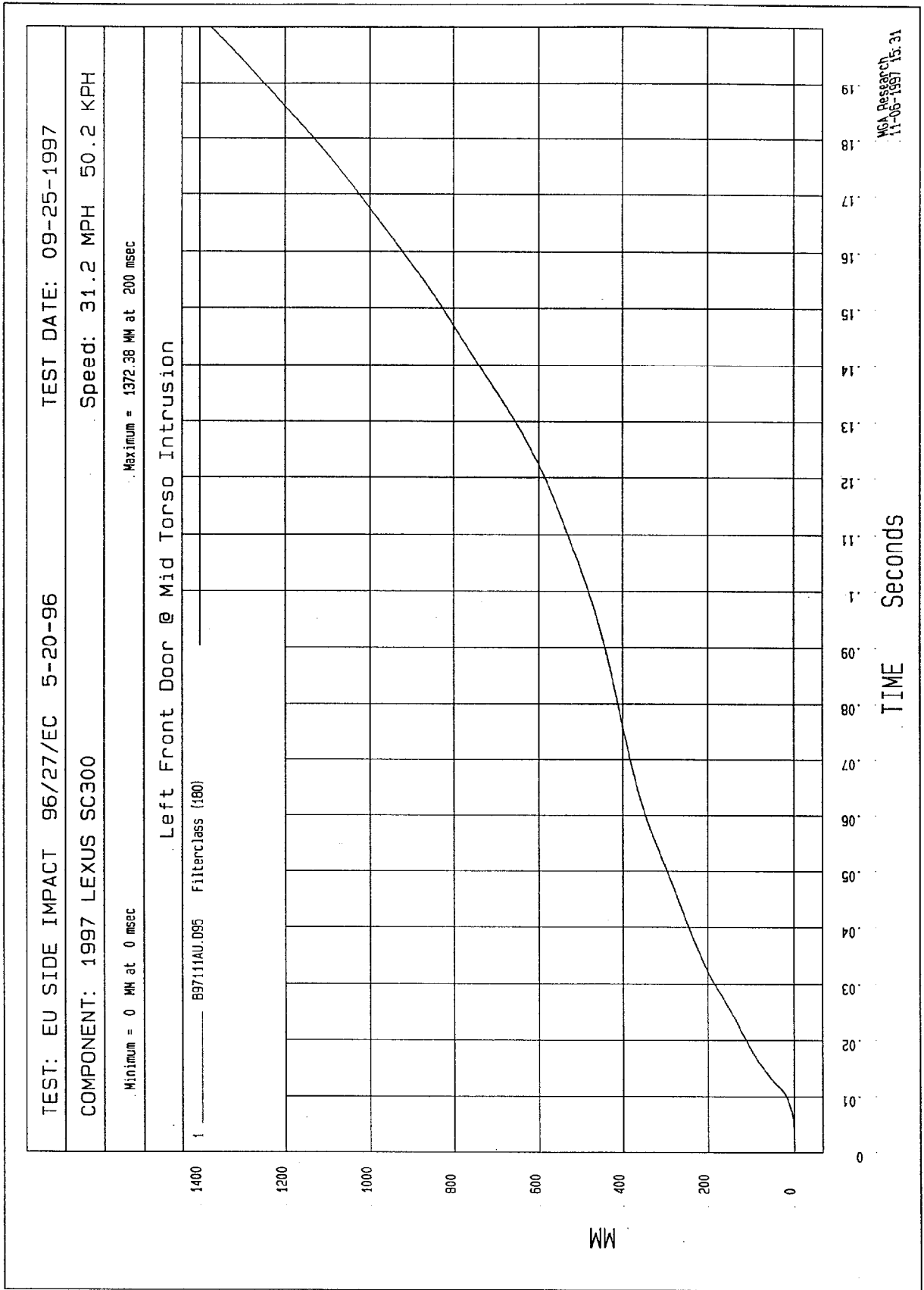


RELATIVE DISPLACEMENTS





MCA Research
11-06-1997 15: 31

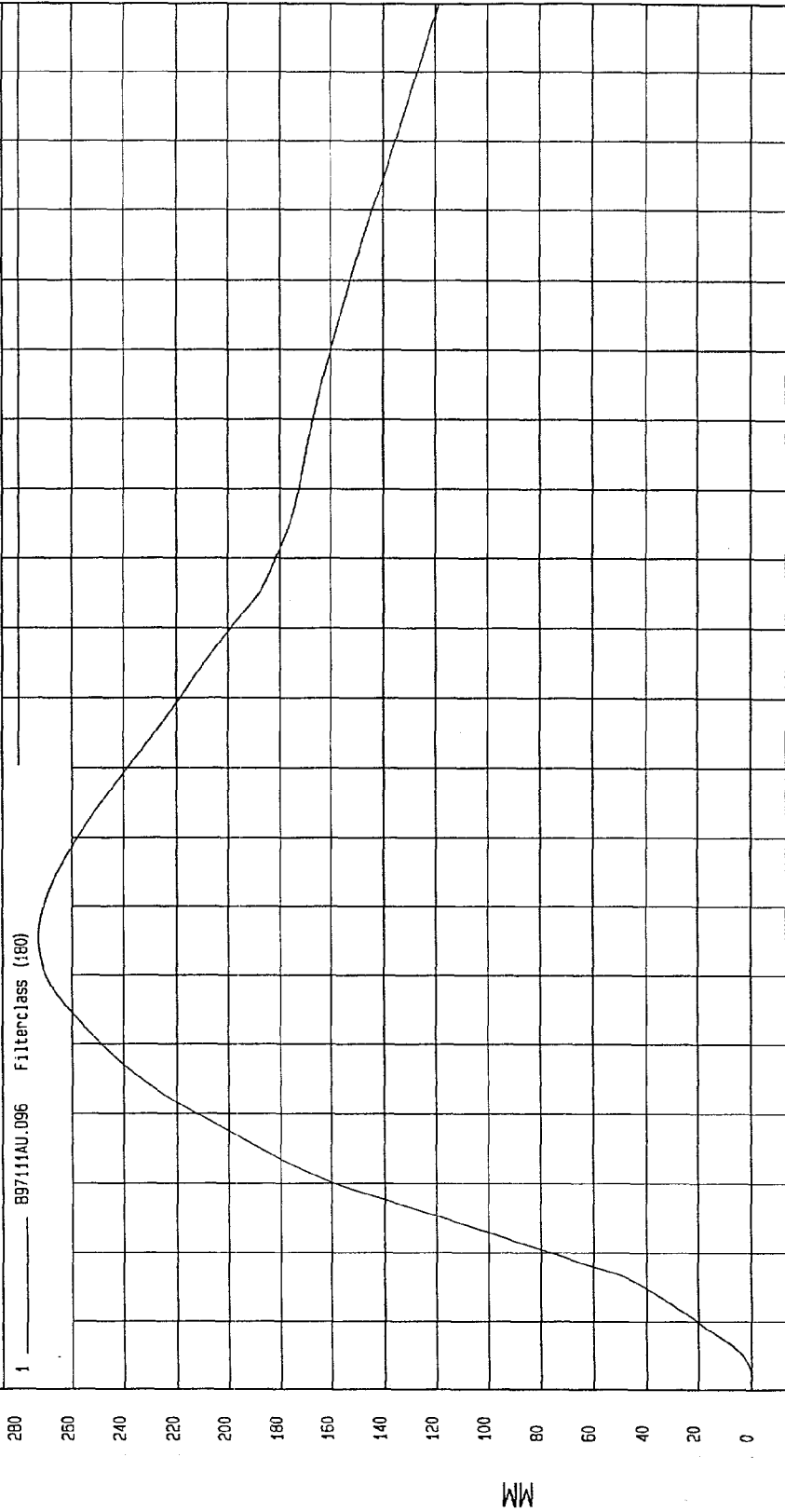


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

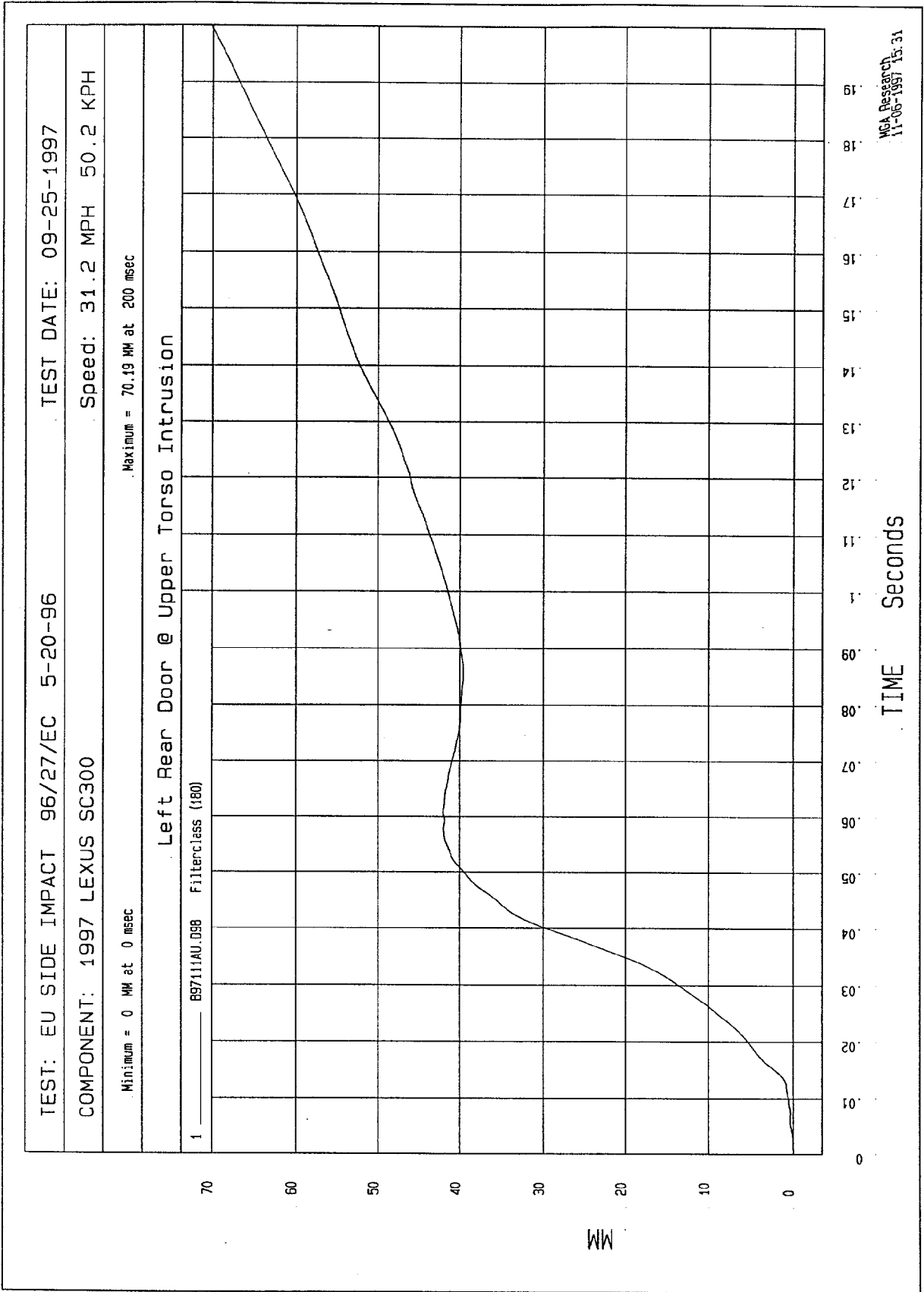
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

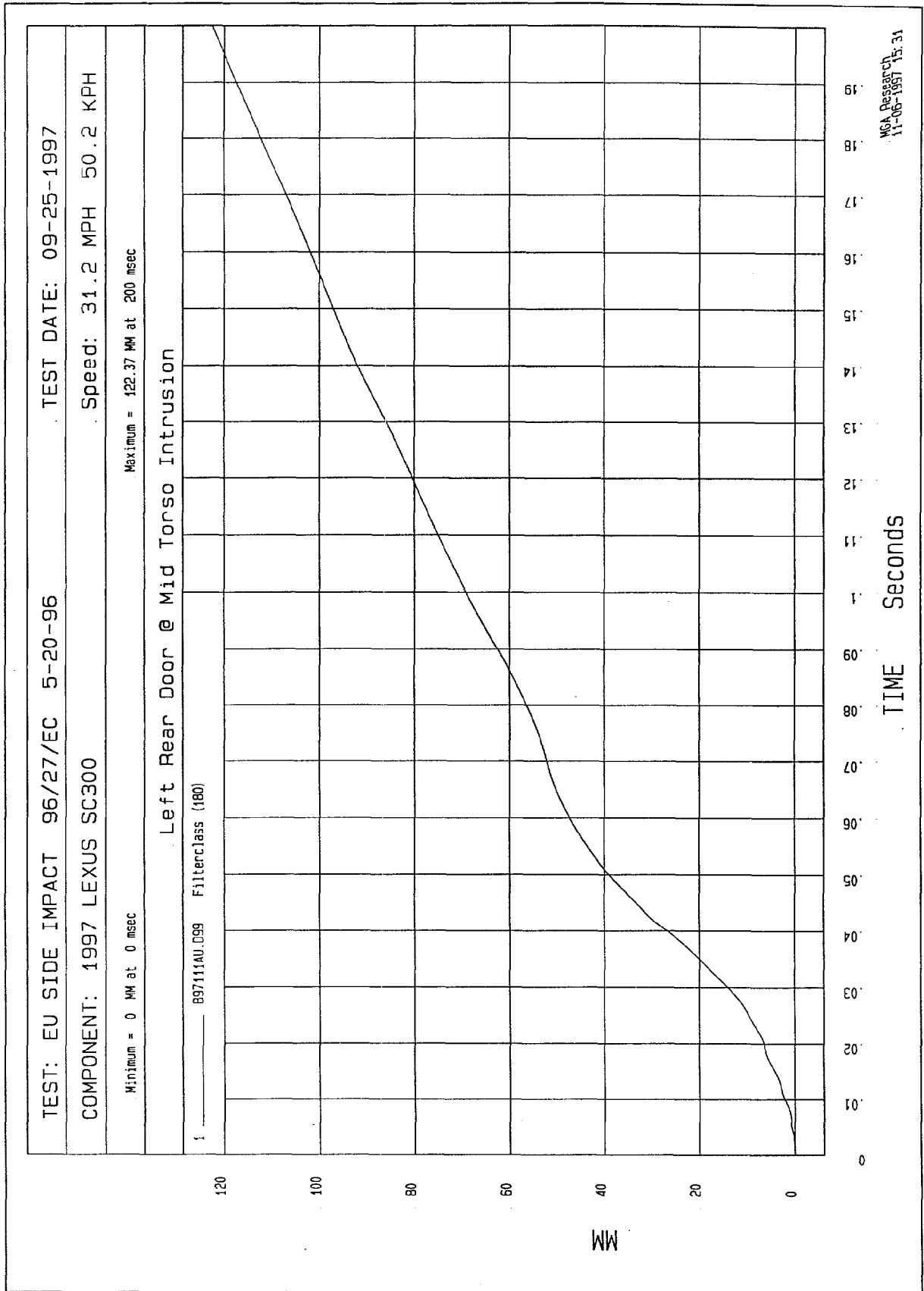
Minimum = 0 MM at 0 msec Maximum = 272.62 MM at 65 msec

Left Front Door @ Lower Torso Intrusion



MCA Research
11-06-1997 15:31





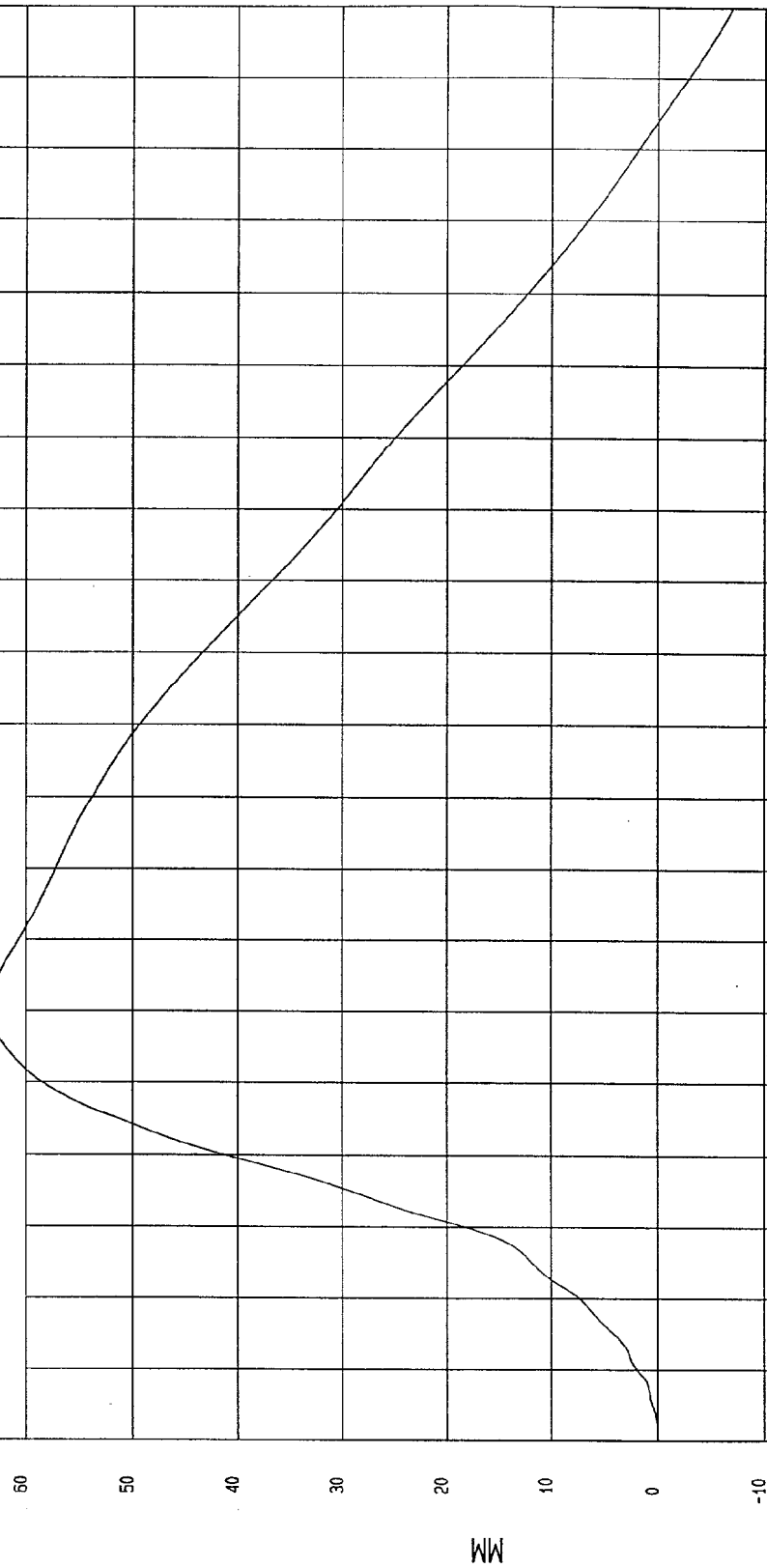
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

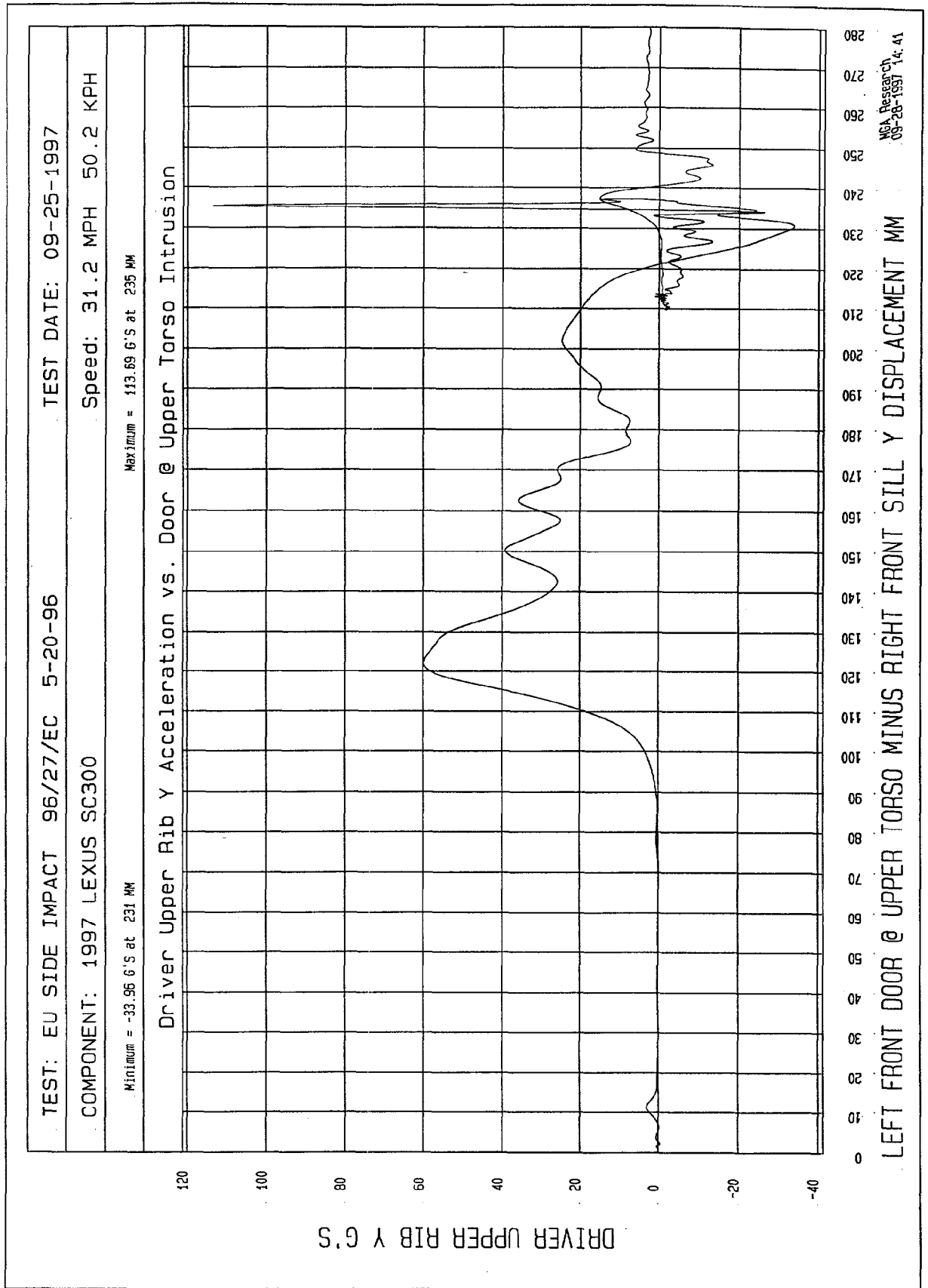
Minimum = -6.90 MM at 200 msec Maximum = 63.37 MM at 60 msec

Left Rear Door @ Lower Torso Intrusion

1 B97111AU.D10 Filterclass (180)



TIME Seconds
NSA Research
11-06-1997 12:31



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

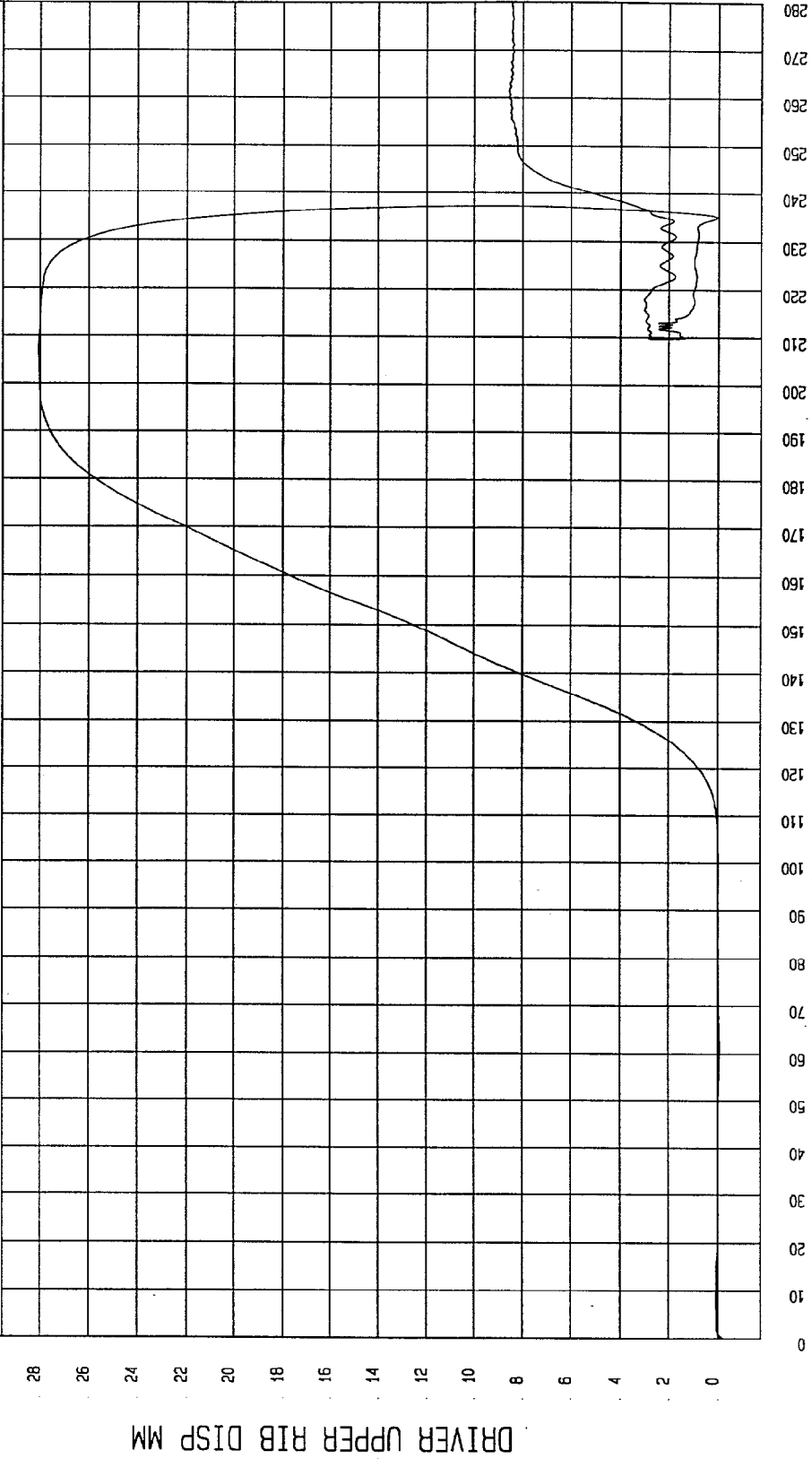
COMPONENT: 1997 LEXUS SC300

Speed: 31.2 MPH 50.2 KPH

Minimum = -28 MM at 0 MM

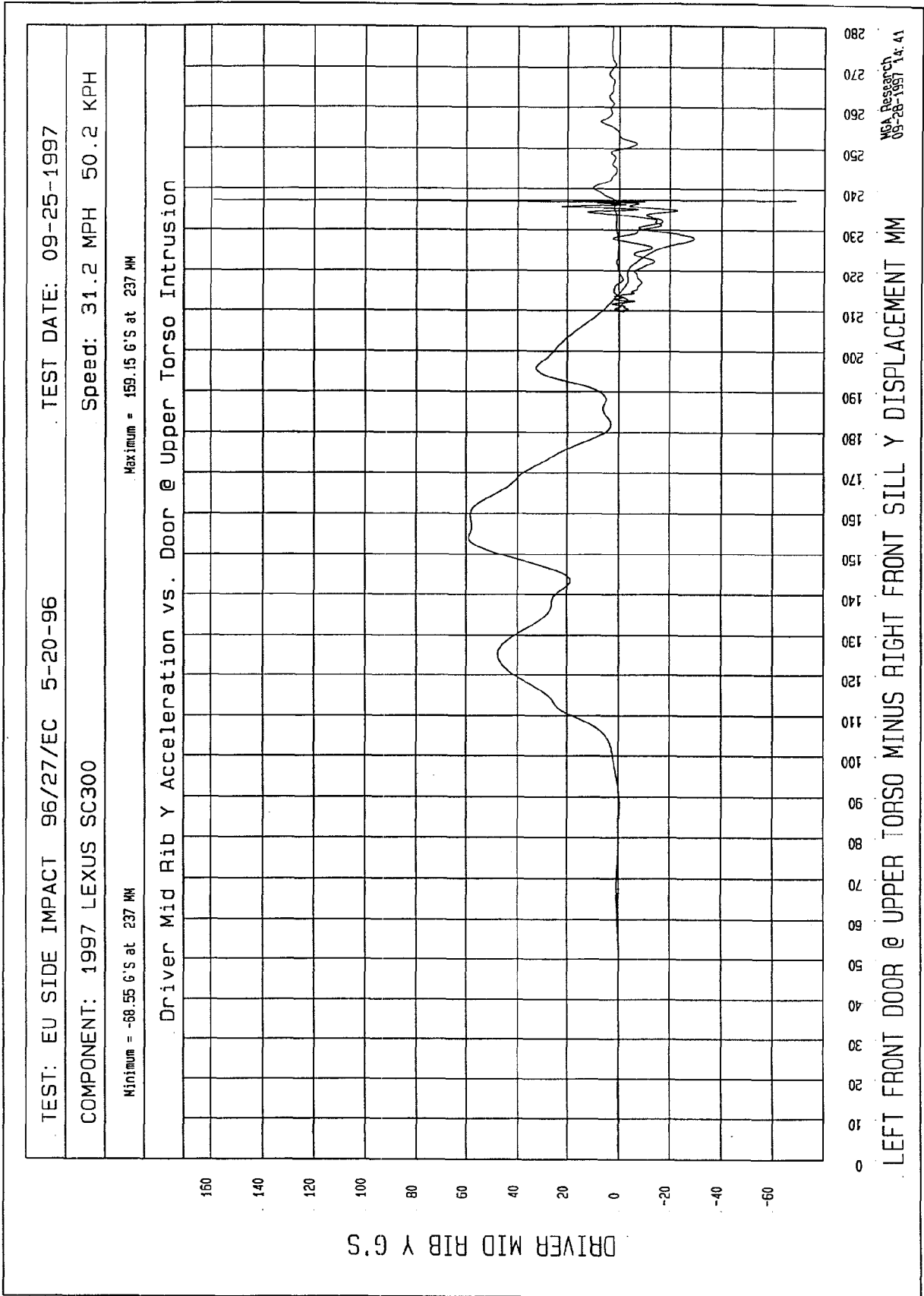
Maximum = 28.09 MM at 207 MM

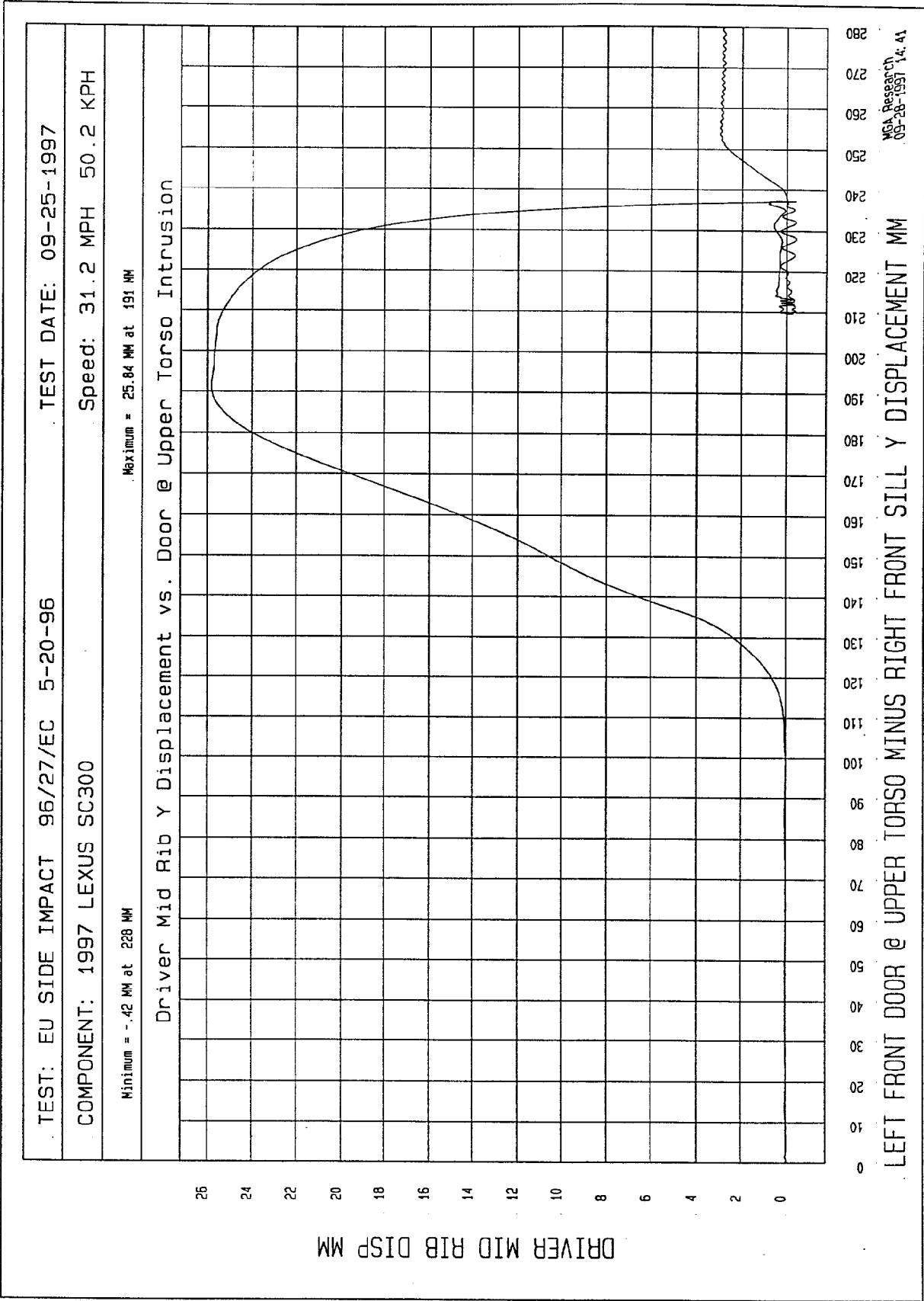
Driver Upper Rib Y Displacement vs. Door @ Upper Torso Intrusion



NCA Research
09-28-1997 14.41

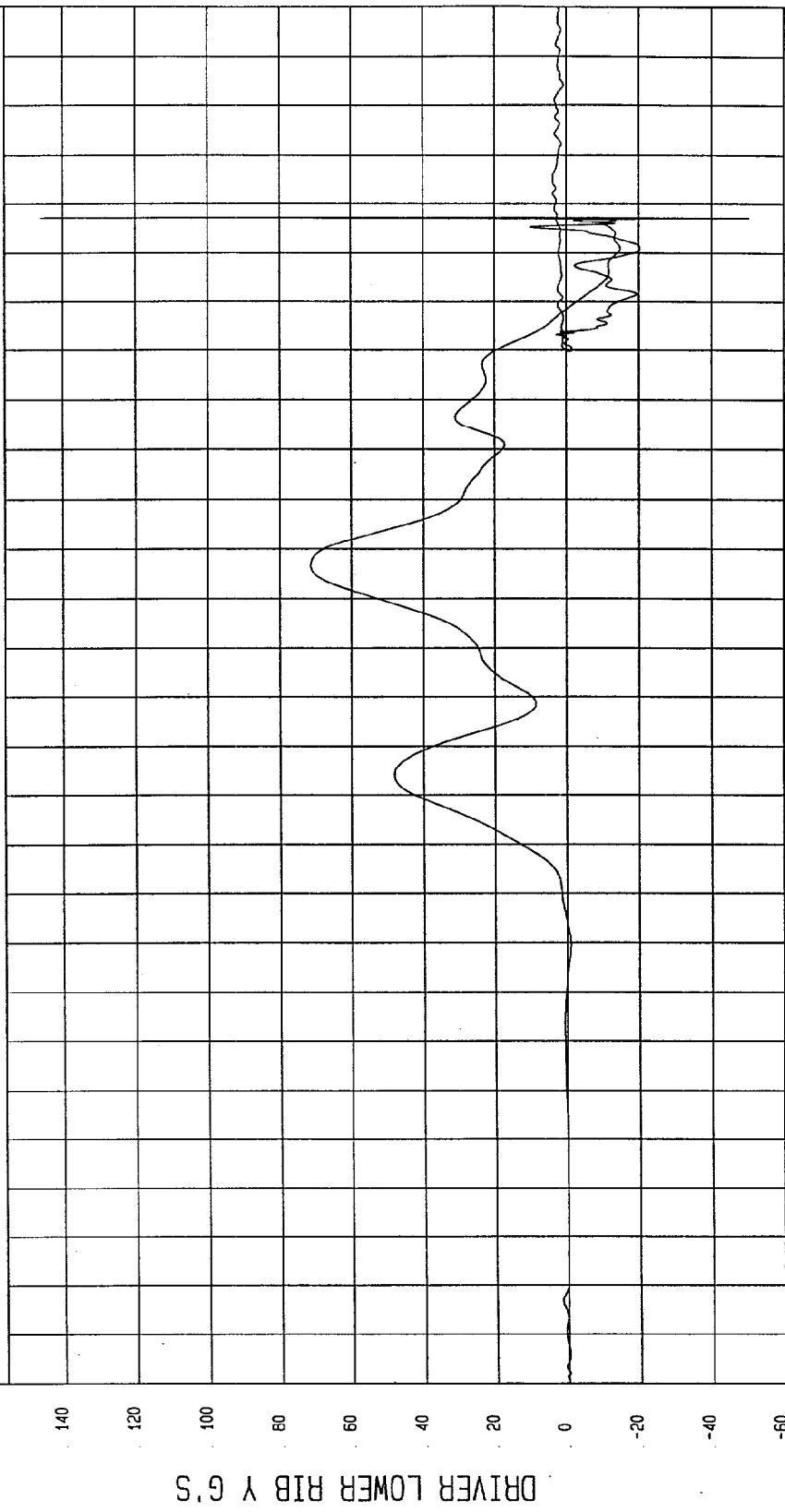
LEFT FRONT DOOR @ UPPER TORSO MINUS RIGHT FRONT SILL Y DISPLACEMENT MM





TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH
Minimum = -50.46 G'S at 237 MM Maximum = 146.20 G'S at 237 MM

Driver Lower Rib Y Acceleration vs. Door @ Upper Torso Intrusion



LEFT FRONT DOOR @ UPPER TORSO MINUS RIGHT FRONT SILL Y DISPLACEMENT MM

NCA Research
09-28-1997 14: 41

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

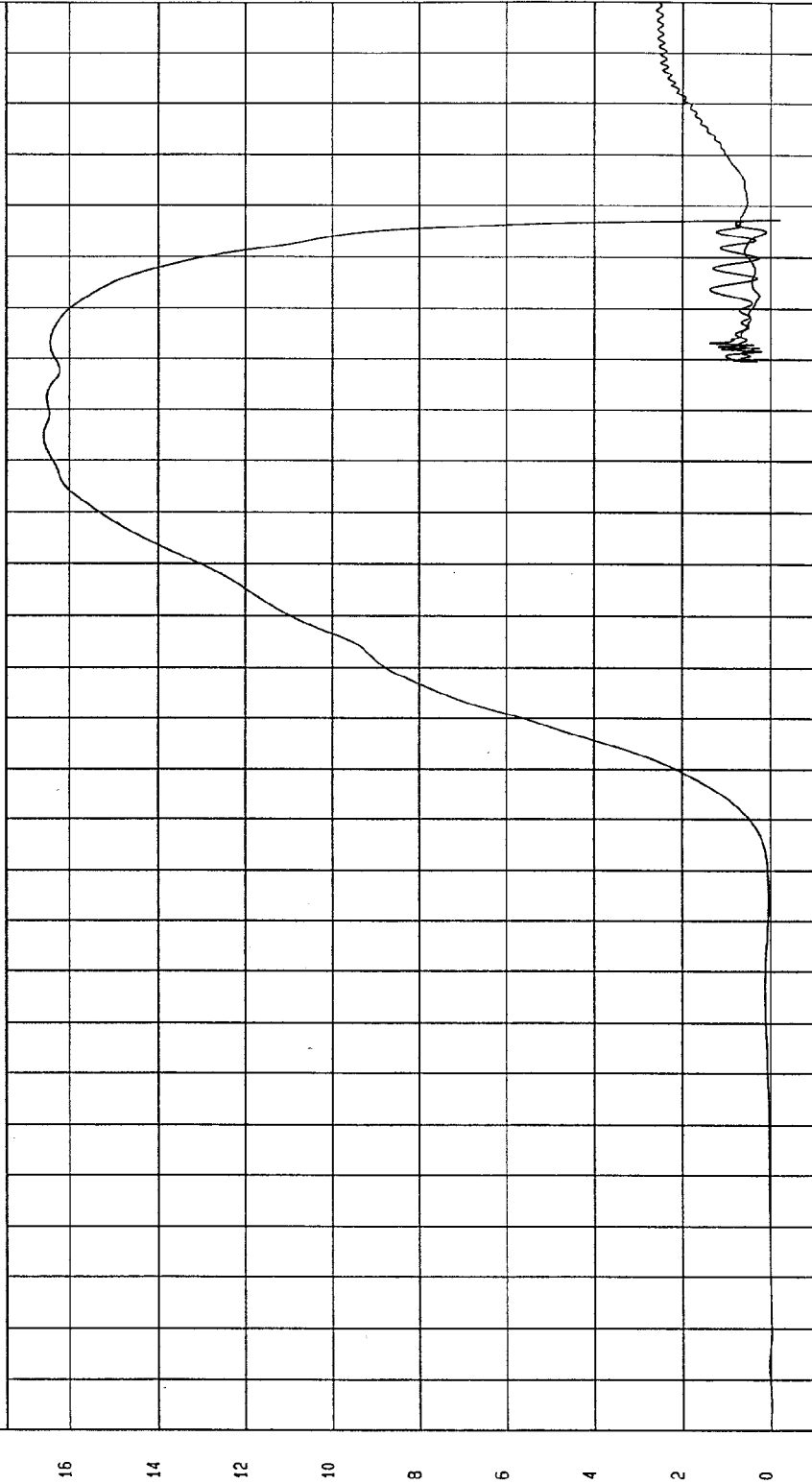
COMPONENT: 1997 LEXUS SC300

Minimum = -.20 MM at 237 MM

Maximum = 16.60 MM at 195 MM

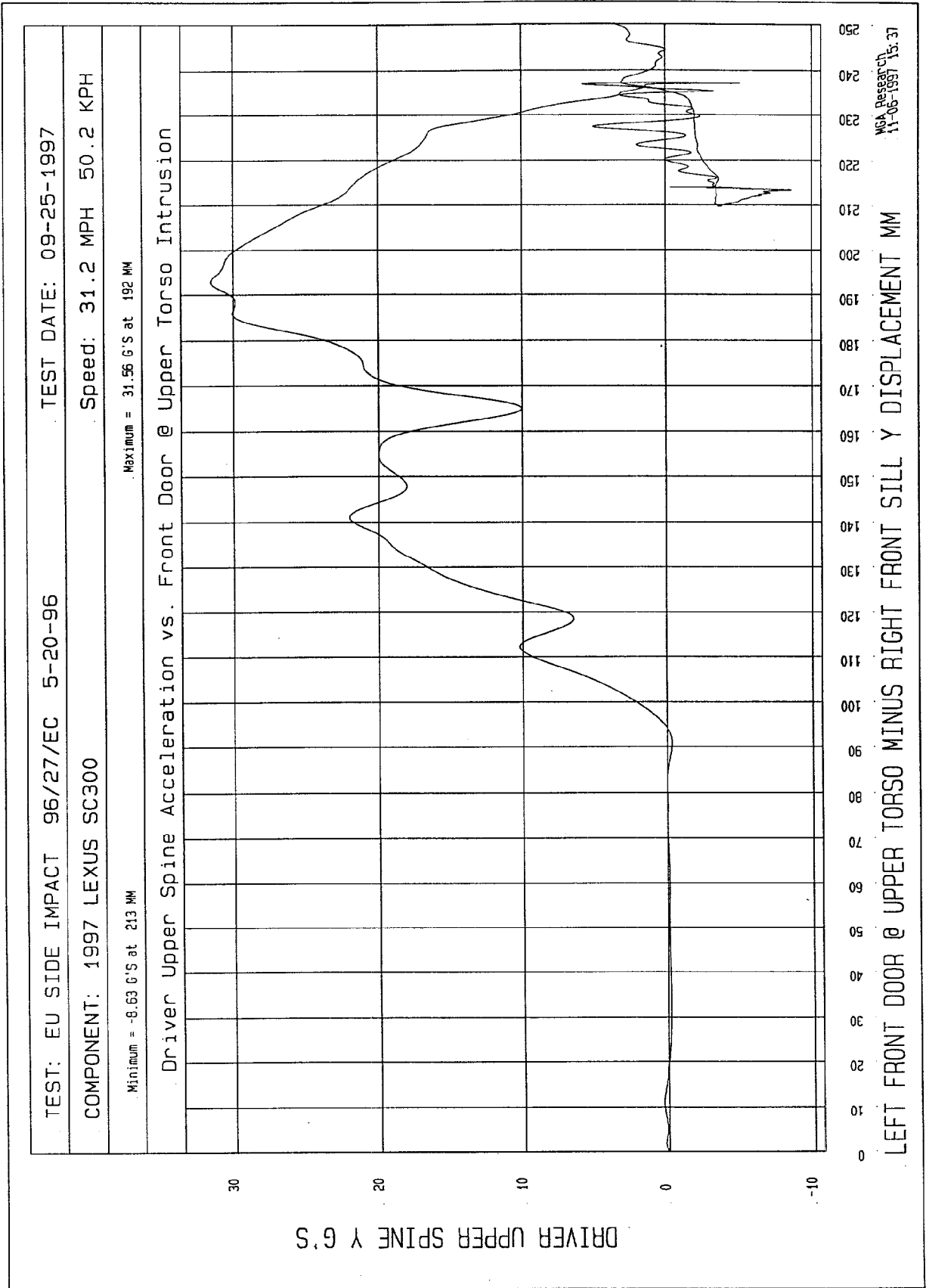
Driver Lower Rib Y Displacement vs. Door @ Upper Torso Intrusion

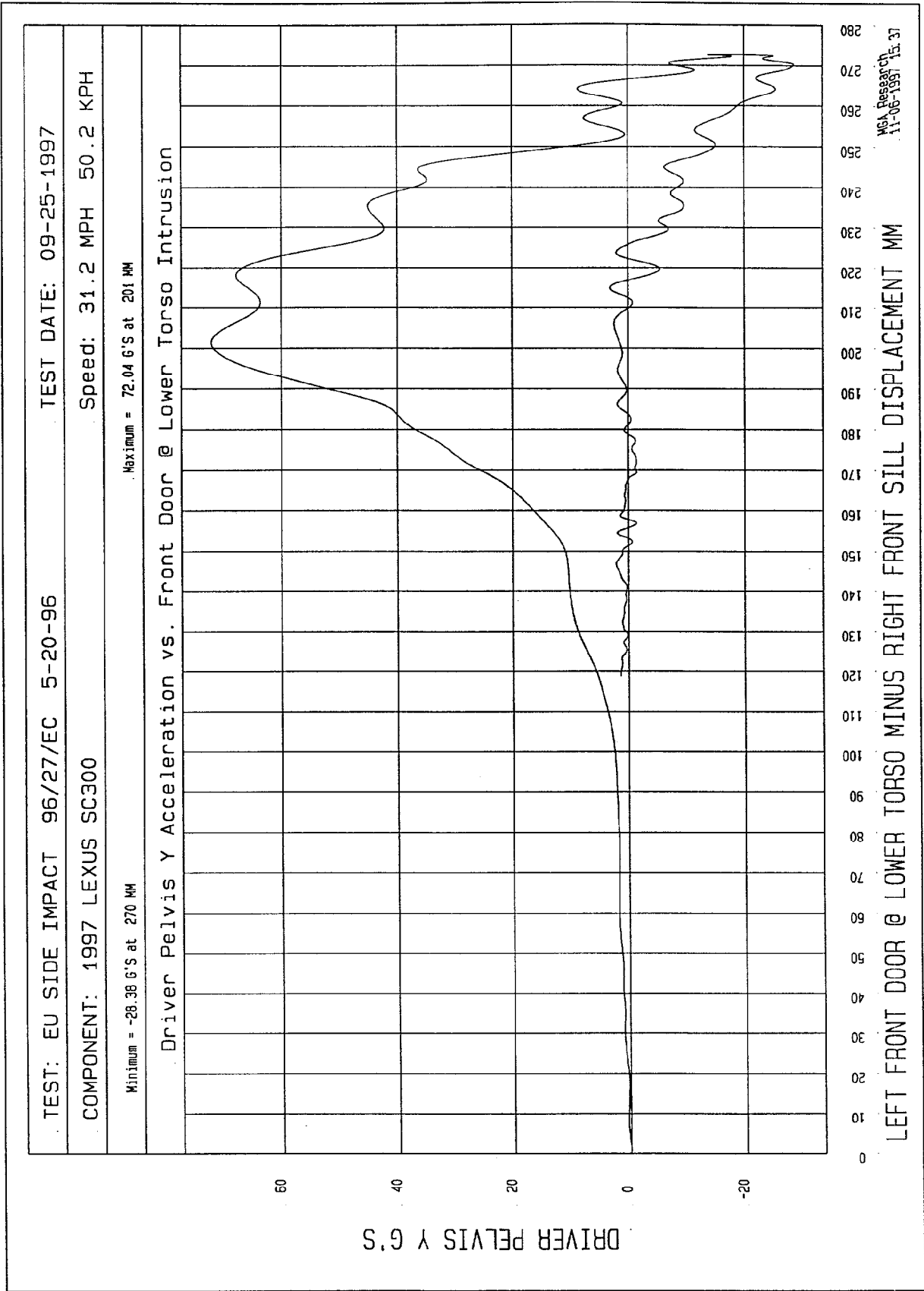
DRIVER LOWER RIB DISP MM

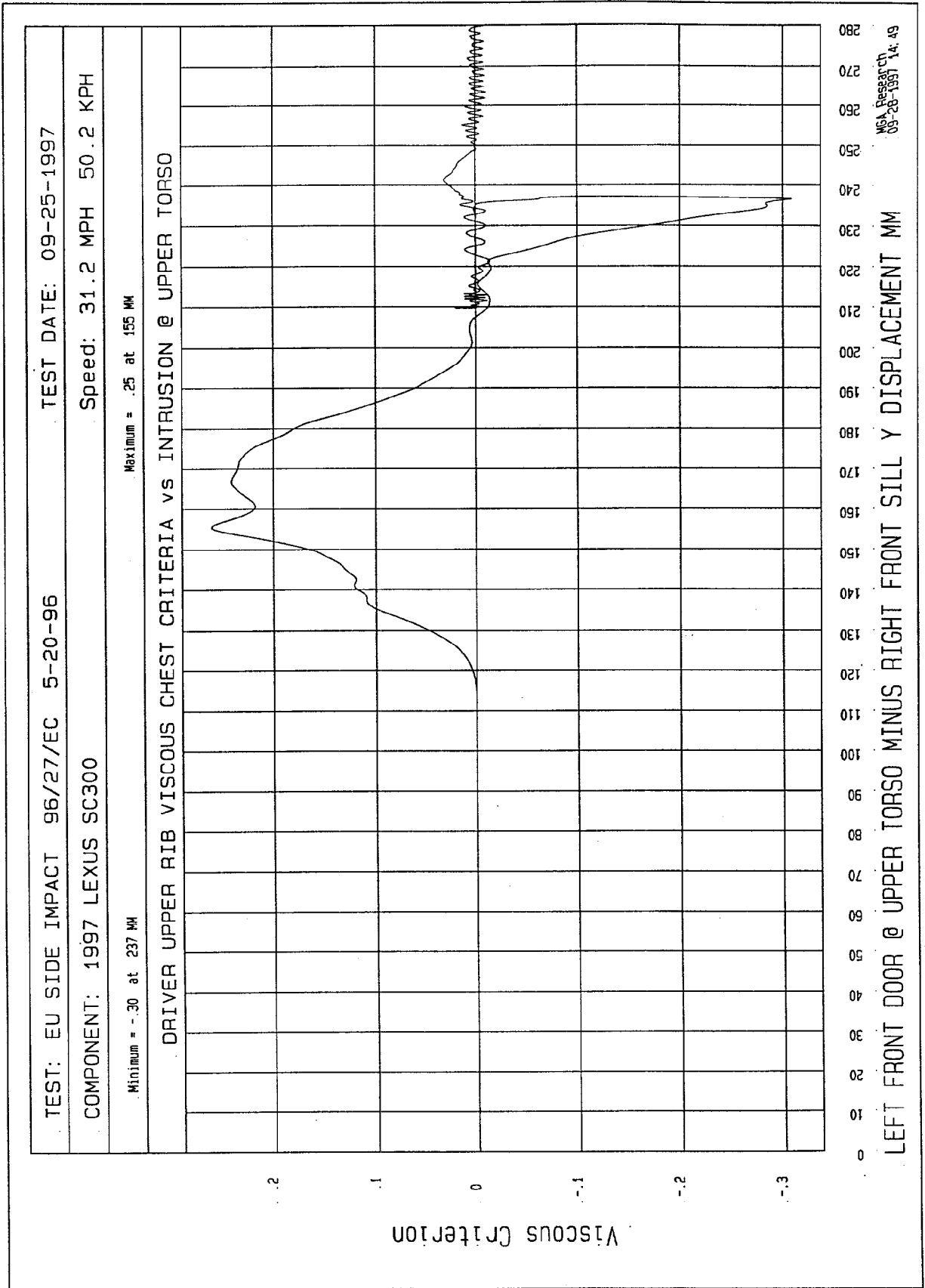


LEFT FRONT DOOR @ UPPER TORSO MINUS RIGHT FRONT SILL Y DISPLACEMENT MM

NSA Research
09-28-1997 14:56







TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

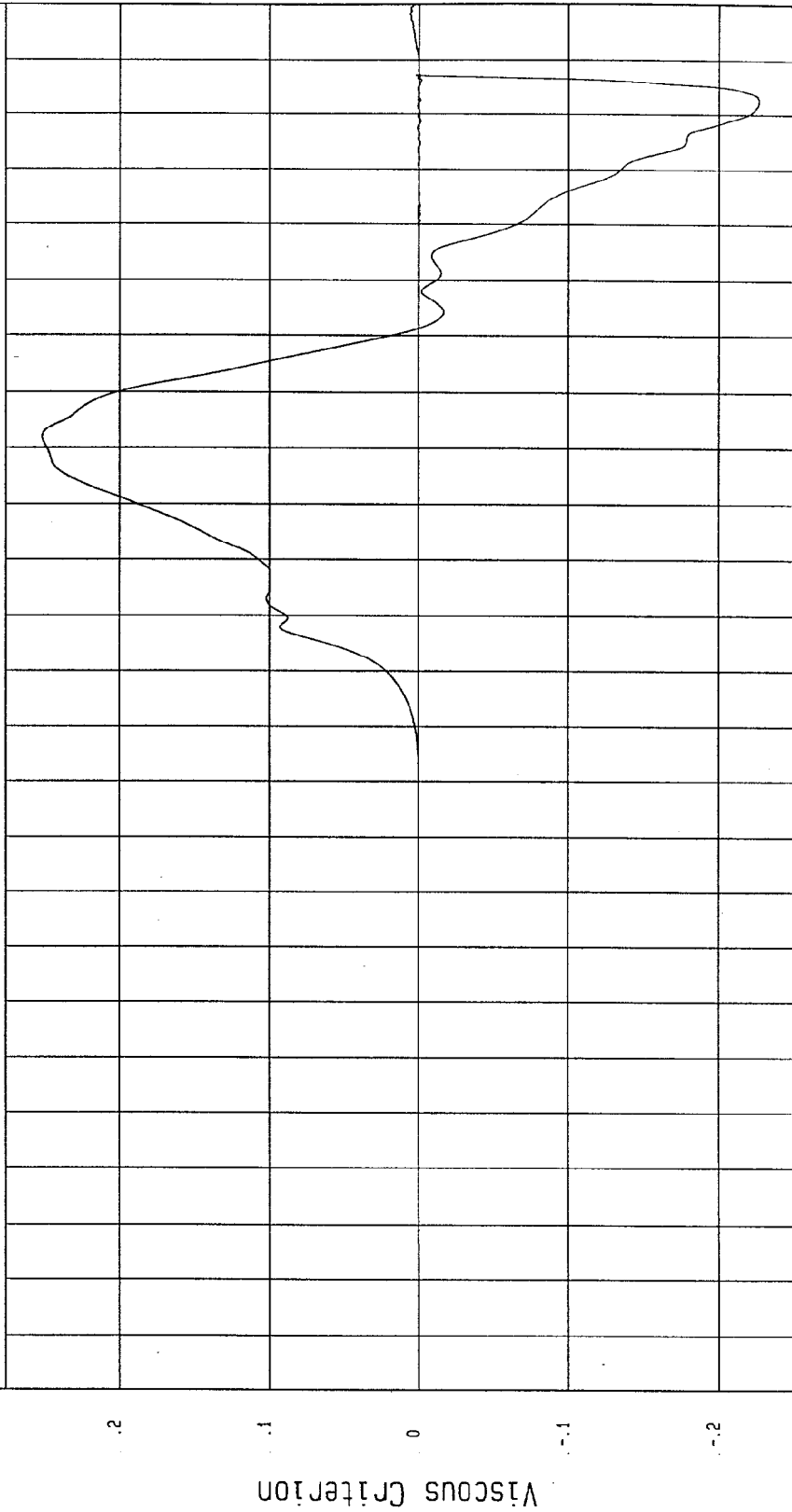
COMPONENT: 1997 LEXUS SC300

Speed: 31.2 MPH 50.2 KPH

Minimum = -.22 at 233 MM

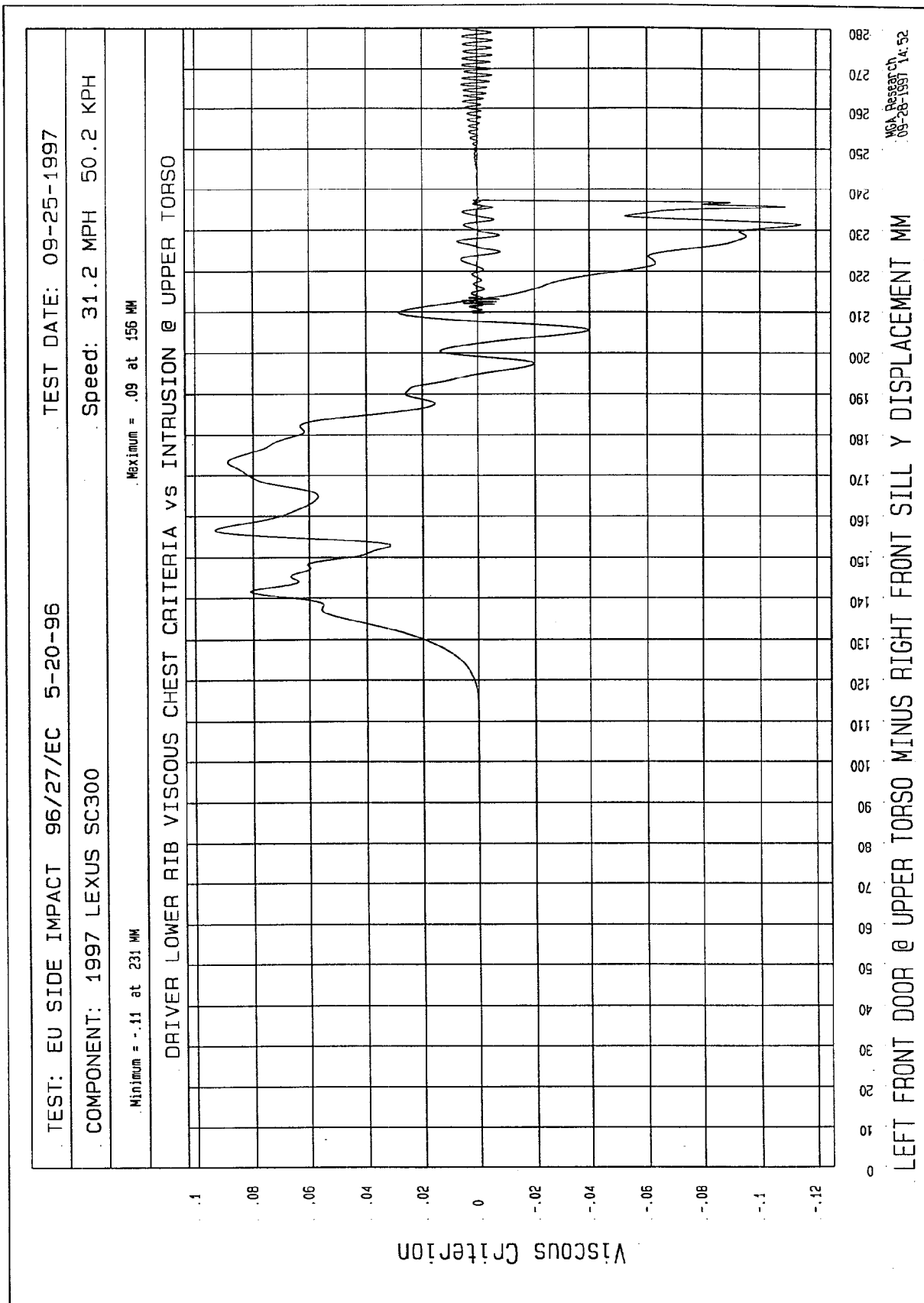
Maximum = .25 at 171 MM

Driver Mid Rib Y Viscous Criteria vs. Front Door @ Upper Torso Intrusion



MGA Research
11-06-1997 15:37

LEFT FRONT DOOR @ UPPER TORSO MINUS RIGHT FRONT SILL Y DISPLACEMENT MM



TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

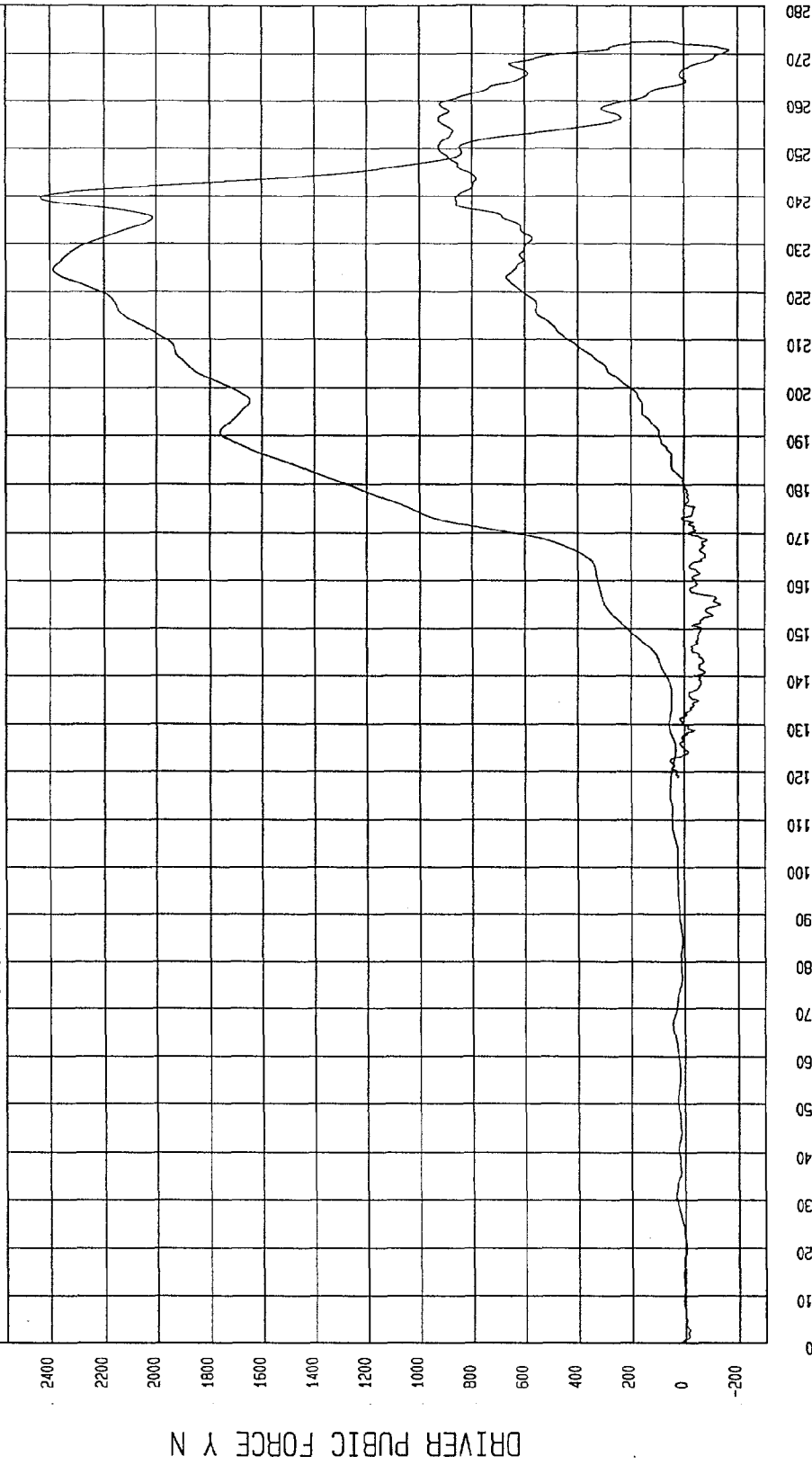
SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

Minimum = -167.83 N at 271 MM

Maximum = 2436.47 N at 239 MM

Driver Pubic Symphysis Force vs. Front Door @ Lower Torso Intrusion



LEFT FRONT DOOR @ LOWER TORSO MINUS RIGHT FRONT SILL DISPLACEMENT MM

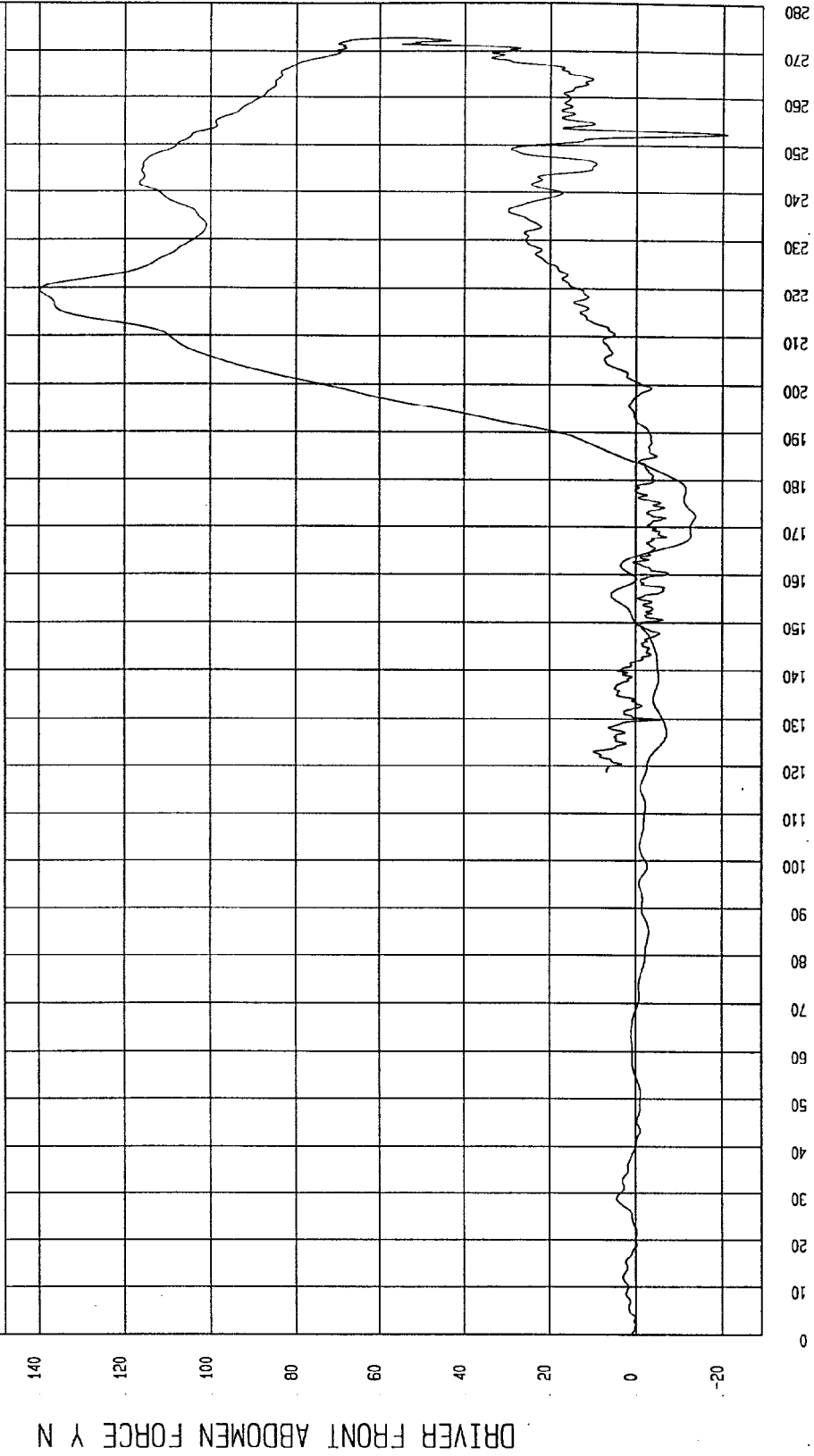
MGA Research
11-06-1997 15:37

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -21.04 N at 253 MM Maximum = 139.83 N at 219 MM

Driver Front Abdomen Force vs. Door @ Lower Torso Intrusion



LEFT FRONT DOOR @ LOWER TORSO MINUS RIGHT FRONT SILL DISPLACEMENT MM

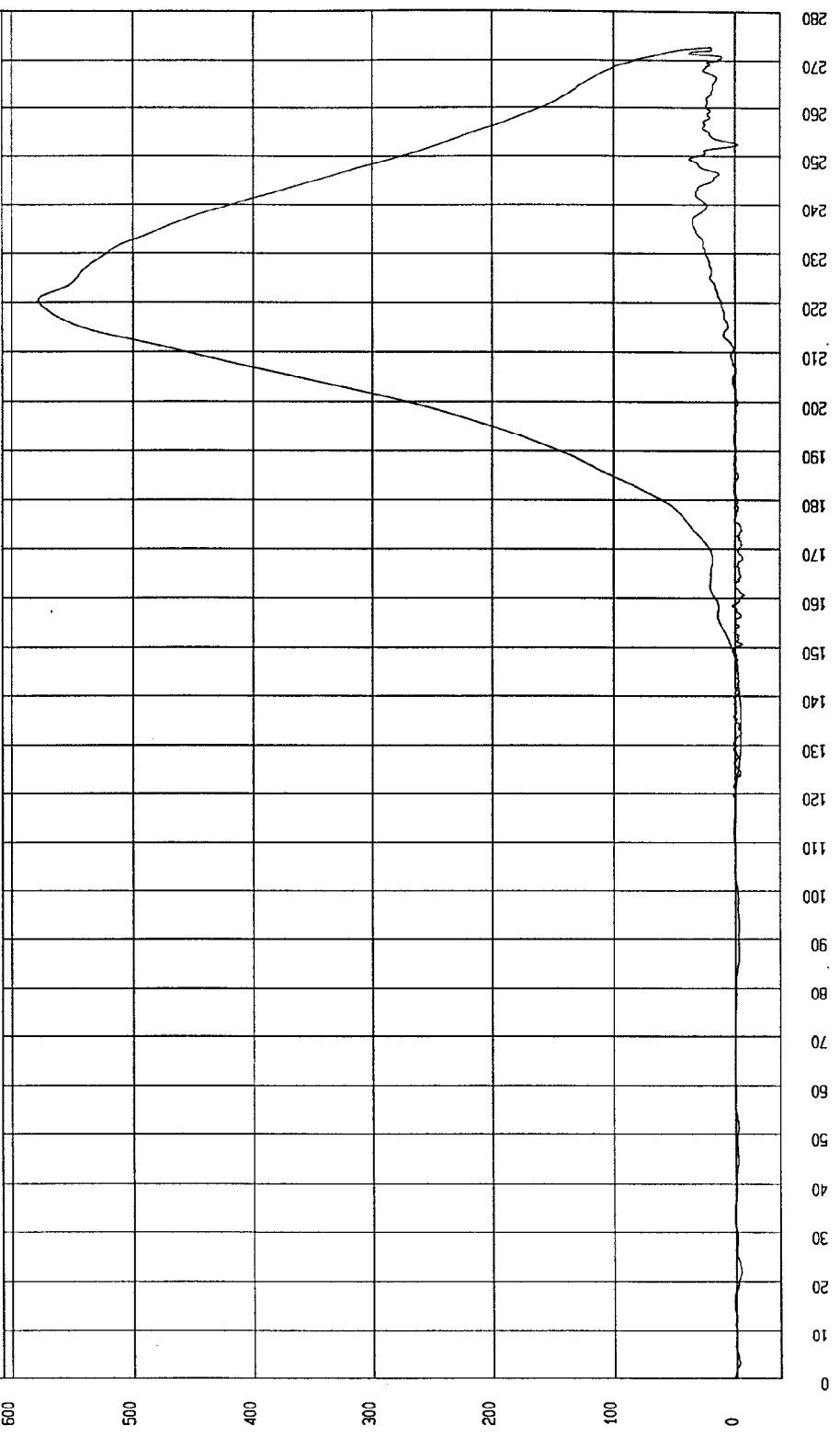
ME Research
09-28-1997 14.42

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

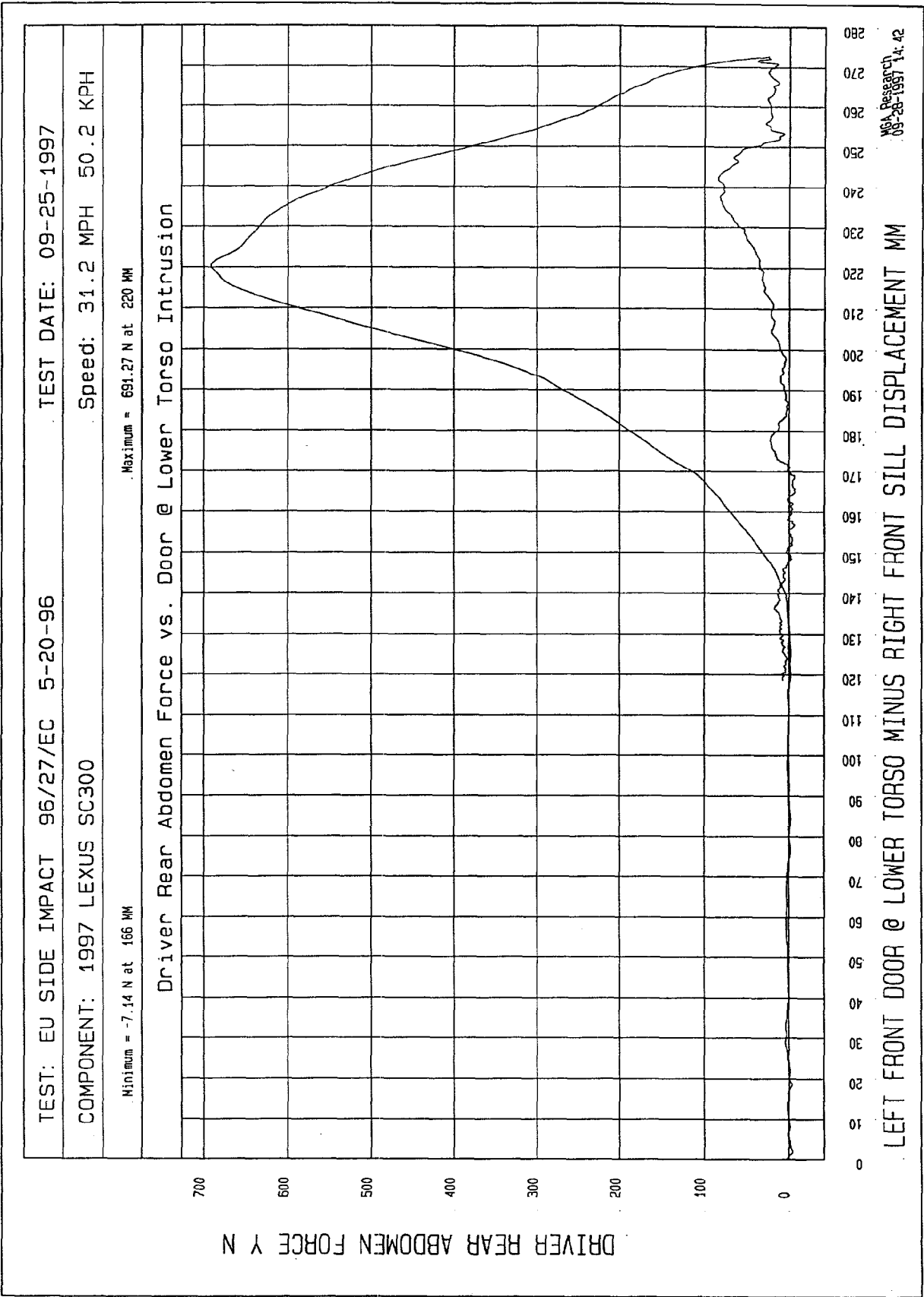
Minimum = -7.22 N at 161 MM Maximum = 578.53 N at 220 MM

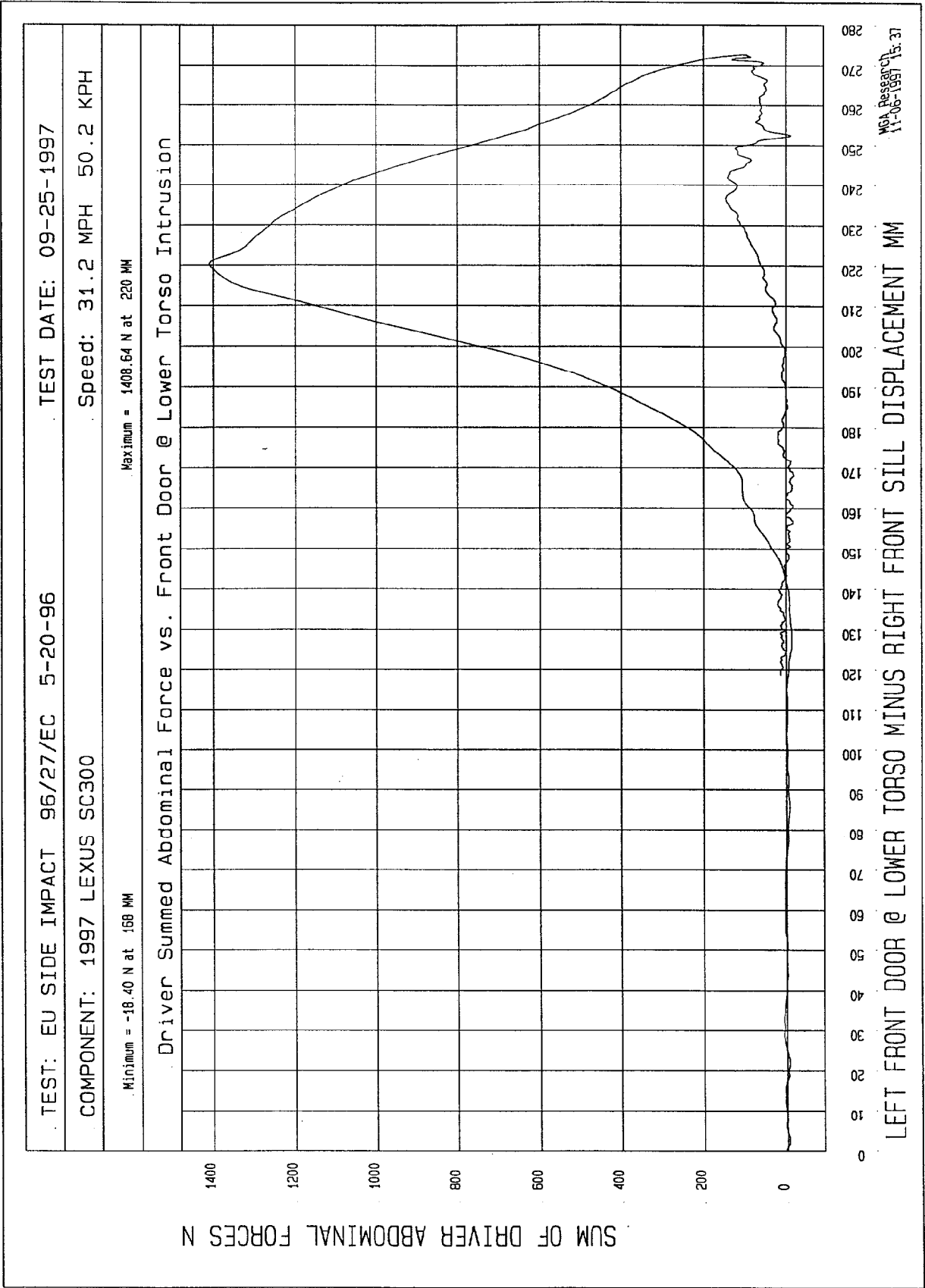
Driver Mid Abdomen Force vs. Door @ Lower Torso Intrusion



LEFT FRONT DOOR @ LOWER TORSO MINUS RIGHT FRONT SILL DISPLACEMENT MM

MCA Research
09-28-1997 14:42

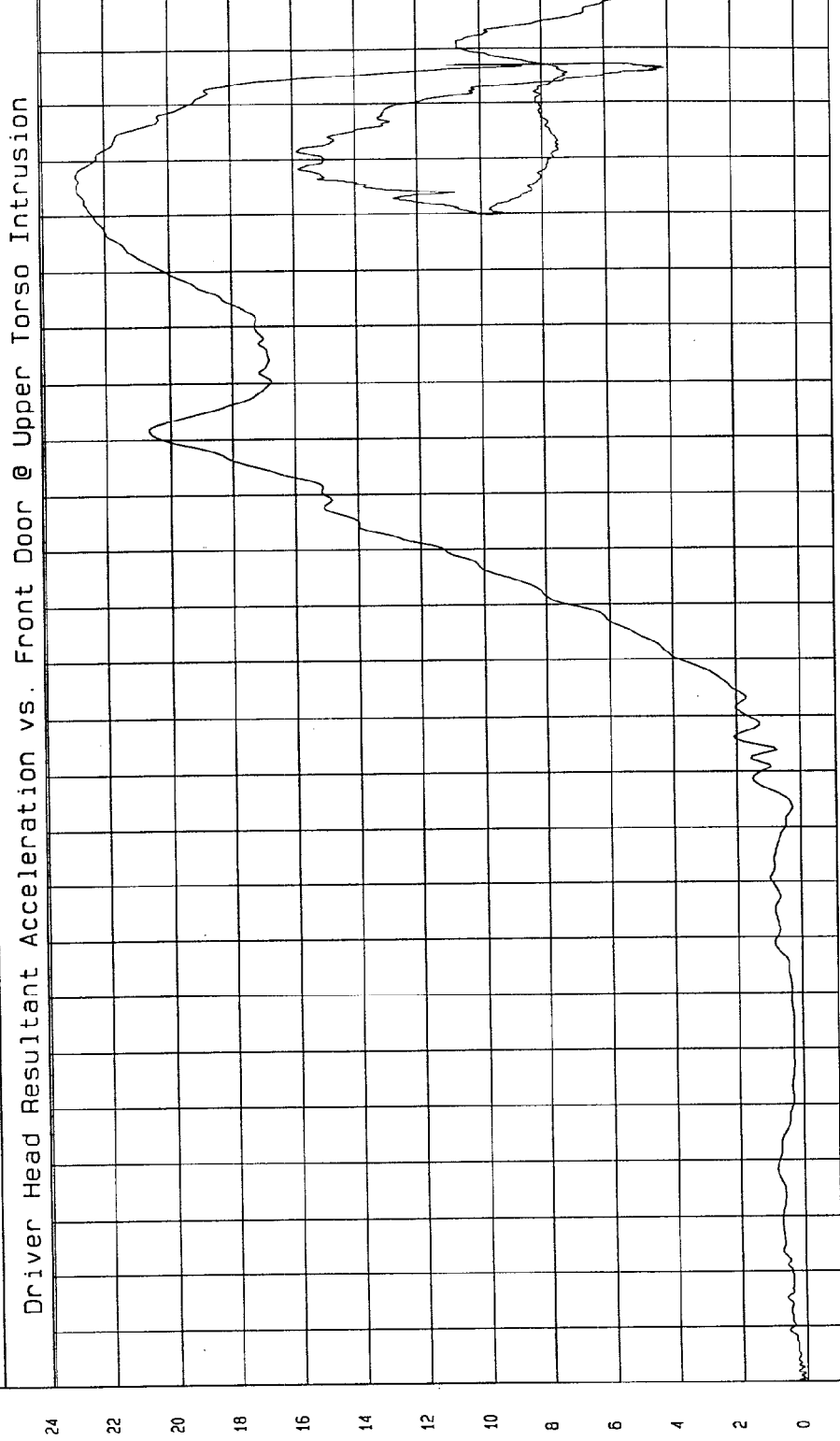




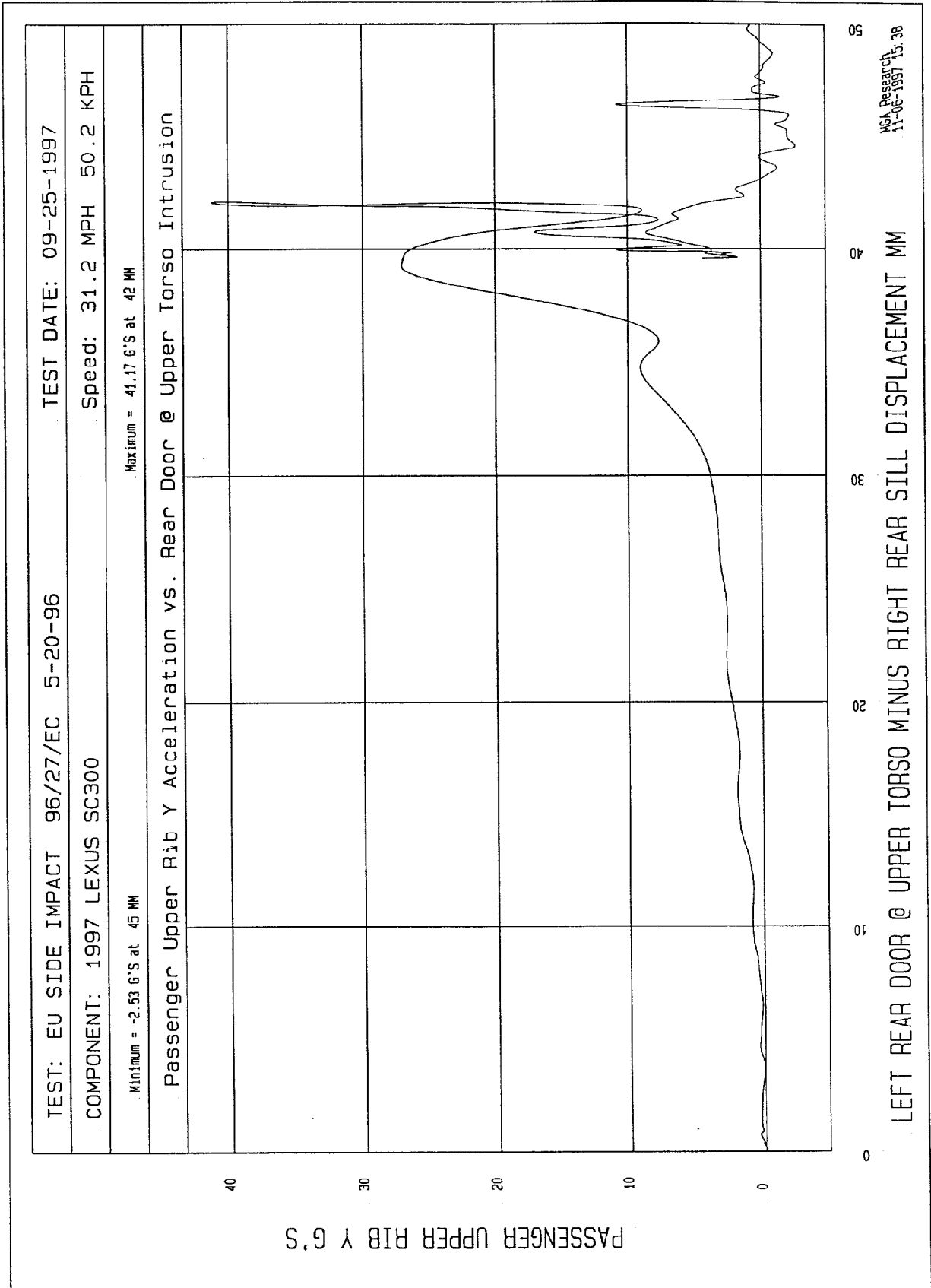
TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

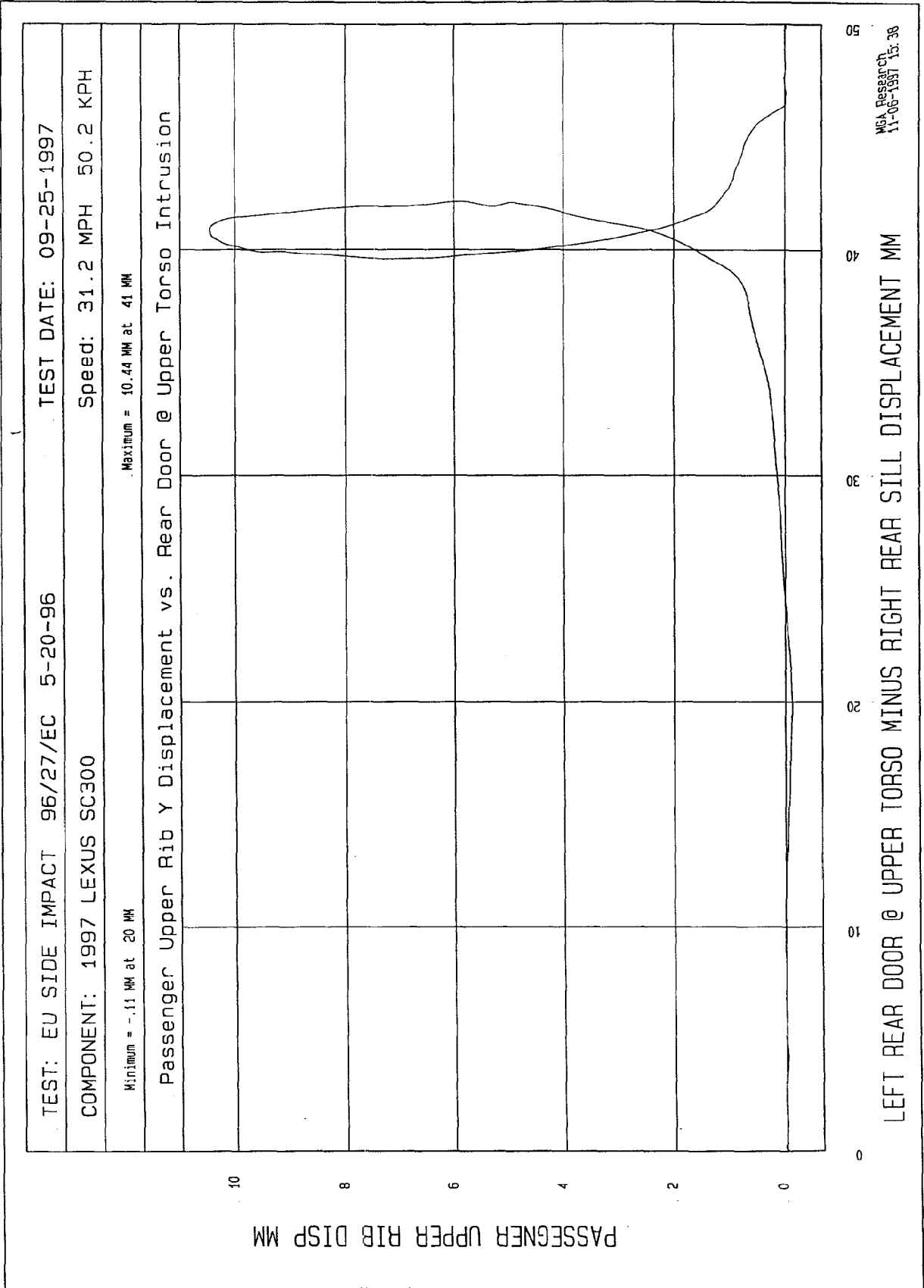
COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

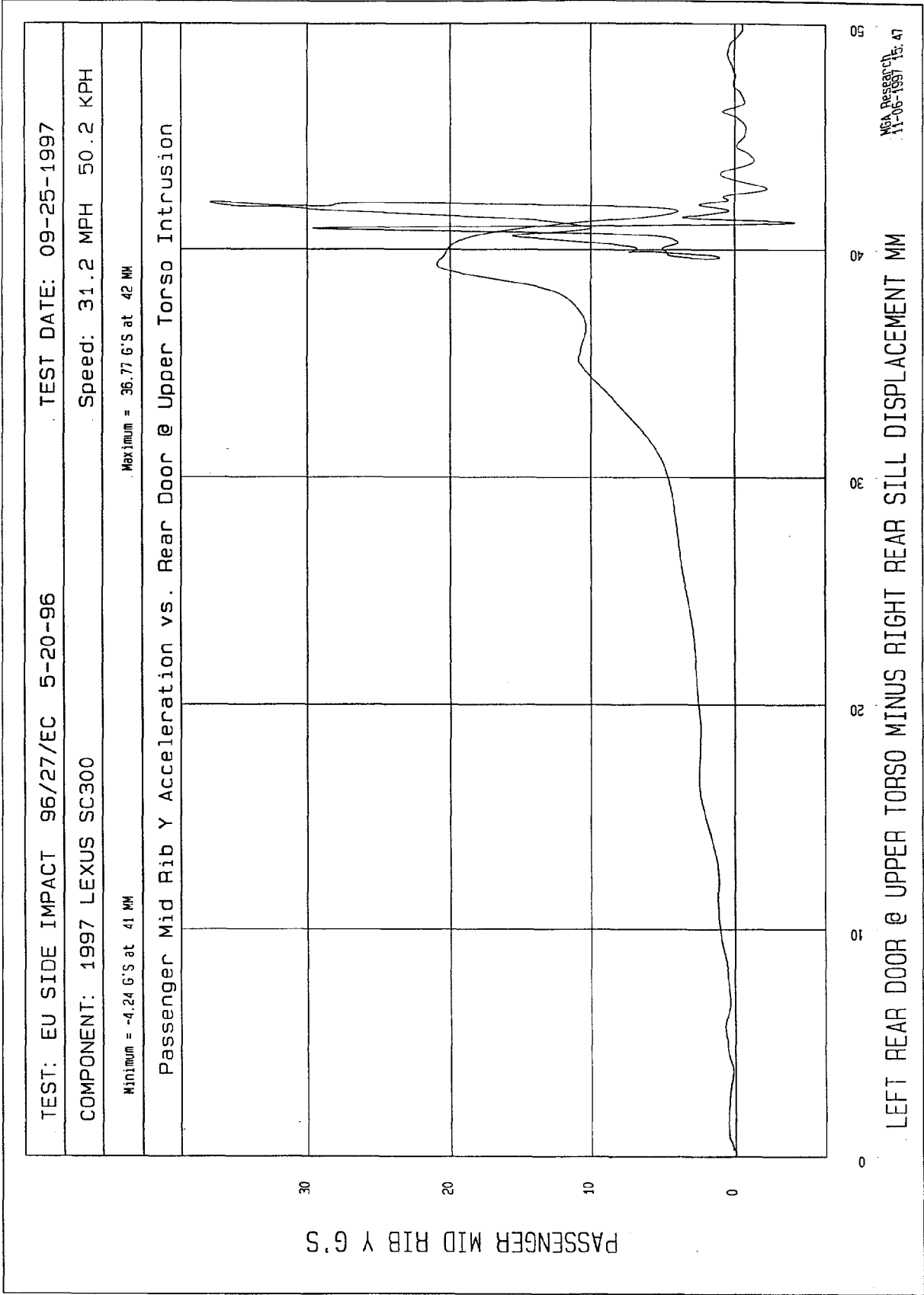
Minimum = 1.87E-02 G'S at 0 MM Maximum = 22.99 G'S at 217 MM

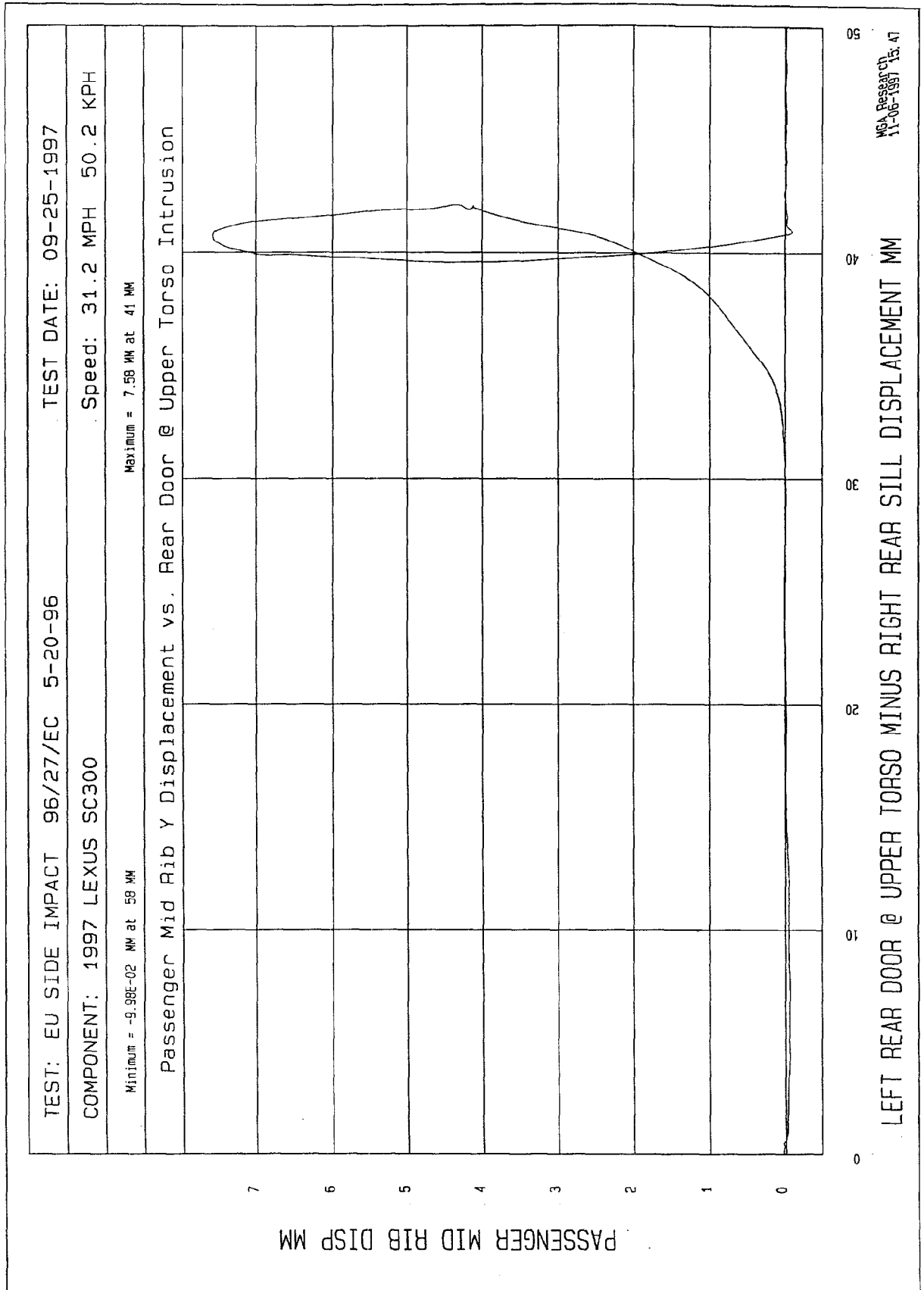


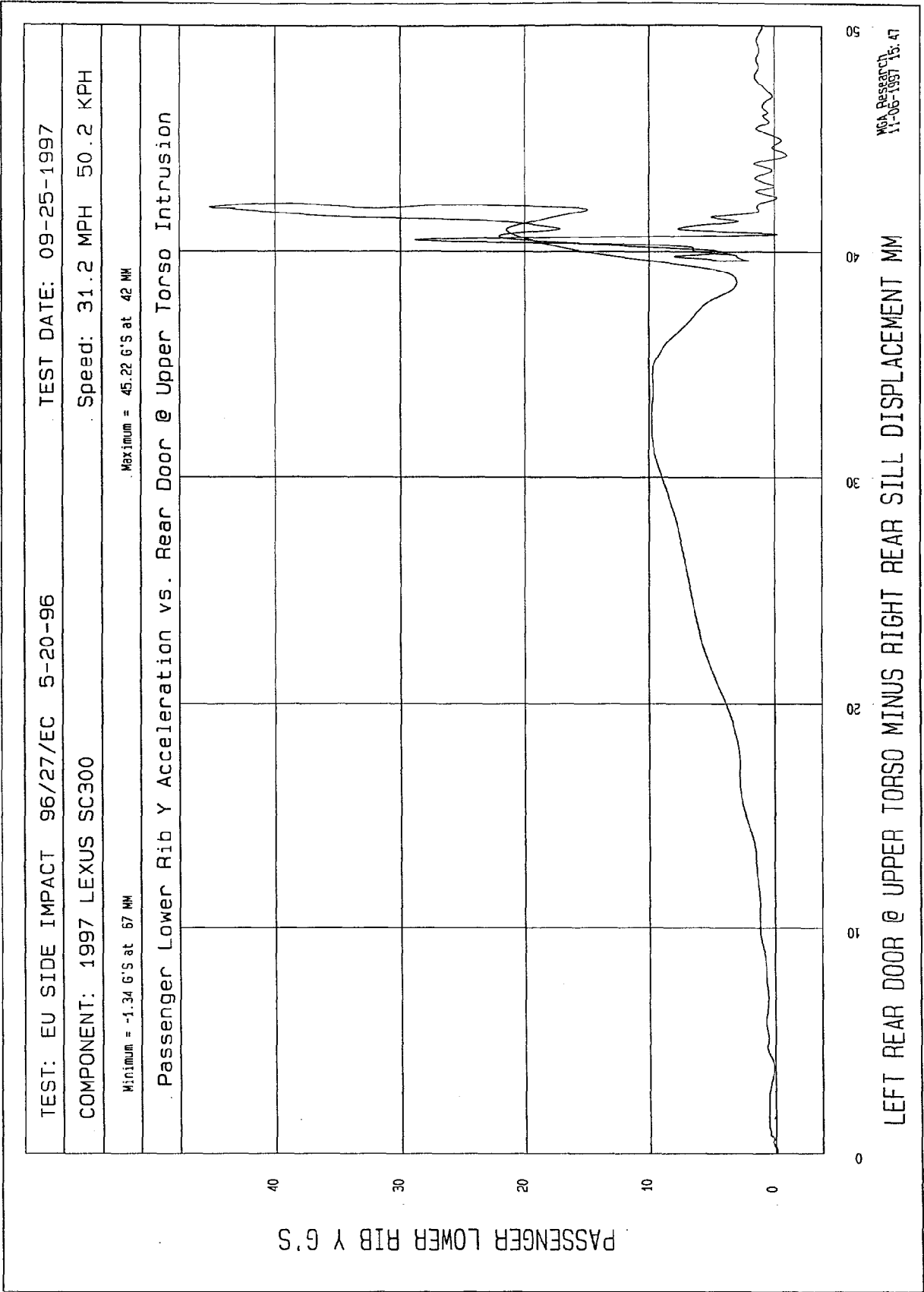
WCA Research
11-06-1997 15: 37









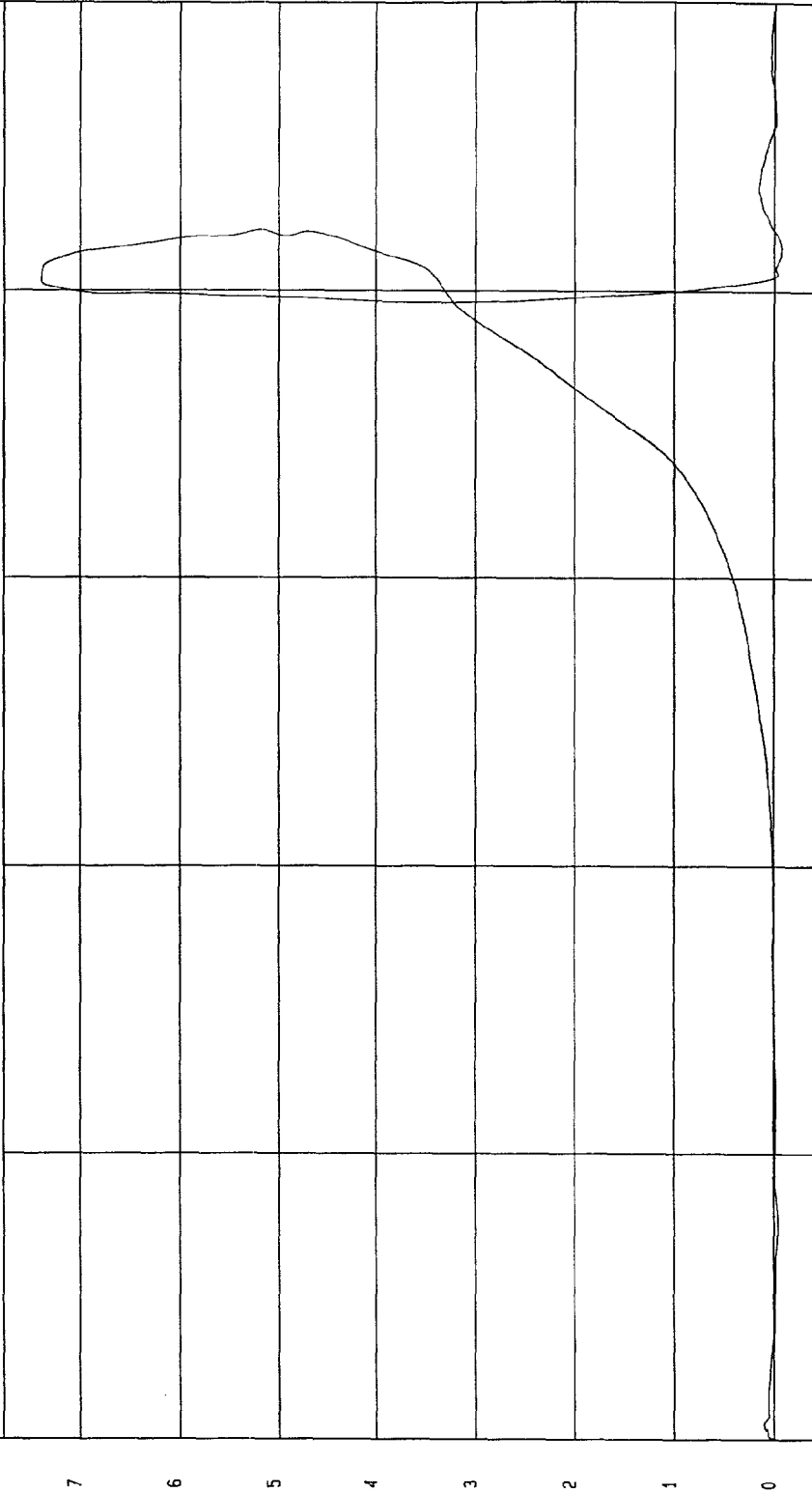


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.07 MM at 41 MM Maximum = 7.38 MM at 40 MM

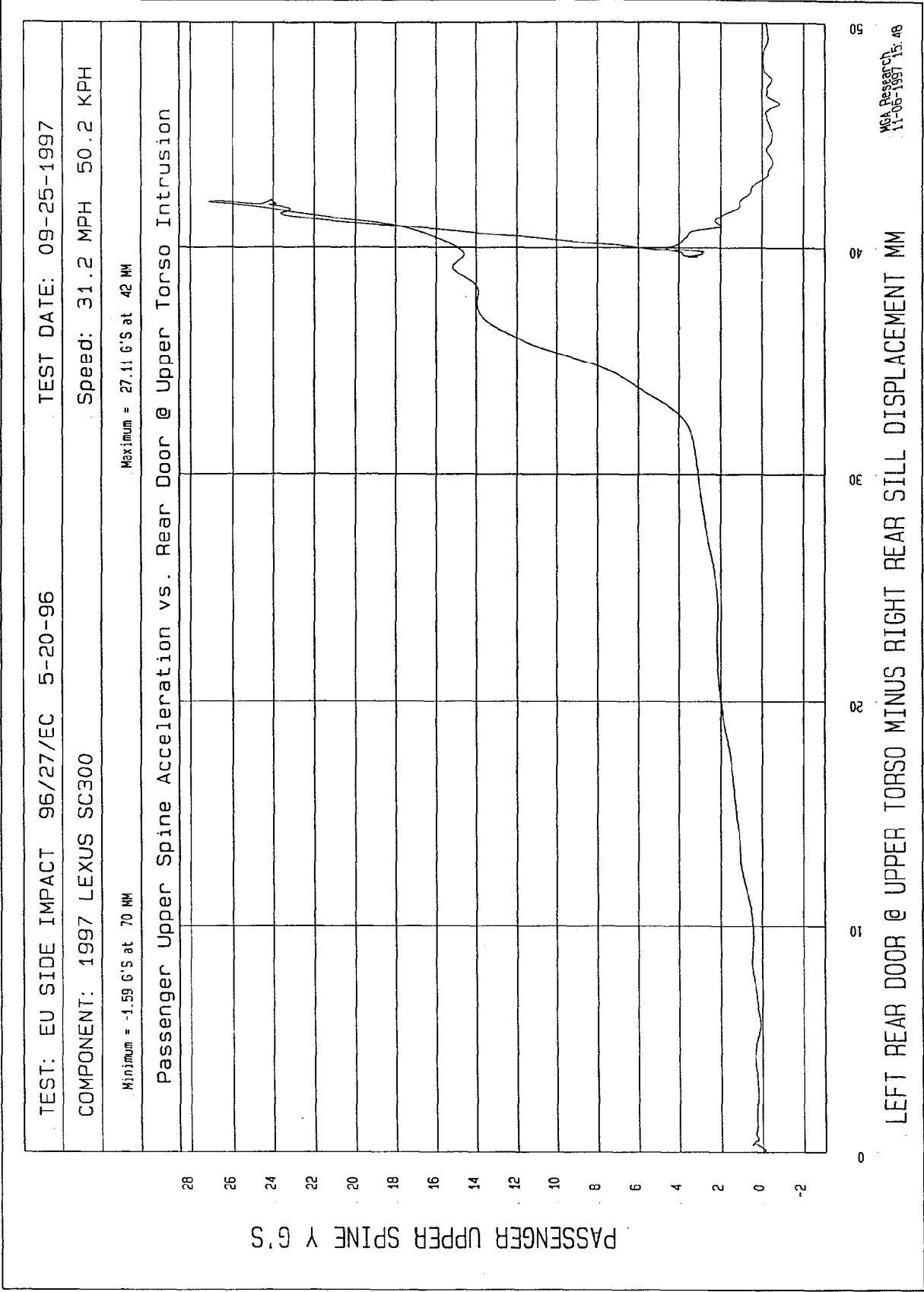
Passenger Lower Rib Y Displacement vs. Rear Door @ Upper Torso Intrusion

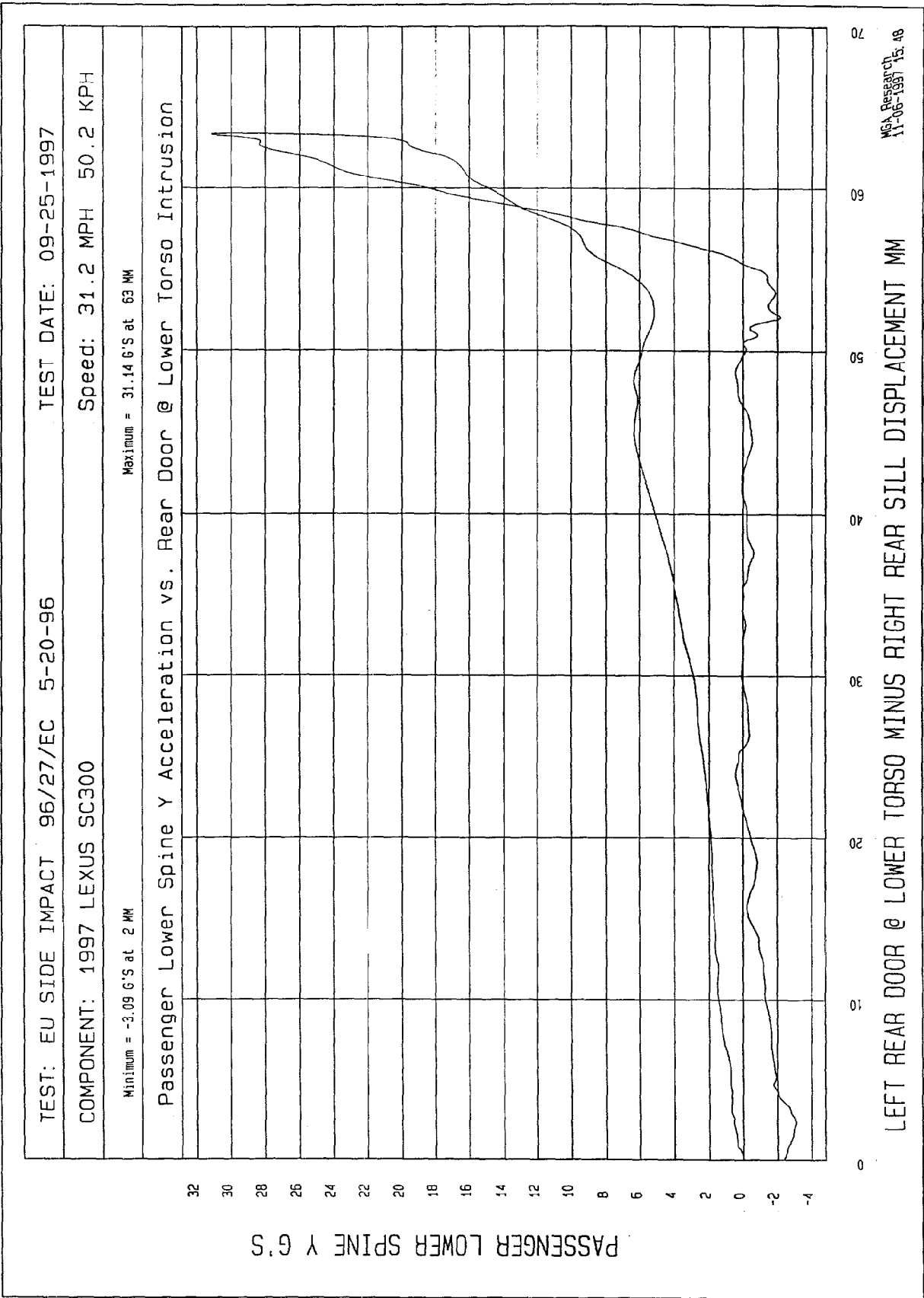


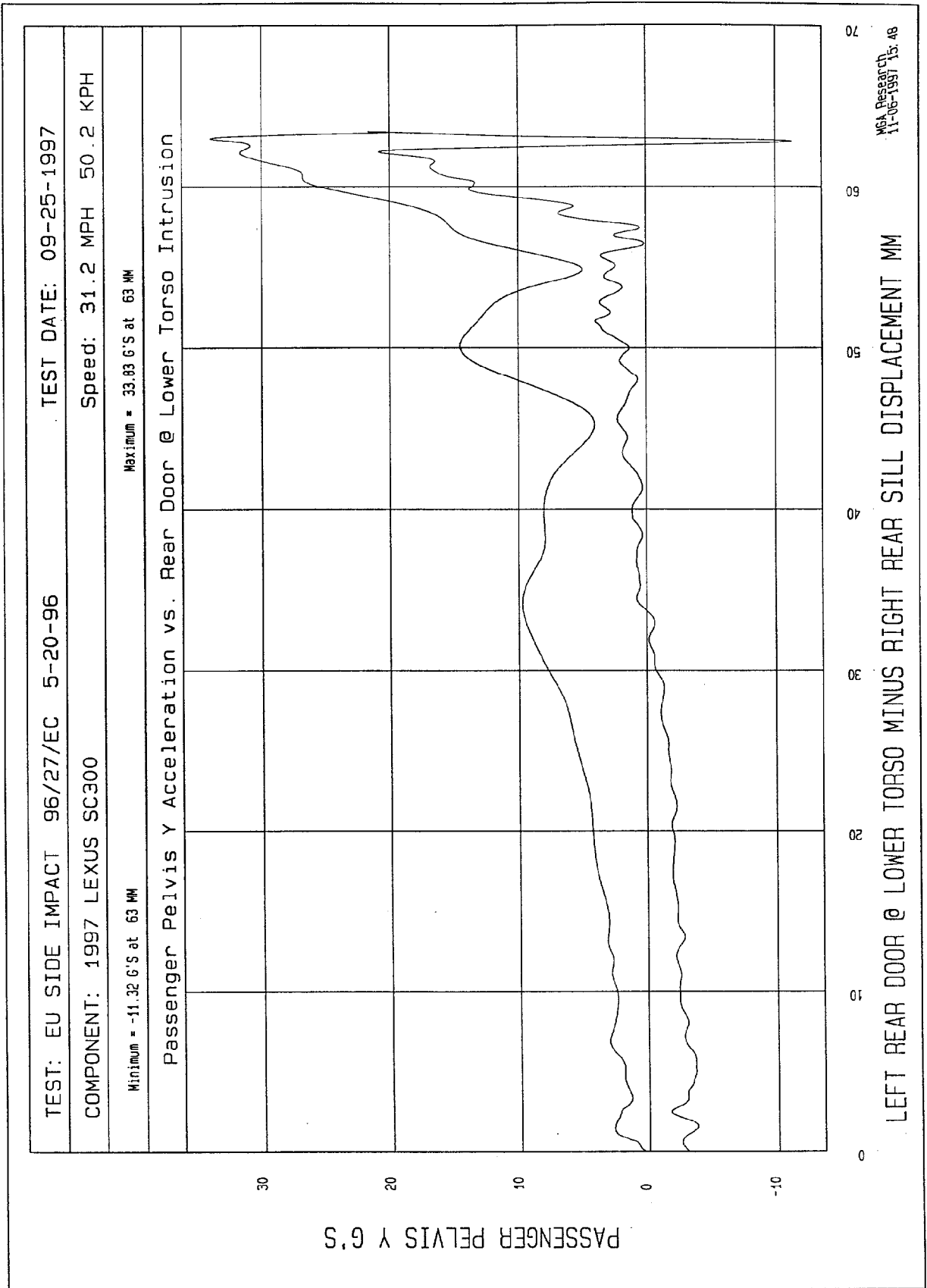
0 10 20 30 40 50

LEFT REAR DOOR @ UPPER TORSO MINUS RIGHT REAR SILL DISPLACEMENT MM

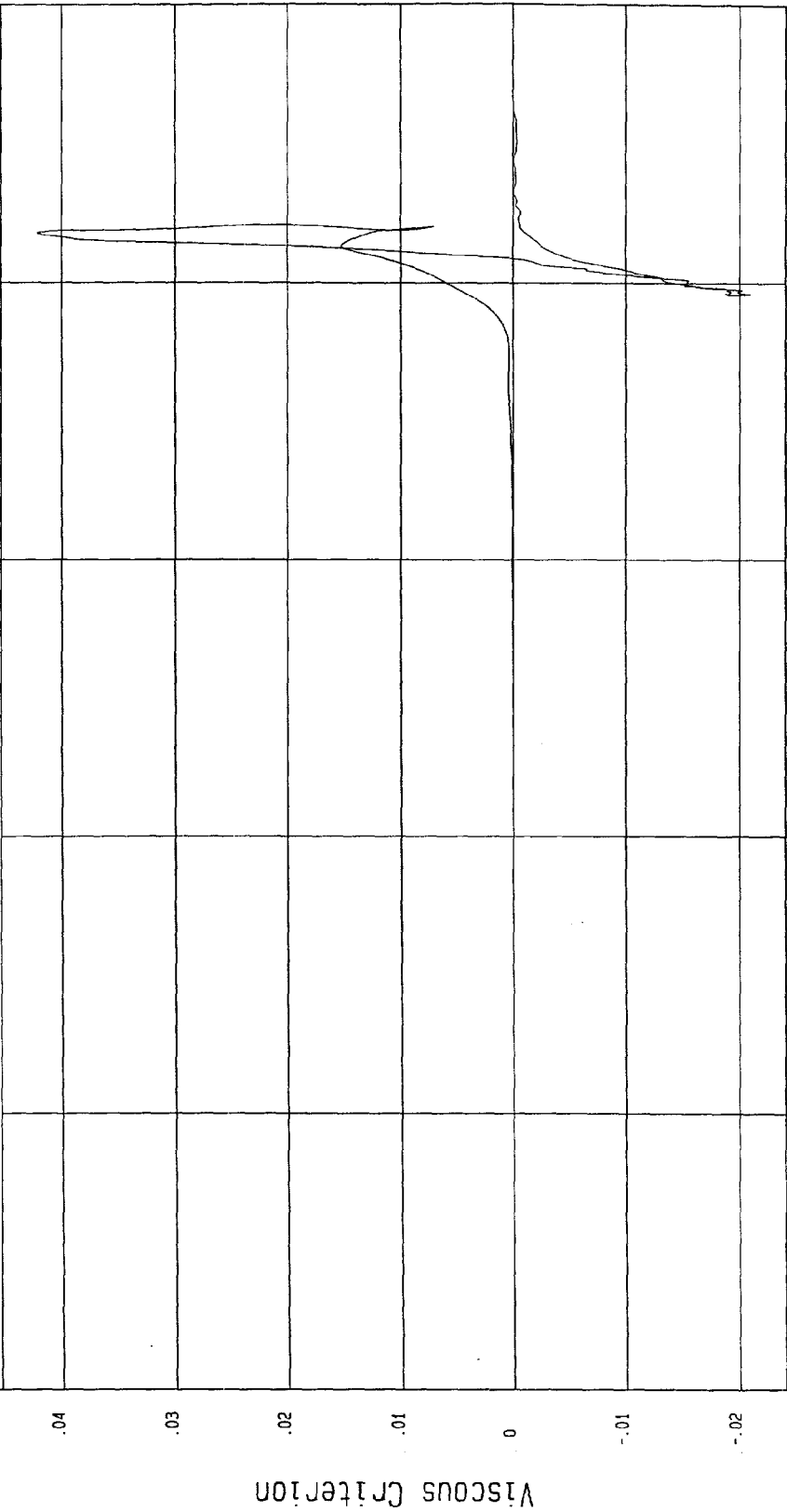
MCA Research
11-06-1997 13: 47





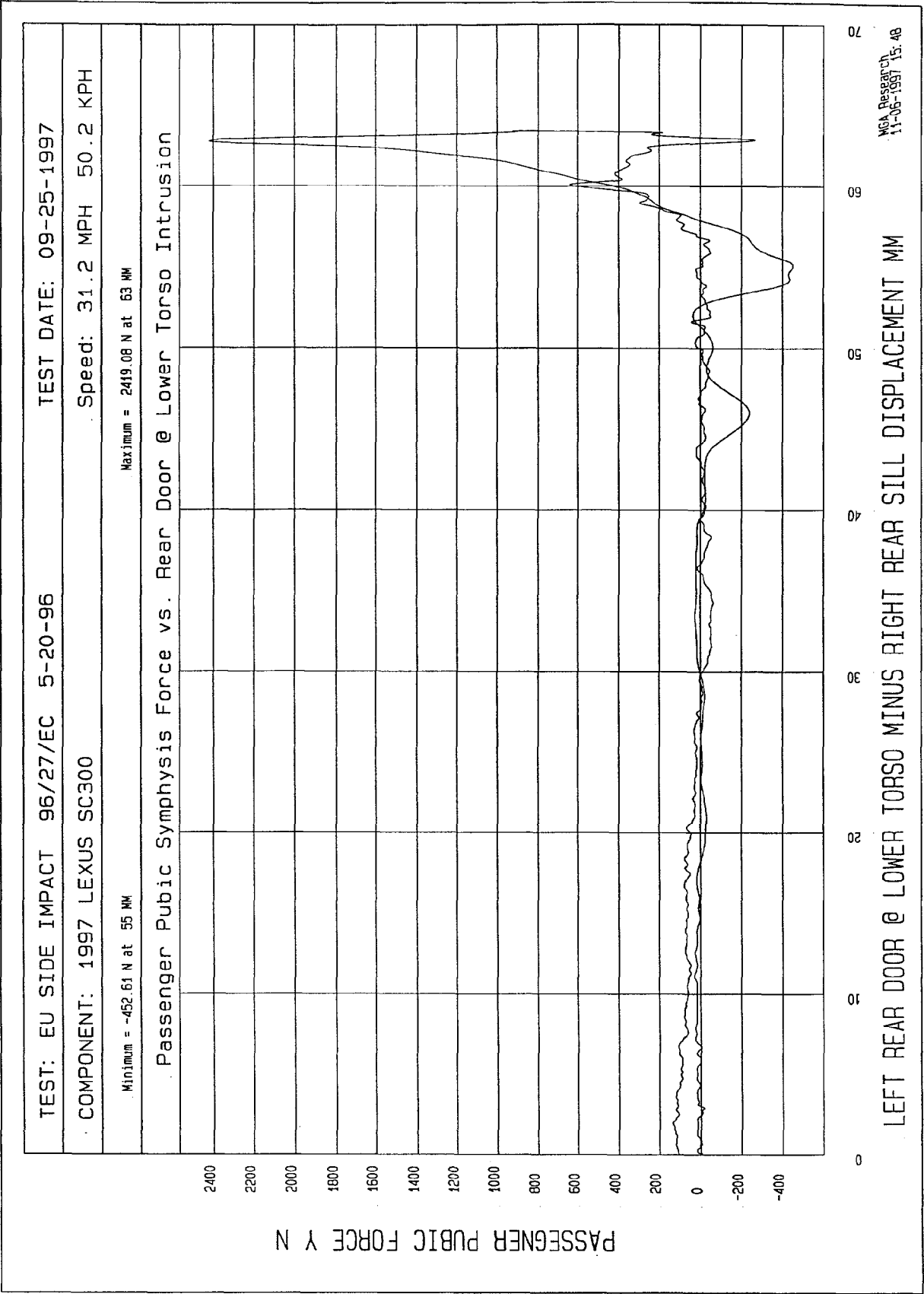


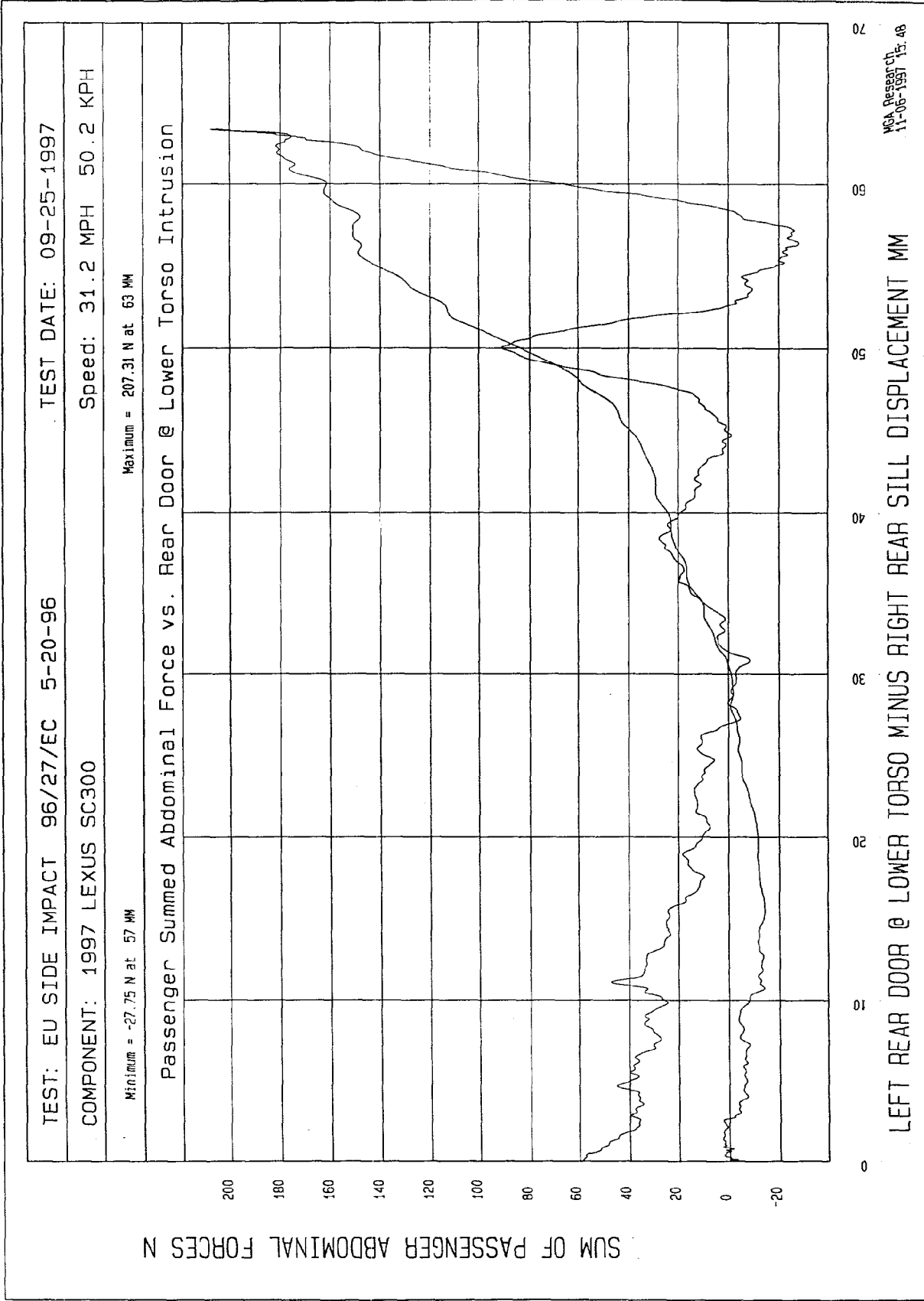
TEST: EU SIDE IMPACT 96/27/EC 5-20-96	TEST DATE: 09-25-1997
COMPONENT: 1997 LEXUS SC300	Speed: 31.2 MPH 50.2 KPH
Minimum = -2.09E-02 at 40 MM	Maximum = 4.20E-02 at 42 MM
Passenger Mid Upper Y Viscous Criteria vs. Rear Door @ Upper Torso Intrusion	

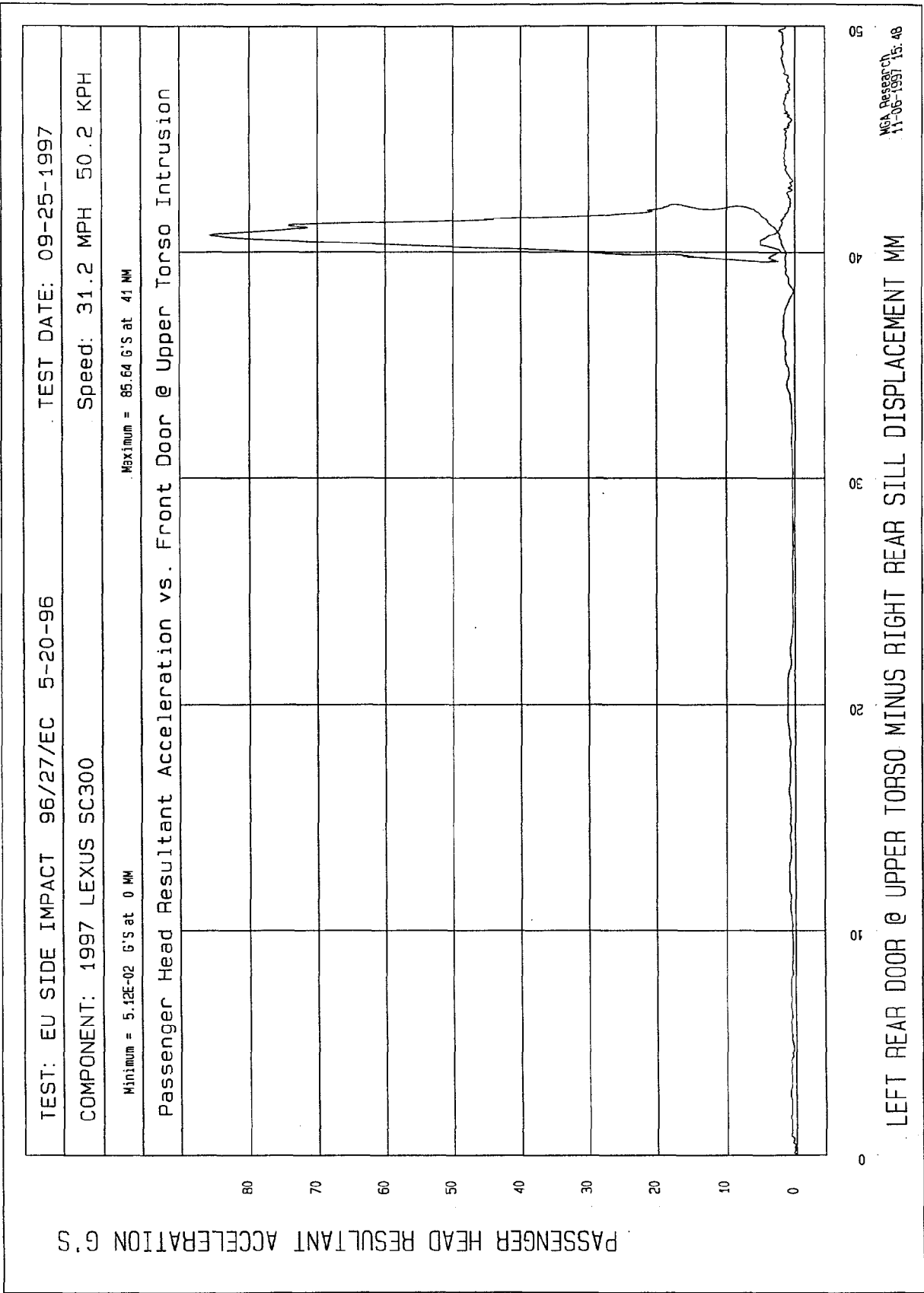


NGA Research
11-06-1997 15:38

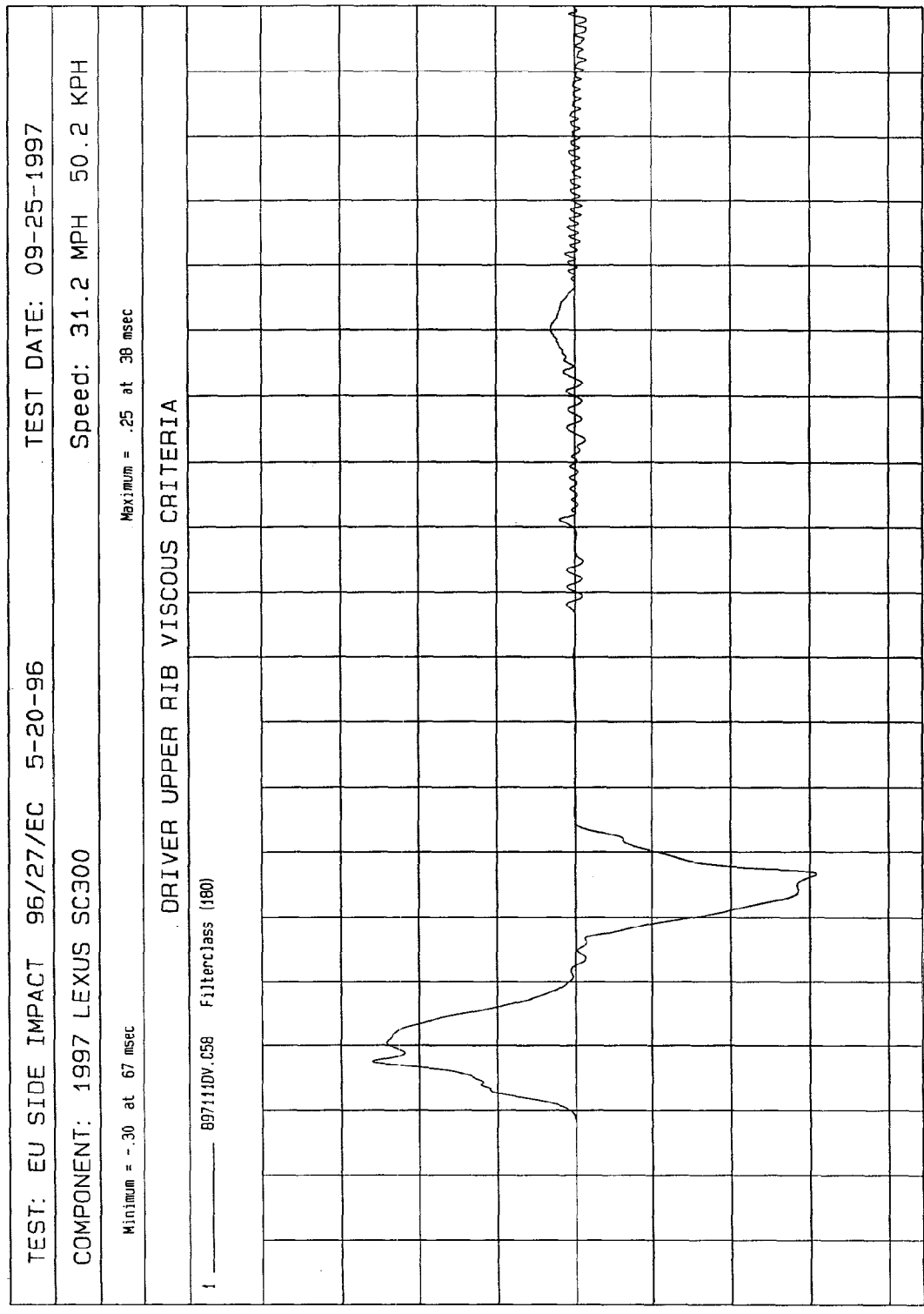
LEFT REAR DOOR @ UPPER TORSO MINUS RIGHT REAR SILL DISPLACEMENT MM







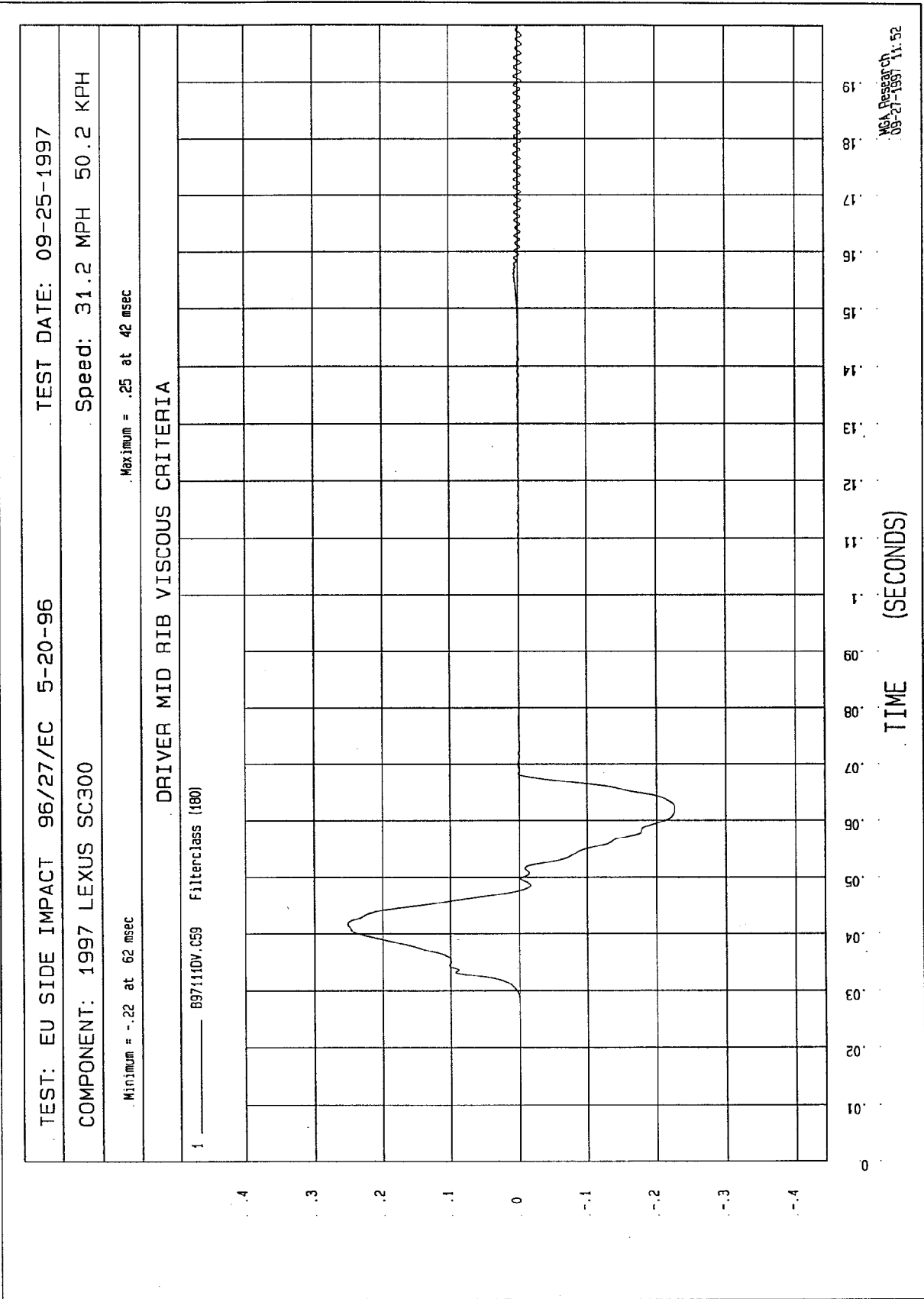
VISCOUS CRITERIA DATA

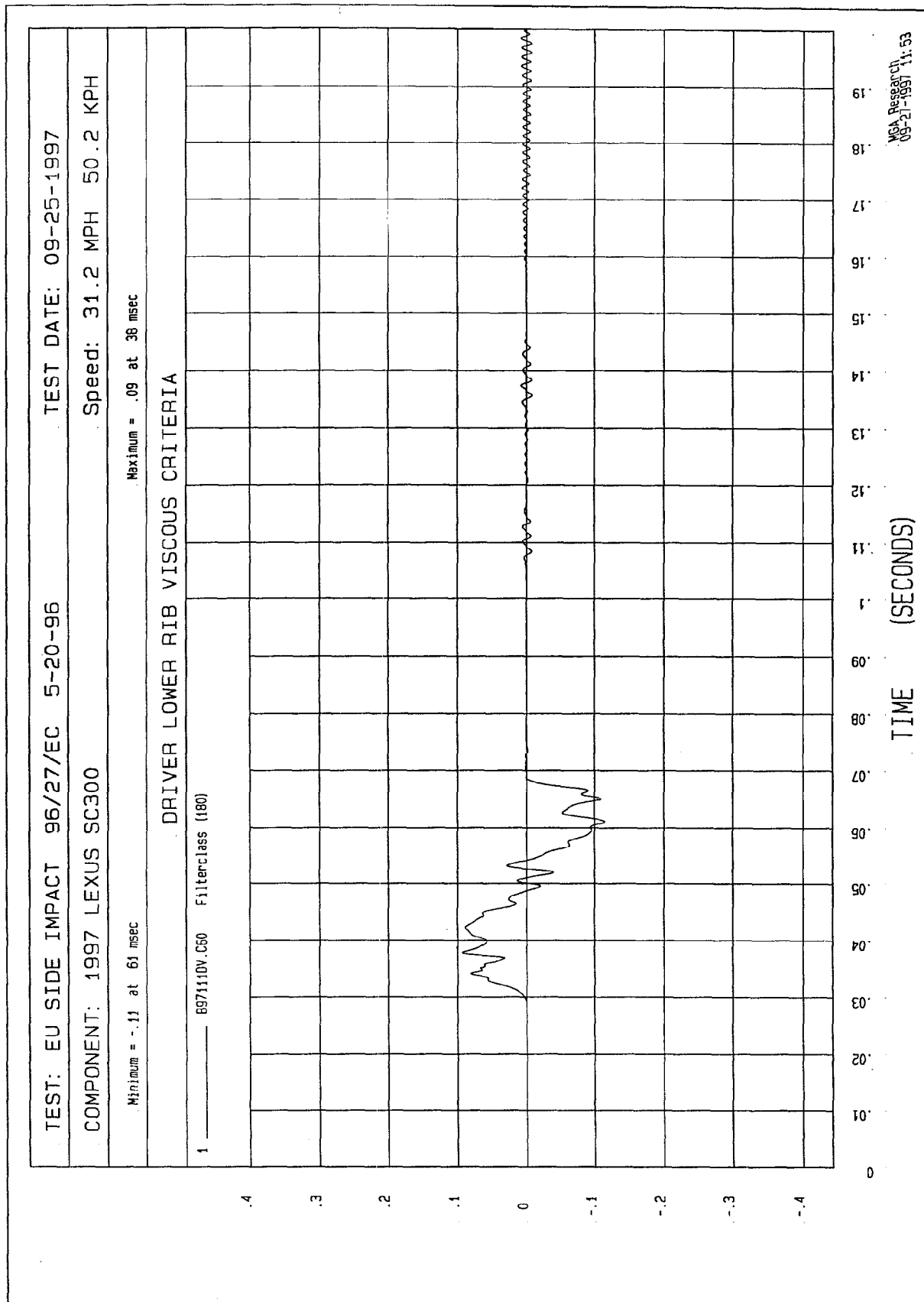


TIME (SECONDS)

0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

NSA Research
09-21-1997 11:52





TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

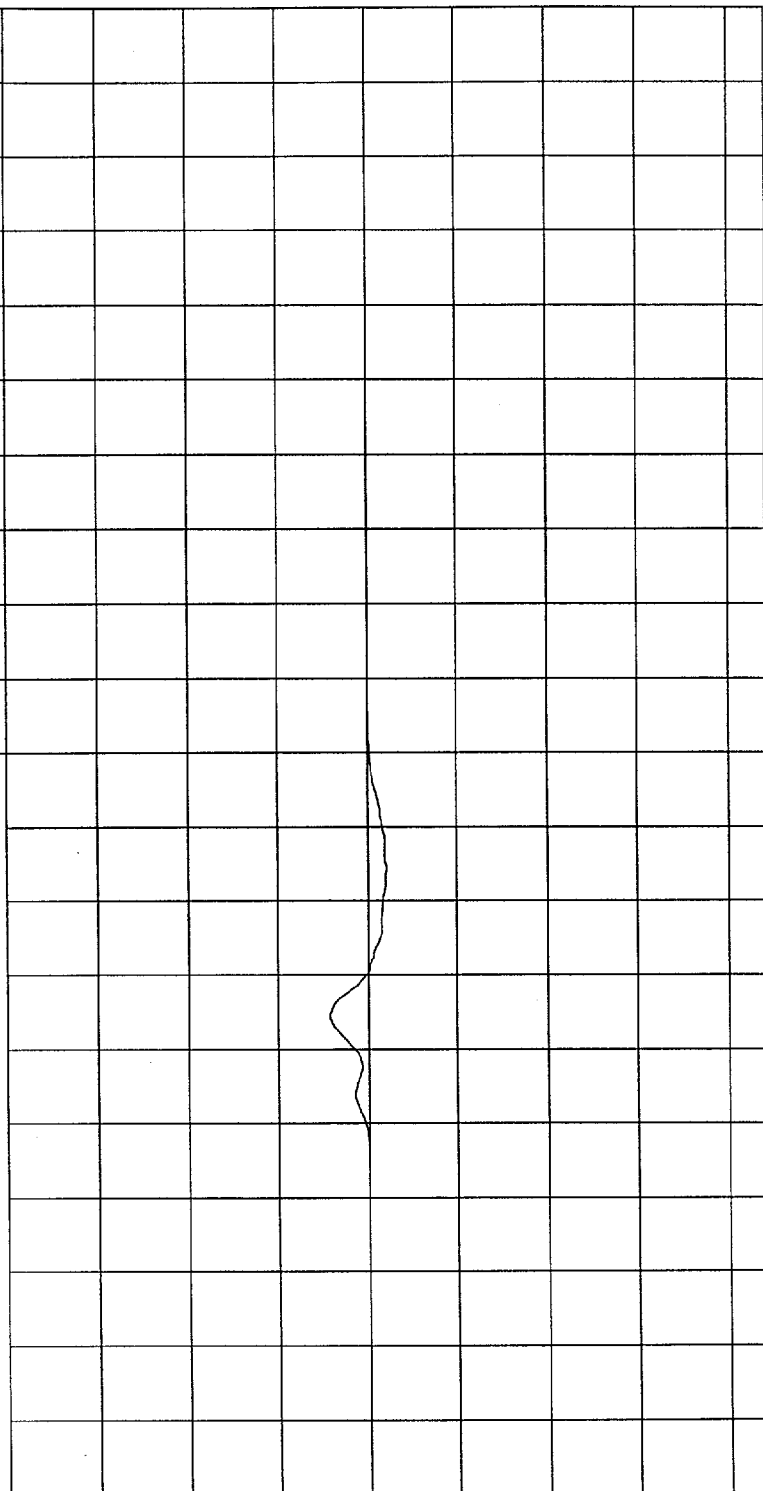
Minimum = -2.09E-02 at 84 msec

Maximum = 4.20E-02 at 64 msec

PASSENGER UPPER RIB VISCOUS CRITERIA

1 _____ B971110V.C51 Filterclass (180)

.4
.3
.2
.1
0
-.1
-.2
-.3
-.4



0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

TIME (SECONDS)

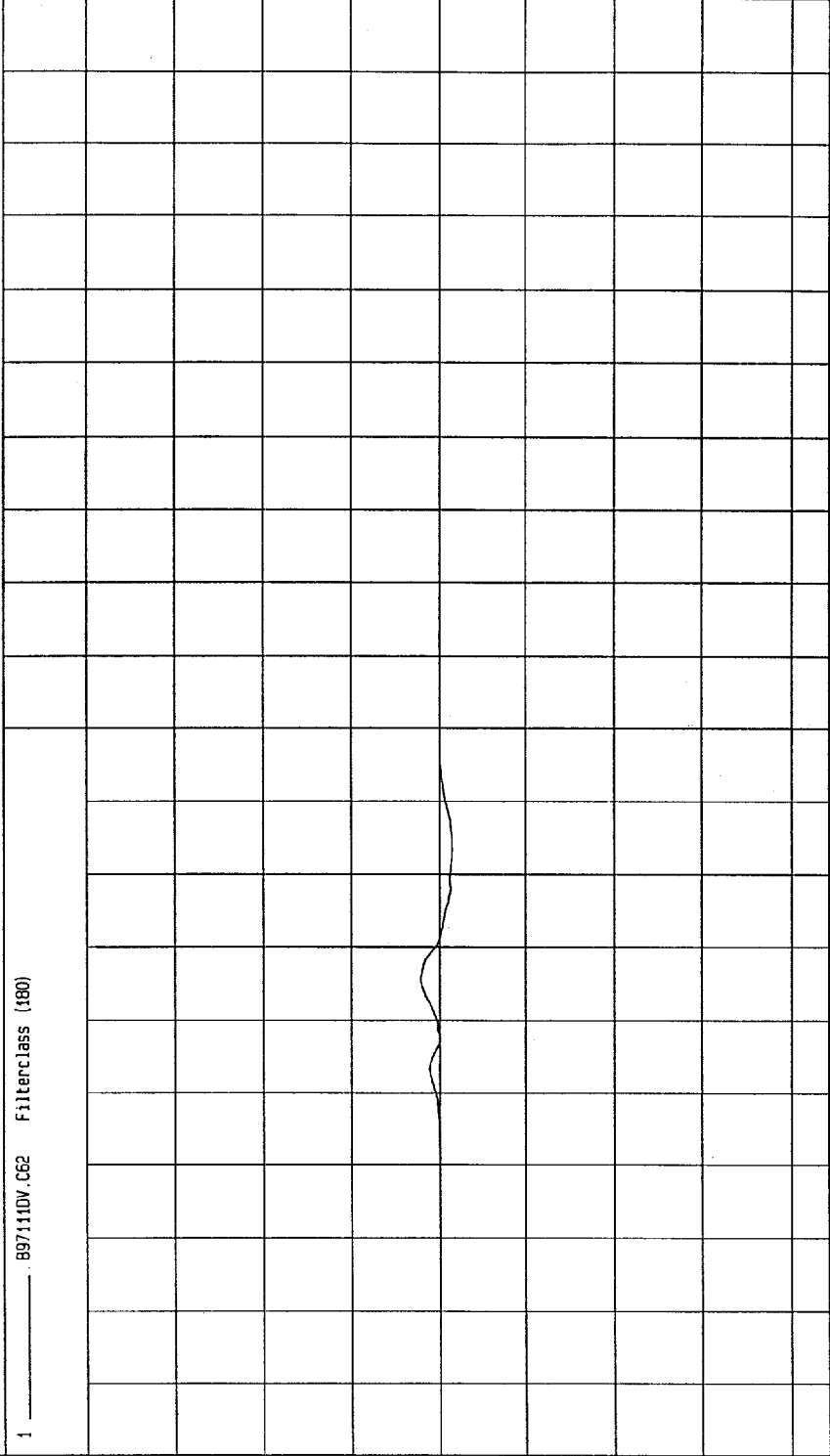
MCA Research
09-27-1997 11:53

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -1.44E-02 at 83 msec Maximum = 2.10E-02 at 66 msec

PASSENGER MID RIB VISCOUS CRITERIA



TIME (SECONDS)

MCA Research
09-27-1997 11:53

TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

SPEED: 31.2 MPH 50.2 KPH

COMPONENT: 1997 LEXUS SC300

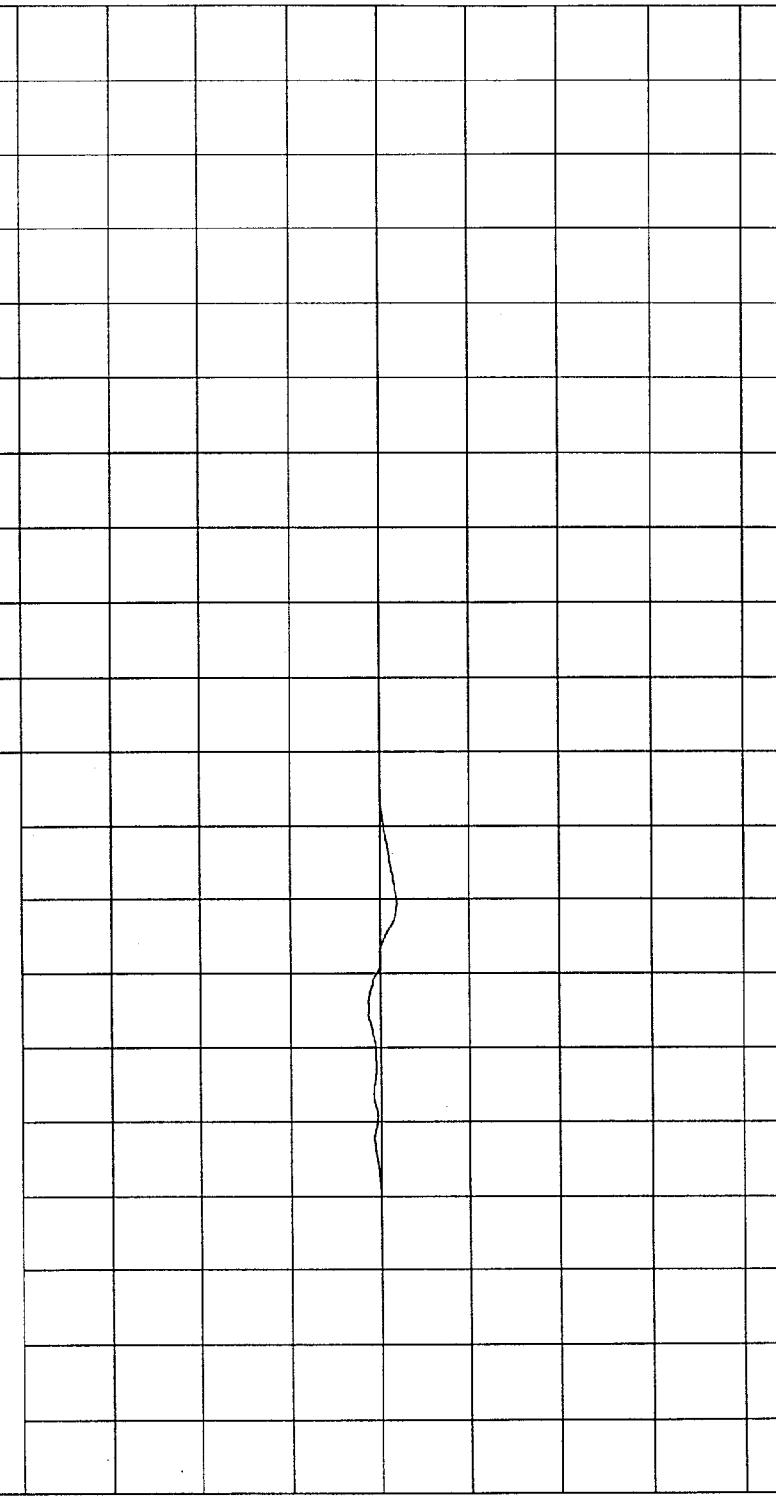
Maximum = 1.34E-02 at 64 msec

Minimum = -1.90E-02 at 79 msec

PASSENGER LOWER RIB VISCOUS CRITERIA

1 897110V.C63 Filterclass (180)

.4
.3
.2
.1
0
-.1
-.2
-.3
-.4



0.19

0.18

0.17

0.16

0.15

0.14

0.13

0.12

0.11

0.1

0.09

0.08

0.07

0.06

0.05

0.04

0.03

0.02

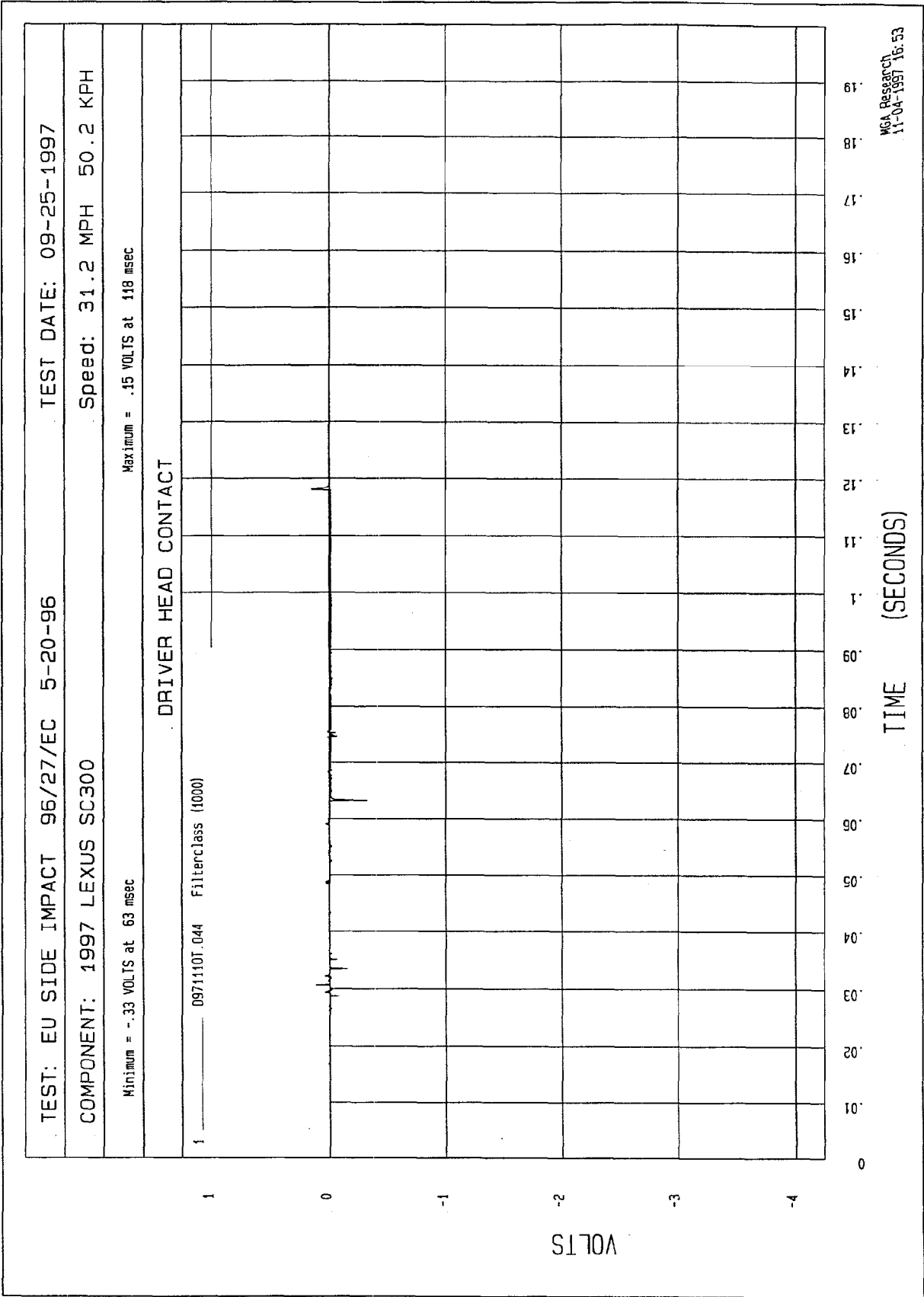
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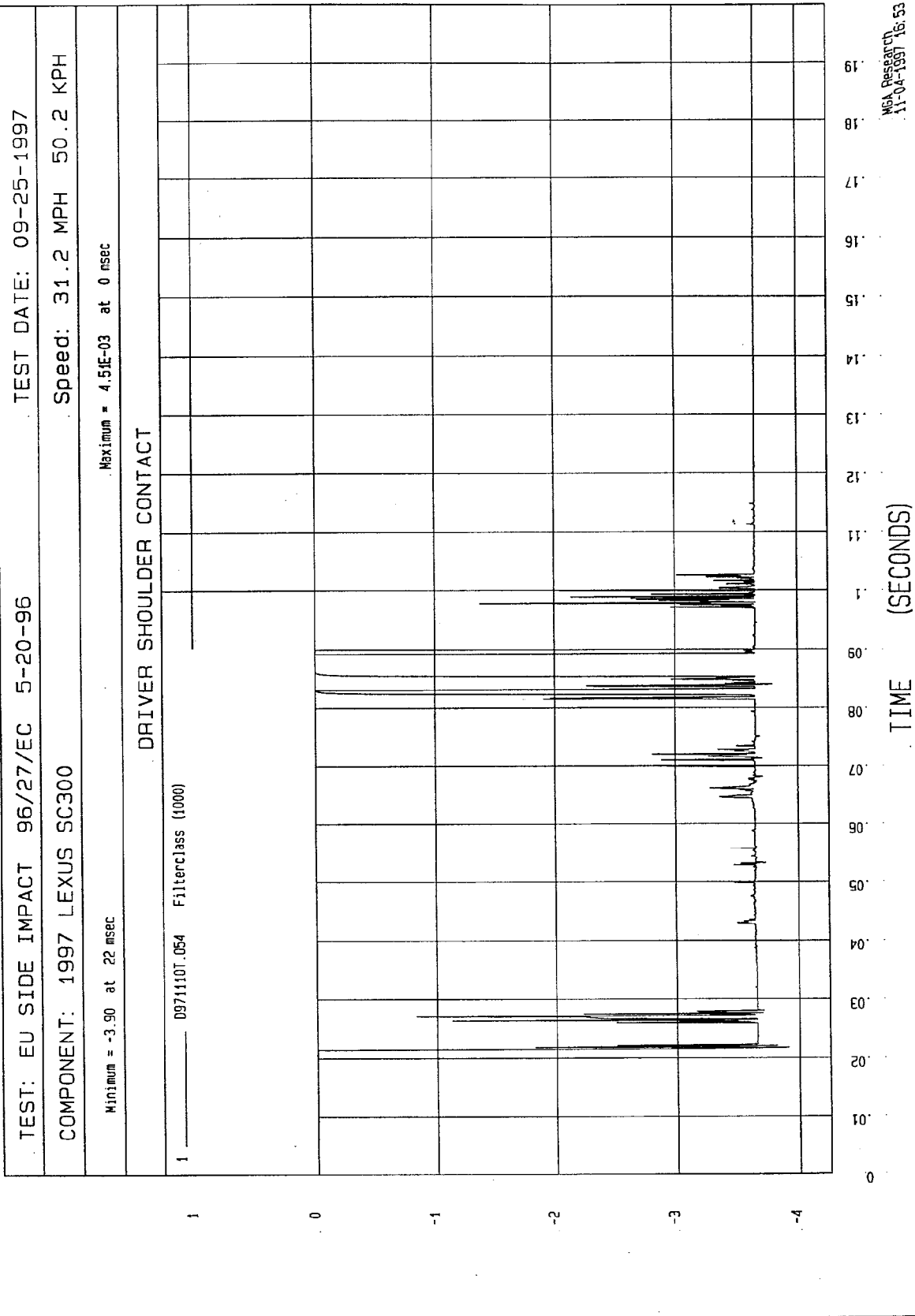
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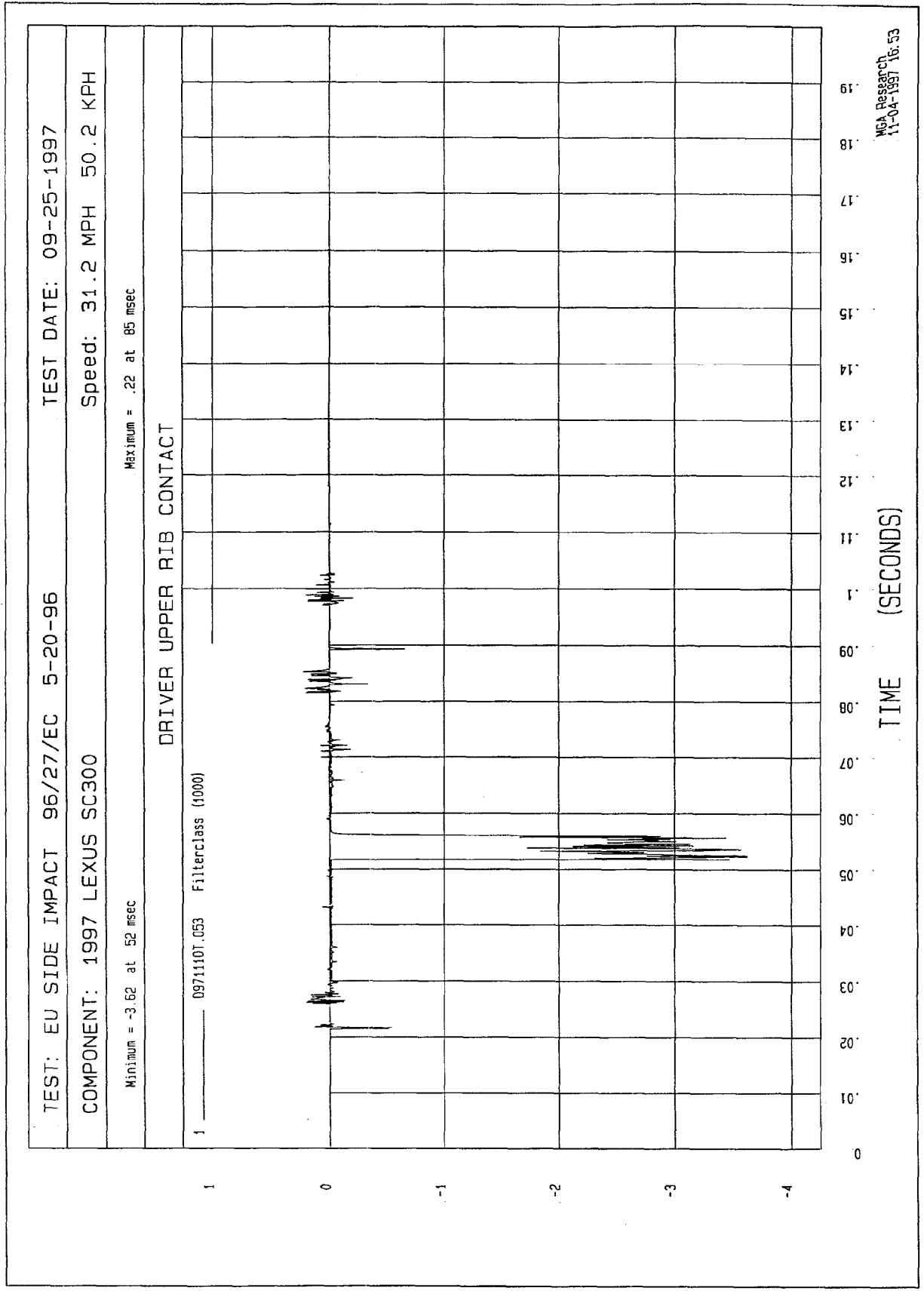
TIME (SECONDS)

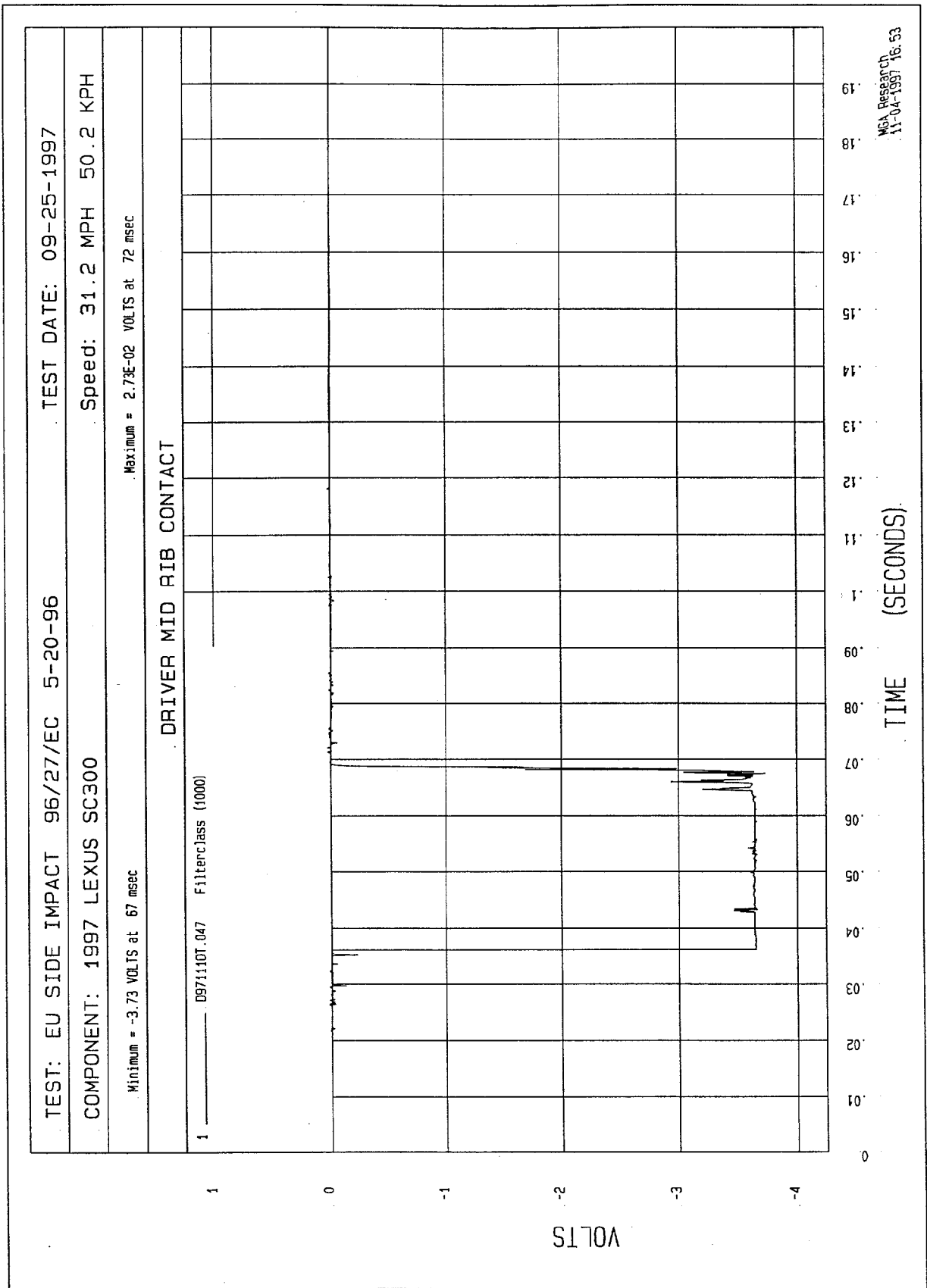
WGA Research
09-27-1997 11:53

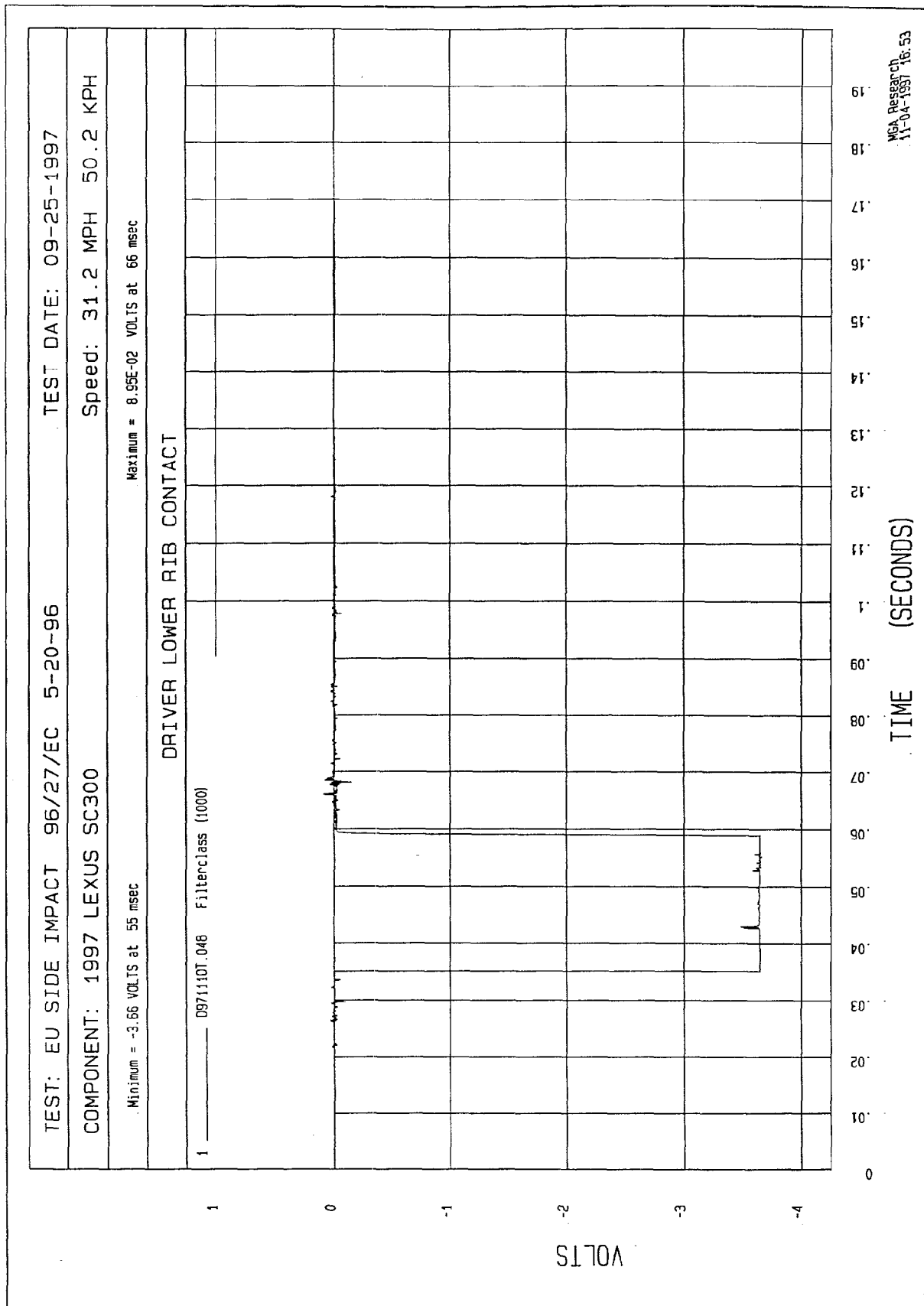
DUMMY CONTACT DATA









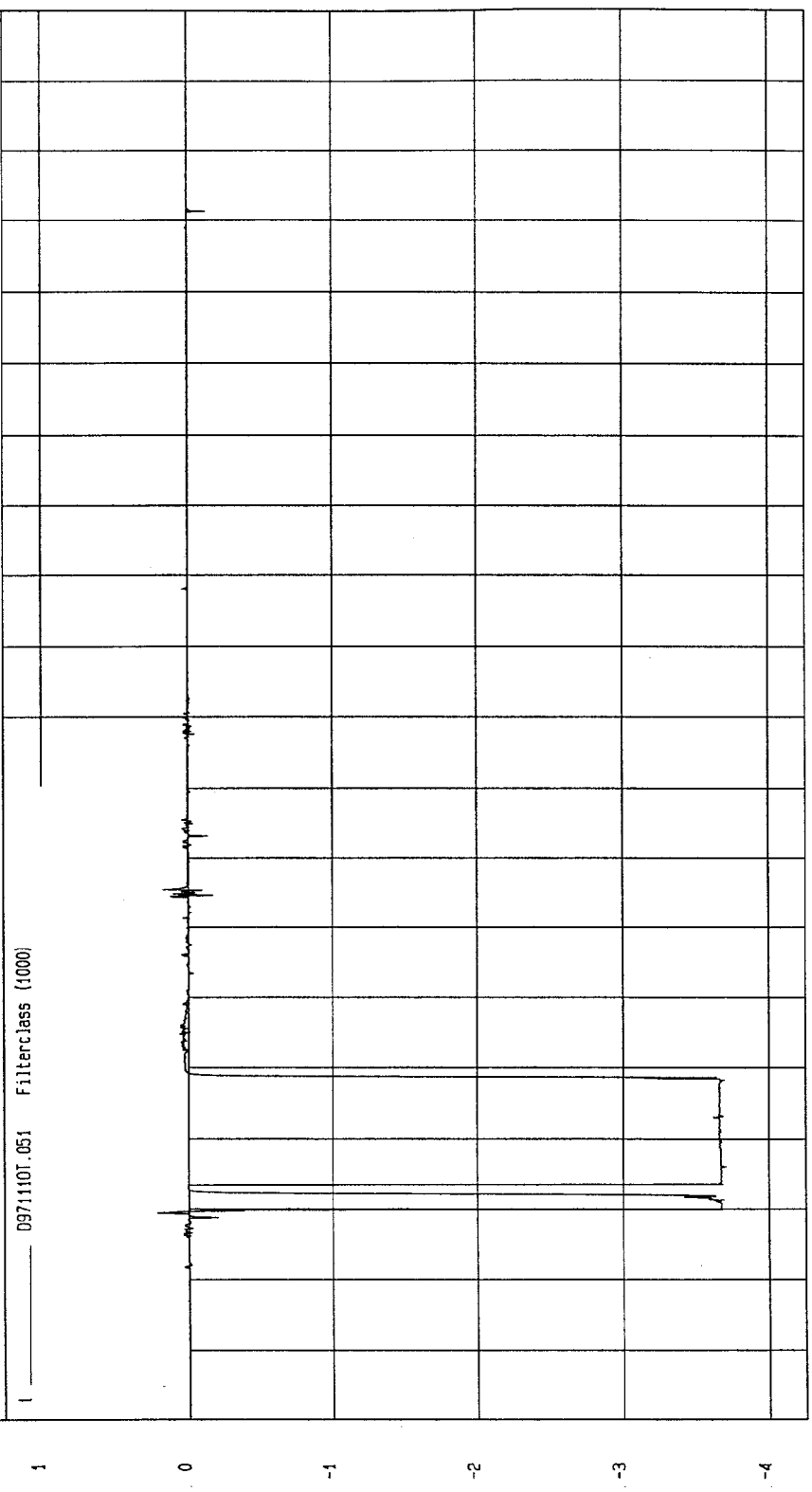


TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997

COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -3.70 at 36 msec Maximum = .21 at 29 msec

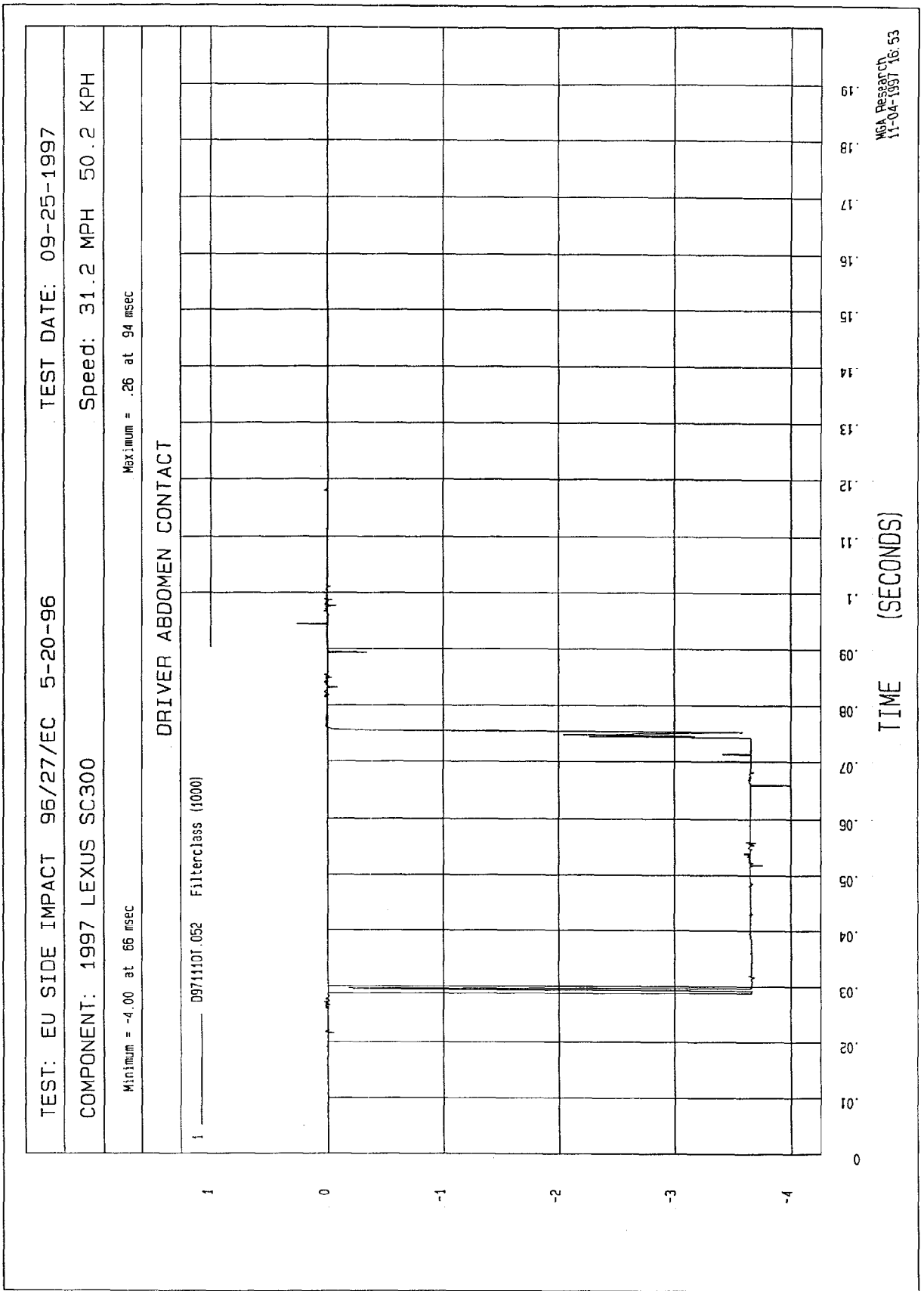
DRIVER PELVIS CONTACT

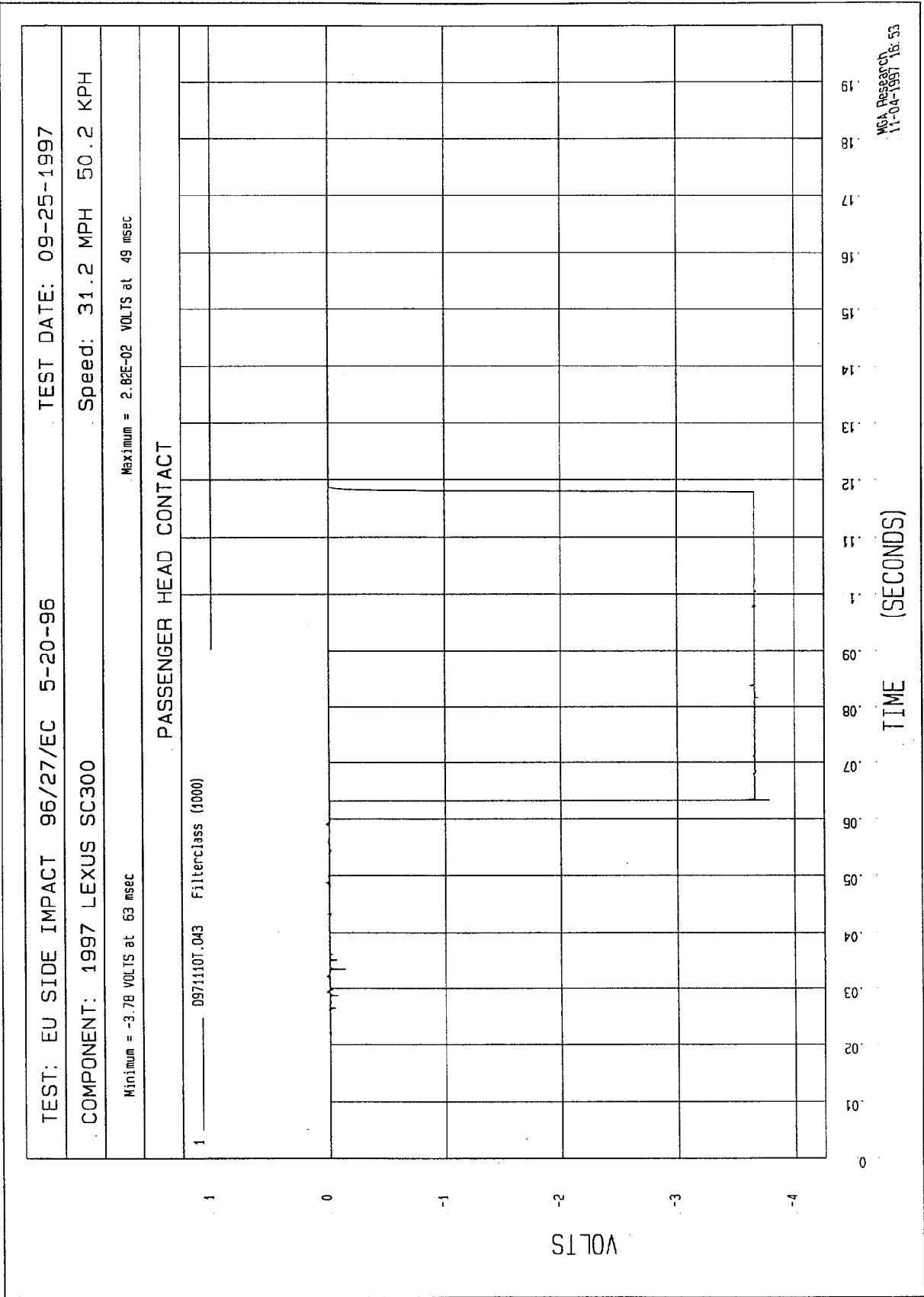


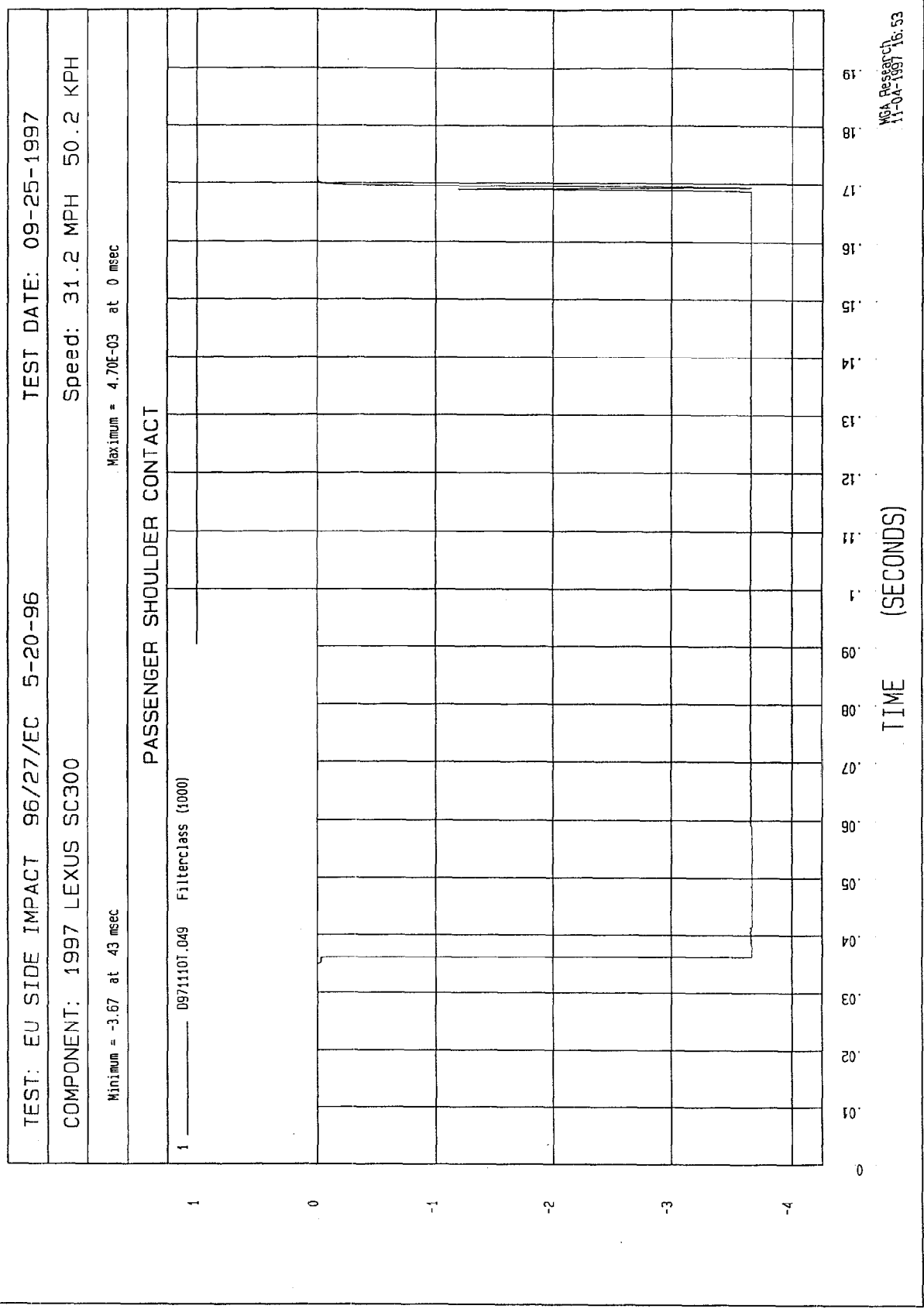
TIME (SECONDS)

0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

MCA Research
11-04-1991 16:53



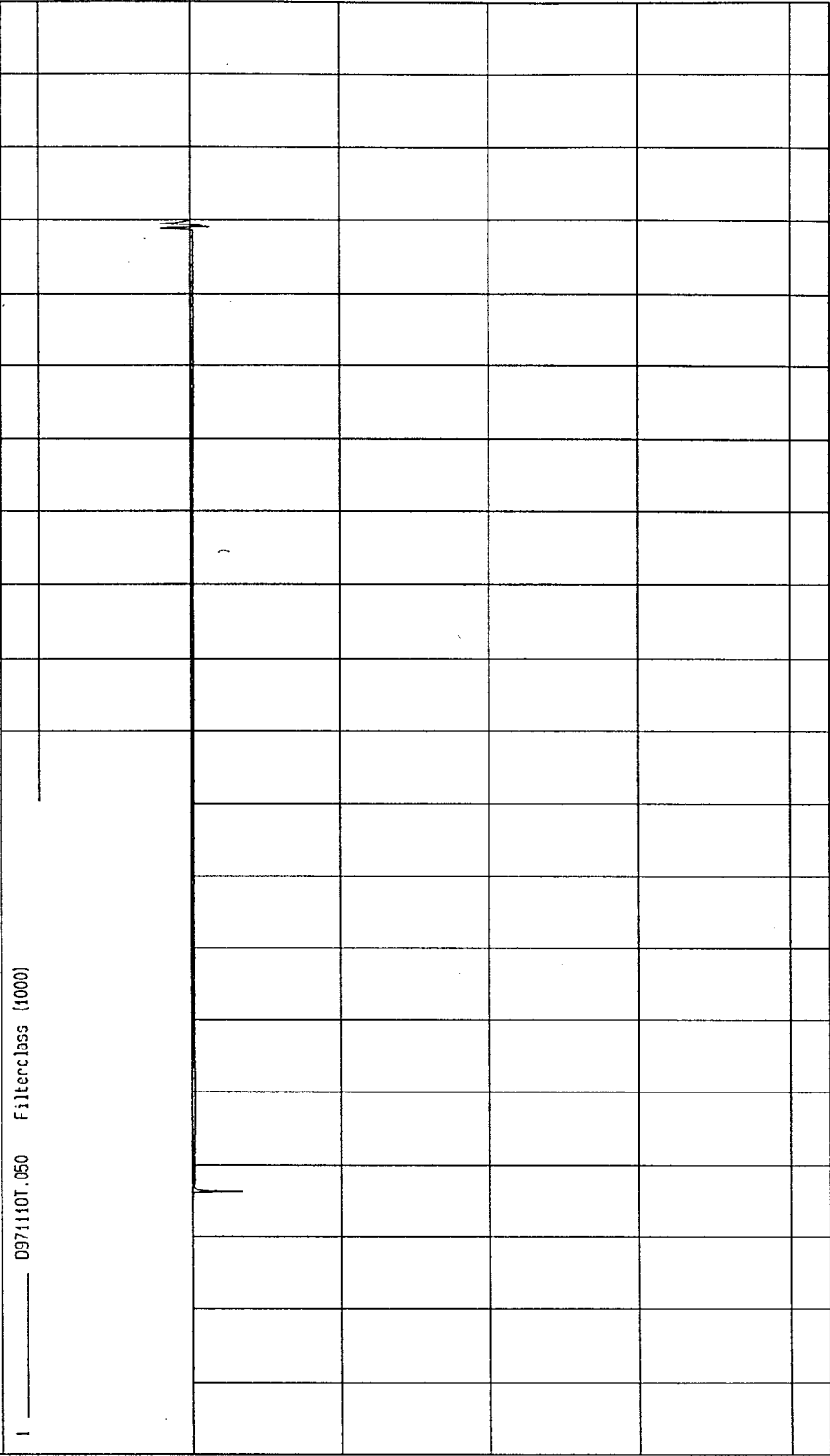




TEST: EU SIDE IMPACT 96/27/EC 5-20-96 TEST DATE: 09-25-1997
 COMPONENT: 1997 LEXUS SC300 Speed: 31.2 MPH 50.2 KPH

Minimum = -.34 at 36 msec Maximum = .18 at 169 msec

PASSENGER UPPER RIB CONTACT

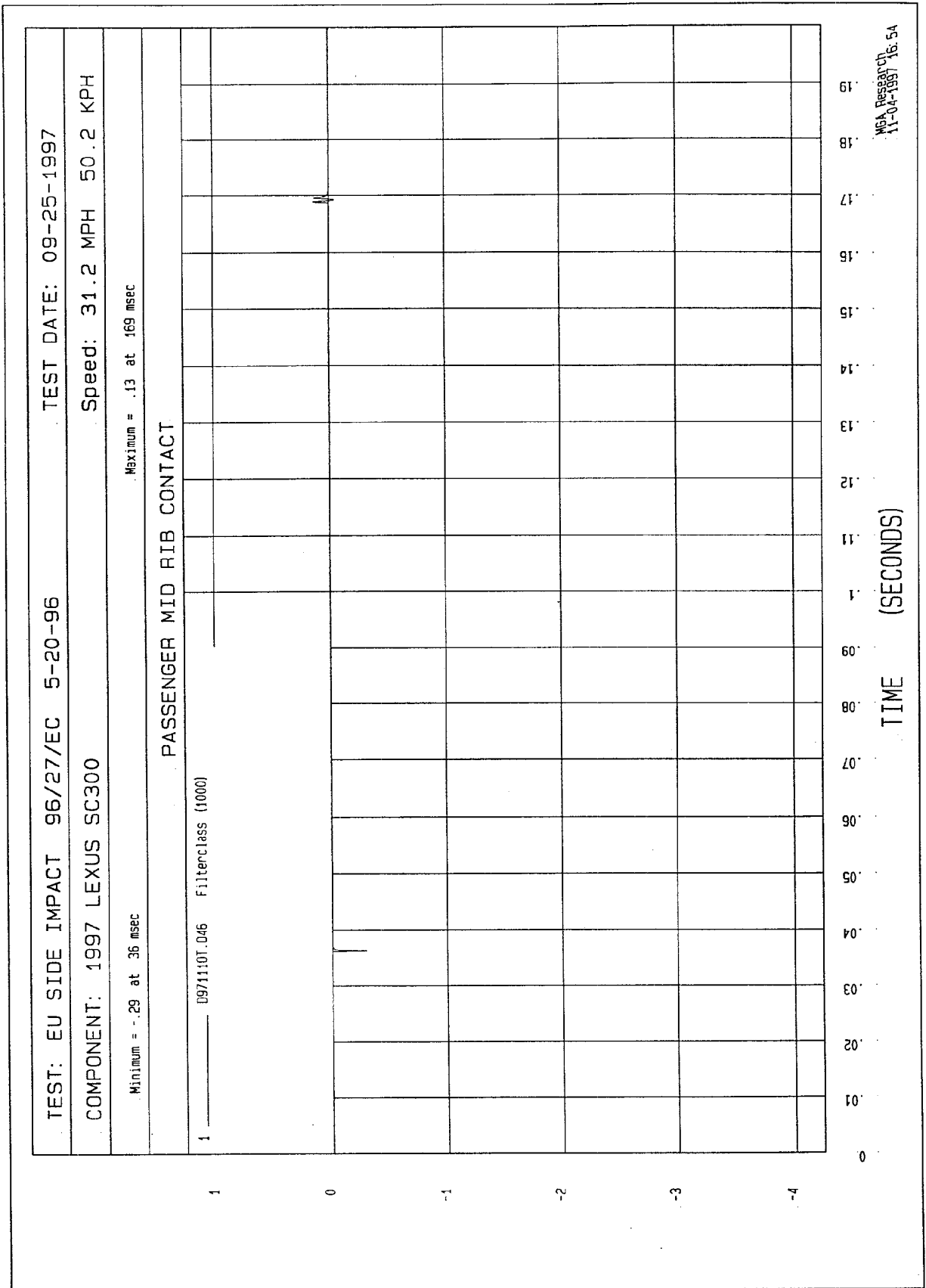


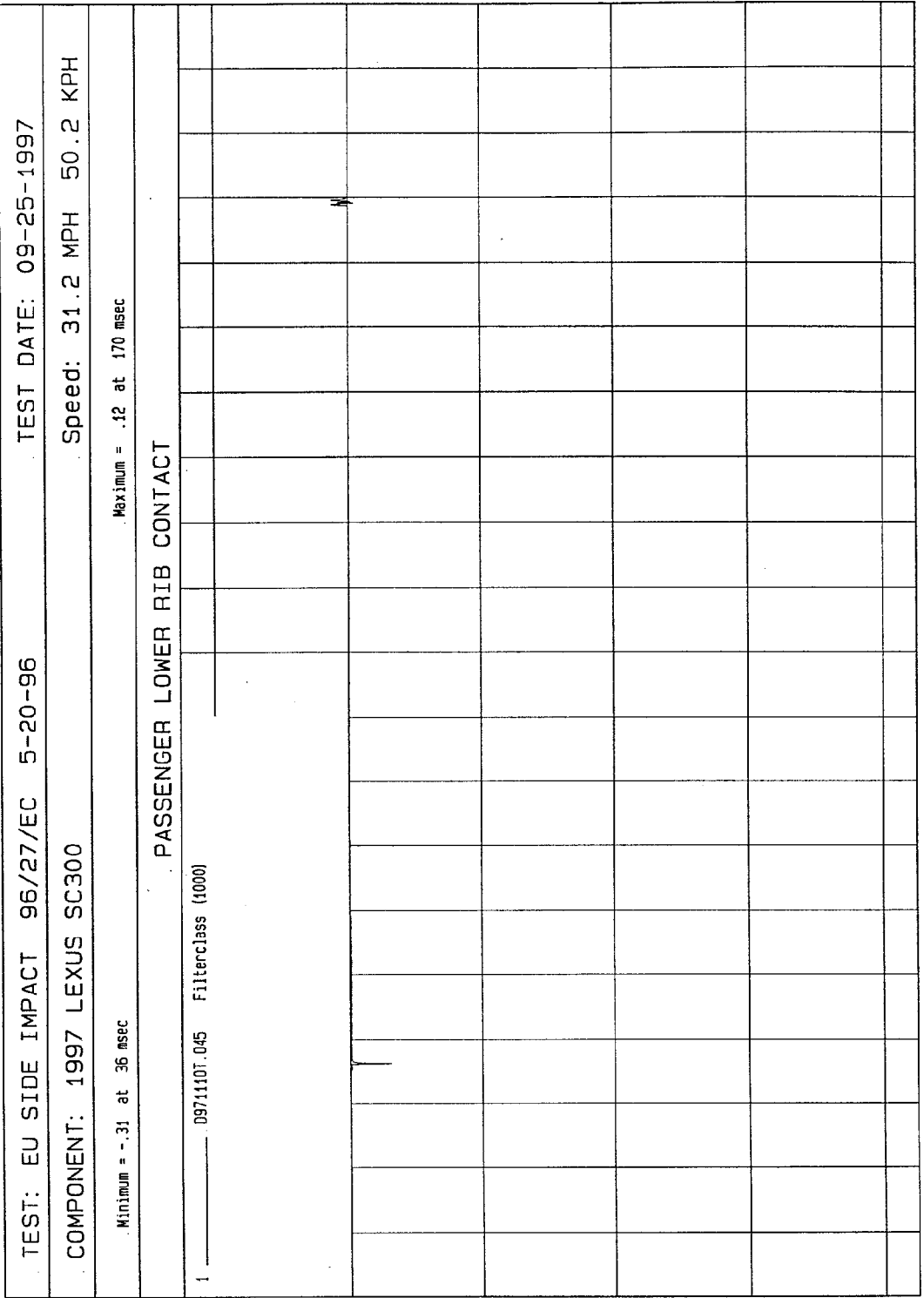
TIME (SECONDS)

0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0

1
0
-1
-2
-3
-4

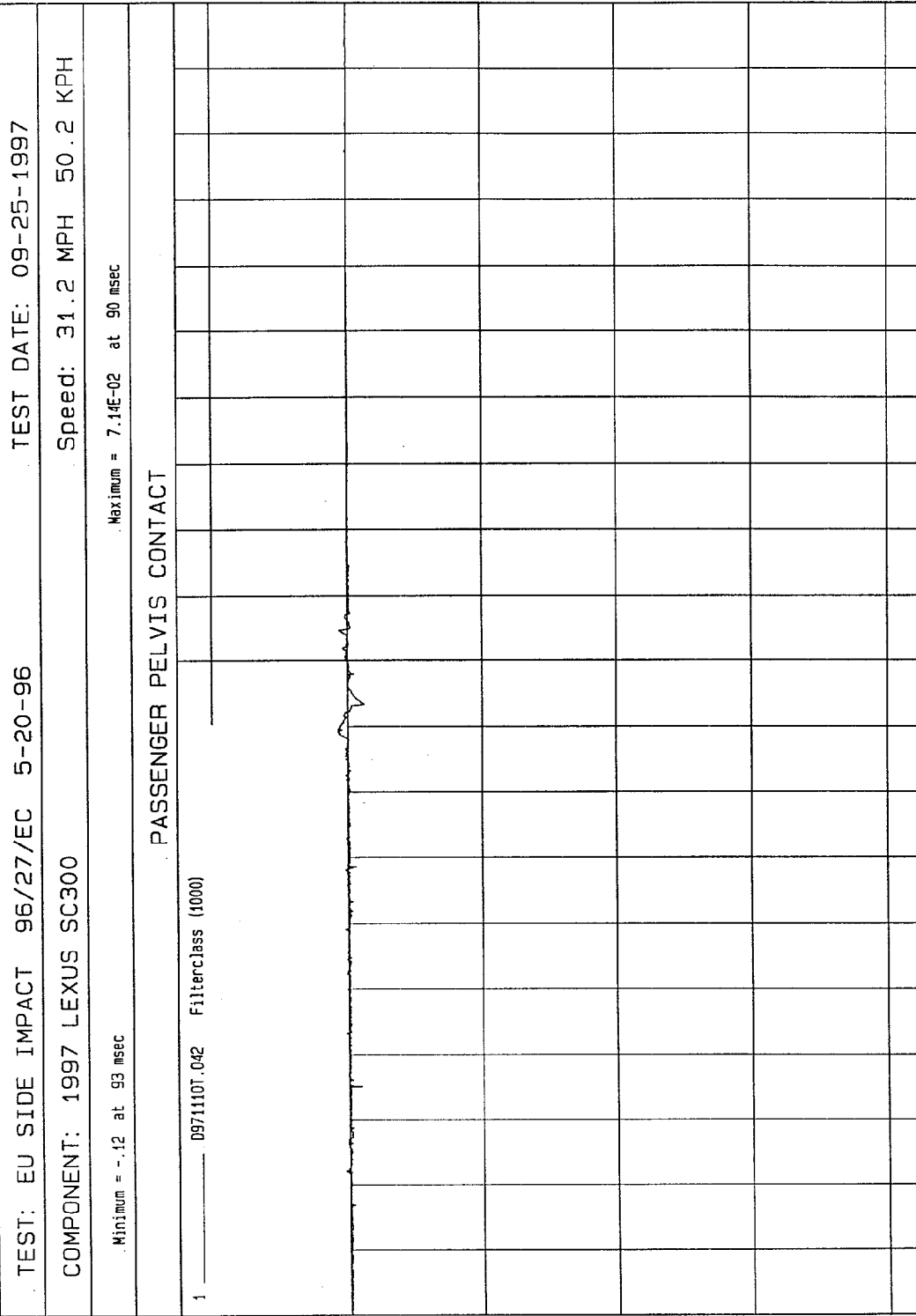
MCA Research
11-04-1997 16:53





MSA Research
11-04-1997 16:54

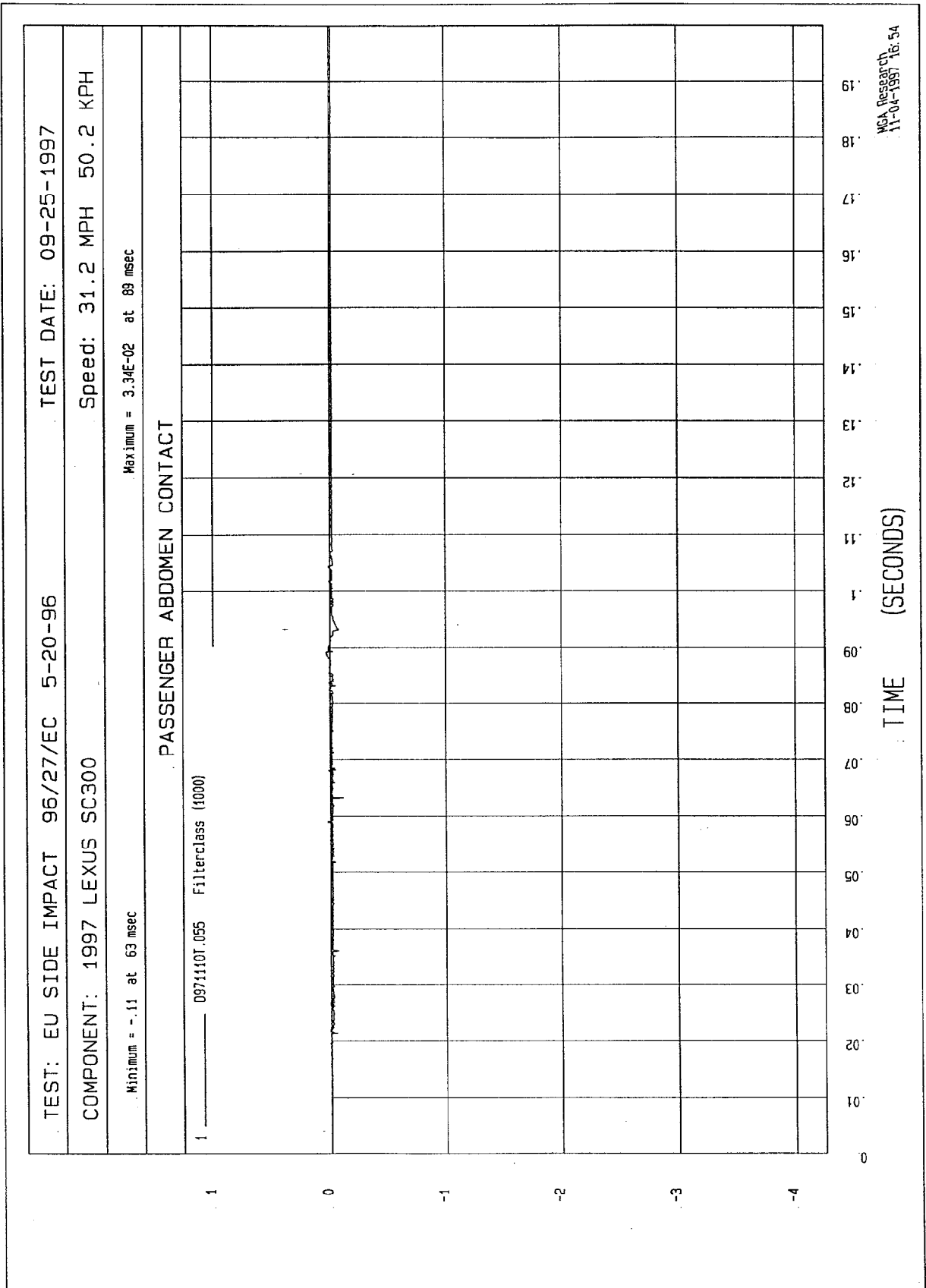
TIME (SECONDS)



TIME (SECONDS)

0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0

WGA Research
11-04-1997 16:54



APPENDIX C
OVERPLOT DATA

This section contains overplot data from the European Lateral Impact testing conducted at MGA Research on September 25, 1997 and the FMVSS 214D Side Impact testing conducted at MGA Research on September 29, 1994.

	<u>European Lateral Impact</u>	<u>FMVSS 214D</u>
Vehicle	1997 Lexus SC300	1995 Lexus SC300
Test Weight (kg)	1819	1876
Impact Speed (kph)	50.2	52.8
Driver Dummy	EuroSID-1	SID
Passenger Dummy	EuroSID-1	SID
Impact Angle (°)	90°	90°
Crab Angle (°)	0°	27°
Driver (TTI)	61	63
Passenger (TTI)	38	39

* These values are calculated using the FMVSS 214D injury criteria.

Table of Data Plots

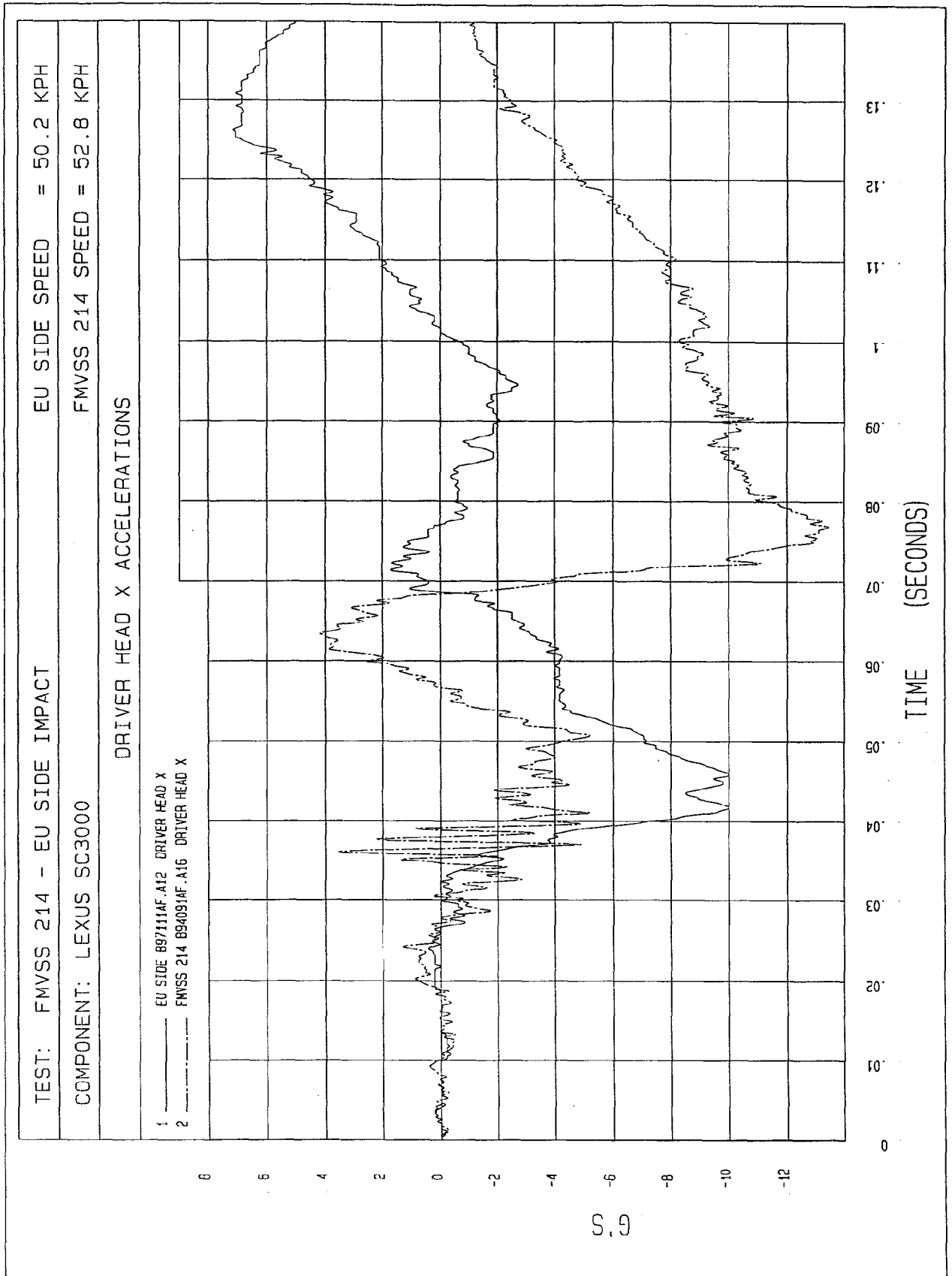
<u>Overplot Data:</u>	<u>Page No.</u>
Figure C-1 - Driver Head X Accelerations vs. Time	C-1
Figure C-2 - Driver Head X Velocities vs. Time	C-2
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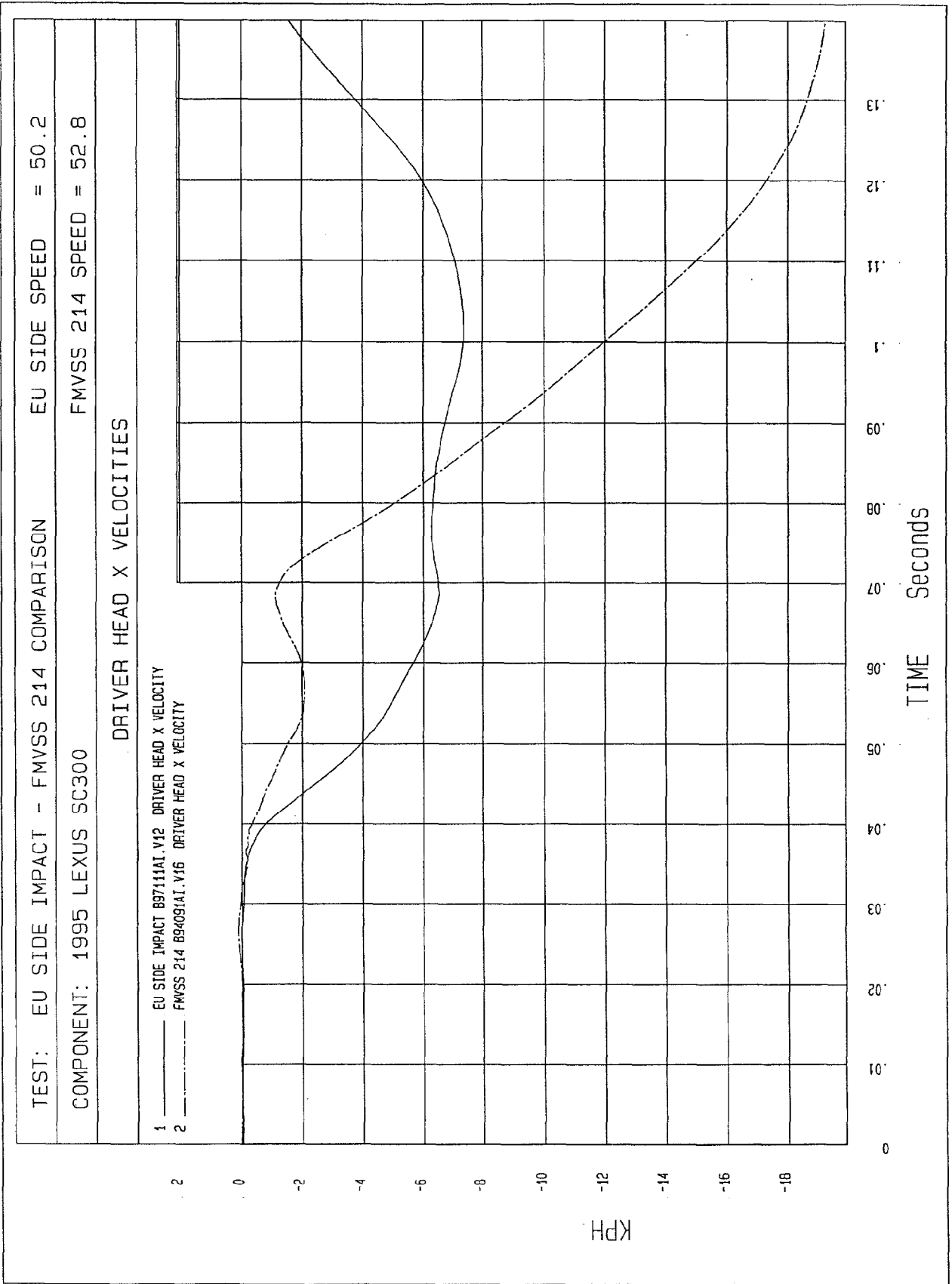
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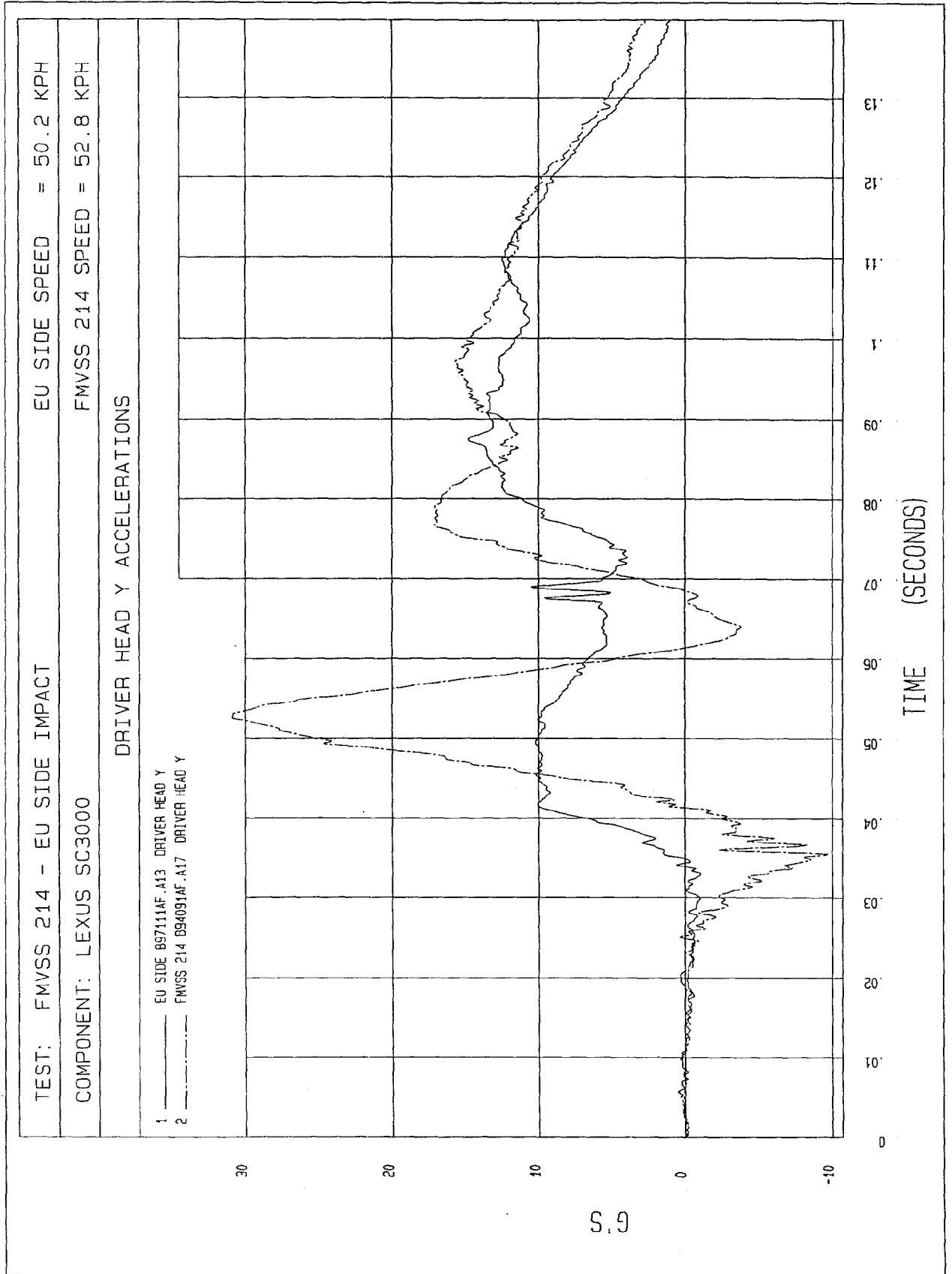
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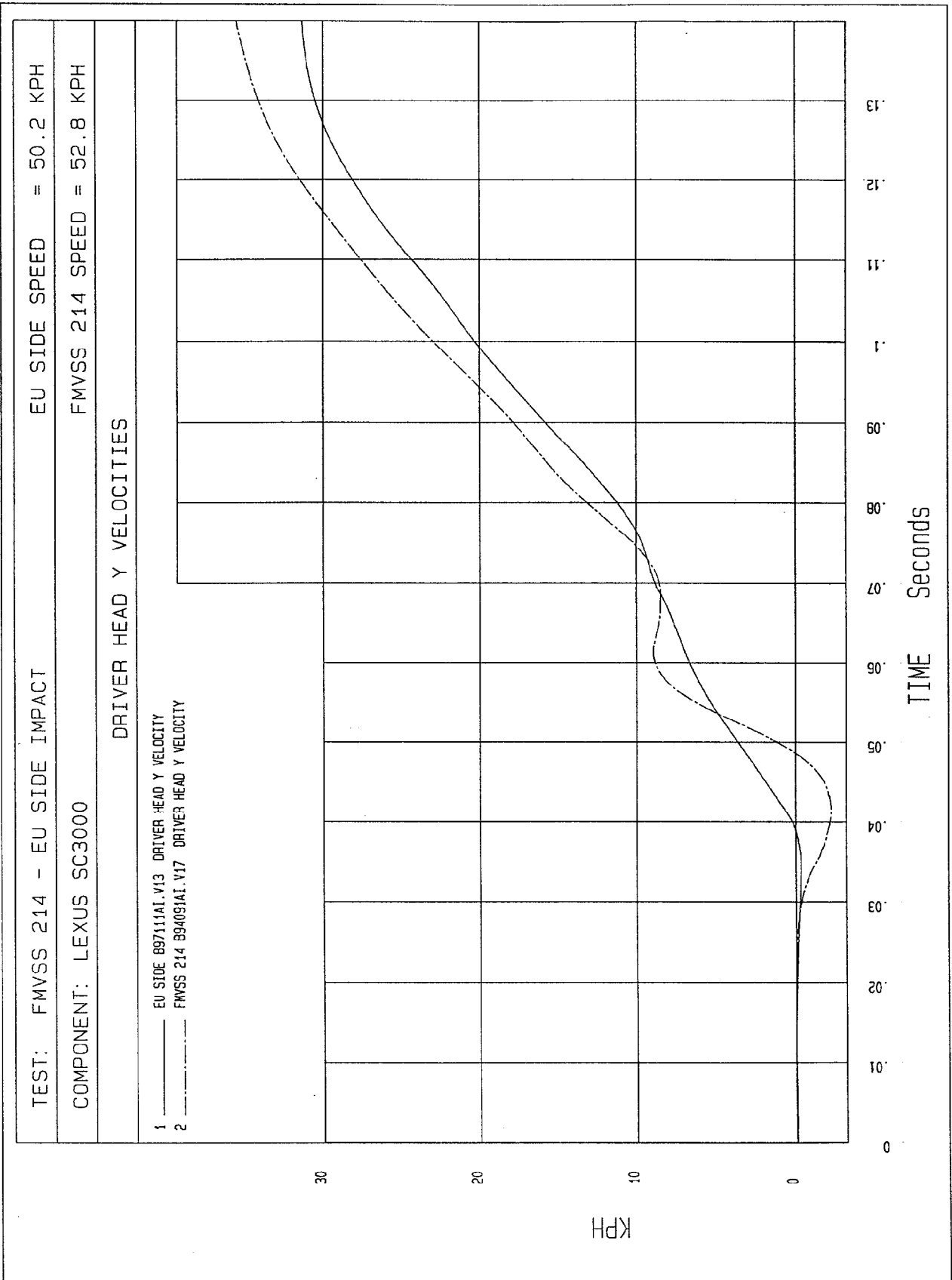
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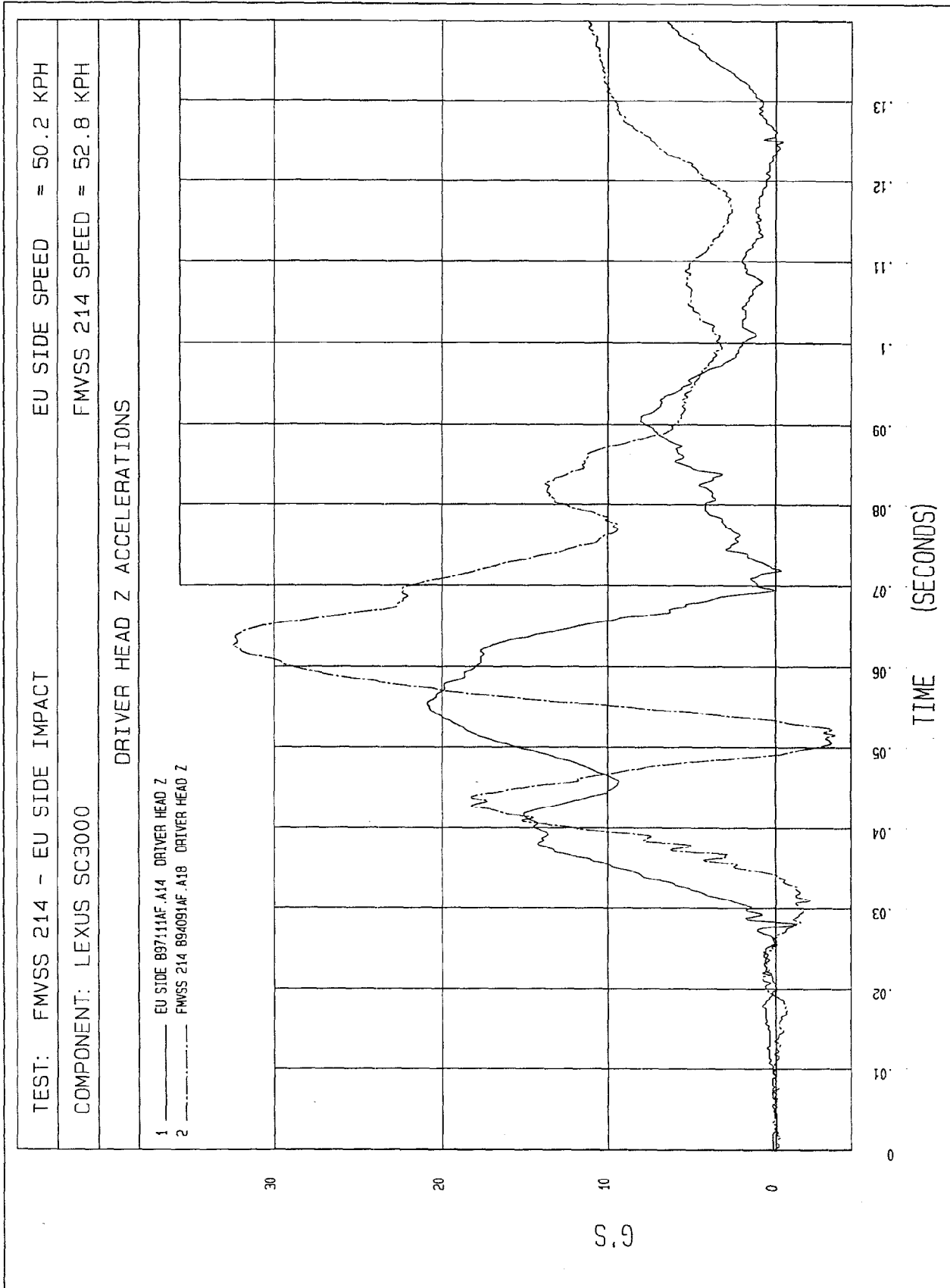
<u>Overplot Data:</u>	<u>Page No.</u>
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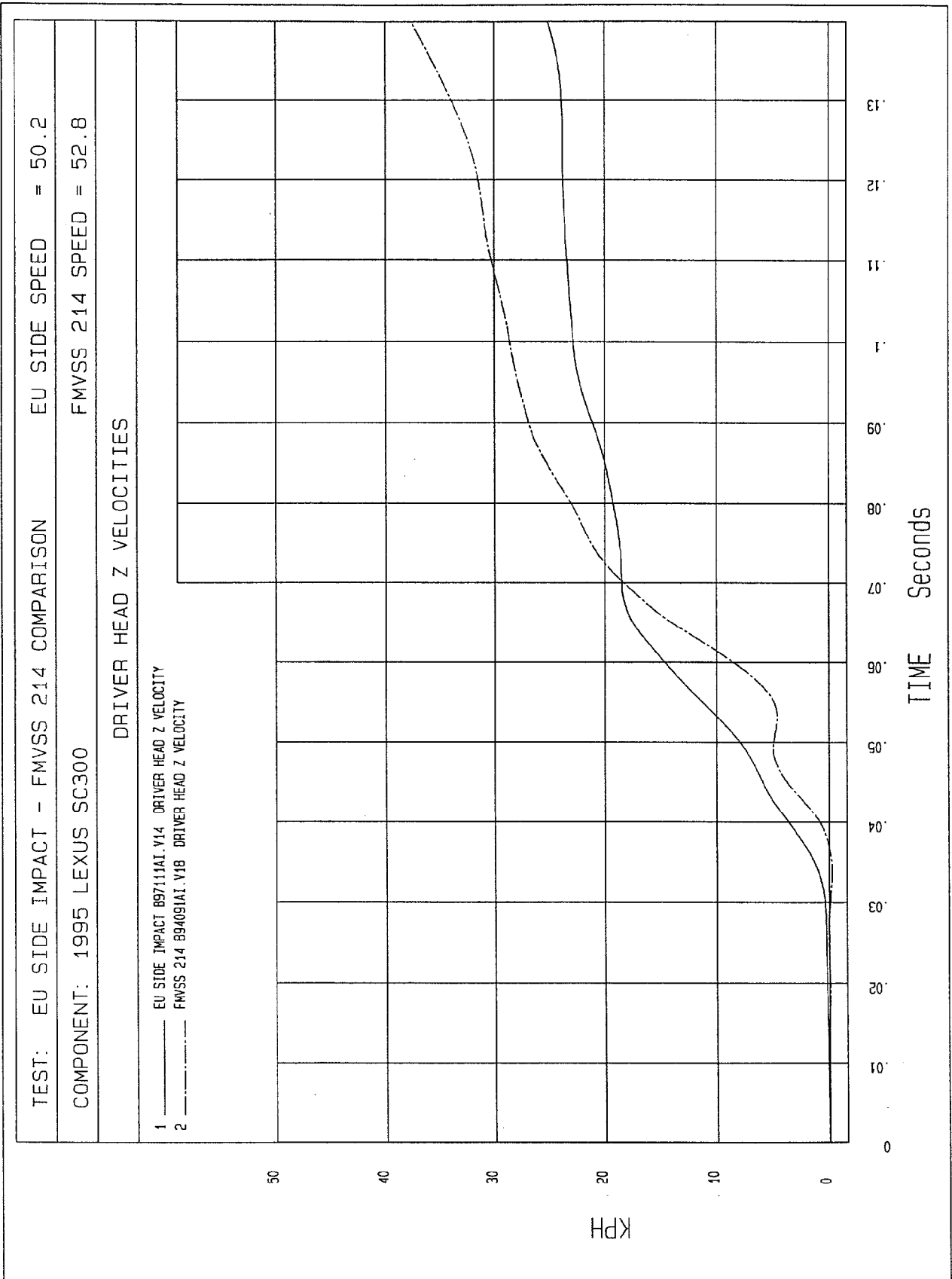


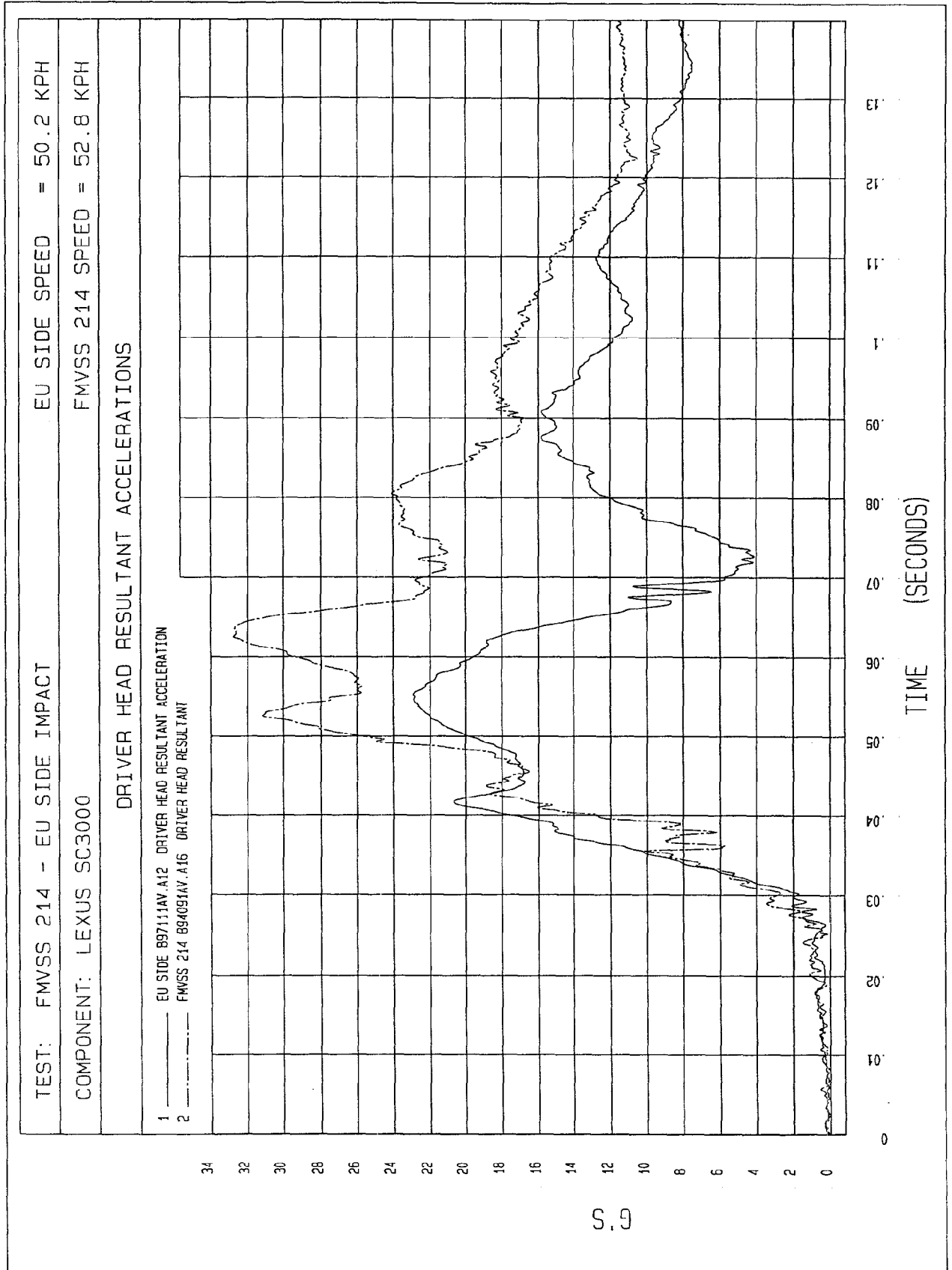




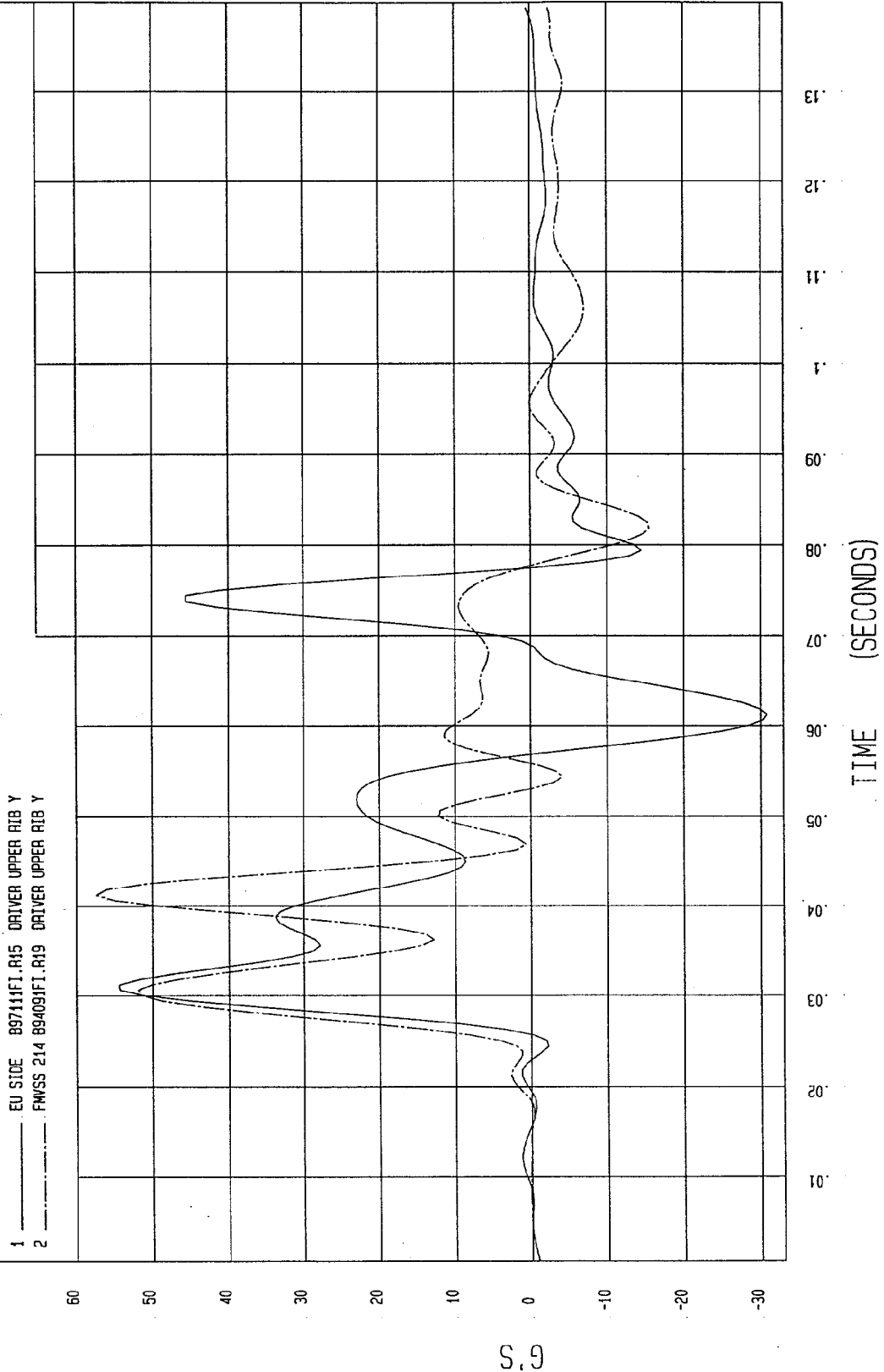


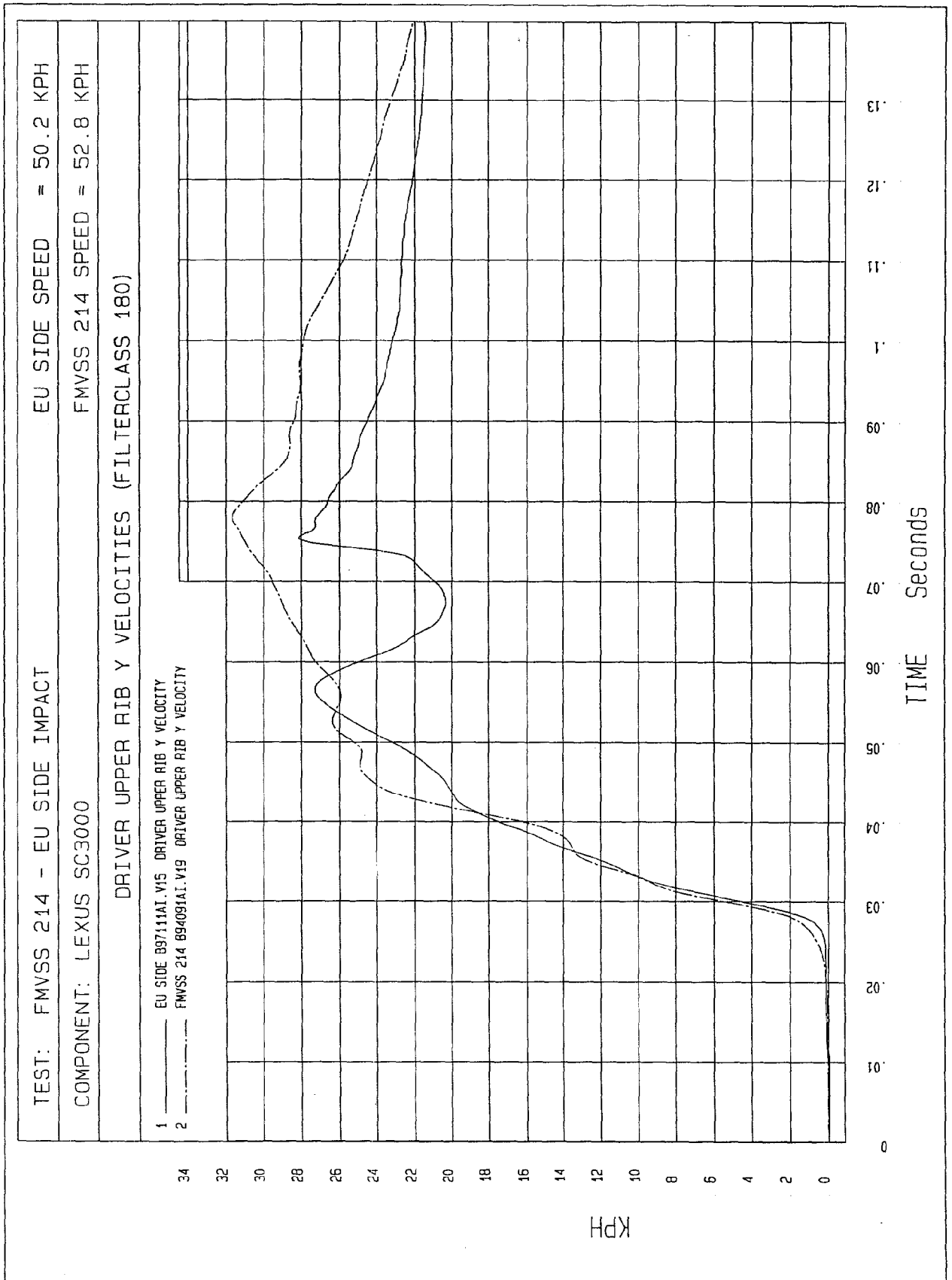


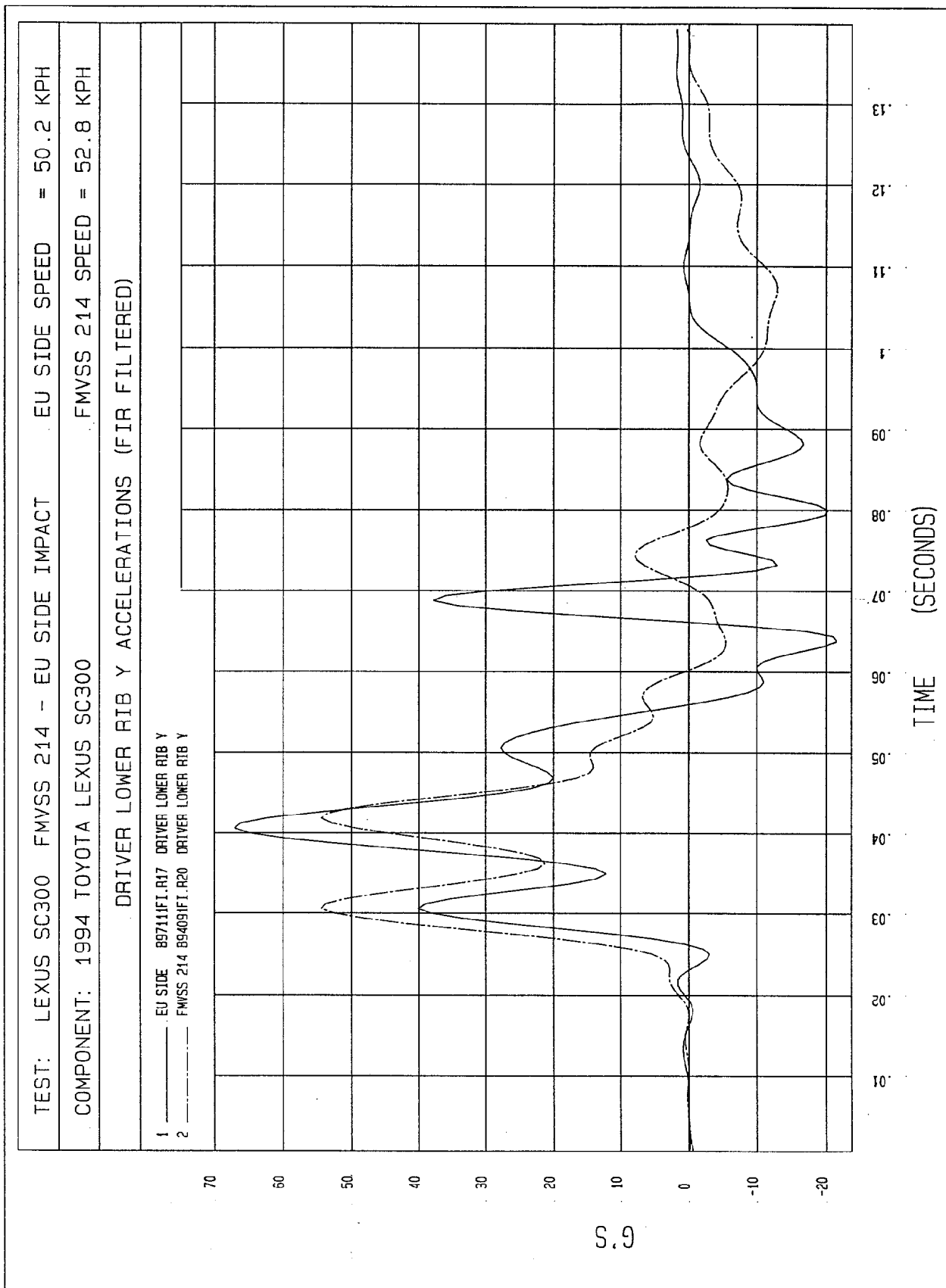


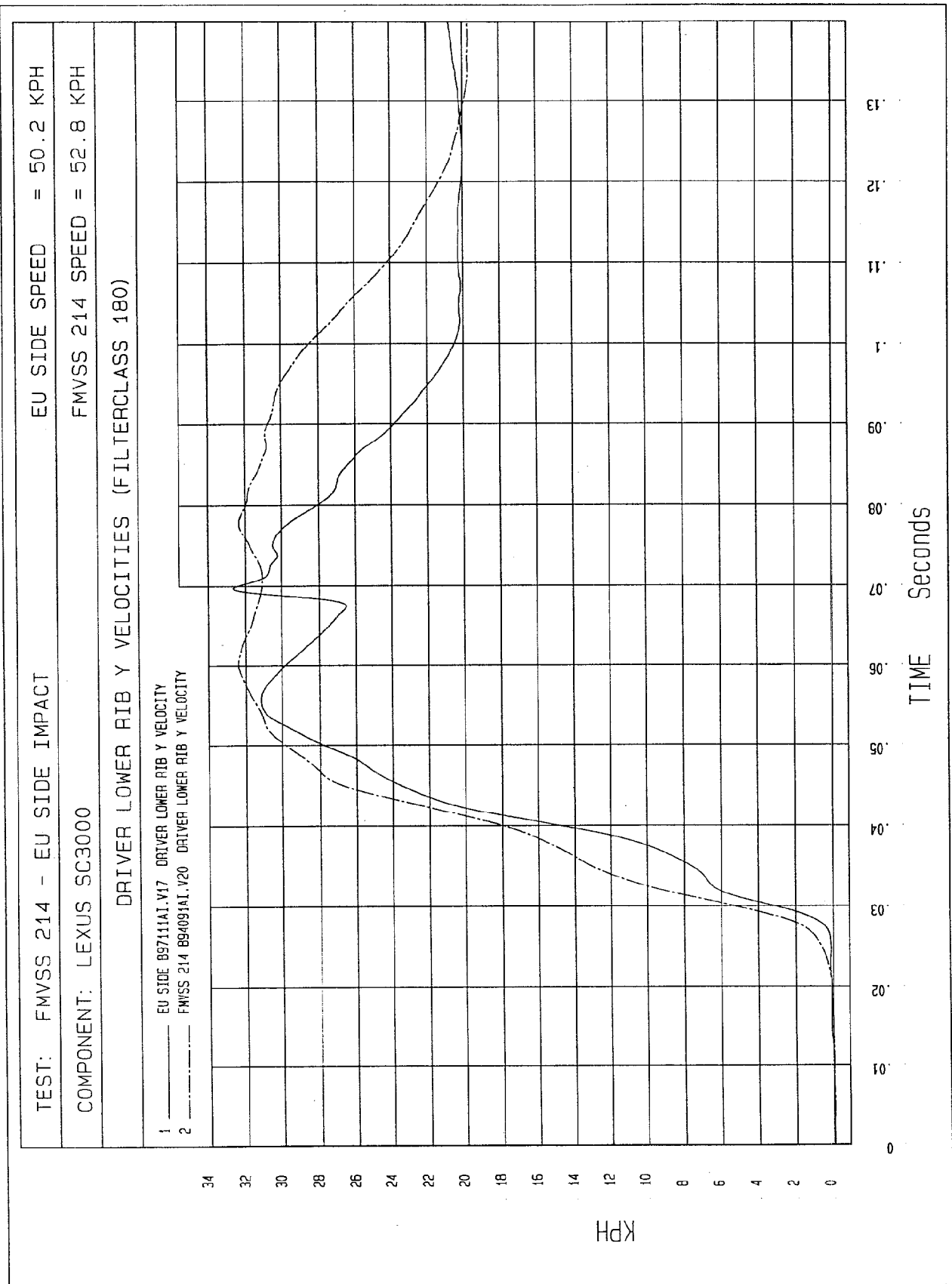


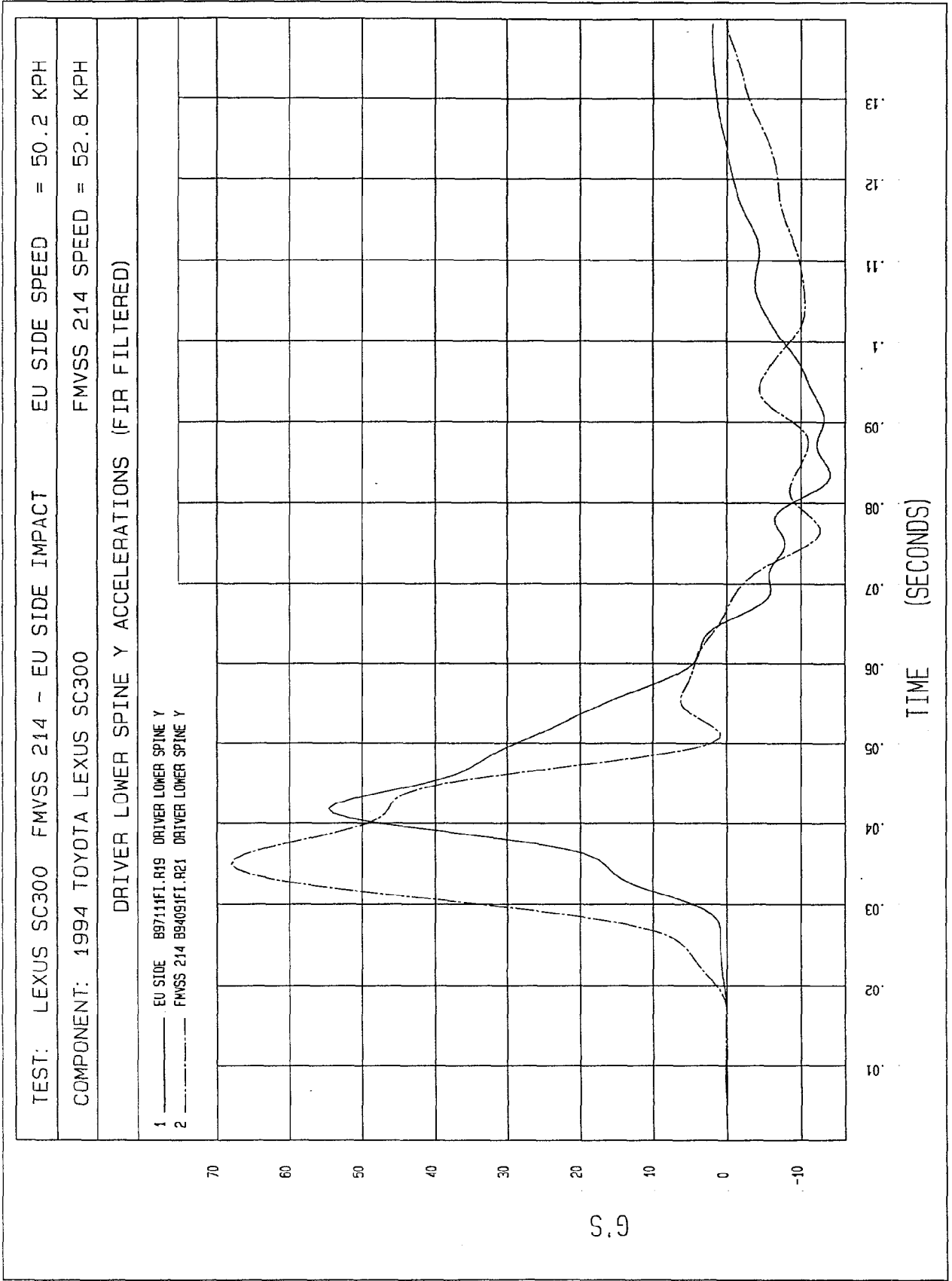
TEST: LEXUS SC300 FMVSS 214 - EU SIDE IMPACT EU SIDE SPEED = 50.2 KPH
 COMPONENT: 1994 TOYOTA LEXUS SC300 FMVSS 214 SPEED = 52.8 KPH
 DRIVER UPPER RIB Y ACCELERATIONS (FIR FILTERED)

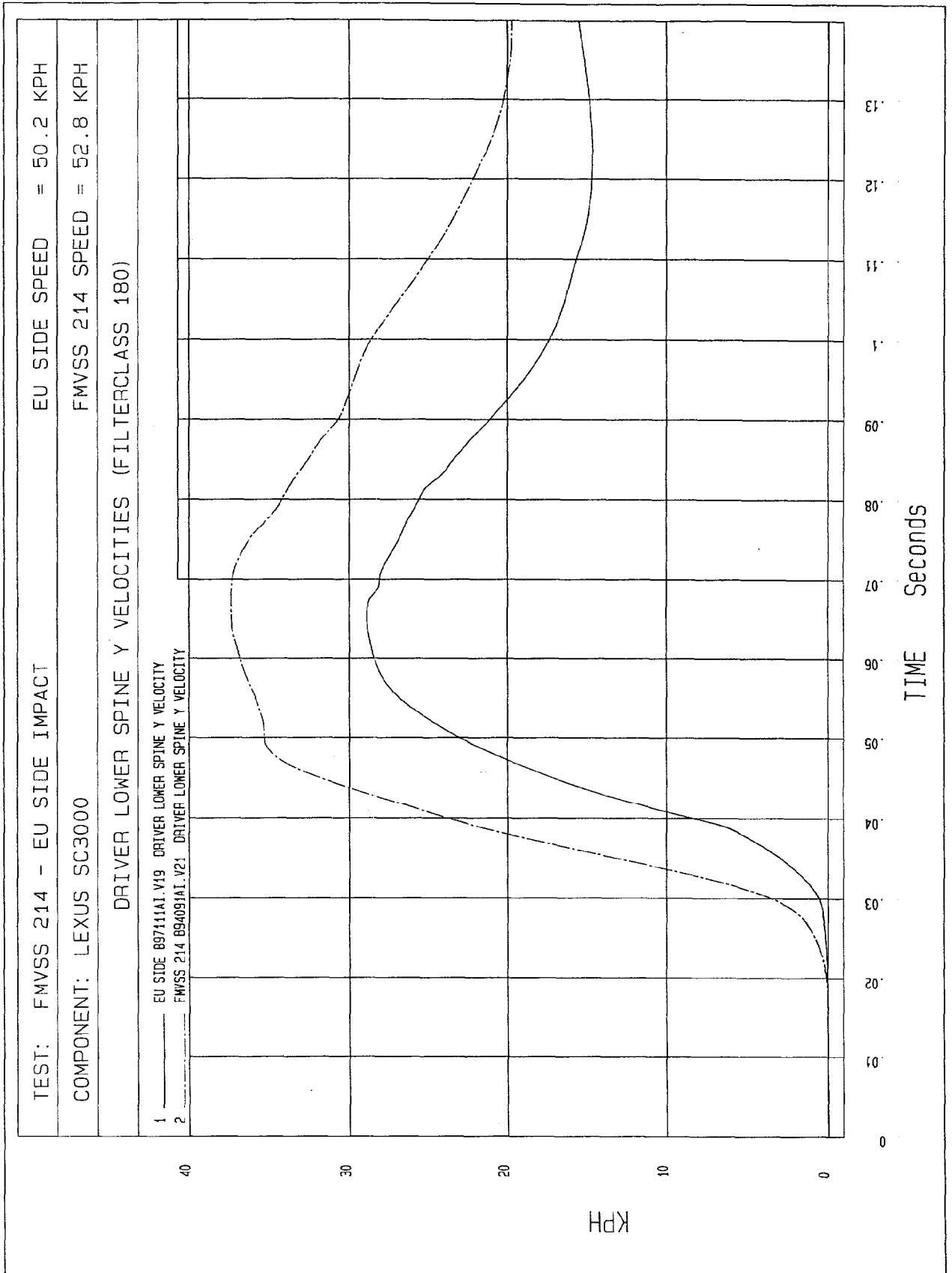


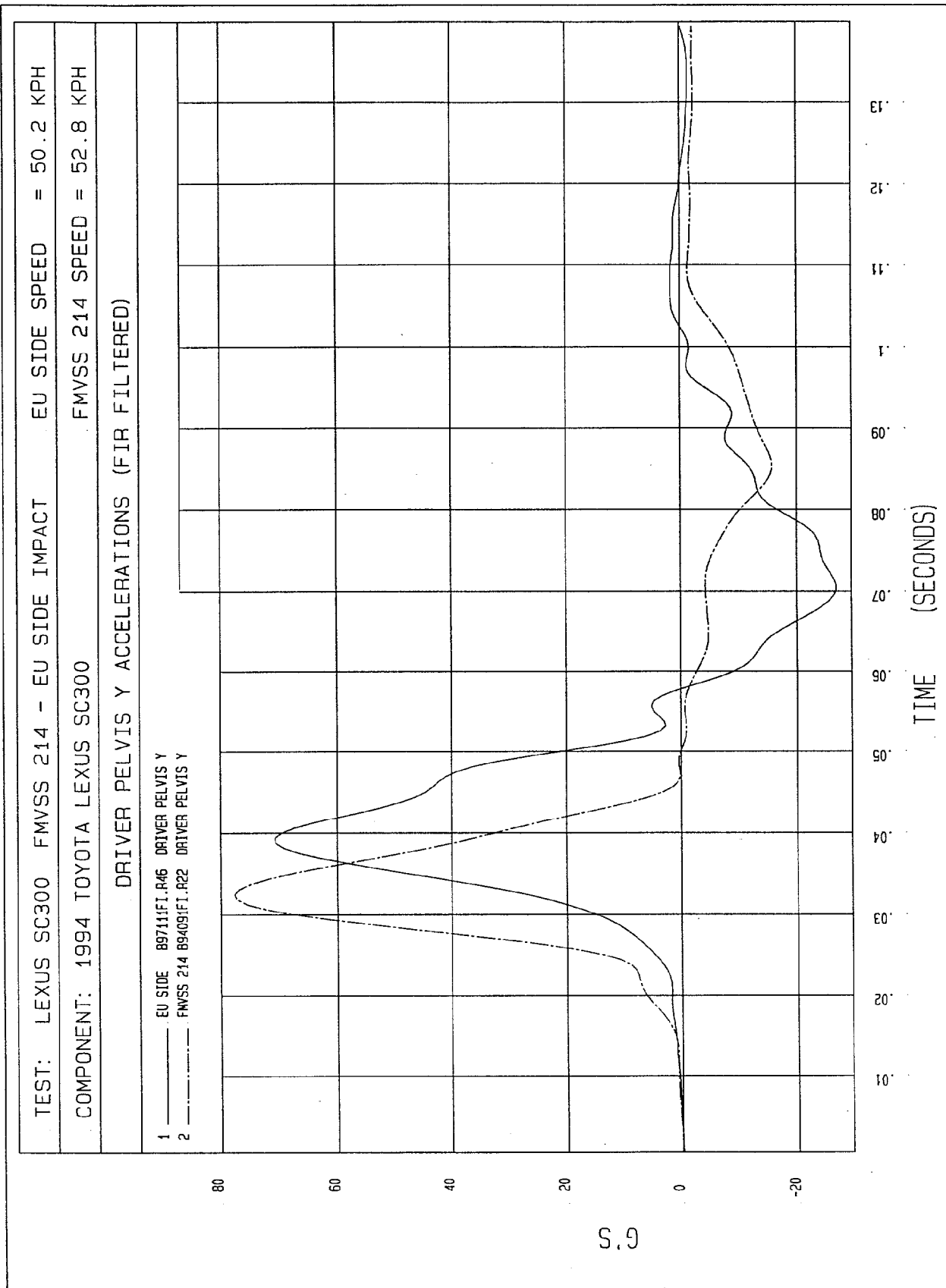


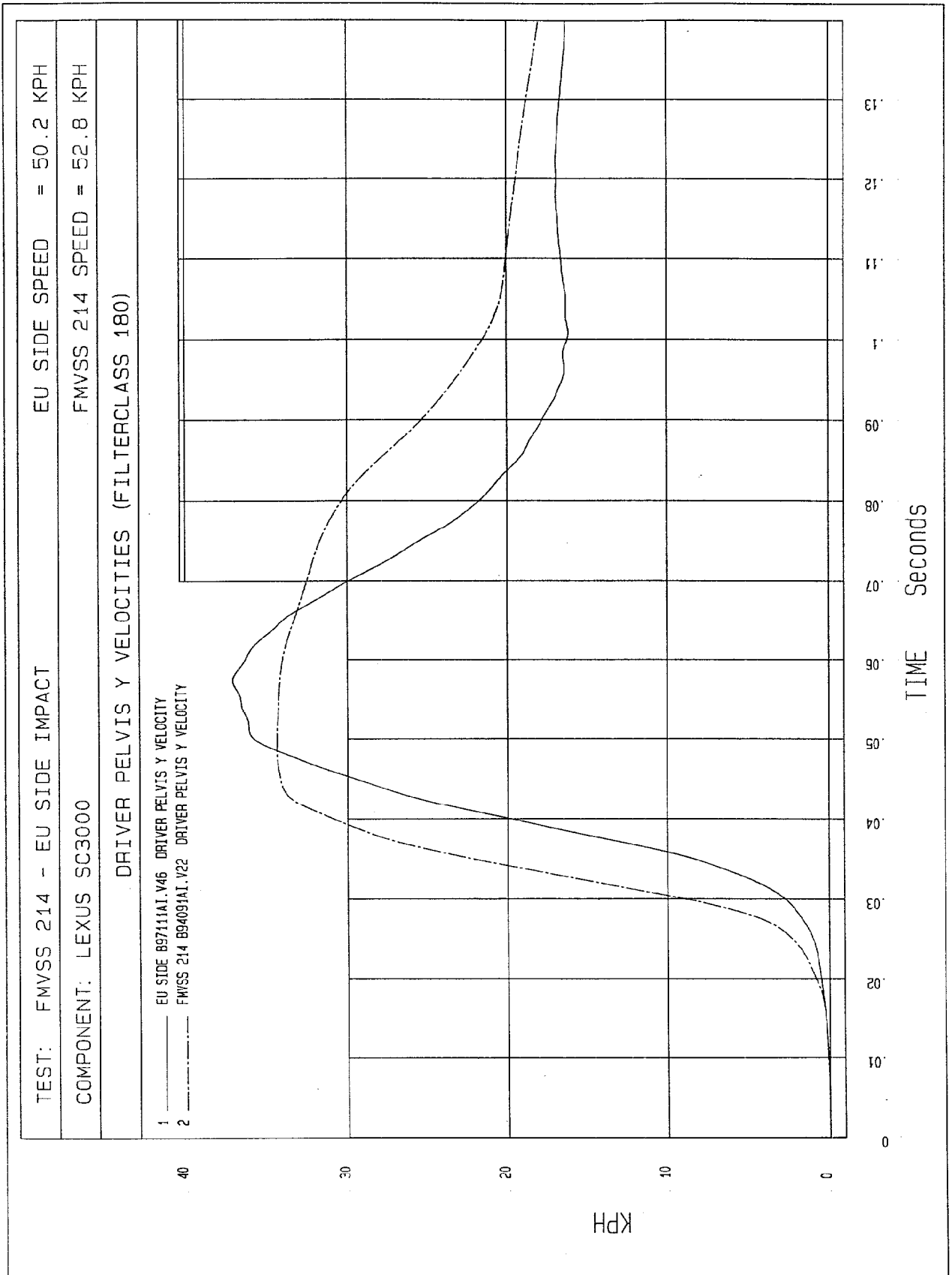


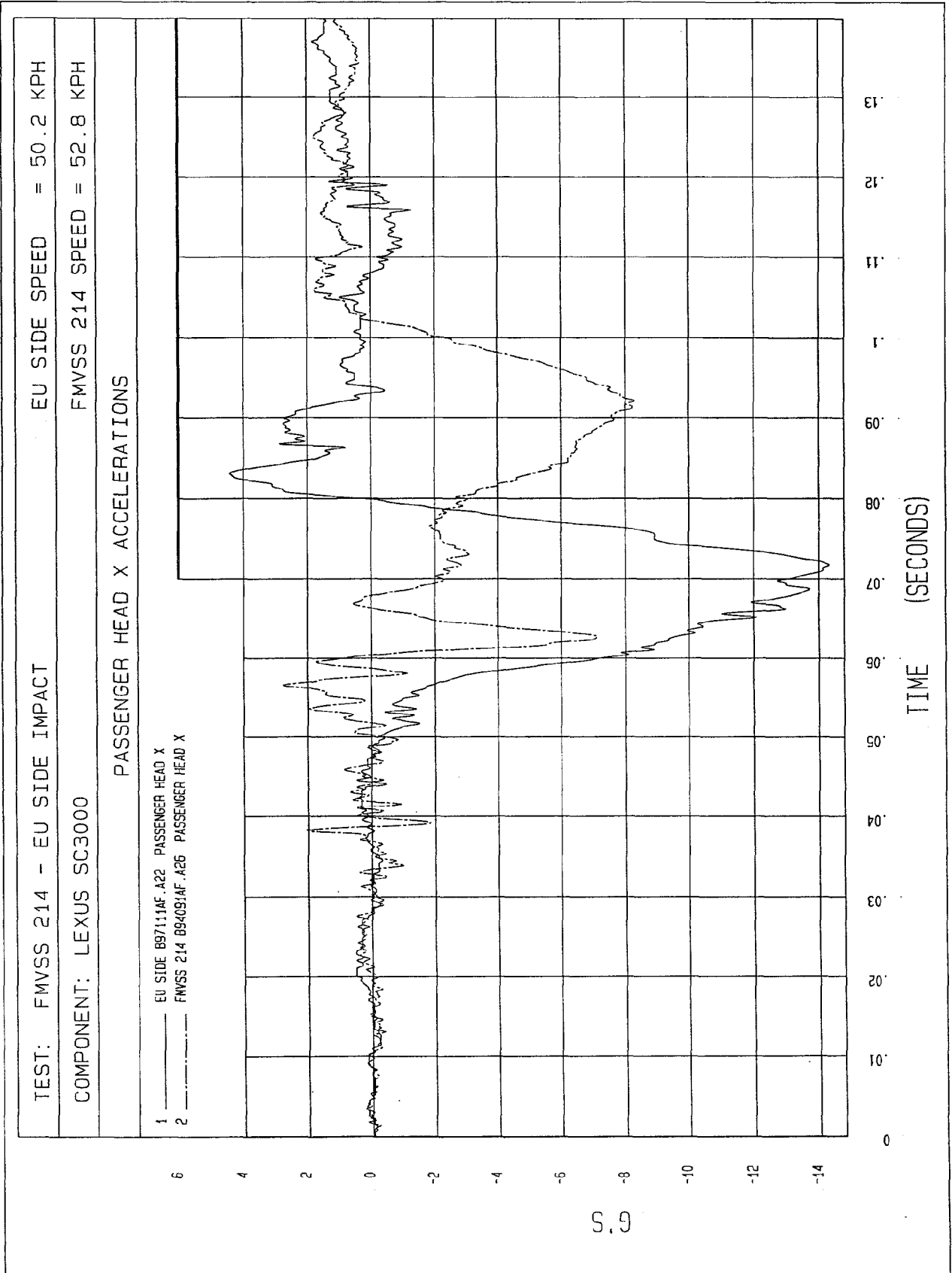


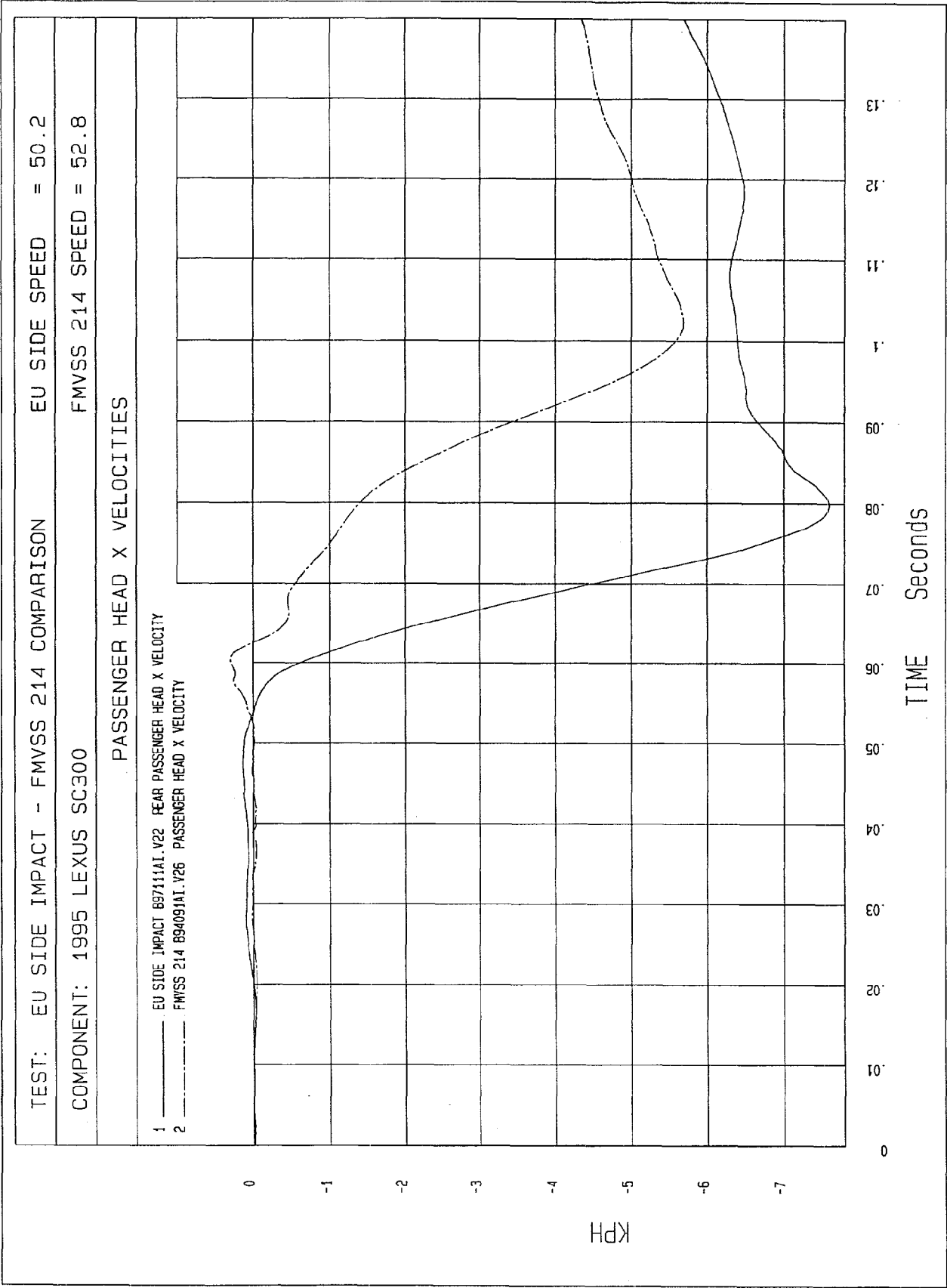


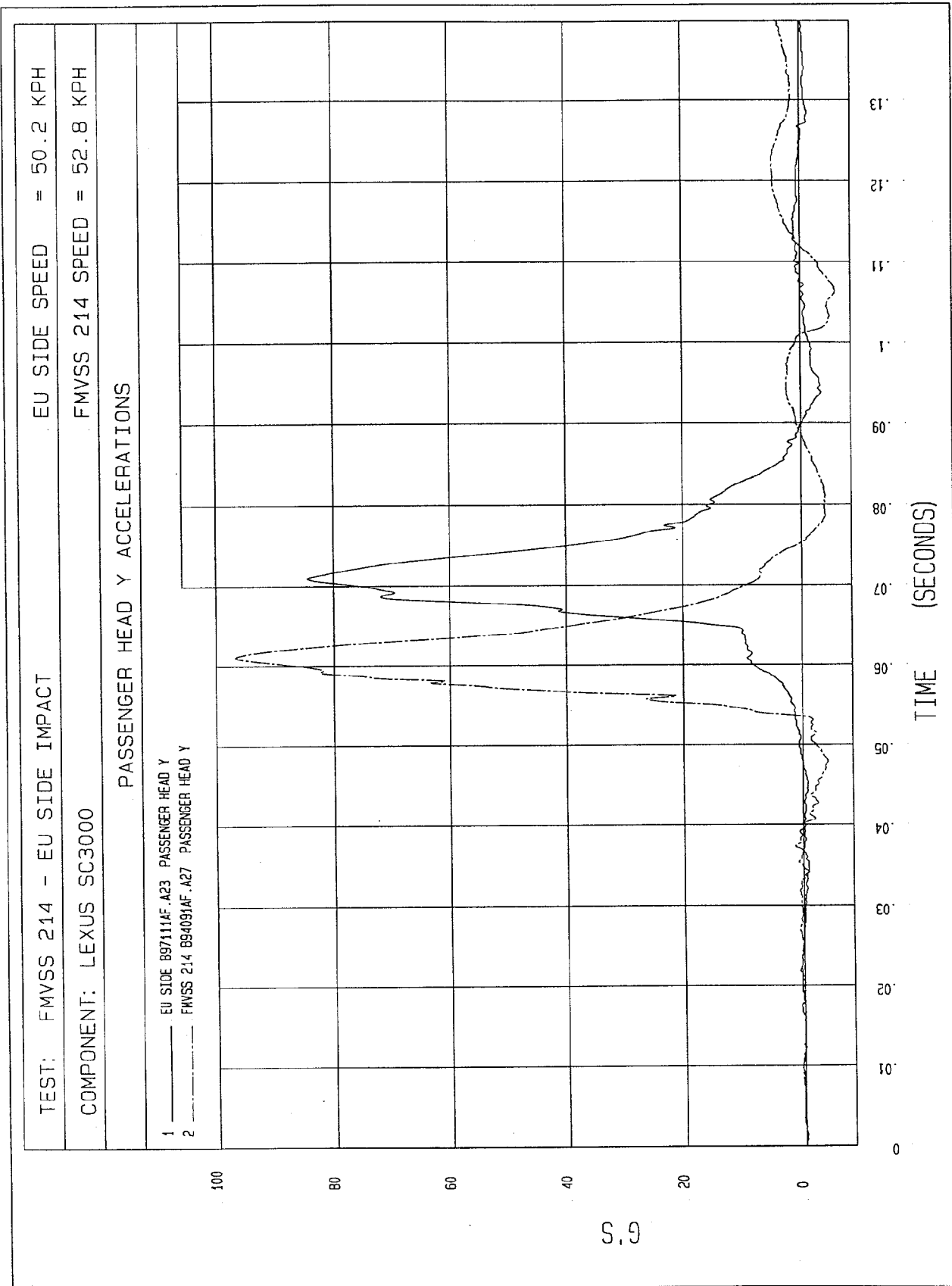


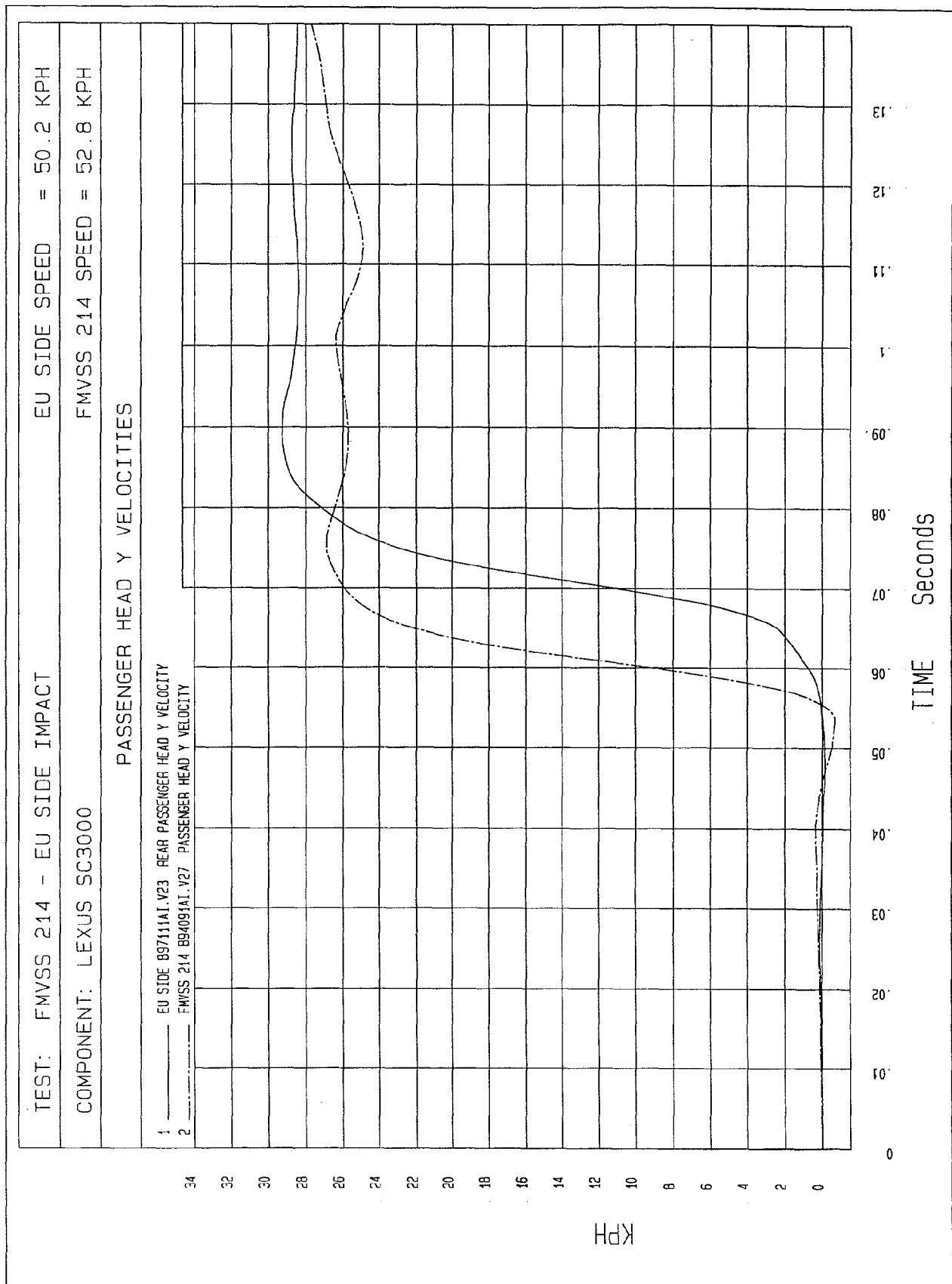


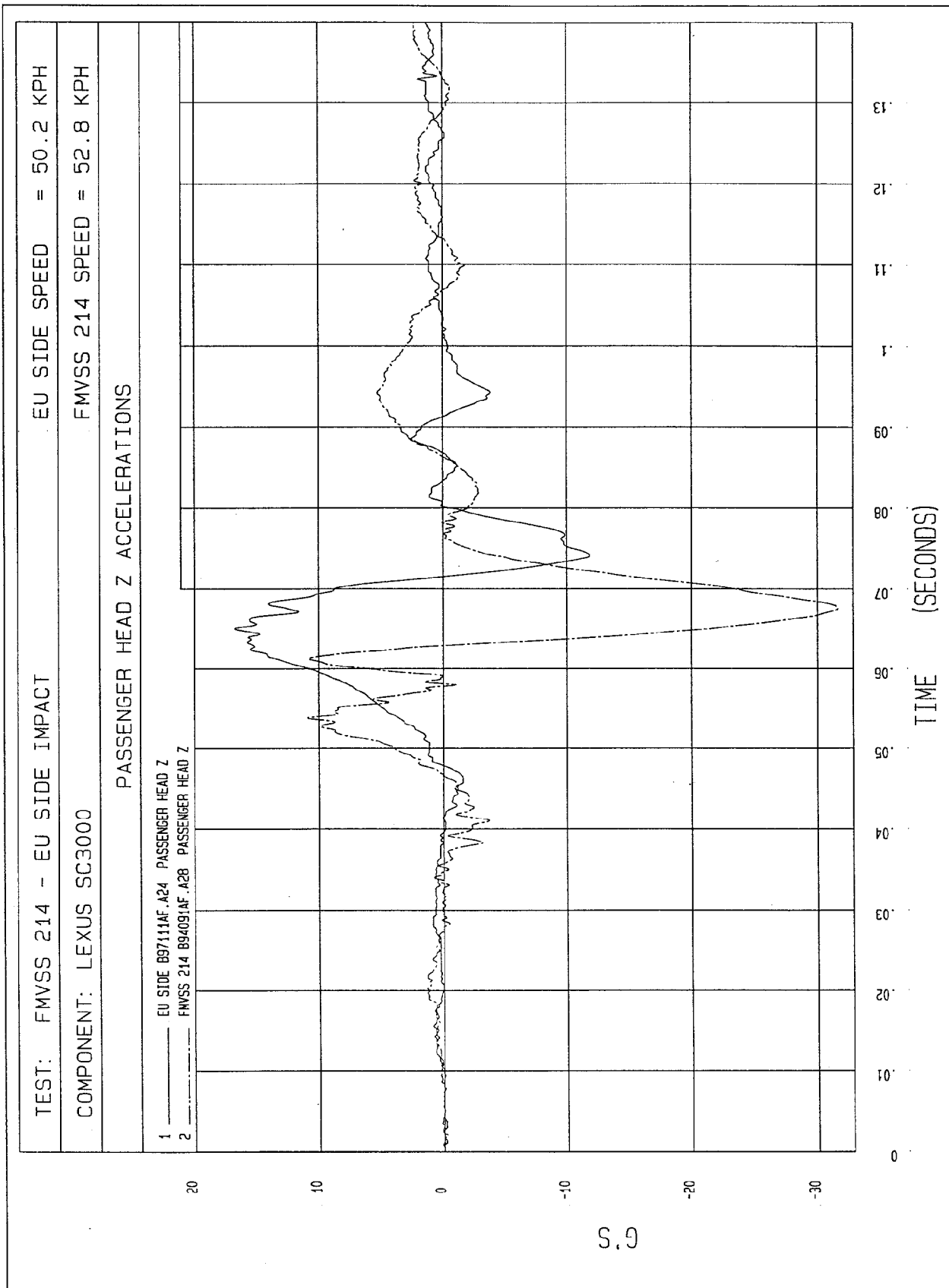


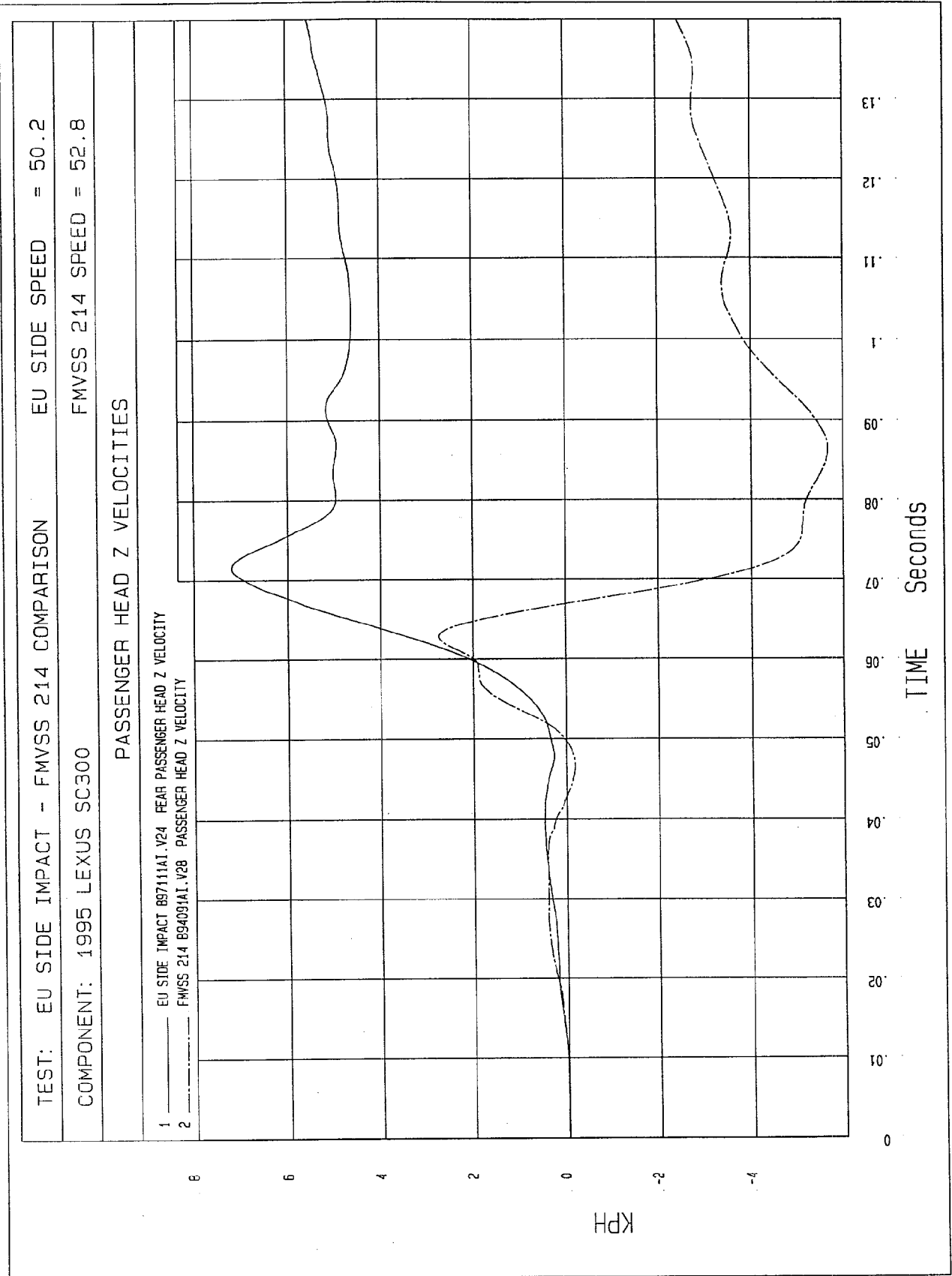


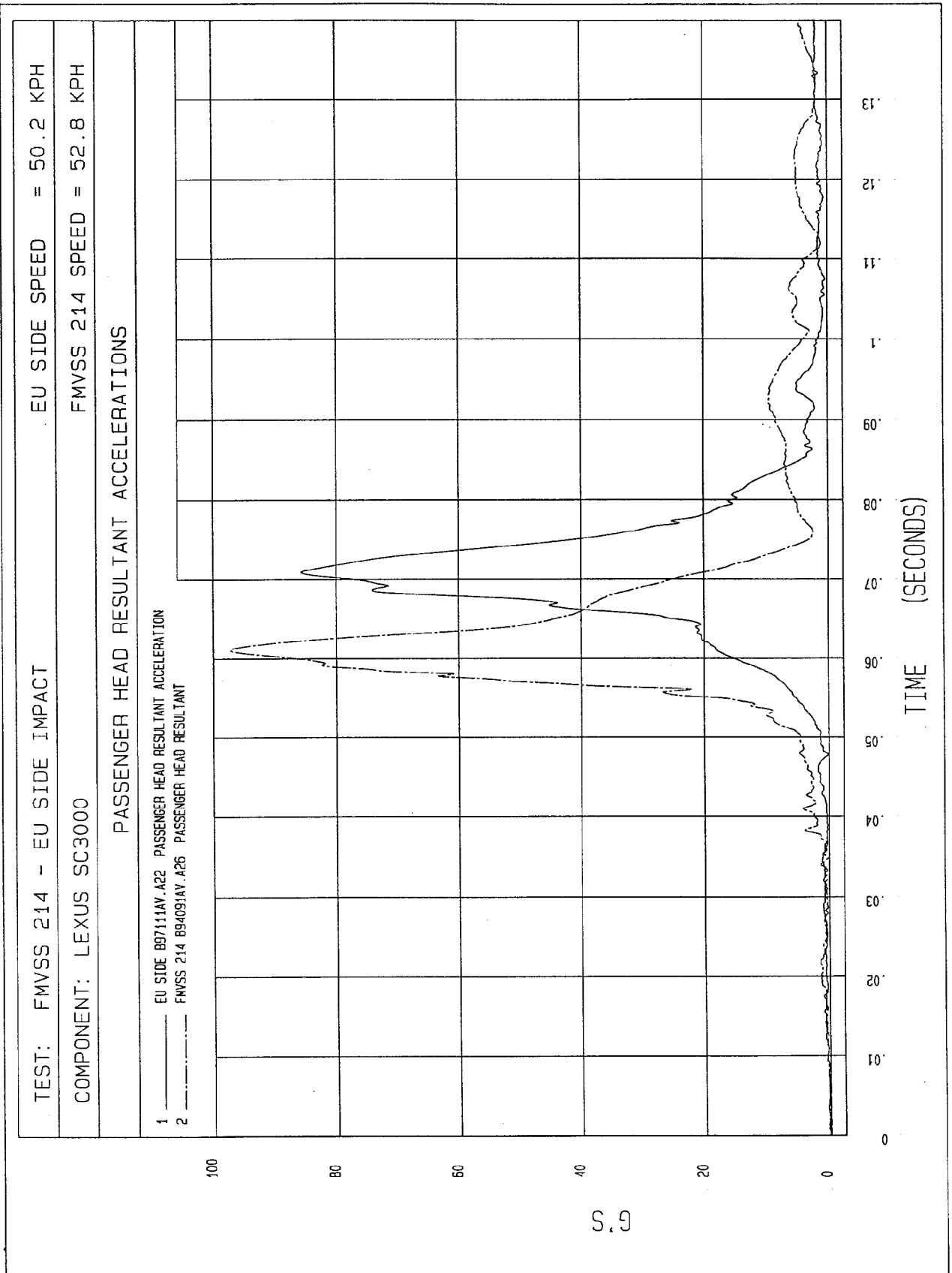


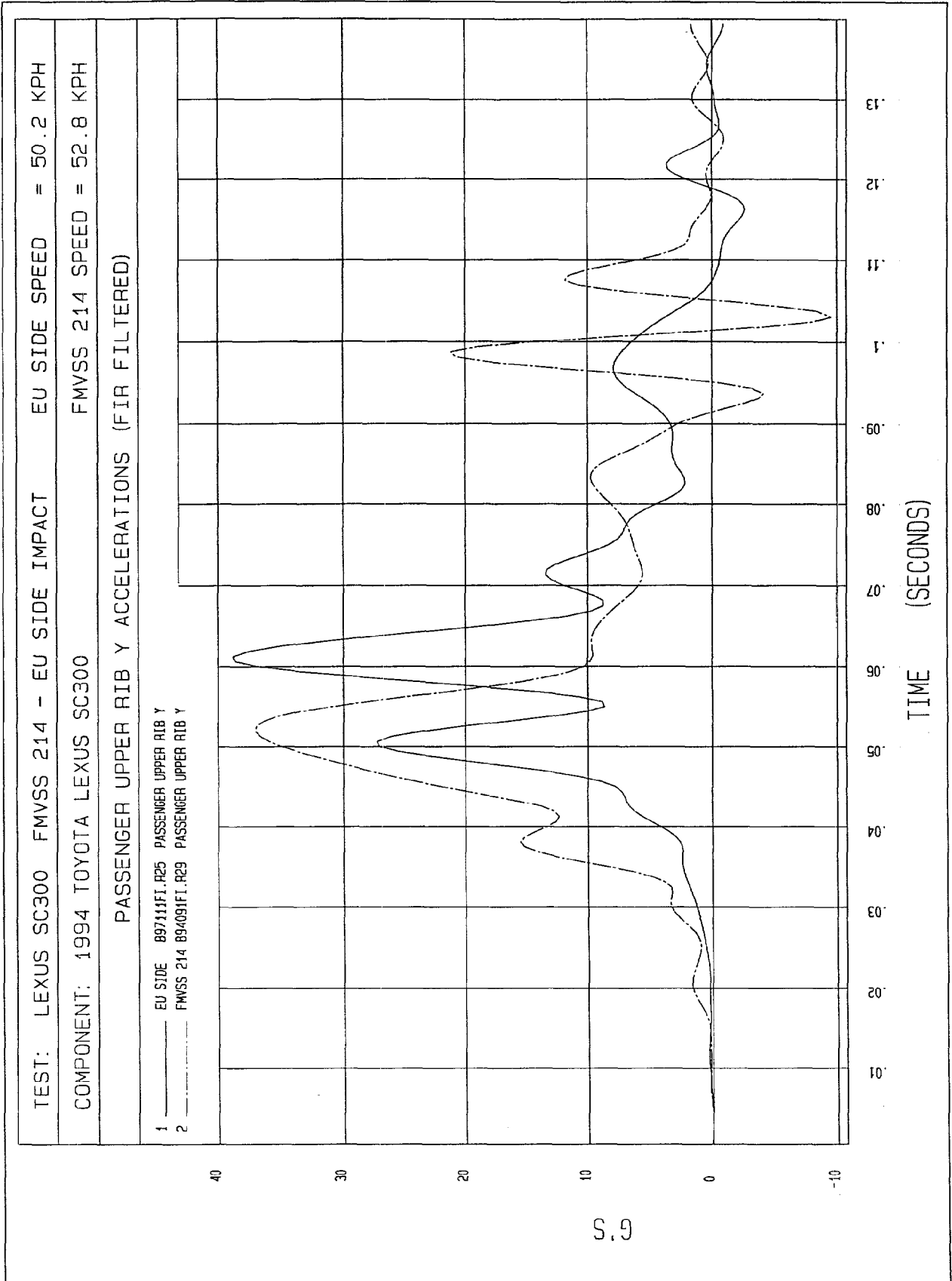


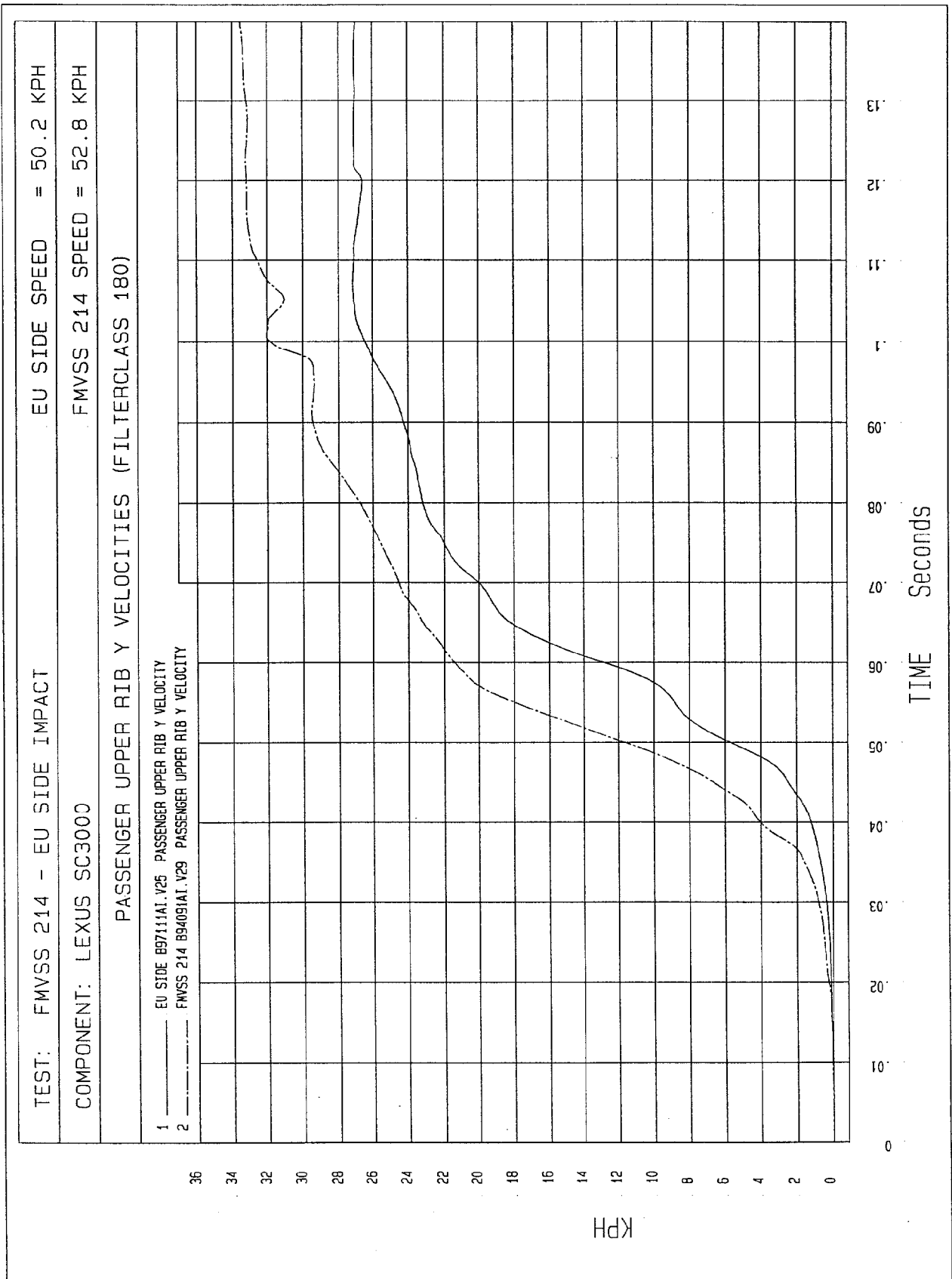


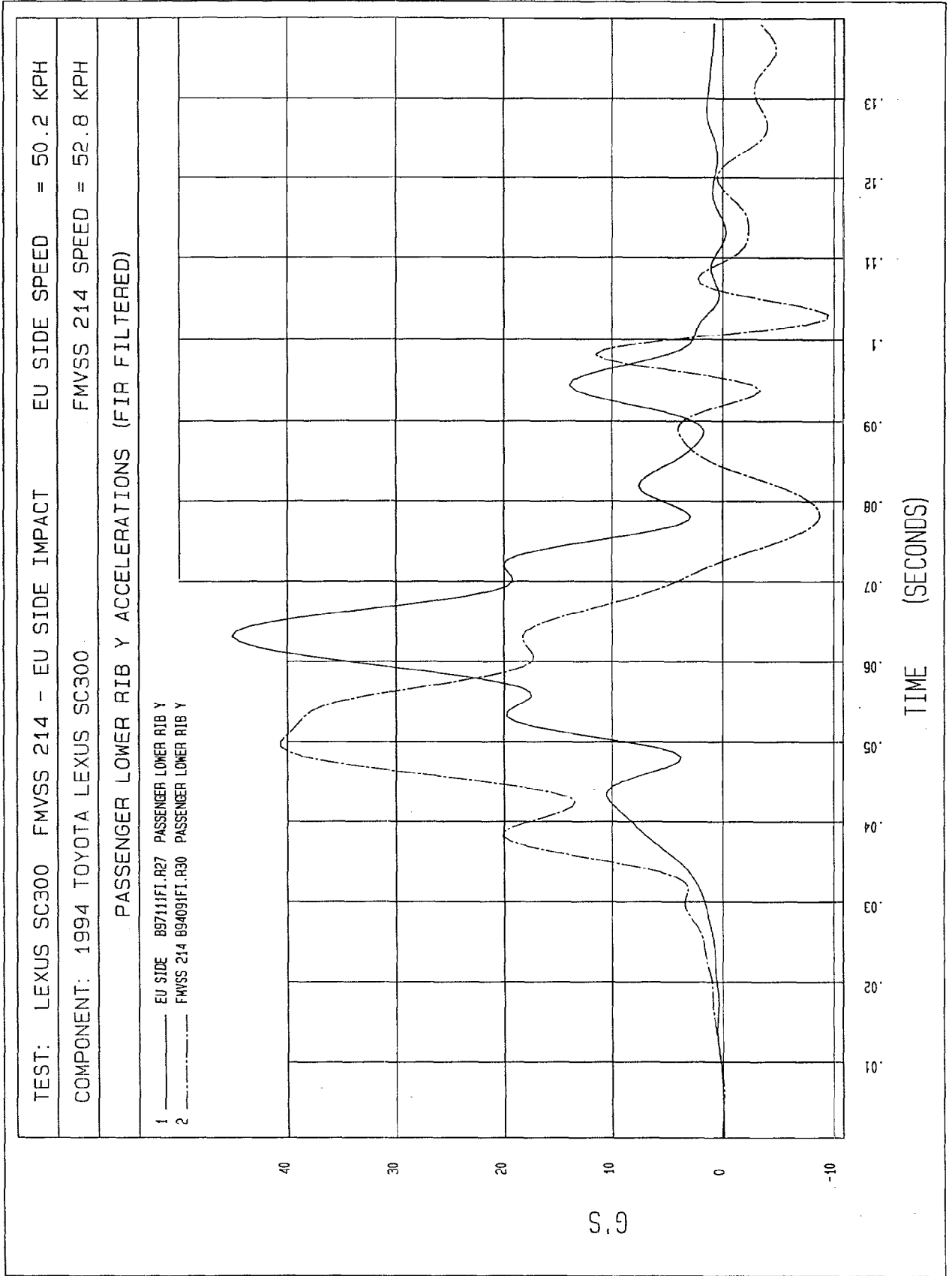


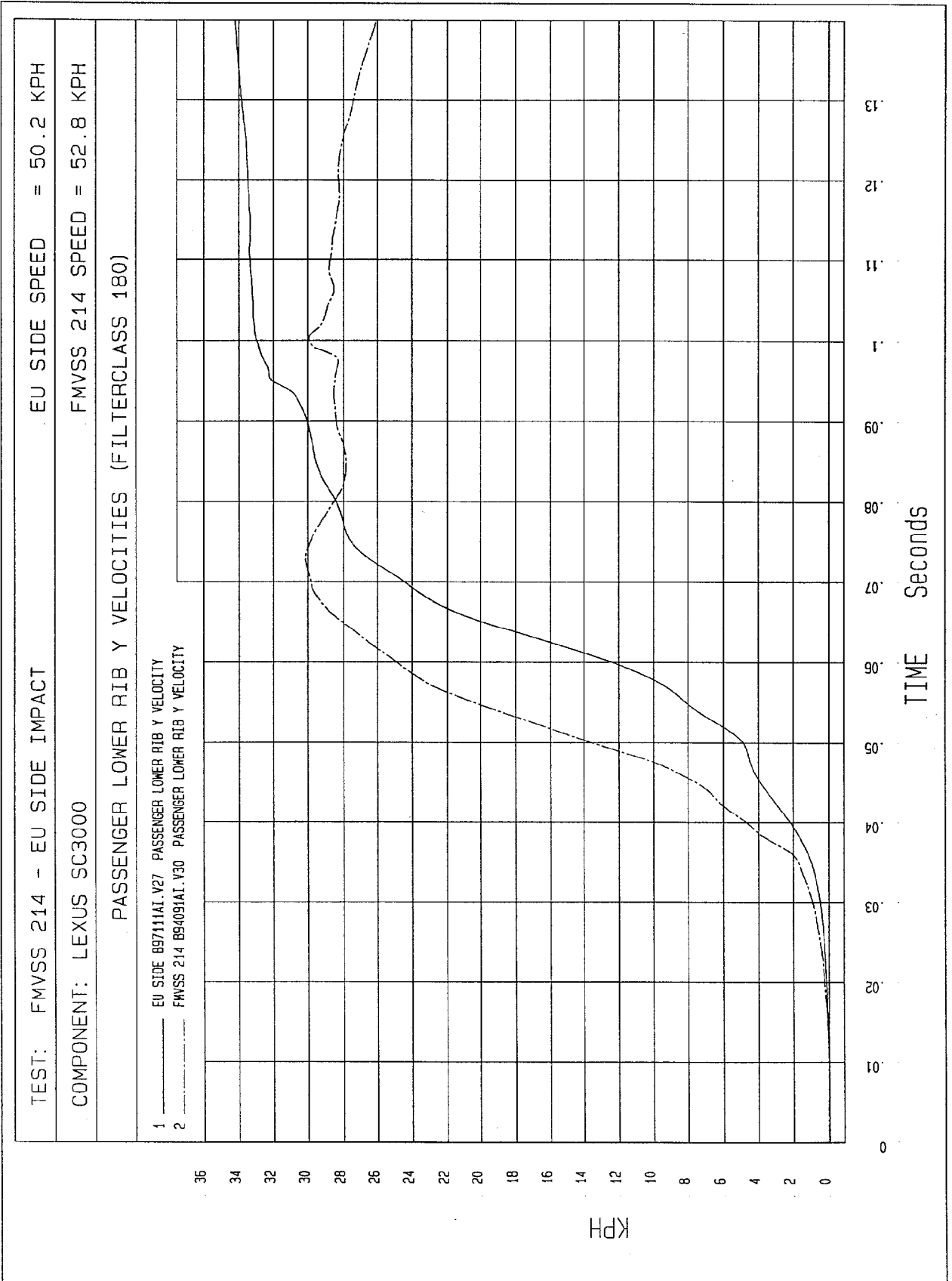


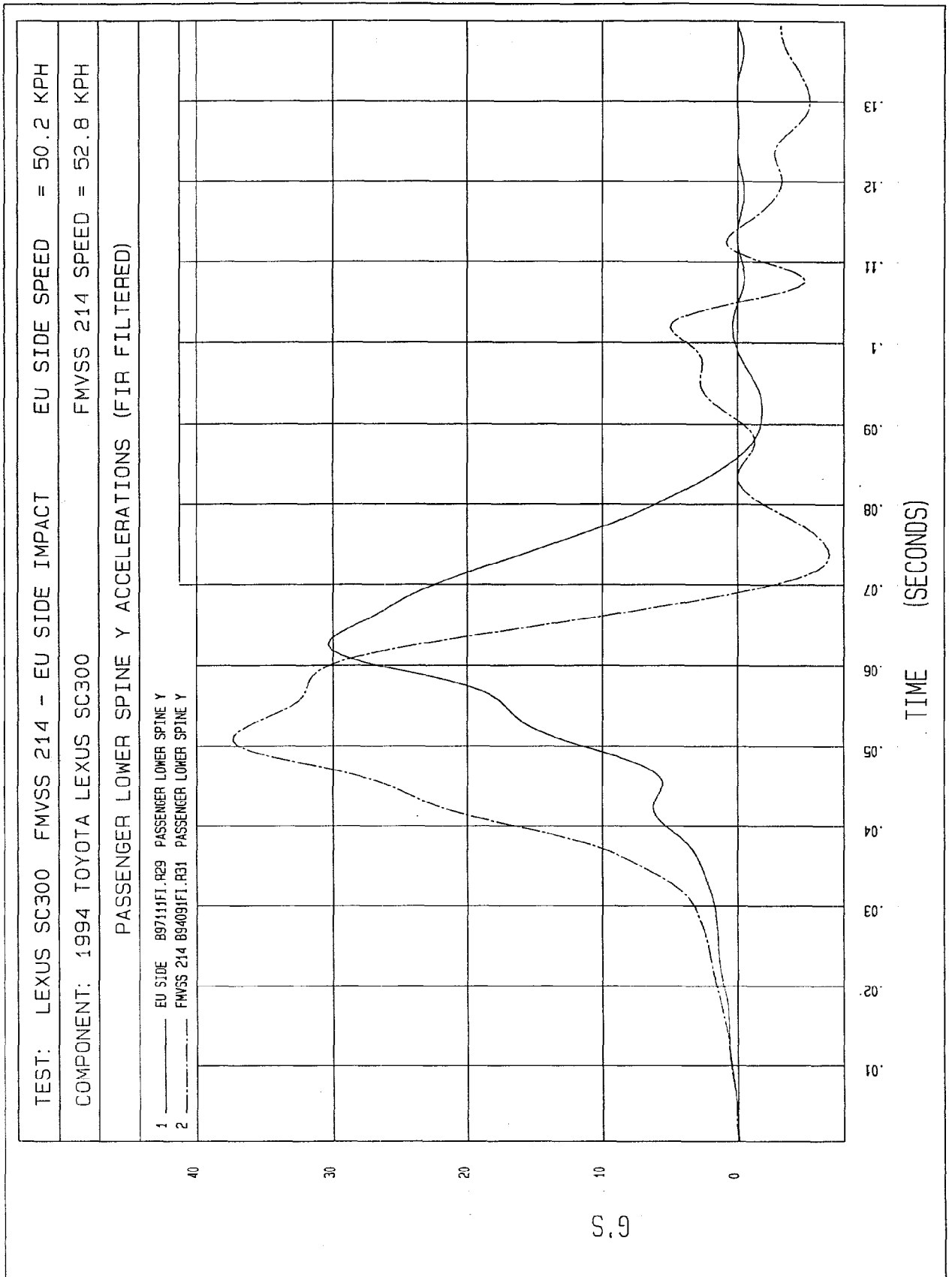


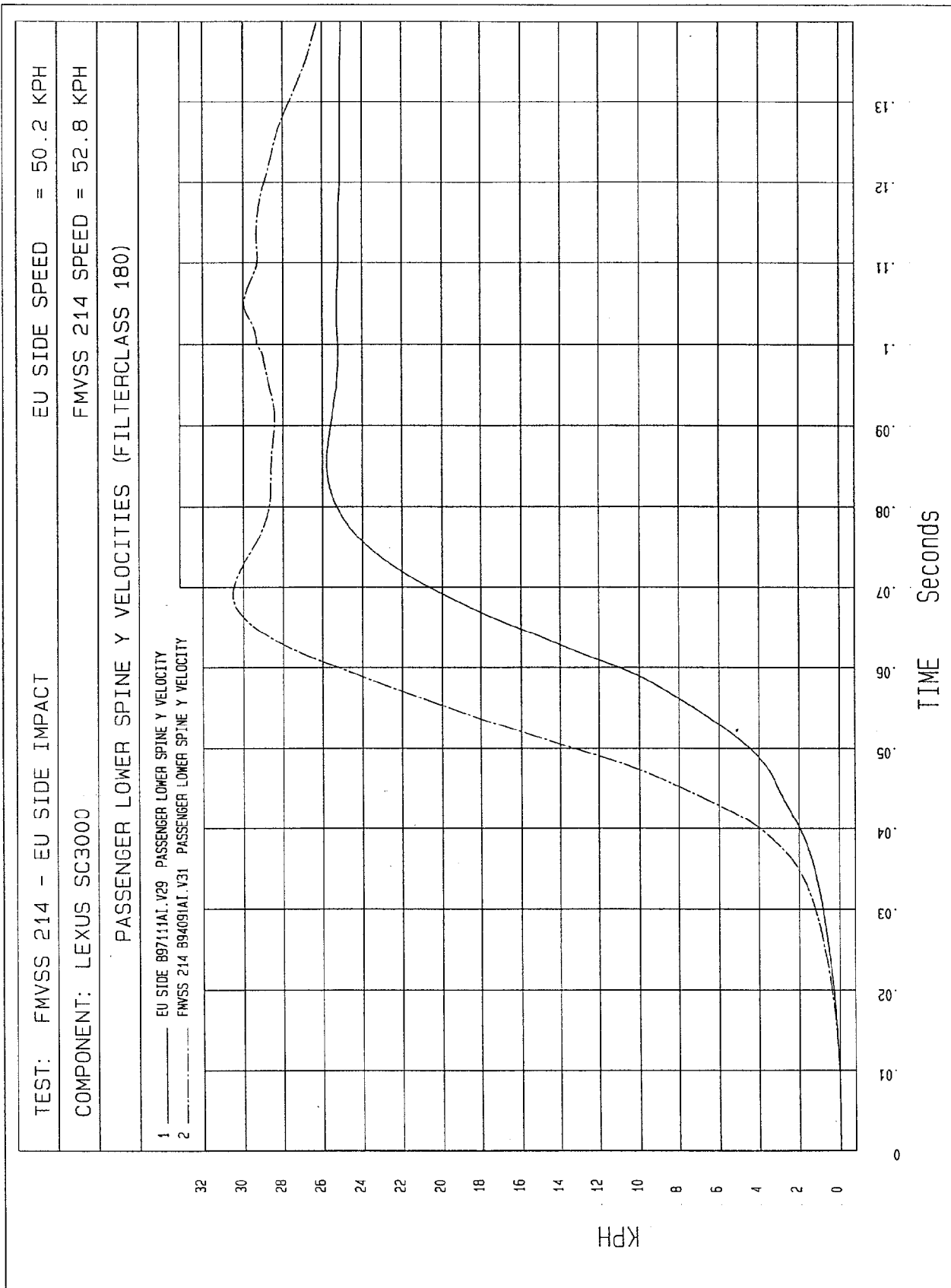


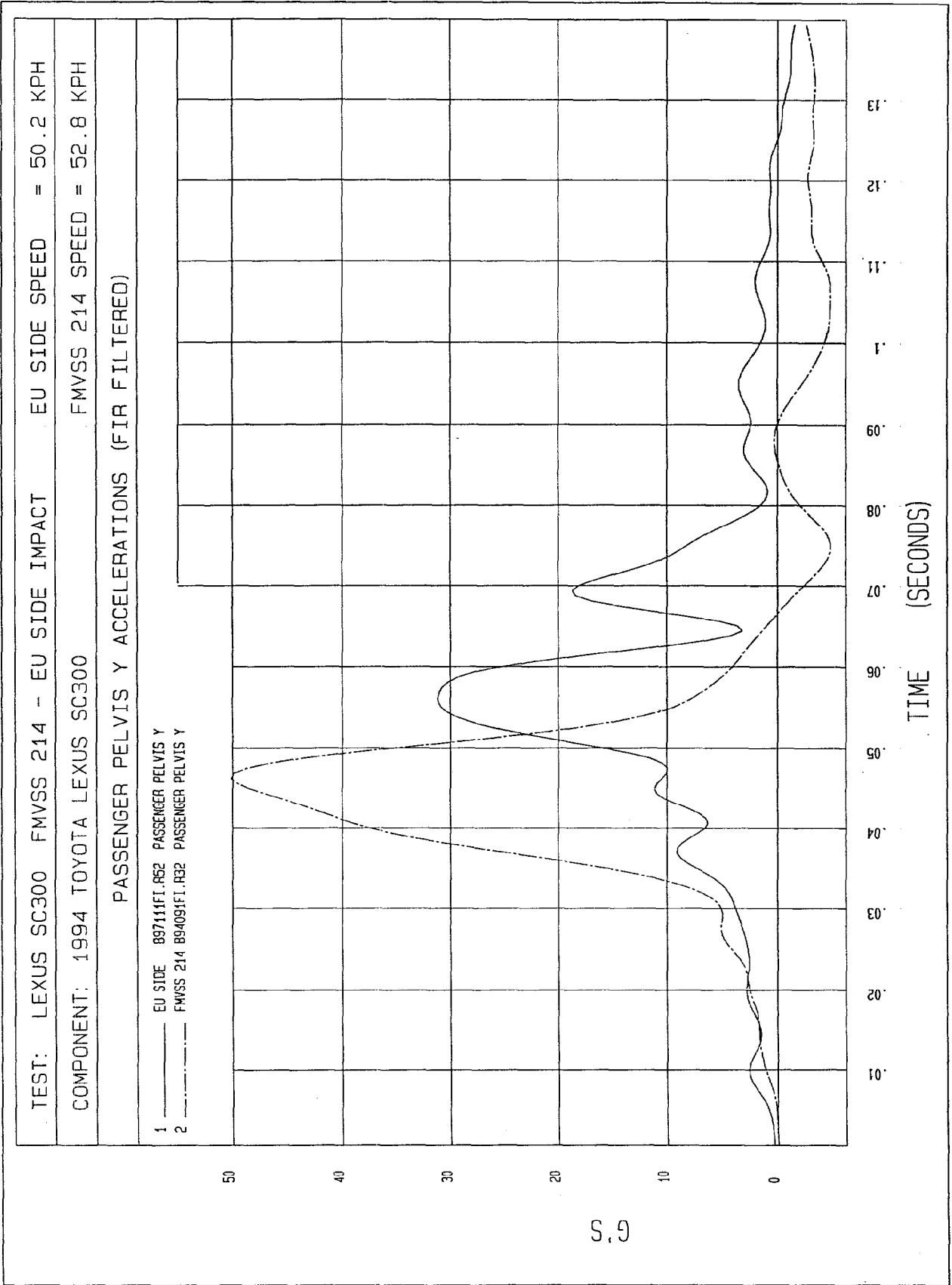


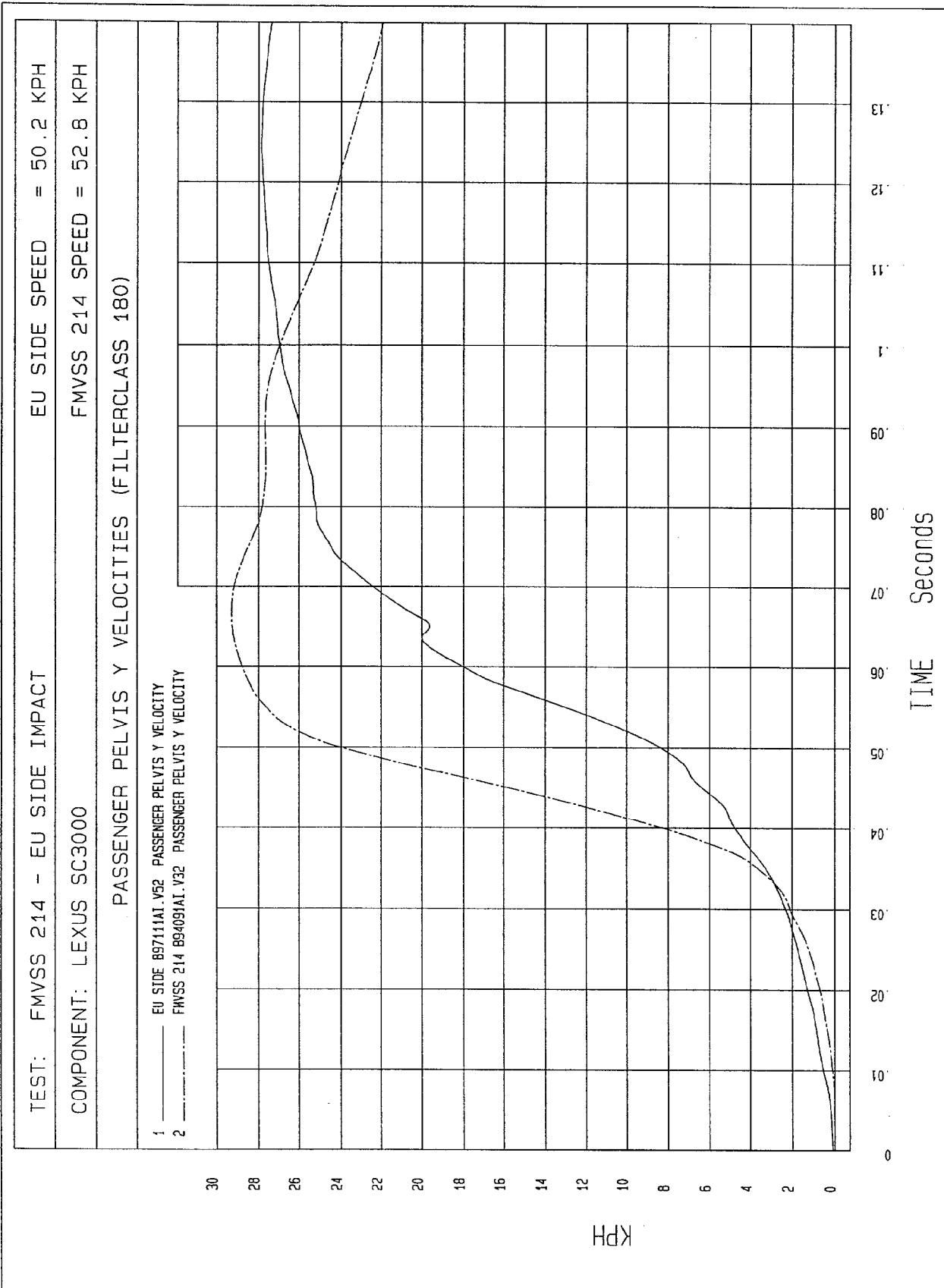


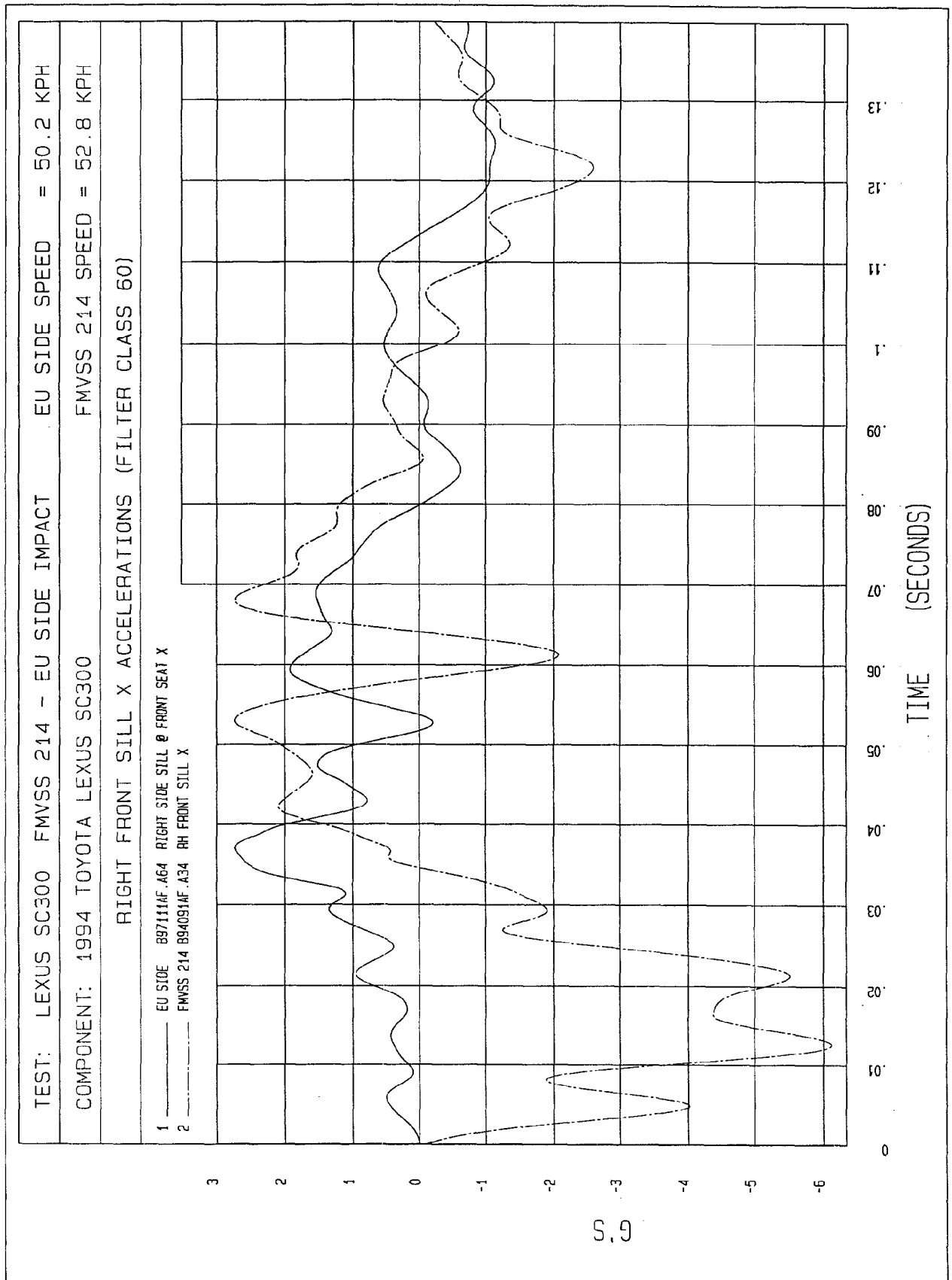


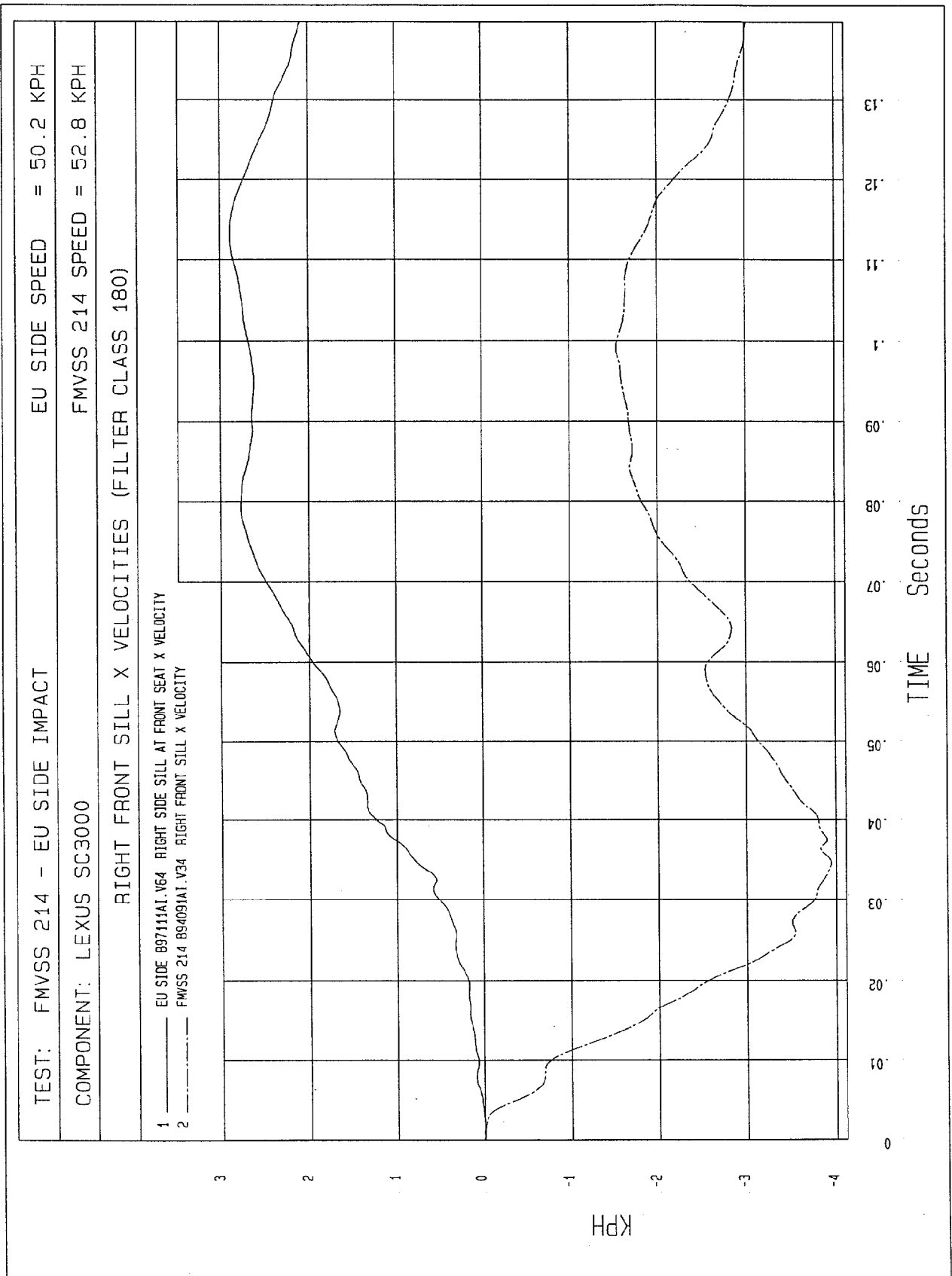


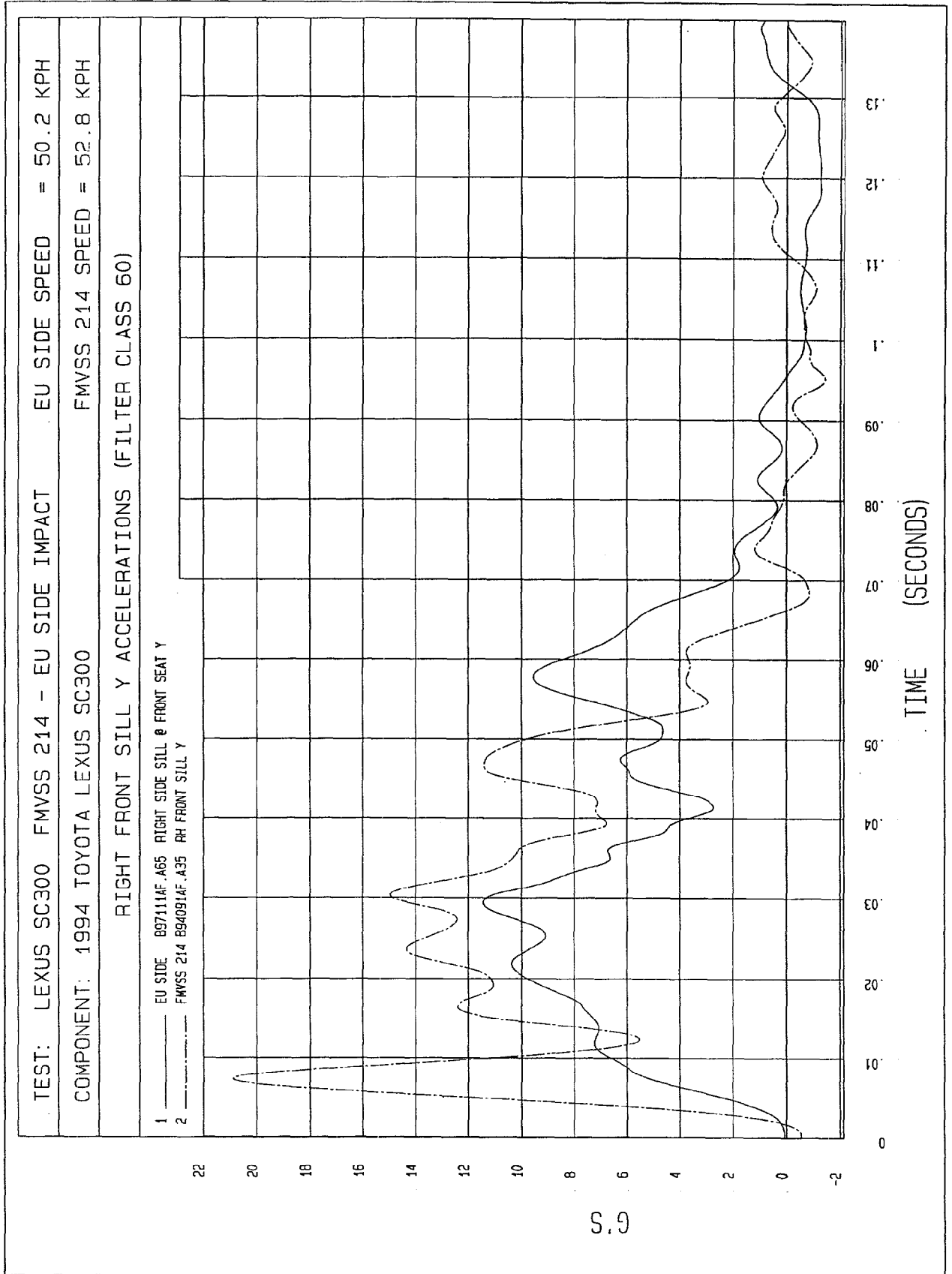


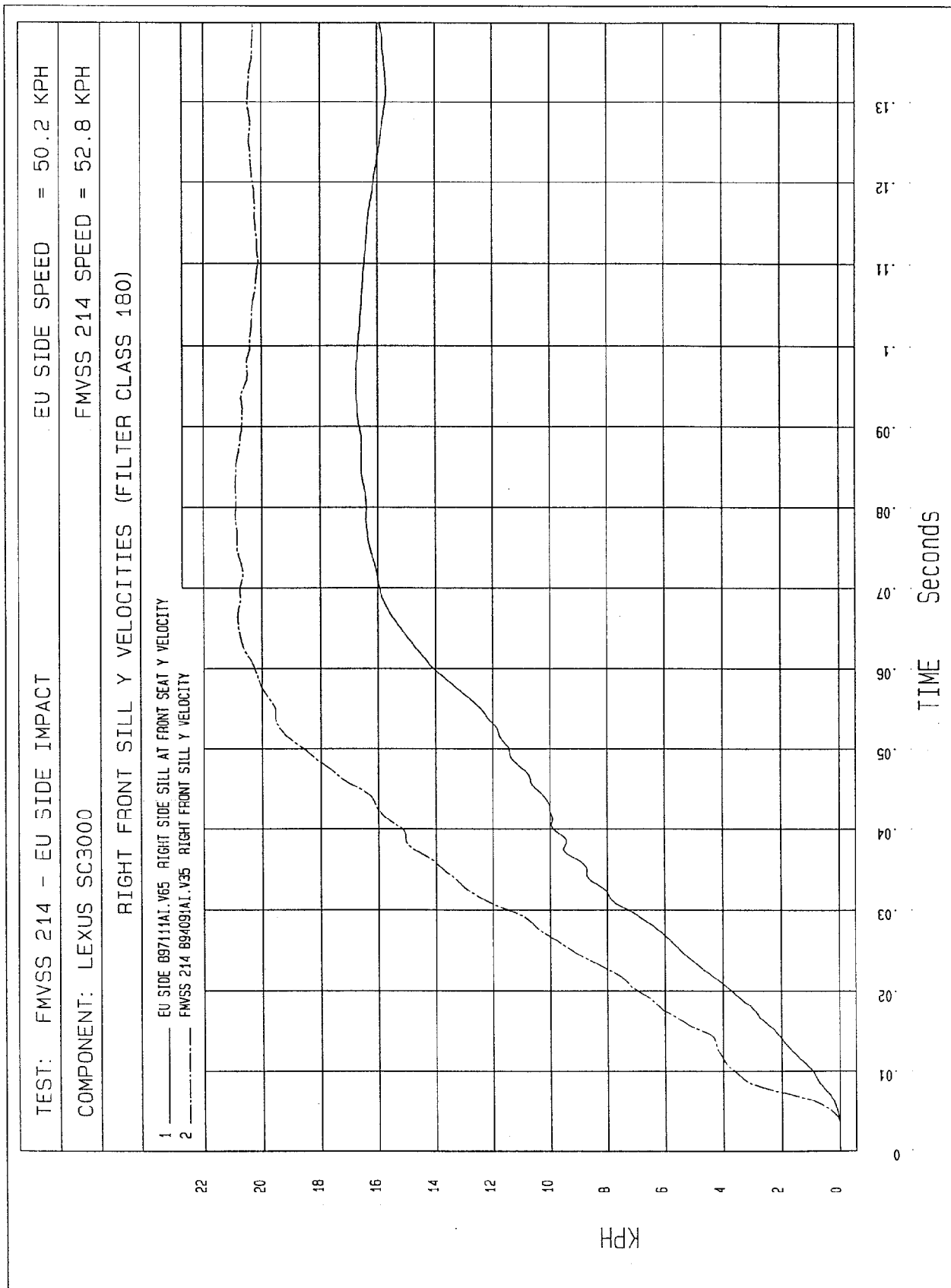


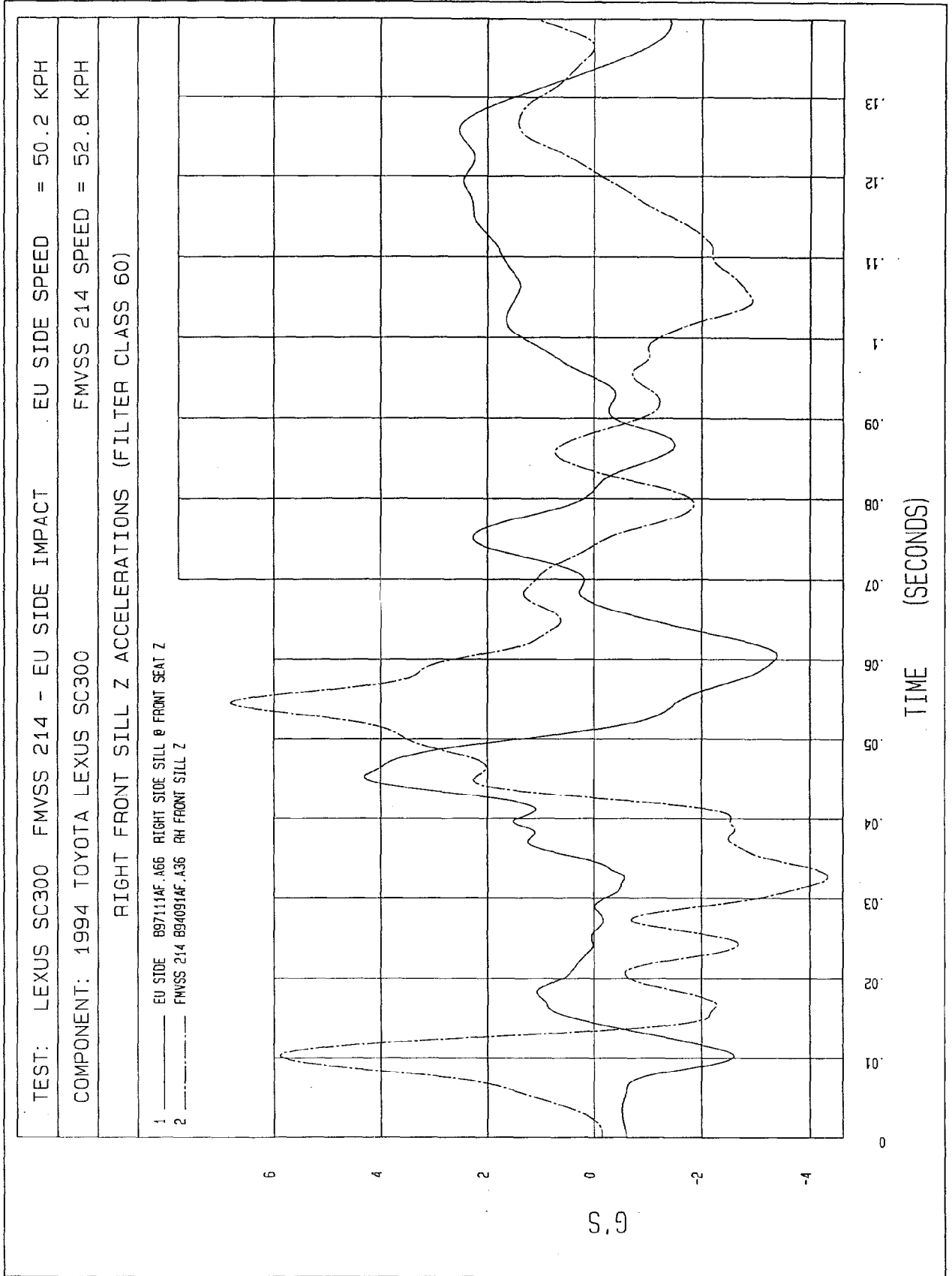


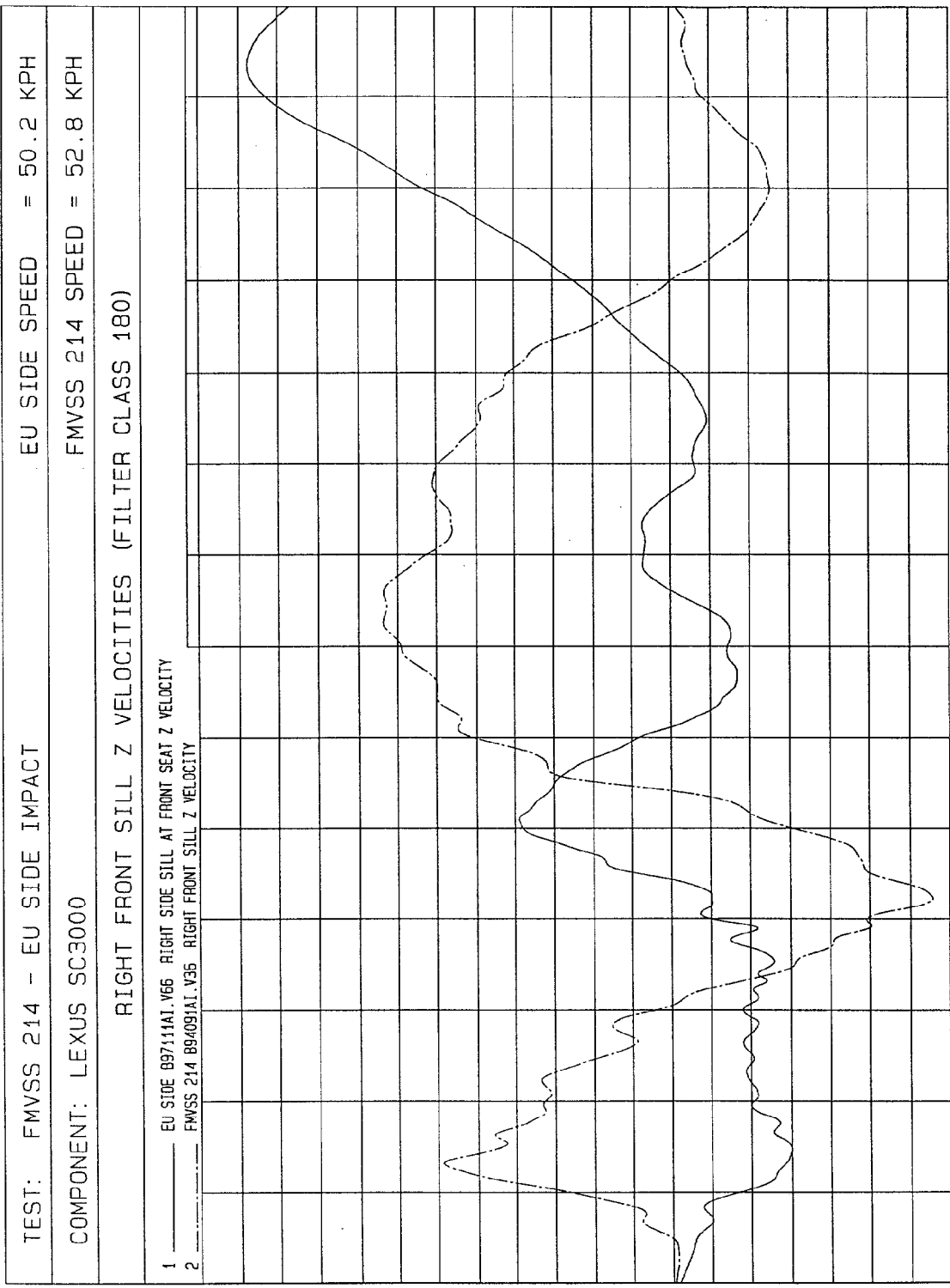


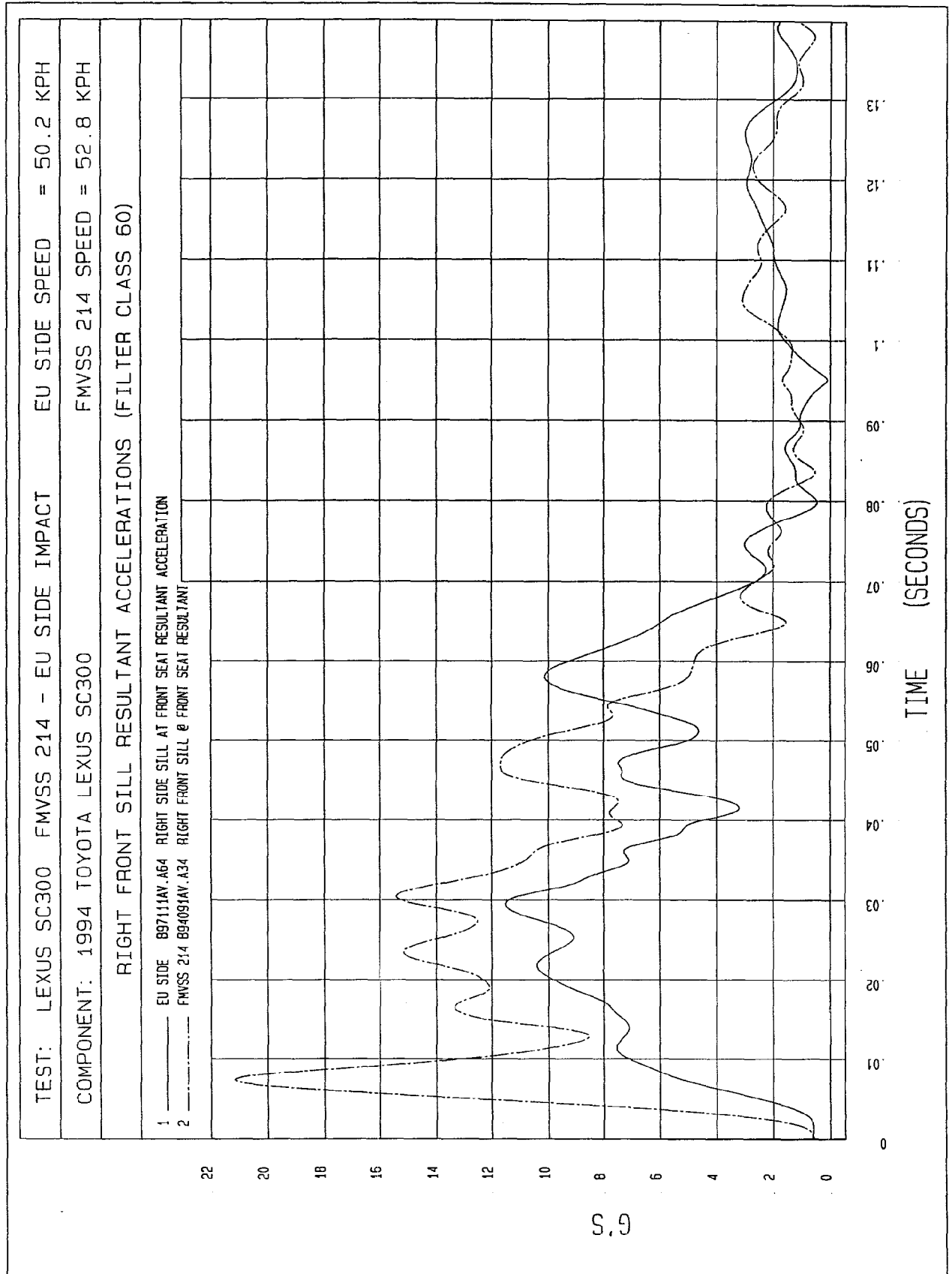


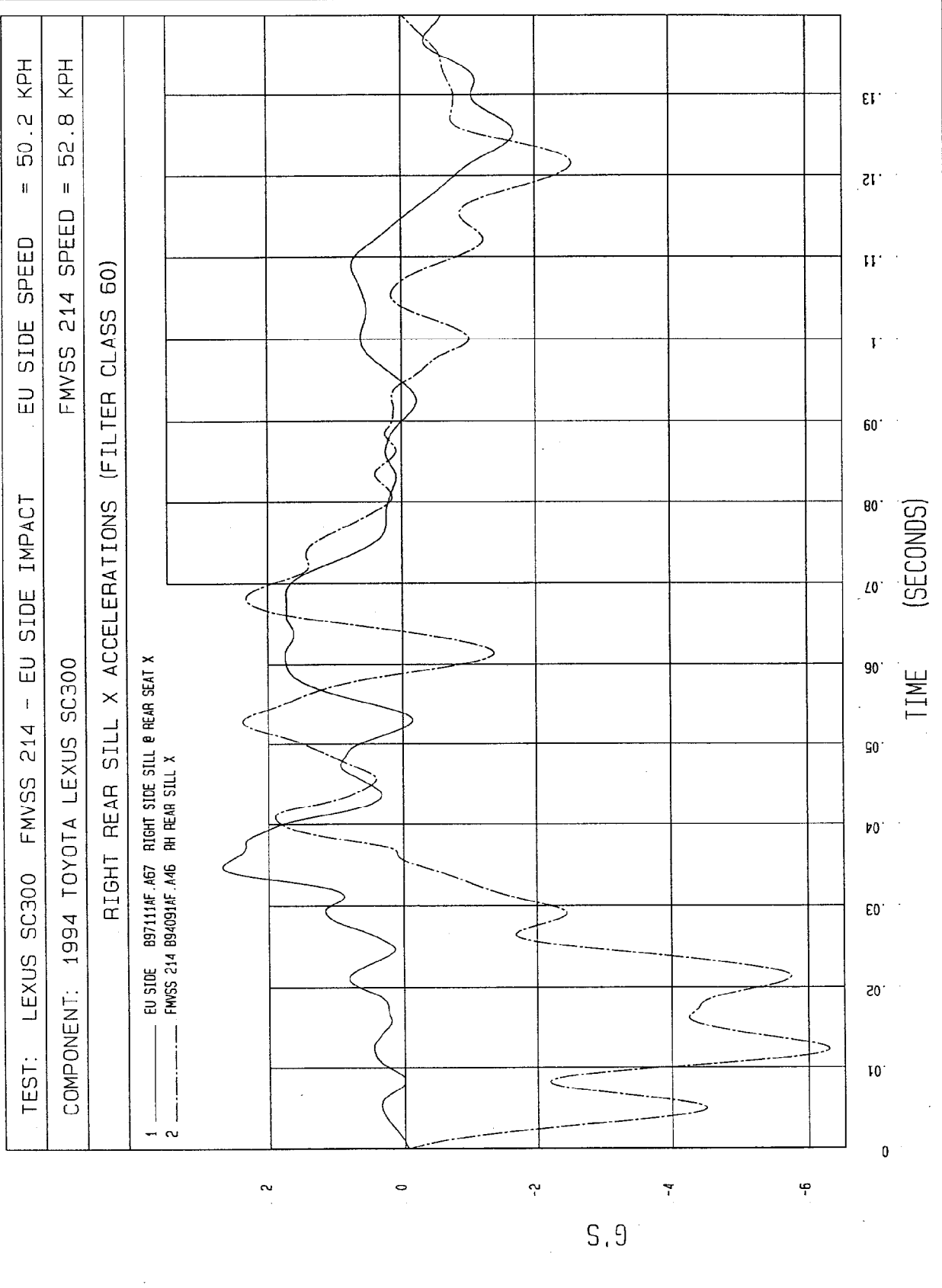


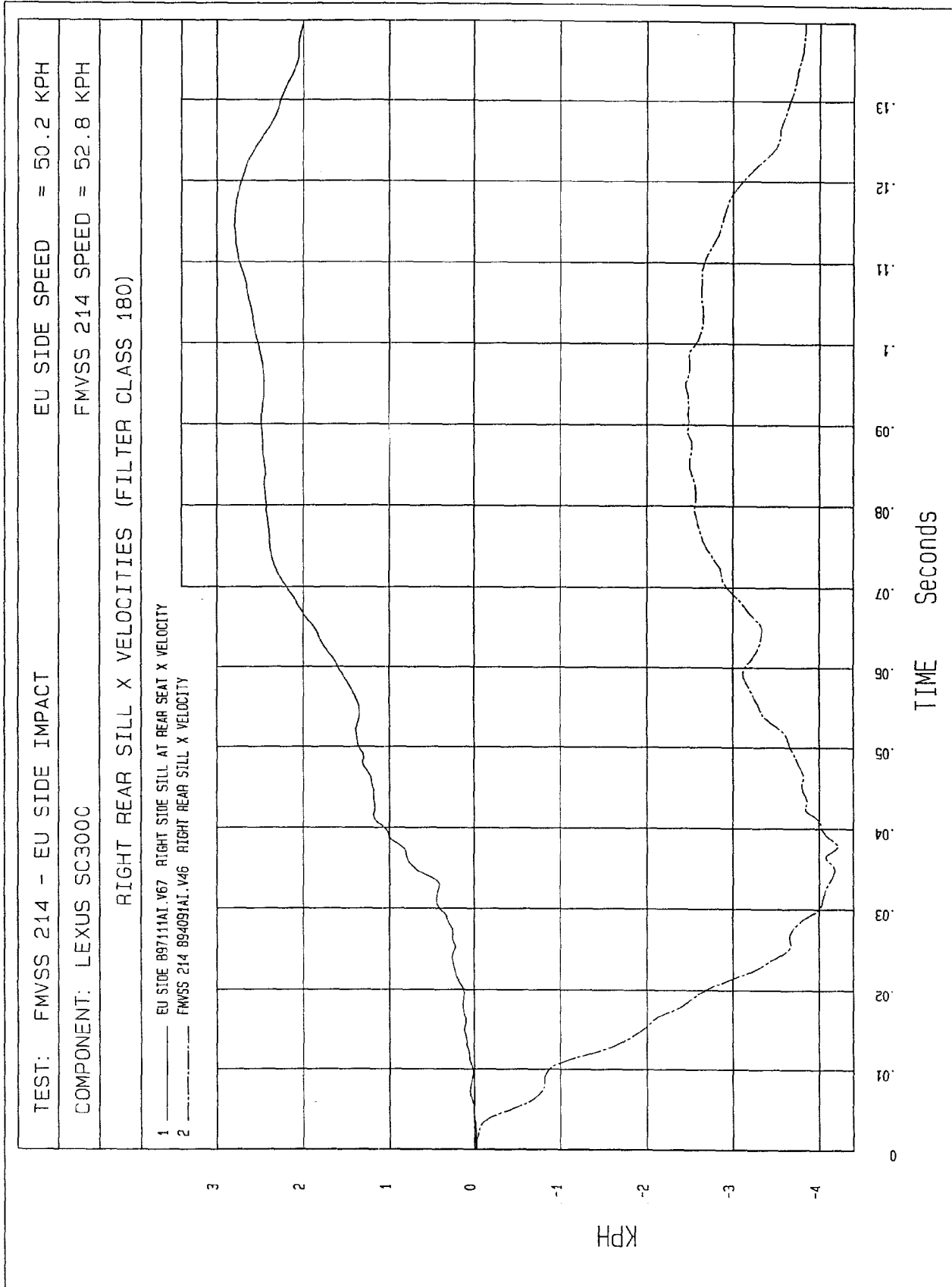


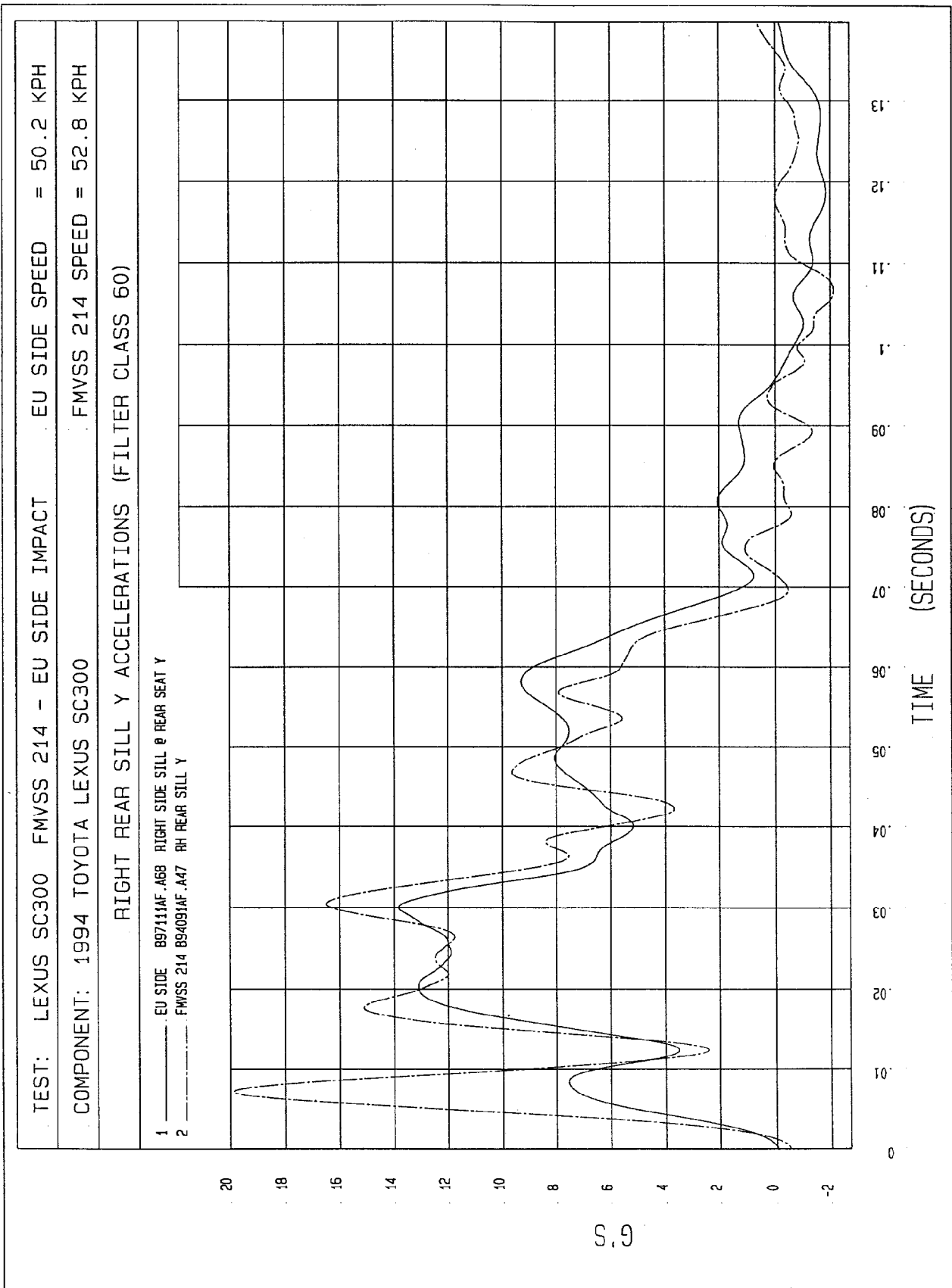










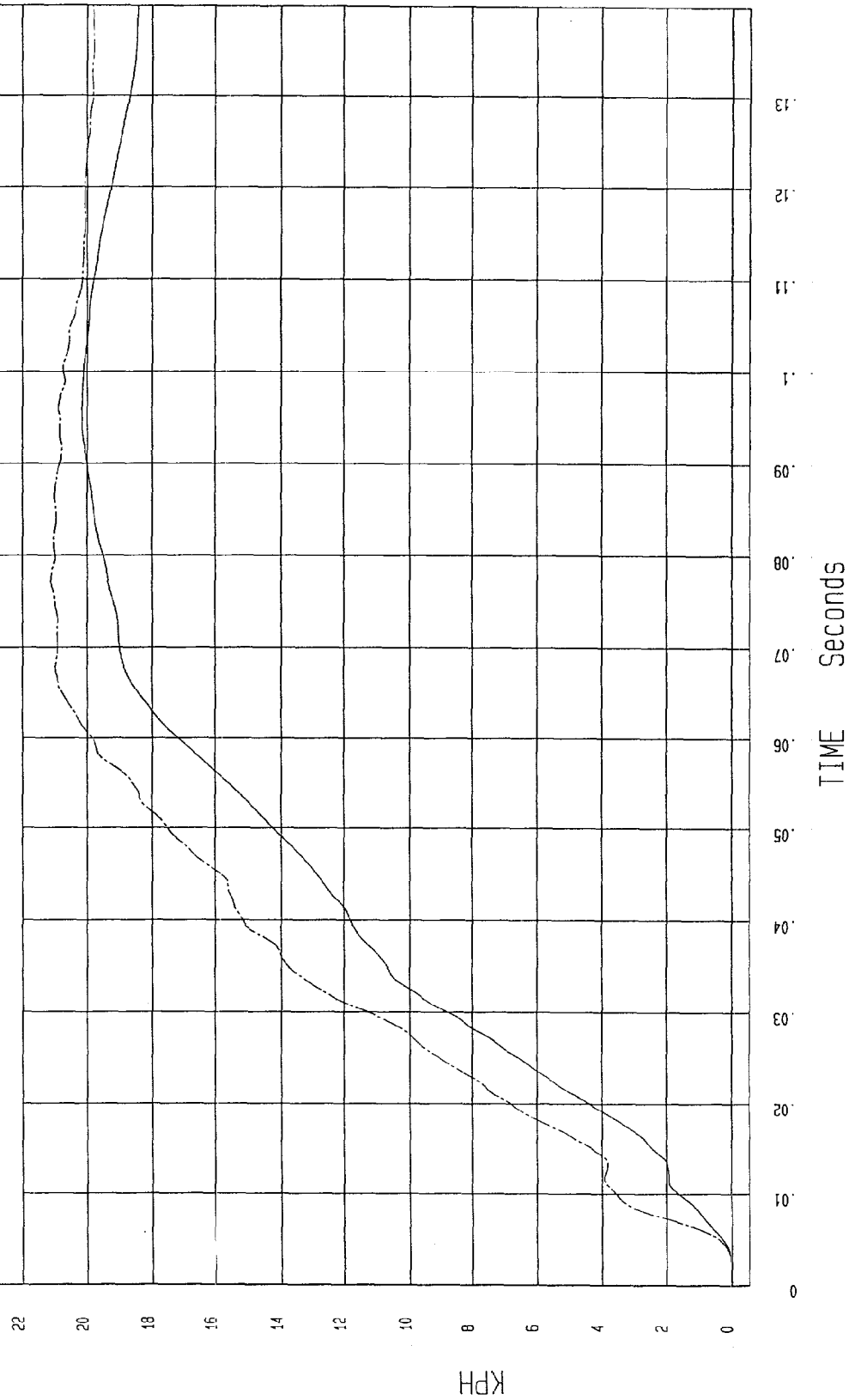


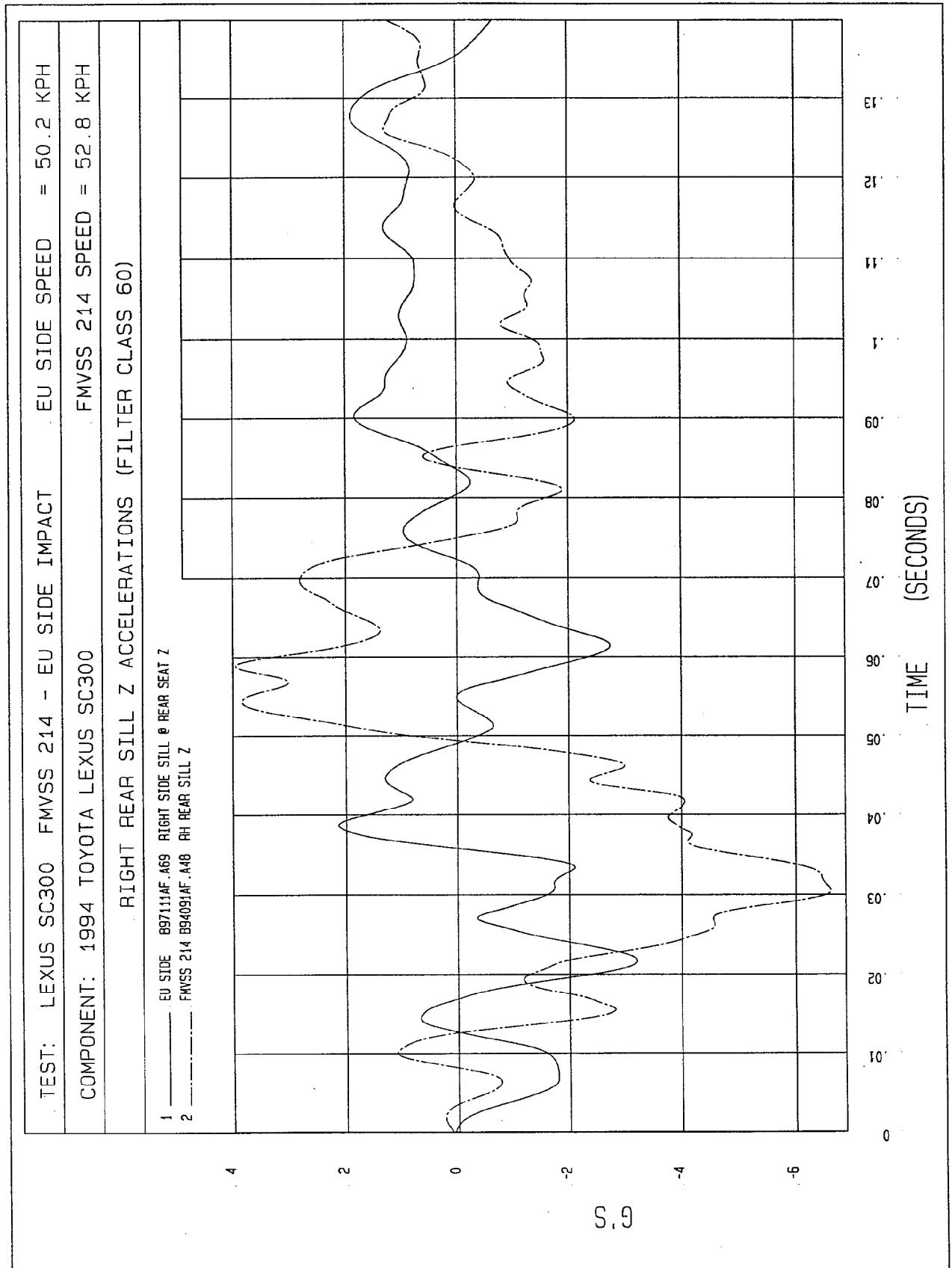
TEST: FMVSS 214 - EU SIDE IMPACT EU SIDE SPEED = 50.2 KPH

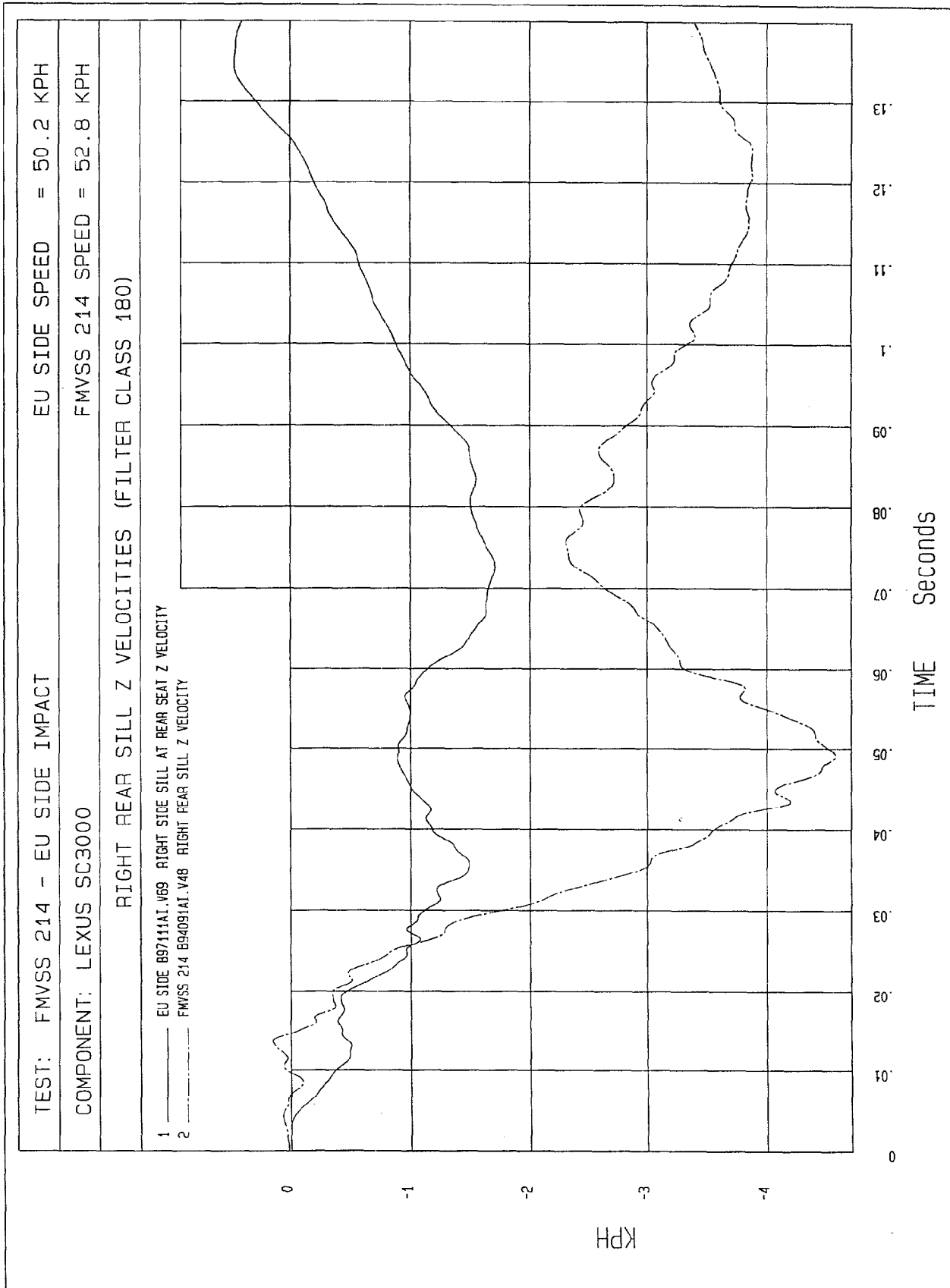
COMPONENT: LEXUS SC3000 FMVSS 214 SPEED = 52.8 KPH

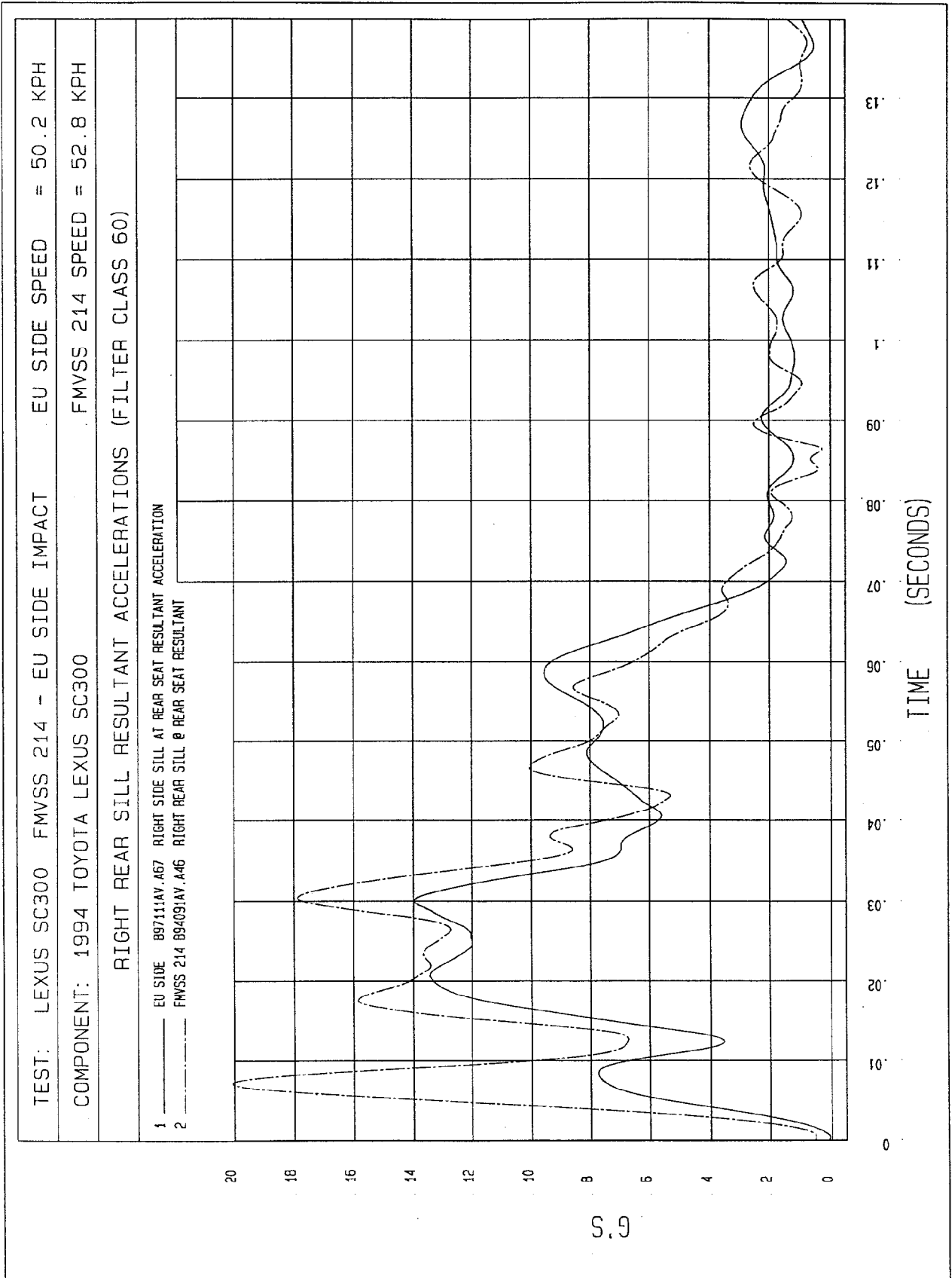
RIGHT REAR SILL Y VELOCITIES (FILTER CLASS 180)

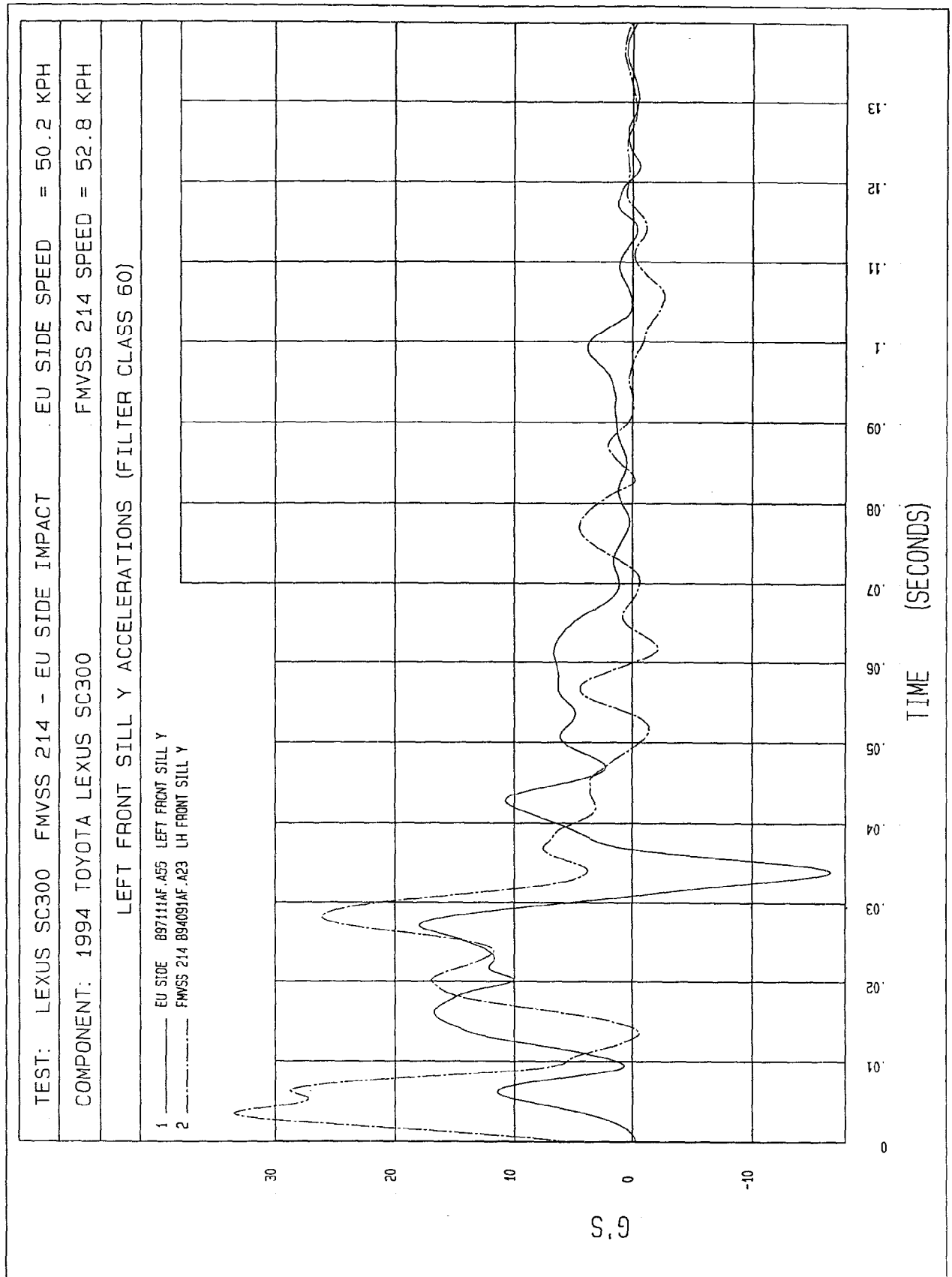
1 ——— EU SIDE 89711A1.V68 RIGHT SIDE SILL AT REAR SEAT Y VELOCITY
2 ——— FMVSS 214 894091A1.V47 RIGHT REAR SILL Y VELOCITY

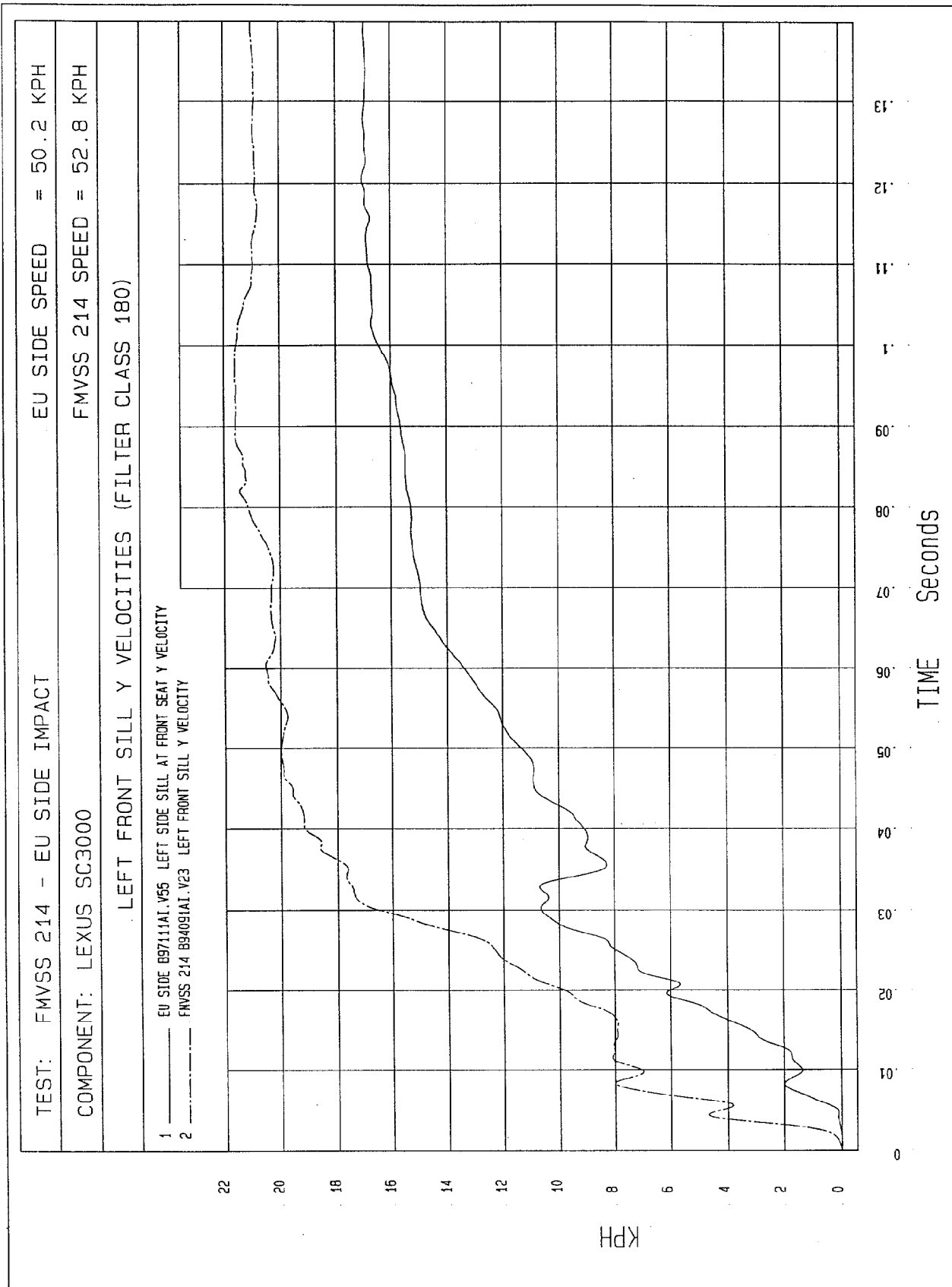


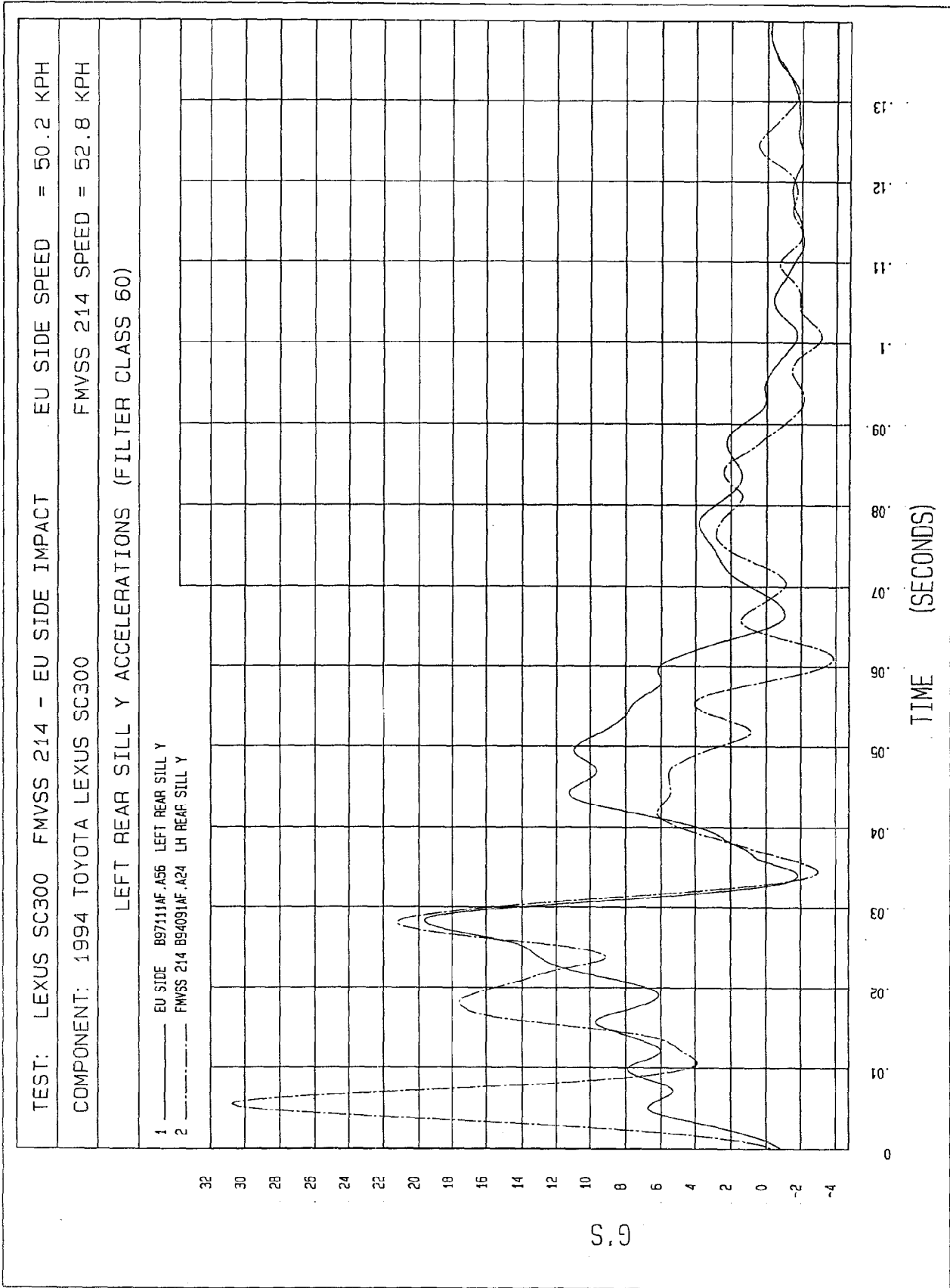


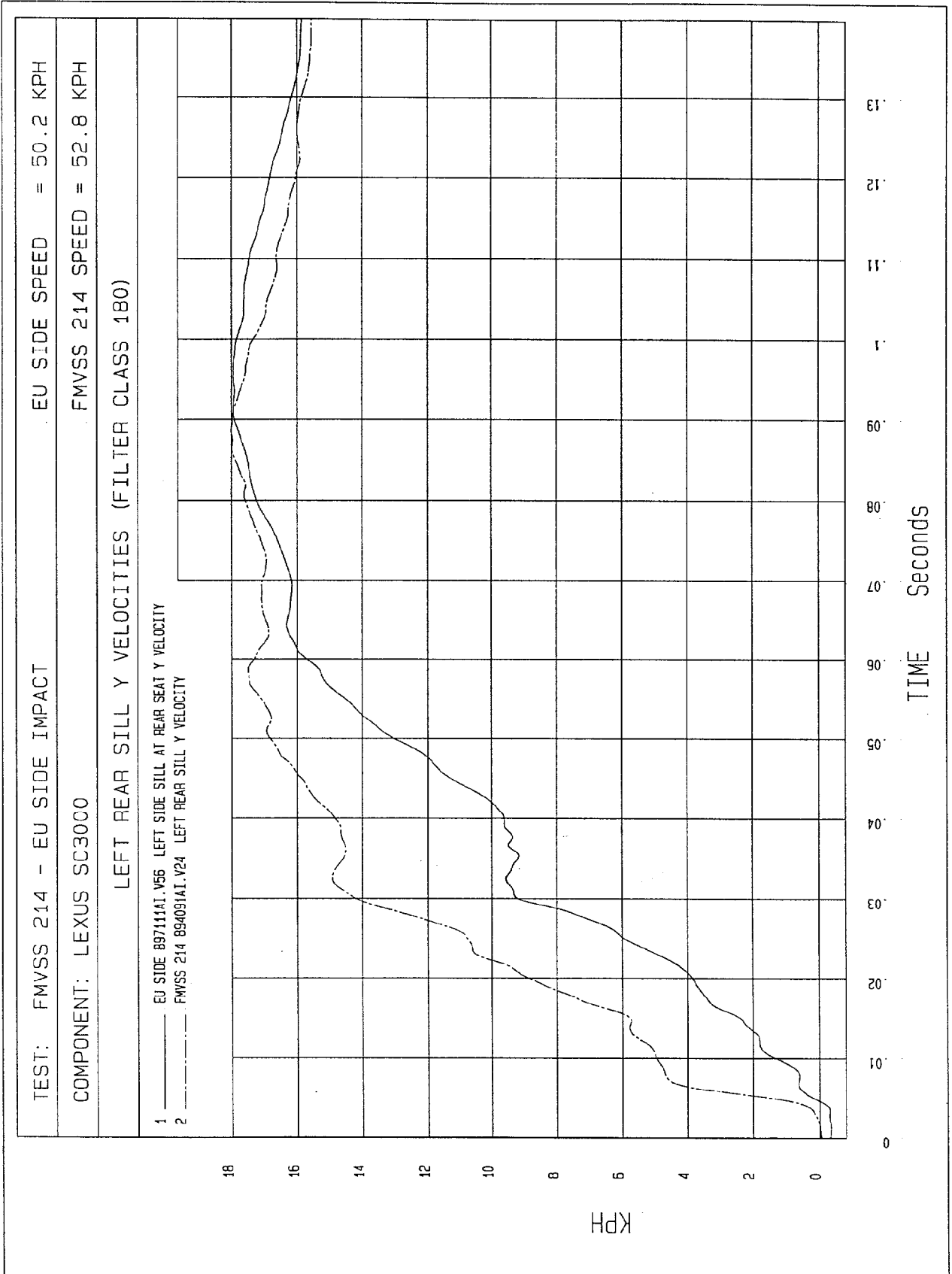


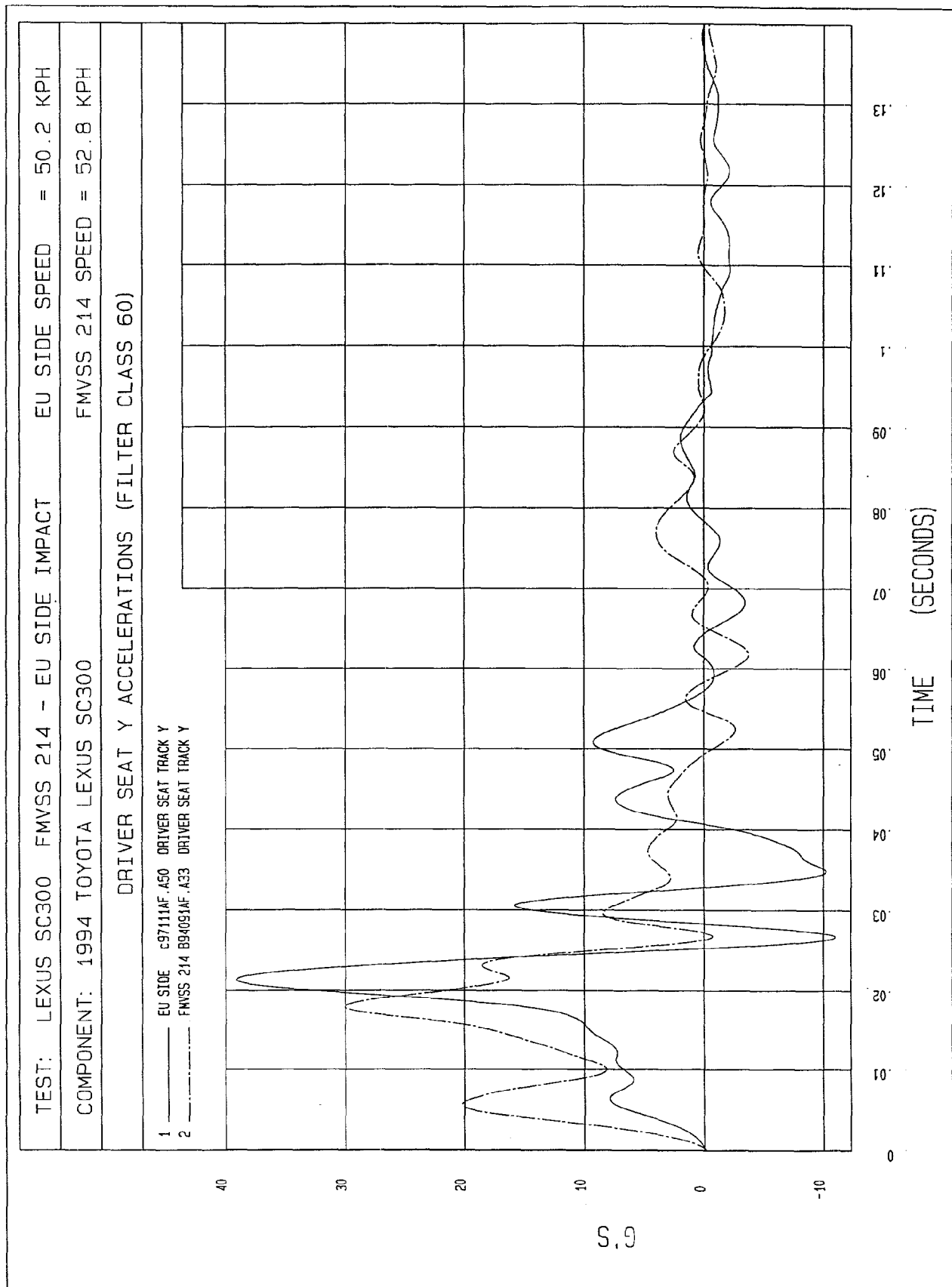


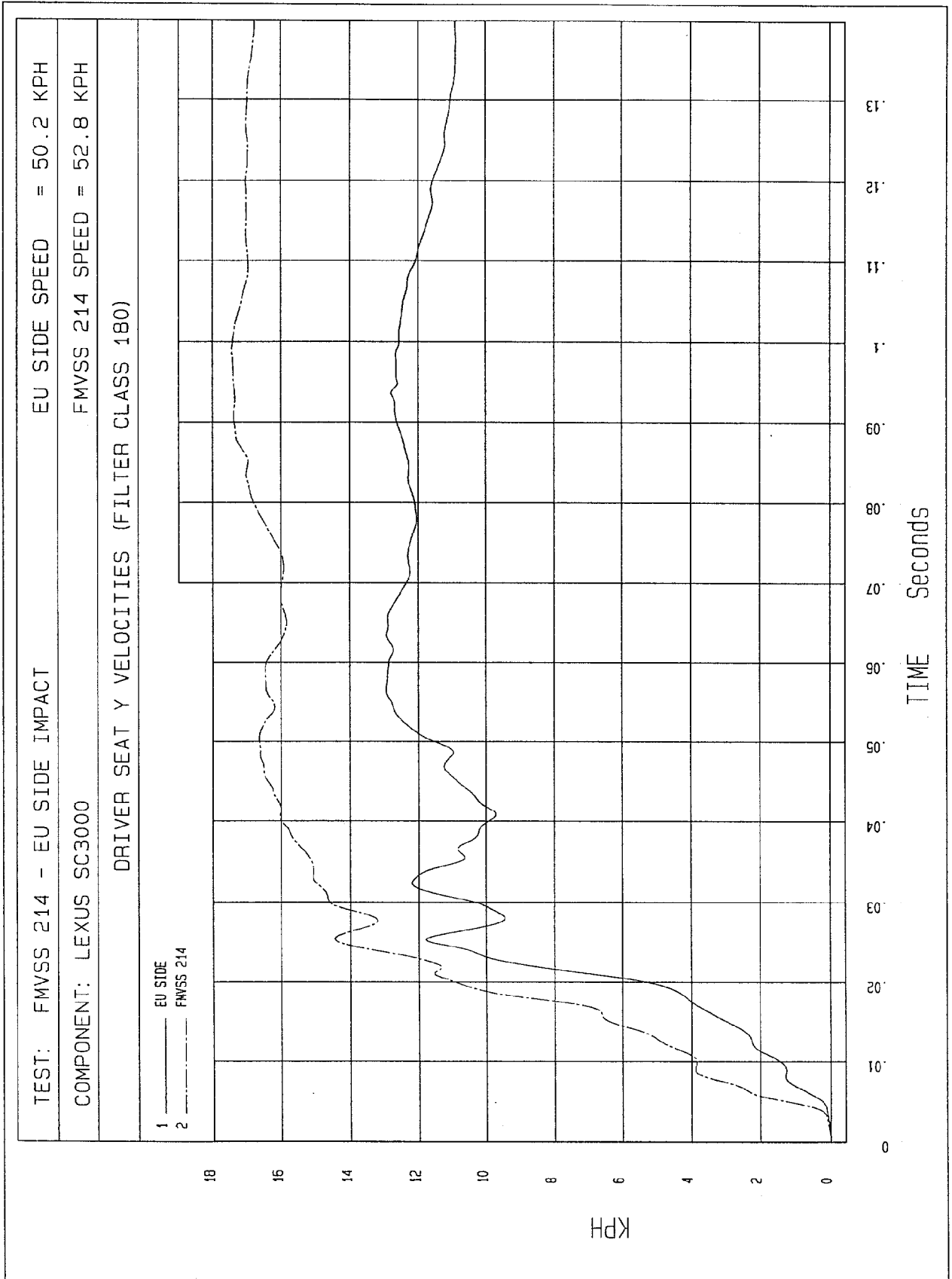


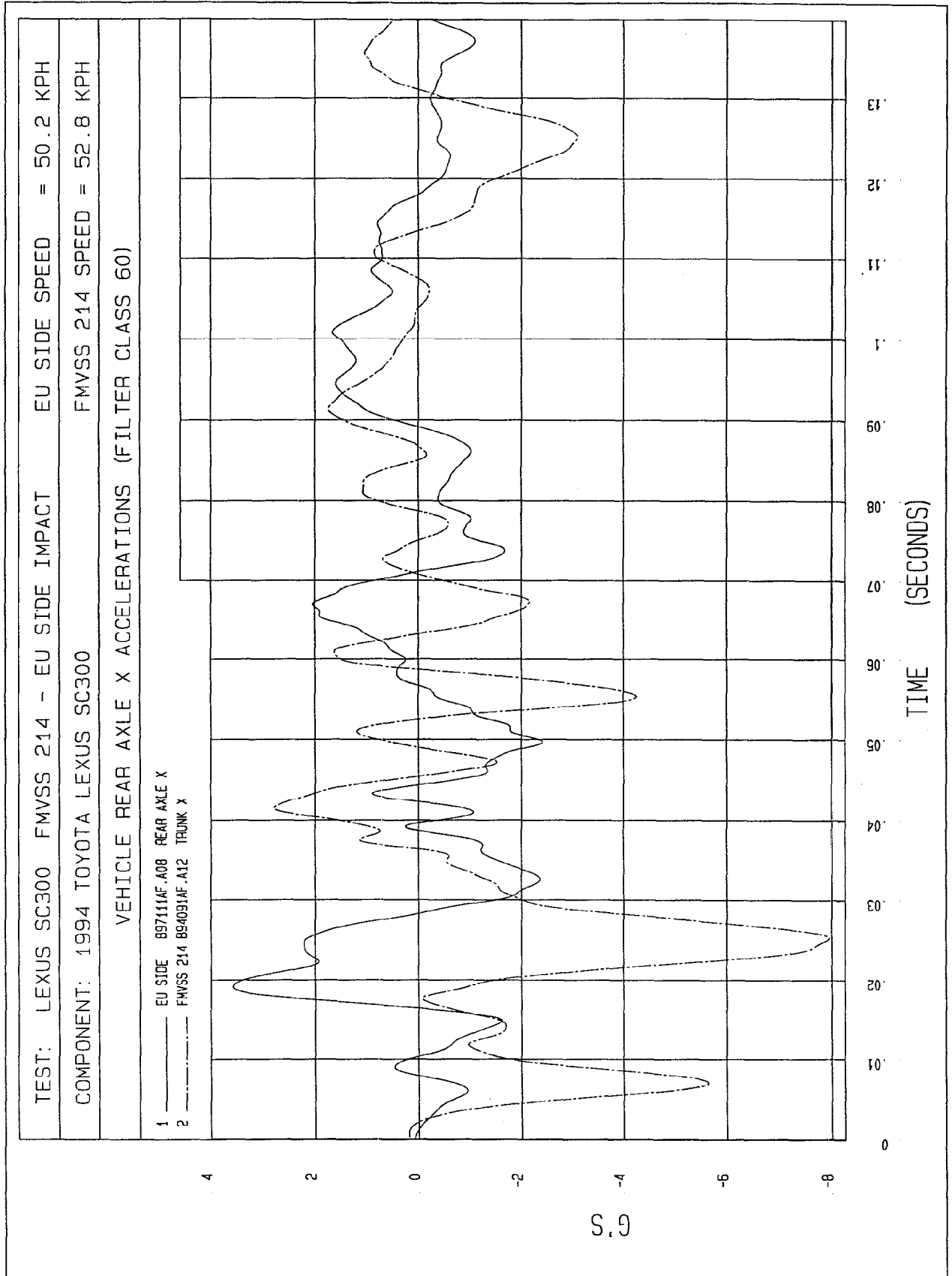


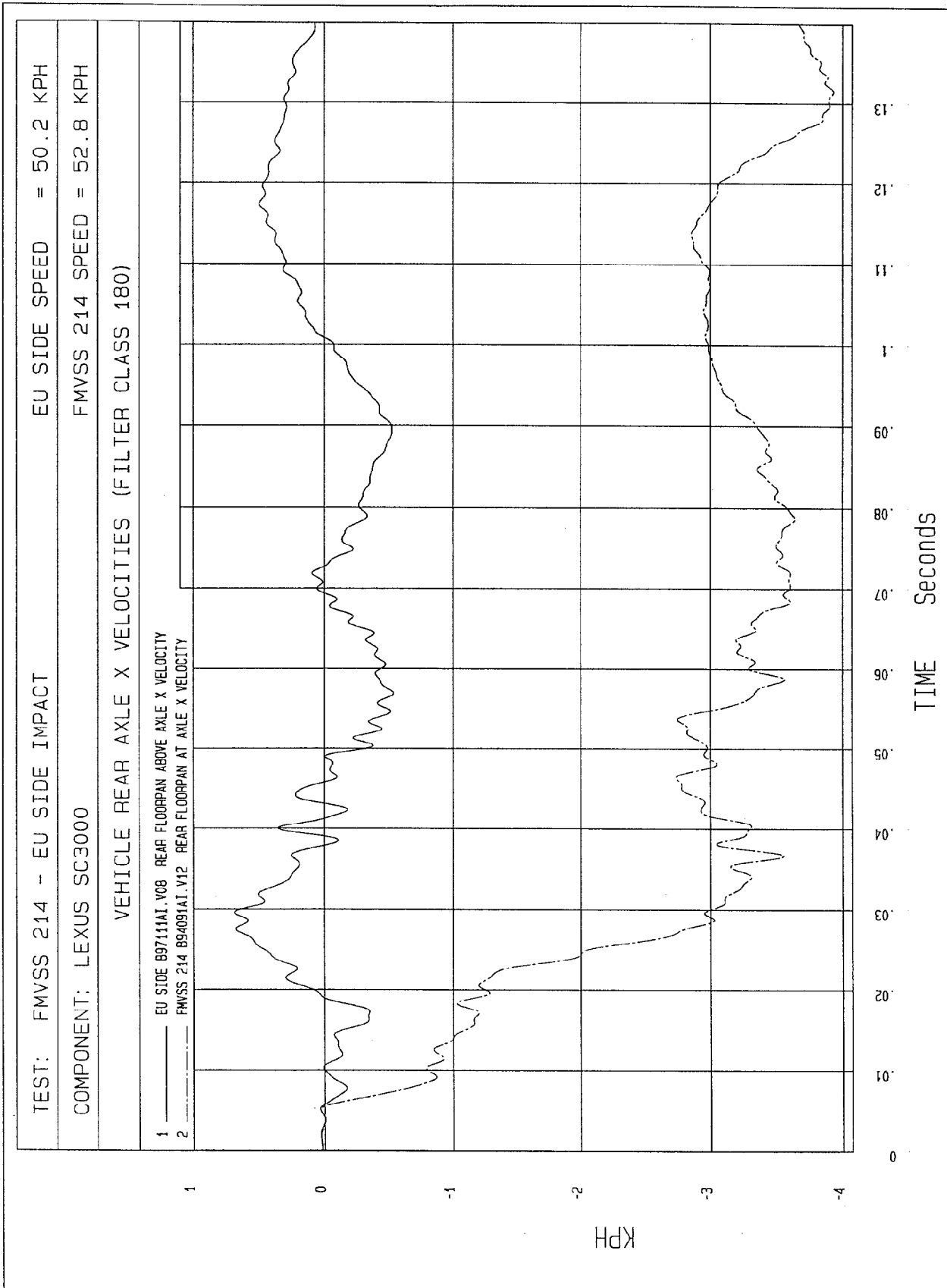


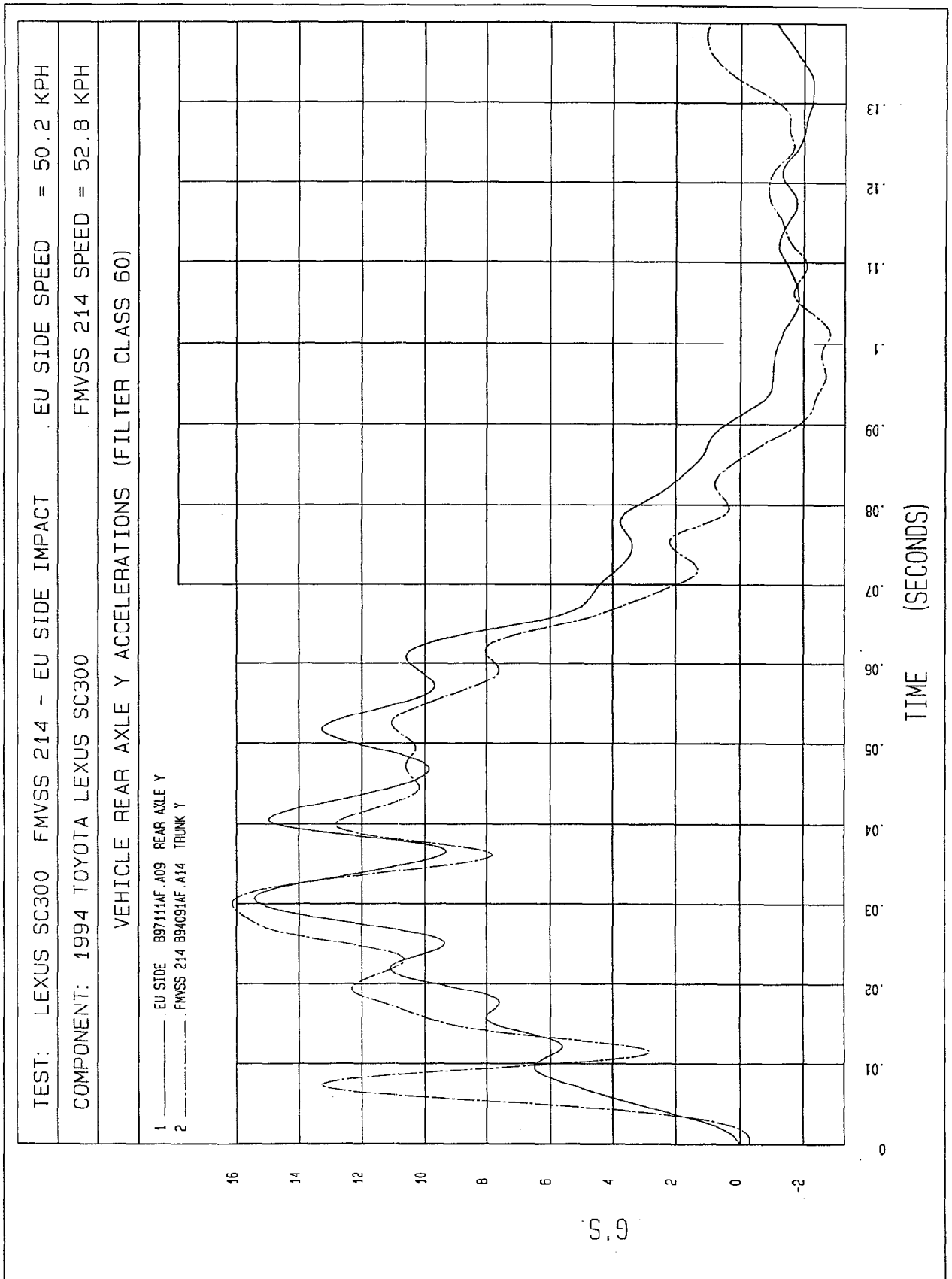


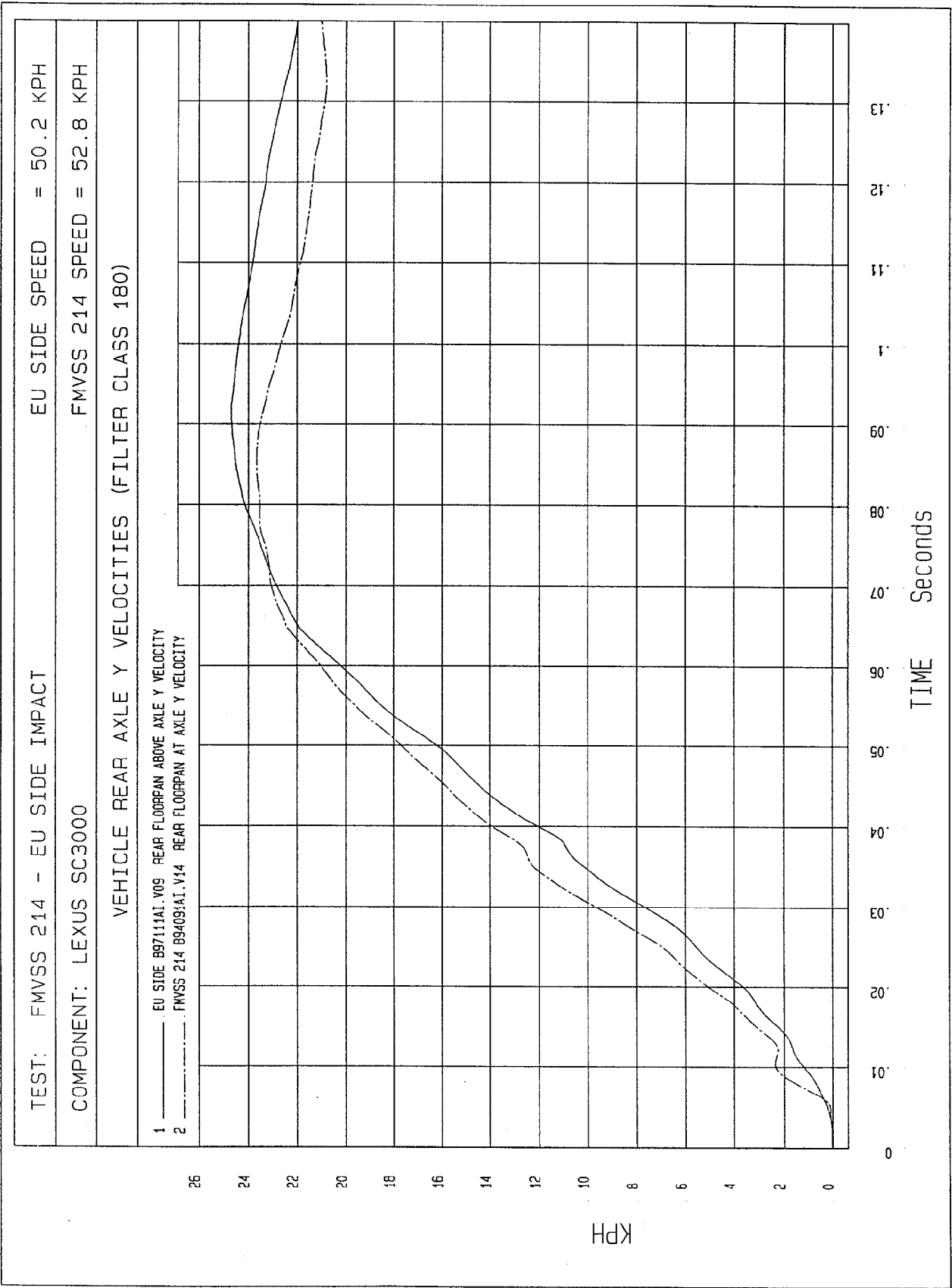


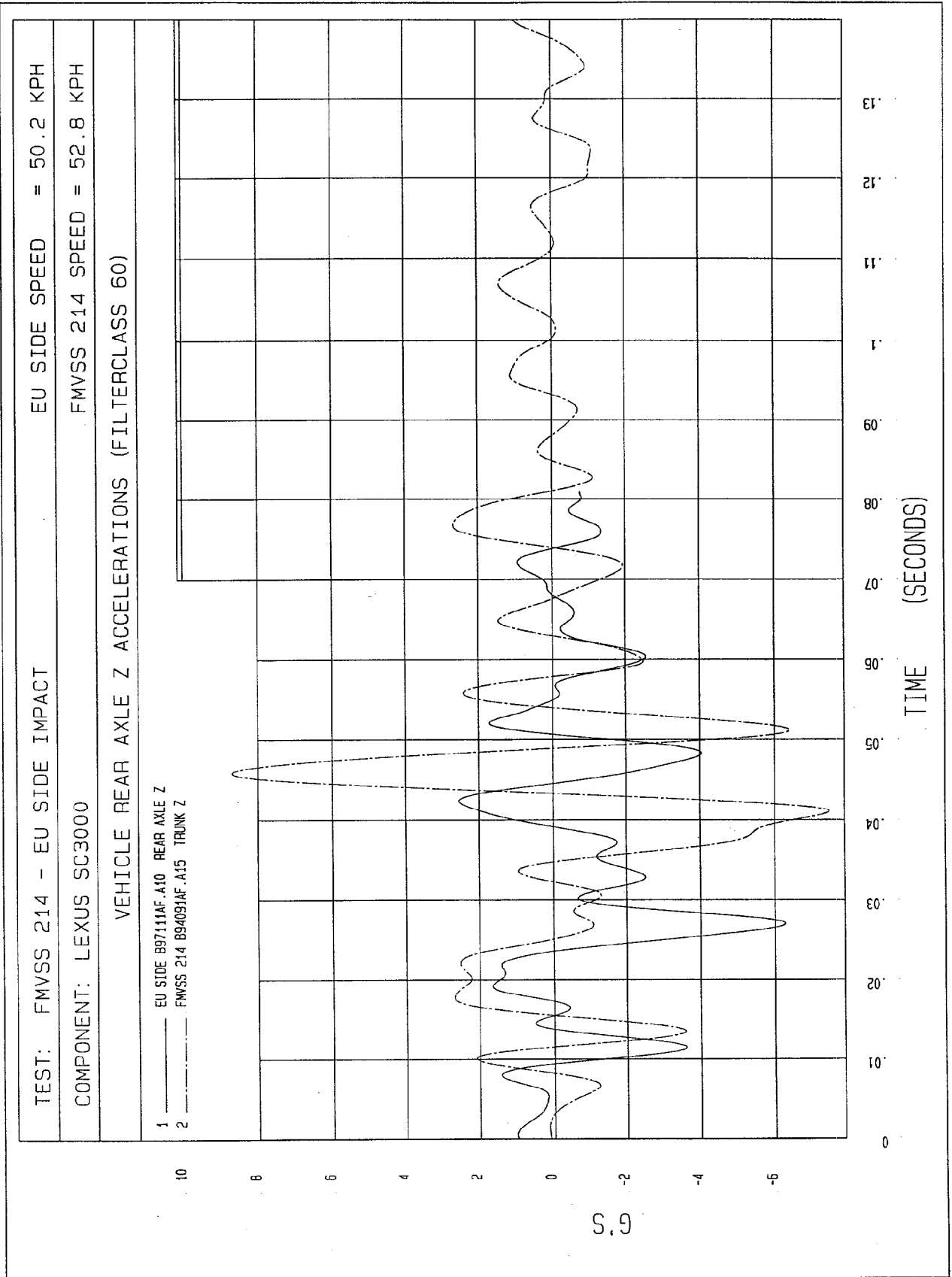


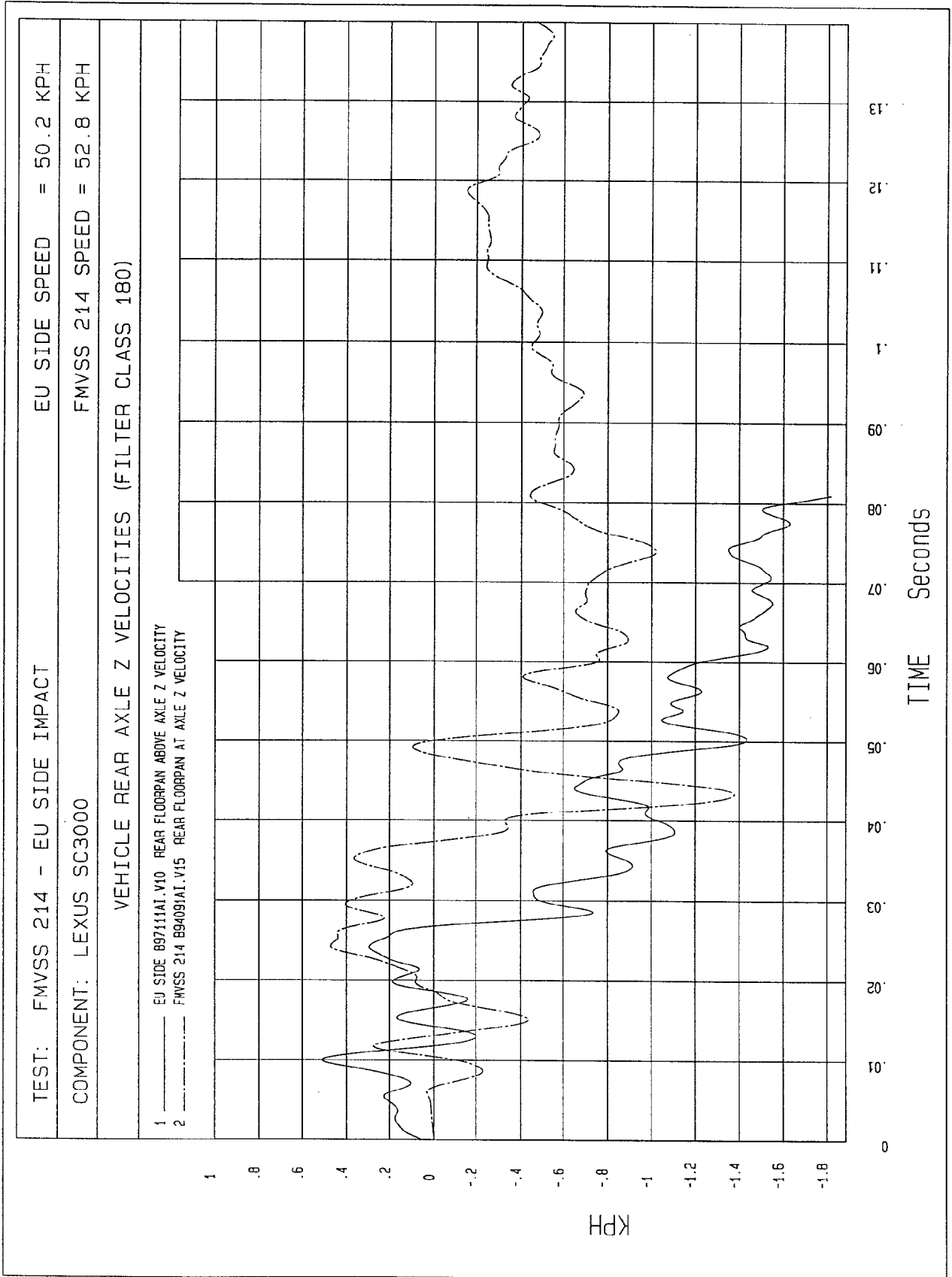


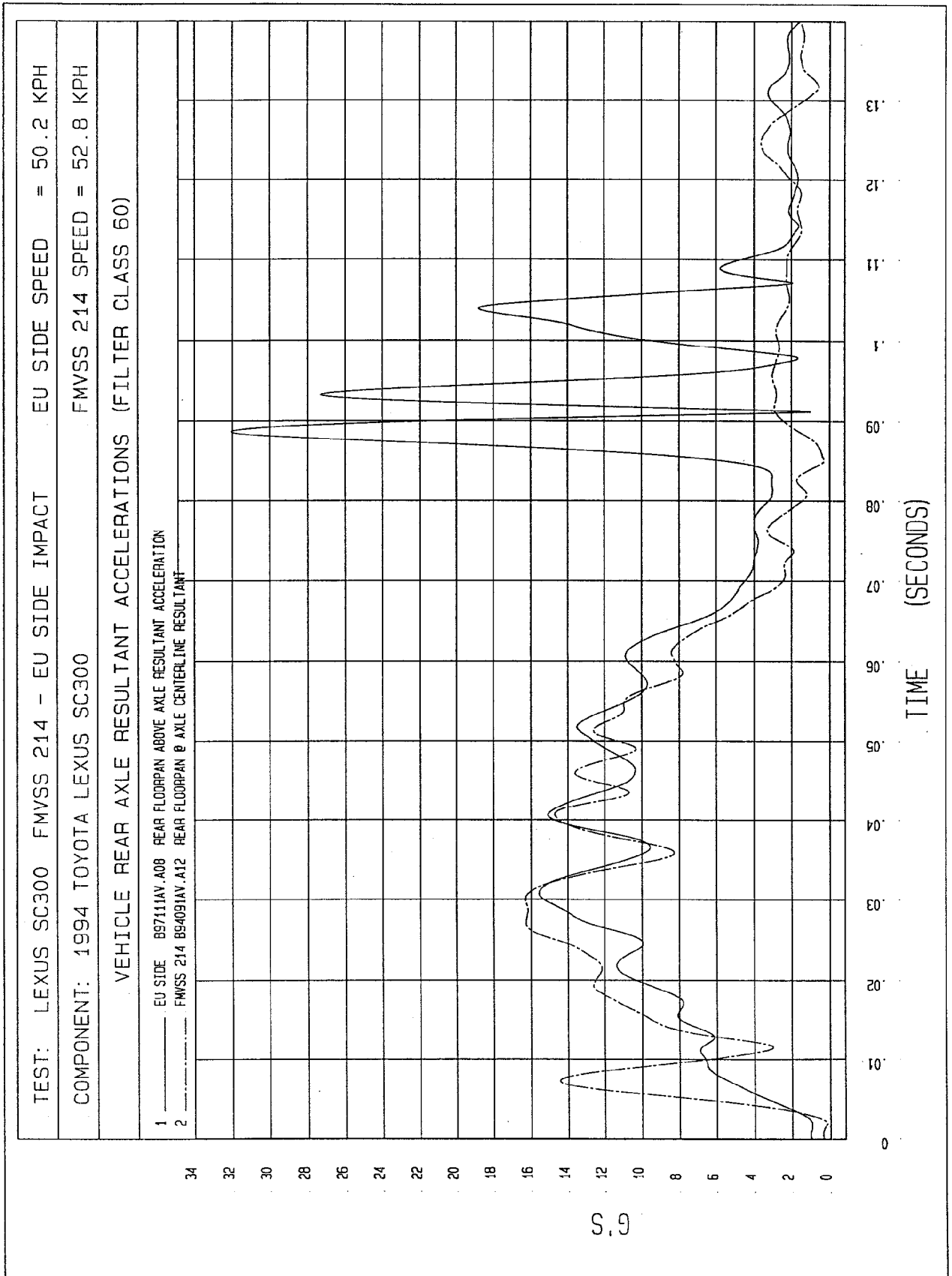


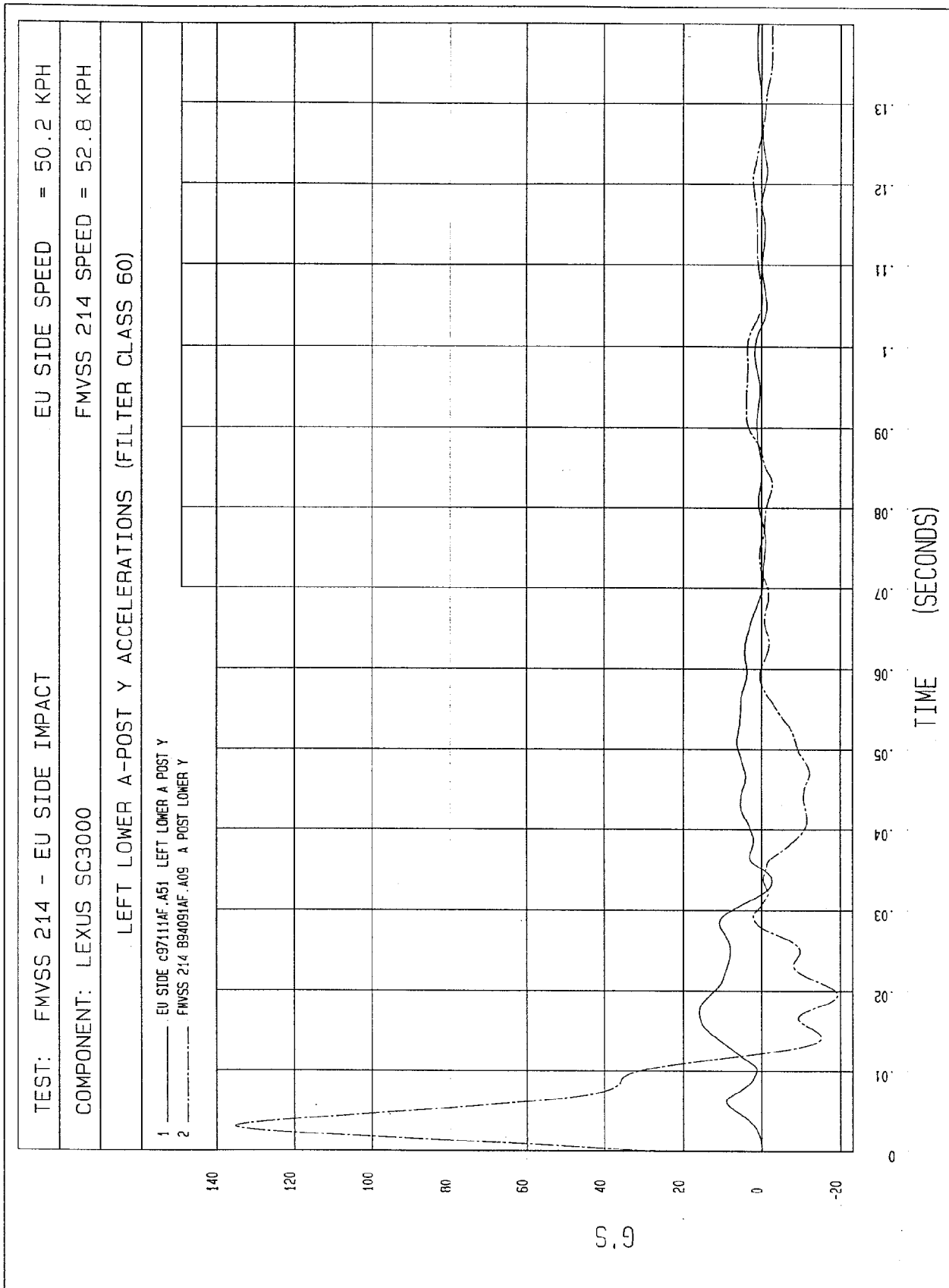


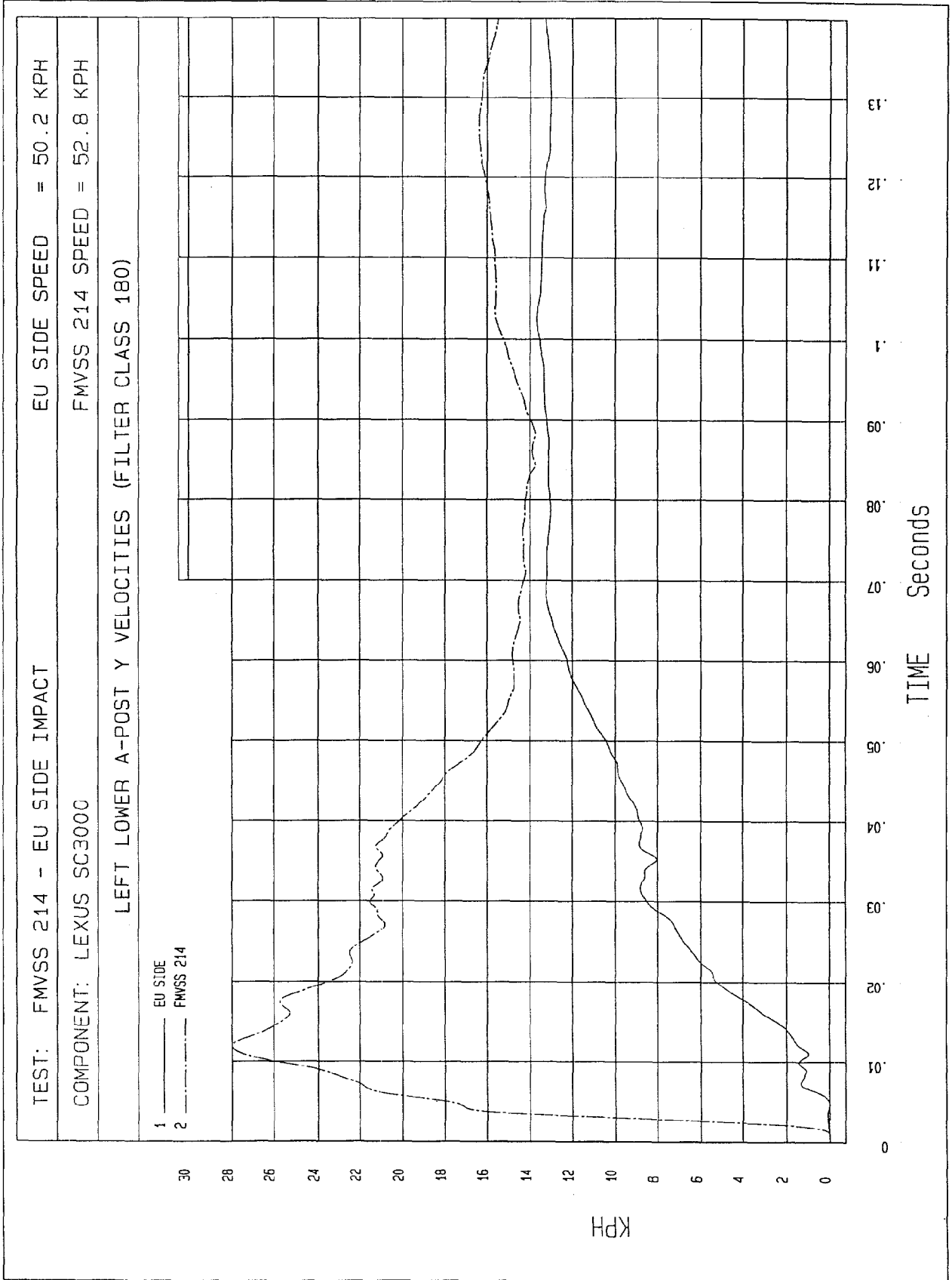


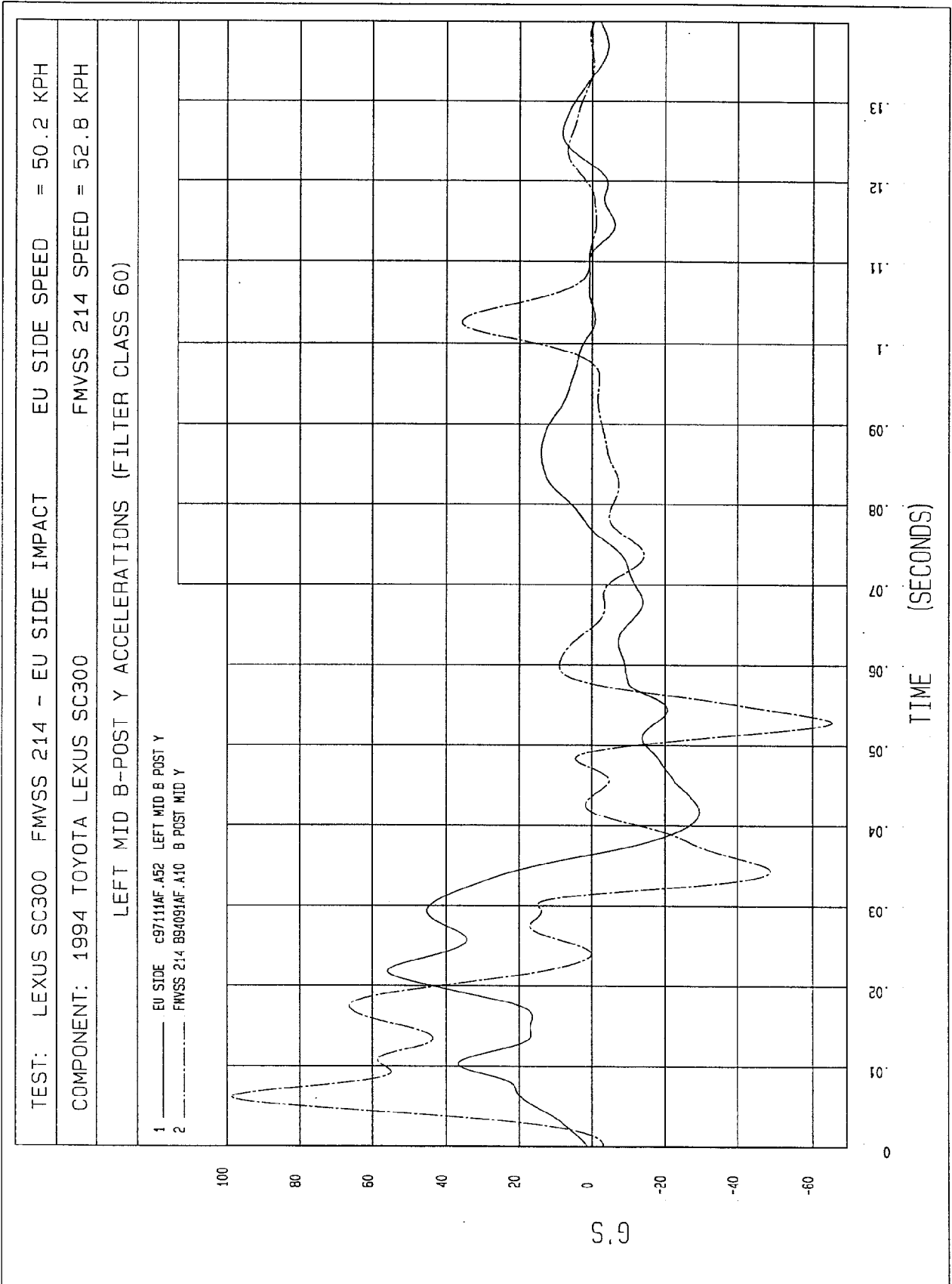


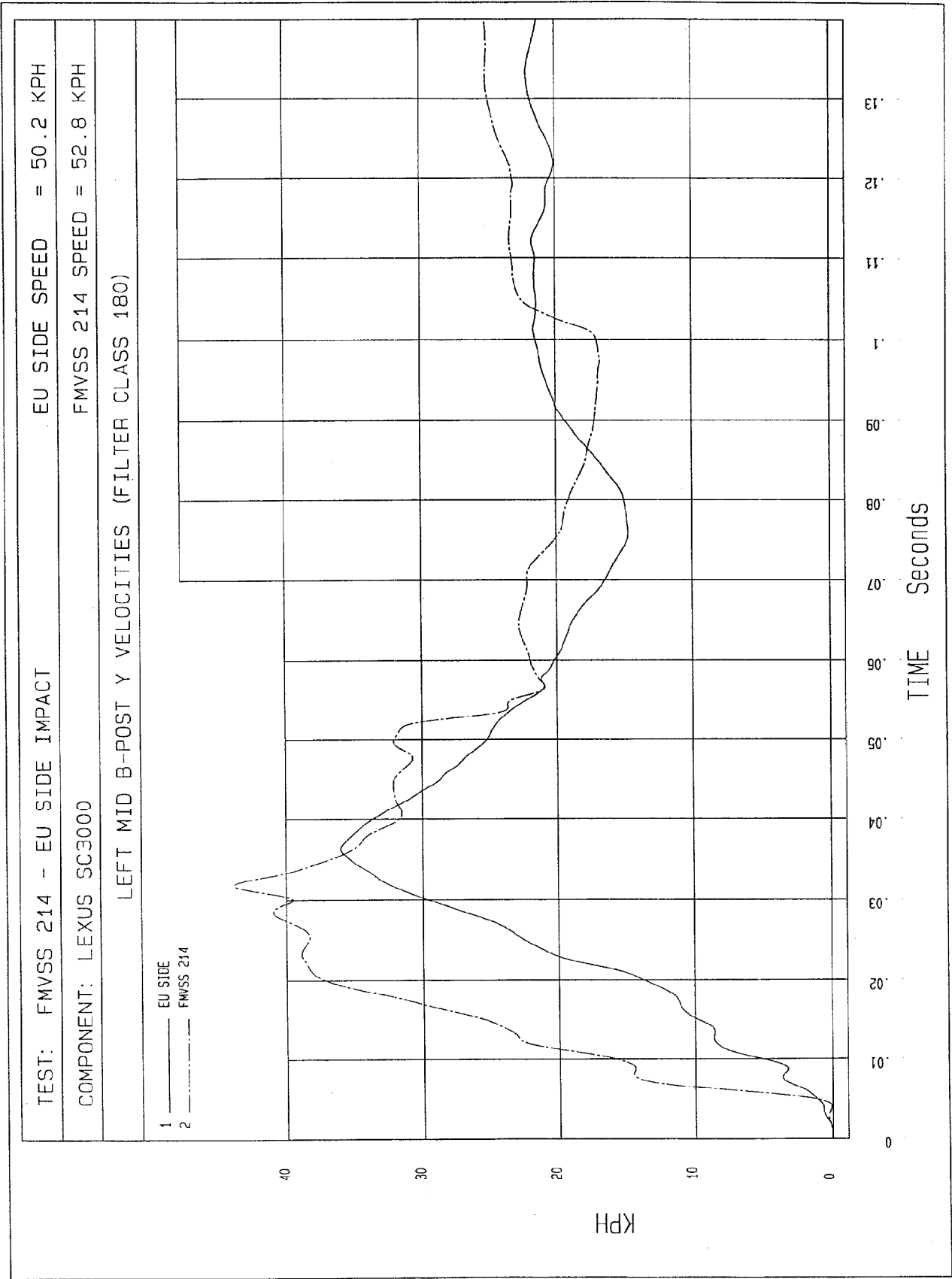


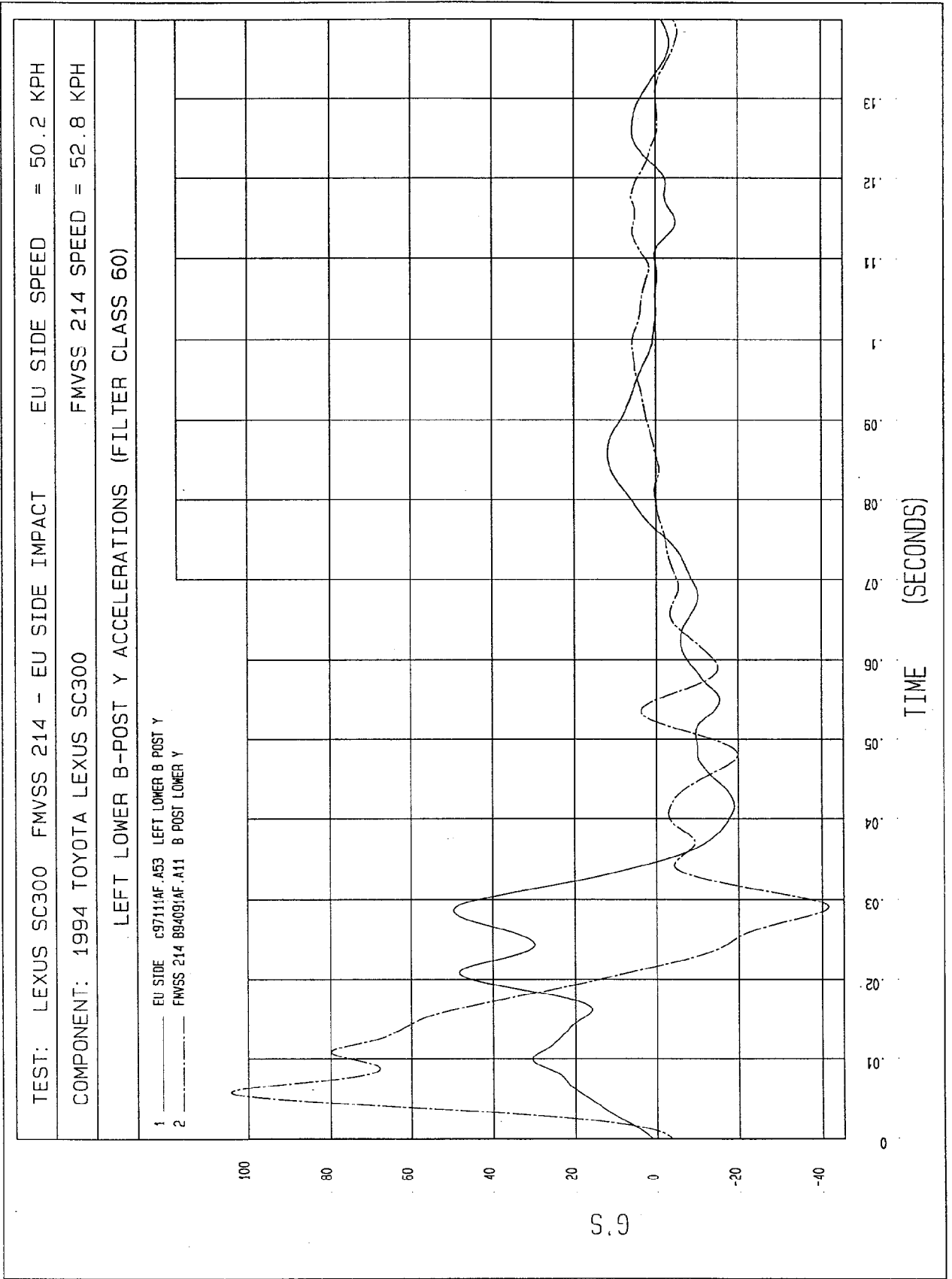


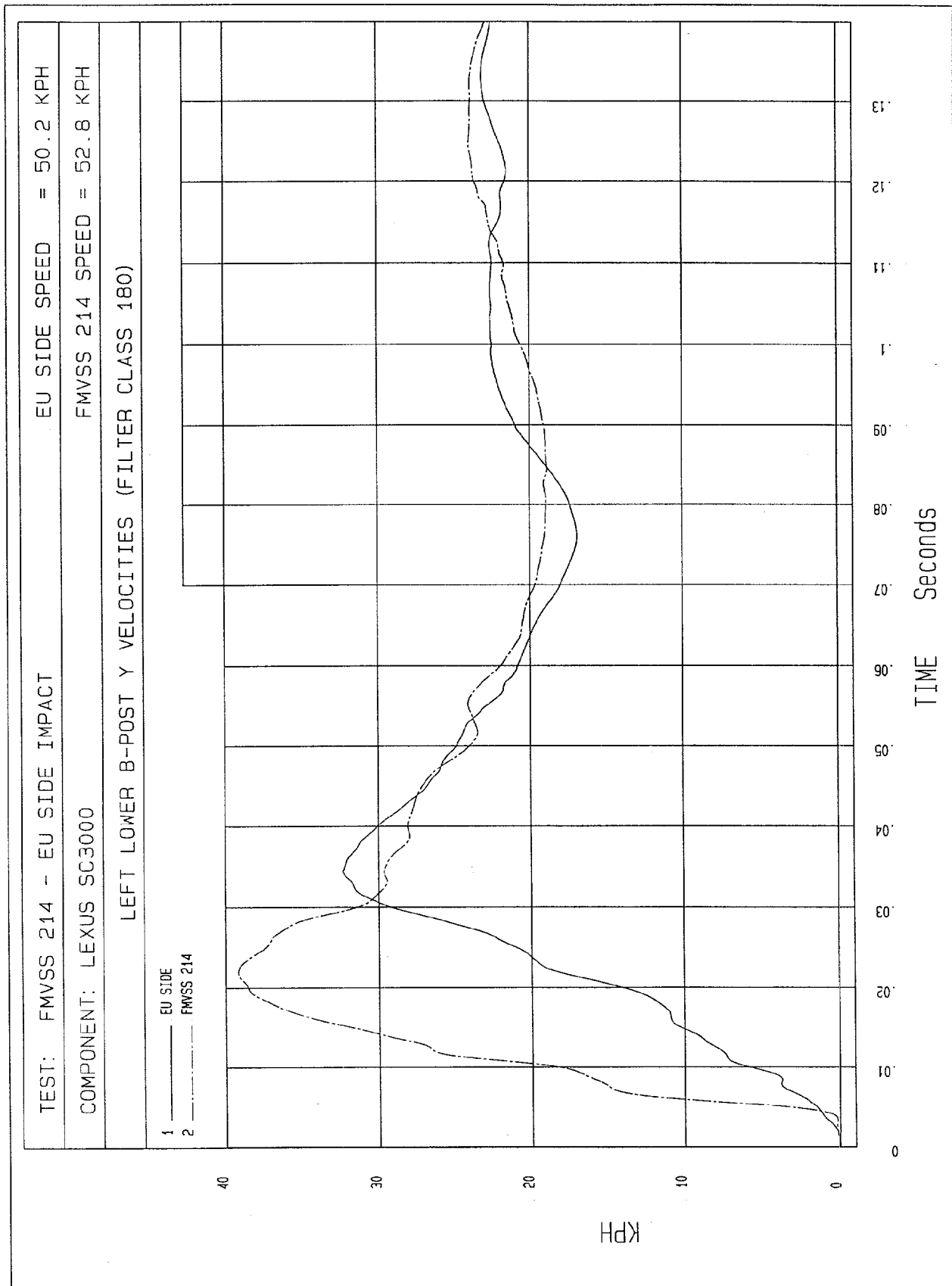




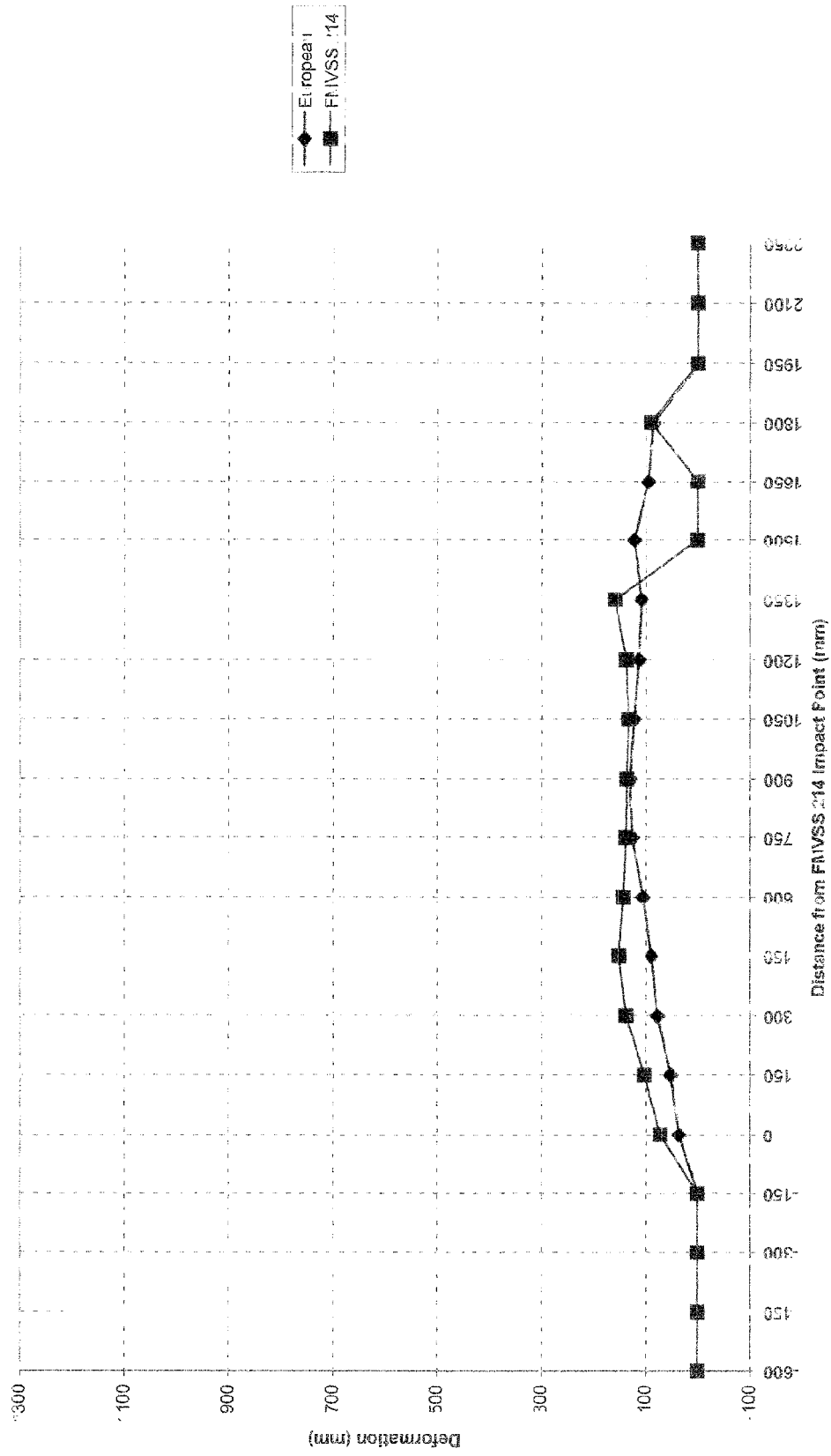




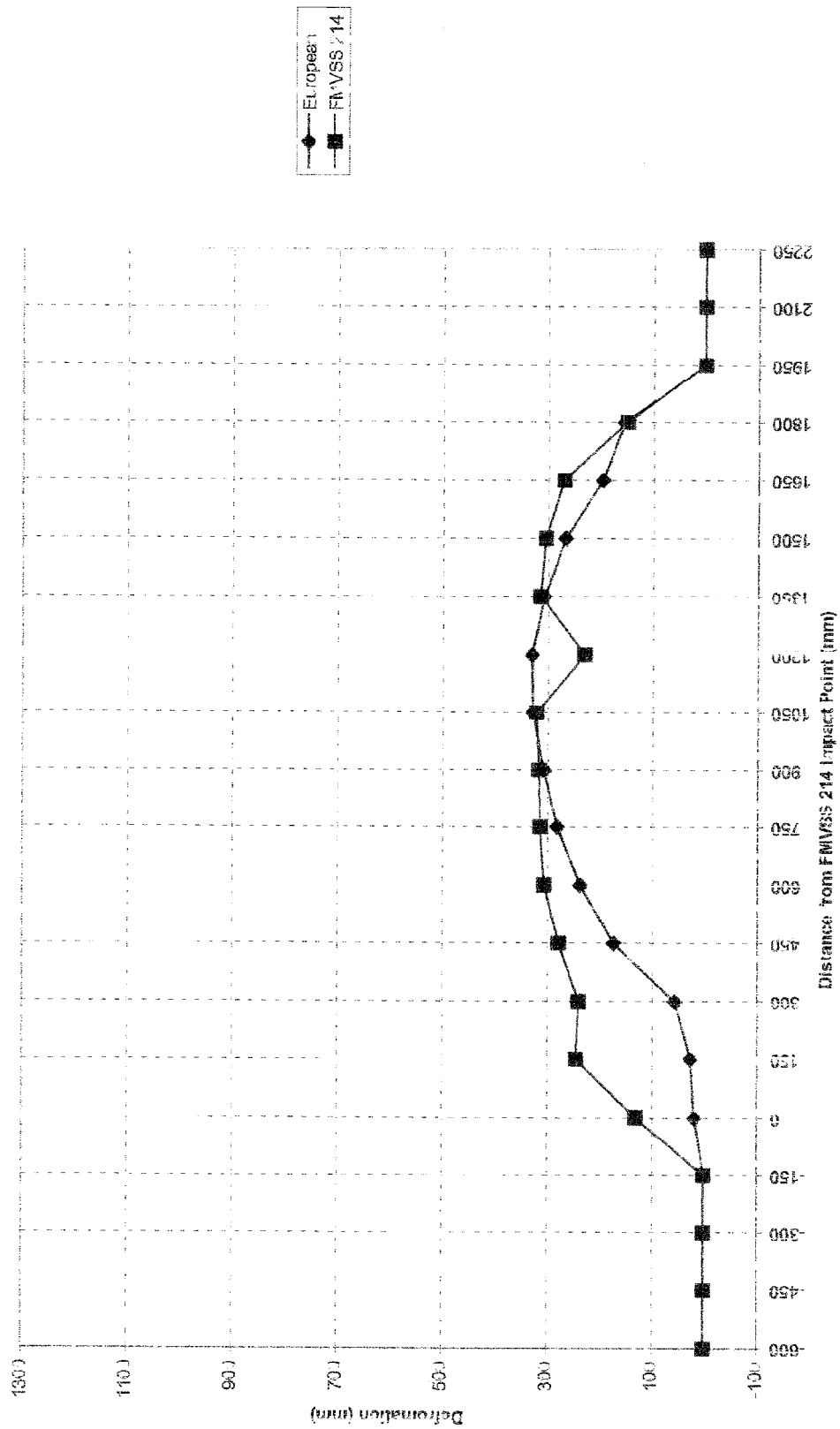




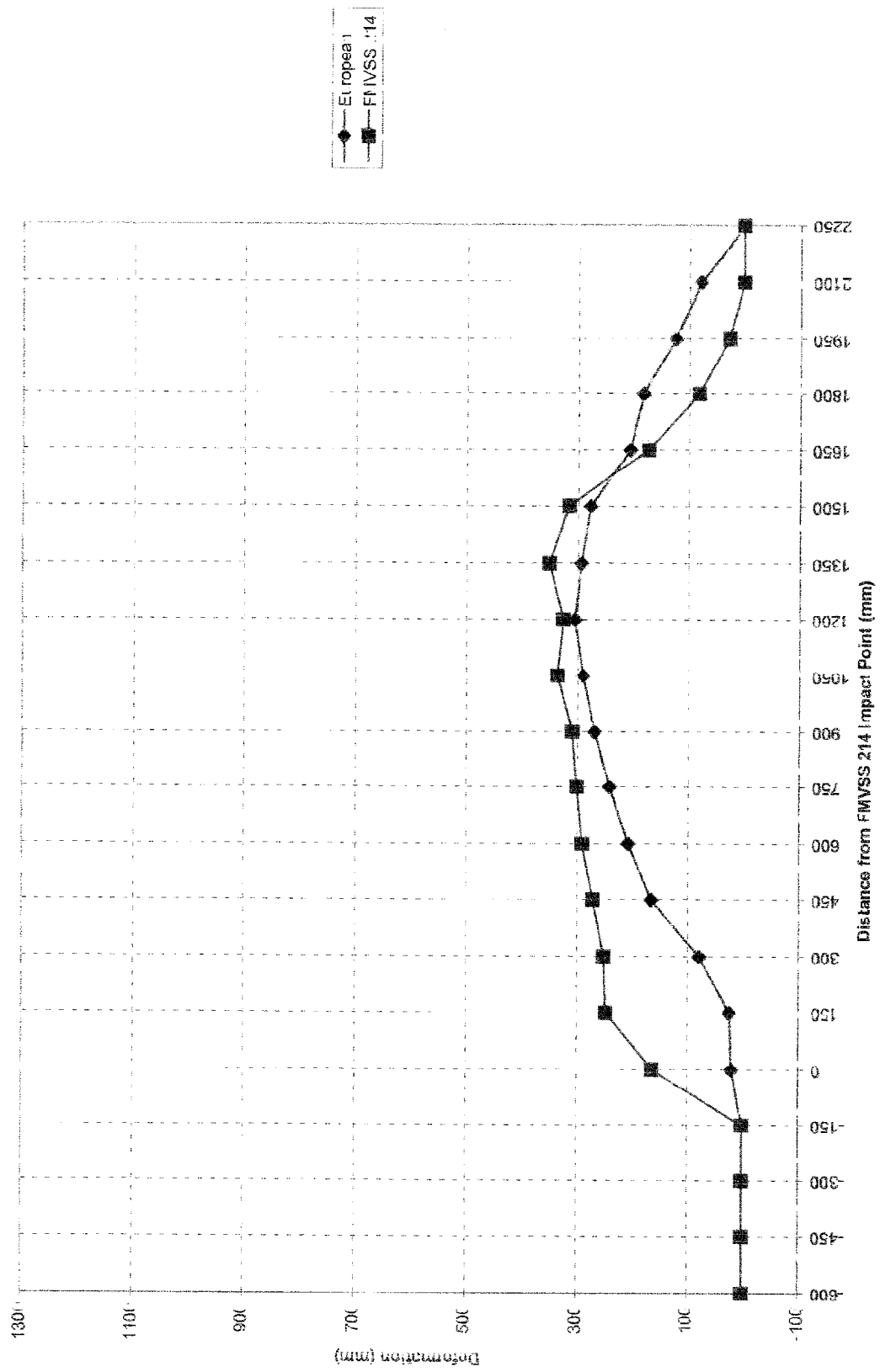
Level 1: Sill Deformation



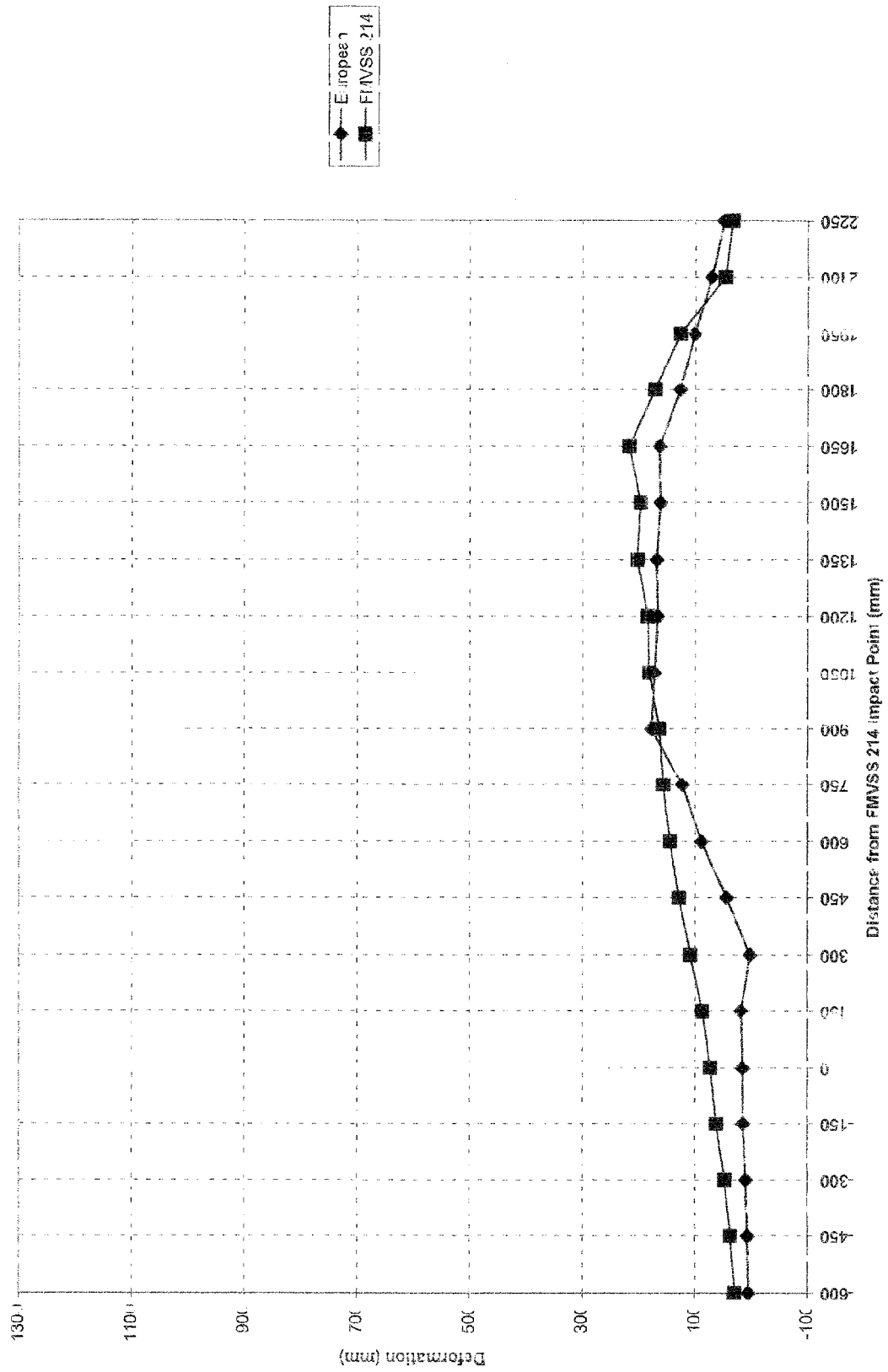
Level 2: Occupant H-Point Deformation



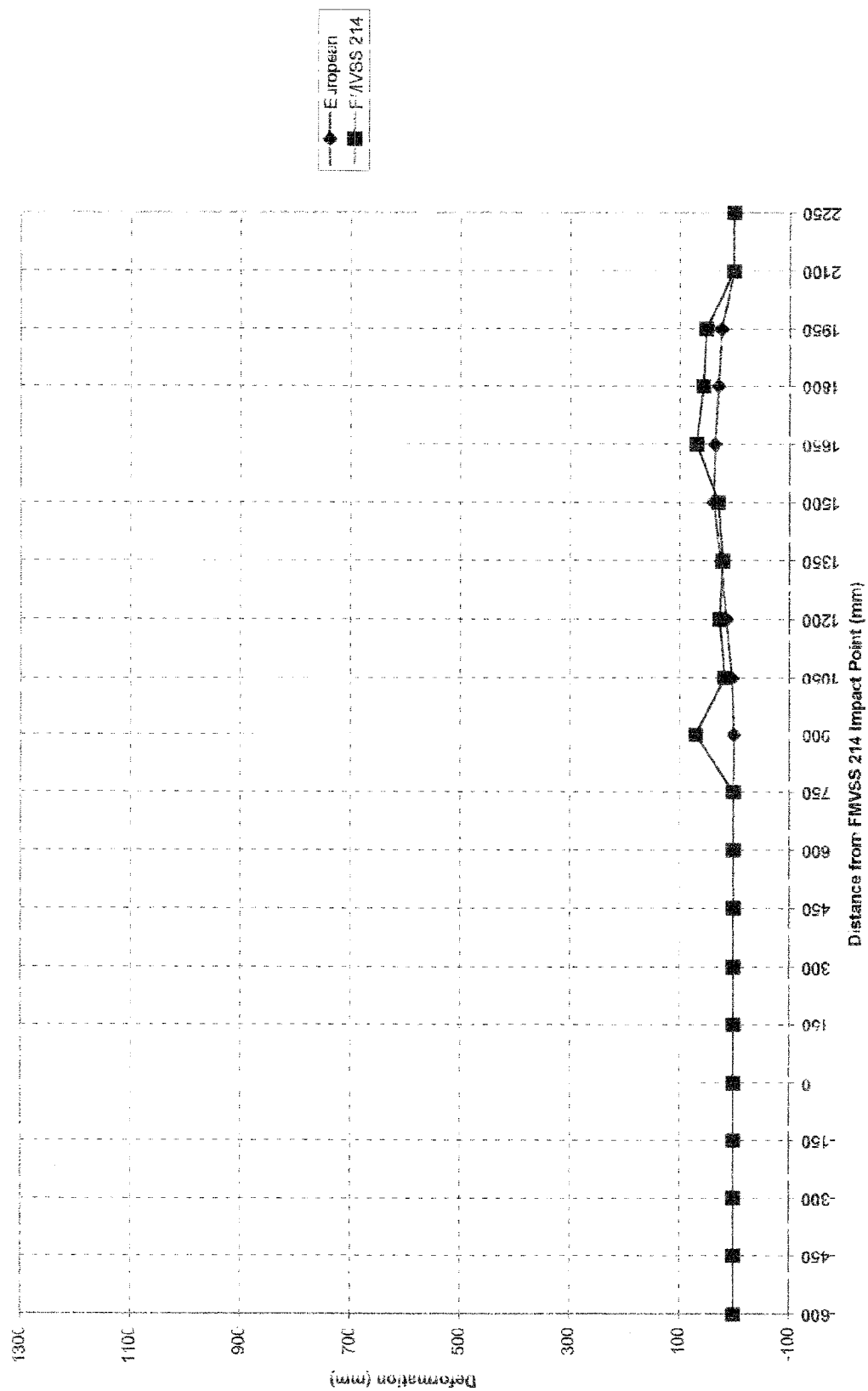
Level 3: Mid Door Deformation



Level 4: Window Sill Deformation



Level 5: Window Top Deformation



APPENDIX D
EUROSID-1 CONFIGURATION
AND PERFORMANCE VERIFICATION

EUROSID DUMMY PRE-TEST CALIBRATION DATA SUMMARY SHEET

Dummy #: E1- 169

Calibration Date: September 14, 1997

1.0 Head Drop Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Max. Resultant Acceleration	100 - 150 g's	135
Time of Max. Res. Acceleration		2.6 msec.

Calibrated By: Tim Michnay

Date: September 24, 1997

2.0 Neck Pendulum Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	40%
Pendulum Speed	10.83 - 11.48 ft/sec	11.26
Max. Pendulum Acceleration		-29.84
Time Max. Pend. Acceleration		9.98
Maximum Flexion Angle	46.0 - 56.0 deg.	55.8
Time of Max. Flexion Angle	50.0 - 62.0 ms	57.4
Maximum Angle Theta (A)	30.0 - 34.0 deg	33.6
Time of Max. Theta (A)	50.0 - 60.0 ms	57.1
Maximum Angle Theta (B)	26.0 - 30.0 deg.	29.9
Time of Max. Theta (B)	50.0 - 60.0 ms	53.5

Calibrated By: Tim Michnay

Date: September 24, 1997

3.0 Shoulder Impact Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	13.78 - 14.43 ft/sec	13.93
Max. Pendulum Acceleration	7.5 - 10.5 g's	9.7
Time of Max. Pendulum Acceleration		18.8

Calibrated By: Tim Michnay

Date: September 24, 1997

4.0 Upper Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	40%
Displacement at 3.28 ft/sec	.39 - .55 in	.43
Displacement at 6.56 ft/sec	.93 - 1.08 in	.98
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.52
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.93

Calibrated By: Tim Michnay

Date: September 24, 1997

5.0 Middle Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	40%
Displacement at 3.28 ft/sec	.39 - .55 in	.43
Displacement at 6.56 ft/sec	.93 - 1.08 in	1.01
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.55
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.98

Calibrated By: Tim Michnay

Date: September 24, 1997

6.0 Lower Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	40%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.92
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.50
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.90

Calibrated By: Tim MichnayDate: September 24, 1997**7.0 Abdomen Test**

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Probe Speed	20.34 - 20.99 ft/sec	20.70
Maximum Impact Force	2136 - 2495 lbs	2282
Time of Maximum Force	8.8 - 10.4 ms	9.6
Max. Total Abdomen Force	1326 - 1776 lbs	1373
Time of Max. Total Force	8.5 - 10.1 ms	10.0

Calibrated By: Tim MichnayDate: September 24, 1997

8.0 Lumbar Spine Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	71°
Laboratory Relative Humidity	10% - 70%	52%
Pendulum Speed	19.52 - 20.17 ft/sec	19.94
Max. Pendulum Acceleration		-31.67
Time Max. Pend. Acceleration		10.20
Maximum Flexion Angle	45.0 - 55.0 deg.	51.8
Time of Max. Flexion Angle	39.0 - 53.0 ms	47.4
Maximum Angle Theta (A)	31.0 - 35.0 deg	34.3
Time of Max. Theta (A)	45.0 - 55.0 ms	47.3
Maximum Angle Theta (B)	27.0 - 31.0 deg.	30.8
Time of Max. Theta (B)	45.0 - 55.0 ms	48.4

Calibrated By: First Technology Safety Systems

Date: September 10, 1997

9.0 Pelvis Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	13.77 - 14.43 ft/sec	14.26
Maximum Impactor Force	989 - 1214 lbs	1184
Time of Max. Impactor Force	10.3 - 15.5 ms	15.1
Maximum Pubic Force	233.8 - 368.7 lbs	327.0
Time of Max. Pubic Force	9.9 - 15.9 ms	15.8

Calibrated By: Tim Michnay

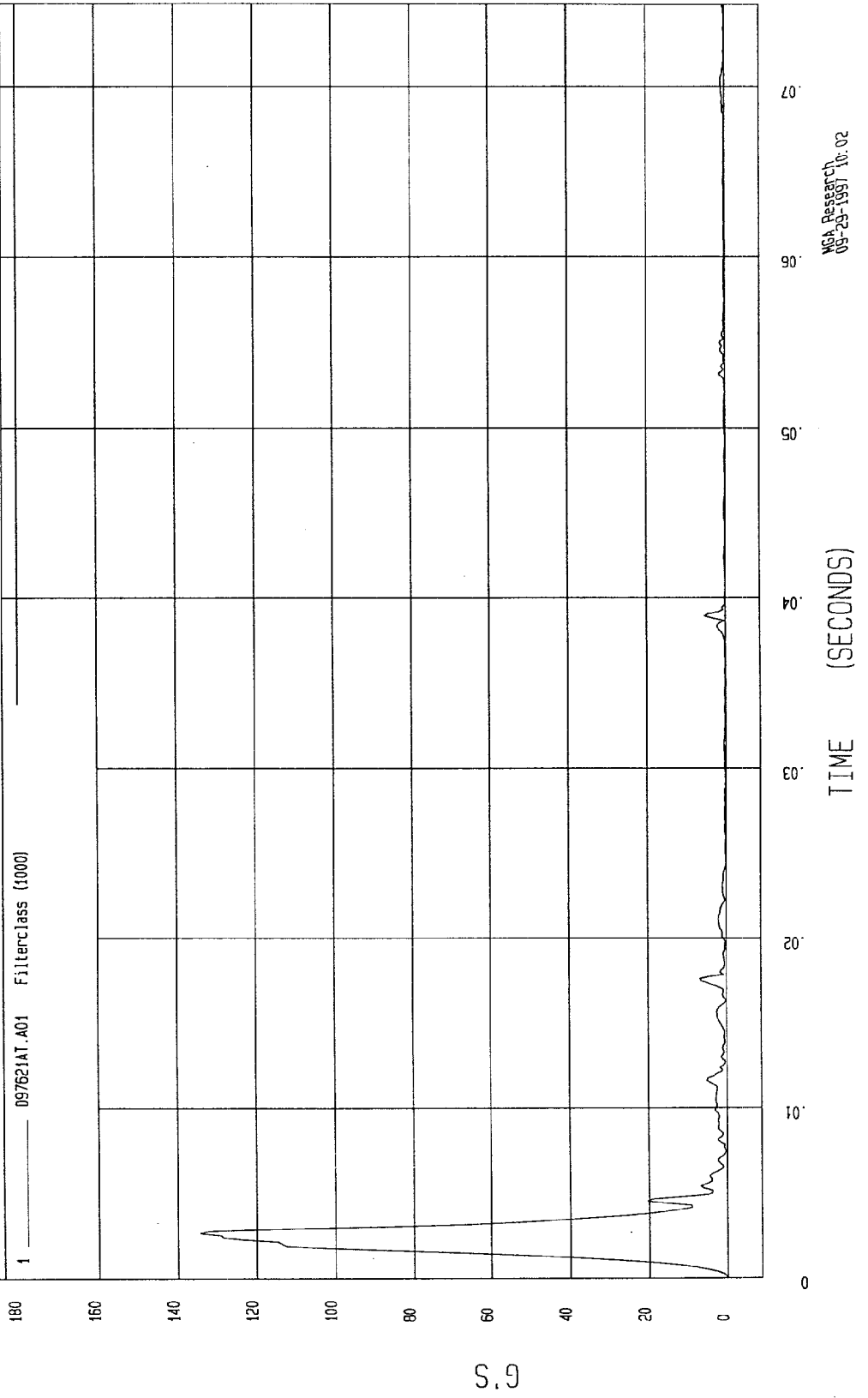
Date: September 24, 1997

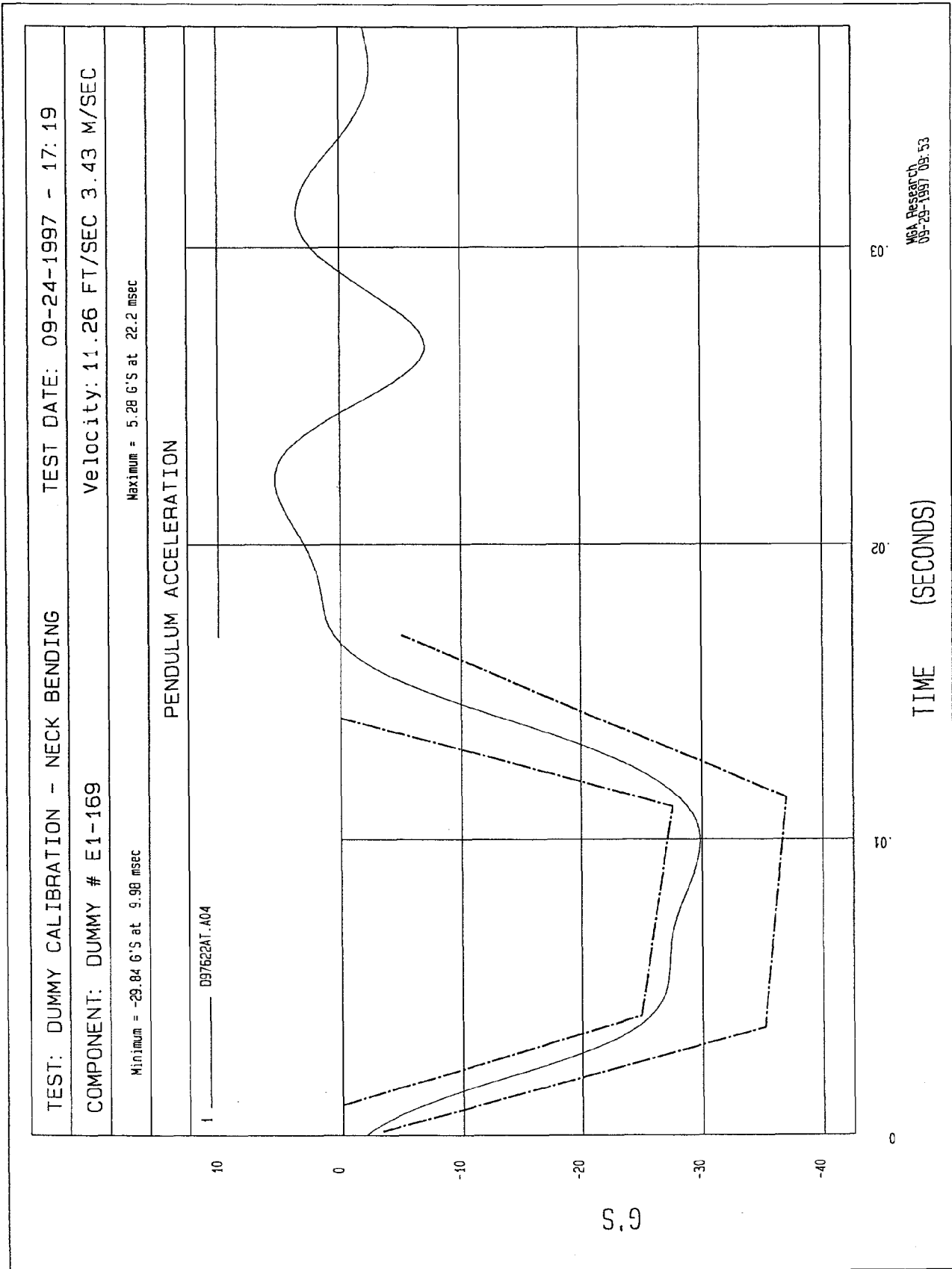
TEST: DUMMY CALIBRATION - HEAD DROP TEST DATE: 09-24-1997 - 22:00:15

COMPONENT: DUMMY # E1-169

Minimum = 1.98E-02 G'S at 52.0 msec Maximum = 134.53 G'S at 2.62 msec

PEAK RESULTANT ACCELERATION



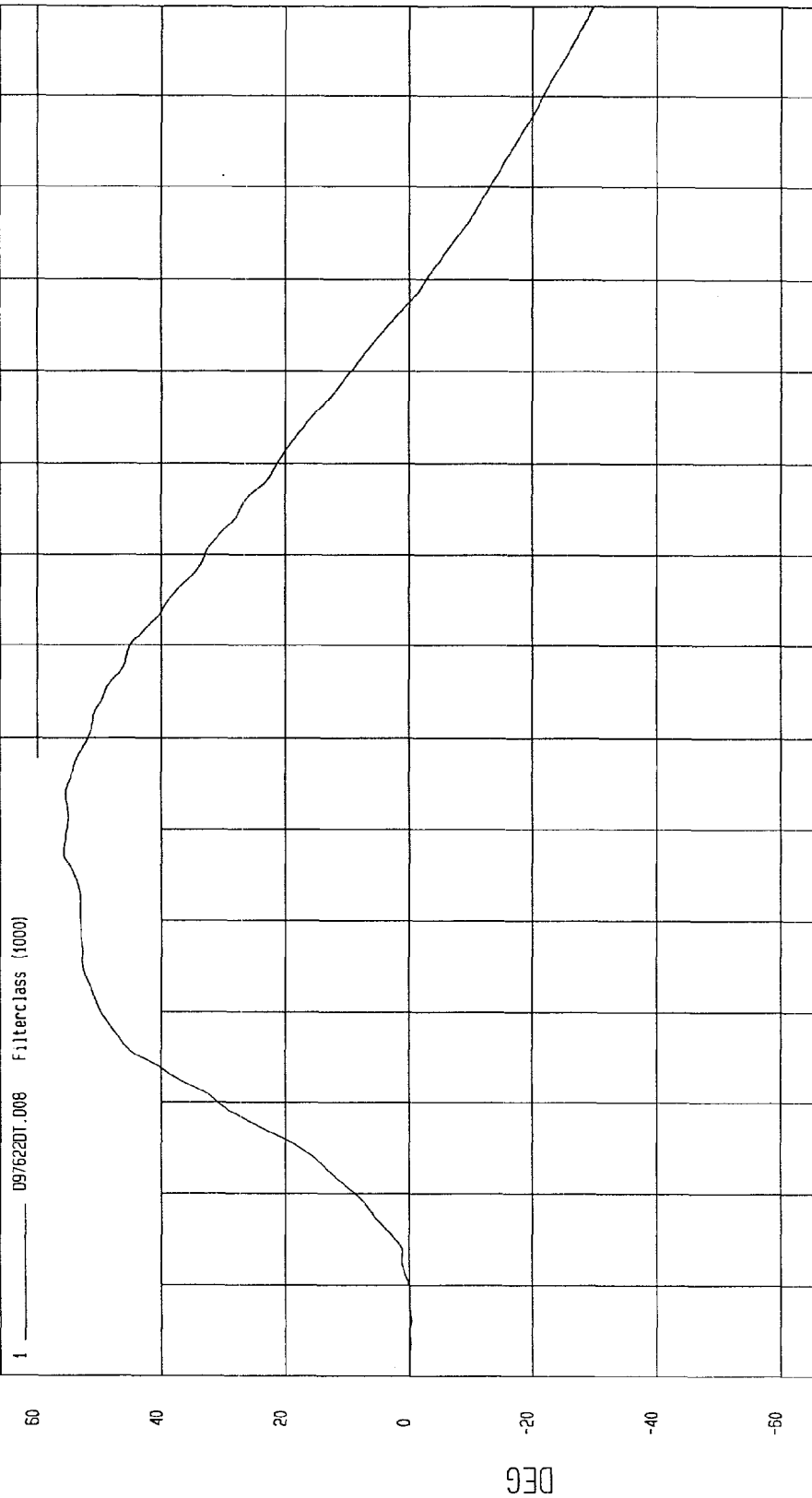


TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 09-24-1997 - 17:19

COMPONENT: DUMMY # E1-169 Velocity: 11.26 FT/SEC 3.43 M/SEC

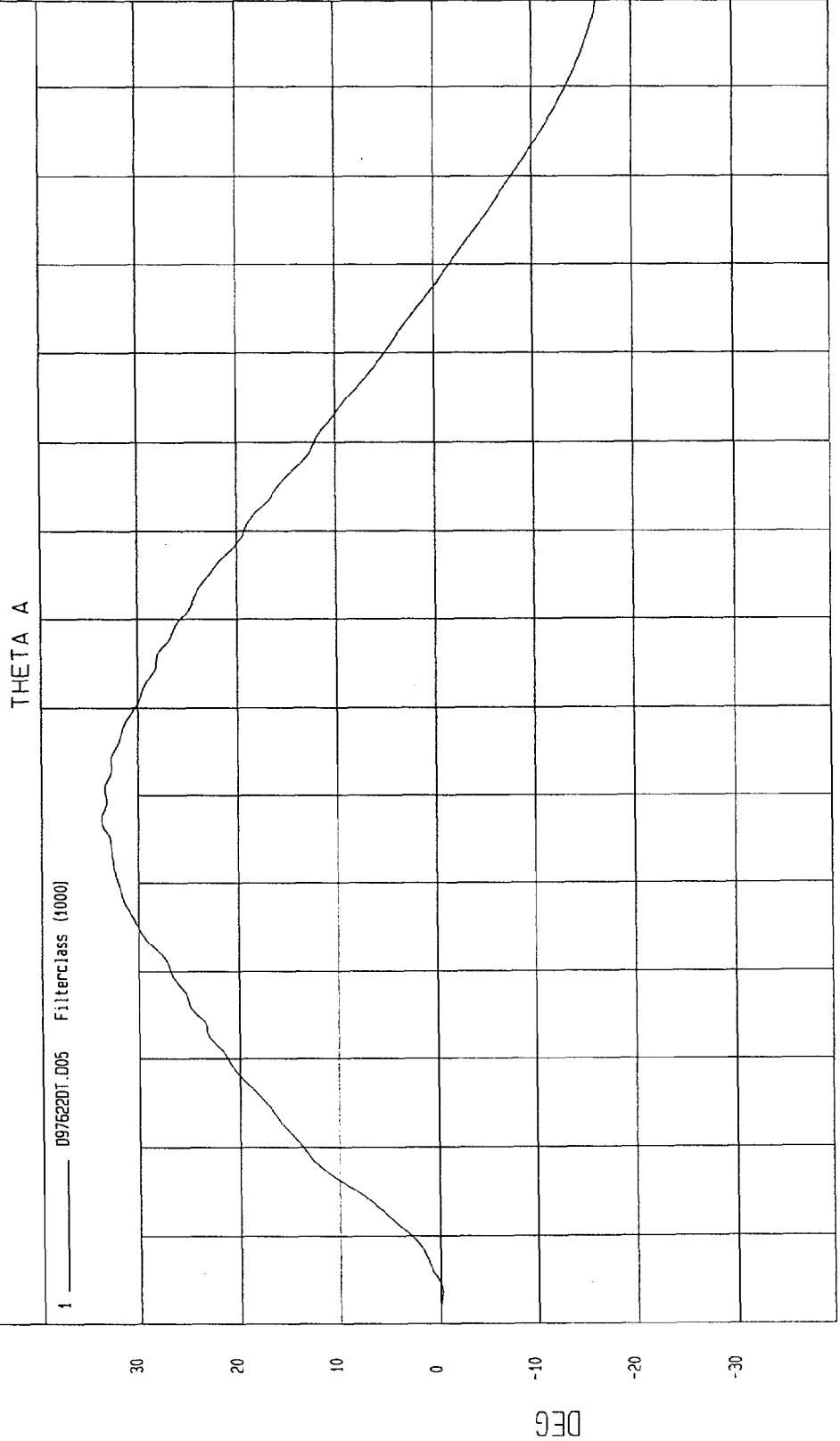
Minimum = -35.06 DEG at 164. msec Maximum = 55.83 DEG at 57.4 msec

FLEXION ANGLE

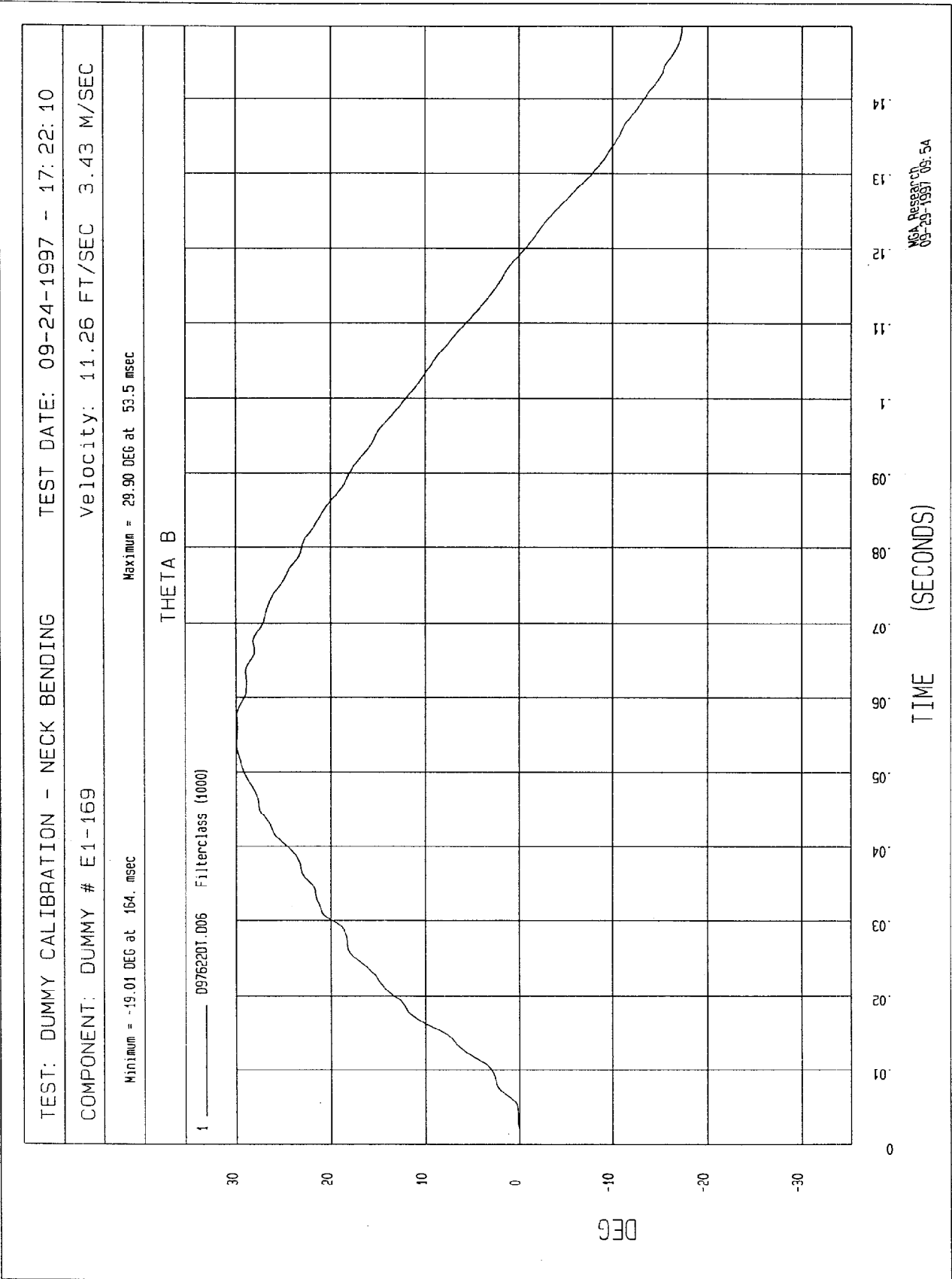


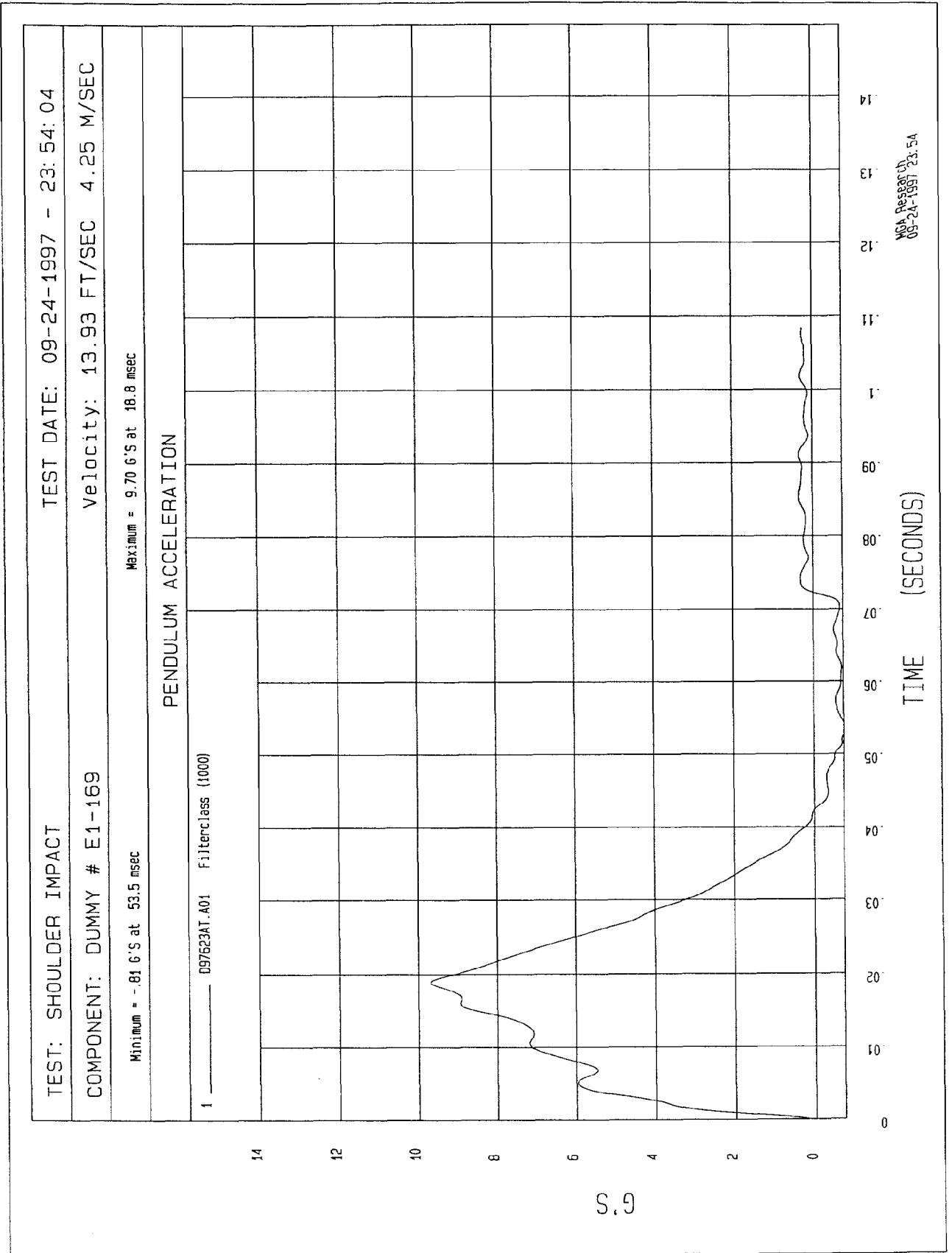
WGA Research
09-29-1997 09:54

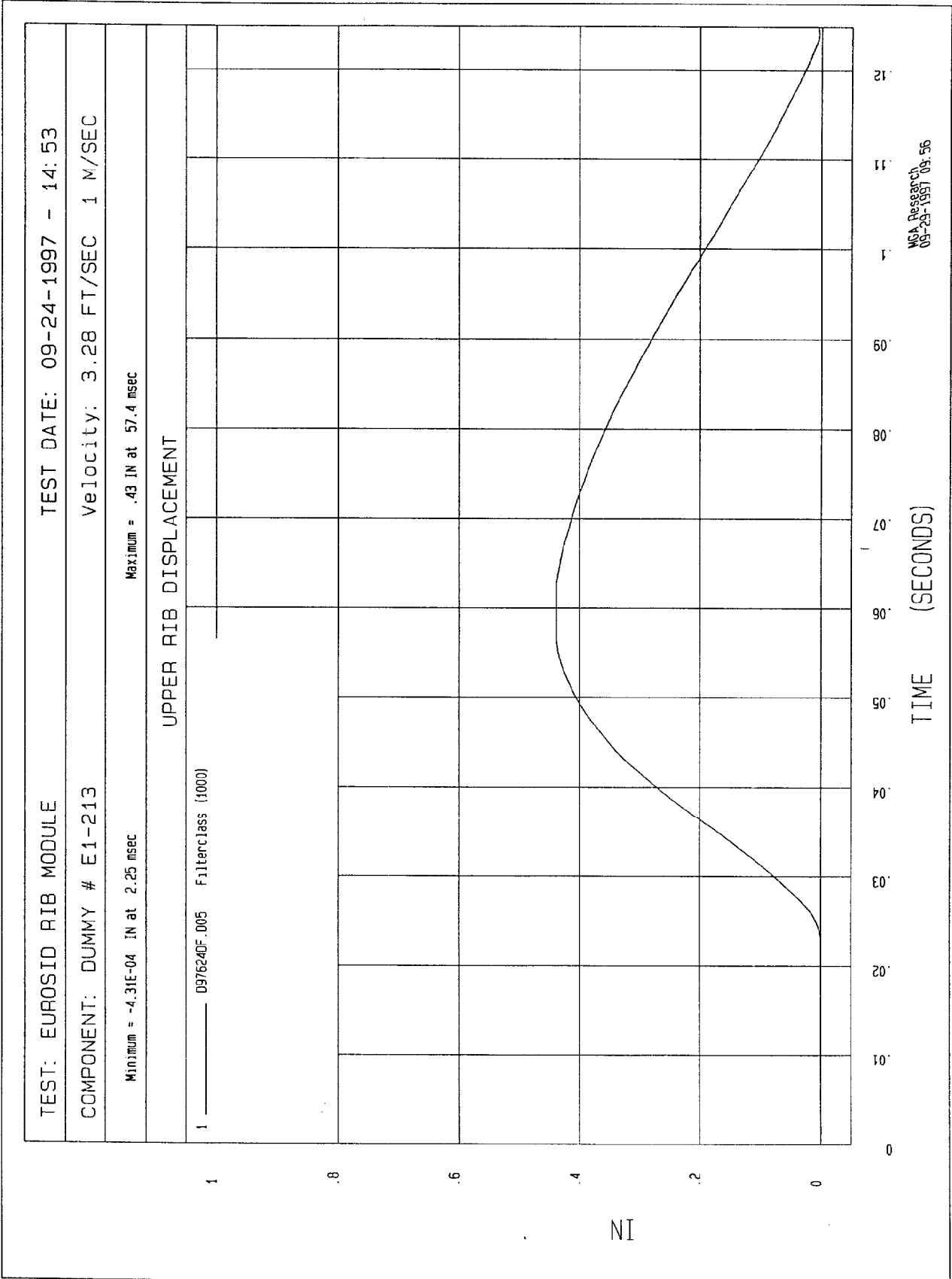
TEST: DUMMY CALIBRATION - NECK BENDING	TEST DATE: 09-24-1997 - 17:19
COMPONENT: DUMMY # E1-169	Velocity: 11.26 FT/SEC 3.43 M/SEC
Minimum = -17.68 DEG at 162. msec	Maximum = 33.58 DEG at 57.1 msec



WCA Research
09-23-1997 09:54

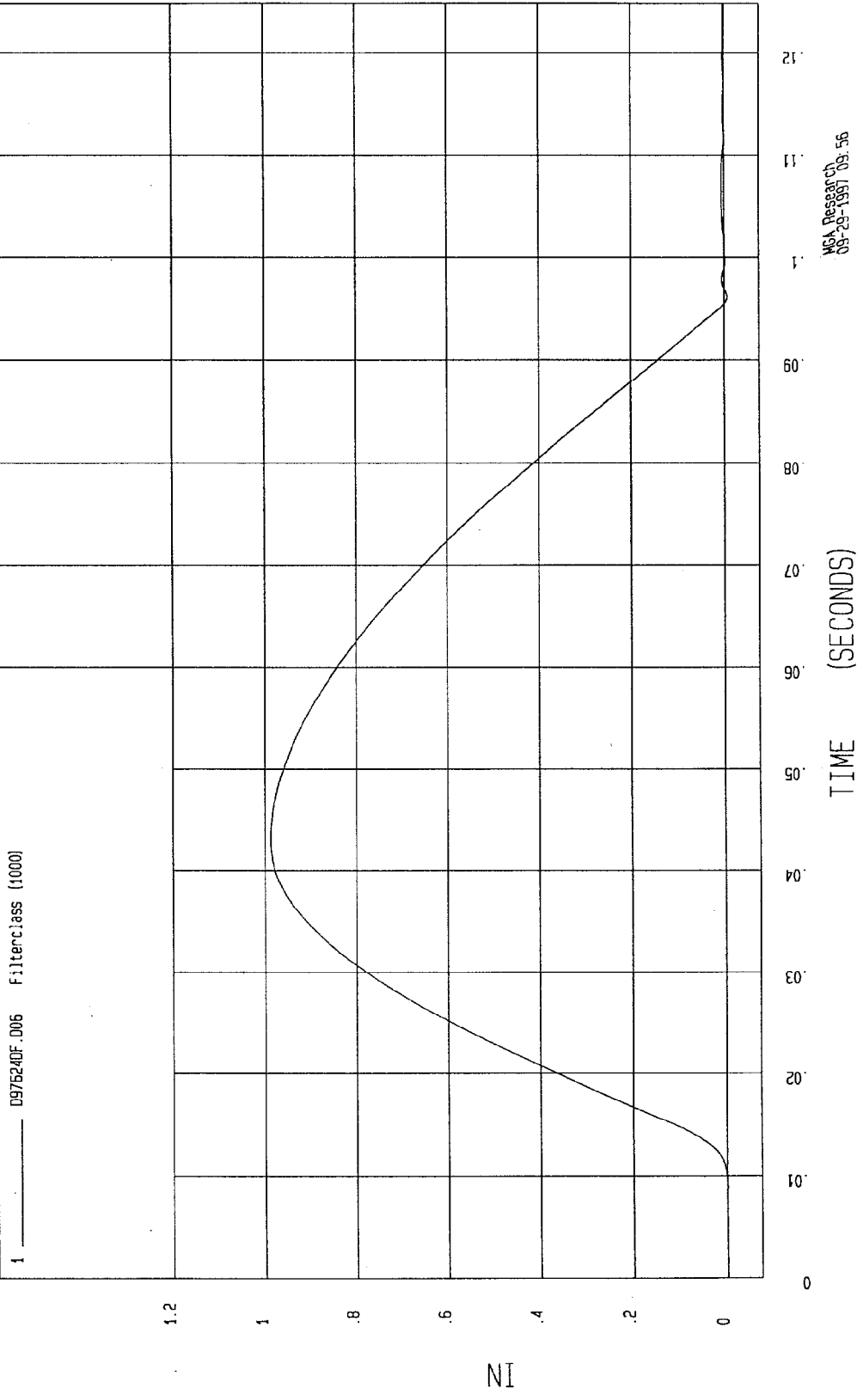


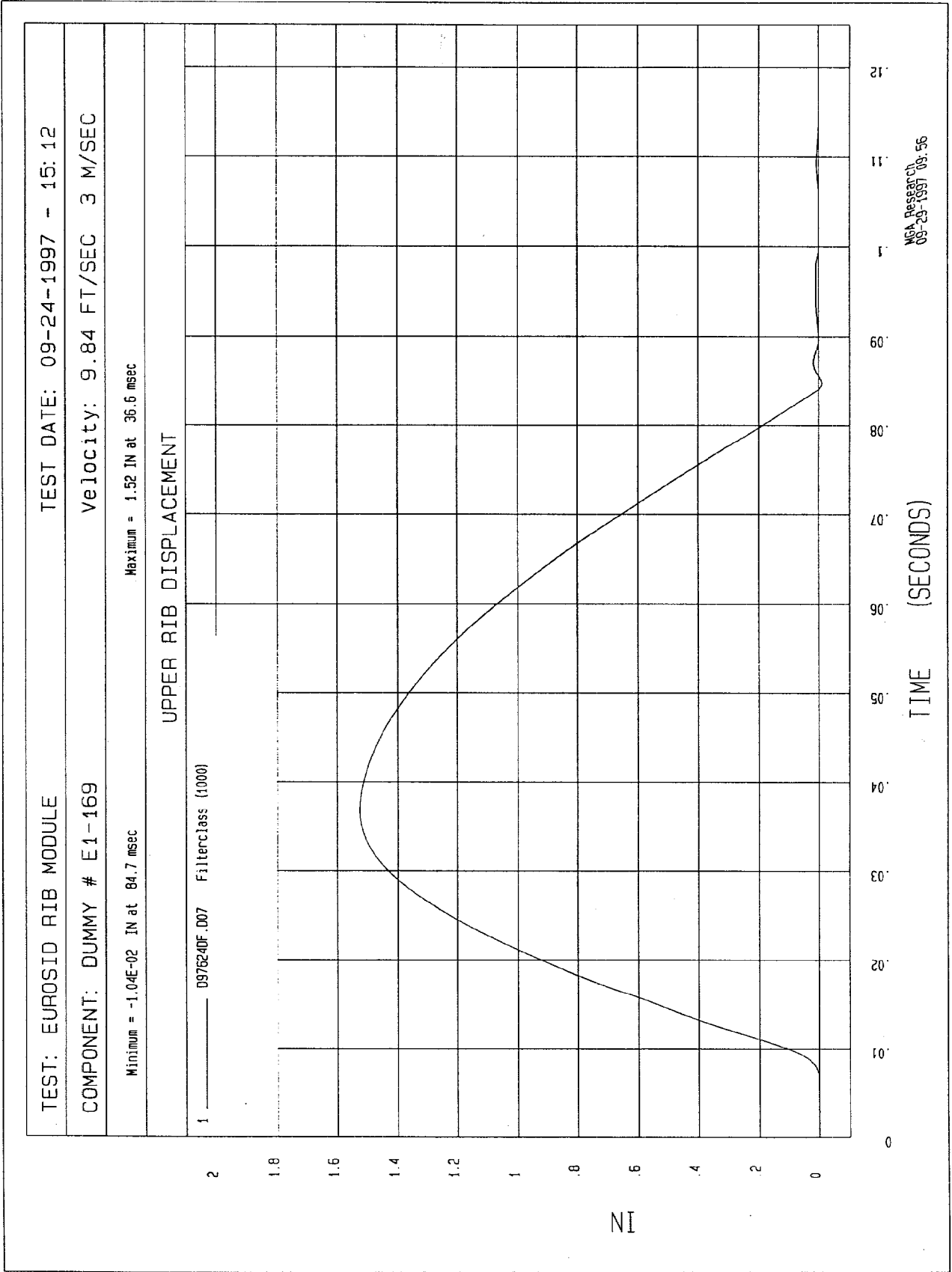




TEST: EUROSID RIB MODULE	TEST DATE: 09-24-1997 - 15:02
COMPONENT: DUMMY # E1-169	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -5.95E-03 IN at 96.1 msec	Maximum = .98 IN at 43.0 msec

UPPER RIB DISPLACEMENT



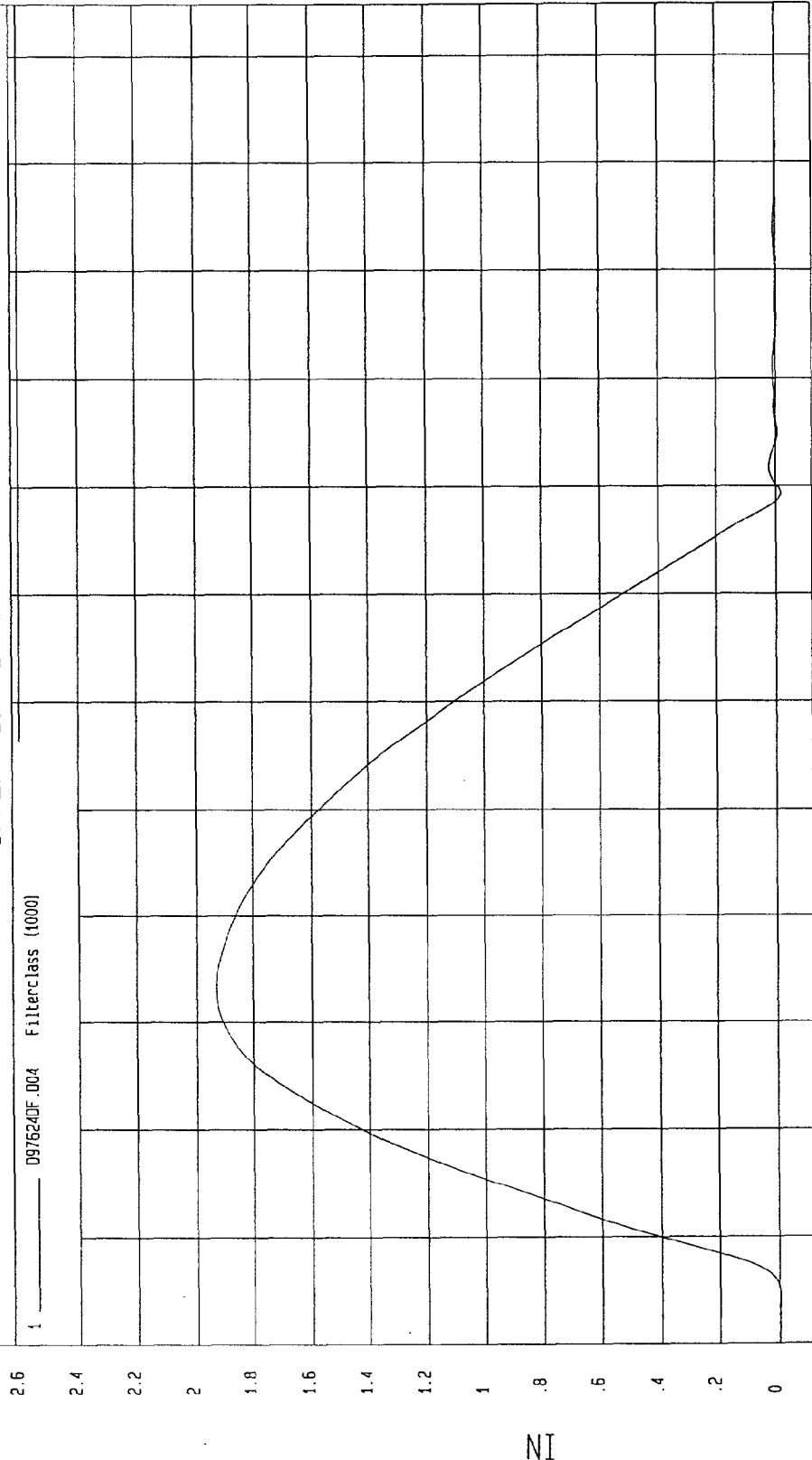


TEST: EUROSID RIB MODULE TEST DATE: 09-24-1997 - 14:42

COMPONENT: DUMMY # E1-169 Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.59E-02 IN at 79.3 msec Maximum = 1.93 IN at 33.3 msec

UPPER RIB DISPLACEMENT



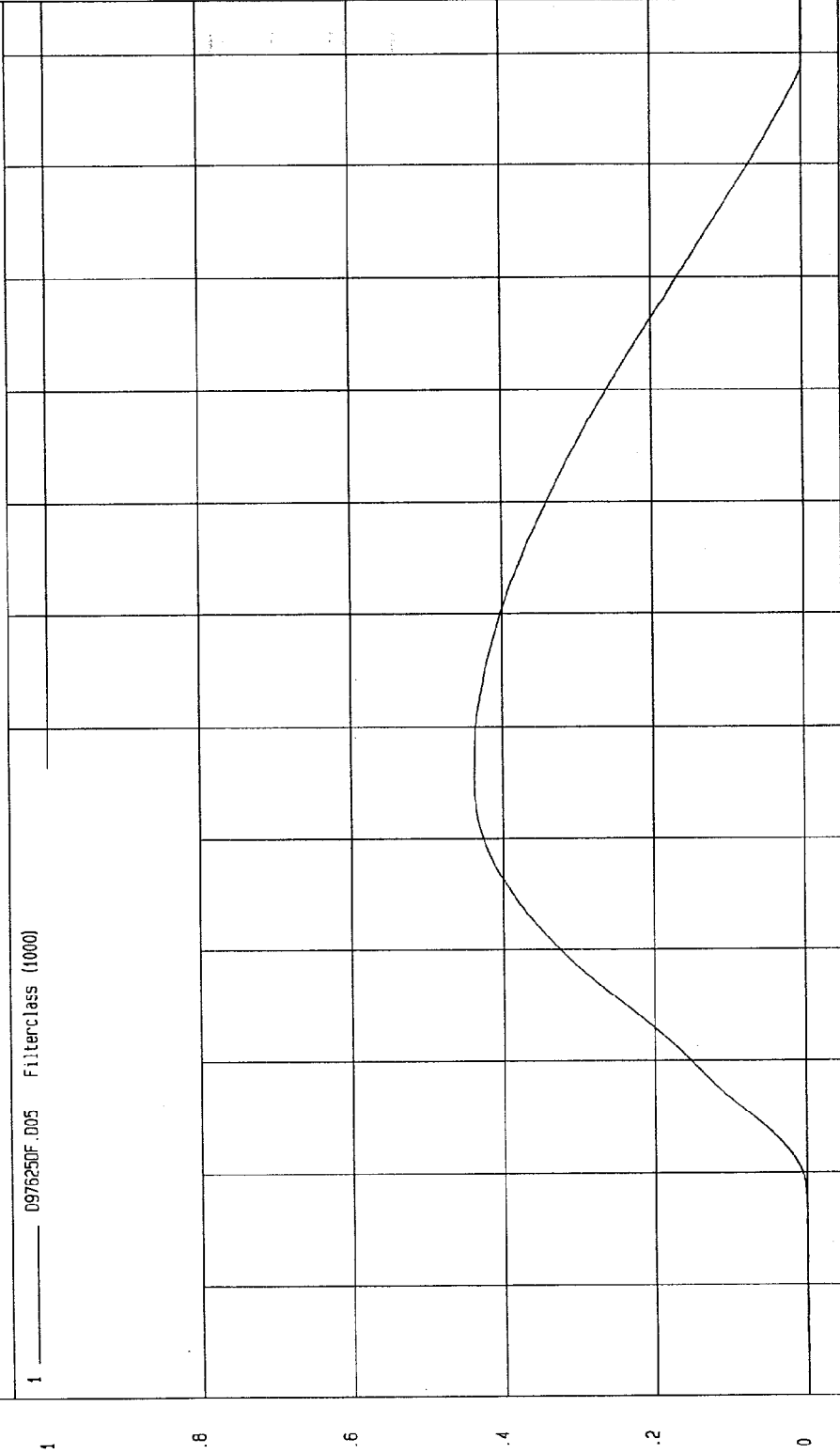
WCA Research
09-29-1997 09:56

TEST: EUROSID RIB MODULE TEST DATE: 09-24-1997 - 15:29

COMPONENT: DUMMY # E1-169 Velocity: 3.28 FT/SEC 1 M/SEC

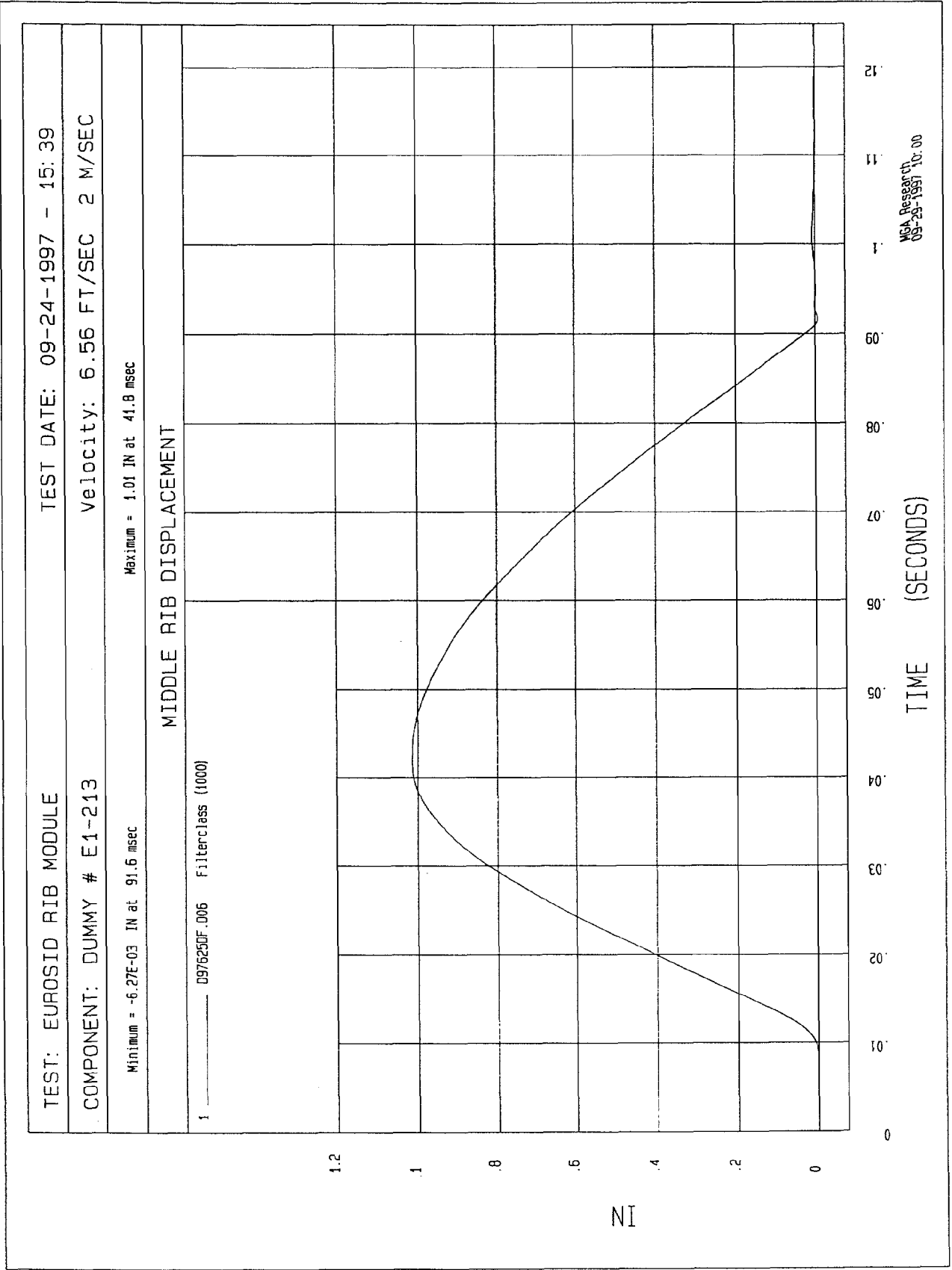
Minimum = -6.48E-04 IN at 124. msec Maximum = .43 IN at 54.6 msec

MIDDLE RIB DISPLACEMENT



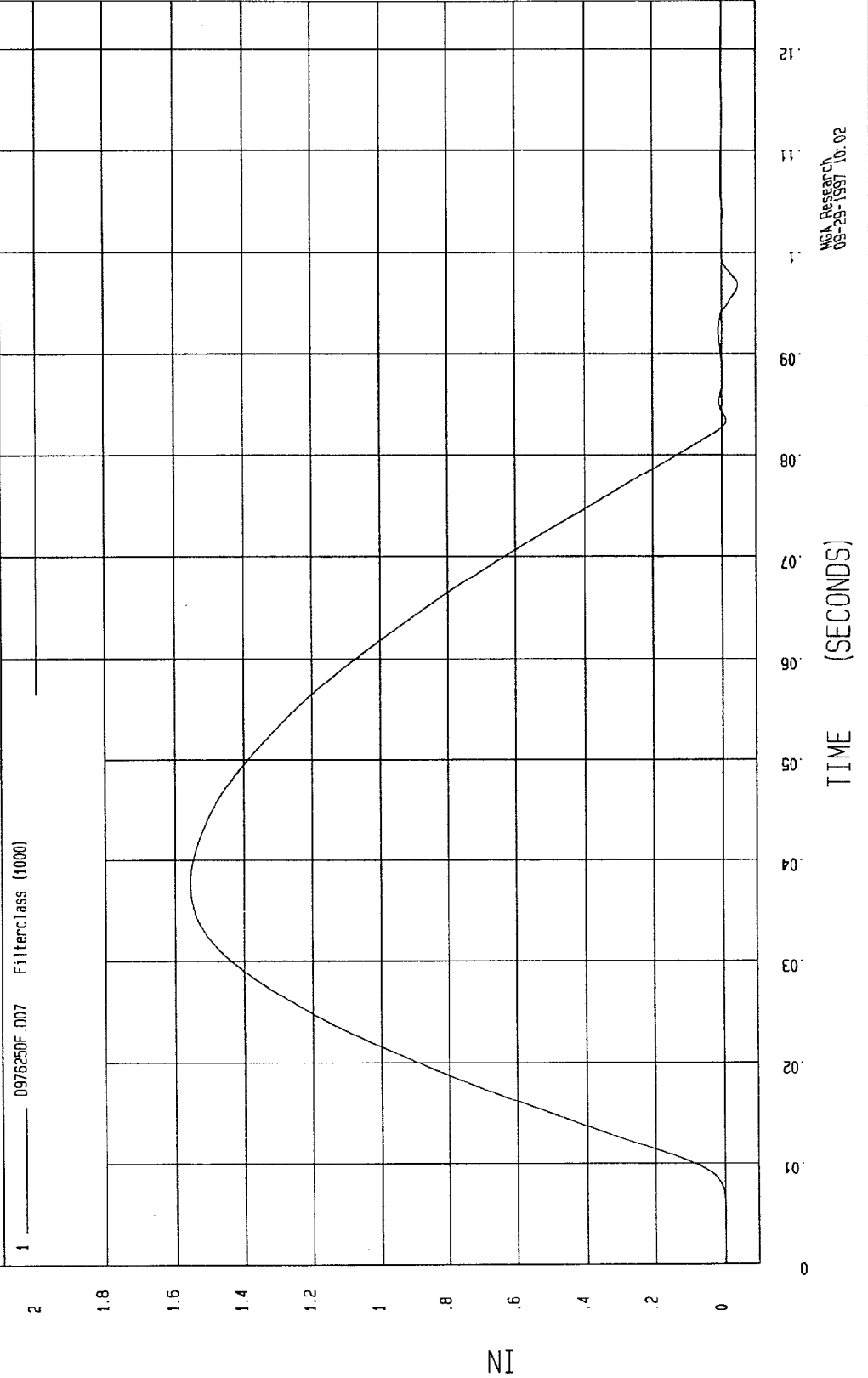
TIME (SECONDS)

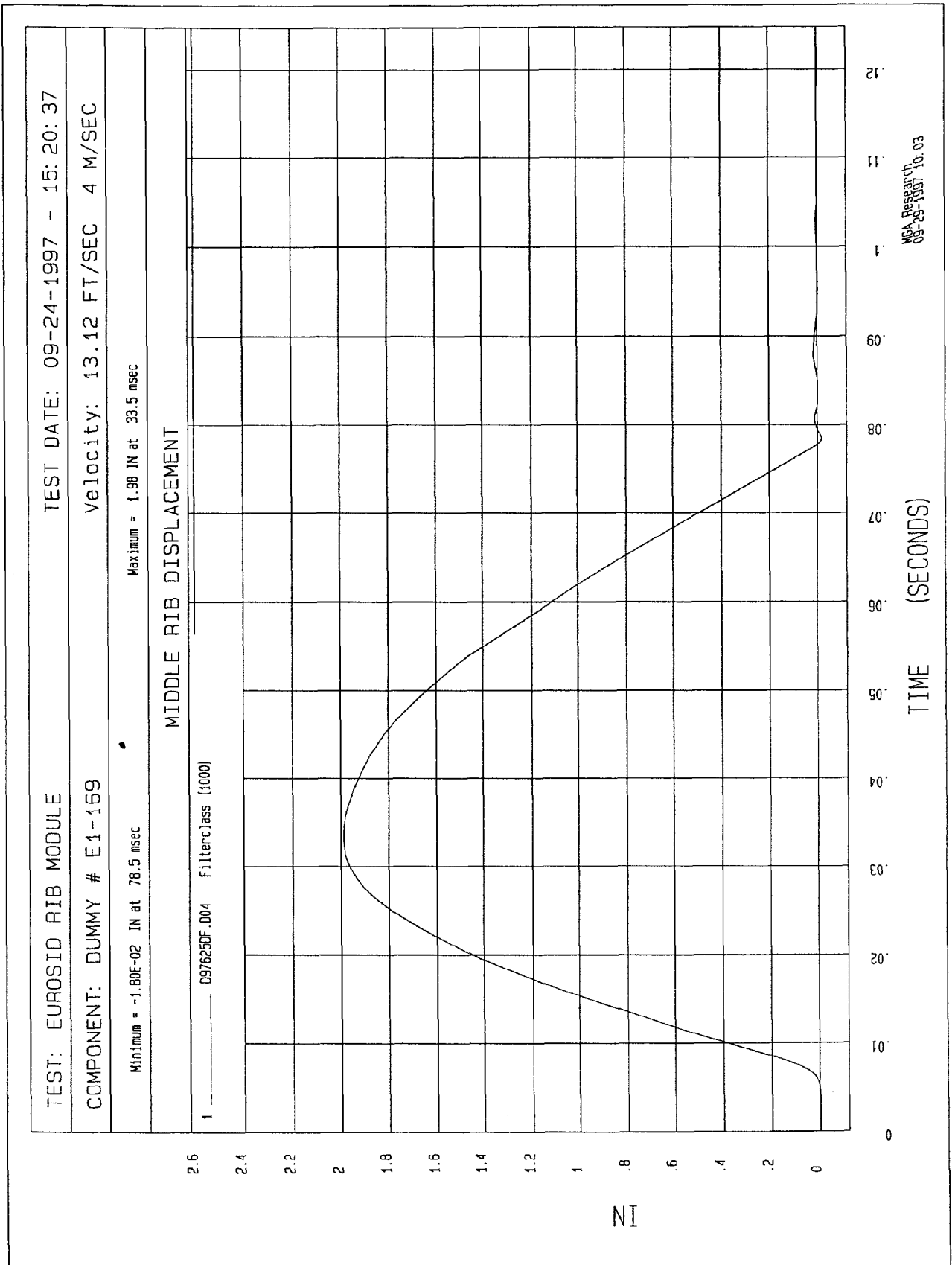
WGA Research
09-29-1997 10:00

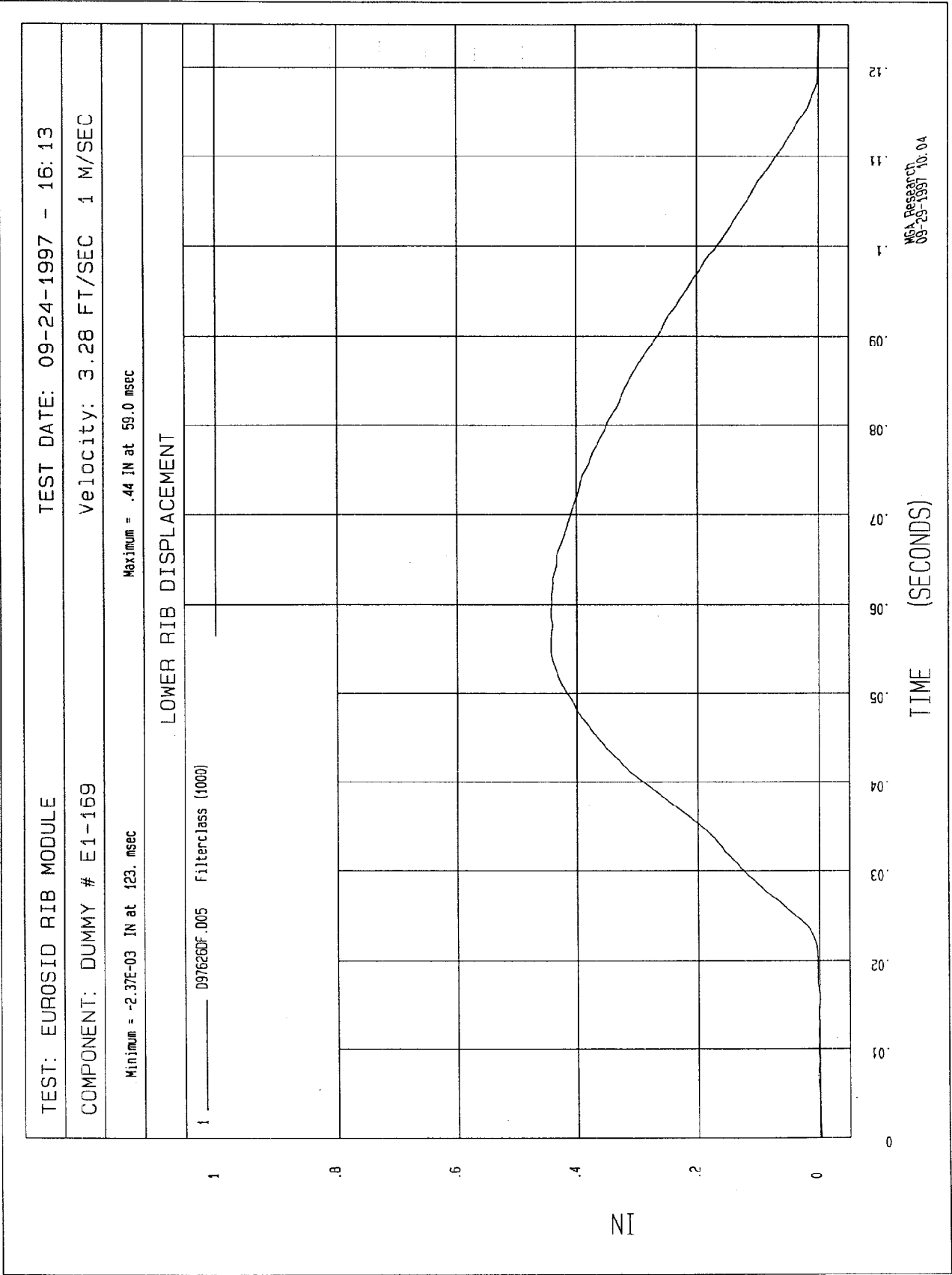


TEST: EUROSID RIB MODULE	TEST DATE: 09-24-1997 - 15:50
COMPONENT: DUMMY # E1-169	Velocity: 9.84 FT/SEC 3 M/SEC
Minimum = -4.65E-02 IN at 96.7 msec	Maximum = 1.55 IN at 37.9 msec

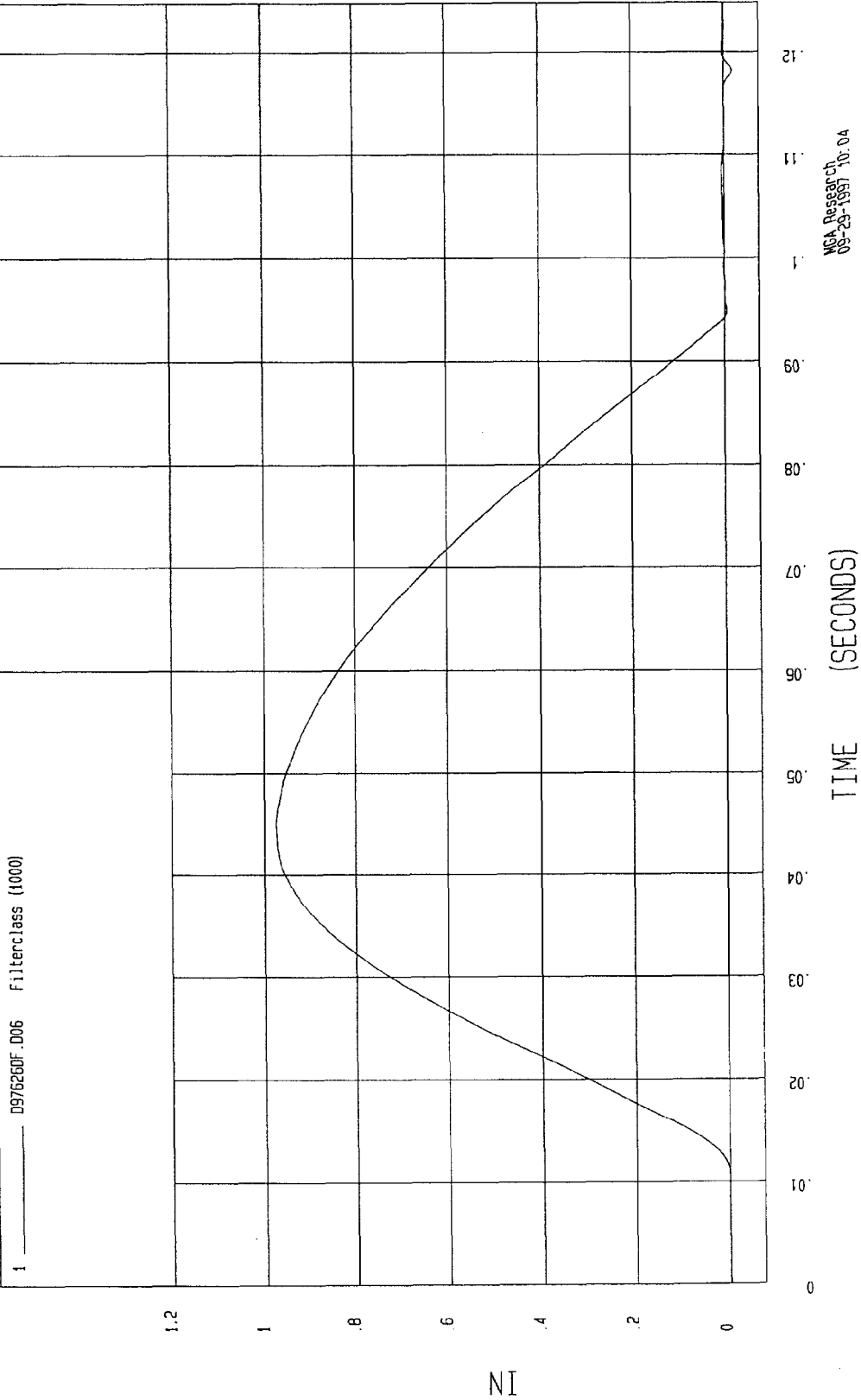
MIDDLE RIB DISPLACEMENT

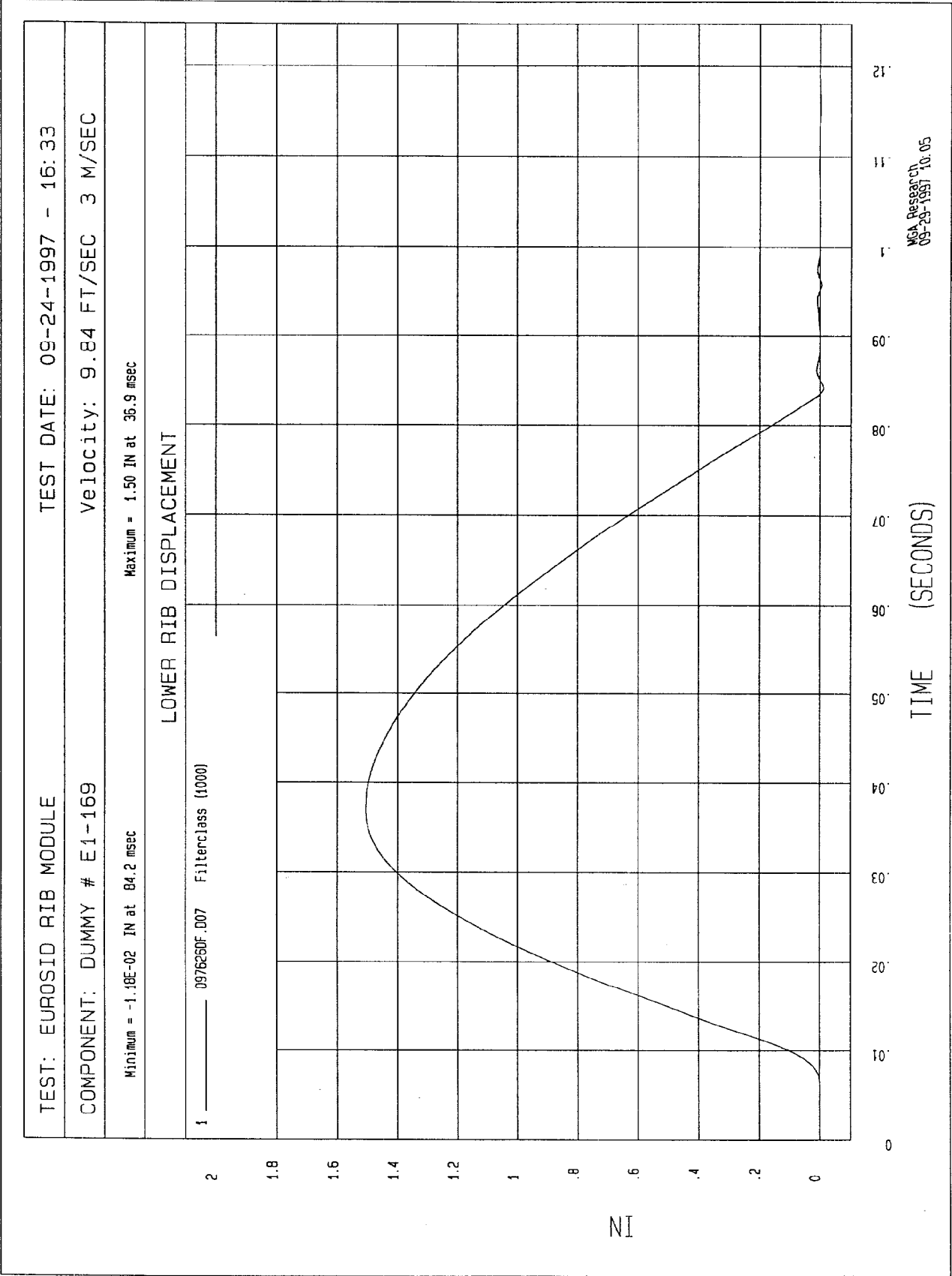




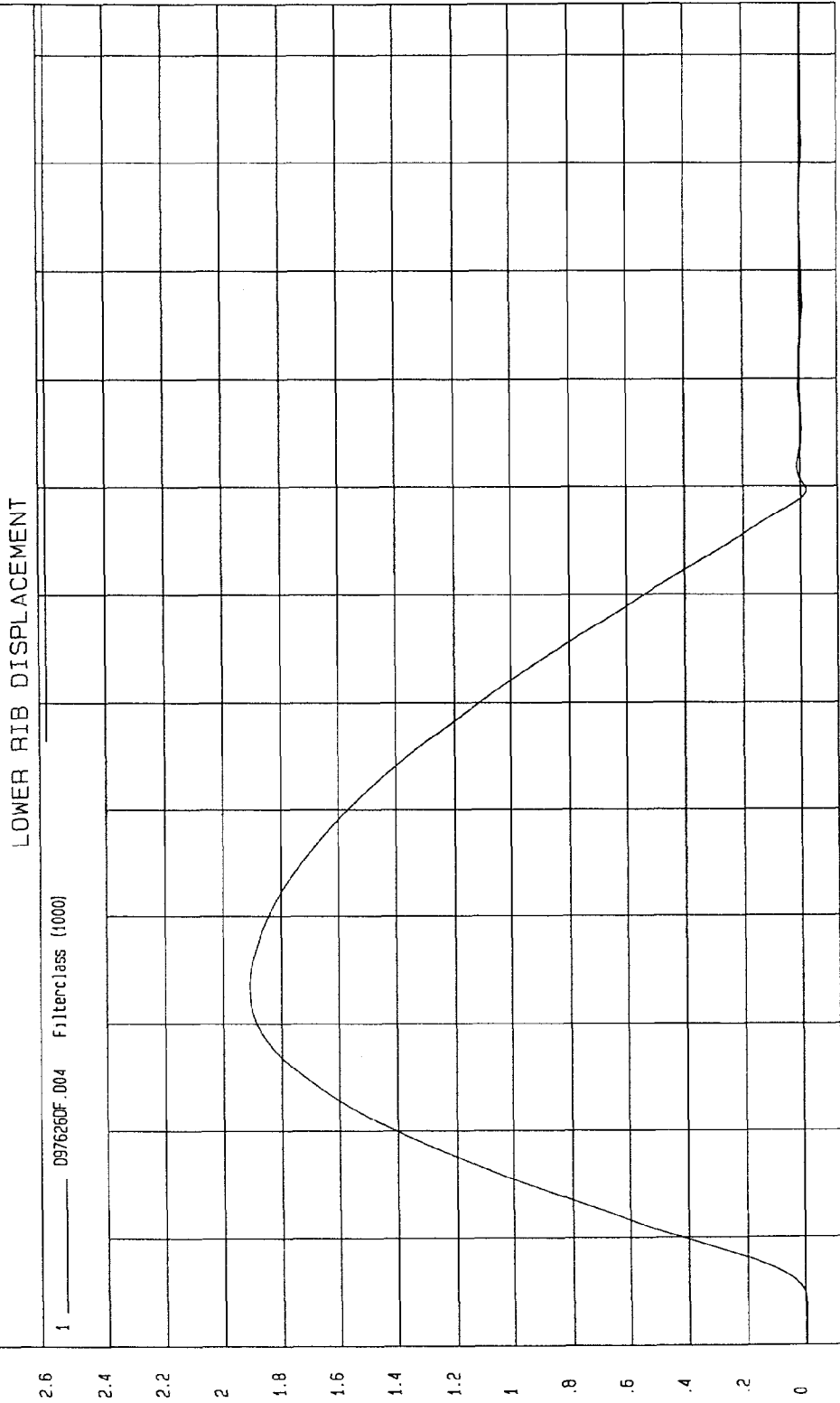


TEST: EUROSID RIB MODULE	TEST DATE: 09-24-1997 - 16:26
COMPONENT: DUMMY # E1-169	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -1.78E-02 IN at 118. msec	Maximum = .97 IN at 44.8 msec
LOWER RIB DISPLACEMENT	

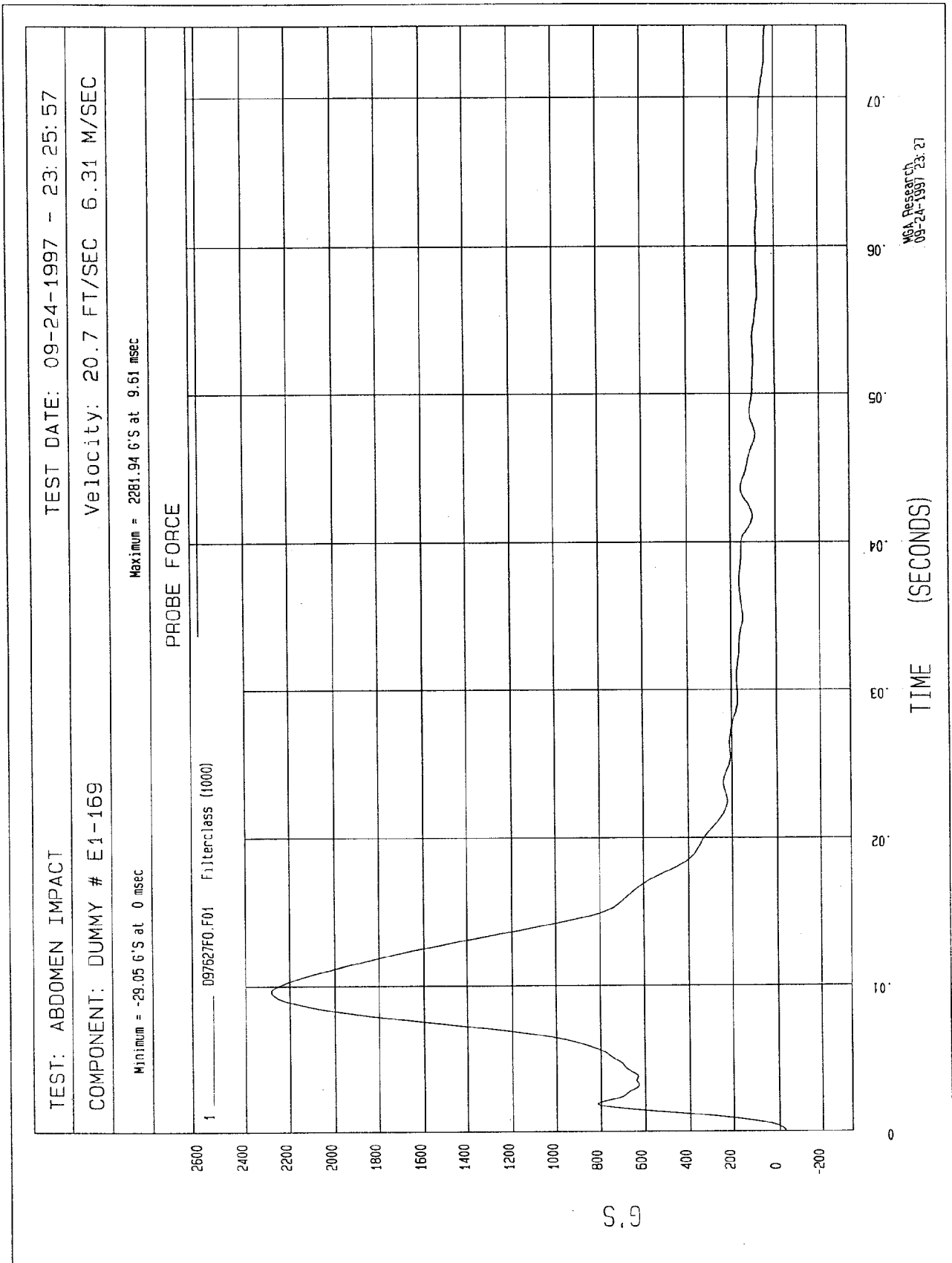


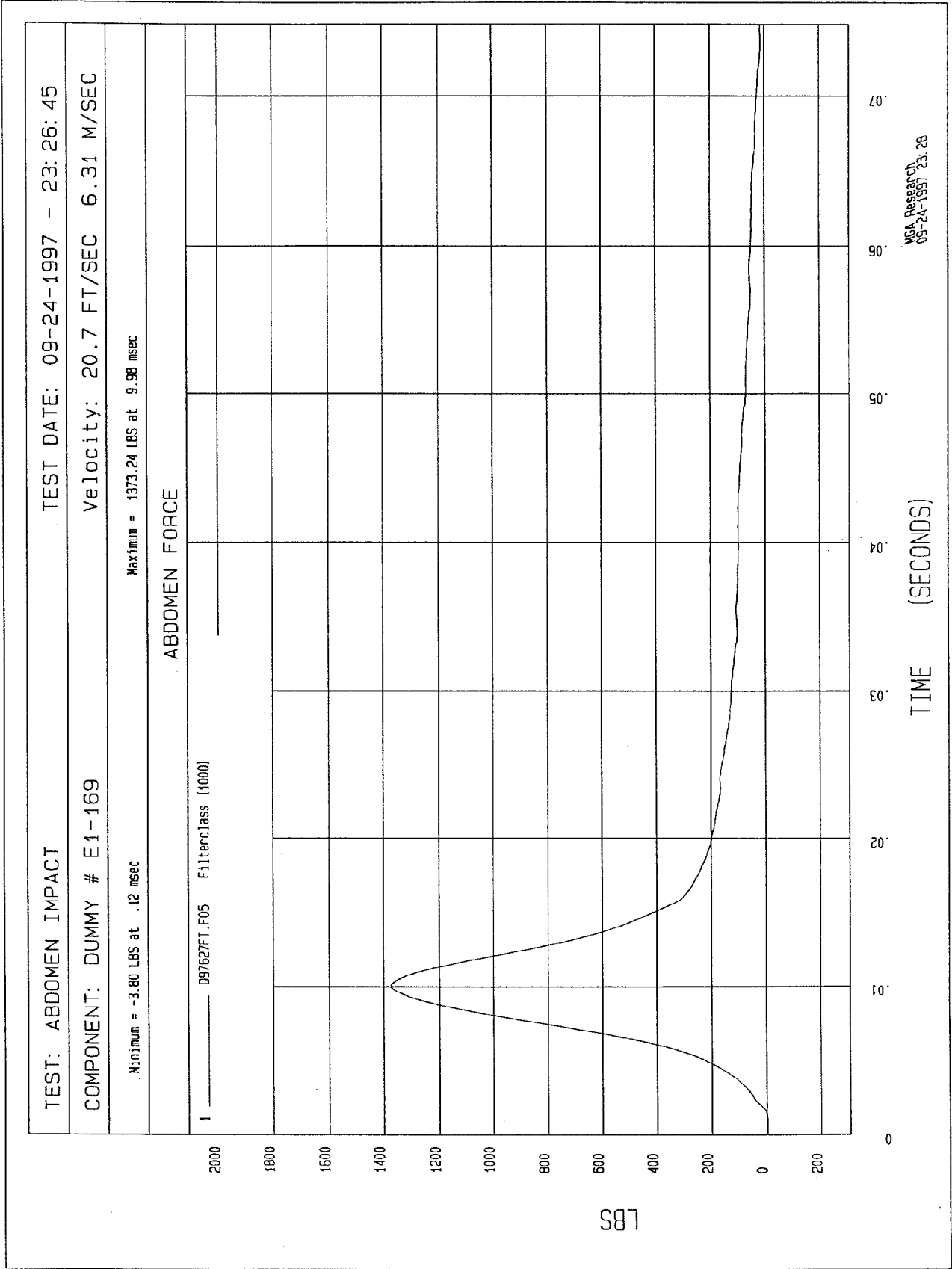


TEST: EUROSID RIB MODULE	TEST DATE: 09-24-1997 - 15:56
COMPONENT: DUMMY # E1-169	Velocity: 13.12 FT/SEC 4 M/SEC
Minimum = -1.75E-02 IN at 79.6 msec	
Maximum = 1.90 IN at 33.5 msec	



NSA Research
09-25-1997 10:05





EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SHM531-1

Temperature : 22 deg C

Test number : 20281

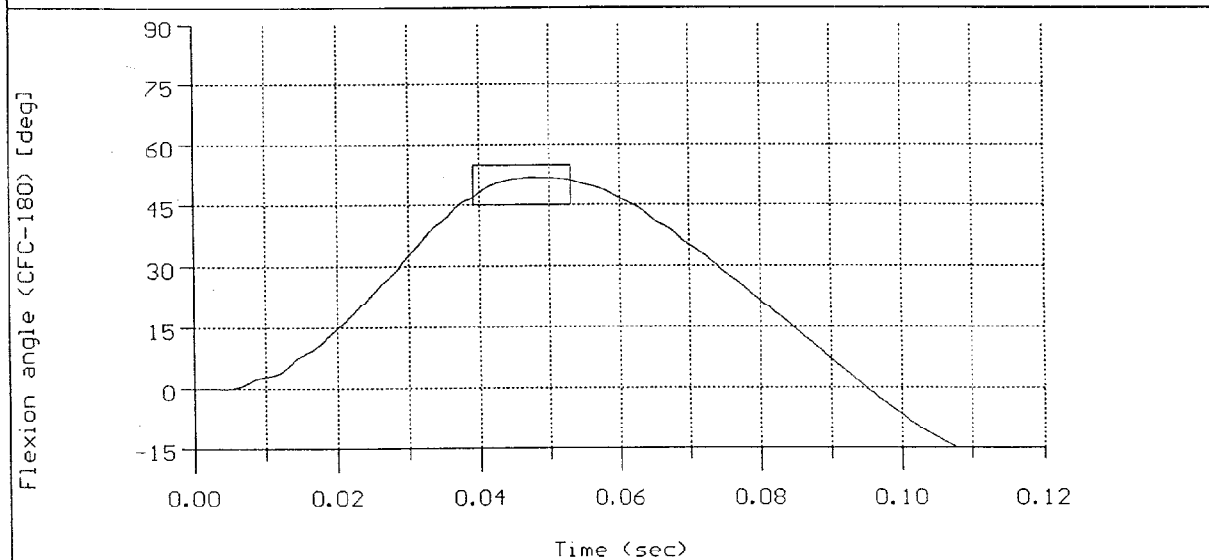
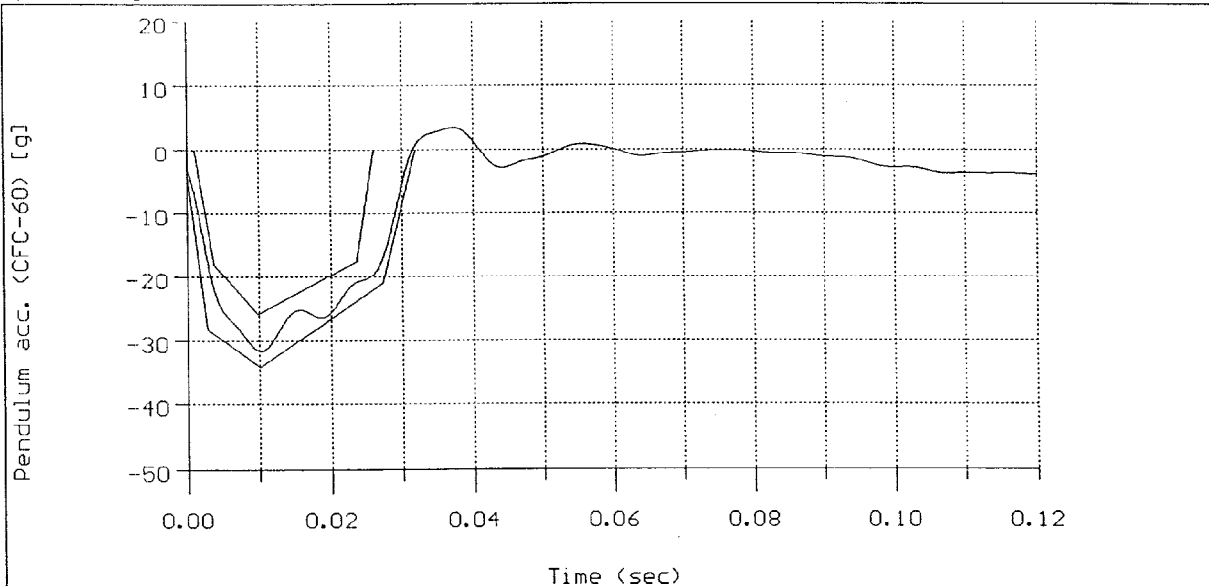
Rel. Humidity : 52 %

Impact side :

Technician : JR

Spine length : 5.25

Test date : 10-SEPTEMBER-1997



Parameter	Specification	Result	Passed/Failed
Pendulum Speed	5.95 - 6.15 m/s	6.08 m/s	
Maximum pendulum acc.		-31.7 g	
Time of max pend. acc.		10.2 msec	
Maximum flexion angle	45.0 - 55.0 deg	51.8 deg	
Time of max. flex. angle	39.0 - 53.0 msec	47.4 msec	

EUROSID-1

COMMENTS: M6A

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SMM531-1

Temperature : 22 deg C

Test number : 20281

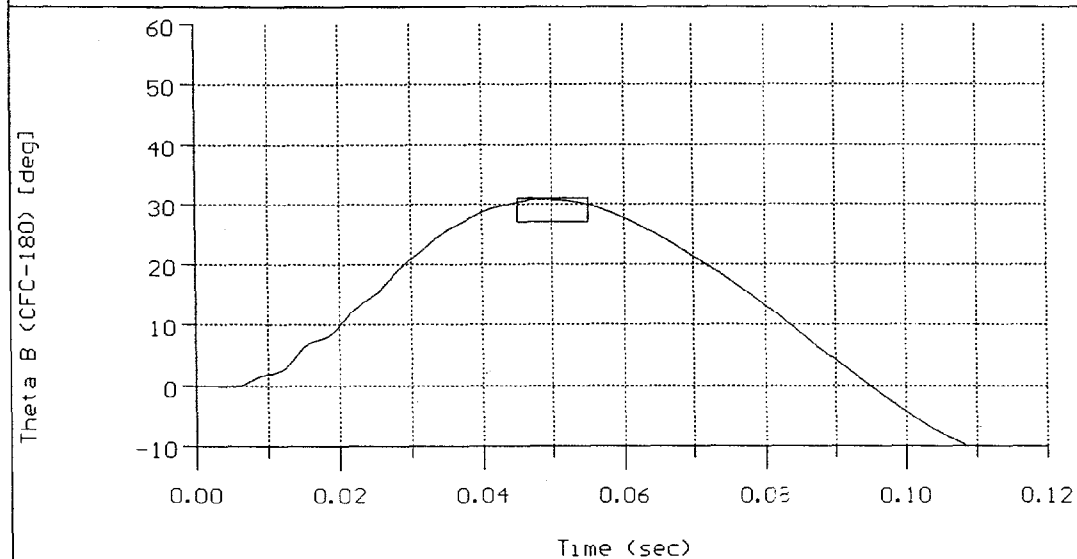
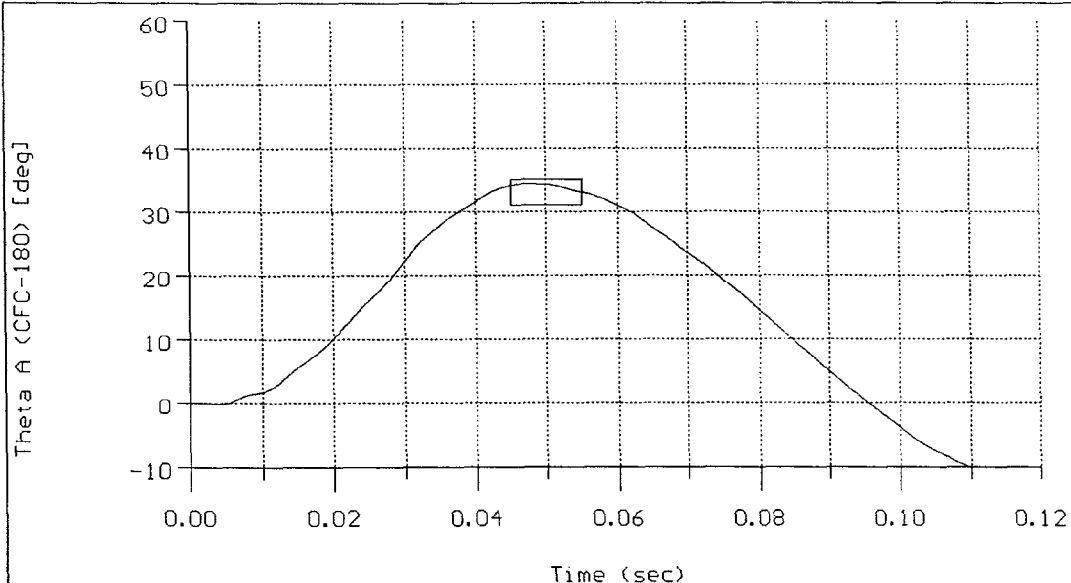
Rel. Humidity : 52 %

Impact side :

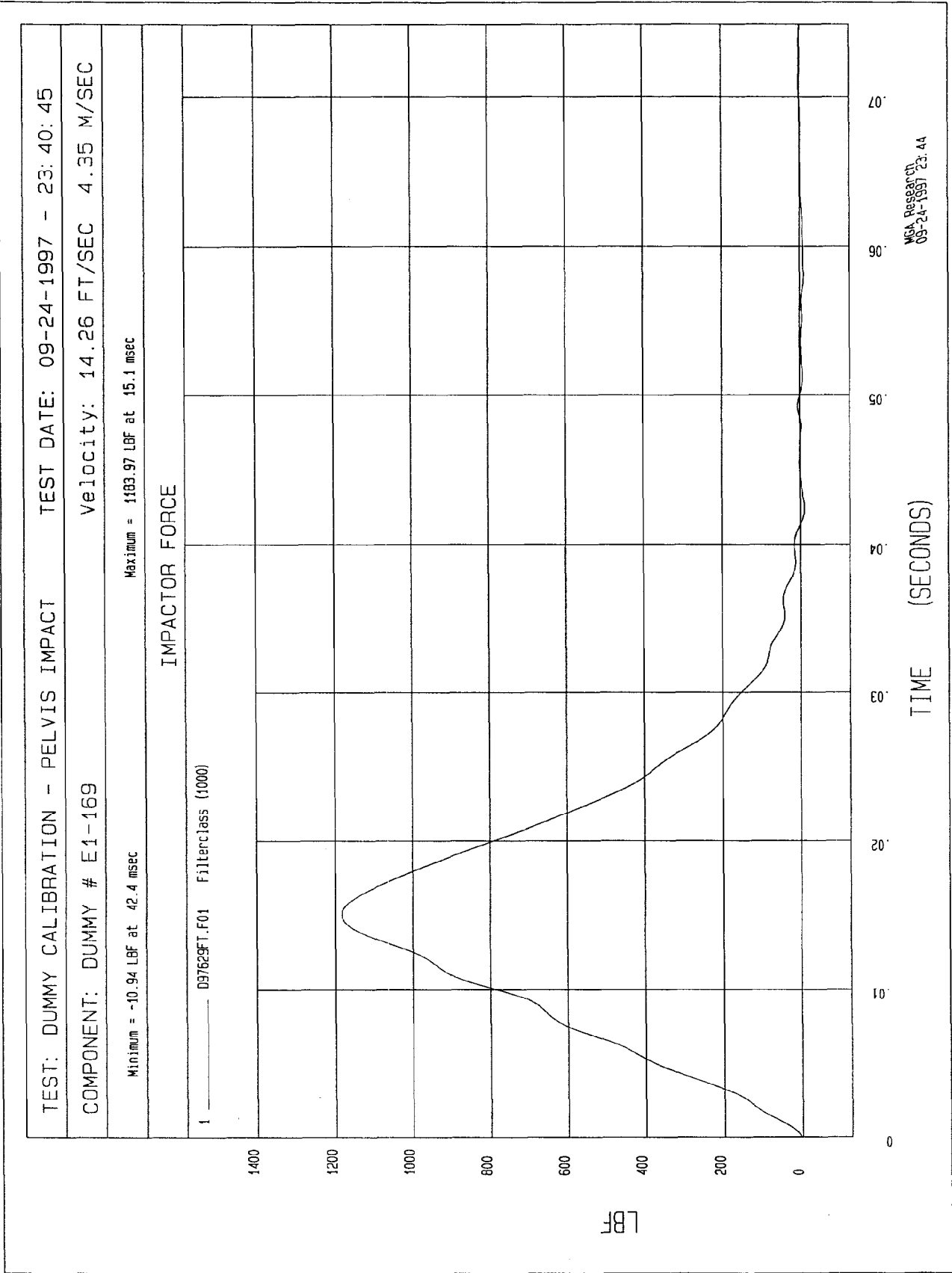
Technician : JR

Spine length : 5.25

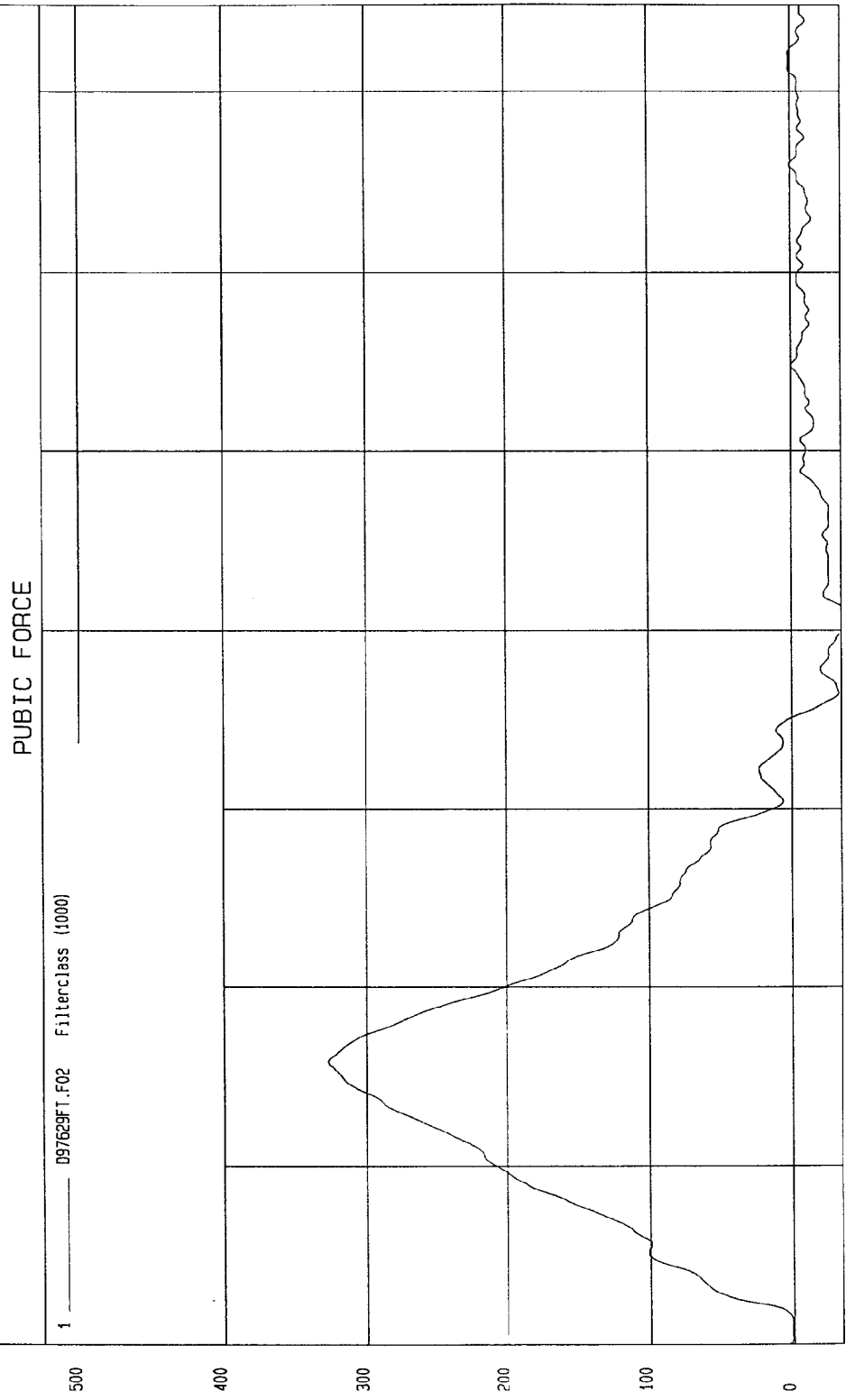
Test date : 10-SEPTEMBER-1997



Parameter	Specification	Result	Passed/Failed
Maximum Theta(A)	31.0 - 35.0 deg	34.3 deg	
Time of max. Theta(A)	45.0 - 55.0 msec	47.3 msec	
Maximum Theta(B)	27.0 - 31.0 deg	30.8 deg	
Time of max. Theta(B)	45.0 - 55.0 msec	48.4 msec	



TEST: DUMMY CALIBRATION - PELVIS IMPACT	TEST DATE: 09-24-1997 - 23:43:34
COMPONENT: DUMMY # E1-169	Velocity: 14.26 FT/SEC 4.35 M/SEC
Minimum = -49.38 LBS at 94.7 msec	Maximum = 327.15 LBS at 15.8 msec



TIME (SECONDS)

MCA Research
09-24-1997 23:44

EUROSID DUMMY PRE-TEST CALIBRATION DATA SUMMARY SHEET

Dummy #: E1-213

Calibration Date: September 24, 1997

1.0 Head Drop Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Max. Resultant Acceleration	100 - 150 g's	144
Time of Max. Res. Acceleration		2.6 msec.

Calibrated By: Tim Michnay

Date: September 24, 1997

2.0 Neck Pendulum Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	10.83 - 11.48 ft/sec	11.23
Max. Pendulum Acceleration		-29.04
Time Max. Pend. Acceleration		10.0
Maximum Flexion Angle	46.0 - 56.0 deg.	53.4
Time of Max. Flexion Angle	50.0 - 62.0 ms	55.7
Maximum Angle Theta (A)	30.0 - 34.0 deg	32.1
Time of Max. Theta (A)	50.0 - 60.0 ms	55.4
Maximum Angle Theta (B)	26.0 - 30.0 deg.	29.2
Time of Max. Theta (B)	50.0 - 60.0 ms	50.1

Calibrated By: Tim Michnay

Date: September 24, 1997

3.0 Shoulder Impact Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	13.78 - 14.43 ft/sec	13.97
Max. Pendulum Acceleration	7.5 - 10.5 g's	7.9
Time of Max. Pendulum Acceleration		19.7

Calibrated By: Tim Michnay

Date: September 25, 1997

4.0 Upper Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.95
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.52
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.93

Calibrated By: Tim Michnay

Date: September 24, 1997

5.0 Middle Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	36%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.97
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.54
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.94

Calibrated By: Tim Michnay

Date: September 24, 1997

6.0 Lower Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Displacement at 3.28 ft/sec	.39 - .55 in	.43
Displacement at 6.56 ft/sec	.93 - 1.08 in	.94
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.49
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.92

Calibrated By: Tim Michnay

Date: September 25, 1997

7.0 Abdomen Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Probe Speed	20.34 - 20.99 ft/sec	20.80
Maximum Impact Force	2136 - 2495 lbs	2152
Time of Maximum Force	8.8 - 10.4 ms	8.8
Max. Total Abdomen Force	1326 - 1776 lbs	1335
Time of Max. Total Force	8.5 - 10.1 ms	9.1

Calibrated By: Tim Michnay

Date: September 25, 1997

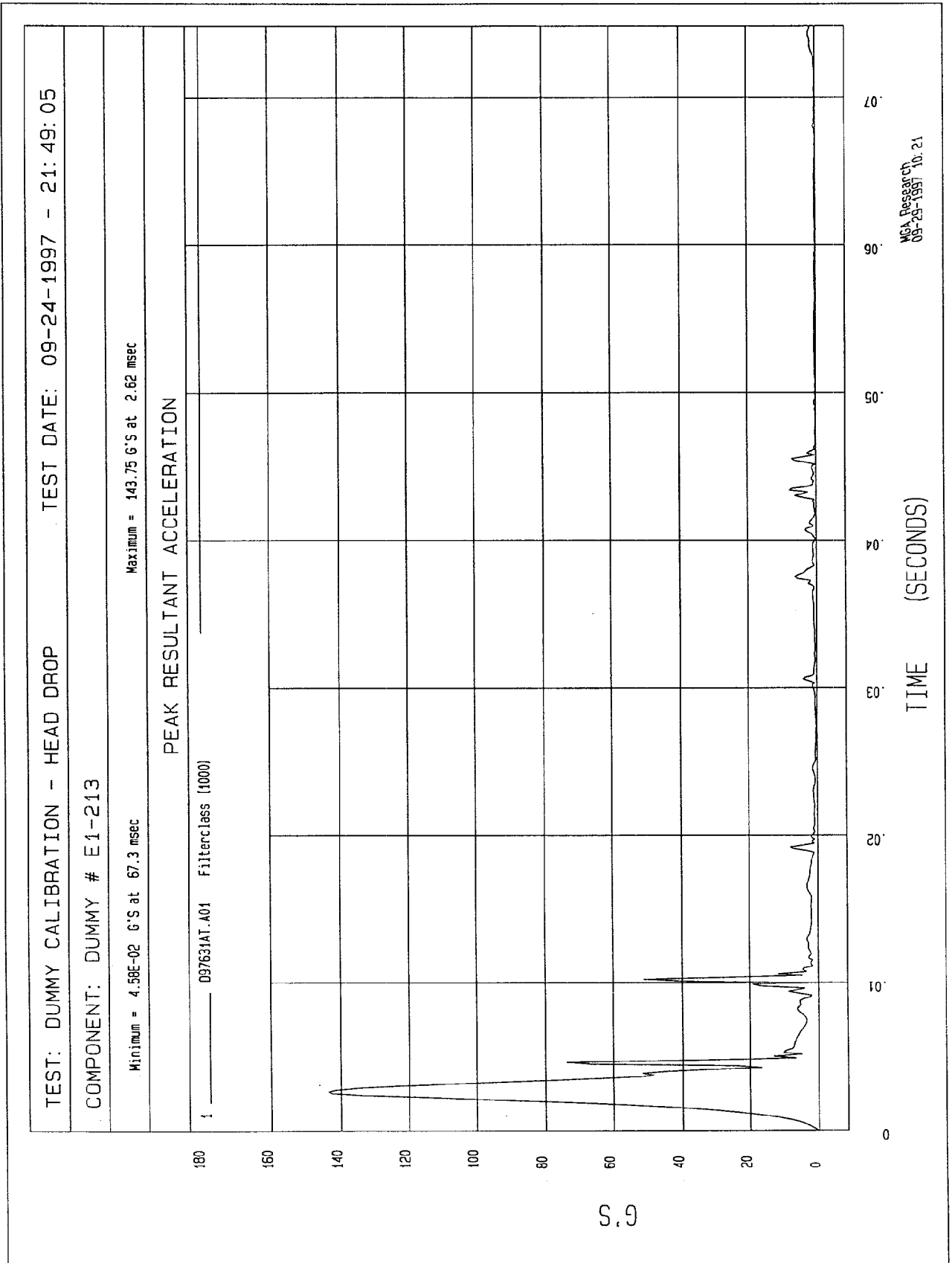
8.0 Lumbar Spine Test

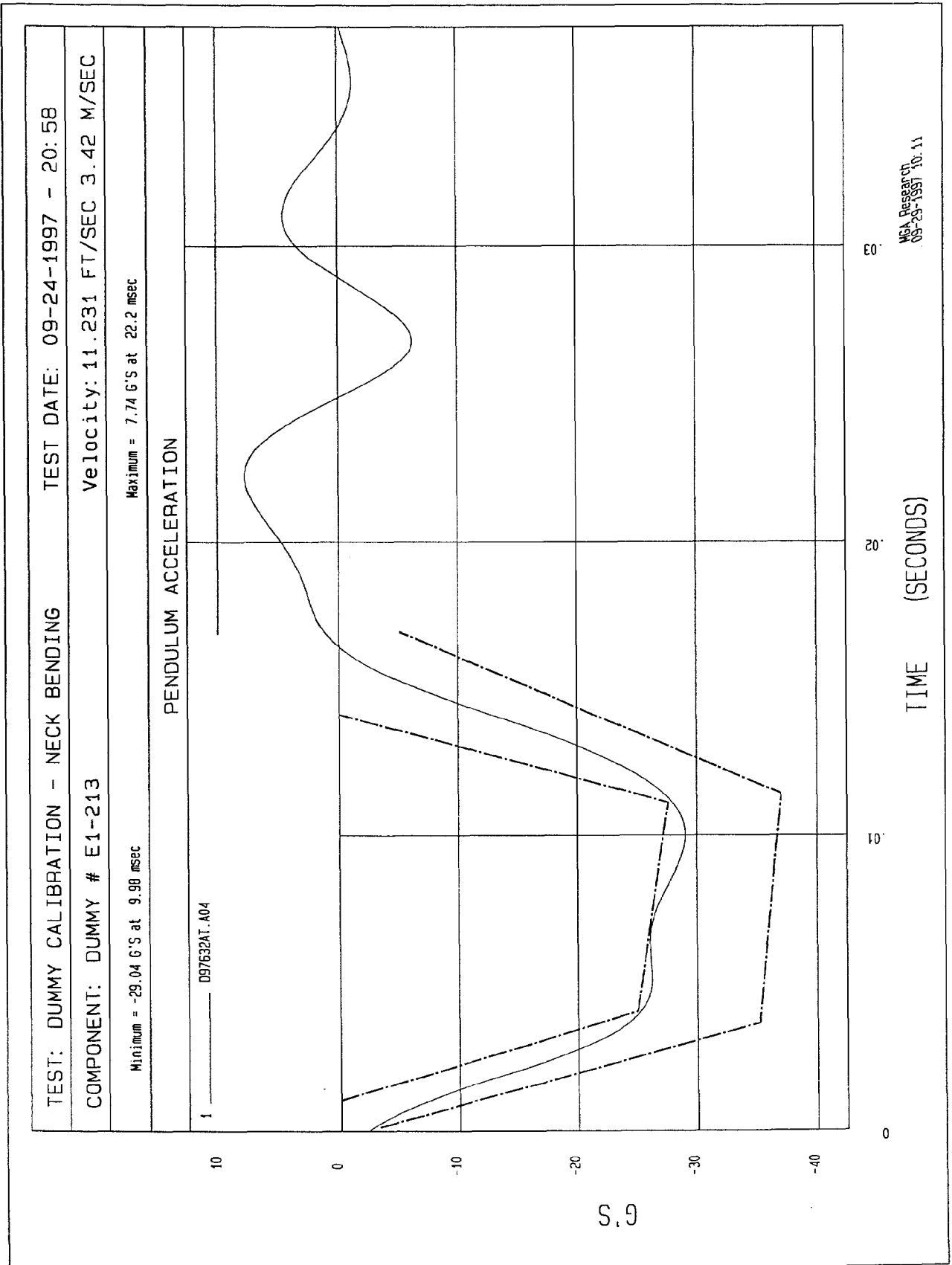
	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	71°
Laboratory Relative Humidity	10% - 70%	52%
Pendulum Speed	19.52 - 20.17 ft/sec	20.11
Max. Pendulum Acceleration		-31.1
Time Max. Pend. Acceleration		10.00
Maximum Flexion Angle	45.0 - 55.0 deg.	50.9
Time of Max. Flexion Angle	39.0 - 53.0 ms	52.2
Maximum Angle Theta (A)	31.0 - 35.0 deg	33.9
Time of Max. Theta (A)	45.0 - 55.0 ms	52.2
Maximum Angle Theta (B)	27.0 - 31.0 deg.	30.9
Time of Max. Theta (B)	45.0 - 55.0 ms	49.3

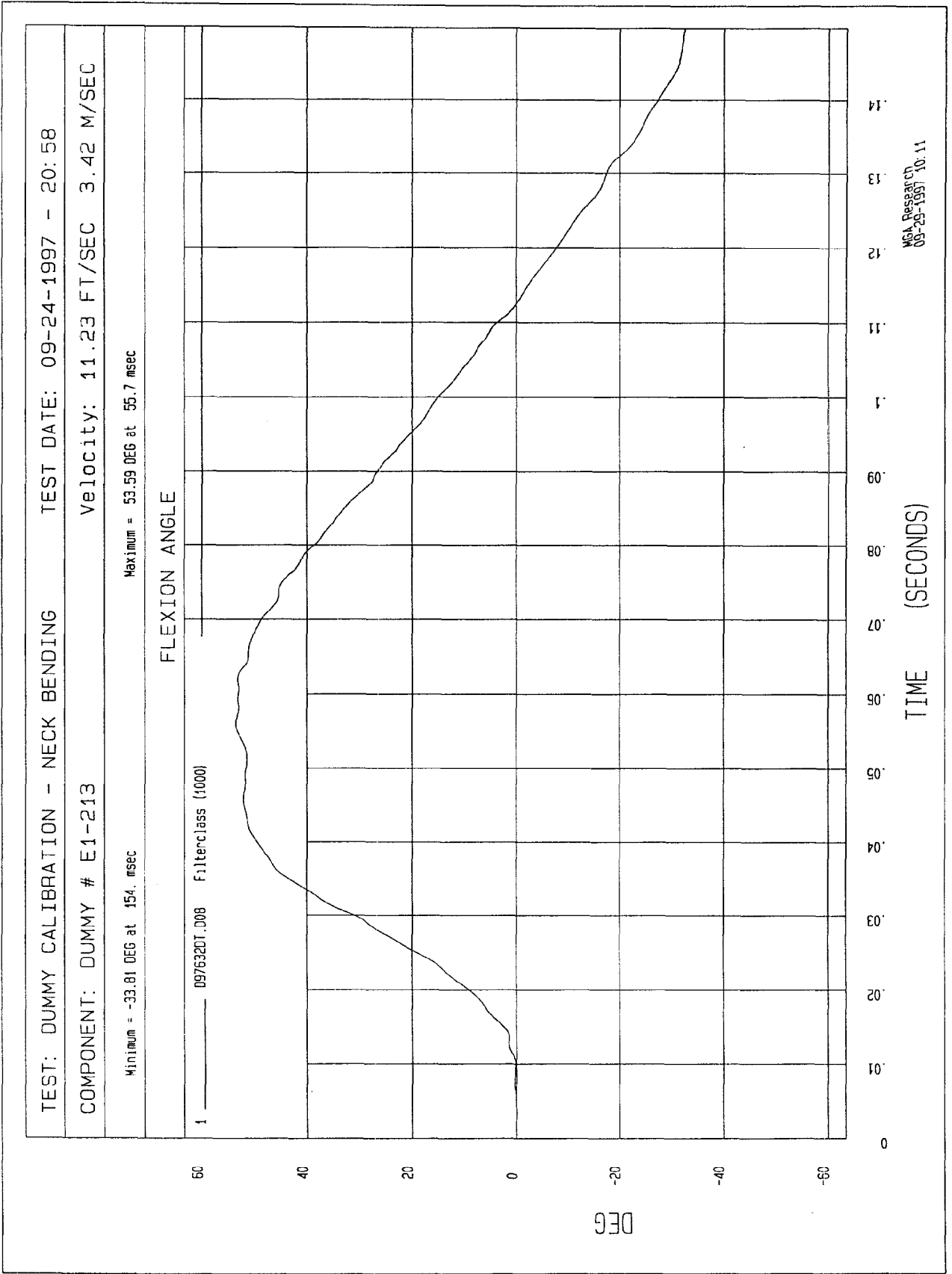
Calibrated By: First Technology Safety SystemsDate: September 10, 1997**9.0 Pelvis Test**

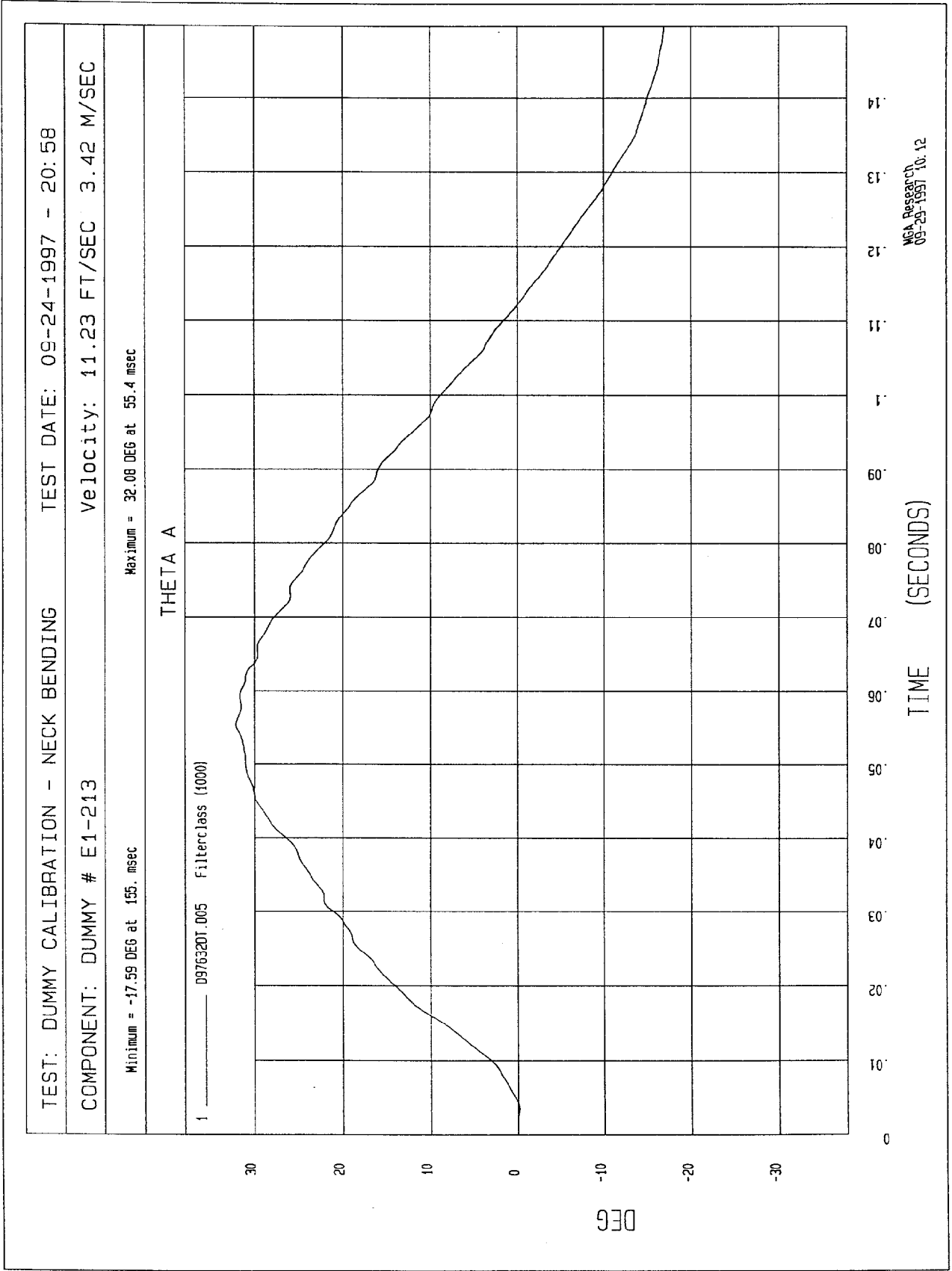
	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	13.77 - 14.43 ft/sec	14.19
Maximum Impactor Force	989 - 1214 lbs	1142
Time of Max. Impactor Force	10.3 - 15.5 ms	13.1
Maximum Pubic Force	233.8 - 368.7 lbs	317.9
Time of Max. Pubic Force	9.9 - 15.9 ms	15.8

Calibrated By: Tim MichnayDate: September 25, 1997







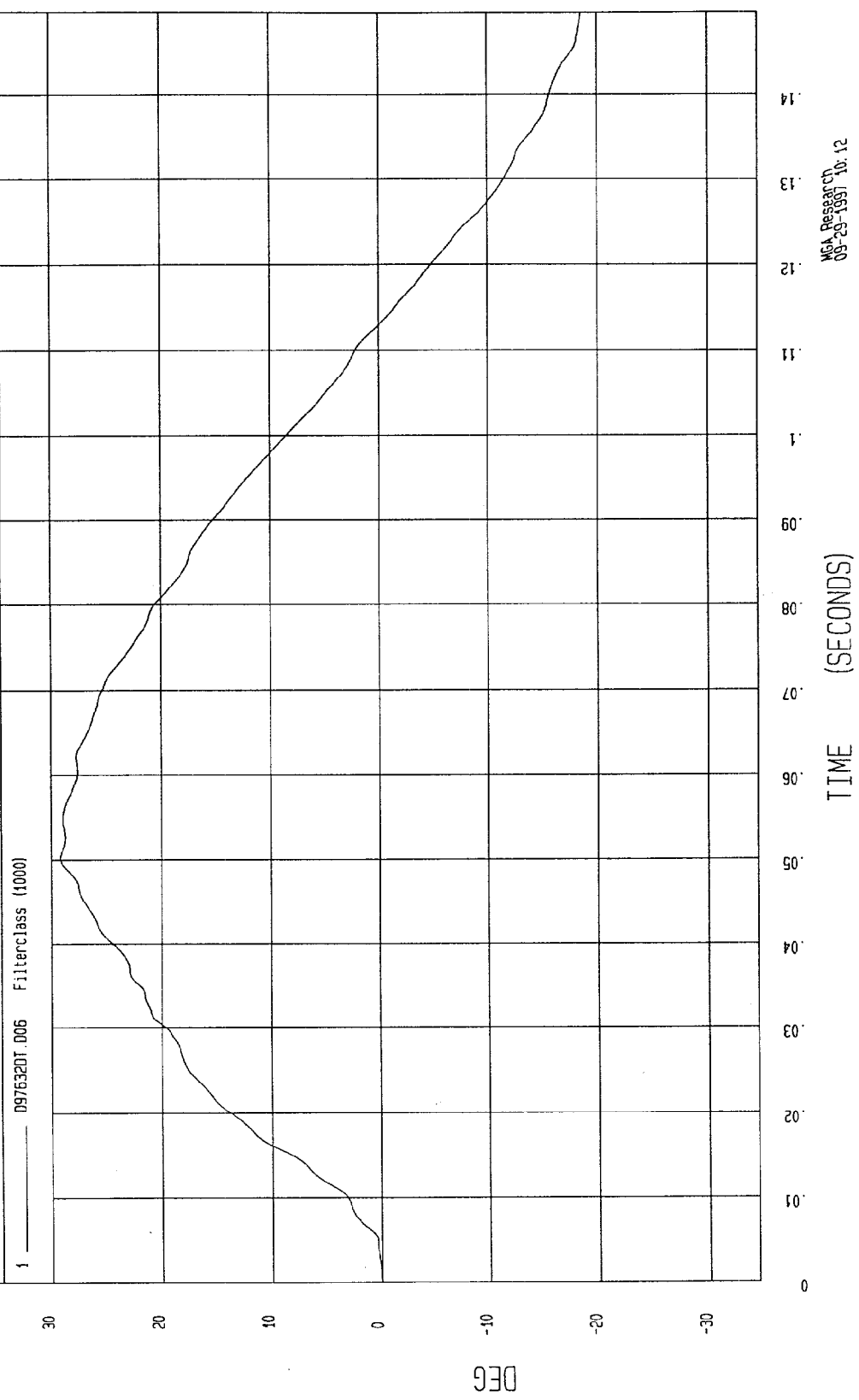


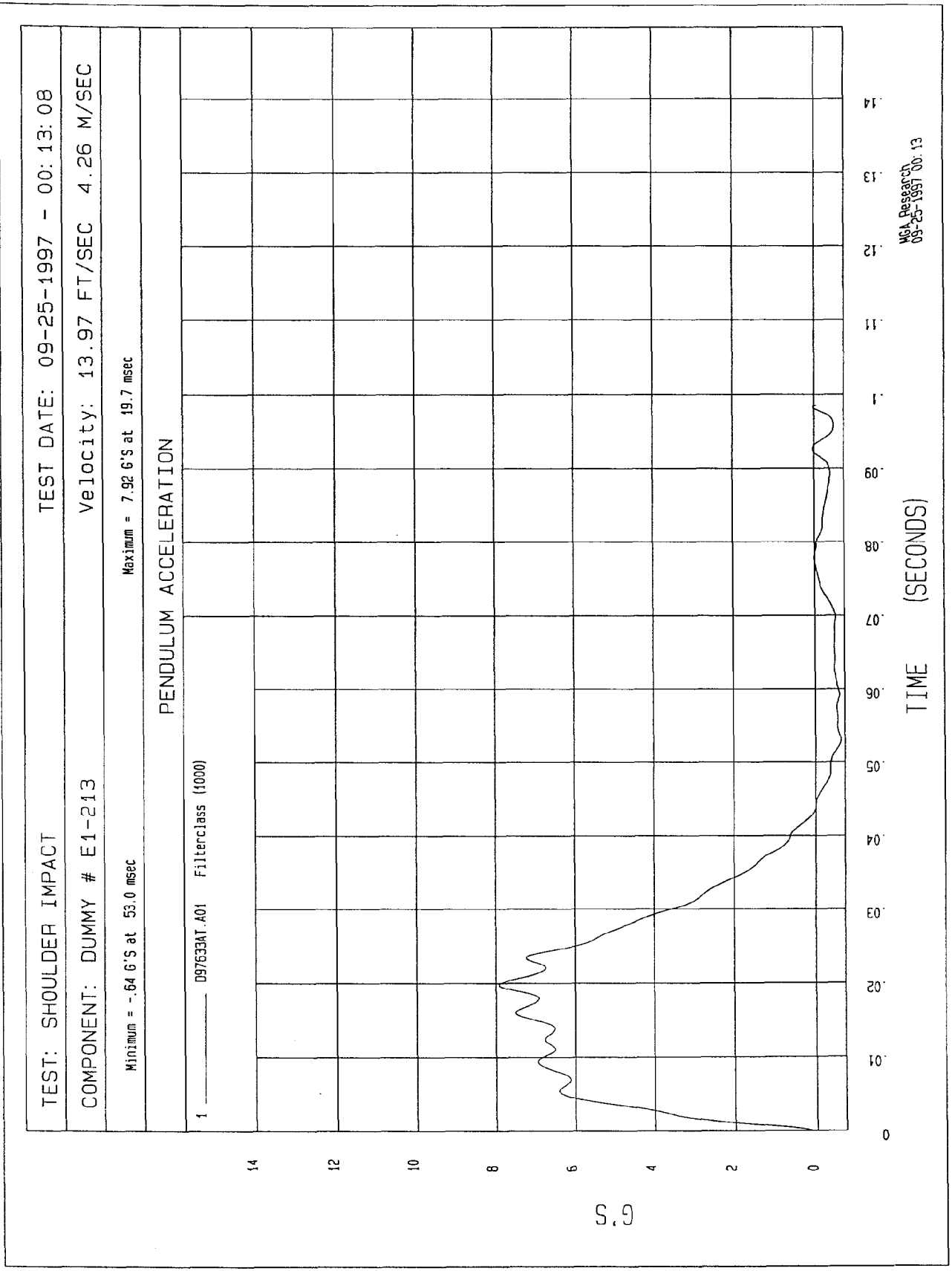
TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 09-24-1997 - 20:58

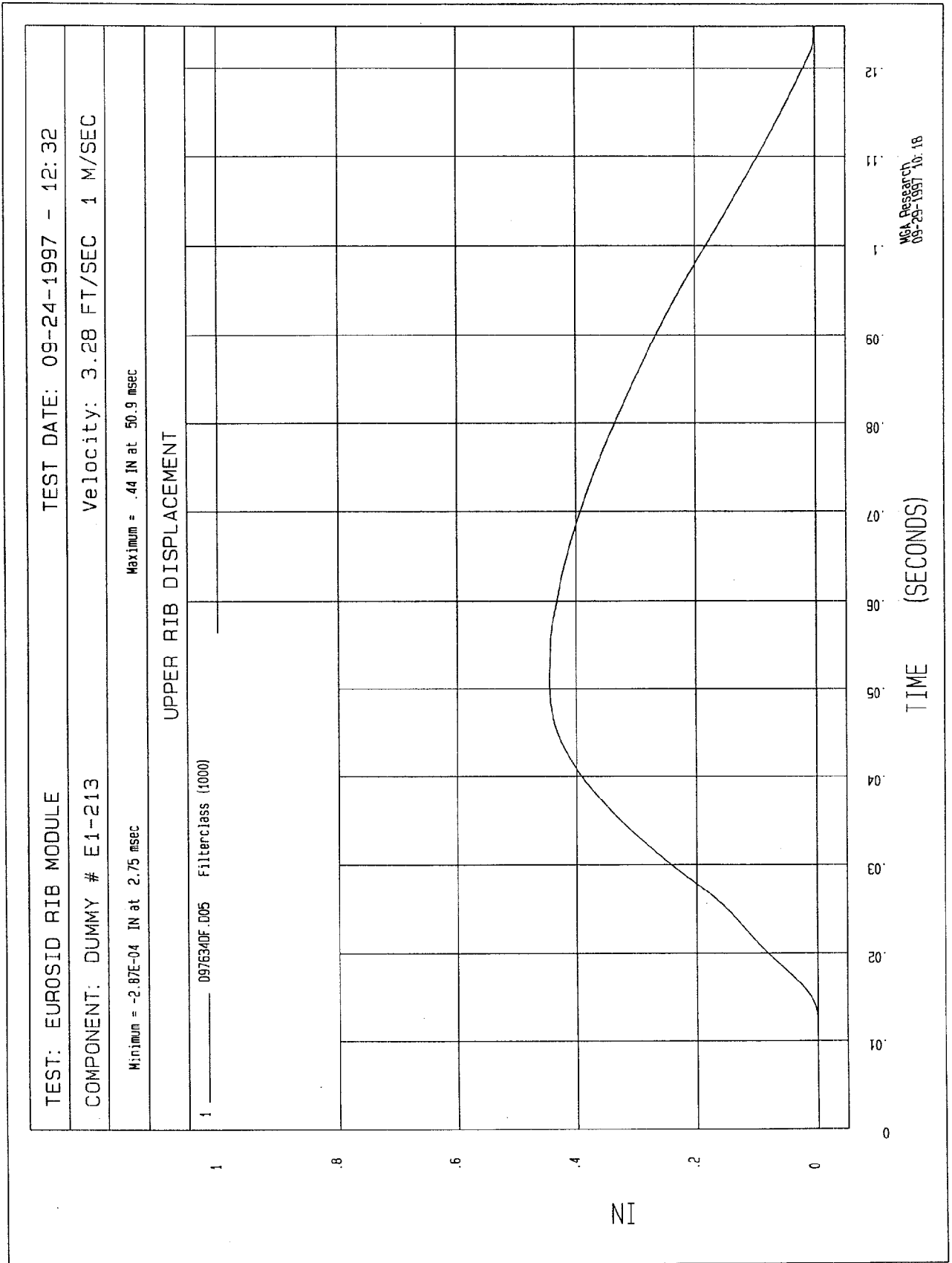
COMPONENT: DUMMY # E1-213 Velocity: 11.23 FT/SEC 3.42 M/SEC

Minimum = -18.99 DEG at 162. msec Maximum = 29.18 DEG at 50.1 msec

THETA B



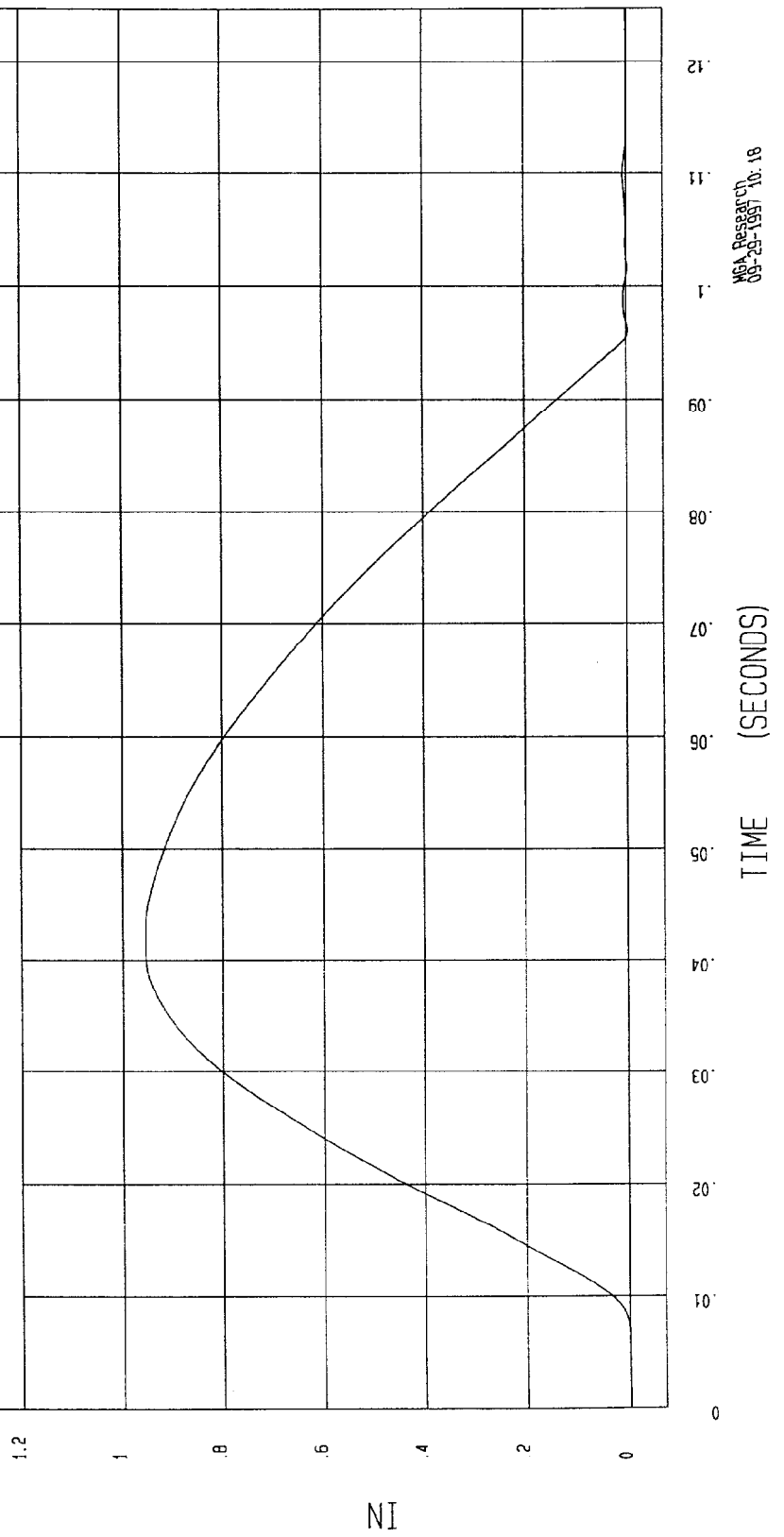




TEST: EUROSID RIB MODULE	TEST DATE: 09-24-1997 - 12:39
COMPONENT: DUMMY # E1-213	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -3.72E-03 IN at 96.1 msec	Maximum = .95 IN at 40.9 msec

UPPER RIB DISPLACEMENT

1 _____ 0976340F.006 FilterClass (1000)



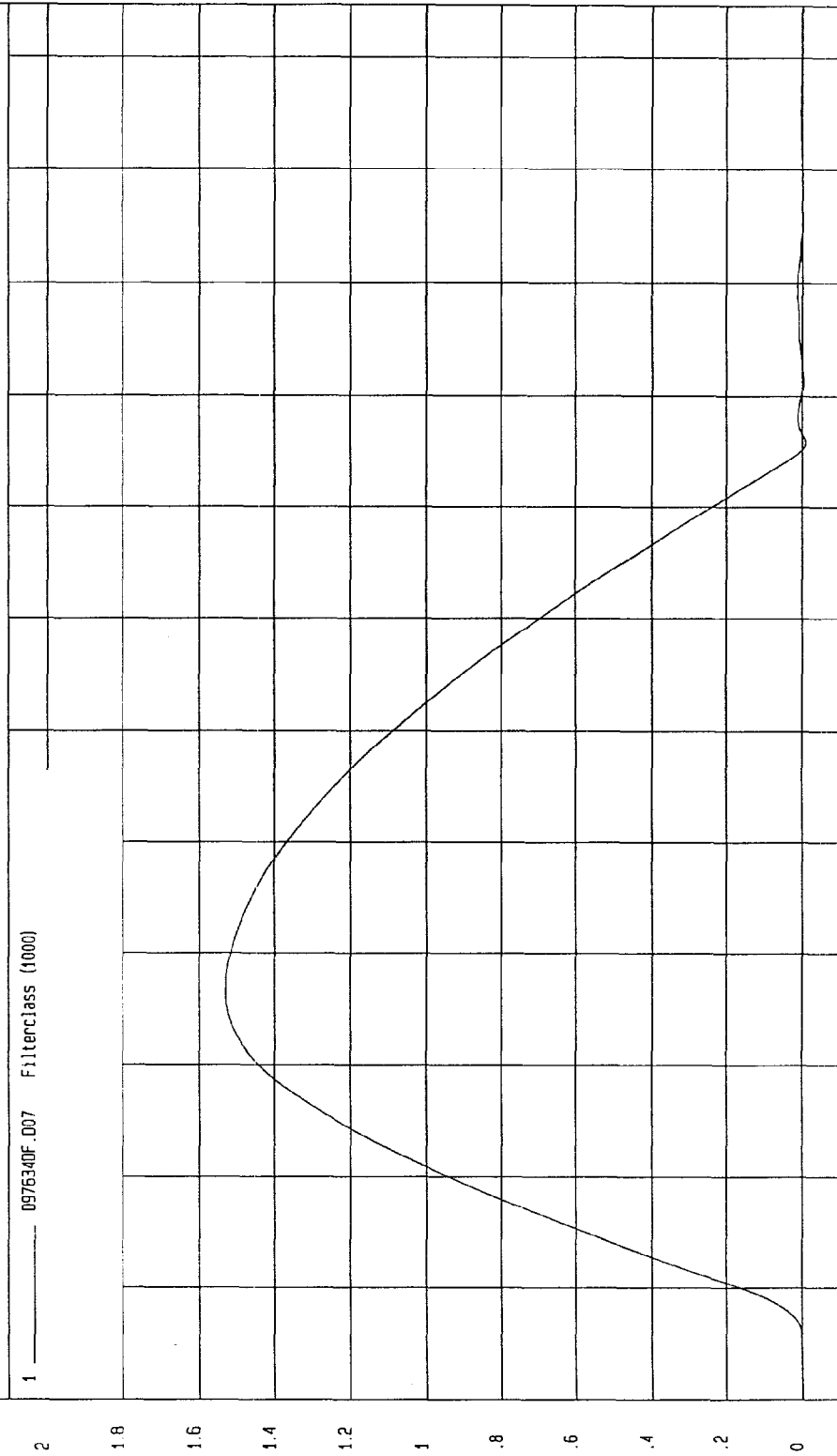
MGA Research
09-29-1997 10:18

TEST: EUROSIO RIB MODULE TEST DATE: 09-24-1997 - 12:47

COMPONENT: DUMMY # E1-213 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -8.70E-03 IN at 85.7 msec Maximum = 1.52 IN at 36.3 msec

UPPER RIB DISPLACEMENT

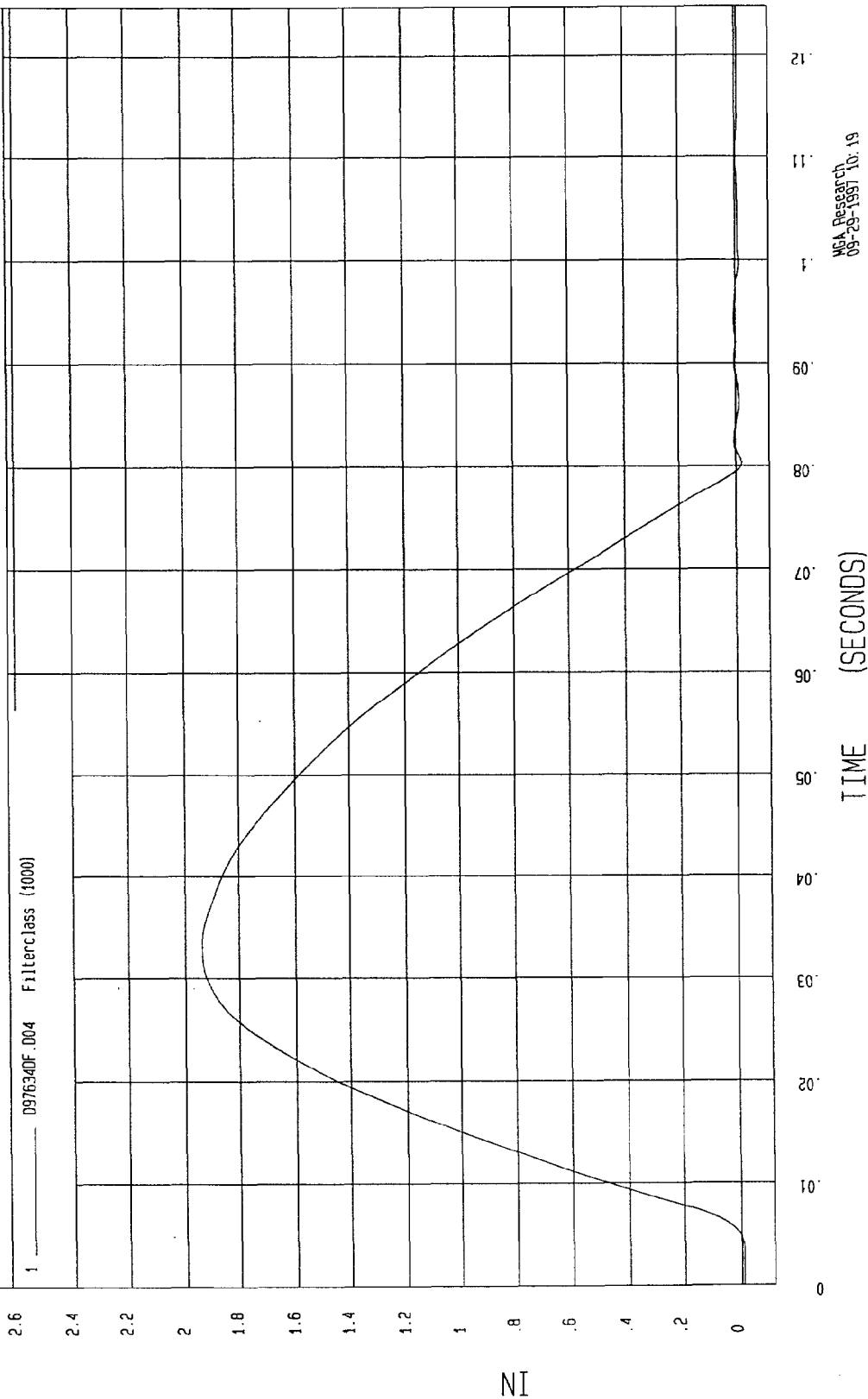


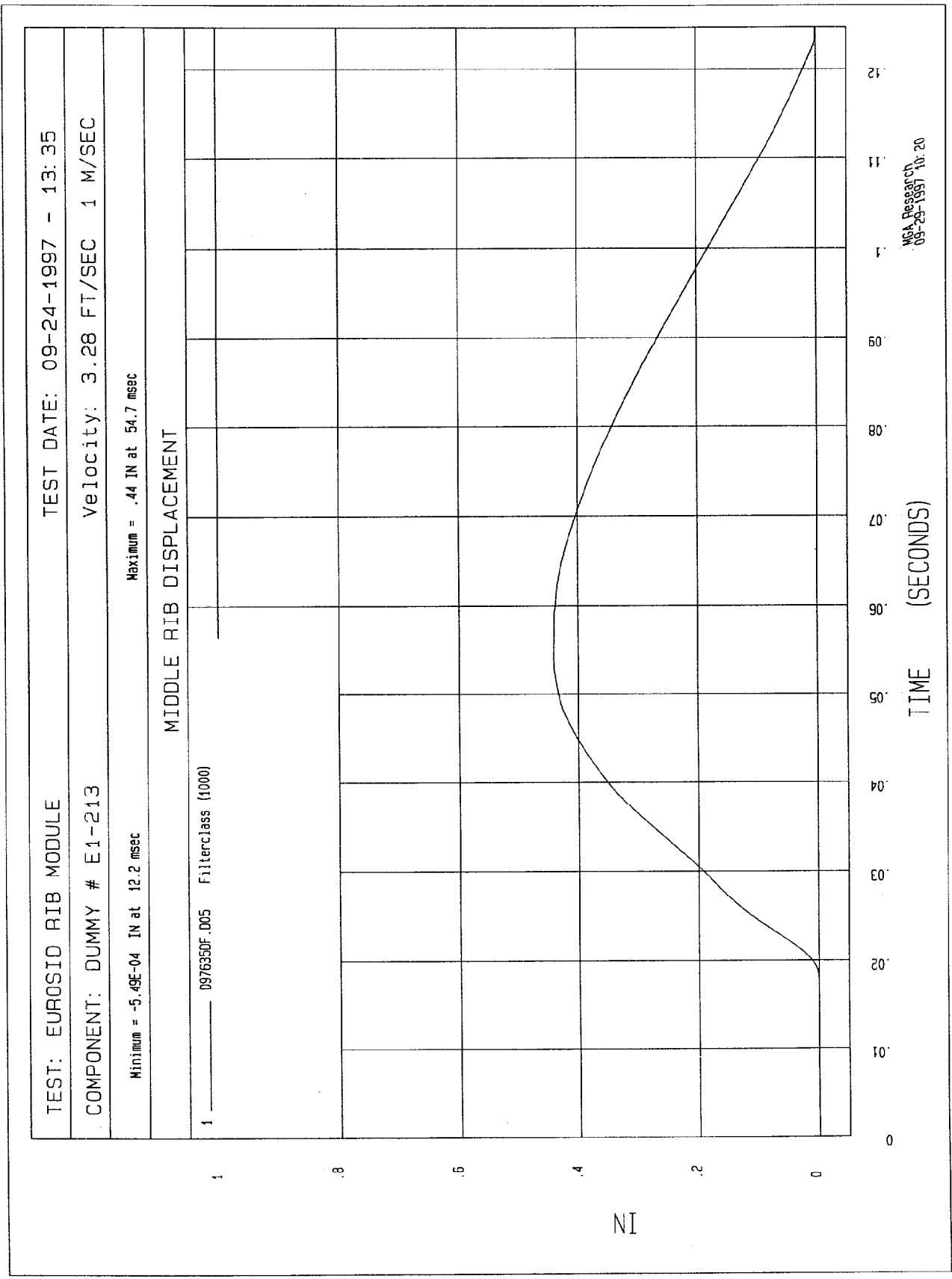
TIME (SECONDS)

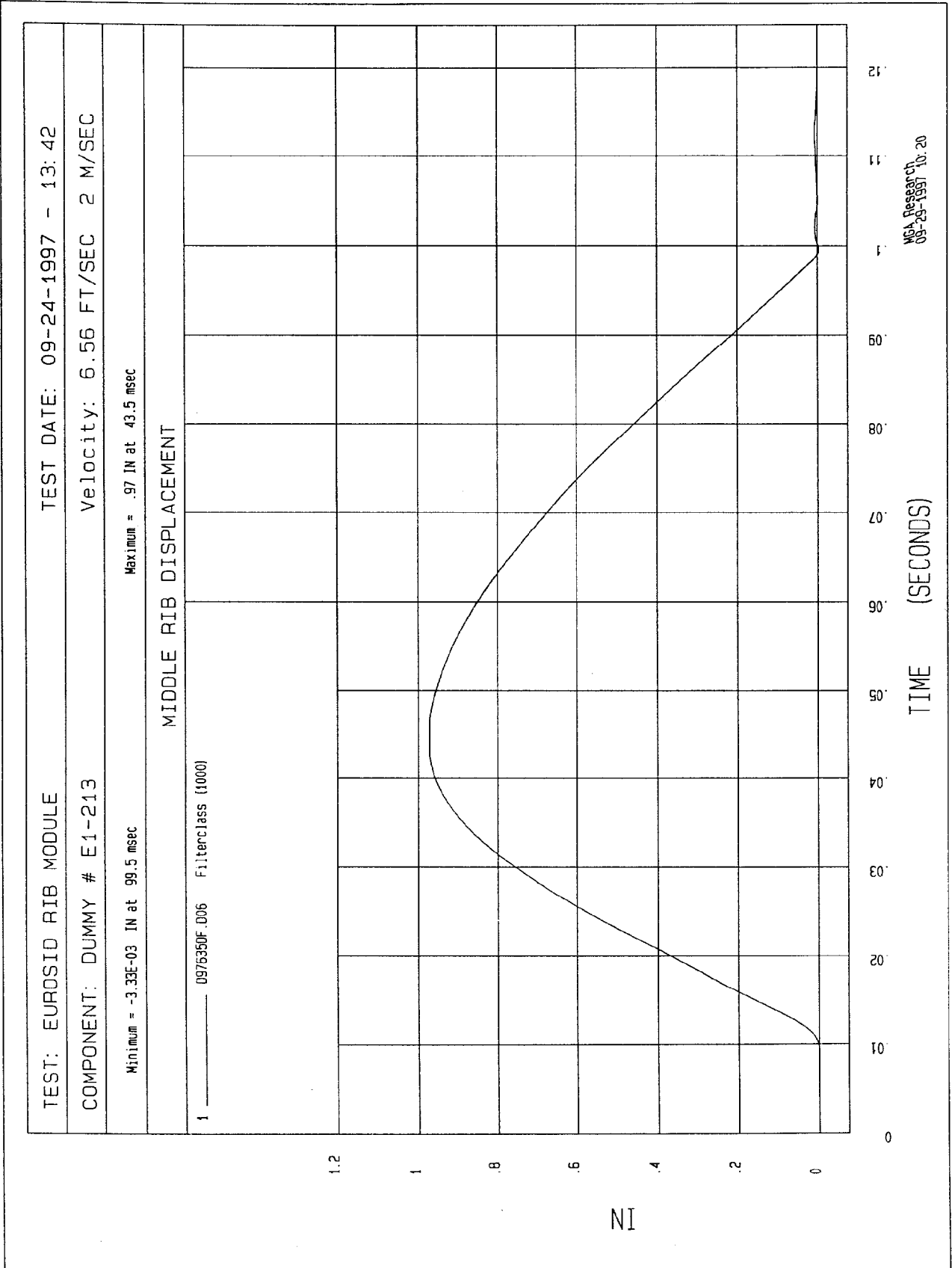
WGA Research
09-29-1997 10:19

TEST: EUROSID RIB MODULE	TEST DATE: 09-24-1997 - 12:22
COMPONENT: DUMMY # E1-213	Velocity: 13.12 FT/SEC 4 M/SEC
Minimum = -2.14E-02 IN at 80.2 msec	Maximum = 1.93 IN at 33.2 msec

UPPER RIB DISPLACEMENT

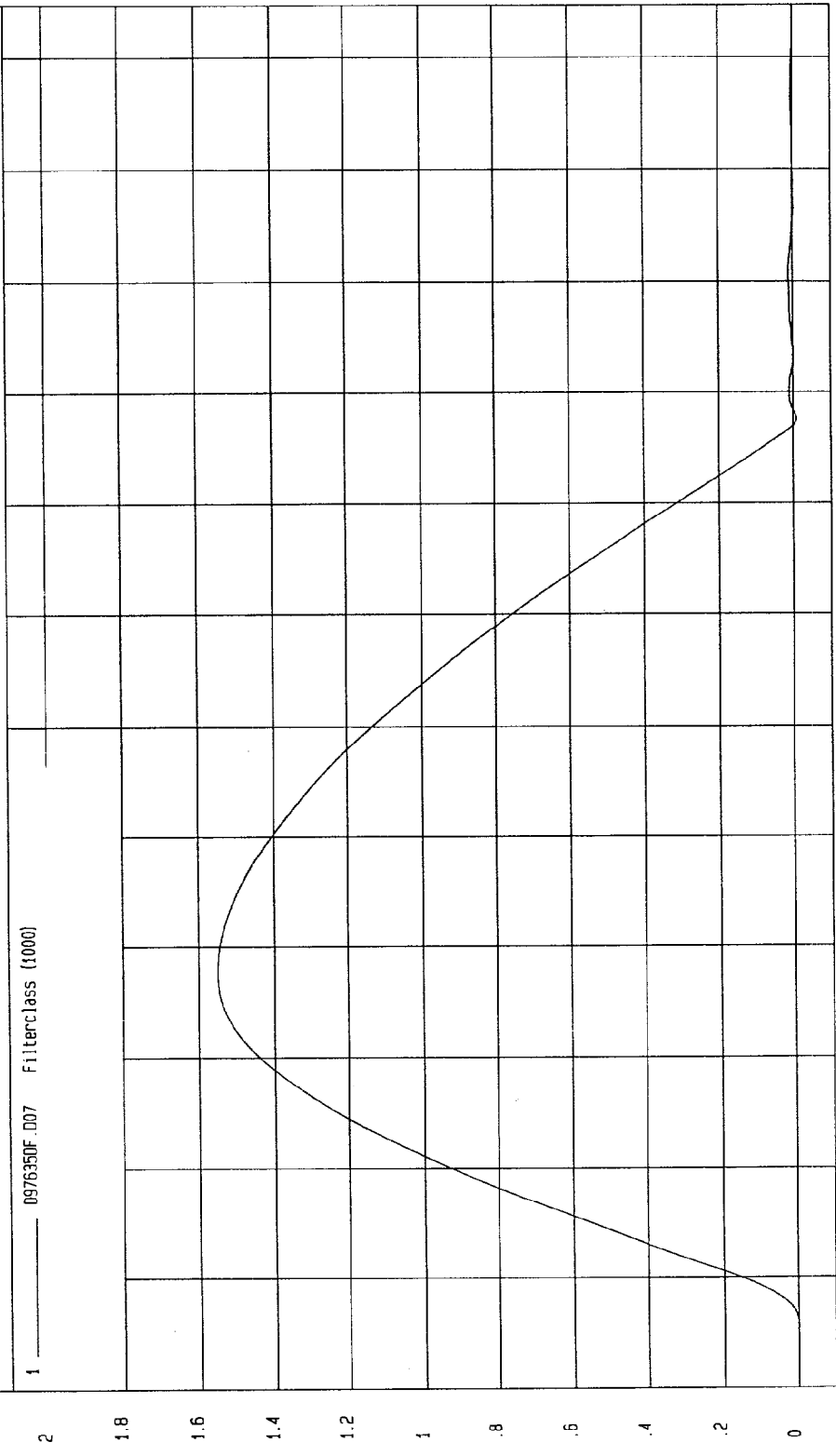






TEST: EUORSID RIB MODULE	TEST DATE: 09-24-1997 - 13:50
COMPONENT: DUMMY # E1-213	Velocity: 9.84 FT/SEC 3 M/SEC
Minimum = -8.47E-03 IN at 87.4 msec	Maximum = 1.54 IN at 37.6 msec

MIDDLE RIB DISPLACEMENT



TIME (SECONDS)

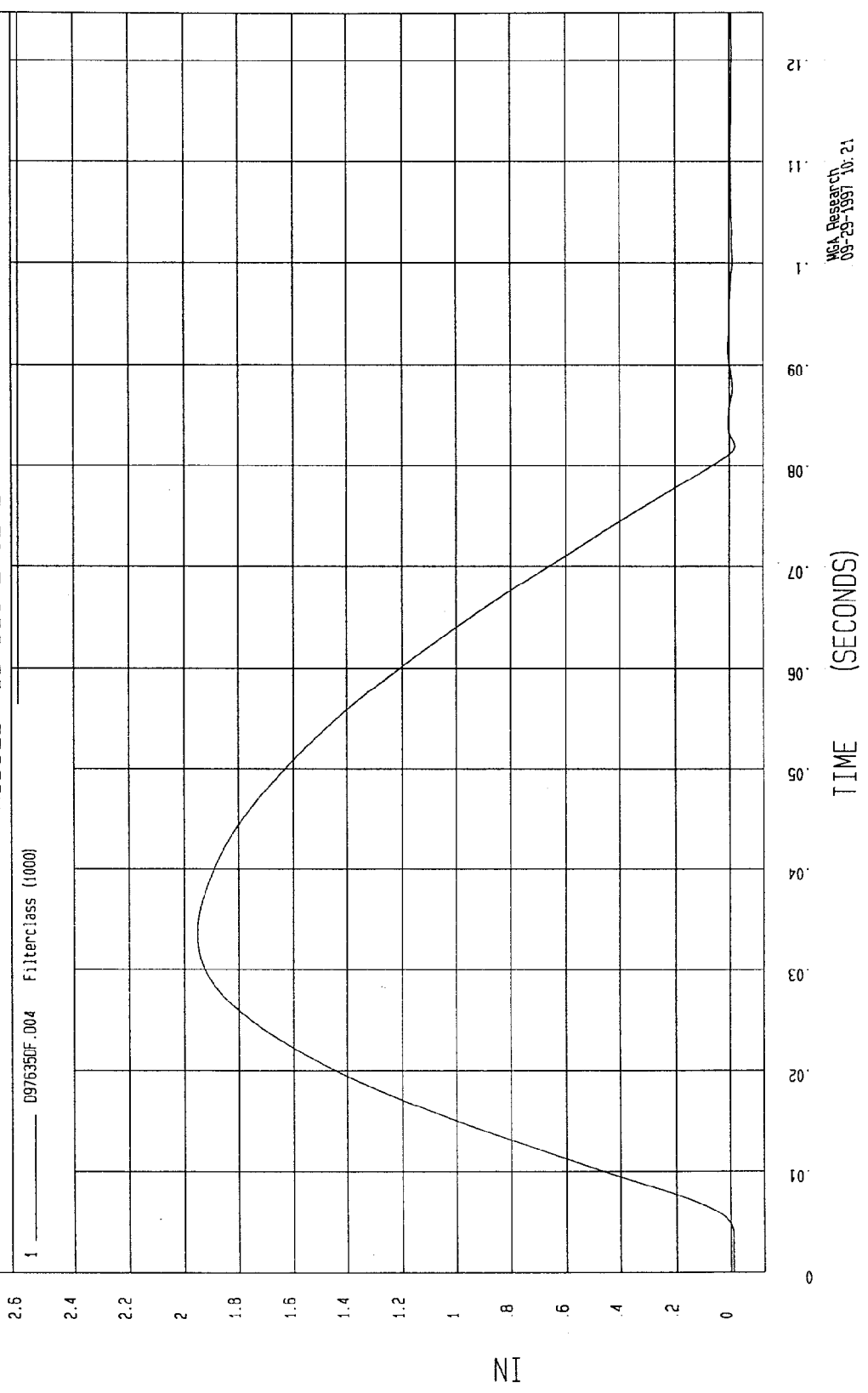
MGA Research
09-29-1997 10:20

TEST: EUROSID RIB MODULE TEST DATE: 09-24-1997 - 13:21

COMPONENT: DUMMY # E1-213 Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.92E-02 IN at 81.8 msec Maximum = 1.94 IN at 33.3 msec

MIDDLE RIB DISPLACEMENT

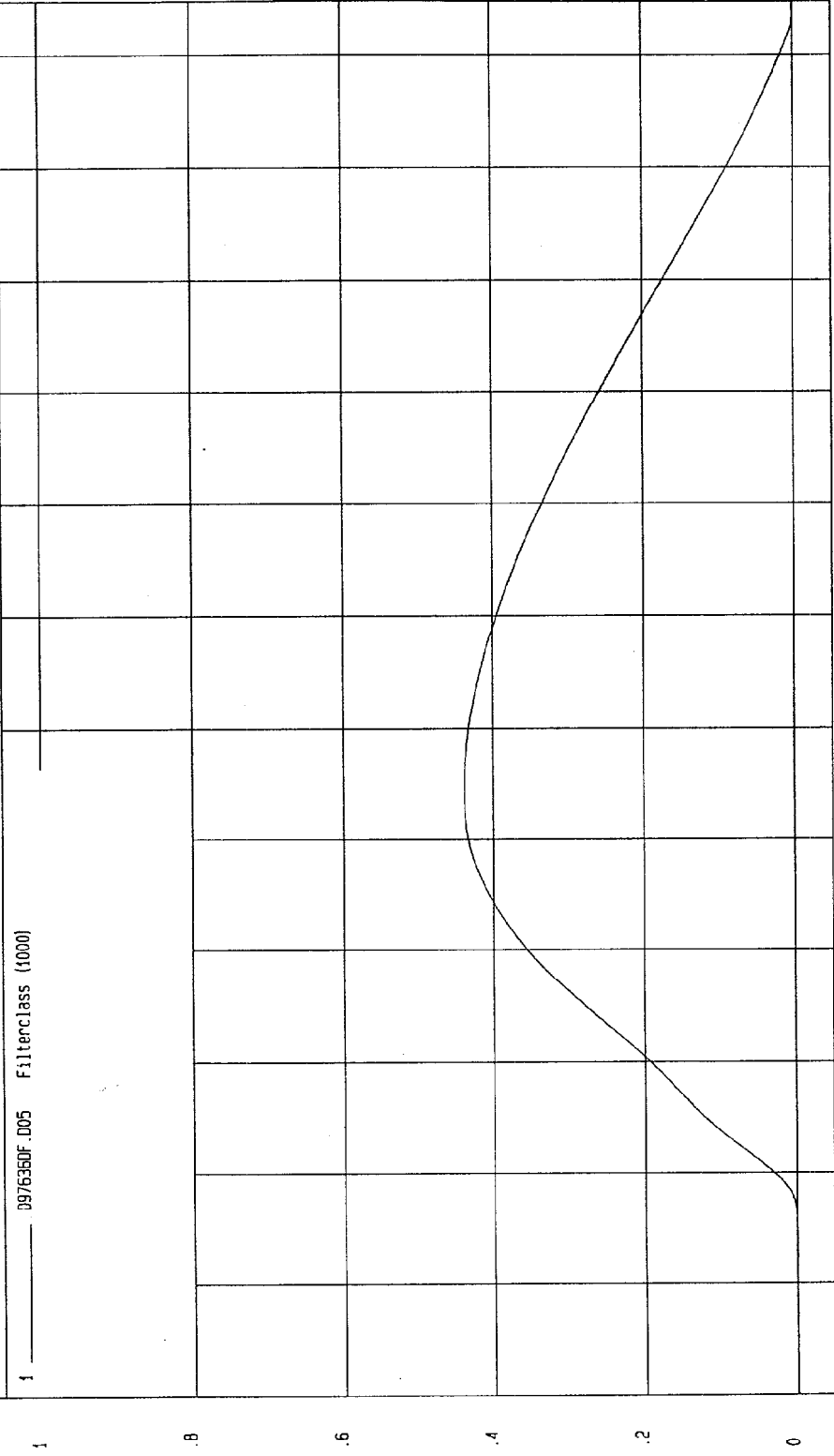


TEST: EUROSID RIB MODULE TEST DATE: 09-24-1997 - 14:11

COMPONENT: DUMMY # E1-213 Velocity: 3.28 FT/SEC 1 M/SEC

Minimum = -6.60E-04 IN at 0 msec Maximum = .43 IN at 53.6 msec

LOWER RIB DISPLACEMENT



TIME (SECONDS)

NSA Research
09-29-1997 10:22

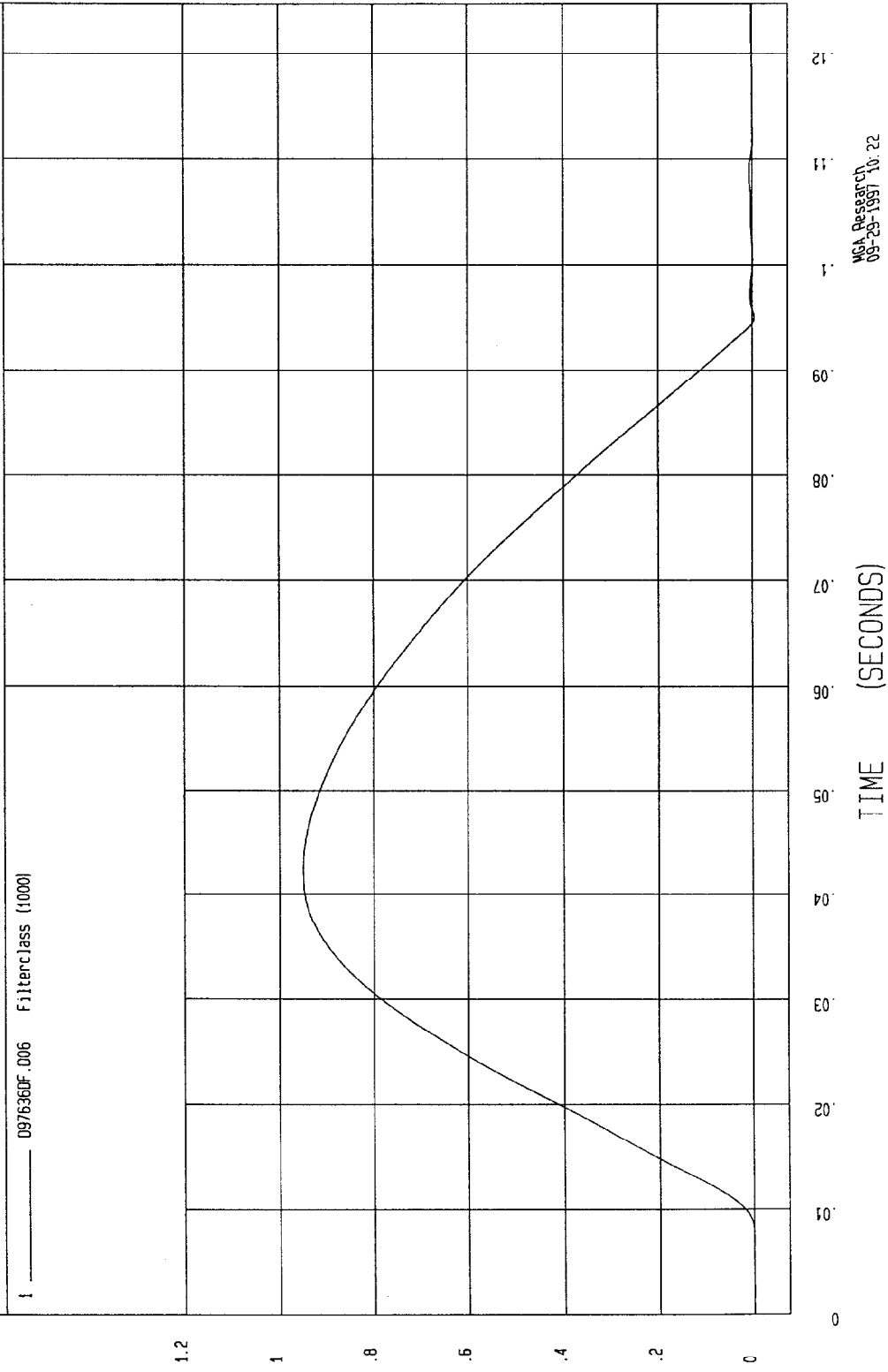
TEST: EUROSID RIB MODULE TEST DATE: 09-24-1997 - 14:18

COMPONENT: DUMMY # E1-213 Velocity: 6.56 FT/SEC 2 M/SEC

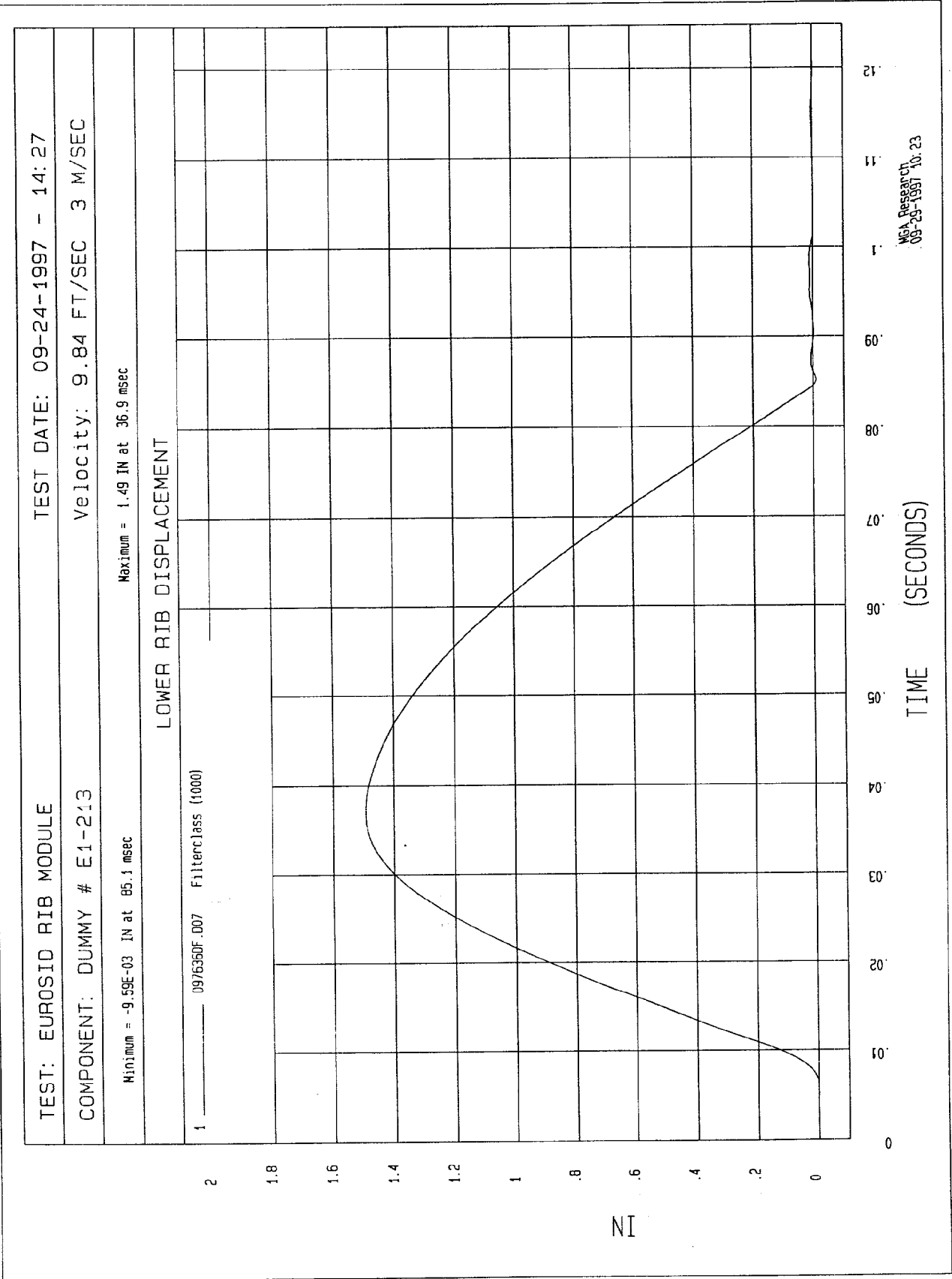
Minimum = -4.50E-03 IN at 95.1 msec Maximum = .94 IN at 42.4 msec

LOWER RIB DISPLACEMENT

1 _____ 0976360F.006 Filterclass (1000)



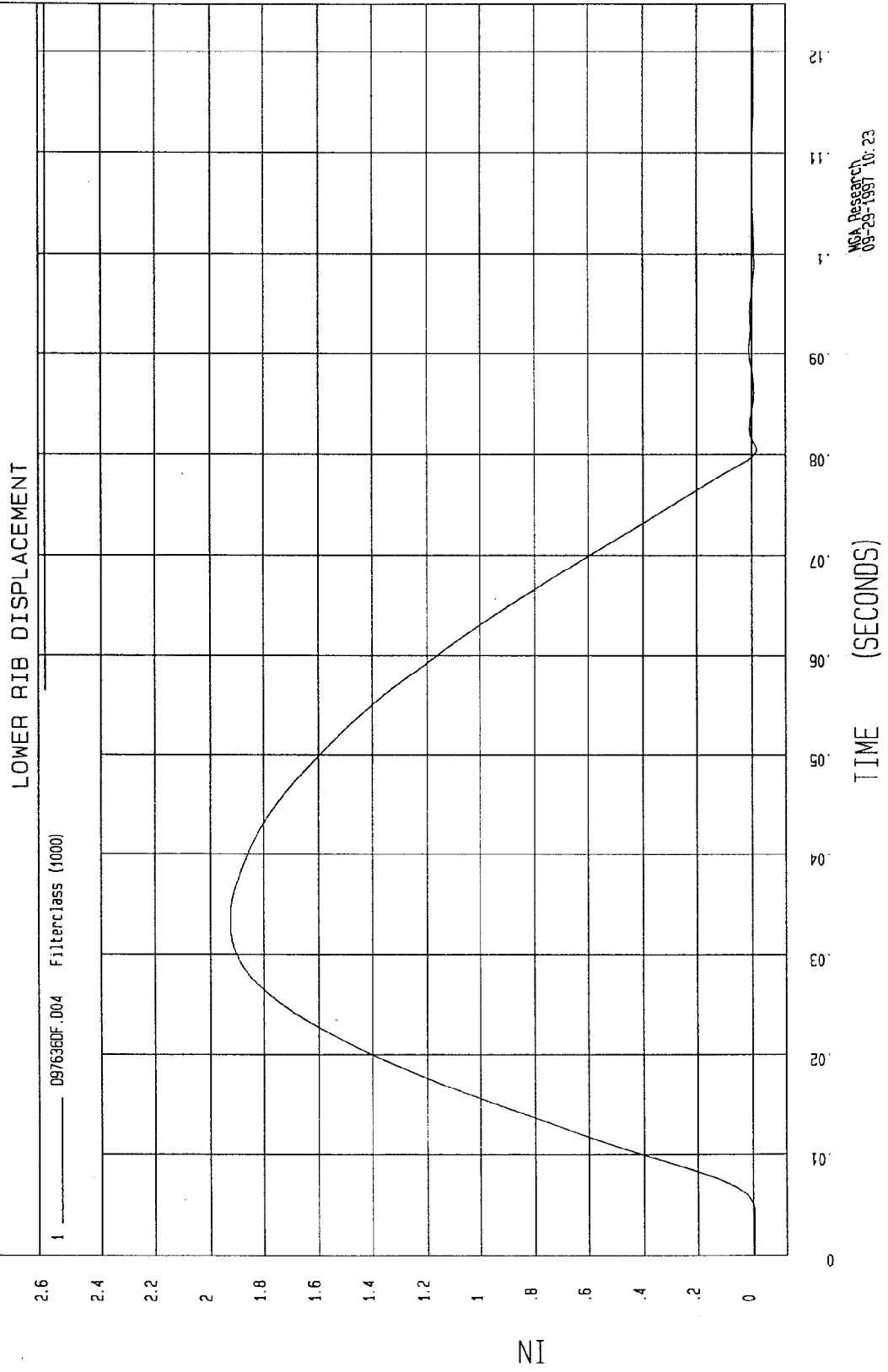
WGA Research
09-29-1997 10:22

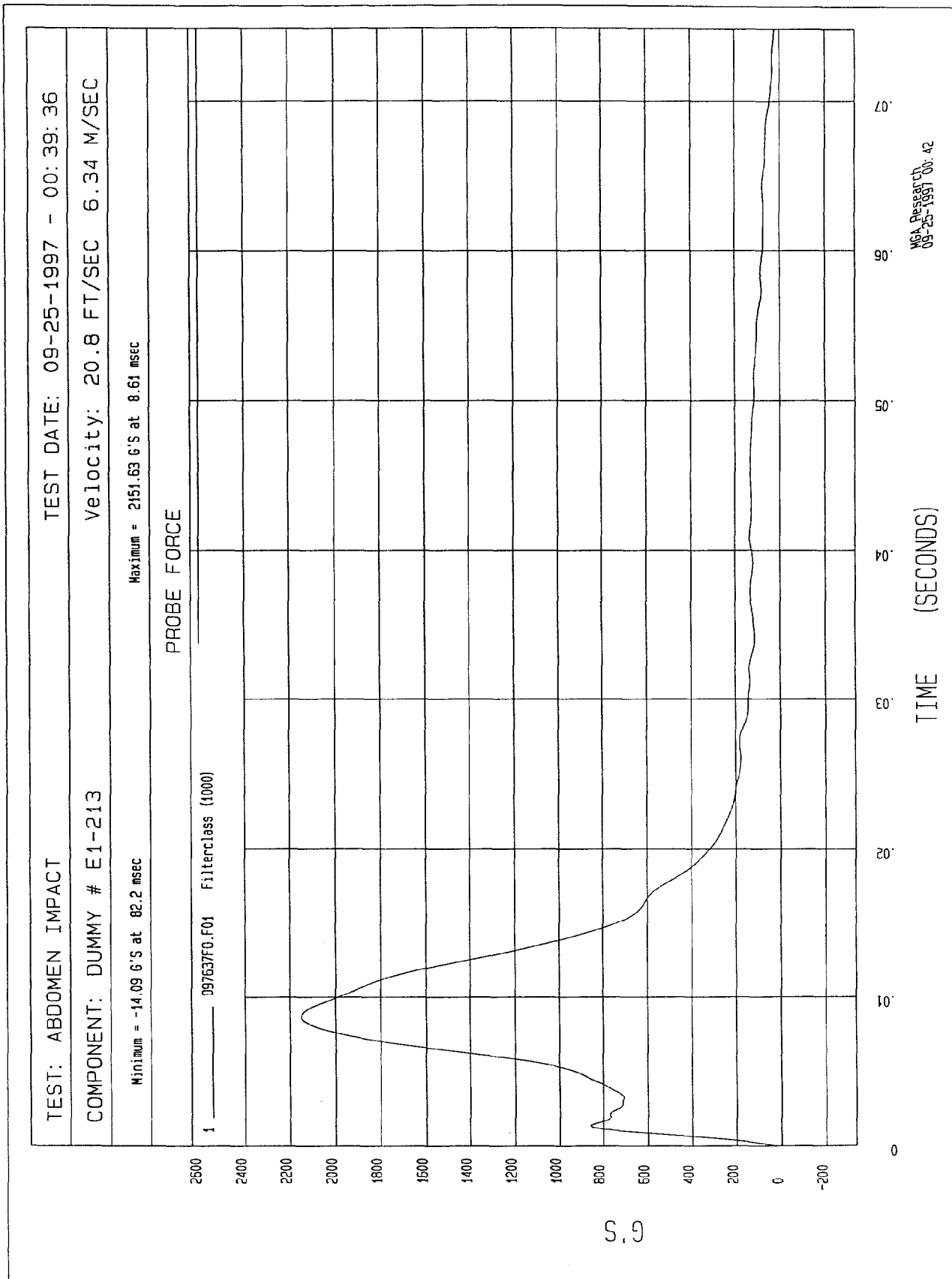


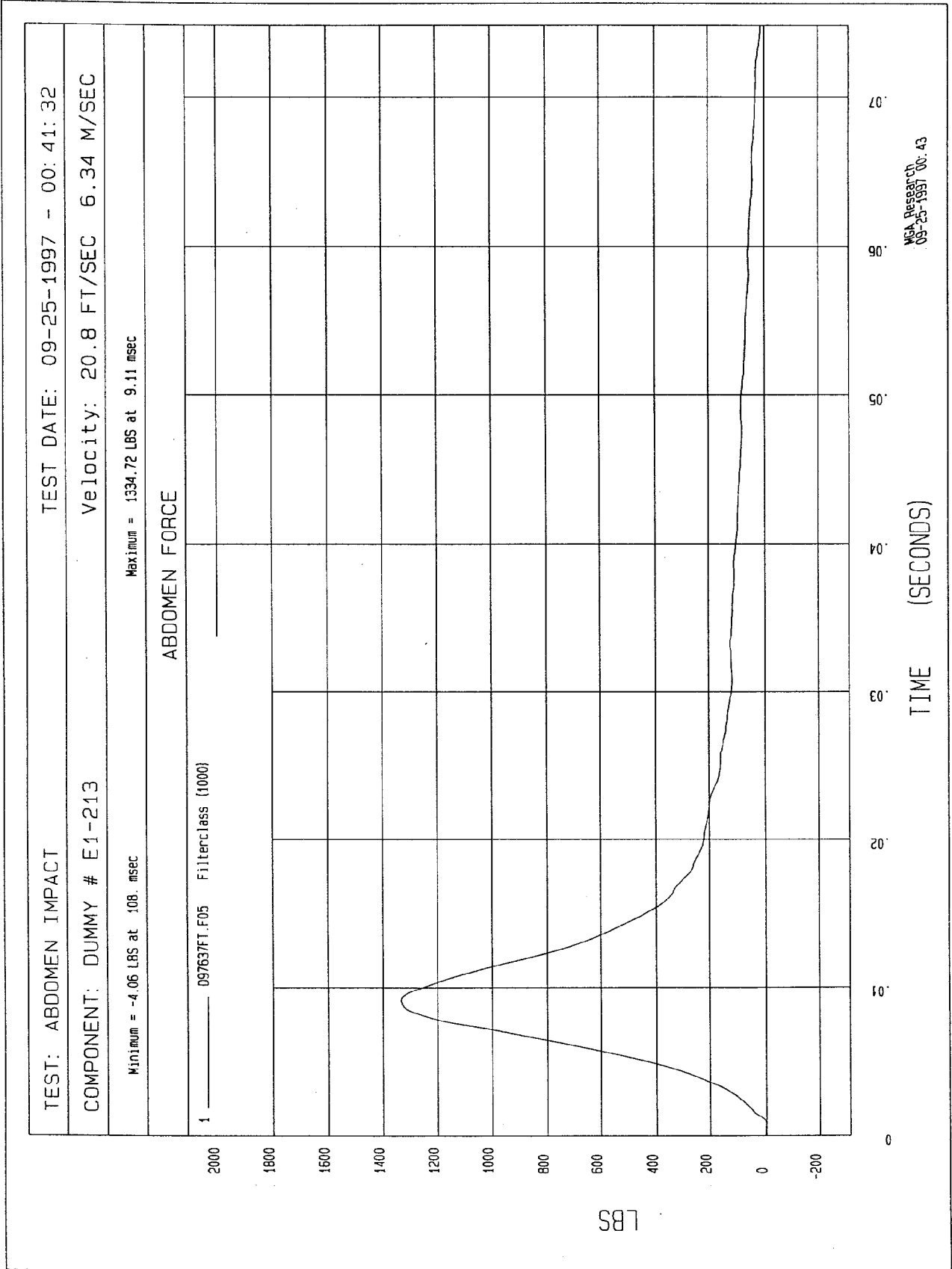
TEST: EUORSID RIB MODULE TEST DATE: 09-24-1997 - 14:01

COMPONENT: DUMMY # E1-213 Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.54E-02 IN at 80.5 msec Maximum = 1.92 IN at 33.3 msec







EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SMM537-1

Temperature : 22 deg C

Test number : 20283

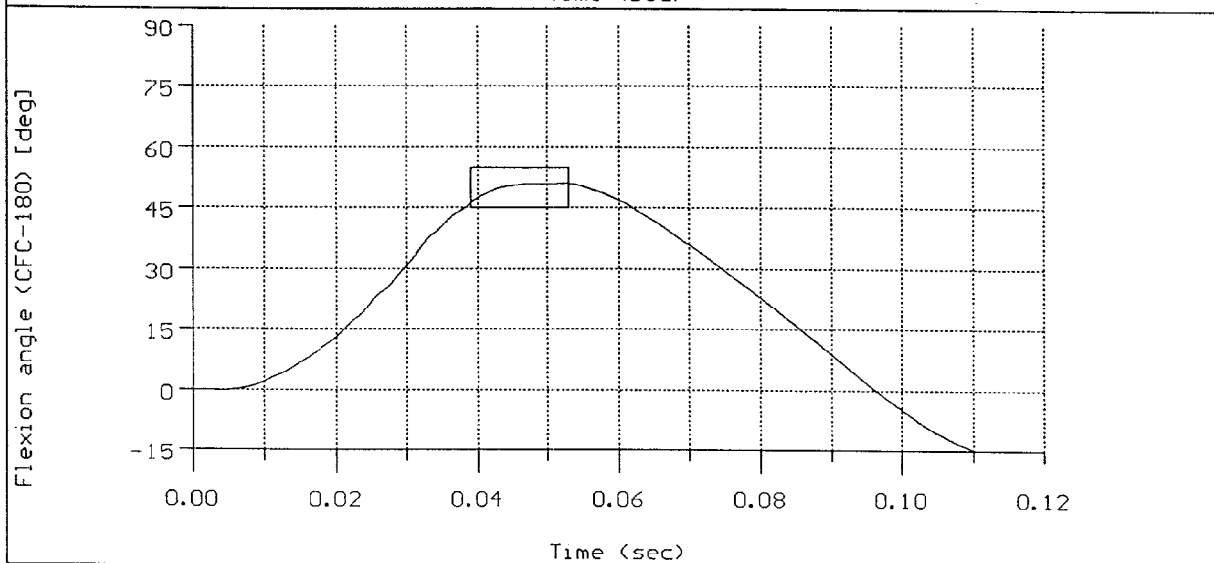
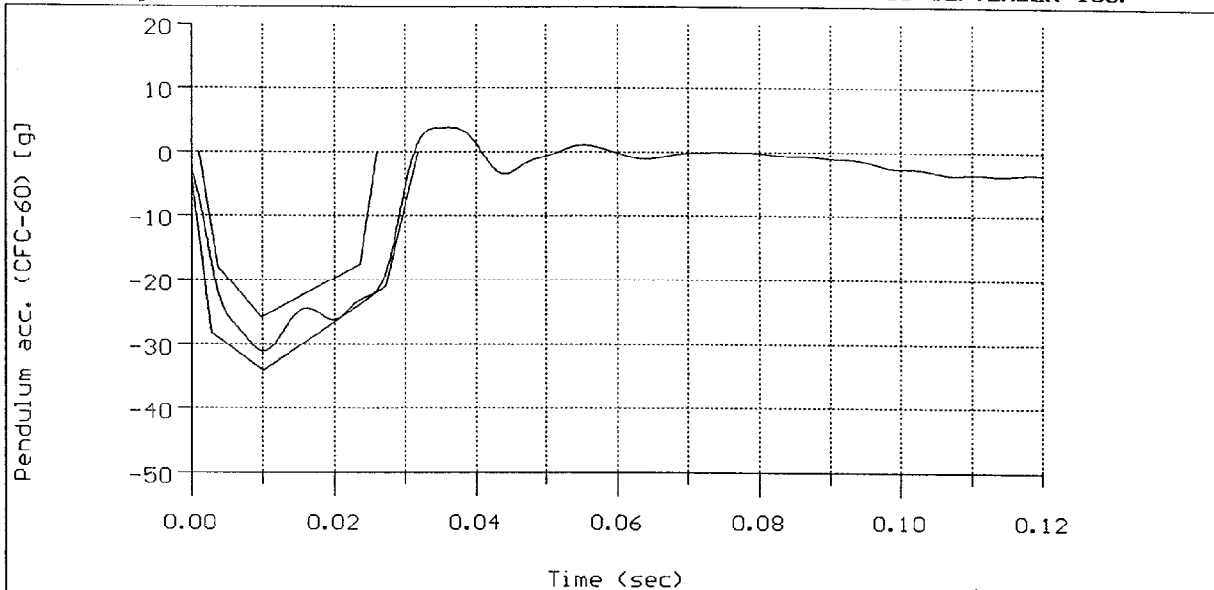
Rel. Humidity : 52 %

Impact side :

Technician : JR

Spine length : 5.25

Test date : 10-SEPTEMBER-1997



Parameter	Specification	Result	Passed/Failed
Pendulum Speed	5.95 - 6.15 m/s	6.13 m/s	
Maximum pendulum acc.		-31.1 g	
Time of max pend. acc.		10.0 msec	
Maximum flexion angle	45.0 - 55.0 deg	50.9 deg	
Time of max. flex. angle	39.0 - 53.0 msec	52.2 msec	

EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SMM537-1

Temperature : 22 deg C

Test number : 20283

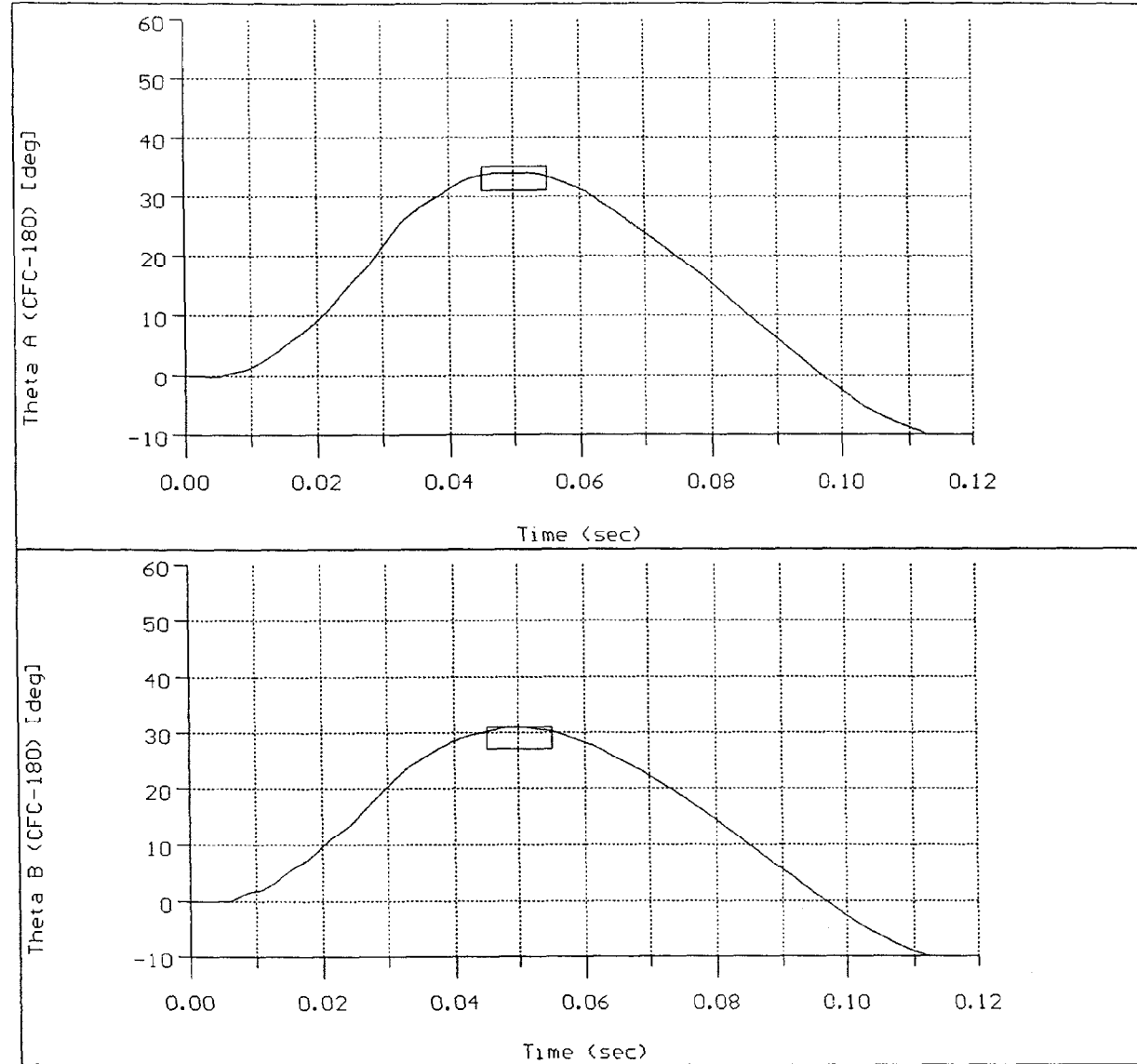
Rel. Humidity : 52 %

Impact side :

Technician : JR

Spine length : 5.25

Test date : 10-SEPTEMBER-1997



Parameter	Specification	Result	Passed/Failed
Maximum Theta(A)	31.0 - 35.0 deg	33.9 deg	
Time of max. Theta(A)	45.0 - 55.0 msec	52.2 msec	
Maximum Theta(B)	27.0 - 31.0 deg	31.0 deg	
Time of max. Theta(B)	45.0 - 55.0 msec	49.3 msec	

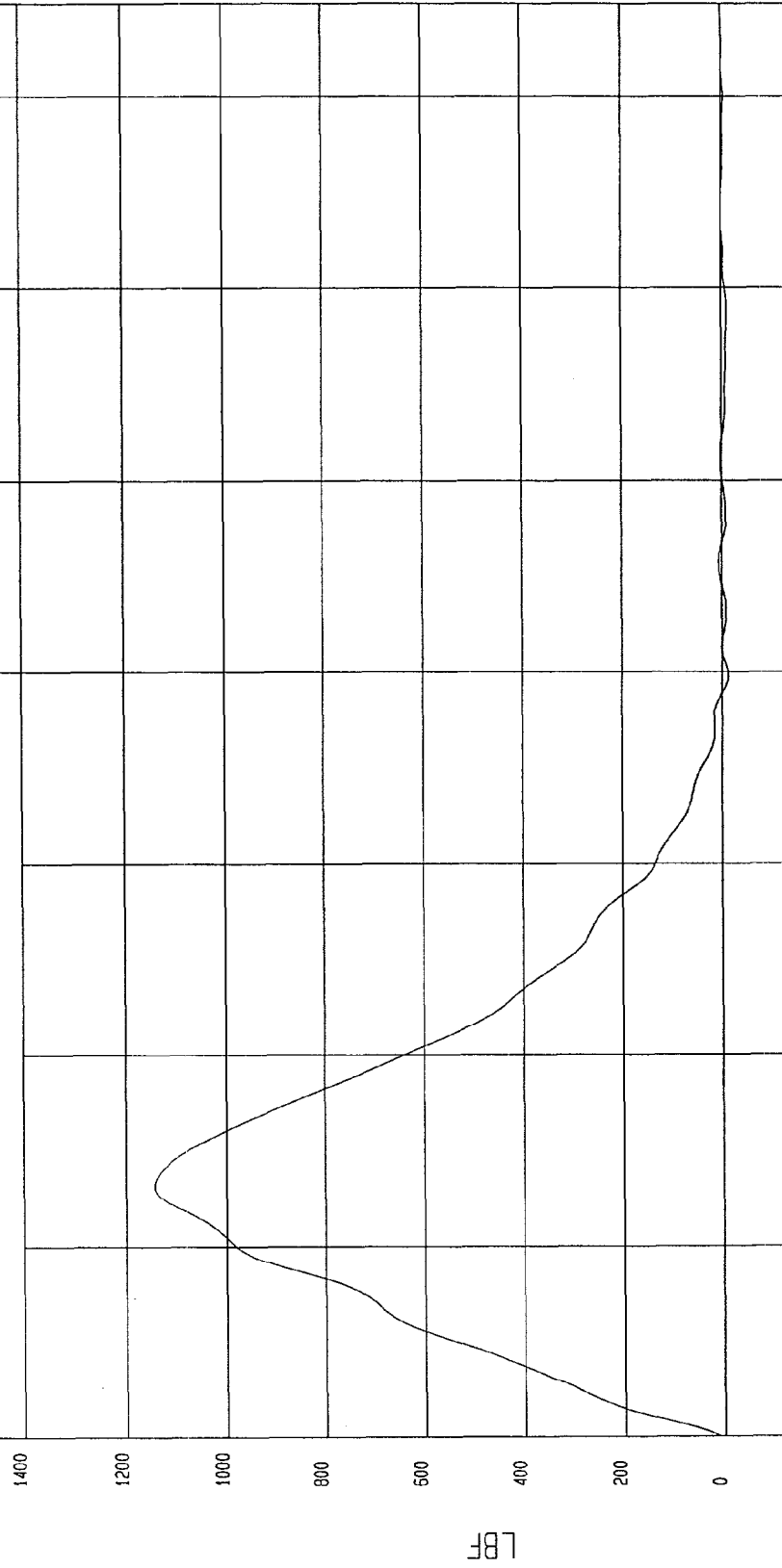
TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 09-25-1997 - 00:24:48

COMPONENT: DUMMY # E1-213 Velocity: 14.19 FT/SEC 4.33 M/SEC

Minimum = -12.07 LBF at 39.8 msec Maximum = 1142.07 LBF at 13.1 msec

IMPACTOR FORCE

1 097639FT.F01 Filterclass (1000)



WCA Research
09-25-1997 00:27

TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 09-25-1997 - 00:27:16

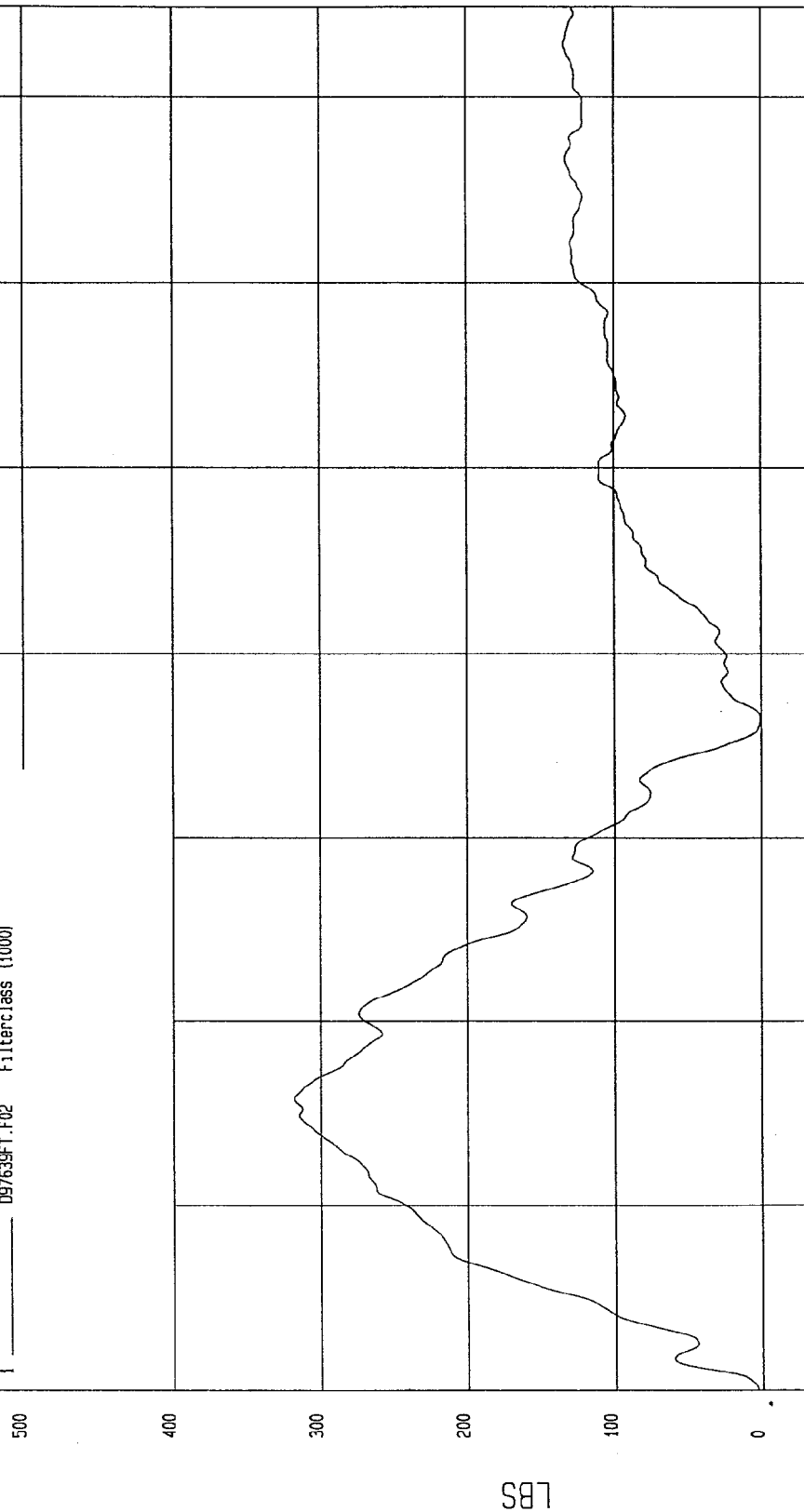
COMPONENT: DUMMY # E1-213 Velocity: 14.19 FT/SEC 4.33 M/SEC

Minimum = .62 LBS at 36.5 msec

Maximum = 317.99 LBS at 15.8 msec

PUBIC FORCE

1 ——— D97639FT.F02 Filterclass (1000)



20

90

80

70

60

50

40

30

WSA Report
09-25-1997 00:27

TIME (SECONDS)

EUROSID DUMMY POST-TEST CALIBRATION DATA SUMMARY SHEET

Dummy #: E1-169

Calibration Date: October 8, 1997

1.0 Head Drop Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Max. Resultant Acceleration	100 - 150 g's	148
Time of Max. Res. Acceleration		2.3 msec.

Calibrated By: Tim Michnay

Date: October 8, 1997

2.0 Neck Pendulum Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Pendulum Speed	10.83 - 11.48 ft/sec	11.11
Max. Pendulum Acceleration		-29.21
Time Max. Pend. Acceleration		9.73
Maximum Flexion Angle	46.0 - 56.0 deg.	52.1
Time of Max. Flexion Angle	50.0 - 62.0 ms	59.1
Maximum Angle Theta (A)	30.0 - 34.0 deg	31.6
Time of Max. Theta (A)	50.0 - 60.0 ms	56.1
Maximum Angle Theta (B)	26.0 - 30.0 deg.	28.9
Time of Max. Theta (B)	50.0 - 60.0 ms	54.2

Calibrated By: Tim Michnay

Date: October 8, 1997

3.0 Shoulder Impact Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	13.78 - 14.43 ft/sec	13.94
Max. Pendulum Acceleration	7.5 - 10.5 g's	8.0
Time of Max. Pendulum Acceleration		17.7

Calibrated By: Tim Michnay

Date: September 29, 1997

4.0 Upper Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Displacement at 3.28 ft/sec	.39 - .55 in	.45
Displacement at 6.56 ft/sec	.93 - 1.08 in	.96
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.49
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.88

Calibrated By: Tim Michnay

Date: October 8, 1997

5.0 Middle Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Displacement at 3.28 ft/sec	.39 - .55 in	.42
Displacement at 6.56 ft/sec	.93 - 1.08 in	1.00
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.55
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.95

Calibrated By: Tim Michnay

Date: October 8, 1997

6.0 Lower Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Displacement at 3.28 ft/sec	.39 - .55 in	.45
Displacement at 6.56 ft/sec	.93 - 1.08 in	.96
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.48
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.87

Calibrated By: Tim MichnayDate: October 8, 1997**7.0 Abdomen Test**

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	36%
Probe Speed	20.34 - 20.99 ft/sec	20.62
Maximum Impact Force	2136 - 2495 lbs	2305
Time of Maximum Force	8.8 - 10.4 ms	9.4
Max. Total Abdomen Force	1326 - 1776 lbs	1367
Time of Max. Total Force	8.5 - 10.1 ms	9.7

Calibrated By: Tim MichnayDate: September 29, 1997

8.0 Lumbar Spine Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	71°
Laboratory Relative Humidity	10% - 70%	23%
Pendulum Speed	19.52 - 20.17 ft/sec	19.78
Max. Pendulum Acceleration		-29.71
Time Max. Pend. Acceleration		10.20
Maximum Flexion Angle	45.0 - 55.0 deg.	50.6
Time of Max. Flexion Angle	39.0 - 53.0 ms	51.3
Maximum Angle Theta (A)	31.0 - 35.0 deg	33.87
Time of Max. Theta (A)	45.0 - 55.0 ms	51.4
Maximum Angle Theta (B)	27.0 - 31.0 deg.	30.8
Time of Max. Theta (B)	45.0 - 55.0 ms	49.3

Calibrated By: First Technology Safety SystemsDate: October 2, 1997**9.0 Pelvis Test**

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	38%
Pendulum Speed	13.77 - 14.43 ft/sec	14.35
Maximum Impactor Force	989 - 1214 lbs	1117
Time of Max. Impactor Force	10.3 - 15.5 ms	13.8
Maximum Pubic Force	233.8 - 368.7 lbs	327.4
Time of Max. Pubic Force	9.9 - 15.9 ms	15.7

Calibrated By: Tim MichnayDate: September 29, 1997

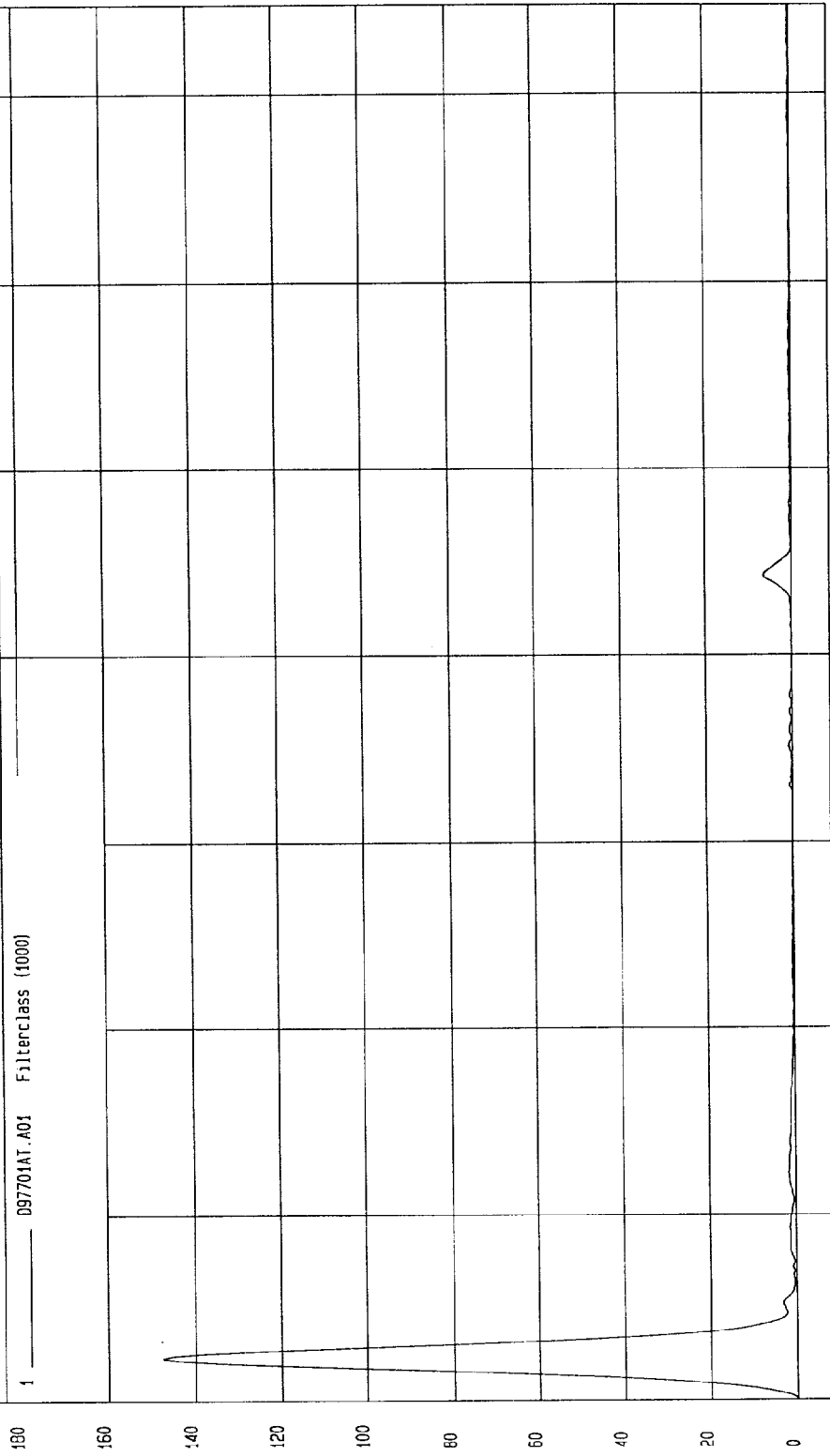
TEST: DUMMY CALIBRATION - HEAD DROP TEST DATE: 10-08-1997 - 17:32:13

COMPONENT: DUMMY # E1-169

Minimum = 2.02E-02 G'S at 32.3 msec Maximum = 147.62 G'S at 2.25 msec

PEAK RESULTANT ACCELERATION

1 ——— D97701AT.A01 Filterclass (1000)



0.07

0.06

0.05

0.04

0.03

0.02

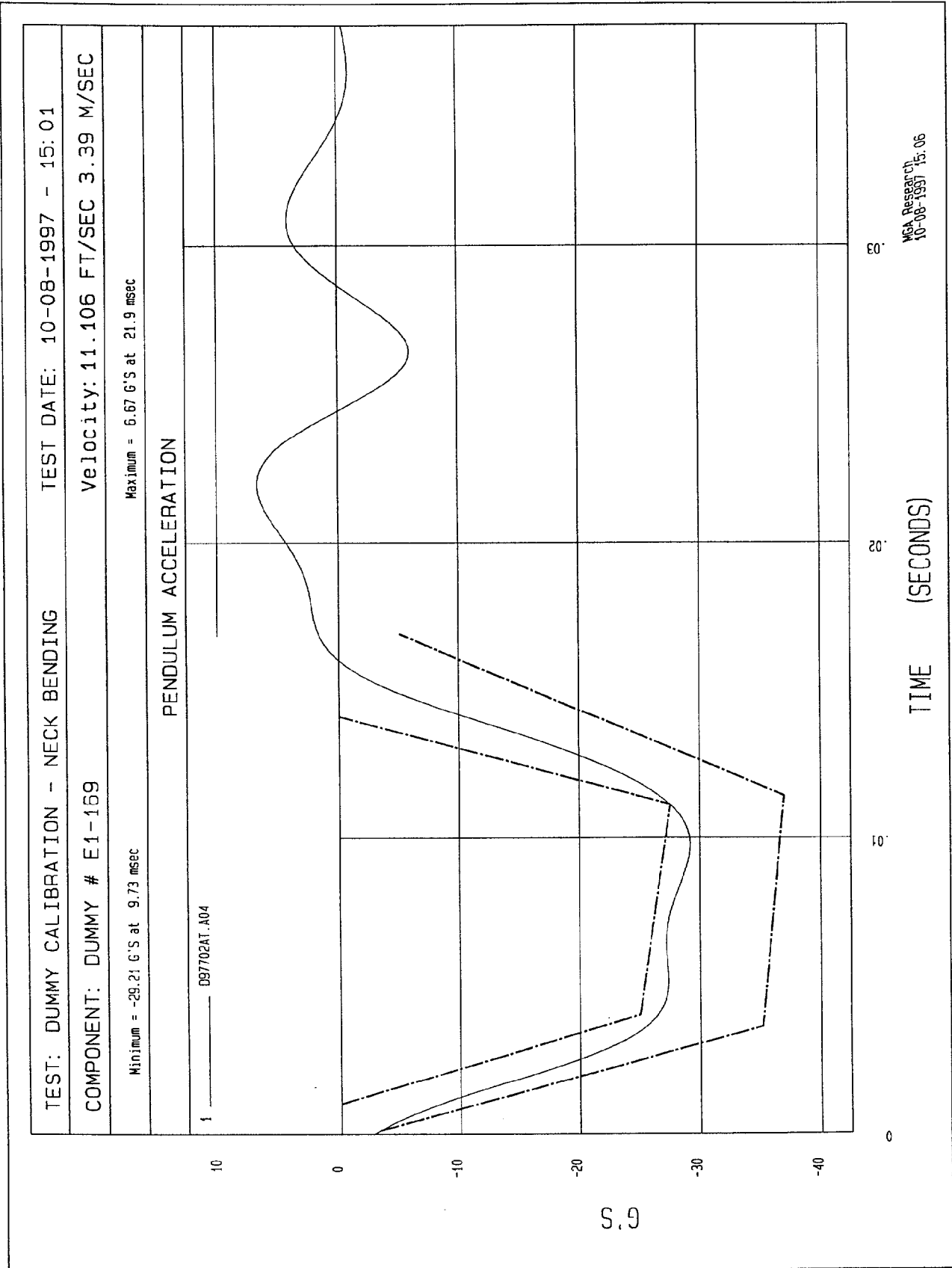
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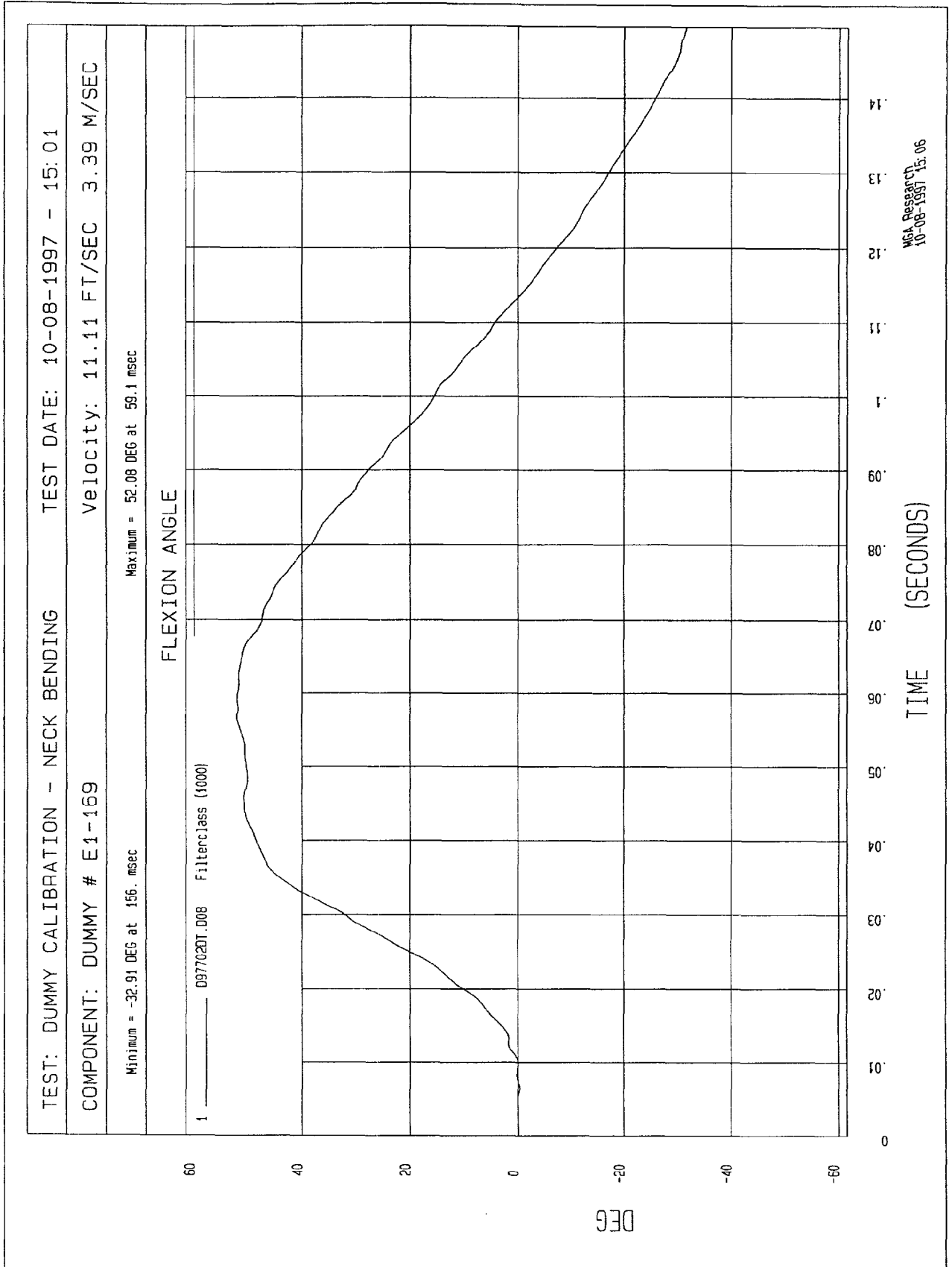
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MCA Research
10-08-1997 17:32

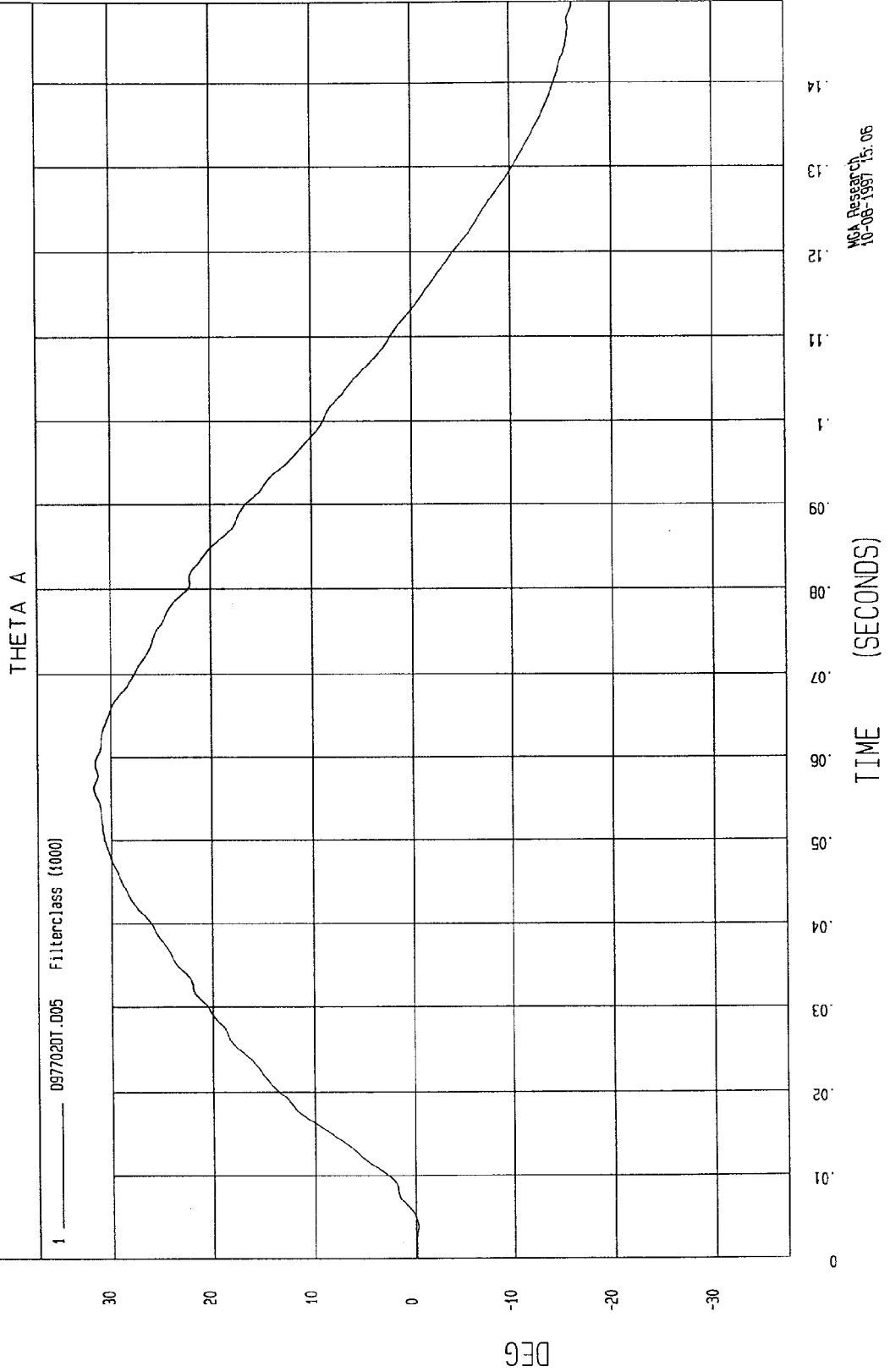
TIME (SECONDS)

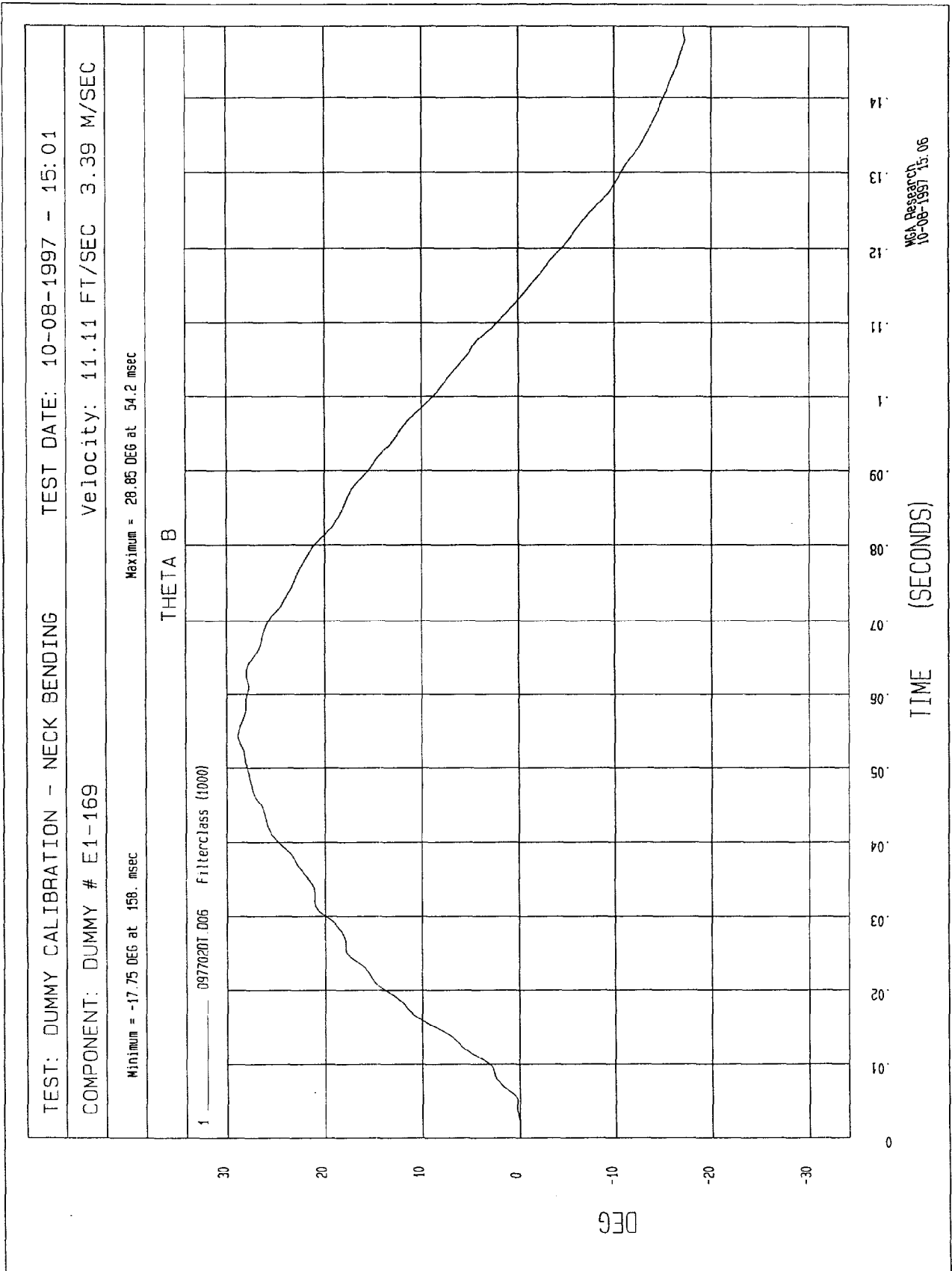
G

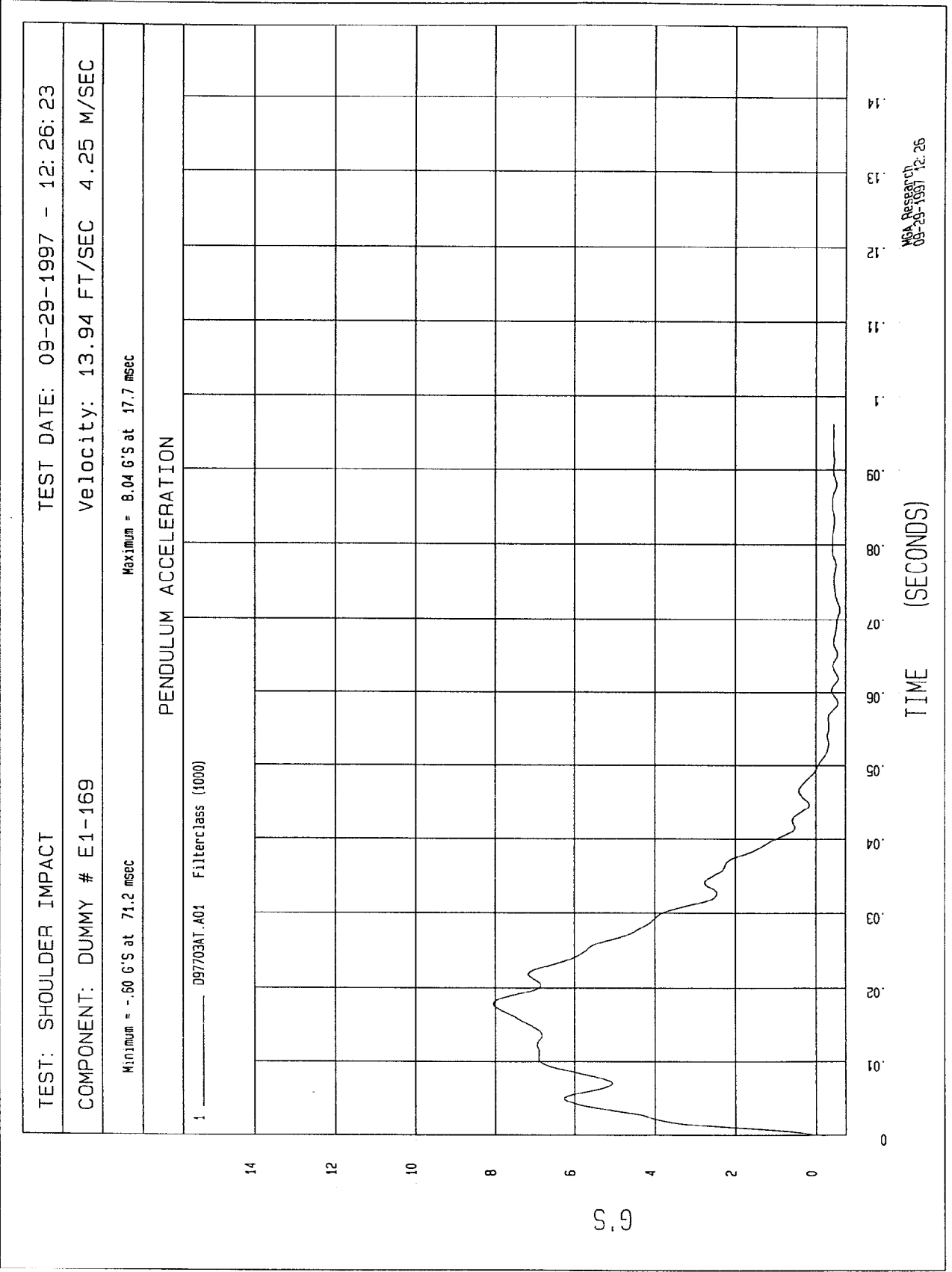




TEST: DUMMY CALIBRATION - NECK BENDING	TEST DATE: 10-08-1997 - 15:01
COMPONENT: DUMMY # E1-169	Velocity: 11.11 FT/SEC 3.39 M/SEC
Minimum = -16.70 DEG at 155. msec Maximum = 31.64 DEG at 56.1 msec	





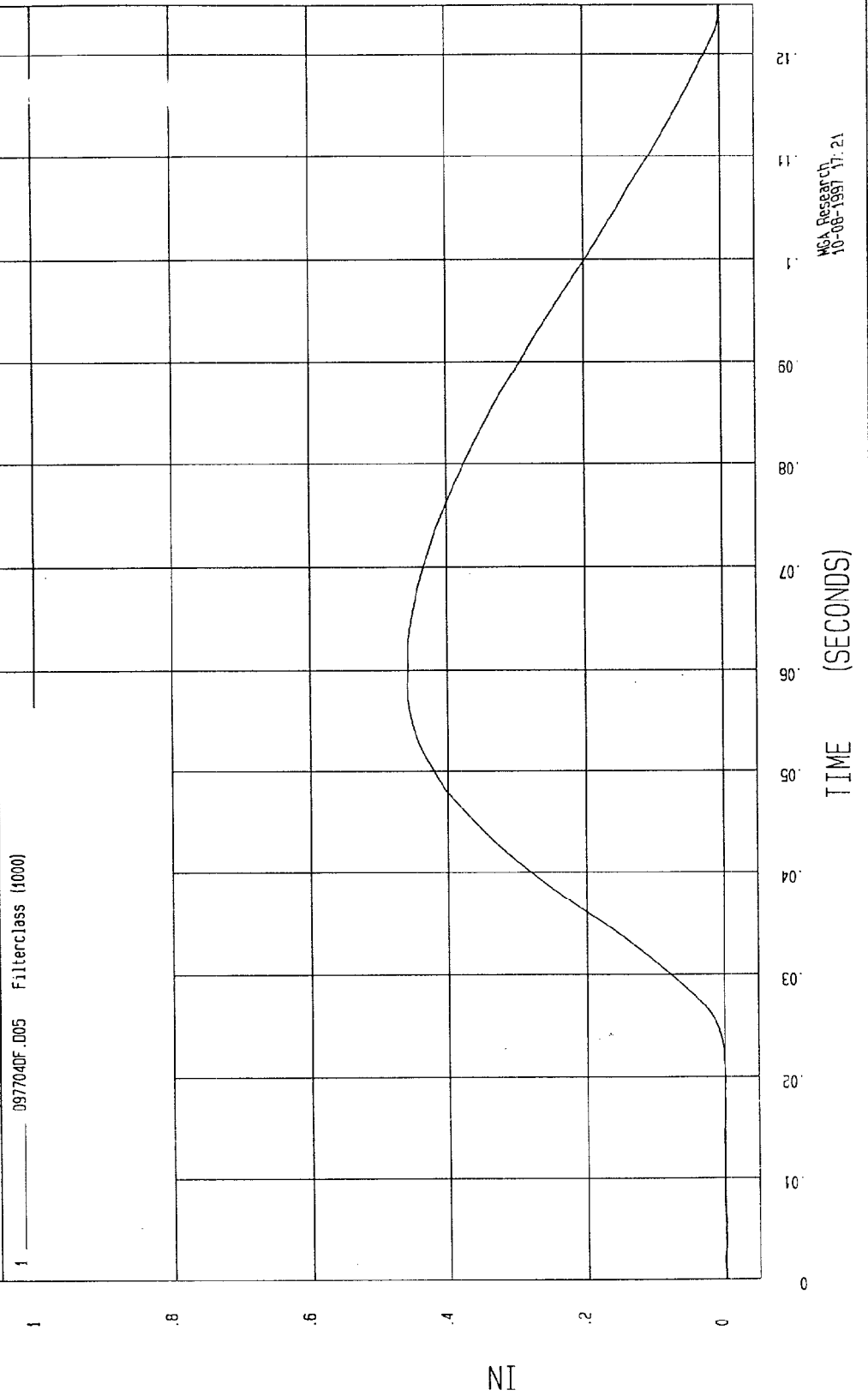


TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 16:06

COMPONENT: DUMMY # E1-169 Velocity: 3.28 FT/SEC 1 M/SEC

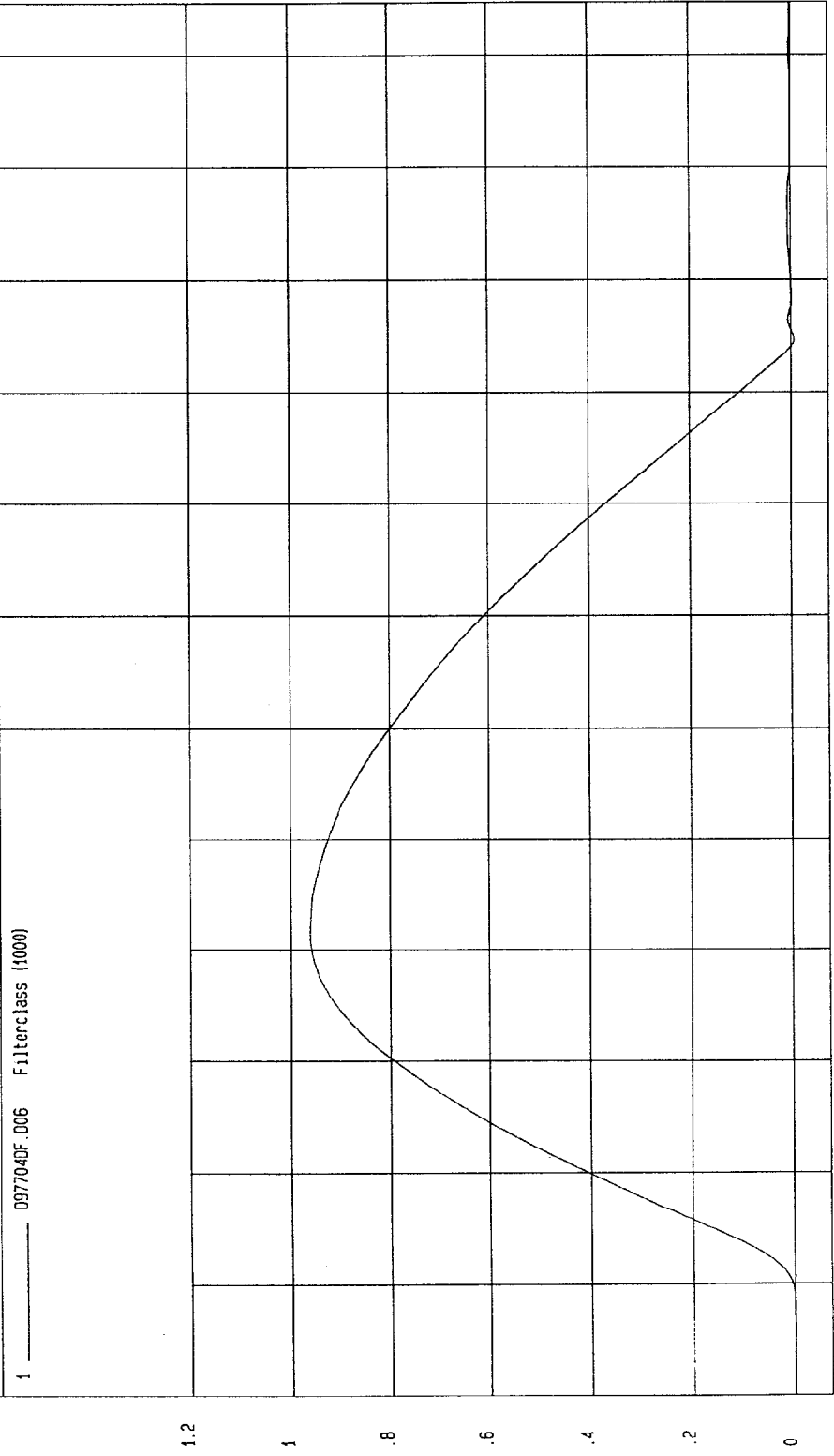
Minimum = -8.69E-04 IN at 16.7 msec Maximum = .45 IN at 58.4 msec

UPPER RIB DISPLACEMENT



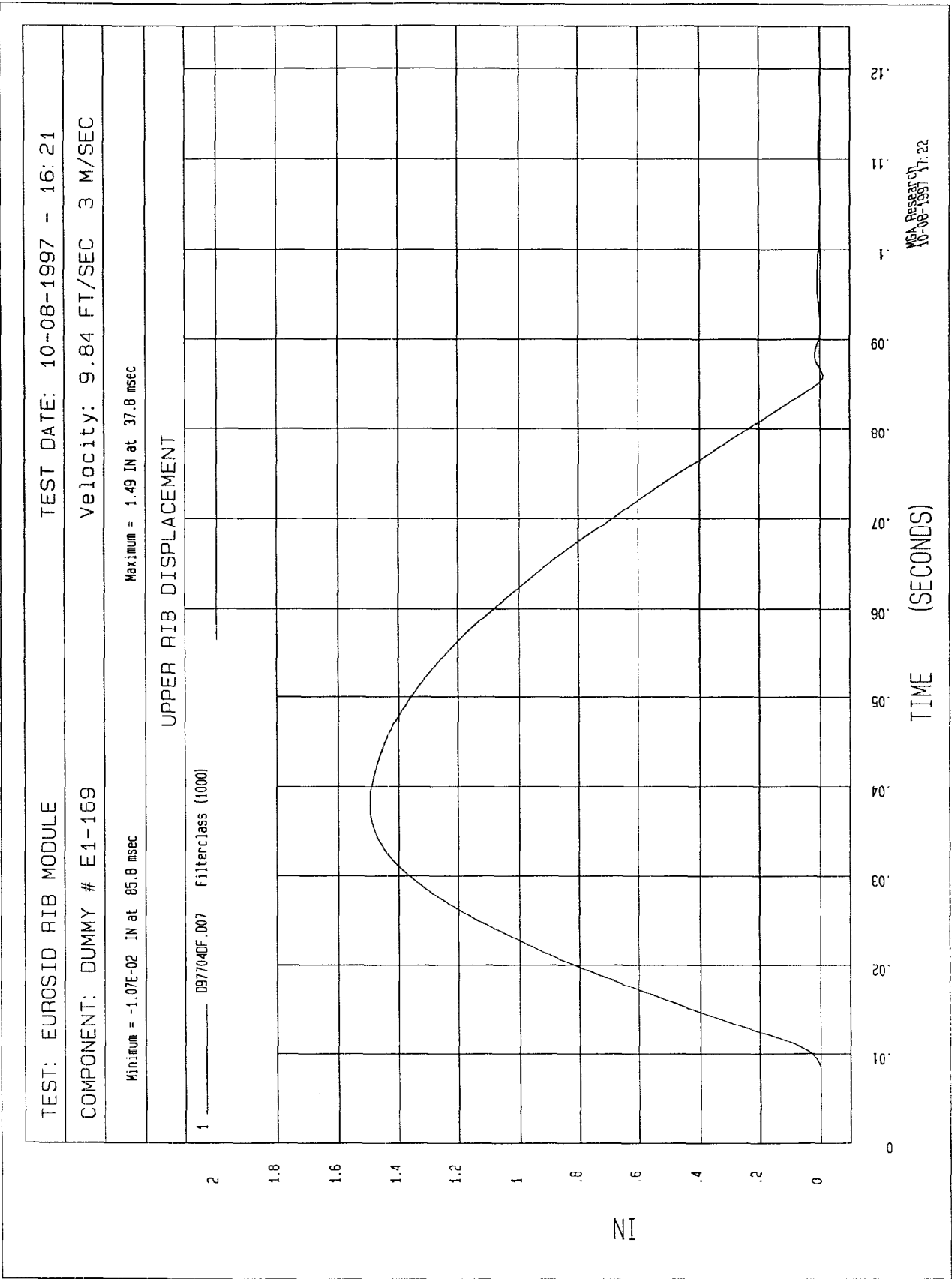
TEST: EUROSIO RIB MODULE	TEST DATE: 10-08-1997 - 16:13
COMPONENT: DUMMY # E1-169	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -6.23E-03 IN at 94.7 msec	Maximum = .96 IN at 41.4 msec

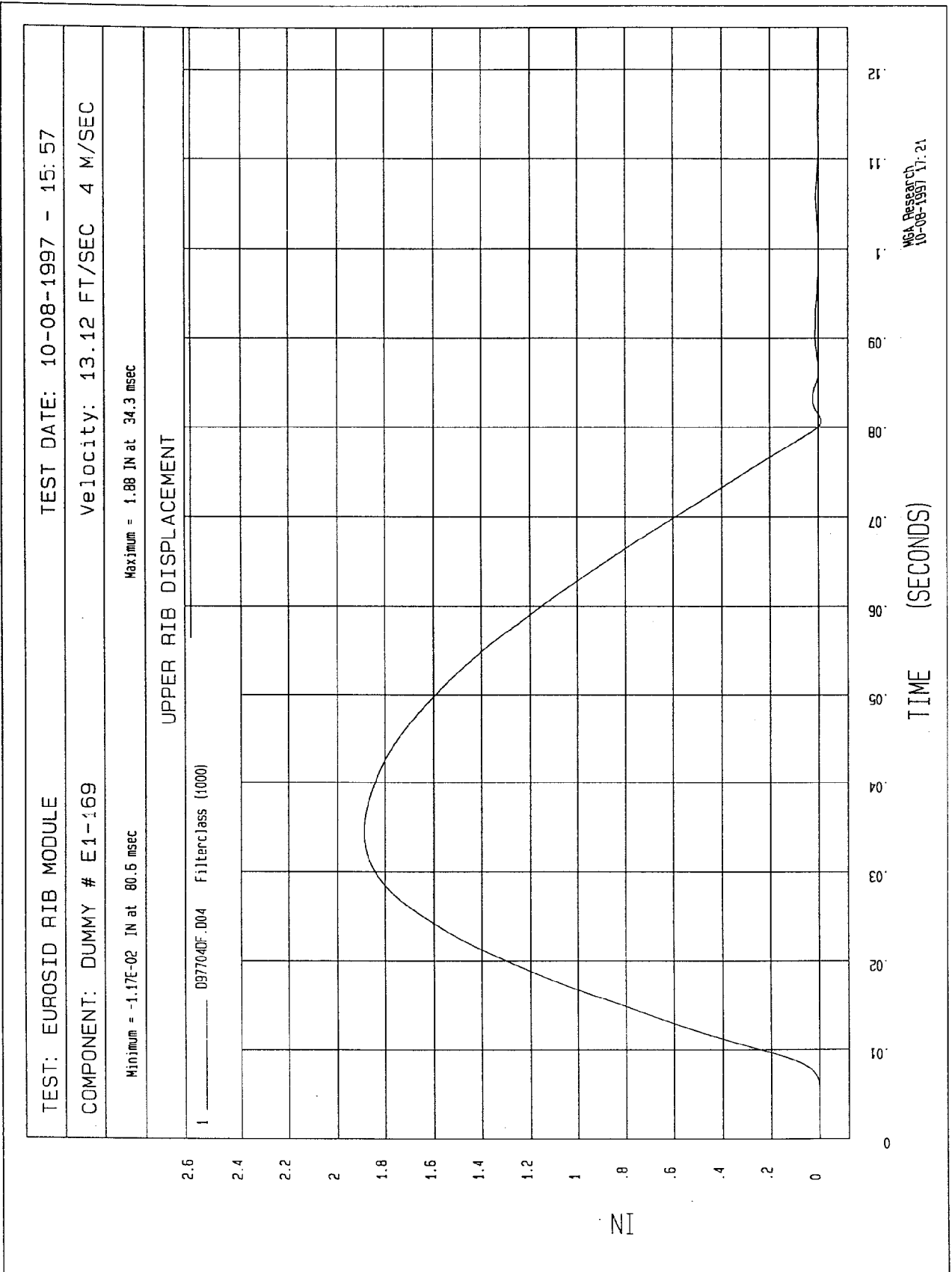
UPPER RIB DISPLACEMENT



TIME (SECONDS)

WCA Research
10-08-1997 17:21



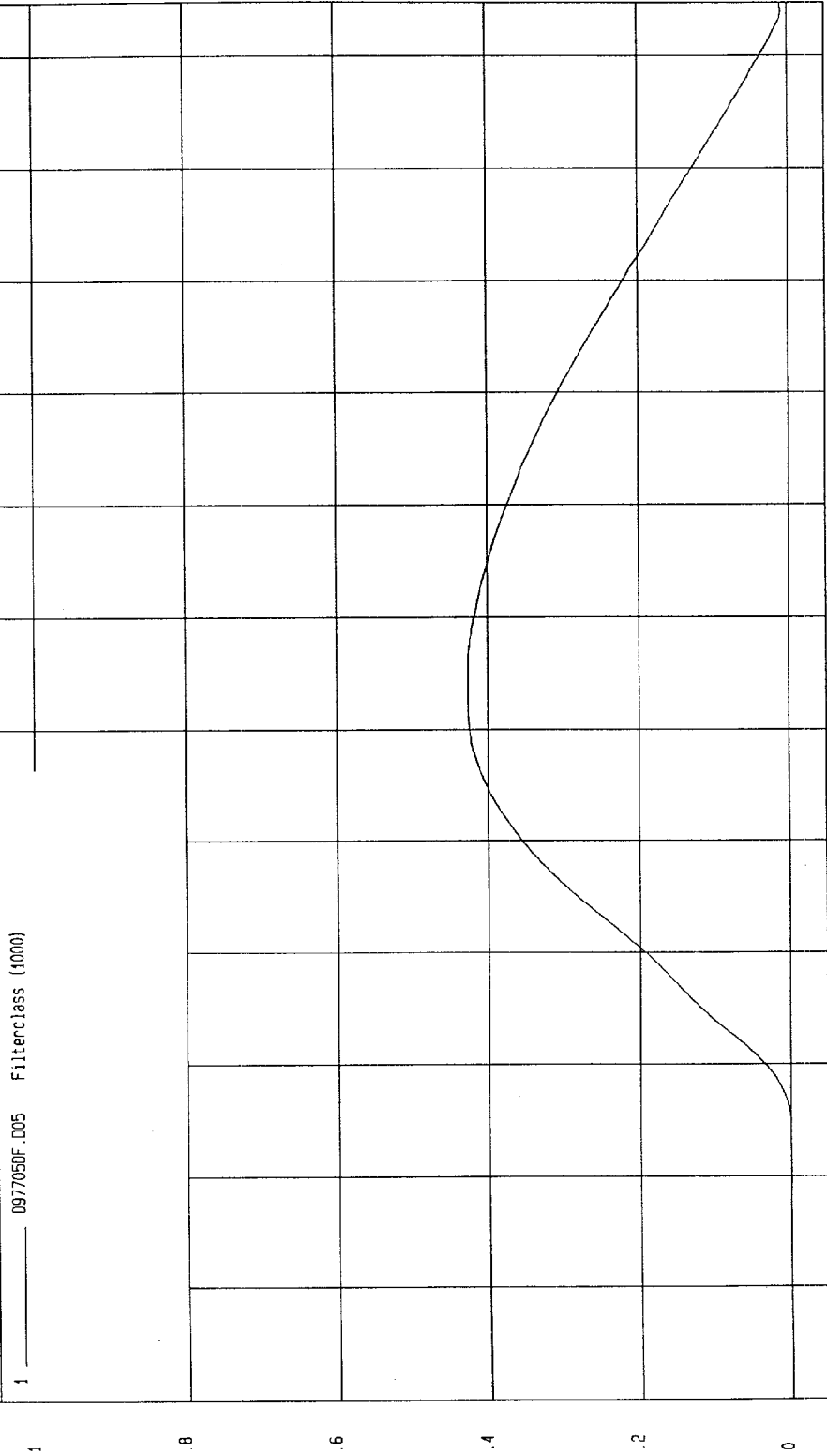


TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 16:35

COMPONENT: DUMMY # E1-169 Velocity: 3.28 FT/SEC 1 M/SEC

Minimum = -1.2/E-04 IN at 19.5 msec Maximum = .42 IN at 63.0 msec

MIDDLE RIB DISPLACEMENT

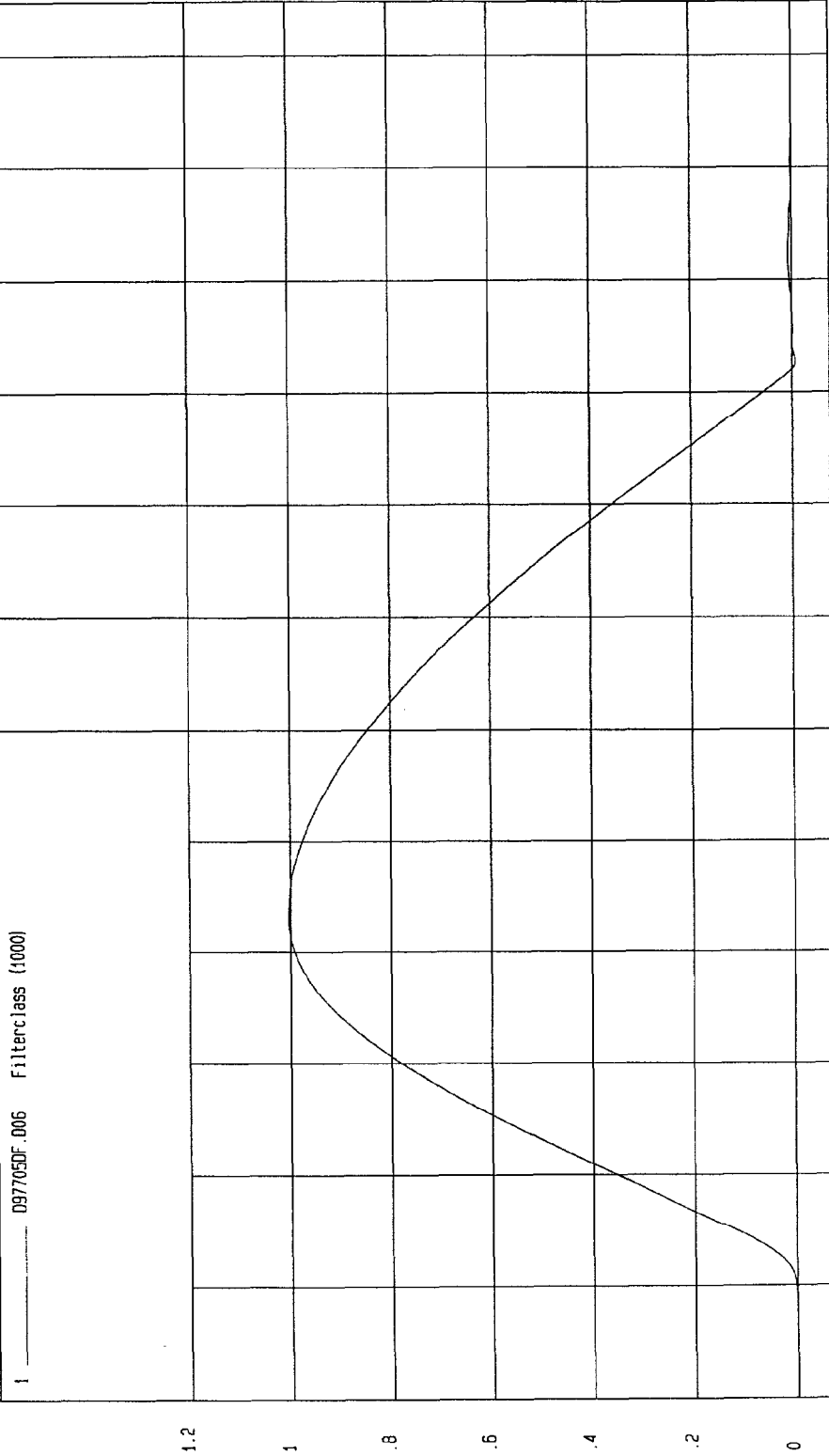


TIME (SECONDS)

NSA Research
10-08-1997 17:27

TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 16:42
COMPONENT: DUMMY # E1-169	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -6.73E-03 IN at 92.7 msec	Maximum = 1.00 IN at 42.9 msec

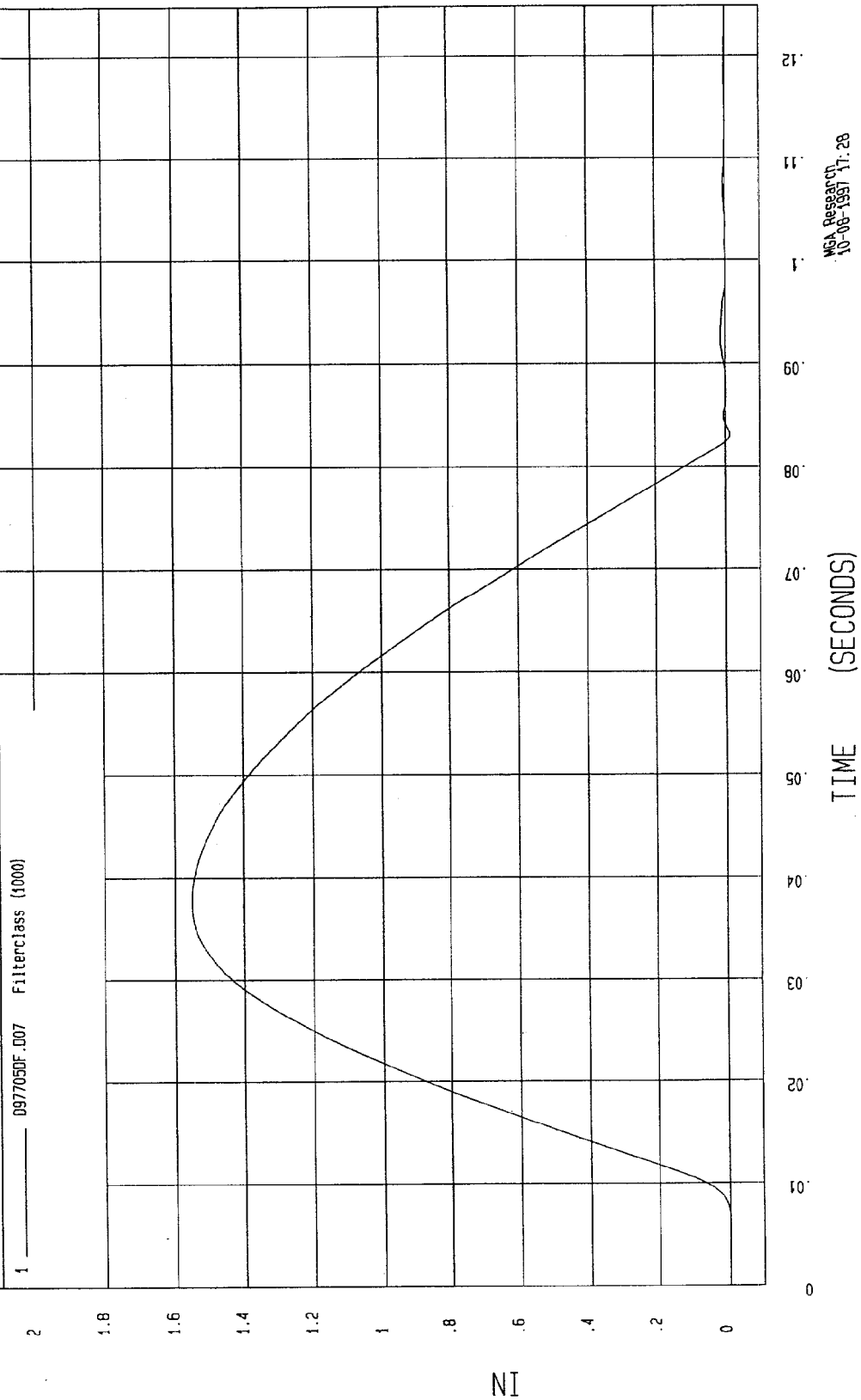
MIDDLE RIB DISPLACEMENT



WCA Research
10-08-1997 17:27

TEST: EUORSID RIB MODULE	TEST DATE: 10-08-1997 - 16:50
COMPONENT: DUMMY # E1-169	Velocity: 9.84 FT/SEC 3 M/SEC
Minimum = -1.16E-02 IN at 83.1 msec	Maximum = 1.55 IN at 37.4 msec

MIDDLE RIB DISPLACEMENT



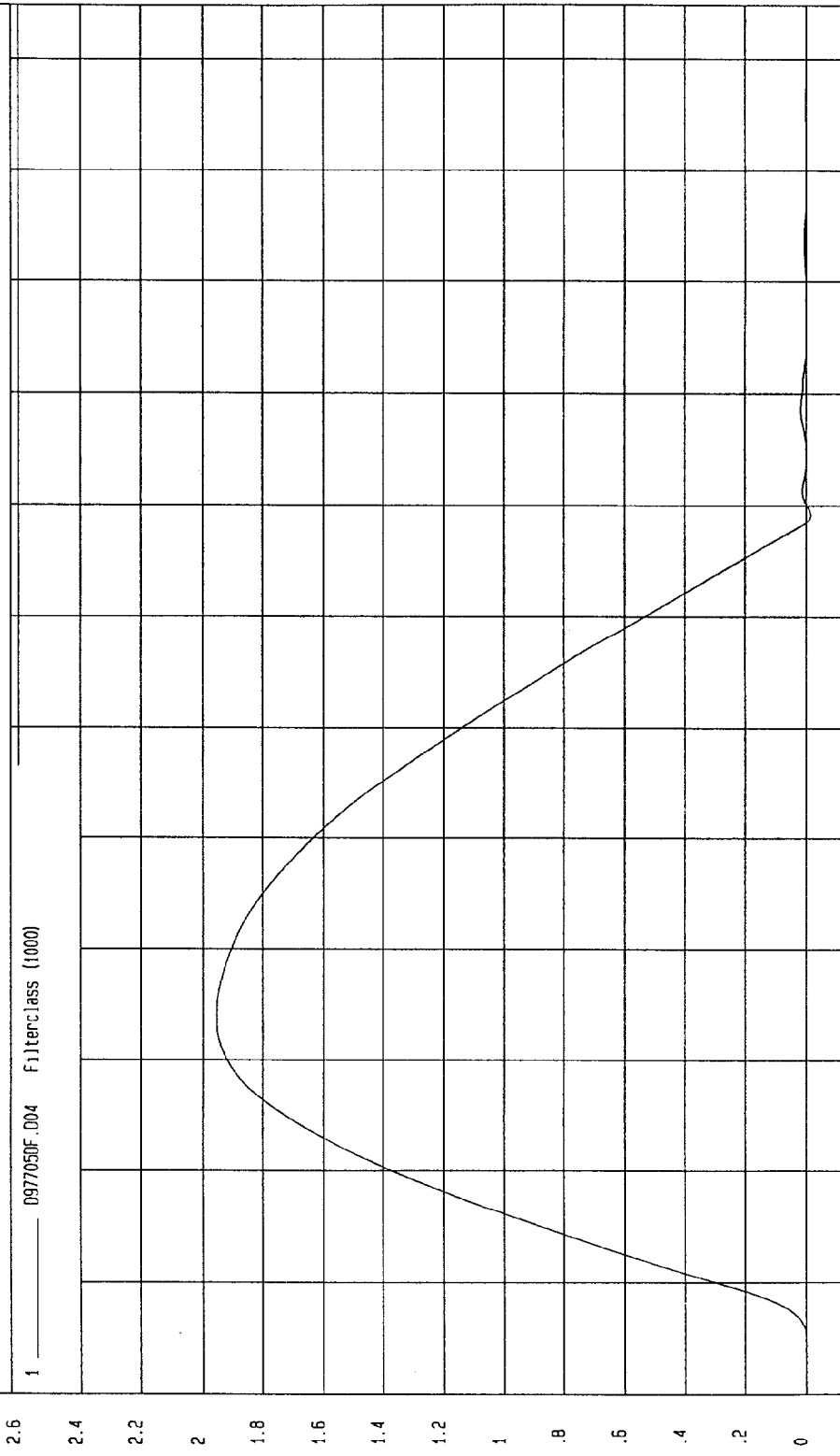
MCA Research
10-08-1997 17:28

TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 16:26

COMPONENT: DUMMY # E1-169 Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.62E-02 IN at 79.1 msec Maximum = 1.95 IN at 33.7 msec

MIDDLE RIB DISPLACEMENT



TIME (SECONDS)

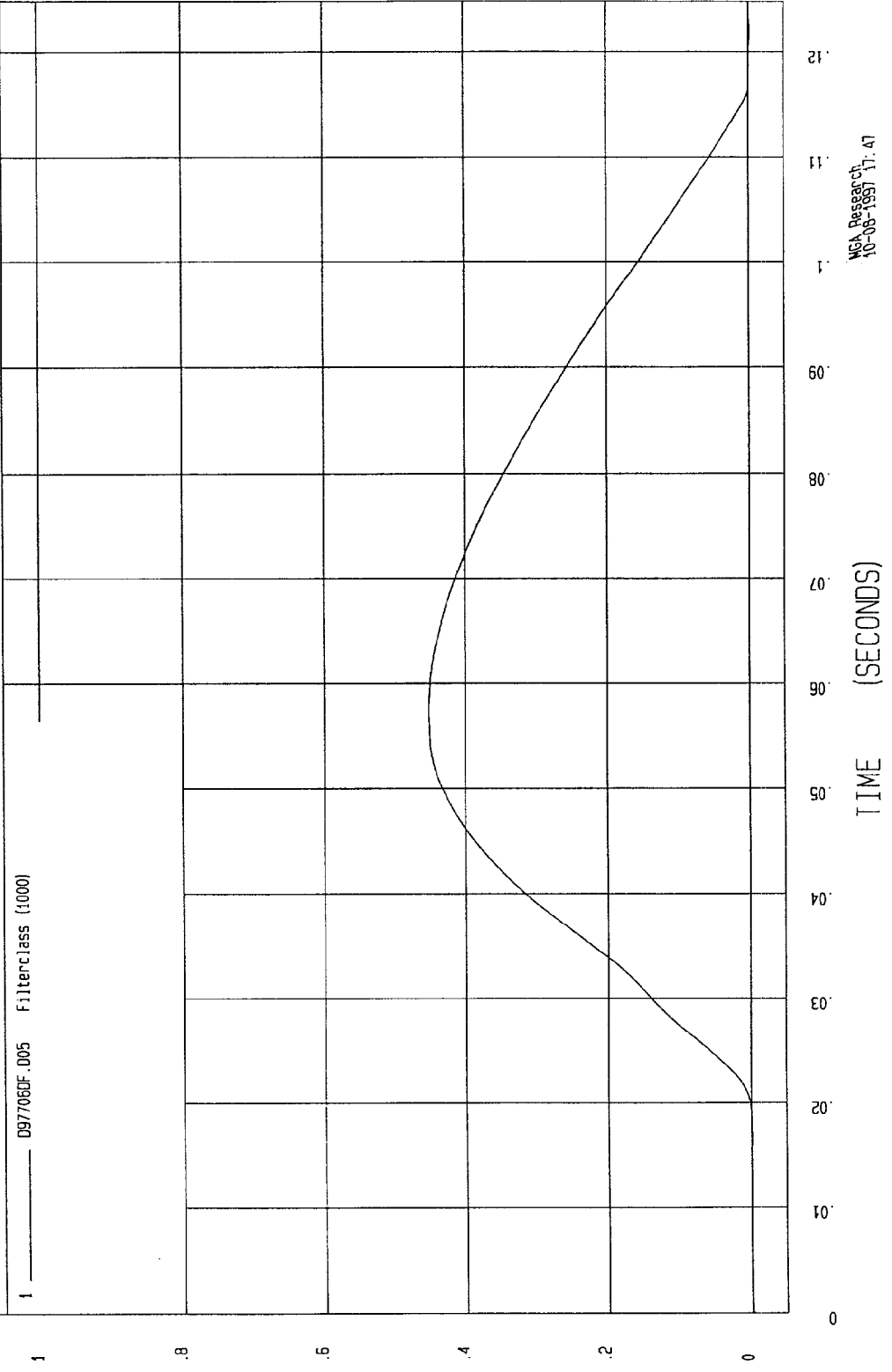
MCA Research
10-08-1997 17:27

TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 17:02

COMPONENT: DUMMY # E1-159 Velocity: 3.28 FT/SEC 1 M/SEC

Minimum = -2.28E-03 IN at 0 msec Maximum = .45 IN at 57.2 msec

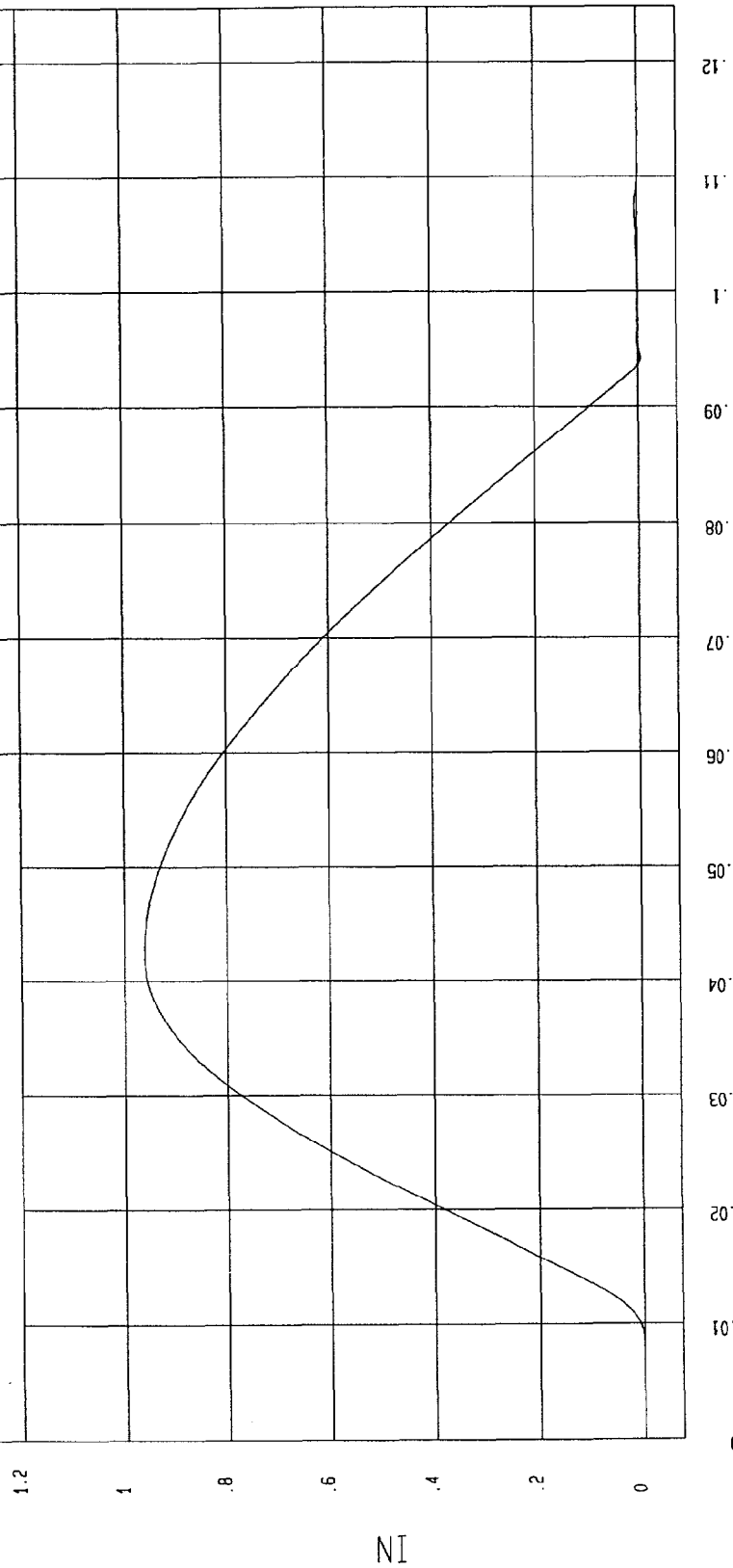
LOWER RIB DISPLACEMENT



TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 17: 10
COMPONENT: DUMMY # E1-169	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -4.50E-03 IN at 94.2 msec	Maximum = .96 IN at 42.3 msec

LOWER RIB DISPLACEMENT

1 _____ 0977060F.006 Filterclass (1000)



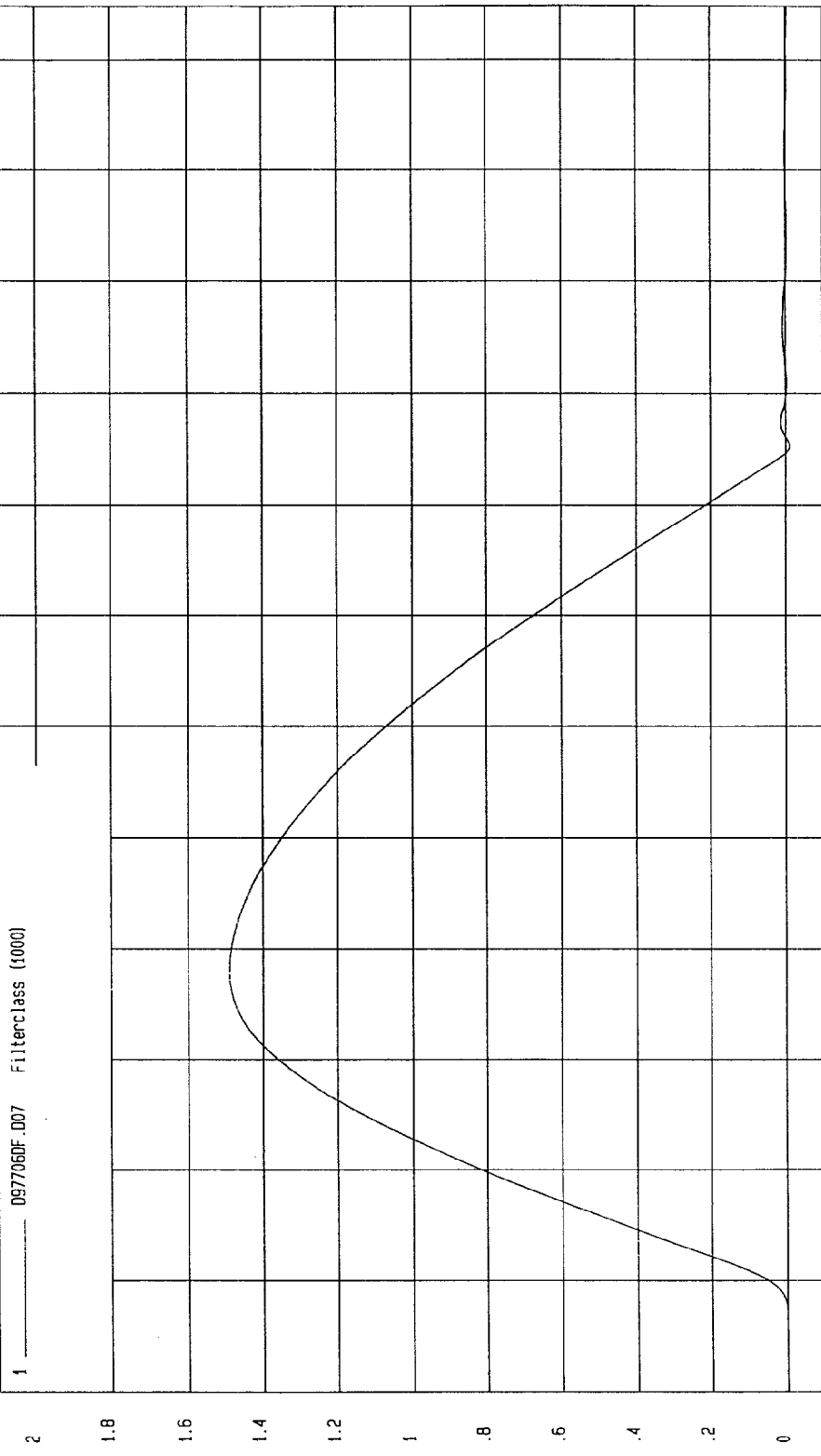
MCA Research
10-08-1997 17: 47

TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 17:18

COMPONENT: DUMMY # E1-169 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -1.02E-02 IN at 85.2 msec Maximum = 1.48 IN at 37.6 msec

LOWER RIB DISPLACEMENT

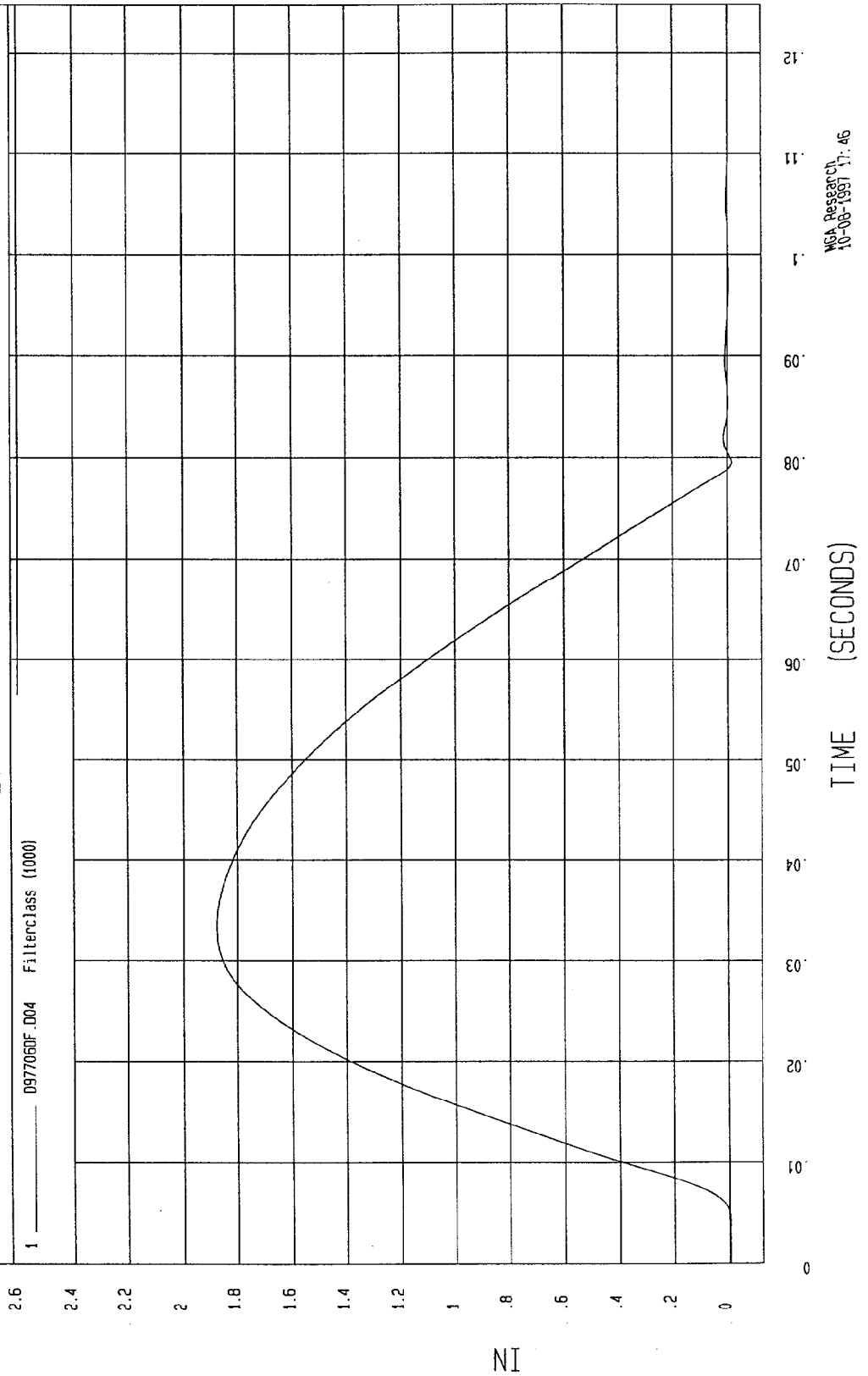


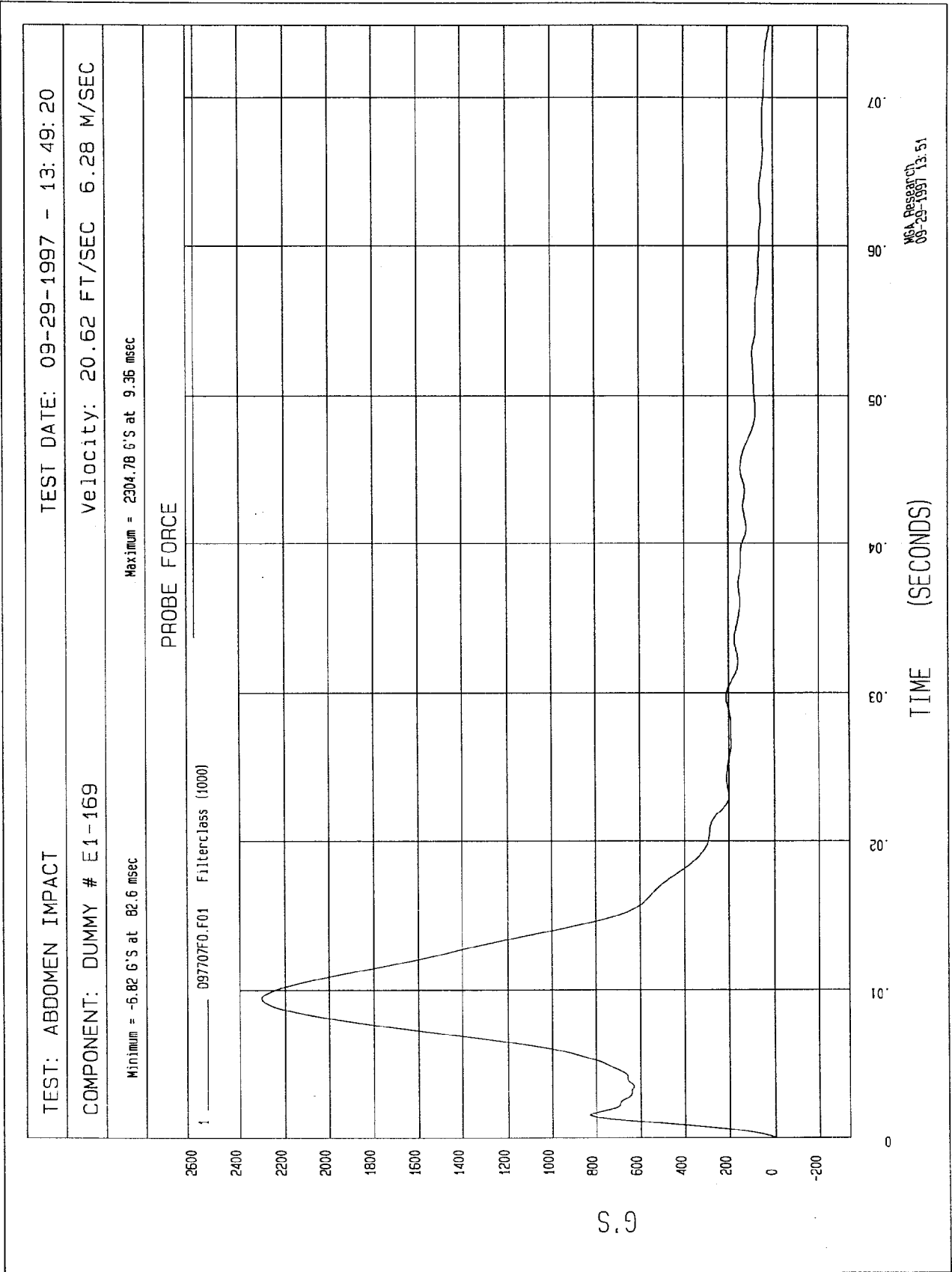
TIME (SECONDS)

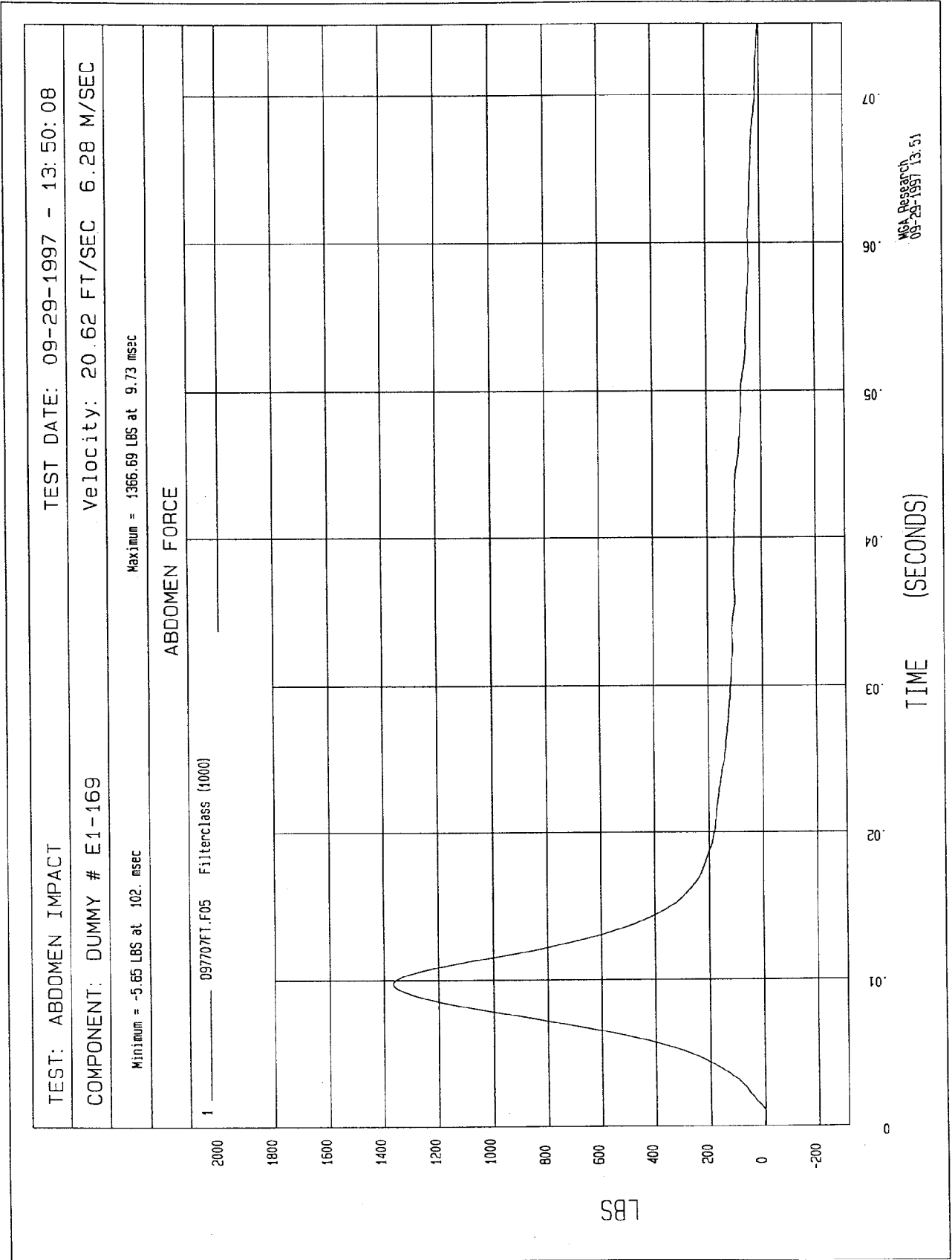
MSA Research
10-08-1997 17:47

TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 16:55
COMPONENT: DUMMY # E1-169	Velocity: 13.12 FT/SEC 4 M/SEC
Minimum = -.01 IN at 79.6 msec	Maximum = 1.87 IN at 33.4 msec

LOWER RIB DISPLACEMENT







EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SM9793-1

Temperature : 22 deg C

Test number : 20512

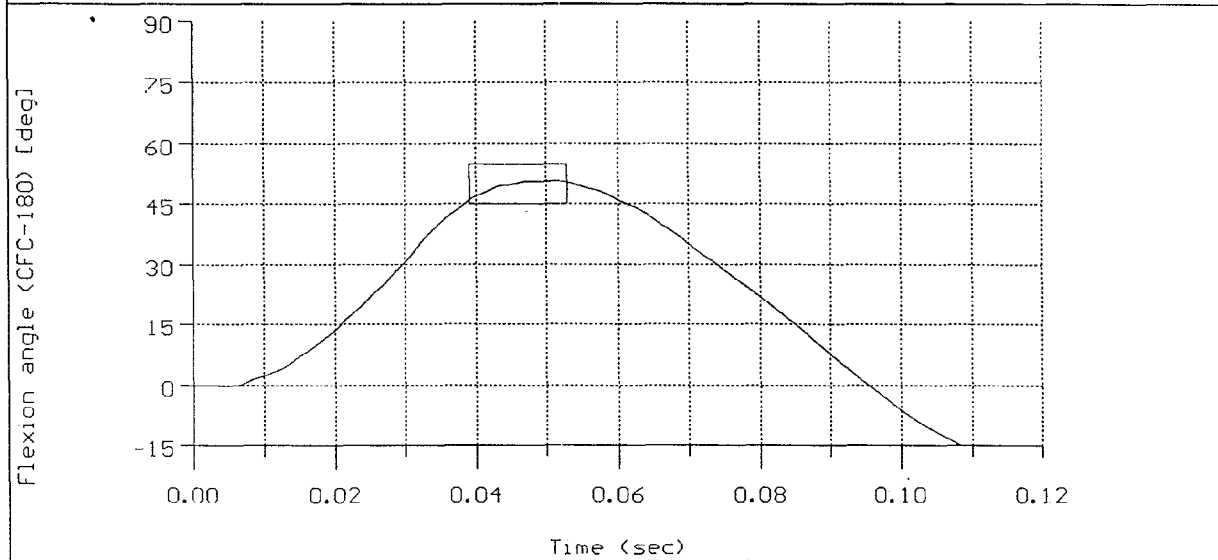
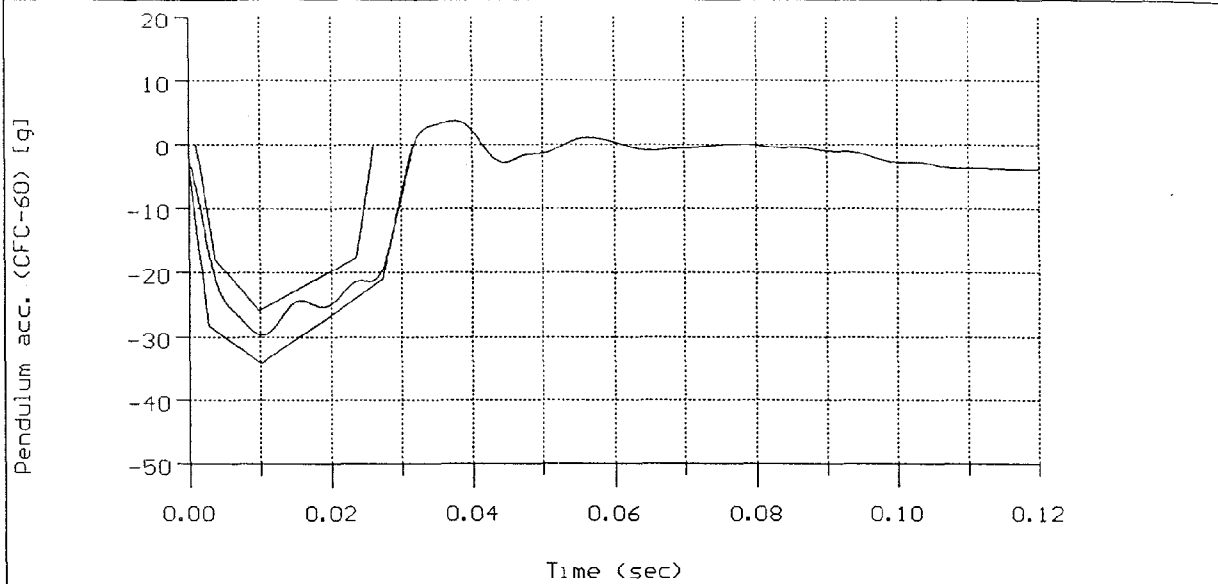
Rel. Humidity : 23 %

Impact side :

Technician : JR

Spine length : 5.25

Test date : 2-OCTOBER-1997



Parameter	Specification	Result	Passed/Failed
Pendulum Speed	5.95 - 6.15 m/s	6.03 m/s	
Maximum pendulum acc.		-29.7 g	
Time of max pend. acc.		10.2 msec	
Maximum flexion angle	45.0 - 55.0 deg	50.6 deg	
Time of max. flex. angle	39.0 - 53.0 msec	51.3 msec	

EUROSID-1

COMMENTS: M6A

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SM9793-1

Temperature : 22 deg C

Test number : 20512

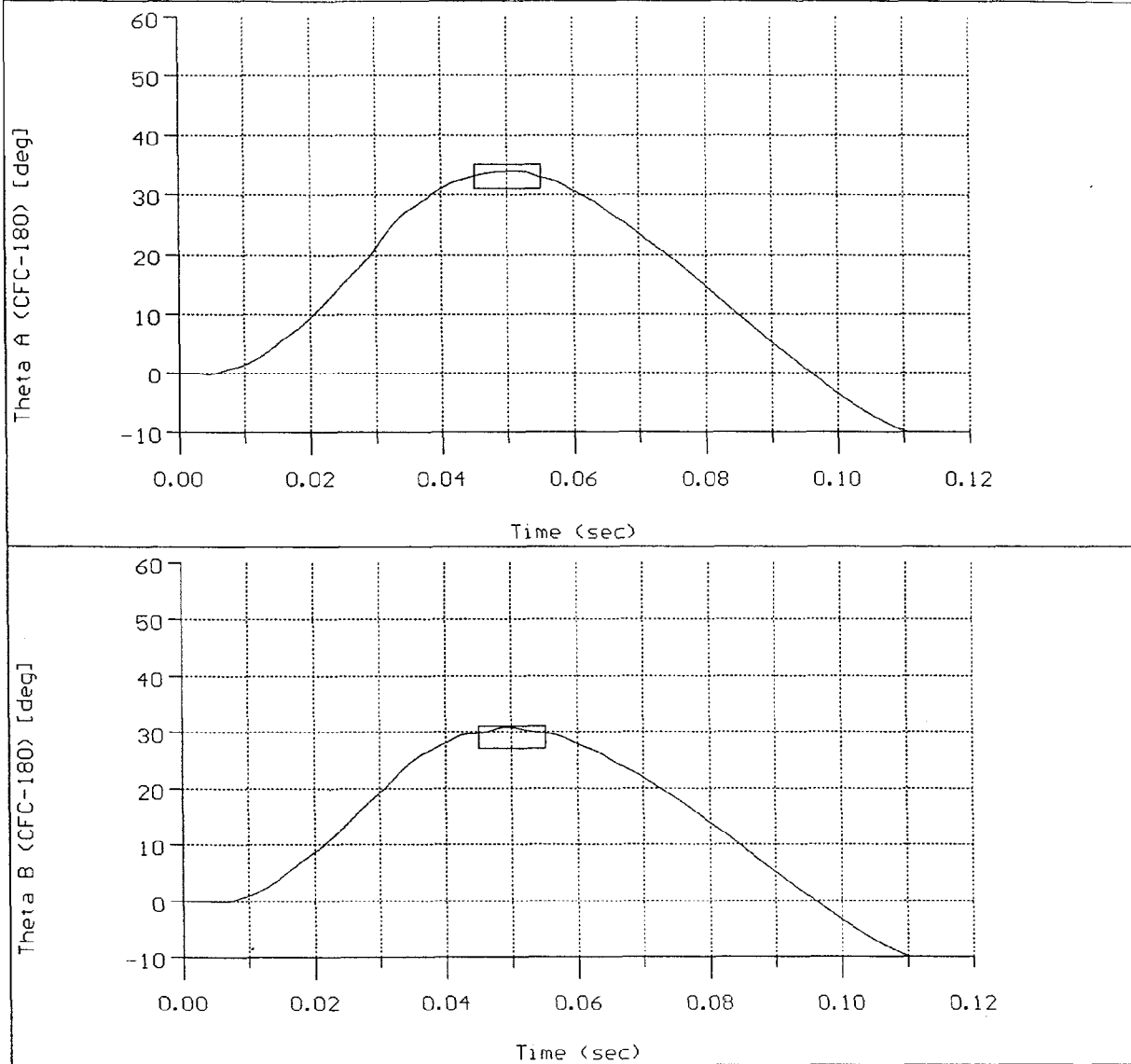
Rel. Humidity : 23 %

Impact side :

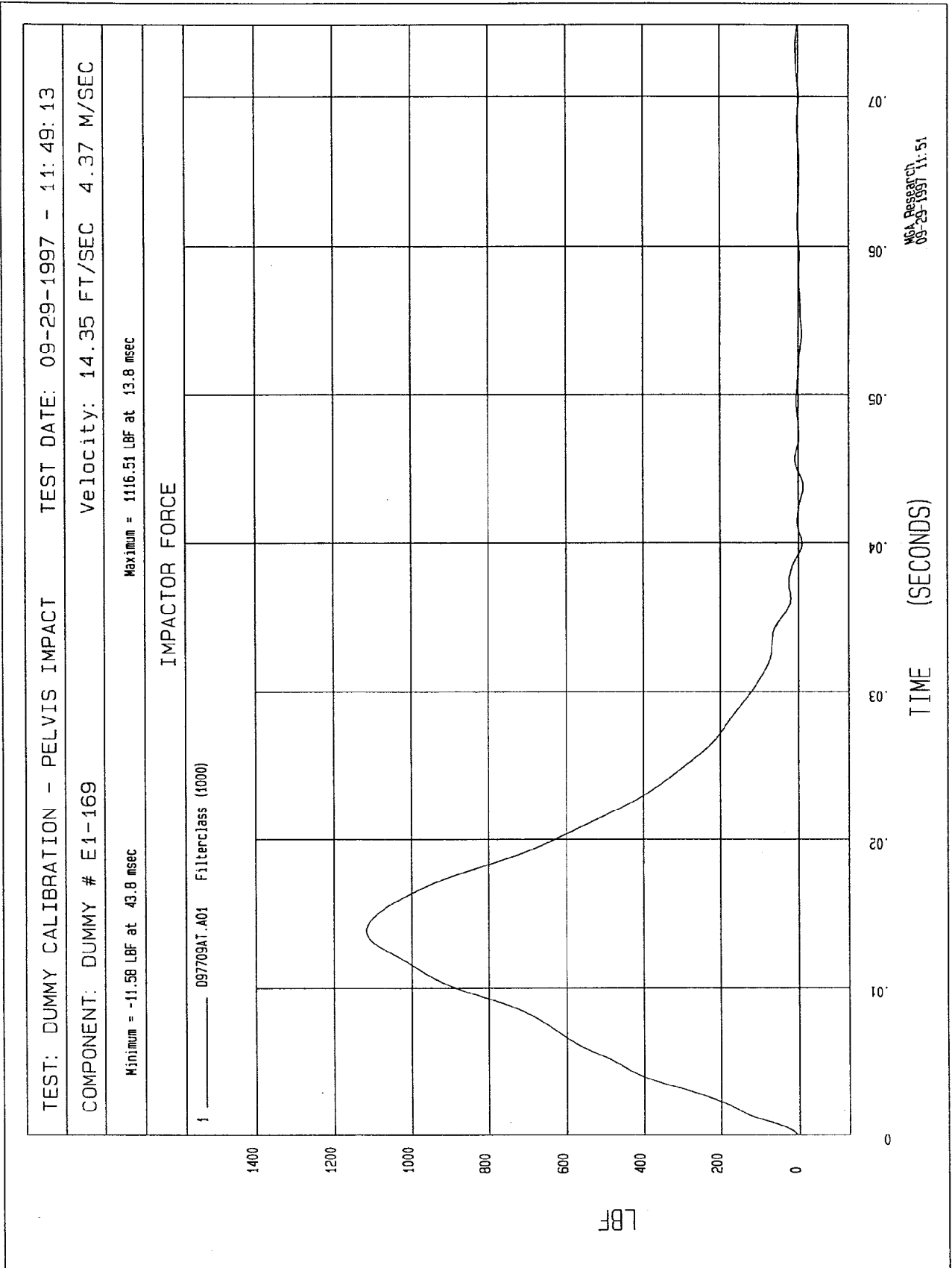
Technician : JR

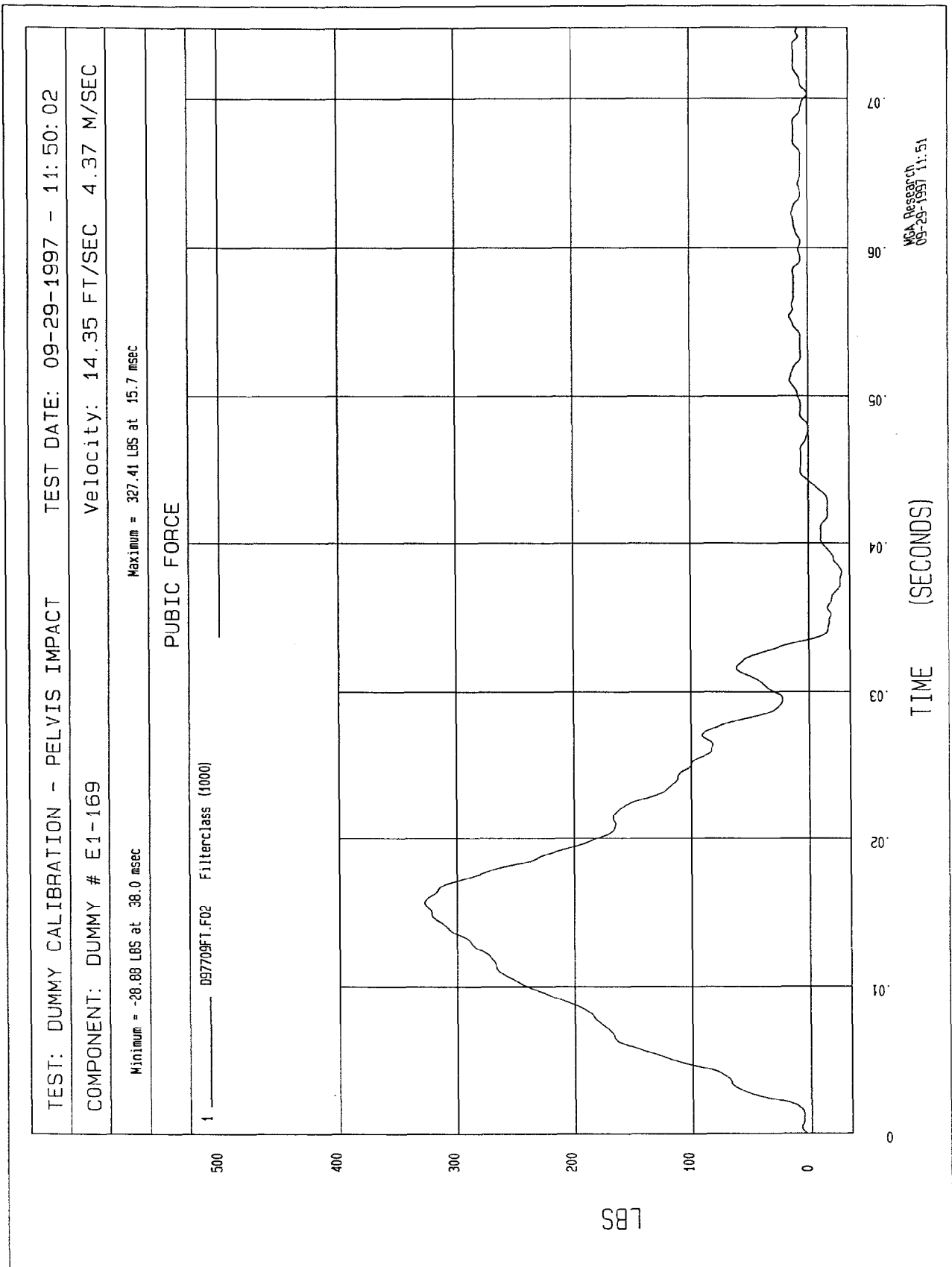
Spine length : 5.25

Test date : 2-OCTOBER-1997



Parameter	Specification	Result	Passed/Failed
Maximum Theta(A)	31.0 - 35.0 deg	33.9 deg	
Time of max. Theta(A)	45.0 - 55.0 msec	51.4 msec	
Maximum Theta(B)	27.0 - 31.0 deg	30.8 deg	
Time of max. Theta(B)	45.0 - 55.0 msec	49.3 msec	





EUROSID DUMMY POST-TEST CALIBRATION DATA SUMMARY SHEET

Dummy #: E1-213

Calibration Date: October 8, 1997

1.0 Head Drop Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Max. Resultant Acceleration	100 - 150 g's	115
Time of Max. Res. Acceleration		3.1 msec.

Calibrated By: Tim Michnay

Date: October 8, 1997

2.0 Neck Pendulum Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	45%
Pendulum Speed	10.83 - 11.48 ft/sec	10.99
Max. Pendulum Acceleration		-29.14
Time Max. Pend. Acceleration		9.95
Maximum Flexion Angle	46.0 - 56.0 deg.	52.8
Time of Max. Flexion Angle	50.0 - 62.0 ms	56.1
Maximum Angle Theta (A)	30.0 - 34.0 deg	31.4
Time of Max. Theta (A)	50.0 - 60.0 ms	58.9
Maximum Angle Theta (B)	26.0 - 30.0 deg.	29.1
Time of Max. Theta (B)	50.0 - 60.0 ms	50.9

Calibrated By: Tim Michnay

Date: October 8, 1997

3.0 Shoulder Impact Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Pendulum Speed	13.78 - 14.43 ft/sec	14.25
Max. Pendulum Acceleration	7.5 - 10.5 g's	8.3
Time of Max. Pendulum Acceleration		18.4

Calibrated By: Tim Michnay

Date: September 29, 1997

4.0 Upper Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.97
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.51
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.90

Calibrated By: Tim Michnay

Date: October 8, 1997

5.0 Middle Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Displacement at 3.28 ft/sec	.39 - .55 in	.45
Displacement at 6.56 ft/sec	.93 - 1.08 in	.98
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.54
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.95

Calibrated By: Tim Michnay

Date: October 8, 1997

6.0 Lower Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.94
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.47
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.89

Calibrated By: Tim Michnay

Date: October 8, 1997

7.0 Abdomen Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	37%
Probe Speed	20.34 - 20.99 ft/sec	20.86
Maximum Impact Force	2136 - 2495 lbs	2304
Time of Maximum Force	8.8 - 10.4 ms	9.4
Max. Total Abdomen Force	1326 - 1776 lbs	1404
Time of Max. Total Force	8.5 - 10.1 ms	9.4

Calibrated By: Tim Michnay

Date: September 29, 1997

8.0 Lumbar Spine Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	23%
Pendulum Speed	19.52 - 20.17 ft/sec	19.78
Max. Pendulum Acceleration		-30.55
Time Max. Pend. Acceleration		10.50
Maximum Flexion Angle	45.0 - 55.0 deg.	50.6
Time of Max. Flexion Angle	39.0 - 53.0 ms	50.7
Maximum Angle Theta (A)	31.0 - 35.0 deg	33.8
Time of Max. Theta (A)	45.0 - 55.0 ms	51.0
Maximum Angle Theta (B)	27.0 - 31.0 deg.	30.6
Time of Max. Theta (B)	45.0 - 55.0 ms	48.4

Calibrated By: First Technology Safety Systems

Date: October 2, 1997

9.0 Pelvis Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	36%
Pendulum Speed	13.77 - 14.43 ft/sec	14.27
Maximum Impactor Force	989 - 1214 lbs	1202
Time of Max. Impactor Force	10.3 - 15.5 ms	14.1
Maximum Pubic Force	233.8 - 368.7 lbs	331.2
Time of Max. Pubic Force	9.9 - 15.9 ms	15.7

Calibrated By: Tim Michnay

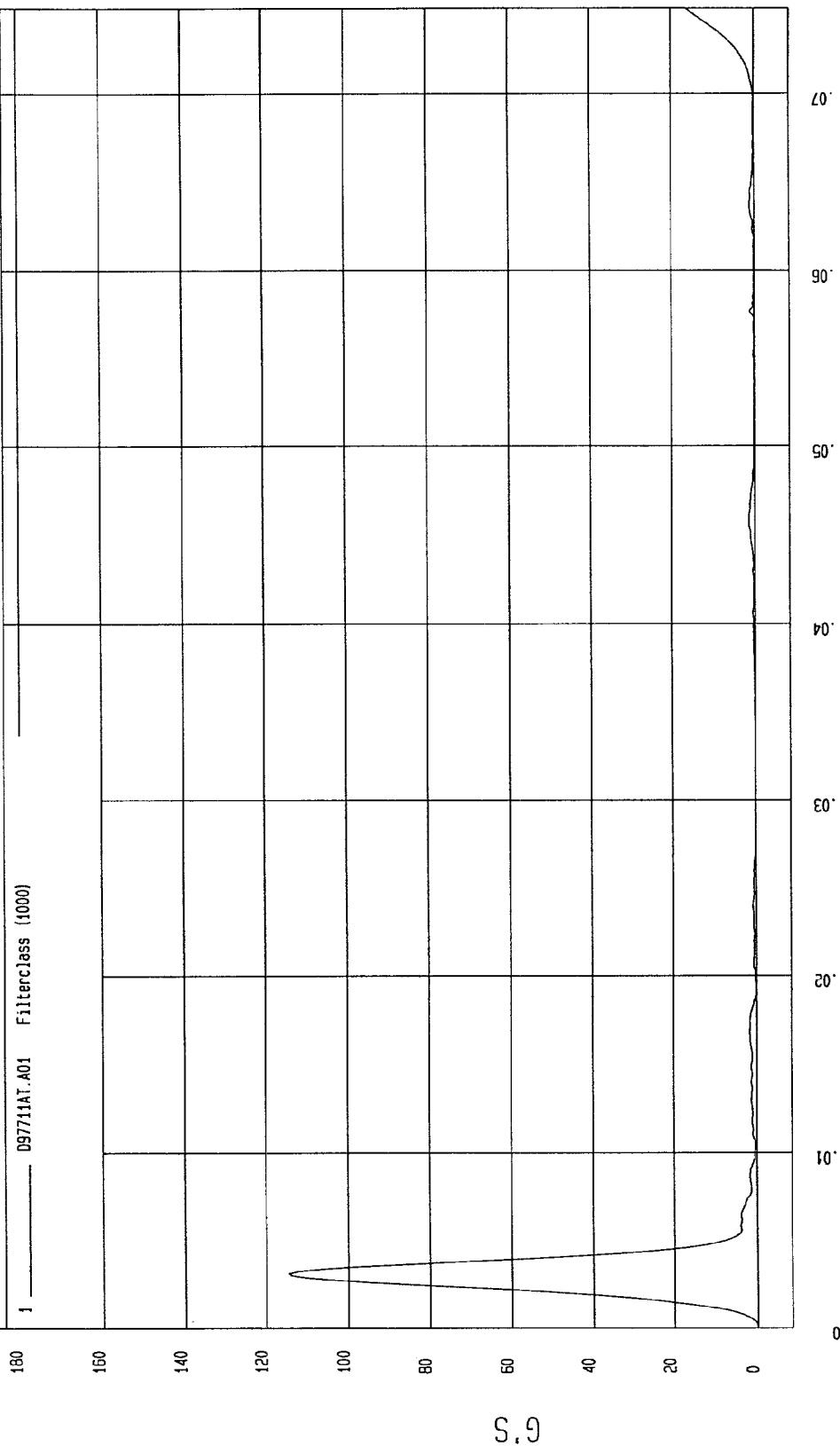
Date: September 29, 1997

TEST: DUMMY CALIBRATION - HEAD DROP TEST DATE: 10-08-1997 - 17:39:43

COMPONENT: DUMMY # E1-213

Minimum = 4.42E-02 G'S at 53.6 msec Maximum = 114.55 G'S at 3.12 msec

PEAK RESULTANT ACCELERATION



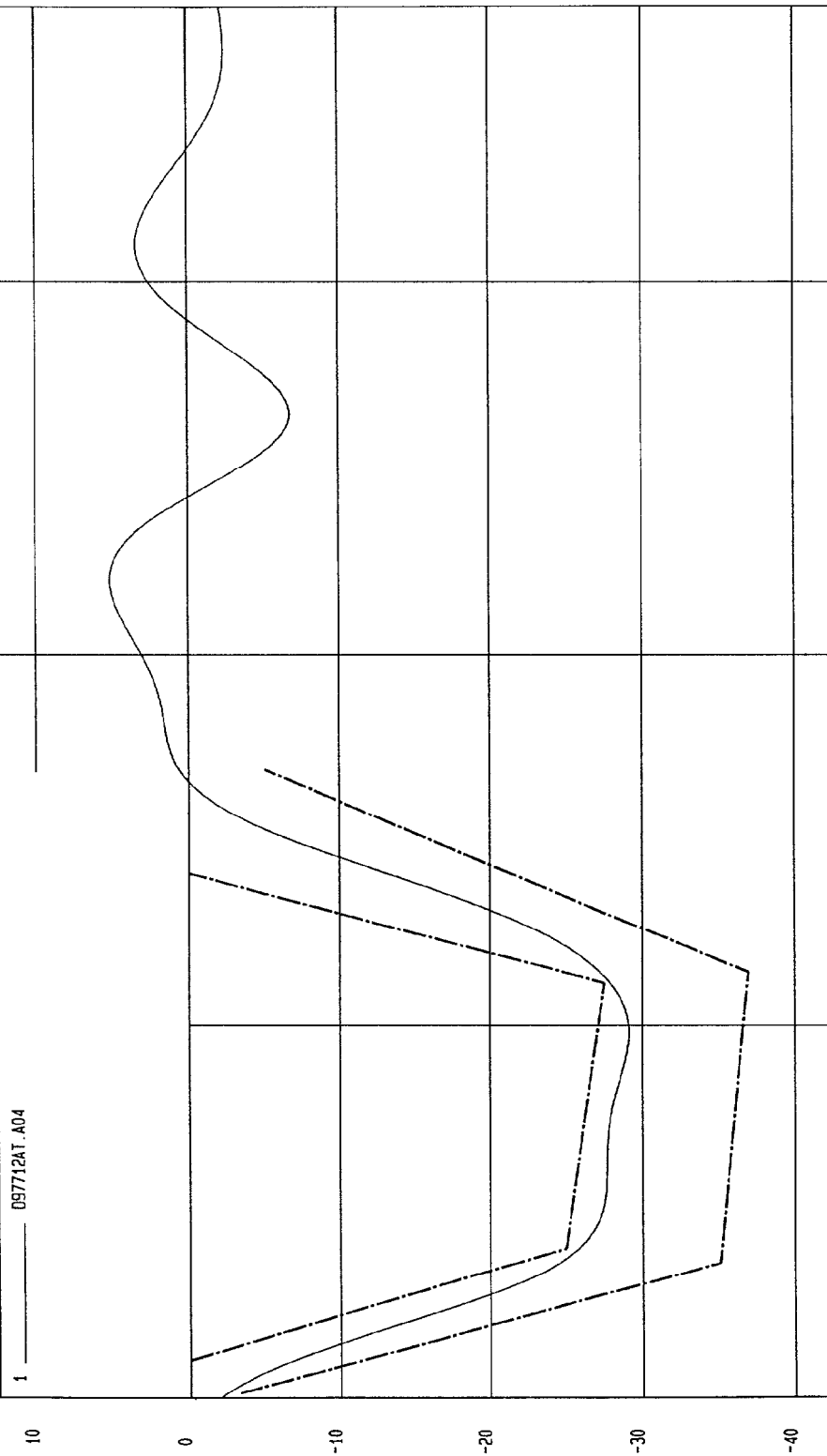
WSA Research
10-08-1997 17:40

TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 10-08-1997 - 15:26

COMPONENT: DUMMY # E1-213 Velocity: 10.991 FT/SEC 3.35 M/SEC

Minimum = -29.14 G'S at 9.85 msec
Maximum = 5.17 G'S at 48.9 msec

PENDULUM ACCELERATION



TIME (SECONDS)

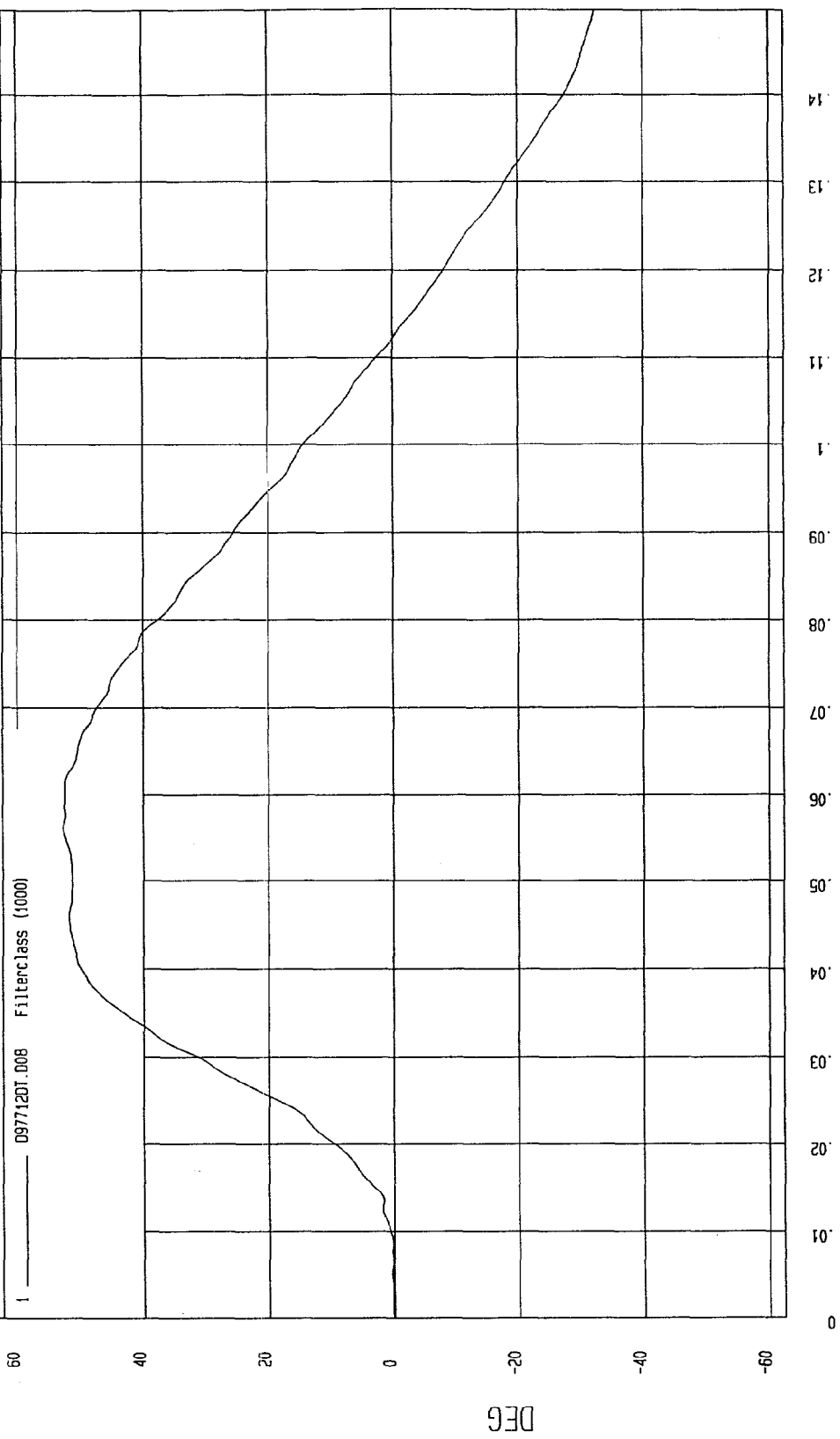
MCA Research
10-08-1997 15:31

TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 10-08-1997 - 15:26

COMPONENT: DUMMY # E1-213 Velocity: 10.99 FT/SEC 3.35 M/SEC

Minimum = -33.06 DEG at 155. msec Maximum = 52.79 DEG at 56.1 msec

FLEXION ANGLE



MSA Research
10-08-1997 15:31

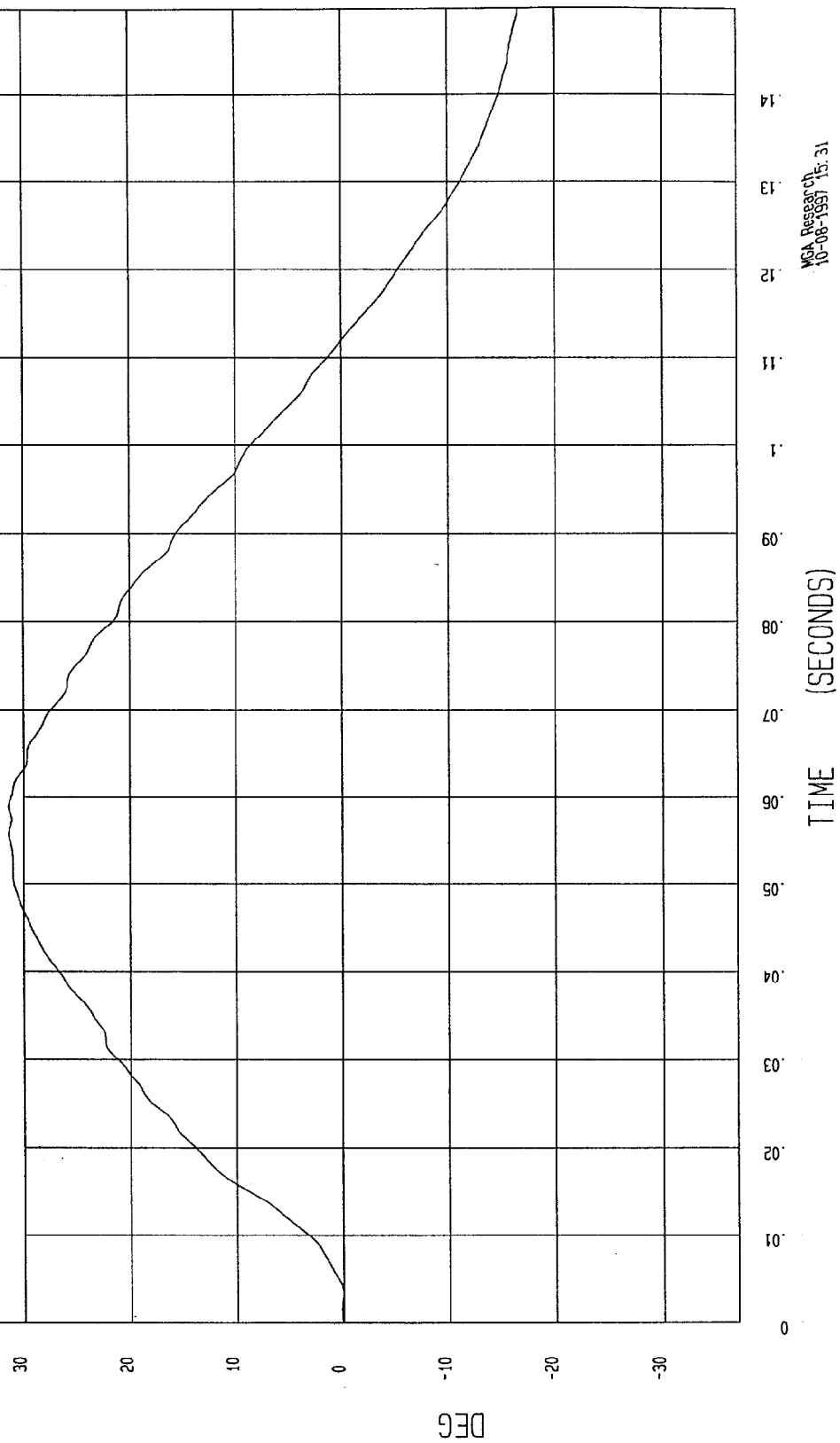
TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 10-08-1997 - 15: 26

COMPONENT: DUMMY # E1-213 Velocity: 10.99 FT/SEC 3.35 M/SEC

Minimum = -16.99 DEG at 155. msec Maximum = 31.38 DEG at 58.9 msec

THETA A

1 09771207.D05 Filterclass (4000)



MGA Research Corp.
10-08-1997 15: 31

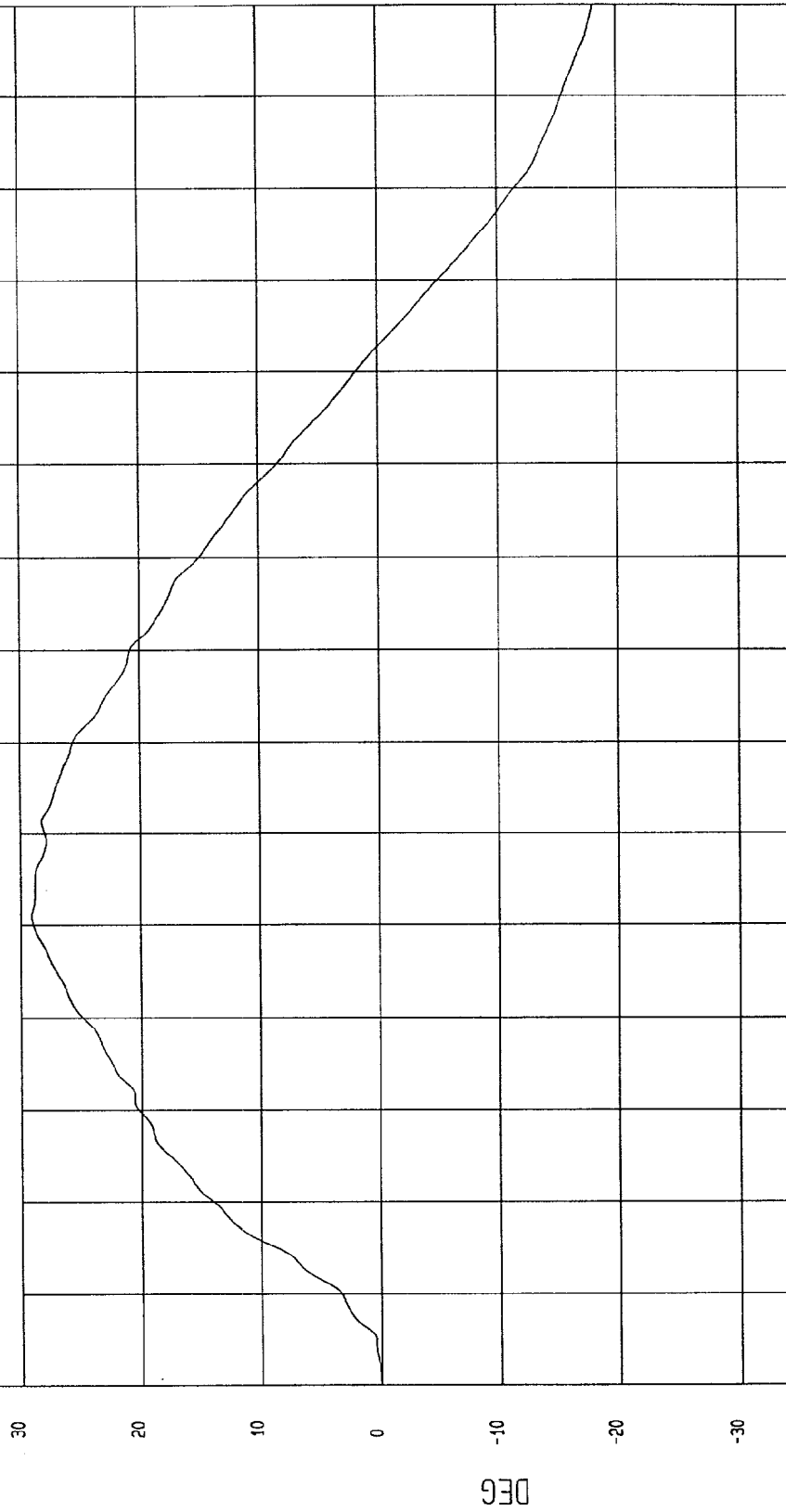
TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 10-08-1997 - 15: 26

COMPONENT: DUMMY # E1-213 Velocity: 10.99 FT/SEC 3.35 M/SEC

Minimum = -18.44 DEG at 159. msec Maximum = 29.11 DEG at 50.9 msec

THETA B

1 0977120T.D06 Filterclass (1000)



TIME (SECONDS)

WEA Research
10-08-1997 15: 32

TEST: SHOULDER IMPACT

TEST DATE: 09-29-1997 - 14:21:22

COMPONENT: DUMMY # E1-213

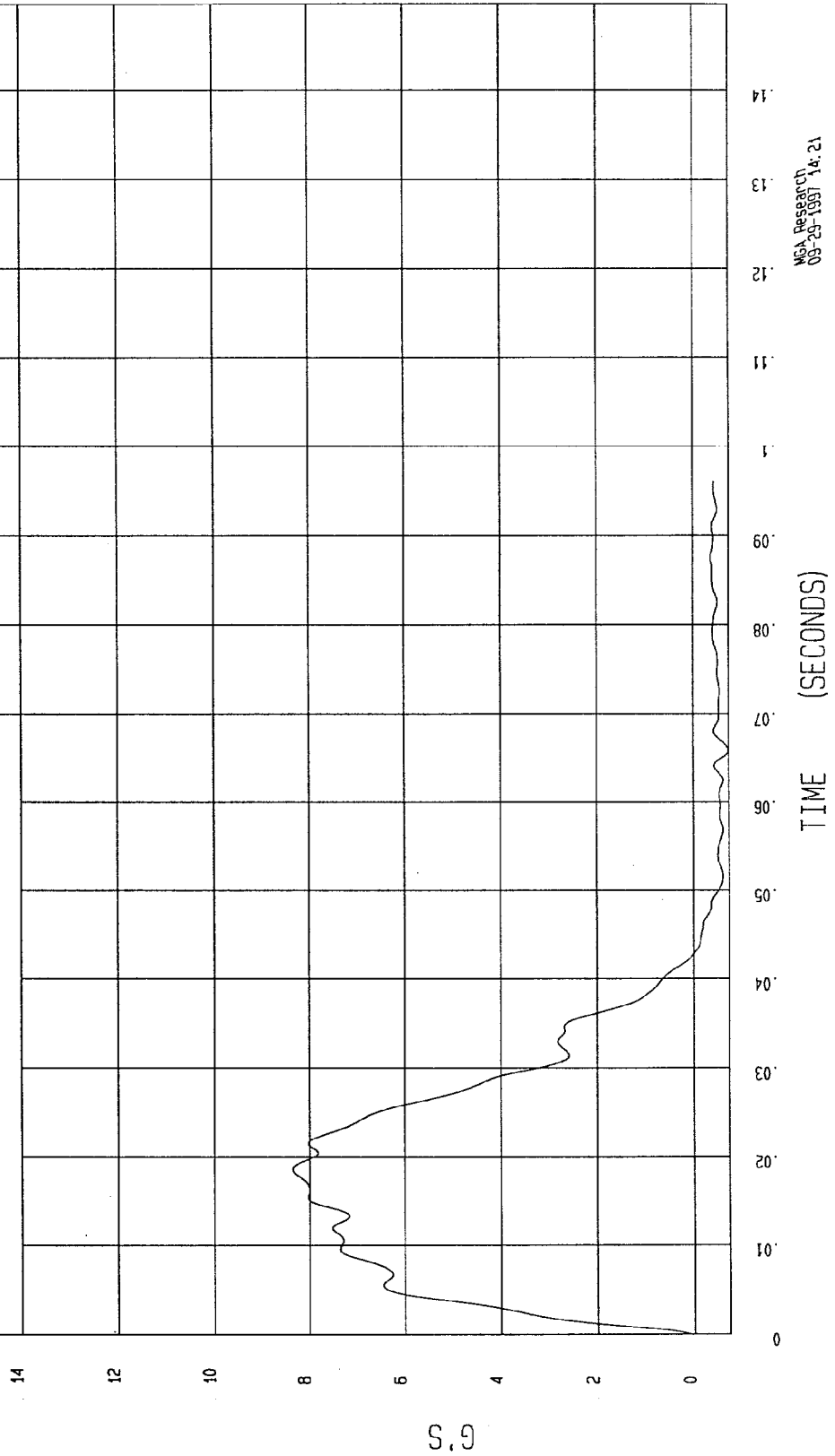
Velocity: 14.25 FT/SEC 4.34 M/SEC

Minimum = -.74 G'S at 65.8 msec

Maximum = 8.33 G'S at 18.4 msec

PENDULUM ACCELERATION

1 _____ D97713AT.A01 Filterclass (1000)



MCA Research
09-29-1997 14:21

TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 13:57

COMPONENT: DUMMY # E1-213 Velocity: 3.28 FT/SEC 1 M/SEC

Minimum = -4.81E-04 IN at 13.1 msec Maximum = .44 IN at 59.9 msec

UPPER RIB DISPLACEMENT

1 ——— 097714DF.005 Filterclass (1000)

1

.8

.6

.4

.2

0

NI

.12

.11

.1

.09

.08

.07

.06

.05

.04

.03

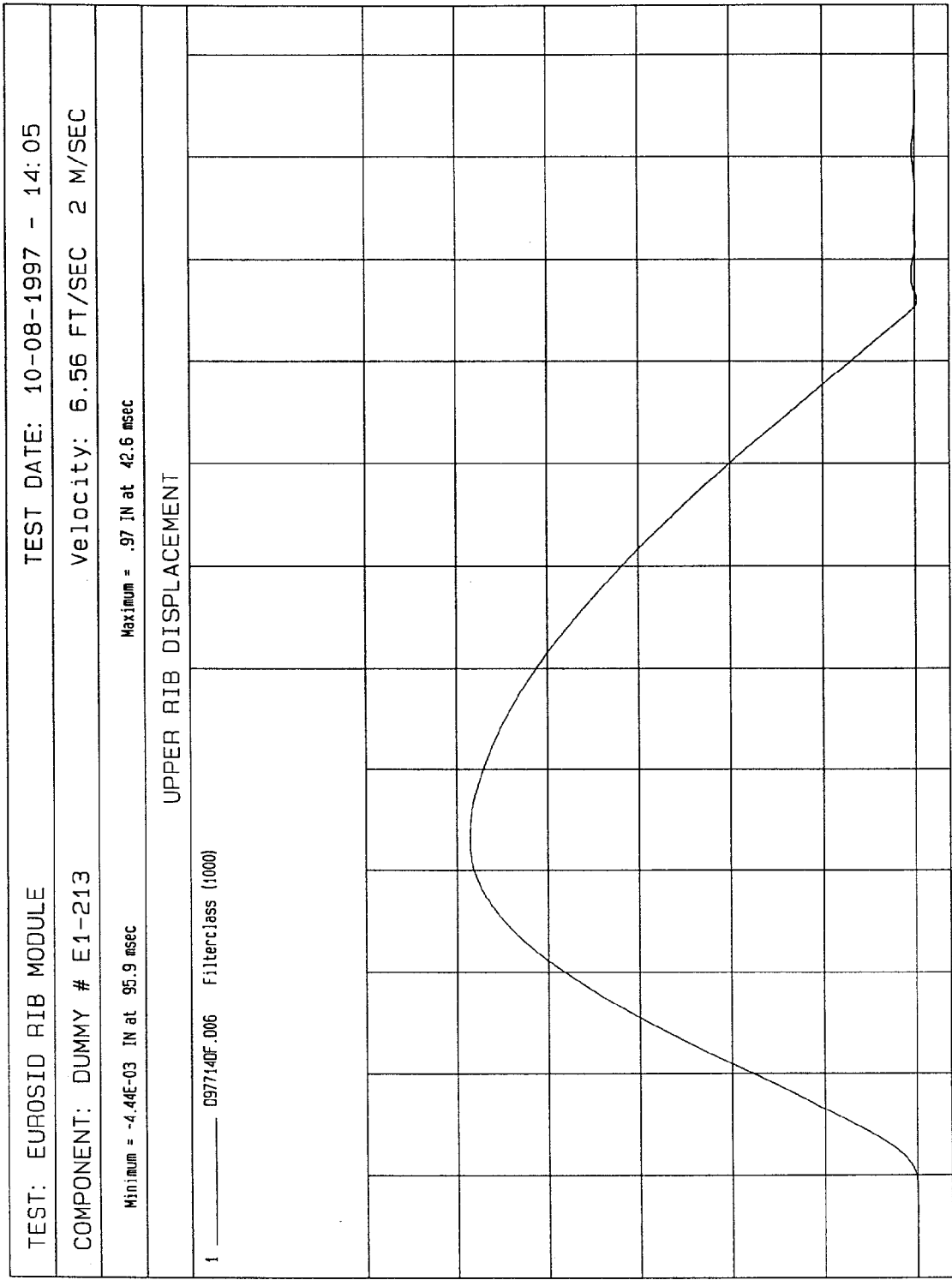
.02

.01

0

TIME (SECONDS)

MCA Research
10-08-1997 15:30



MGA Research
10-08-1997 15:31

TEST: EUROSID RIB MODULE

TEST DATE: 10-08-1997 - 14:15

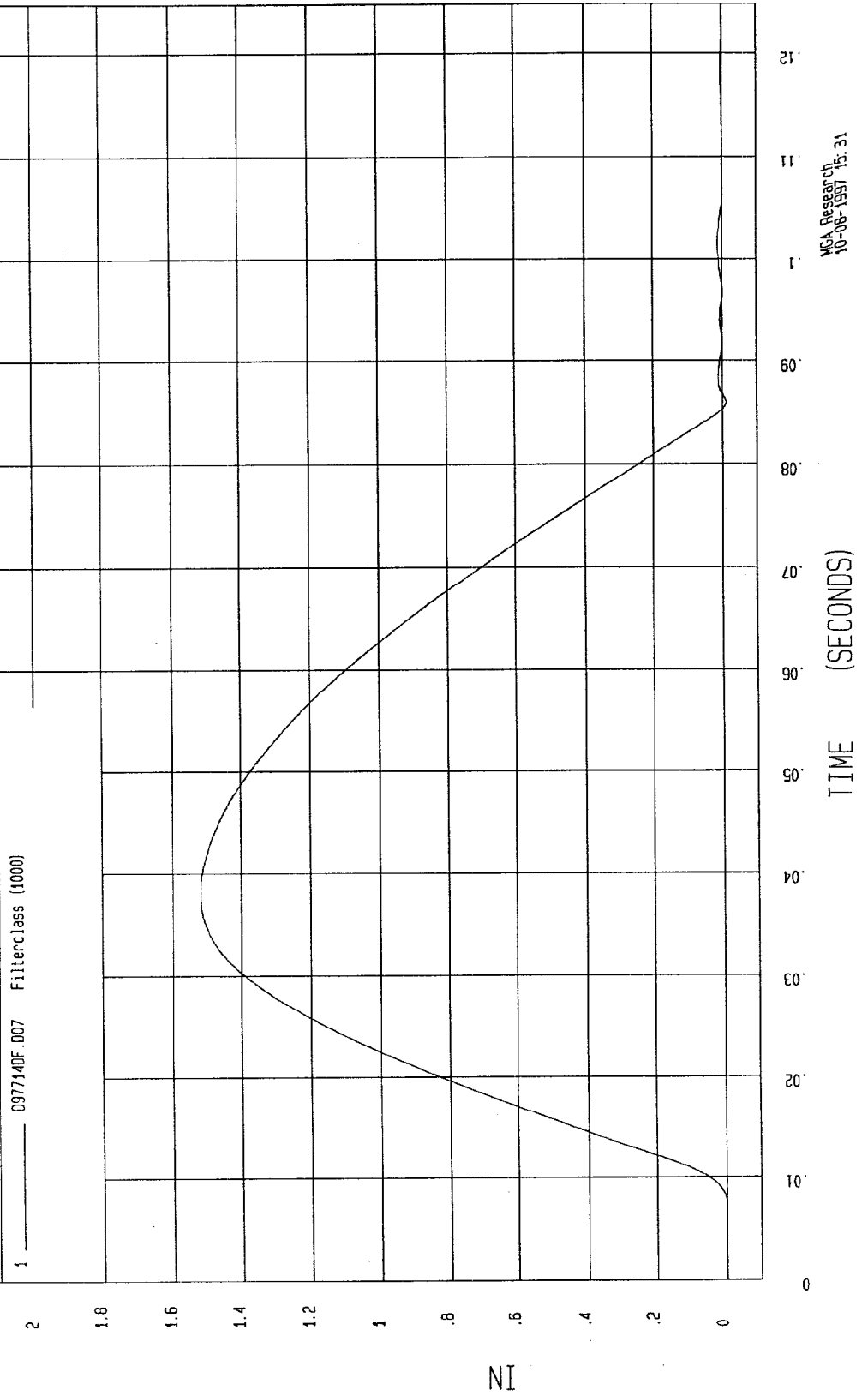
COMPONENT: DUMMY # E1-213

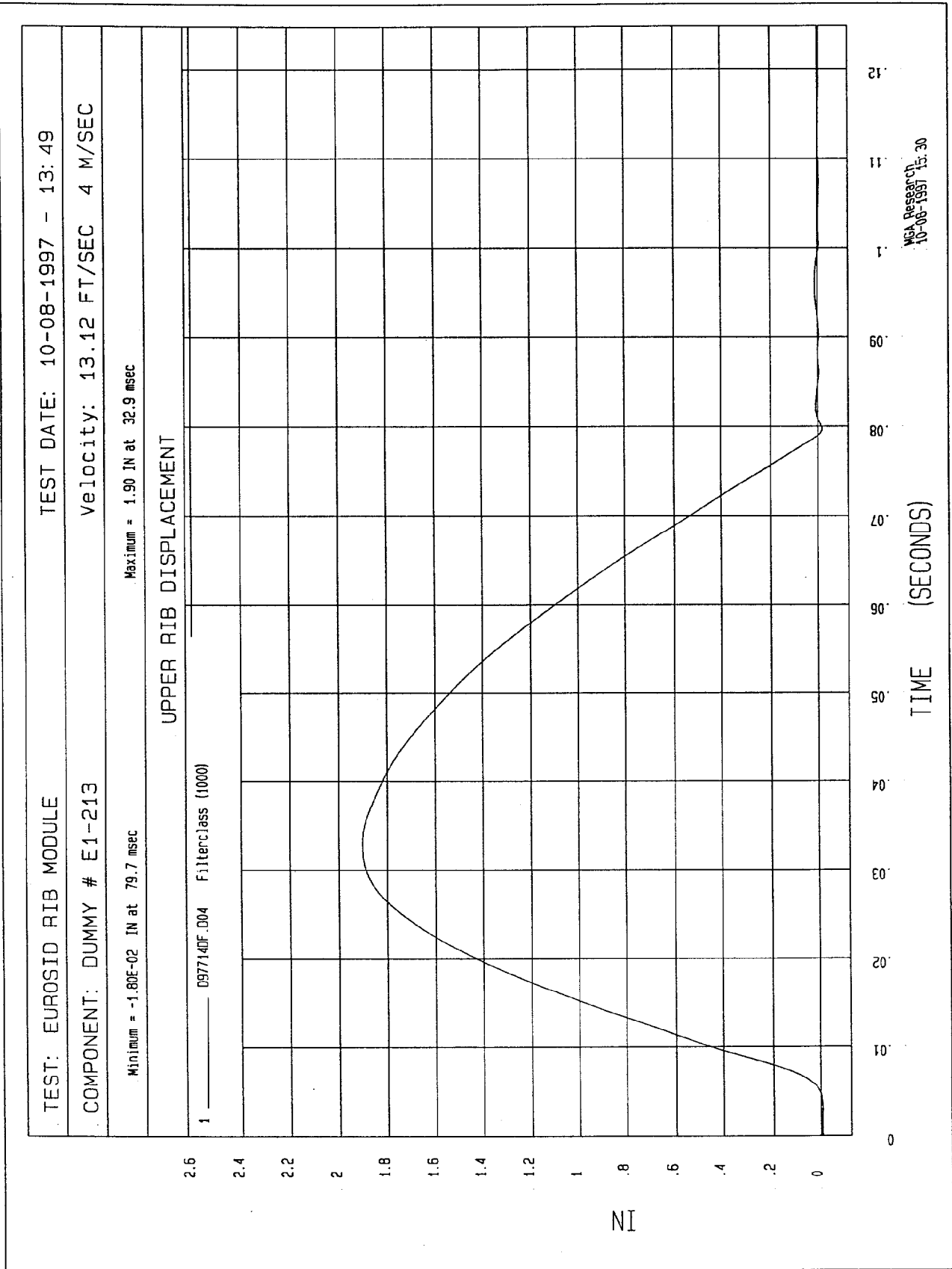
Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -9.79E-03 IN at 85.8 msec

Maximum = 1.51 IN at 38.1 msec

UPPER RIB DISPLACEMENT

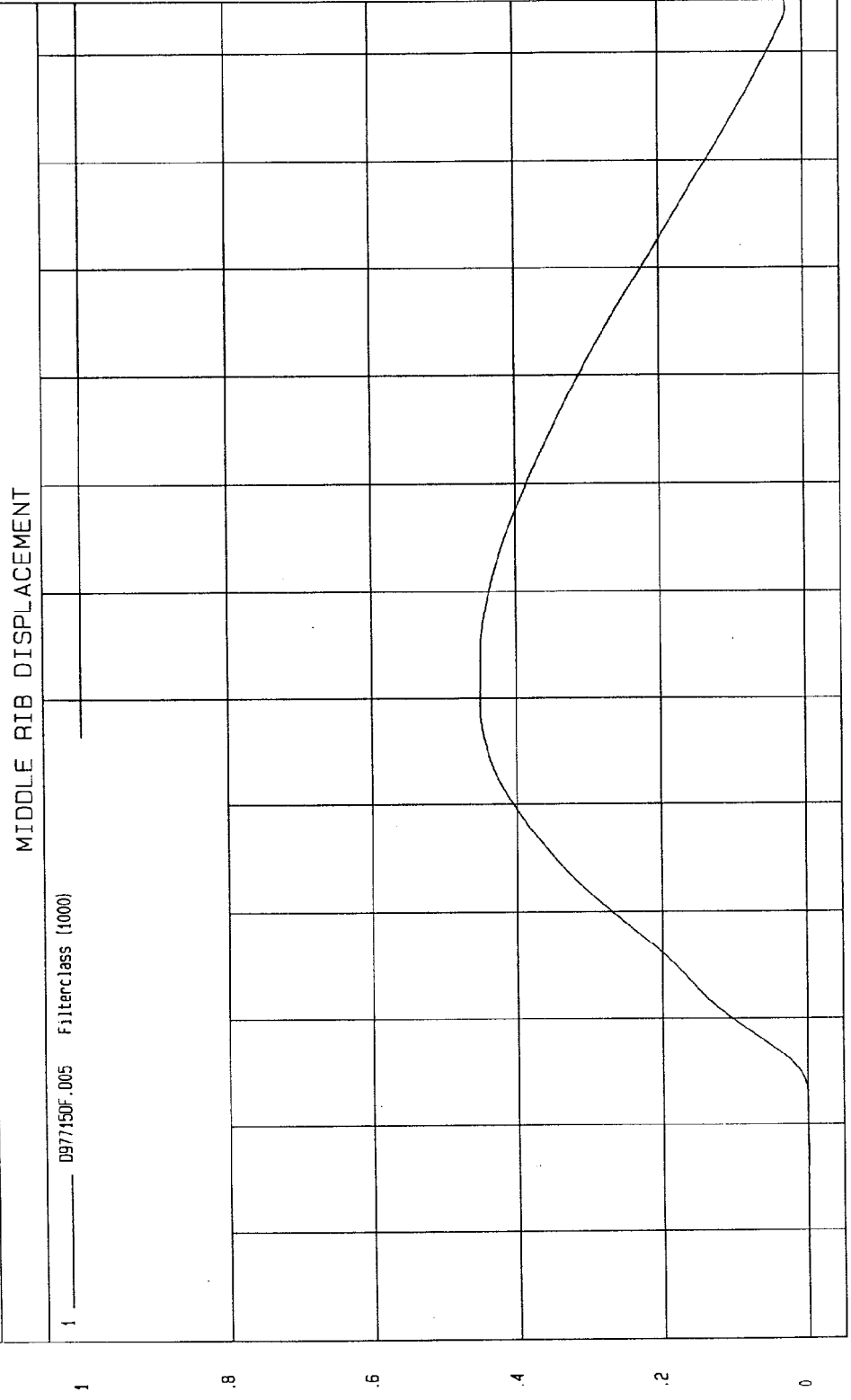




TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 14:37

COMPONENT: DUMMY # E1-213 Velocity: 3.28 FT/SEC 1 M/SEC

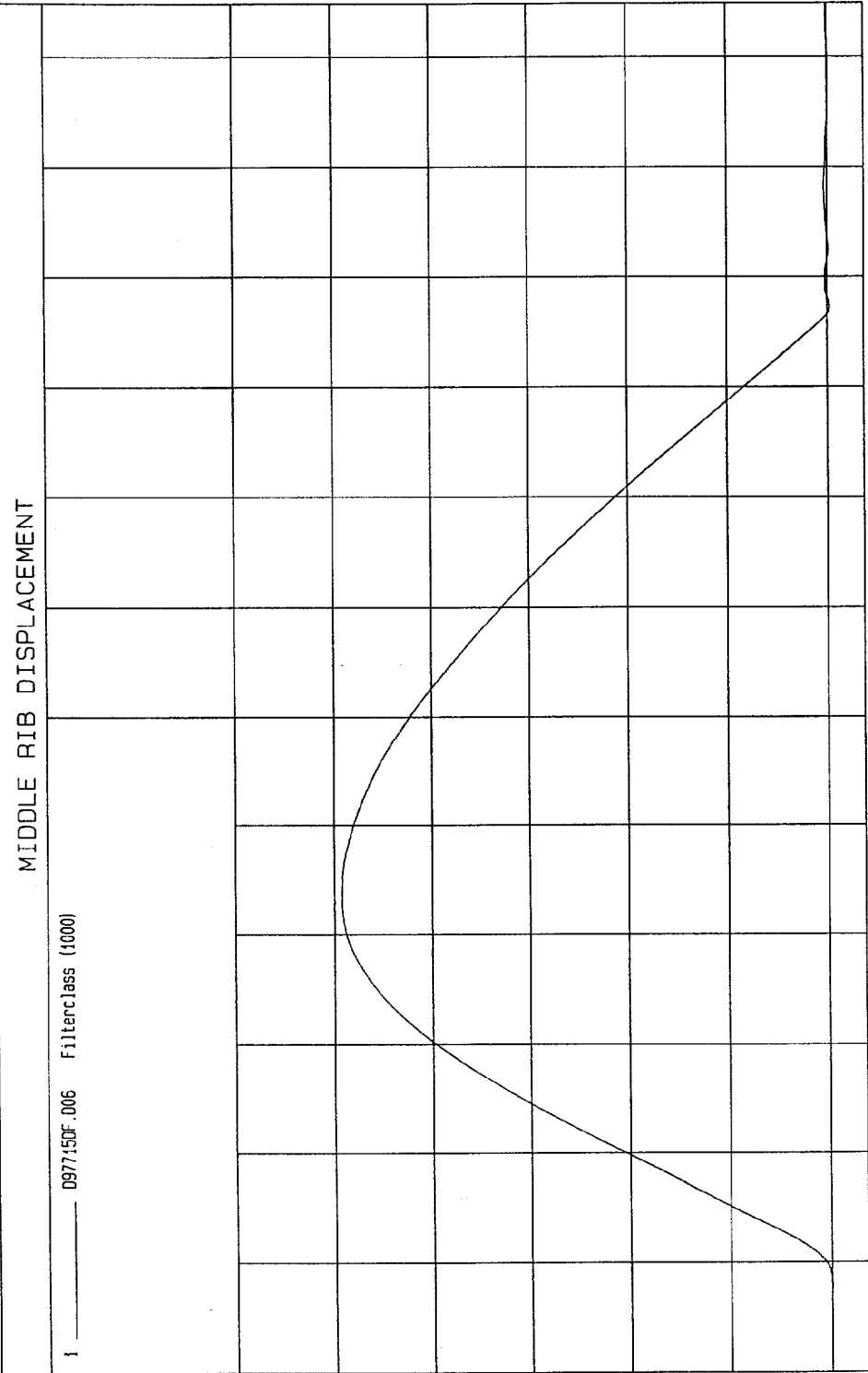
Minimum = -8.56E-04 IN at 16.9 msec Maximum = .45 IN at 59.9 msec



TIME (SECONDS)

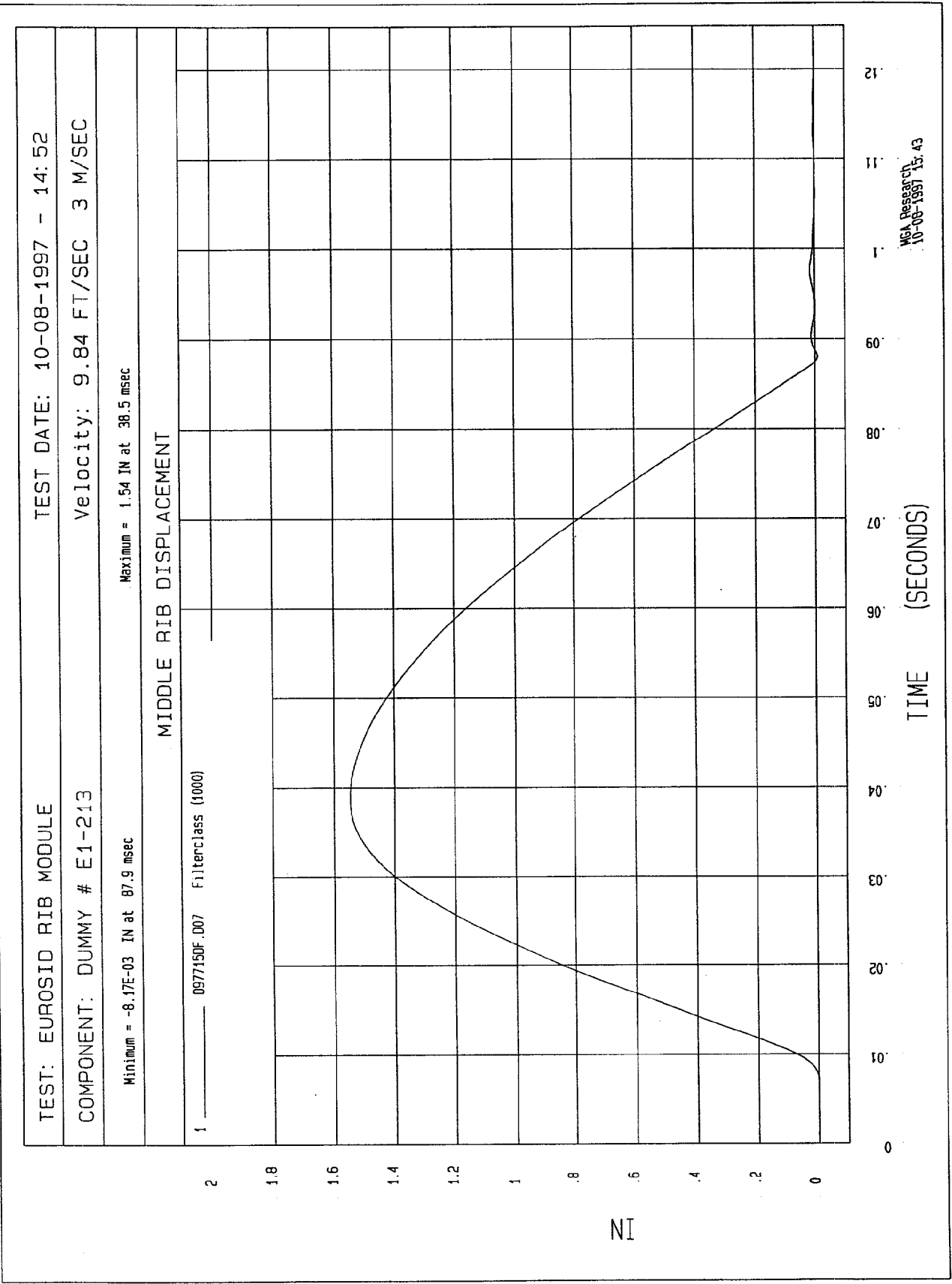
WGA Research
10-08-1997 15:43

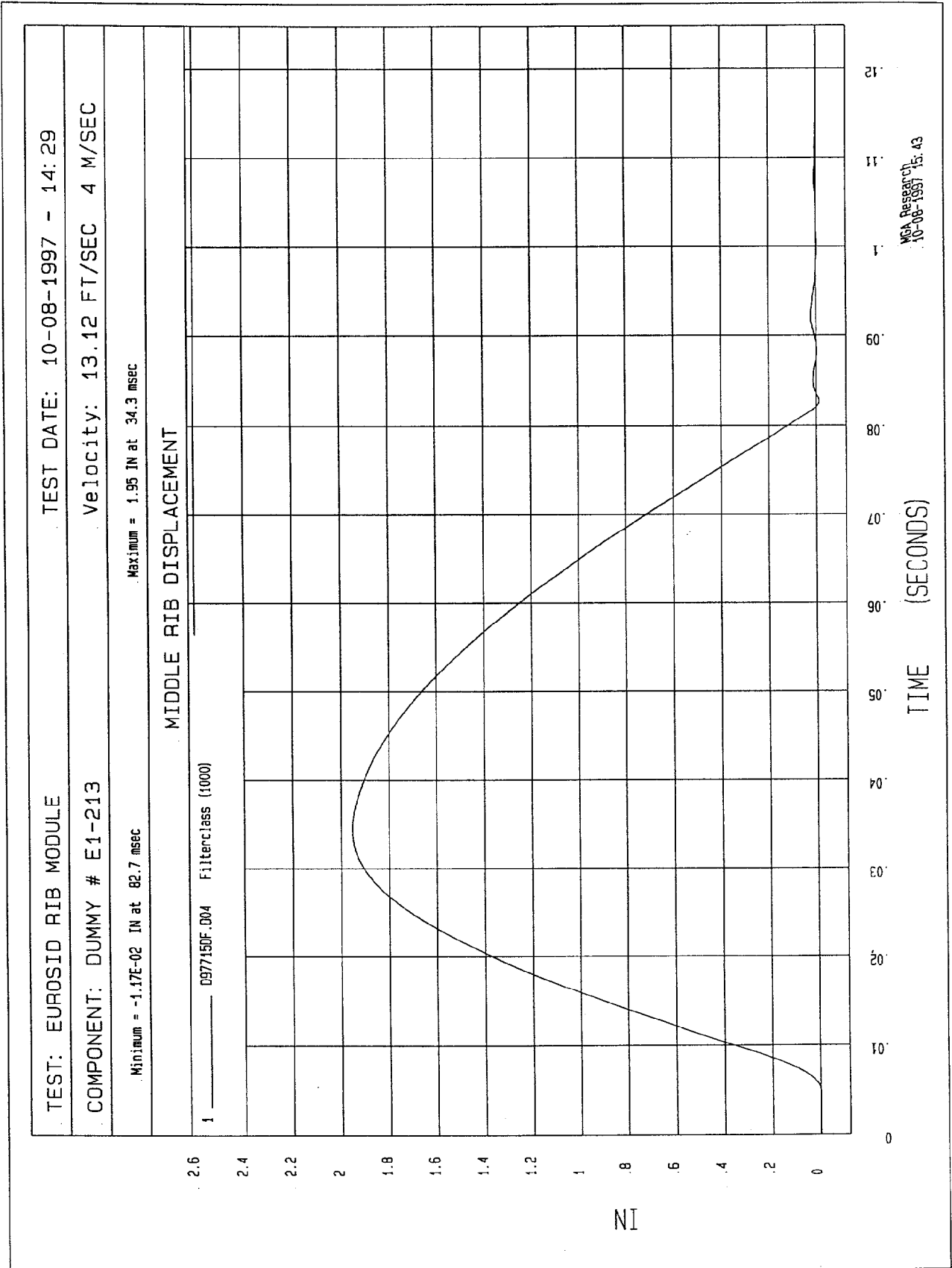
TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 14:46
COMPONENT: DUMMY # E1-213	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -4.69E-03 IN at 97.2 msec	
Maximum = .98 IN at 42.8 msec	

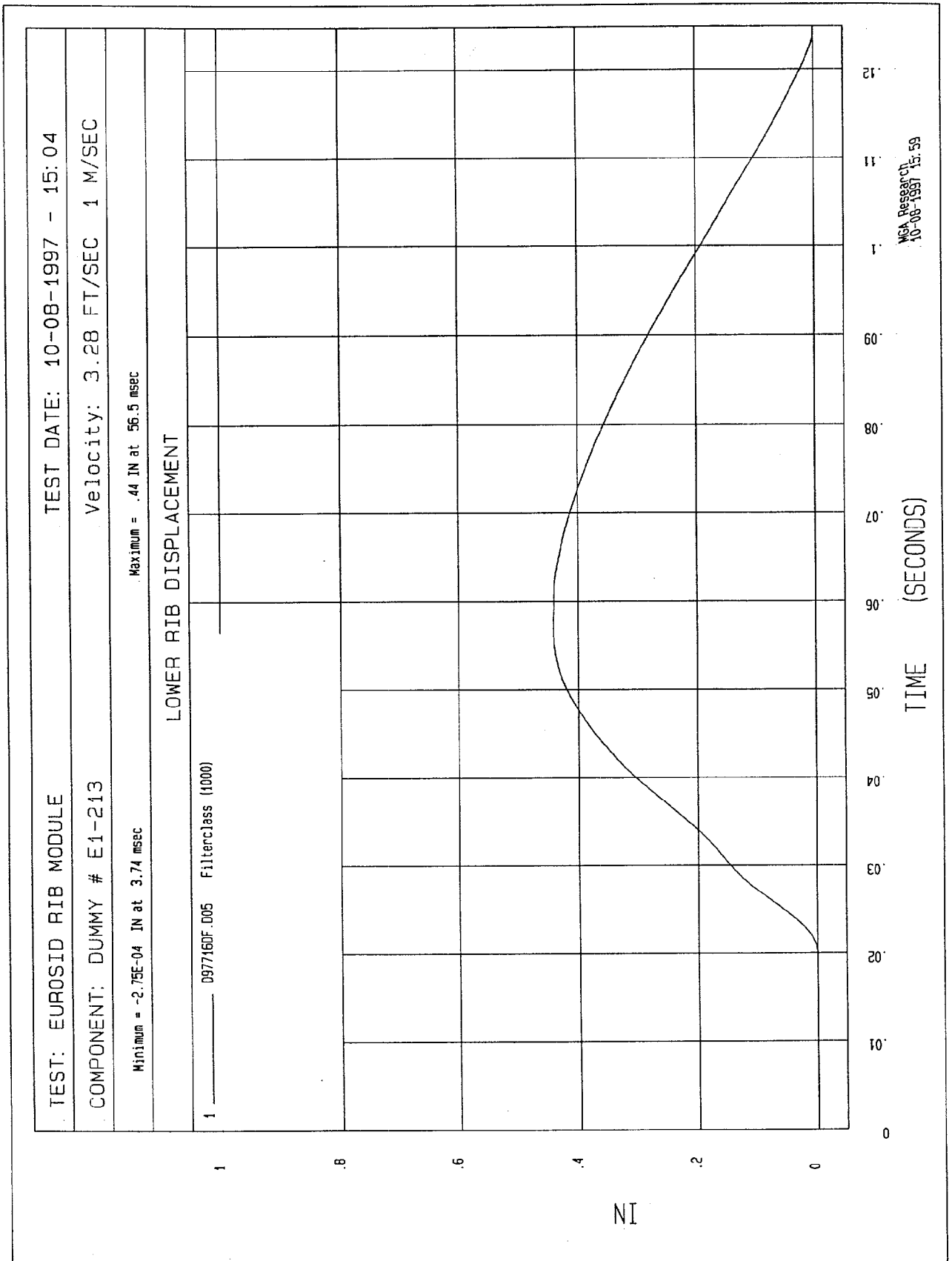


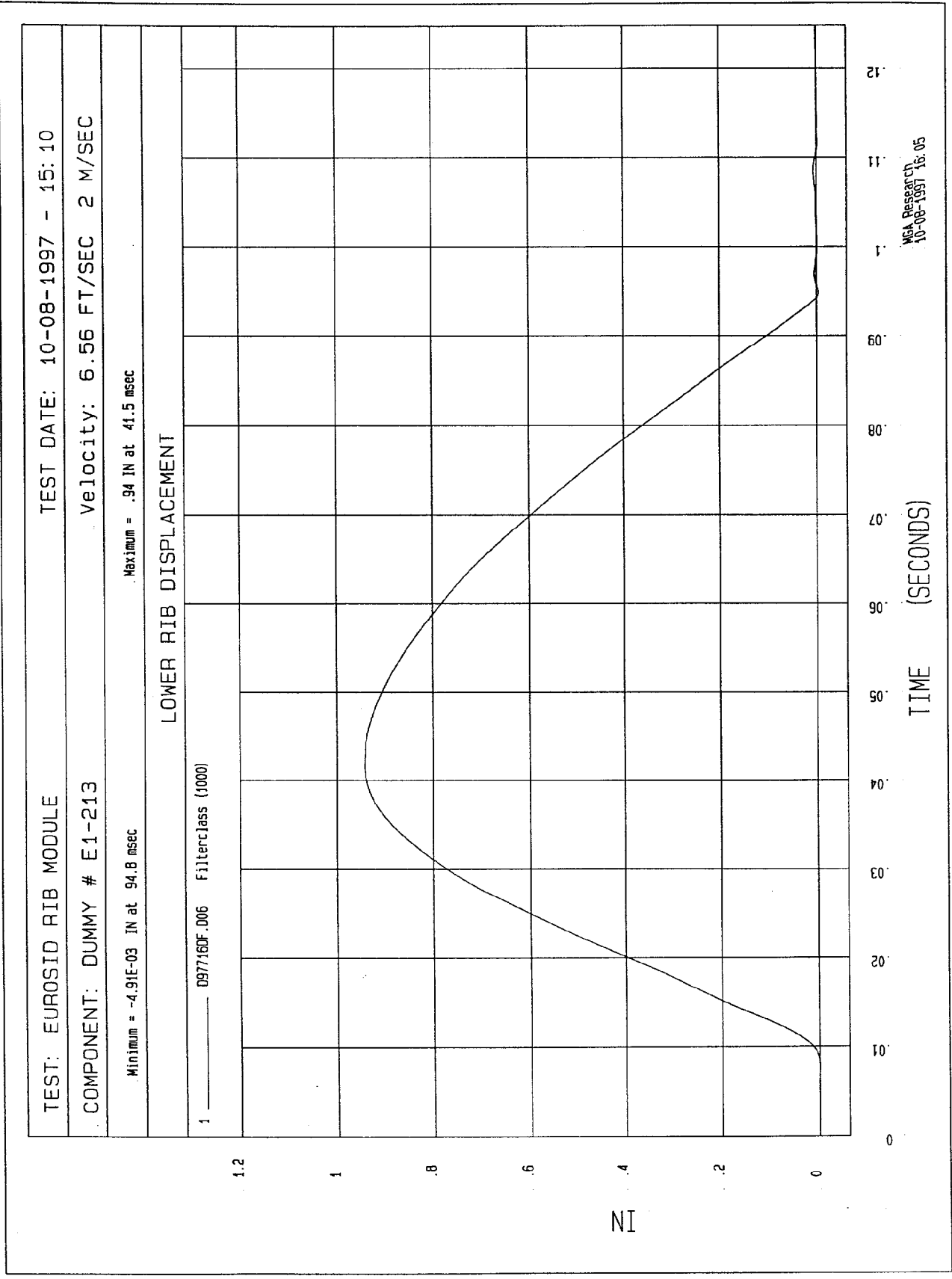
TIME (SECONDS)

MGA Research
10-08-1997 15:43









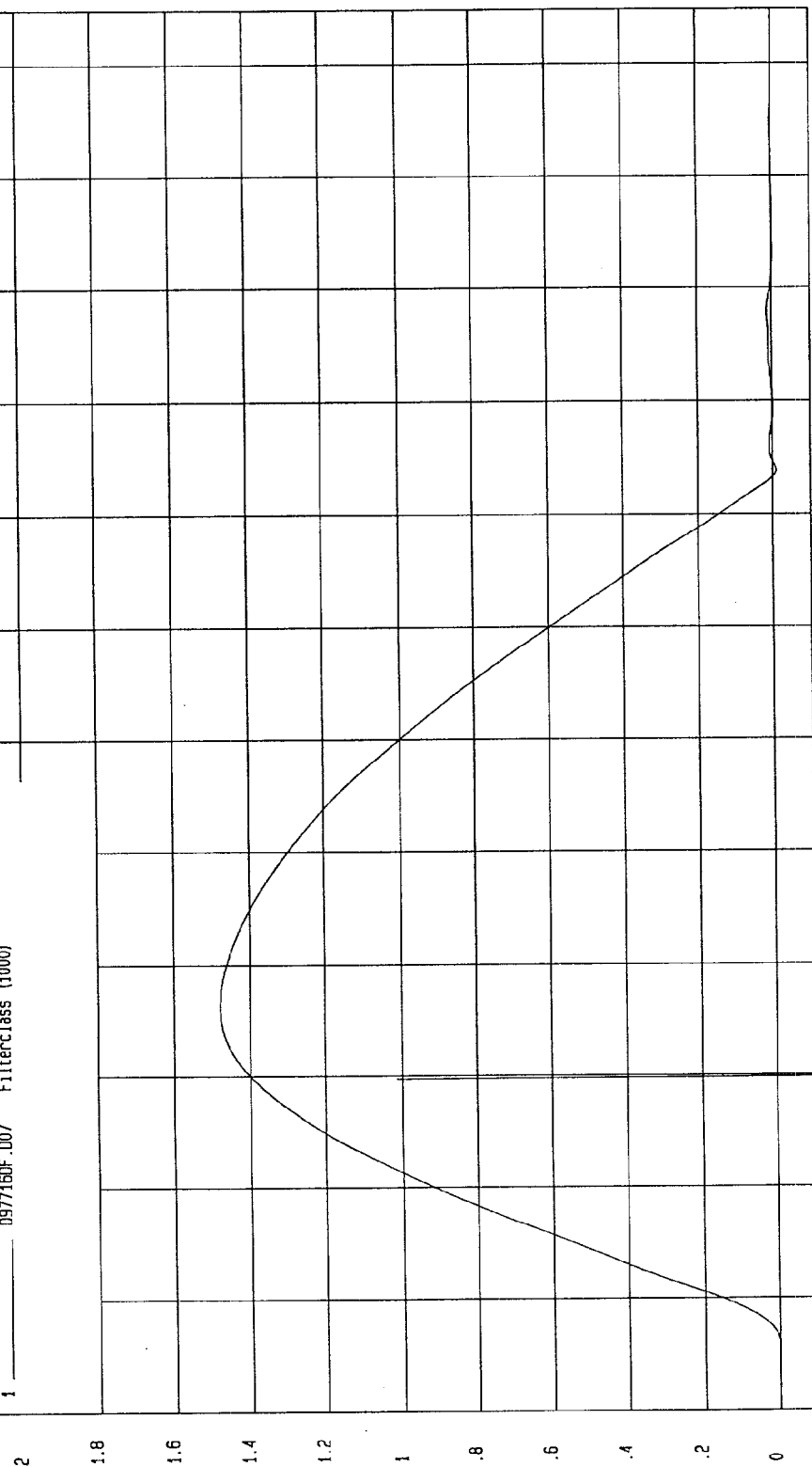
TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 15:21

COMPONENT: DUMMY # E1-213 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -8.87E-03 IN at 83.8 msec Maximum = 1.47 IN at 35.1 msec

LOWER RIB DISPLACEMENT

1 0977160F.D07 Filterclass (1000)

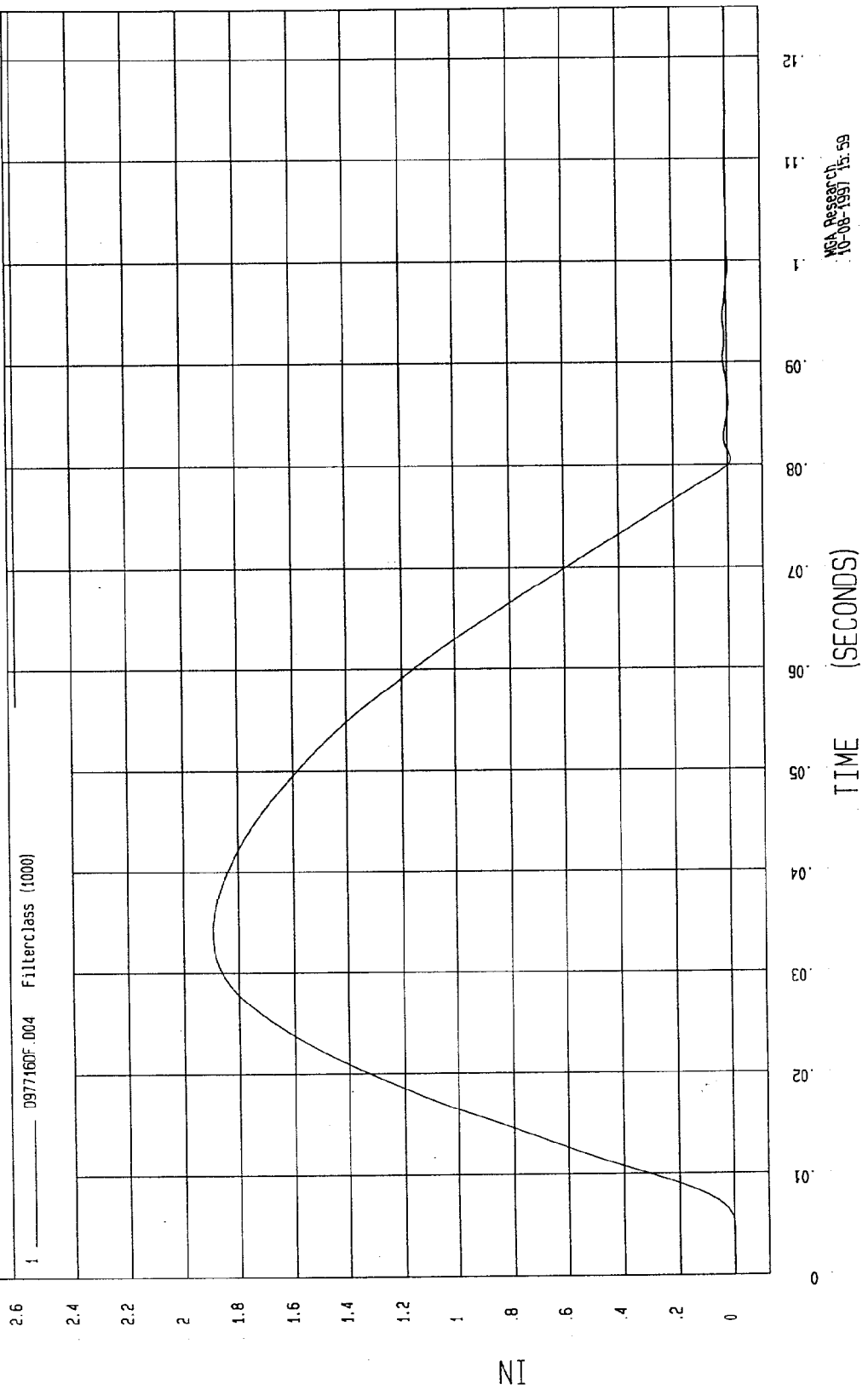


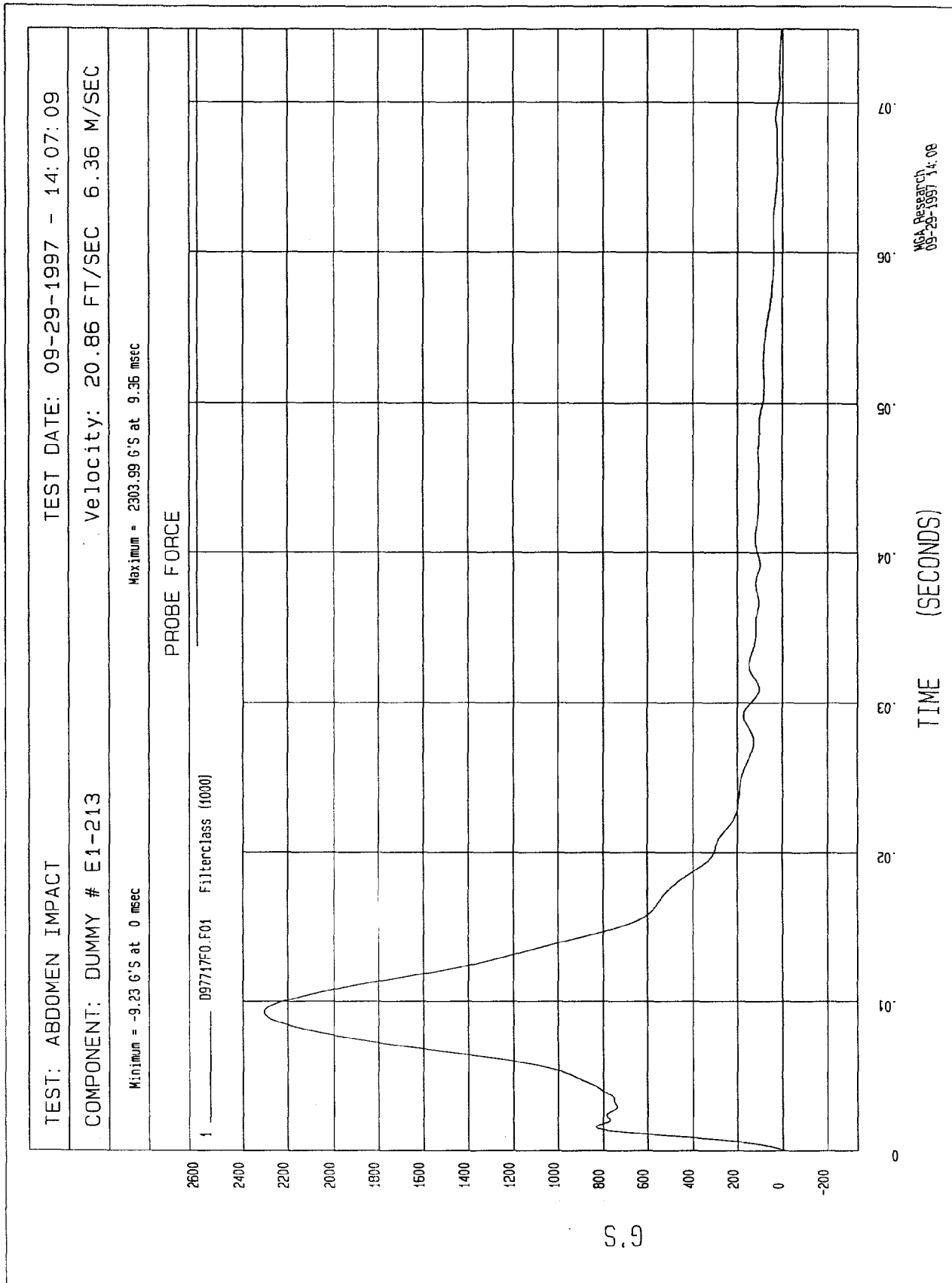
TIME (SECONDS)

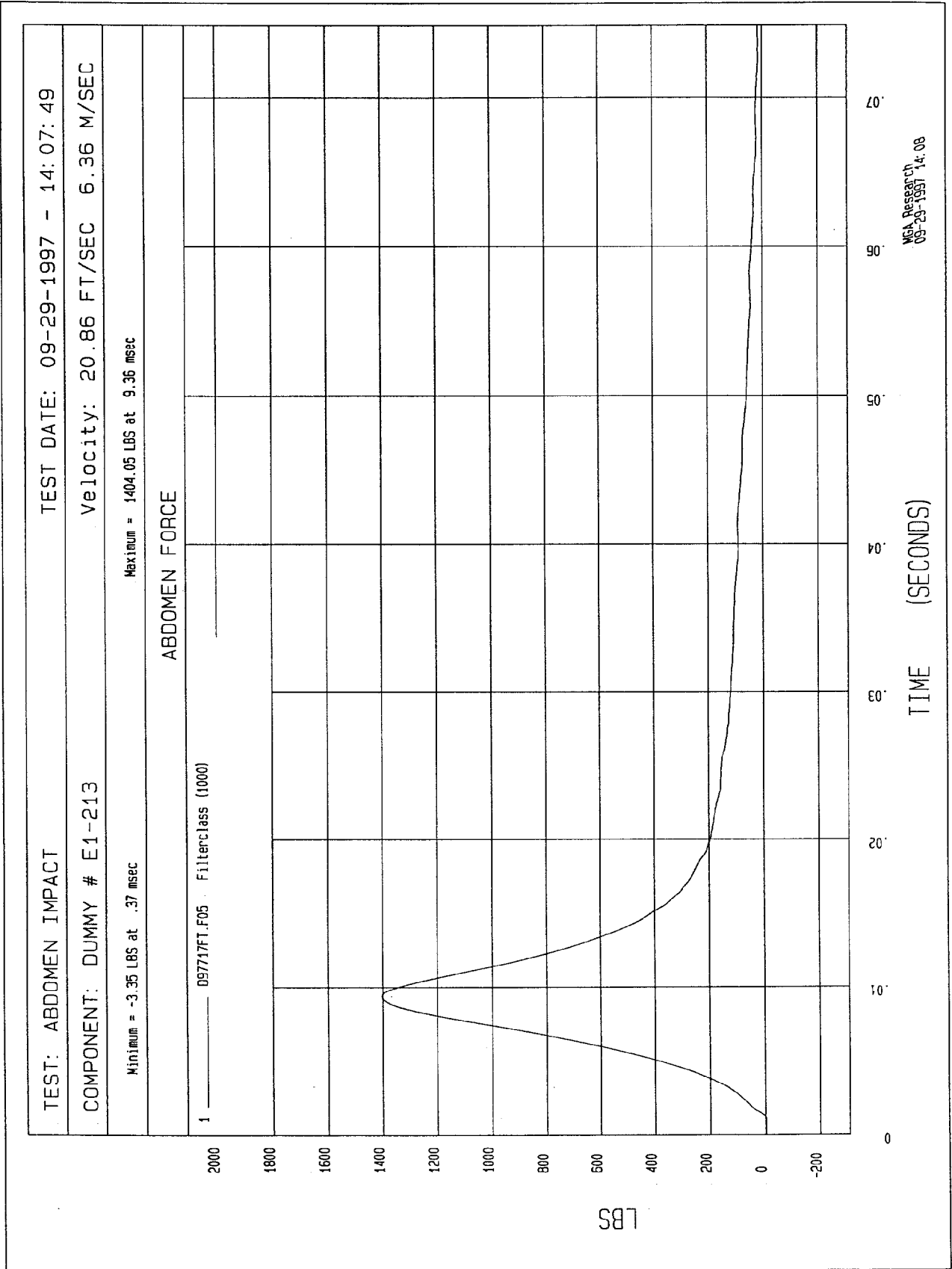
WCA Research
10-08-1997 16:00

TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 14:57
COMPONENT: DUMMY # E1-213	Velocity: 13.12 FT/SEC 4 M/SEC
Minimum = -1.22E-02 IN at 80.5 msec	Maximum = 1.89 IN at 33.9 msec

LOWER RIB DISPLACEMENT







EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SM9794-1

Temperature : 22 deg C

Test number : 20510

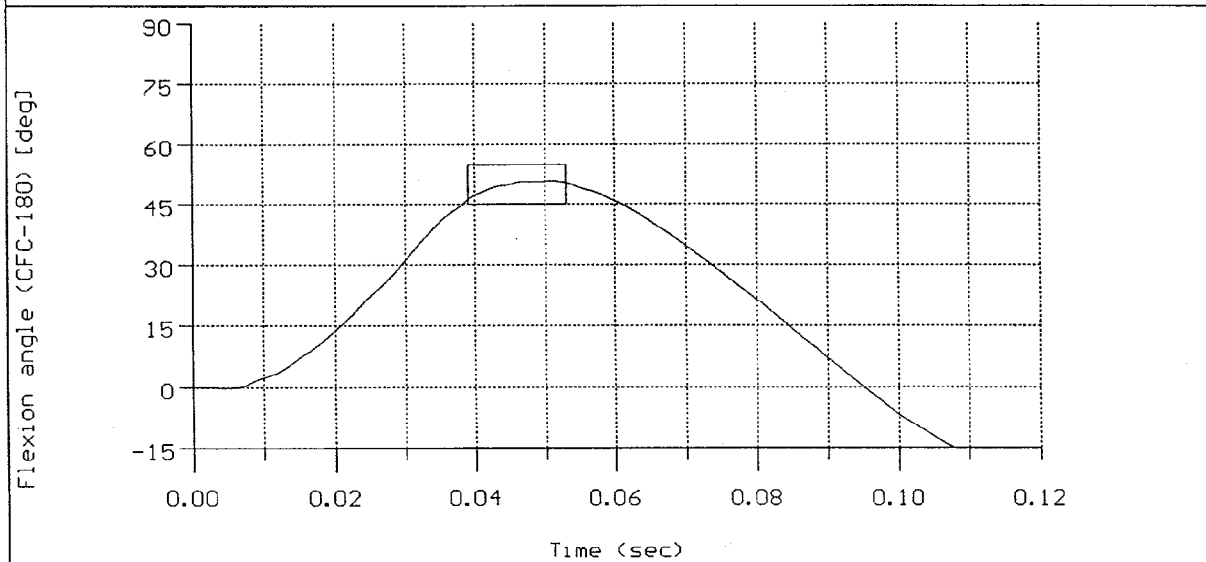
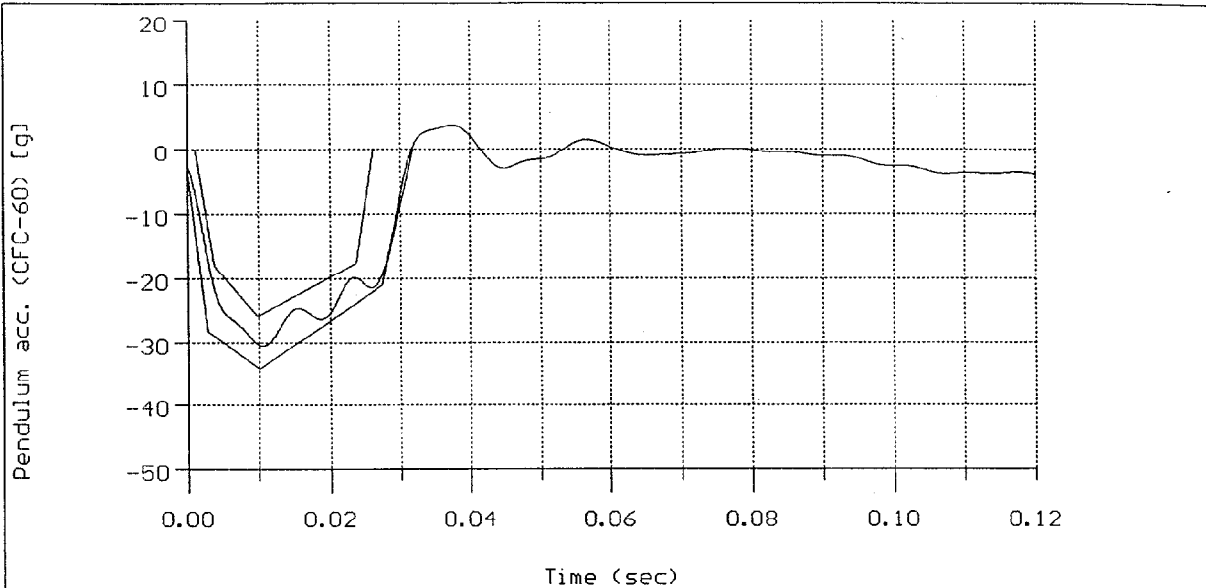
Rel. Humidity : 23 %

Impact side :

Technician : JR

Spine length : 5.25

Test date : 2-OCTOBER-1997



Parameter	Specification	Result	Passed/Failed
Pendulum Speed	5.95 - 6.15 m/s	6.03 m/s	
Maximum pendulum acc.		-30.5 g	
Time of max pend. acc.		10.5 msec	
Maximum flexion angle	45.0 - 55.0 deg	50.6 deg	
Time of max. flex. angle	39.0 - 53.0 msec	50.7 msec	

EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SM9794-1

Temperature : 22 deg C

Test number : 20510

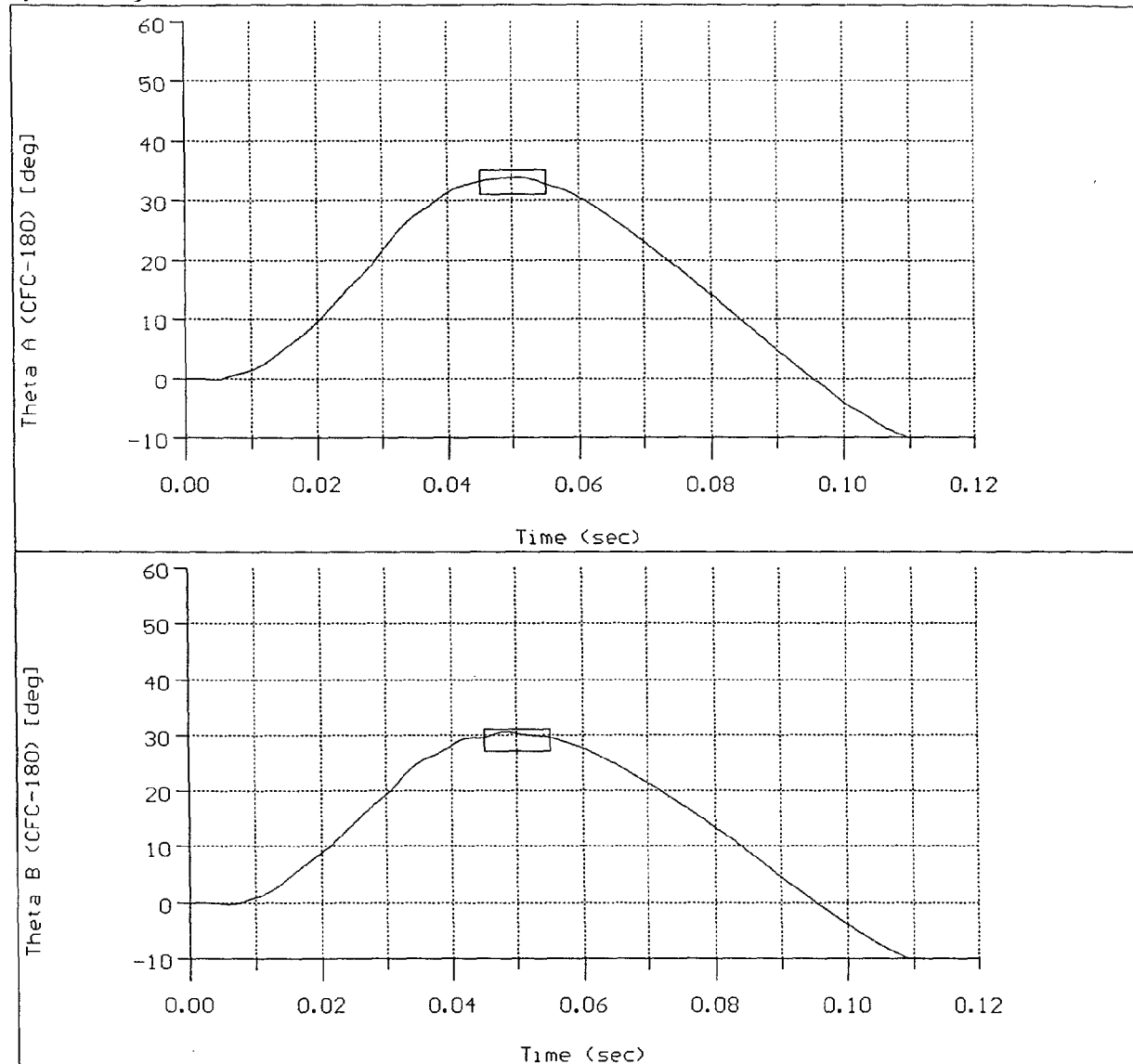
Rel. Humidity : 23 %

Impact side :

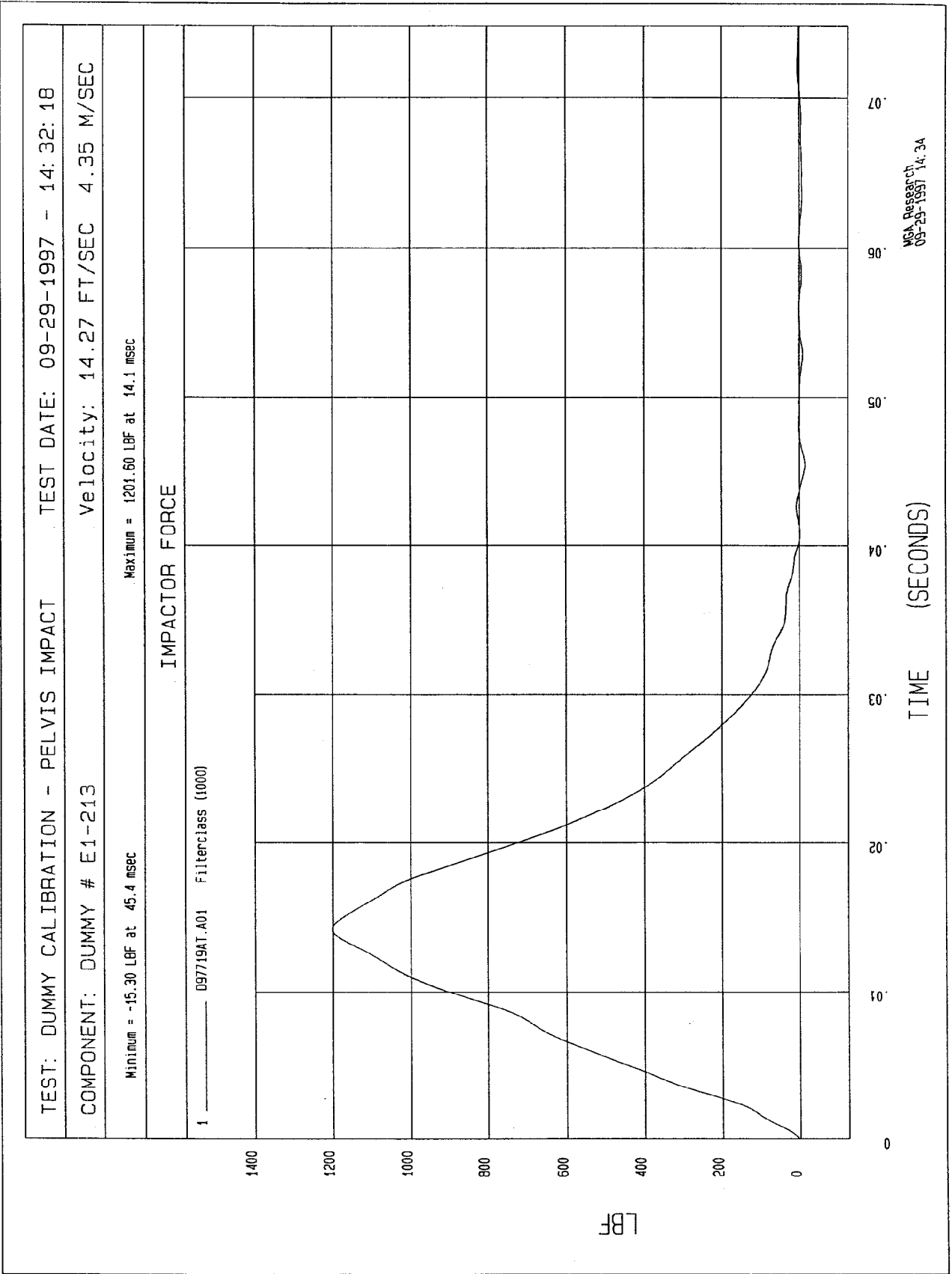
Technician : JR

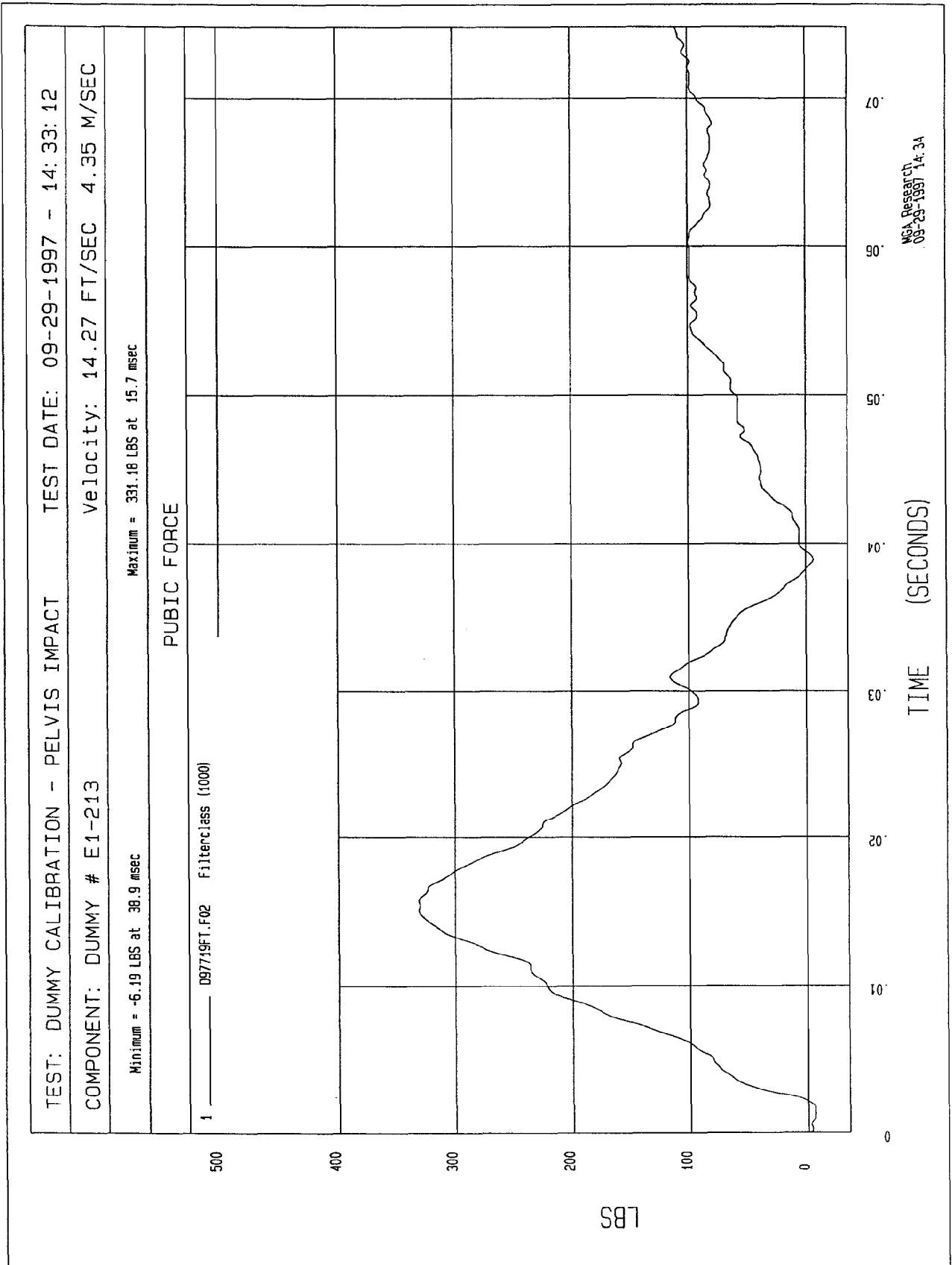
Spine length : 5.25

Test date : 2-OCTOBER-1997

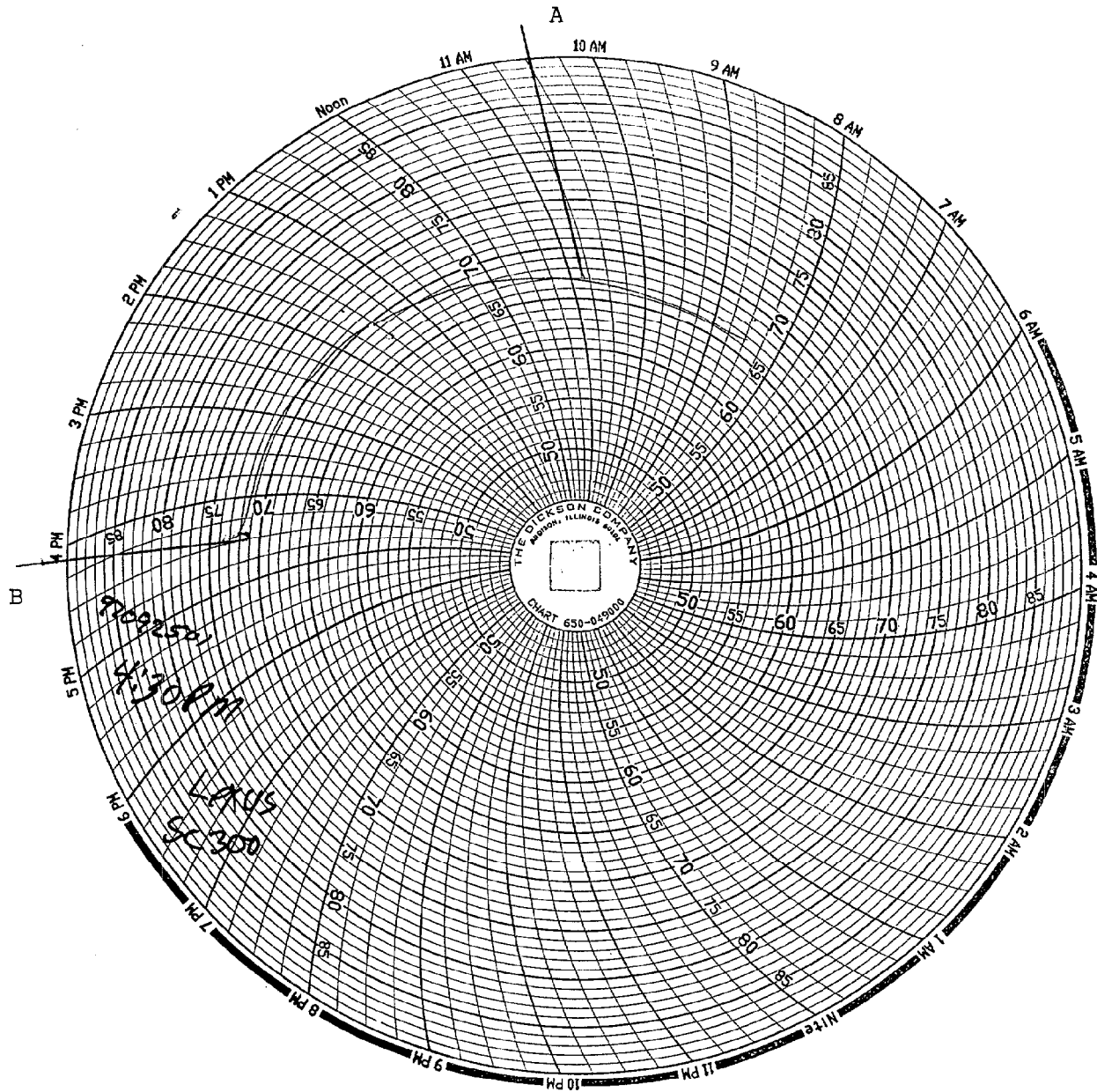


Parameter	Specification	Result	Passed/Failed
Maximum Theta(A)	31.0 - 35.0 deg	33.8 deg	
Time of max. Theta(A)	45.0 - 55.0 msec	51.0 msec	
Maximum Theta(B)	27.0 - 31.0 deg	30.6 deg	
Time of max. Theta(B)	45.0 - 55.0 msec	48.4 msec	





DUMMY AND VEHICLE TEMPERATURE



A = Dummies installed in vehicle
 B = Test conducted

APPENDIX E
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE INSTRUMENT CALIBRATION

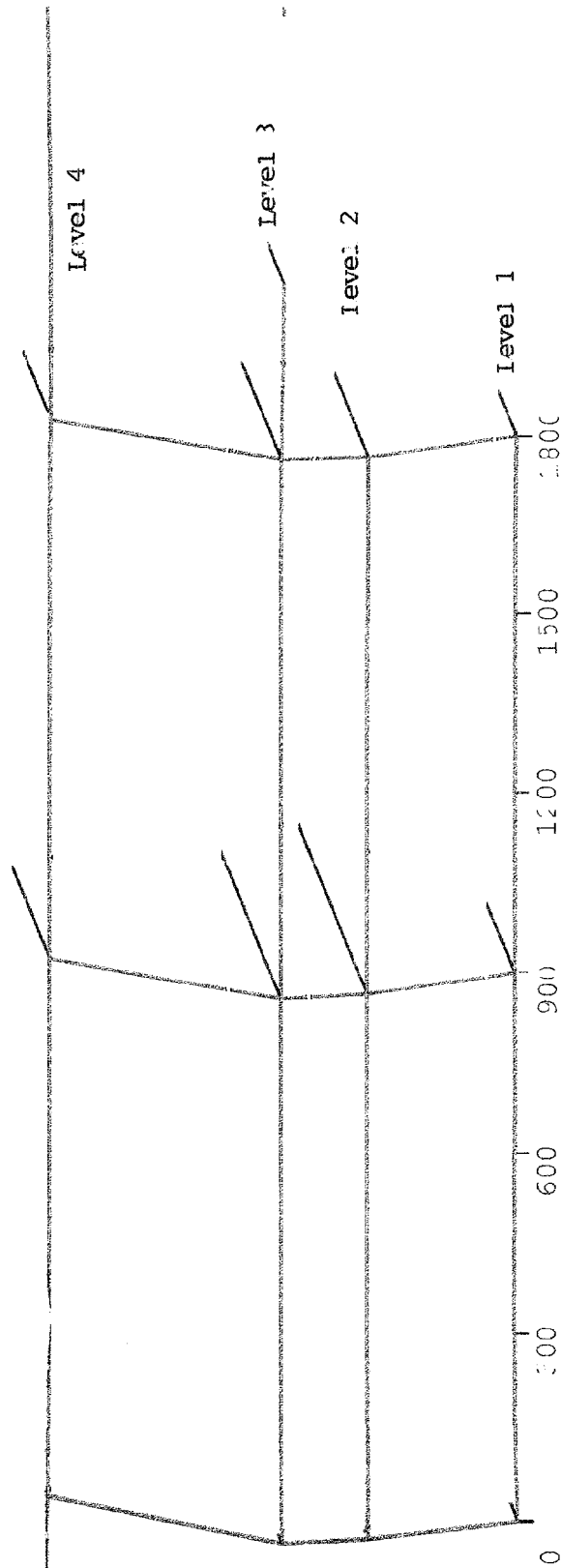
	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Lower A-Post	D05-R08	Entran	August 1, 1997
Left Mid A-Post	G19-G12	Entran	August 1, 1997
Left Lower B-Post	MGA095	Entran	June 12, 1997
Left Mid B-Post	B14-R01	Entran	August 1, 1997
Left Side Sill at Front Seat Y	B14-R13	Entran	July 2, 1997
Left Side Sill at Rear Seat Y	F13-B12	Entran	August 7, 1997
Right Side Sill at Front Seat X	I26-D04	Entran	August 7, 1997
Right Side Sill at Front Seat Y	F18-G03	Entran	August 7, 1997
Right Side Sill at Front Seat Z	I25-J19	Entran	August 7, 1997
Right Side Sill at Rear Seat X	G01-J14	Entran	August 7, 1997
Right Side Sill at Rear Seat Y	I25-J10	Entran	August 7, 1997
Right Side Sill at Rear Seat Z	J13-F17	Entran	August 6, 1997
Left Driver Seat Track Y	F10-D02	Entran	July 14, 1997
Right Rear Occupant Compartment Y	C25-A02	Entran	August 1, 1997
Rear Floorpan Above Axle X	D05-R20	Entran	July 7, 1997
Rear Floorpan Above Axle Y	D05-R16	Entran	July 7, 1997
Rear Floorpan Above Axle Z	F12-G03	Entran	July 11, 1997
Vehicle C.G. X	A10-G08	Entran	July 7, 1997
Vehicle C.G. Y	E10-F19	Entran	July 11, 1997
Vehicle C.G. Z	J23-E10	Entran	July 11, 1997

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier Left Rear Frame X	E10-F04	Entran	August 7, 1997
Moving Barrier Left Rear Frame Y	J04-F14	Entran	August 7, 1997
Moving Barrier Right Rear Frame X	H07-A25	Entran	July 14, 1997
Moving Barrier Right Rear Frame Y	C25-A11	Entran	August 5, 1997
Moving Barrier Left Face X	H02-J16	Entran	August 5, 1997
Moving Barrier Left Face Y	D05-R14	Entran	June 12, 1997
Moving Barrier Right Face X	F11-G08	Entran	August 7, 1997
Moving Barrier Right Face Y	I26-D02	Entran	August 7, 1997
Barrier C.G. X	E13-D01	Entran	August 1, 1997
Barrier C.G. Y	C14-Z08	Entran	August 1, 1997
Barrier C.G. Z	A09-G05	Entran	August 1, 1997
Left Upper B-Post Y	B13-Z05	Entran	August 1, 1997
Left Front Door @ Upper Torso	F12-G08	Entran	August 1, 1997
Left Front Door @ Mid Torso	J10-E17	Entran	August 23, 1997
Left Front Door @ Pelvis	J06-D22	Entran	June 12, 1997
Left Front Door Lower Rear	B14-R14	Entran	June 12, 1997
Left Rear Panel @ Upper Torso	G13-B15	Entran	August 5, 1997
Left Rear Panel @ Mid Torso	D05-R19	Entran	July 7, 1997
Left Rear Panel @ Pelvis	J10-E14	Entran	July 14, 1997

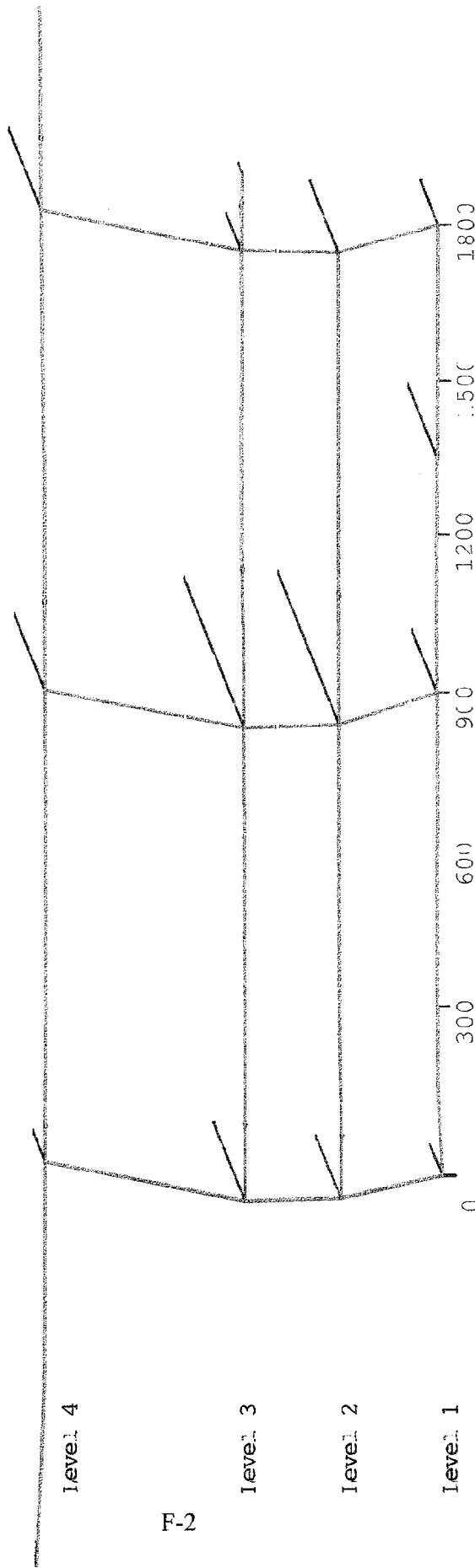
APPENDIX F
STATIC CRUSH

1997 LEXUS SC300



EUROPEAN LATERAL SIDE IMPACT VEHICLE SIDE DEFORMATION

1997 LEXUS SC300



FMVSS 214 VEHICLE SIDE DEFORMATION