

REPORT NUMBER: 201UI-CAL-09-09

**SAFETY COMPLIANCE TESTING FOR FMVSS 201
OCCUPANT PROTECTION IN INTERIOR IMPACT
UPPER INTERIOR HEAD IMPACT PROTECTION**

**KIA MOTORS CORPORATION
2009 KIA SEDONA**

NHTSA NUMBER: C90502

CALSPAN TEST NUMBER: 8877-09

CALSPAN
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225



Test Date: June 24, 2009

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
Mail Code: NVS-220, West Building 4th Floor
1200 New Jersey Avenue, SE
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Prepared by:



James Czarnecki, Project Engineer

Approved by:



David J. Travale, Program Manager
Transportation Science Center

Approval Date:

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16. Abstract Compliance tests were conducted on the subject vehicle, a 2009 Kia Sedona, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure TP-201U-01 for determination of FMVSS 201 compliance. Test failures identified were as follows in the table below:					
Target Point	Horizontal	Vertical	Velocity	HIC	HICd
None	-	-	-	-	-
None	-	-	-	-	-
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SECTION 1

PURPOSE AND TEST PROCEDURE

This head impact compliance test is part of the FMVSS 201 Upper Interior Head Impact Protection Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-04-C-01027. The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2009 Kia Sedona, NHTSA No. C90502, meets the performance requirements of FMVSS 201, Occupant Protection in Interior Impact. The compliance test was conducted in accordance with the OVSC Laboratory Test Procedure No. TP-201U-01 dated April 03, 1998.

SECTION 2

SUMMARY OF UPPER INTERIOR HEAD IMPACTS

A 2009 Kia Sedona, NHTSA No. C90502, was tested at various upper interior locations by a 4.54 kg 50th percentile headform. A total of thirteen (13) impacts were performed in this test series. The target area impacts were chosen by the NHTSA Contracting Officer's Technical Representative (COTR). A summary of test results can be found on Data Sheet 2-1, Summary of Upper Interior Head Impact Tests. The thirteen (13) area chosen for testing were:

RP1	OP1	URRP	UROP	SD
BP4	BP2	BP1	AP3	AP1
OP1	URBP	AP2		

The selected impact areas on the test vehicle appeared to comply with the performance requirements of FMVSS 201.

Five Free Motion Headforms (FMH) were used in this test series. All five FMH's were calibrated prior to and after the test series. Calibration information is included in Appendix B. Each FMH weighed 4.54 ± 0.5 kg and had an orthogonal tri-axis accelerometer pack mounted at the headform's center of gravity (c.g.).

A total of three (3) channels of data for each test were recorded on a Keyser-Threde data acquisition system. Data plots, along with still images, can be found in Section 3, Summary of Test Results and Data Plots.

To document each target area impact test, a Weinberger high-speed video camera was placed at an appropriate location to record the headform contact with the selected target area.

**DATA SHEET 2-1
SUMMARY OF UPPER INTERIOR HEAD IMPACT TESTS**

VEHICLE YEAR/MAKE/MODEL/STYLE:				2009 Kia Sedona							
VIN:				KNDMB133096286580							
DATE OF MANUFACTURE:				07/08 (SEE CERTIFICATION LABEL)							
COLOR:				Blue							
TARGET CODE	Target Coordinates						Approach Angles (degrees)		Velocity (kph)	FMH HIC	HIC(d) [*]
	Driver Side			Passenger Side			Horizontal	Vertical			
	X(mm)	Y(mm)	Z(mm)	X(mm)	Y(mm)	Z(mm)					
AP1	2062.376	-618.440	1645.871	2054.929	619.857	1645.525	115°	42°	18.82	630.1	641.8
AP2	1900.338	-666.666	1557.829	1897.652	667.147	1558.326	217°	40°	18.38	206.7	322.4
AP3	1751.761	-701.165	1467.719	1747.660	701.113	1466.806	141°	39°	18.47	244.9	351.2
BP1	2552.681	-519.944	1722.835	2550.947	523.120	1723.196	90°	25°	18.45	552.7	583.4
BP2	2537.618	-661.792	1497.600	2535.312	663.087	1497.397	90°	0°	23.55	377.3	451.1
BP3	2513.437	-670.173	1483.652	2512.117	670.937	1483.912	-	-	-	-	-
BP4	2661.362	-716.002	1361.910	2657.930	714.383	1363.415	139°	-4°	23.54	286.2	382.3
FH1	1995.731	-526.506	1700.086	1991.094	527.112	1700.651	Relocated 2 circles		-	-	-
FH1 R2	1988.989	-487.288	1699.873	1990.850	479.138	1703.235	-	-	-	-	-
FH2	1977.573	-378.693	1708.526	1971.322	375.674	1707.804	-	-	-	-	-
OP1	3578.922	-664.586	1496.181	3582.531	667.971	1492.525	90°	8°	N/A**	589.0	610.7
							270°	5°	23.56	523.2	561.1
OP2	3582.904	-662.217	1513.485	3579.889	664.091	1513.727	Relocated 1 circle		-	-	-
OP2 R1	3578.522	-664.694	1495.997	3583.944	667.928	1492.856	-	-	-	-	-
RH	4102.452	-355.282	1732.246	4106.515	355.727	1727.359	-	-	-	-	-
RP1	4093.114	-551.675	1627.037	4087.982	552.284	1628.828	34°	21°	23.83	175.6	298.9
RP2	4242.824	-550.593	1575.628	4272.722	553.394	1569.198	-	-	-	-	-
SD	3058.256	-523.296	1763.368	3058.261	525.840	1767.249	-	-	-	-	-
SD R1	3058.012	-531.626	1740.208	3060.413	533.584	1742.672	90°	10°	18.45	72.7	221.3
SR1	2212.931	-551.734	1744.276	2205.604	555.305	1743.984	Relocated 2 circles		-	-	-
SR1 R2	2214.393	-575.521	1706.778	2205.169	583.207	1699.782	-	-	-	-	-
SR2A	2362.070	-548.428	1762.678	2355.817	548.790	1765.474	Relocated 2 circles		-	-	-
SR2A R2	2362.950	-569.093	1712.759	2357.368	567.354	1719.132	-	-	-	-	-
SR2B	2251.320	-551.075	1749.393	2249.160	553.159	1751.020	Relocated 2 circles		-	-	-
SR2B R2	2252.148	-576.366	1705.703	2251.094	580.608	1704.366	-	-	-	-	-
SR3F	3019.812	-487.305	1770.489	3019.653	485.851	1770.796	-	-	-	-	-
URAP	2288.988	-387.329	1776.638	2292.159	385.015	1778.707	-	-	-	-	-
URBP	2578.520	-365.217	1822.573	2540.526	356.842	1822.592	270°	25°	23.80	252.0	356.0
UROP	3726.561	-419.215	1795.942	3542.497	385.427	1807.804	90°	50°	23.62	379.5	452.7
URRP	3853.524	-399.821	1791.339	3867.917	404.311	1794.760	38°	50°	23.50	501.7	544.9
URRSR	3268.894	-408.930	1820.268	3268.742	387.924	1822.722	-	-	-	-	-

*HIC(d)=0.75446(Free Motion Headform HIC)+166.4 ** N/A - Not available - X Accelerometer was intermittent during free flight and impact.

DATA SHEET 2-2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:									
Year/Make/Model/Body Style:					2009 Kia Sedona				
VIN:					KNDMB133096286580				
Month & Year of Manufacture:					07/08 (SEE CERTIFICATION LABEL)				
Vehicle Body Color:					Blue				
Engine Data:	6	Cylinders;	-	CID;	3.8	Liters;	-	cc	
Engine Placement:	-		Longitudinal;	or	x		Lateral		
Transmission:	5	Speed;	-	Manual;	x	Automatic;	-	Overdrive	
Final Drive:	-	Rear Wheel Drive;	x		Front Wheel Drive;	-	Four Wheel Drive		
Odometer Reading:			40	km					
Options:	x	A/C;	x	Power Steering;	x	Pwr.Brakes;	x	Pwr. Windows	
Interior Trim Information :									
1. No sun roof version									
2. Adjustable seat belt anchorages on both B and Other Pillars									
3. Non-adjustable seat belt anchorages on both Rear Pillars									
4. Sunglass holder on driver side rail									

DATA FROM TIRE PLACARD:									
Tire Pressure (at capacity);					240		kPa FRONT		
					240		kPa REAR		
Recommended Tire Size:					P225/70R16				
Tires on Test Vehicle:			P225/70R16		Manufacturer:			Kumho	
Vehicle Capacity Data:									
Number of Occupants:	2	Front;	2	Rear;	3	3rd Seat;	7	Total	
Type of Front Seats:	x	Bucket;	-		Bench;	-		Split Bench	
Type of Front Seat Back:	-	Fixed;	x	Adjustable with	x	Lever or	-	Knob	
Vehicle Capacity Weight (VCW)=					525		kg (A)		
No. of Occupants x 68 kg. =					476		kg (B)		
Rated Cargo/Luggage Weight (RCLW) =					49		kg (A-B) Max. RCLW = 136 kg.		

DATA SHEET 2-2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:						
Left Front	=	598.5	kg	Left Rear	=	443.0 kg
Right Front	=	579.0	kg	Right Rear	=	409.0 kg
TOTAL FRONT	=	1177.5	kg	TOTAL REAR	=	852.0 kg
% of Total Weight	=	58.0%	%	% of Total Weight	=	42.0%
TOTAL WEIGHT	=	2029.5		kg		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:		
Total Test Vehicle Delivered Weight=	2029.5	kg (A)
+ Rated Cargo/Luggage Weight =	49.0	kg (B)
TEST VEHICLE TARGET WEIGHT =	2078.5	kg (A+B)

WEIGHT OF TEST VEHICLE (FULLY LOADED):						
Left Front	=	598.5	kg	Left Rear	=	464.5 kg
Right Front	=	575.0	kg	Right Rear	=	434.5 kg
TOTAL FRONT	=	1173.5	kg	TOTAL REAR	=	899.0 kg
% of Total Weight	=	56.6%	%	% of Total Weight	=	43.4%
TOTAL TEST WEIGHT =	2072.5					
Weight of vehicle secured in test vehicles cargo area =	43.0		kg			

TEST VEHICLE ATTITUDE (all dimensions in millimeters):				
AS DELIVERED:	Left Front	807	Left Rear	822
	Right Front	814	Right Rear	821
FULLY LOADED:	Left Front	806	Left Rear	816
	Right Front	812	Right Rear	814
Test Vehicle Wheelbase:	3020		millimeters	

TEST VEHICLE PITCH AND ROLL ANGLES:				
AS DELIVERED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	↑1.1↓	Front Bumper	0.0
	Right Door Sill	↓0.3↑	Rear Bumper	↓0.1↑
FULLY LOADED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	↑1.0↓	Front Bumper	↑0.2↓
	Right Door Sill	↓0.3↑	Rear Bumper	↓0.1↑
AS TESTED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	↑1.0↓	Front Bumper	0.0
	Right Door Sill	↓0.3↑	Rear Bumper	↓0.1↑

DATA SHEET 2-3
APPROACH ANGLE LIMITS

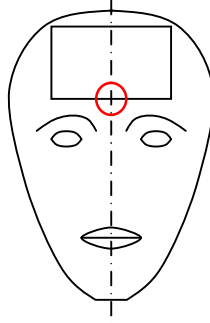
Target Code	Left Side				Target Code	Right Side			
	Horizontal Angles (deg.)		Vertical Angles (deg.)			Horizontal Angles (deg.)		Vertical Angles (deg.)	
	Minimum	Maximum	Minimum	Maximum		Minimum	Maximum	Minimum	Maximum
AP1	205	252	-5	42	AP1	108	155	-5	42
AP2	205	252	-5	40	AP2	108	155	-5	40
AP3	205	252	-5	39	AP3	108	155	-5	39
BP1	202	288	-10	25	BP1	82	158	-10	25
BP2	ANY		0	0	BP2	ANY		0	0
BP3	202	288	-10	0	BP3	82	158	-10	0
BP4	202	288	-10	-4	BP4	82	158	-10	-4
OP1	ANY		0	8	OP1	ANY		0	5
OP2	270		-10	8	OP2	90		-10	5
RP1	270	345	-10	21	RP1	15	90	-10	21
RP2	ANY		0	2	RP2	ANY		0	2
FH1	180		0	50	FH1	180		0	50
FH2	180		0	50	FH2	180		0	50
RH	360		0	50	RH	0		0	50
SR1	270		0	33	SR1	90		0	33
SR2A	270		0	23	SR2A	90		0	23
SR2B	270		0	39	SR2B	90		0	39
SR3	270		0	37	SR3	90		0	37
SD	270		0	10	SD	90		0	10
URAP	ANY		0	50	URAP	ANY		0	50
URBP	ANY		0	25	URBP	ANY		0	25
UROP	ANY		0	50	UROP	ANY		0	50
URRSR	ANY		0	50	URRSR	ANY		0	50
URRP	ANY		0	50	URRP	ANY		0	50

Note : BP2, OP1 and RP2 target location – Seat belt anchorage

DATA SHEET 2-4

SUMMARY TARGET IMPACT LOCATION ON FMH

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue



ã RIGHT SIDE OF FACE

TARGET	Distance Above Point O (mm)	Distance Over From Pt. O (mm)
RP1	32	0
OP1	9	10L
URRP	34	0
UROP	52	0
SD	19	5L
BP4	33	15L
BP2	10	5R
BP1	51	27R
AP3	19	0
AP1	16	7R
OP1	14	6R
URBP	61	6L
AP2	23	0

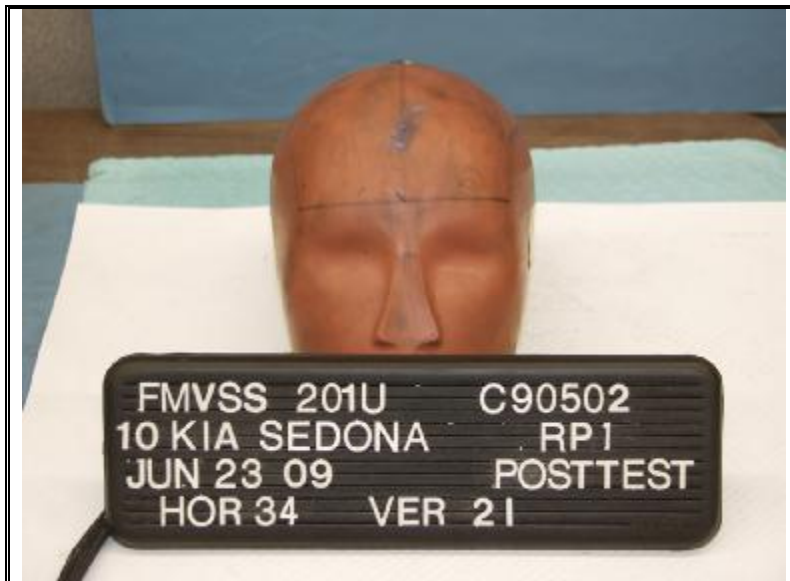
SECTION 3

SUMMARY OF TEST RESULTS AND DATA PLOTS

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	01
Test Date:	06/23/09
Target Location:	REAR PILLAR
Target Code:	RP1
Horizontal Impact Angle:	34°
Vertical Impact Angle:	21°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	9:00
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	0	<input type="checkbox"/>	mm right	<input type="checkbox"/>	mm left
On Centerline	32				mm up



POST-IMPACT RP1 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	175.6
HIC(d)	298.9
Impact Velocity (kph)	23.83
HIC T1 (msec)	3.7
HIC T2 (msec)	24.1

FMVSS 201U 2009 Kia Sedona C90502 - RP1

FMH Headform 0062

Location: RP1

Test Date: June 23, 2009

Work File: RP1

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 298.9

Lab Humidity: 41 %

HIC (36ms): 175.6

Velocity at Impact: 23.83 KPH

t1: 3.7 msec

t2: 24.1 msec

Free Flight Distance: 226.08 mm

Duration: 20.4 msec

Average Acceleration: 9.2 g

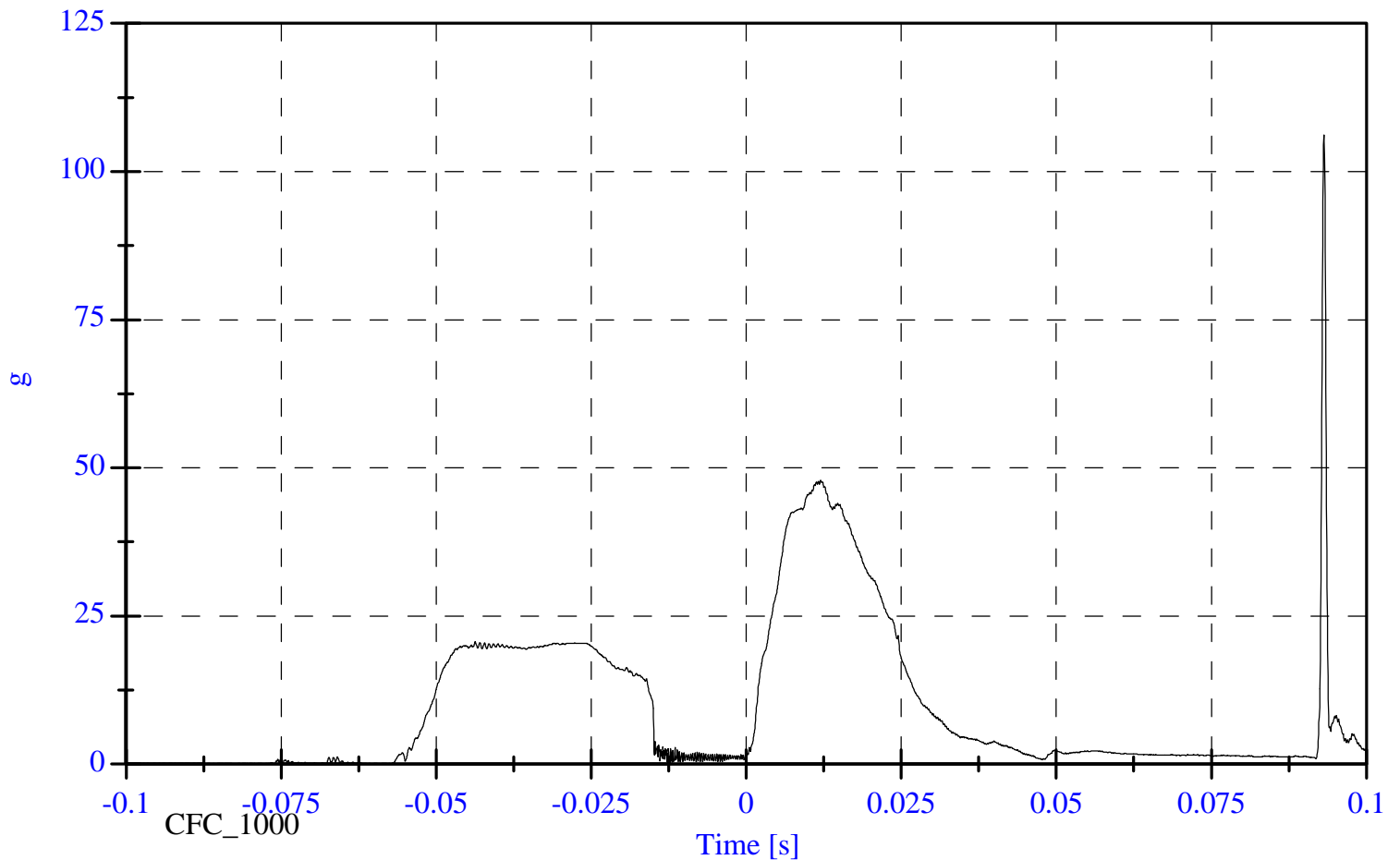
Maximum: 47.9 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 47.9 [g] at 0.012 [s]

Min: 0.0 [g] at -0.058 [s]



FMVSS 201U 2009 Kia Sedona

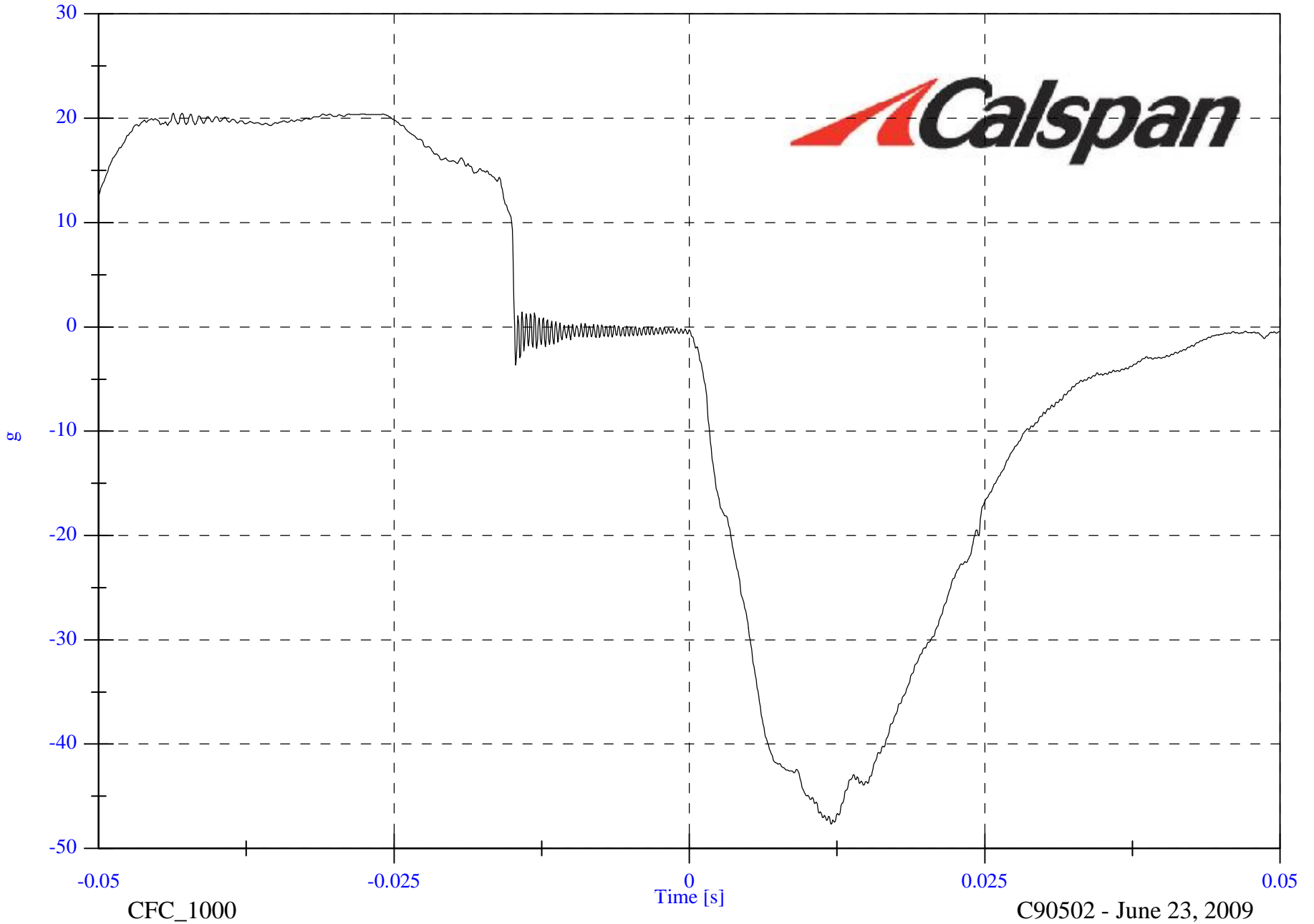
Headform X Acceleration

Max: 20.5 [g] at -0.044 [s]

Min: -47.7 [g] at 0.012 [s]



C90502 PASS, SIDE RP1 IMPACT PLOT #1



CFC_1000

C90502 - June 23, 2009

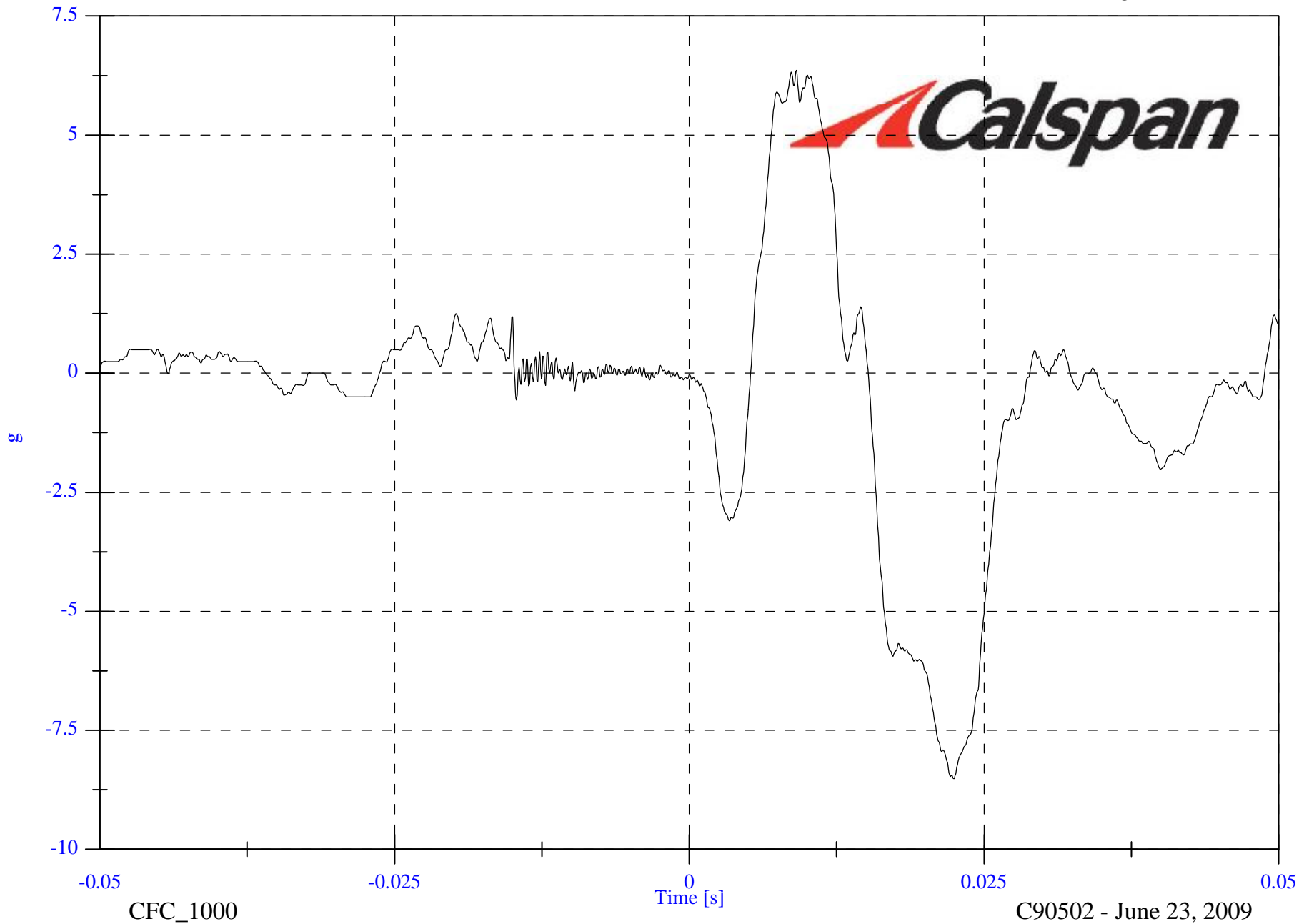
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 6.4 [g] at 0.009 [s]

Min: -8.5 [g] at 0.022 [s]

C90502 PASS, SIDE RP1 IMPACT PLOT #2



C90502 - June 23, 2009

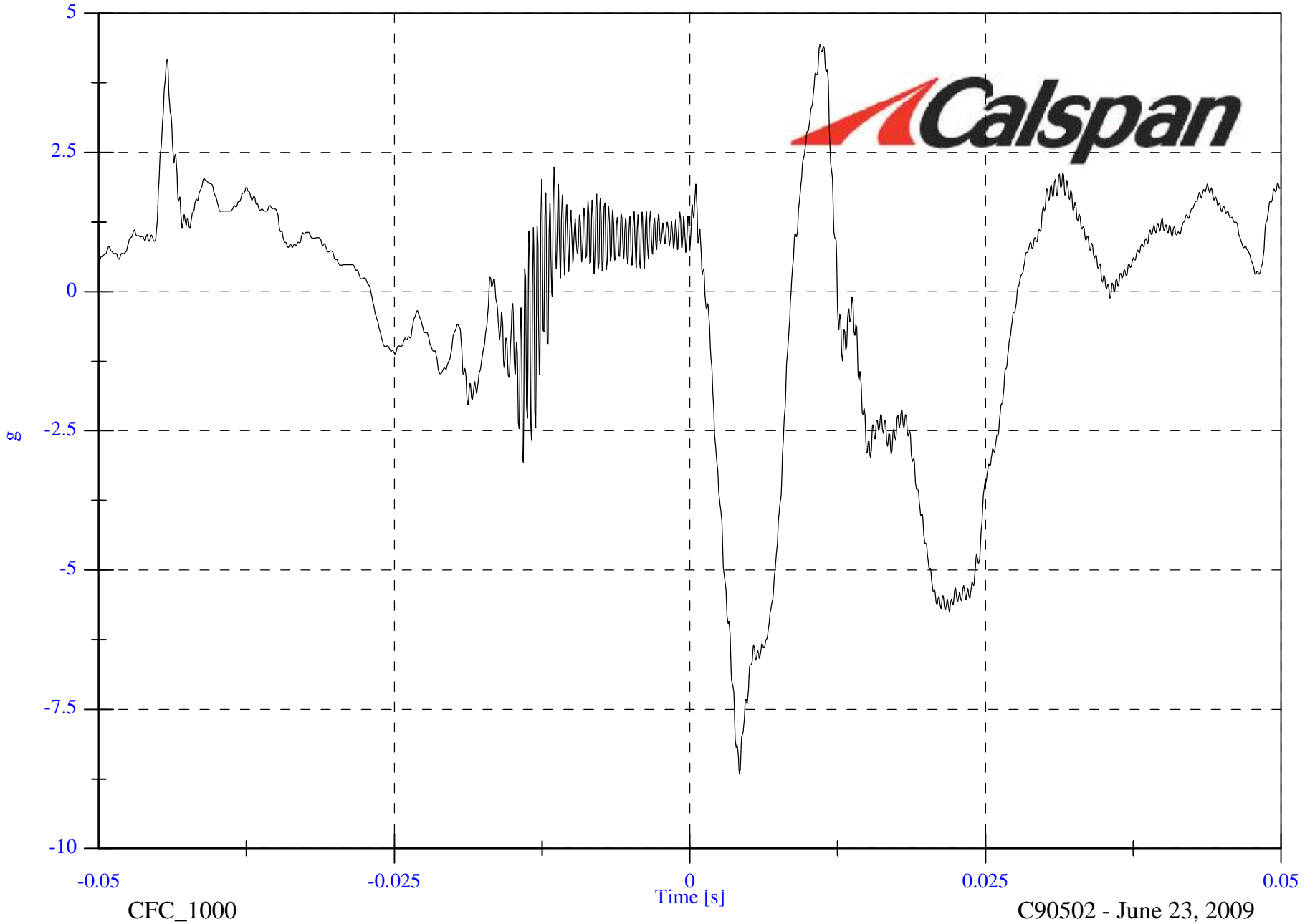
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 4.4 [g] at 0.011 [s]

Min: -8.7 [g] at 0.004 [s]

C90502 PASS, SIDE RP1 IMPACT PLOT #3



CFC_1000

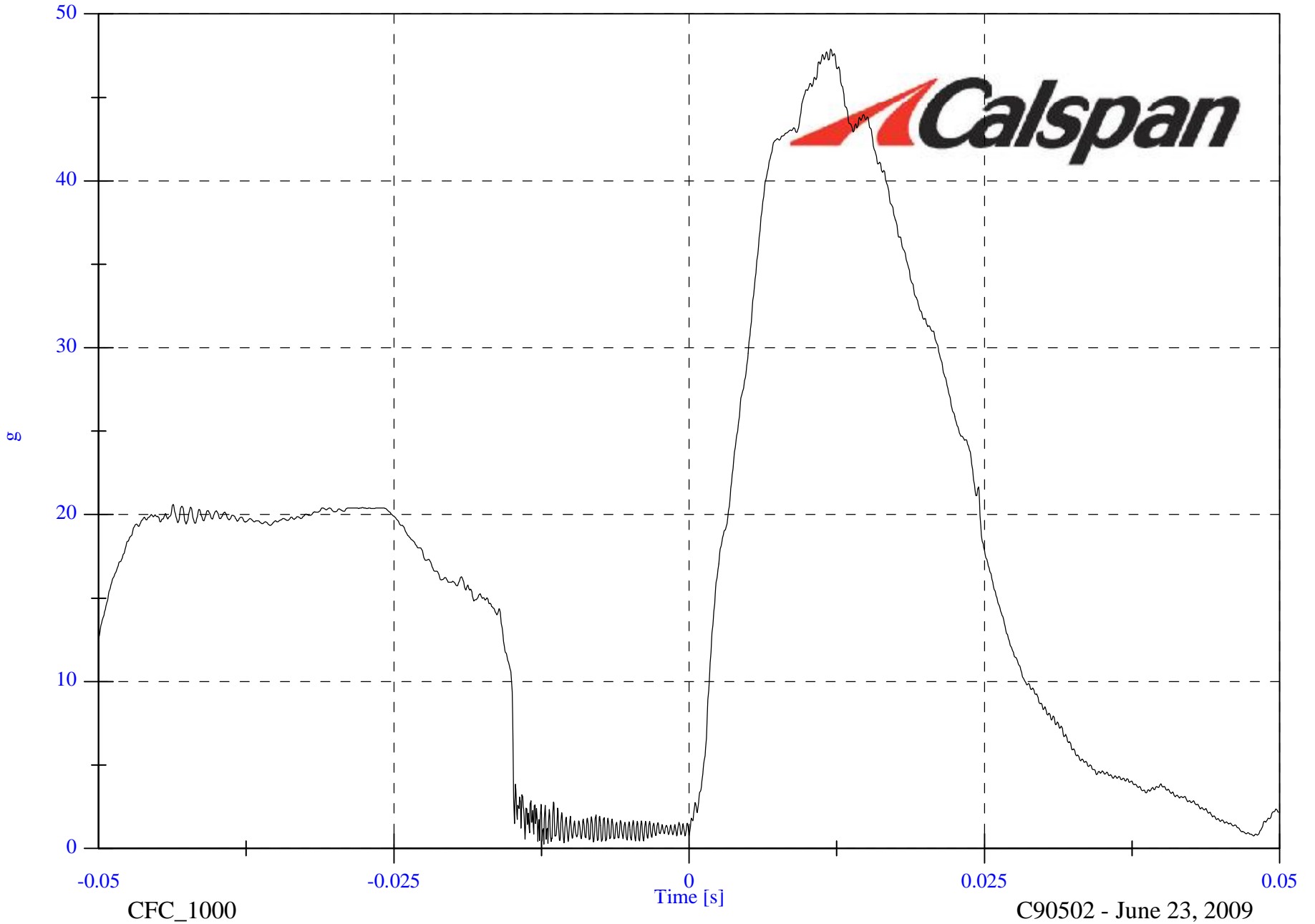
C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 47.9 [g] at 0.012 [s]
Min: 0.2 [g] at -0.012 [s]

C90502 PASS. SIDE R P1 IMPACT PLOT #4



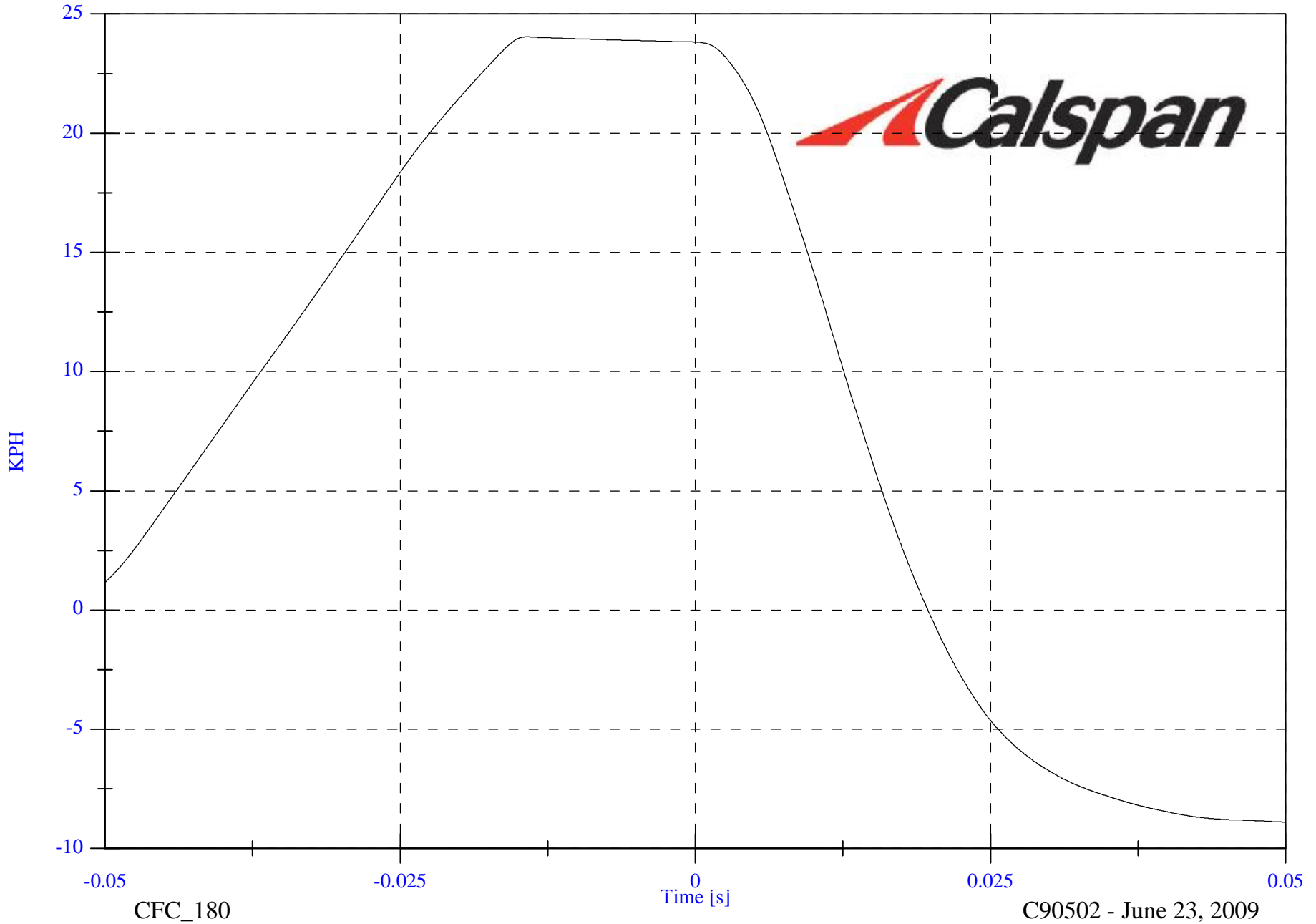
CFC_1000

C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Max: 24.0 [KPH] at -0.014 [s]
Min: -8.9 [KPH] at 0.050 [s]

Headform Velocity



C90502 PASS, SIDE RP1 IMPACT PLOT #5

CFC_180

C90502 - June 23, 2009



PRE-IMPACT RP1 (2009 KIA SEDONA)



POST-IMPACT RP1 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	02
Test Date:	06/23/09
Target Location:	OTHER PILLAR
Target Code:	OP1
Horizontal Impact Angle:	90°
Vertical Impact Angle:	8°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	9:25
Headform Number:	1142

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	10	<input type="checkbox"/>	mm right	<input checked="" type="checkbox"/>	mm left
On Centerline	9				mm up



POST-IMPACT OP1 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	589.0
HIC(d)	610.7
Impact Velocity (kph)	N/A*
HIC T1 (msec)	5.1
HIC T2 (msec)	15.4

- N/A – NOT AVAILABLE - X Accelerometer was intermittent during free flight and impact.

FMVSS 201U 2009 Kia Sedona C90502 - OP1

FMH Headform 1142

Location: OP1

Test Date: June 23, 2009

Work File: OP1

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 610.7

Lab Humidity: 41 %

HIC (36ms): 589.0

Velocity at Impact: N/A

t1: 5.1 msec

t2: 15.4 msec

Free Flight Distance: 265.67 mm

Duration: 10.3 msec

Average Acceleration: 12.6 g

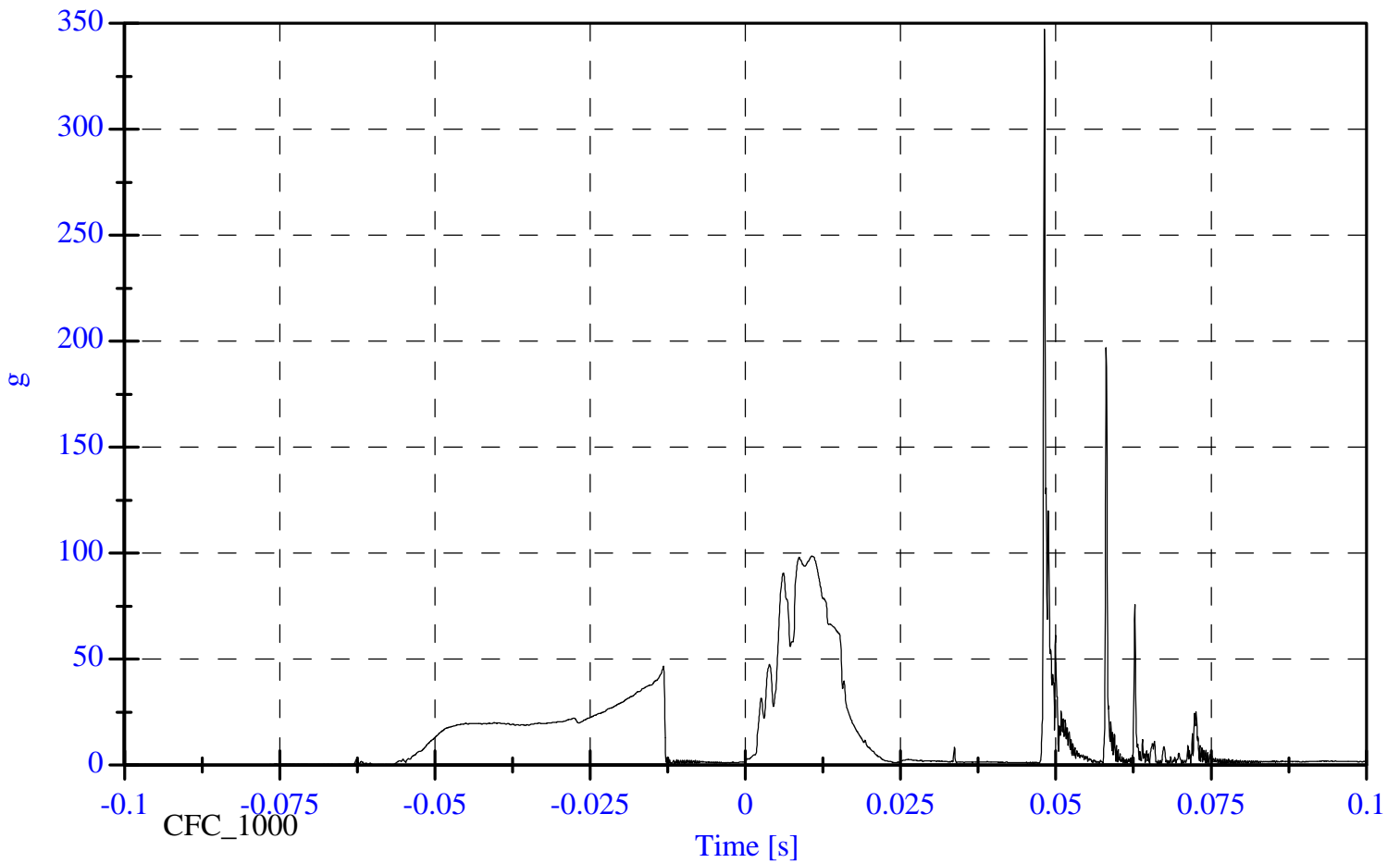
Maximum: 98.6 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 98.6 [g] at 0.011 [s]

Min: 0.0 [g] at -0.098 [s]



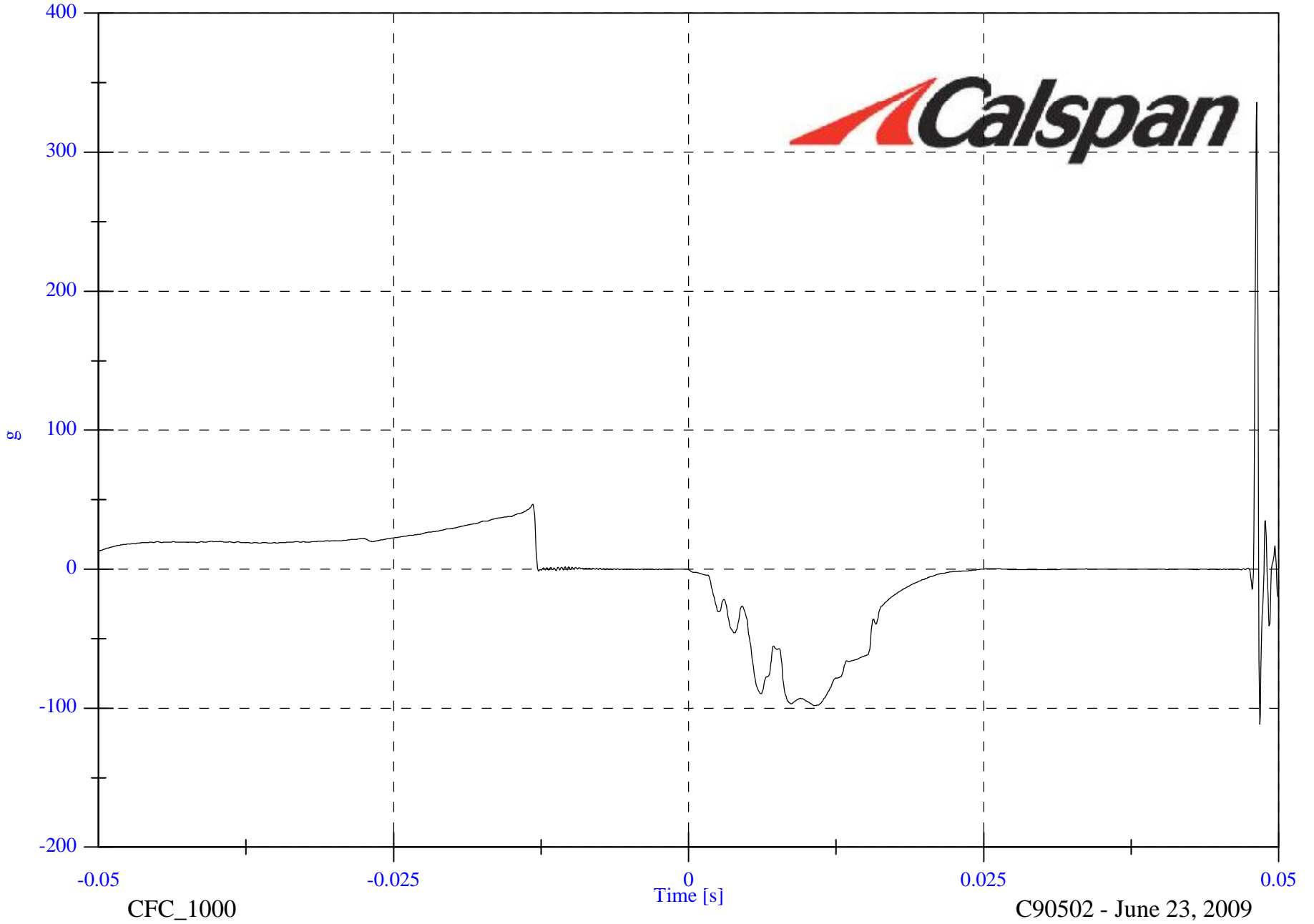
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 335.8 [g] at 0.048 [s]

Min: -111.5 [g] at 0.048 [s]

C90502 PASS. SIDE OP1 IMPACT PLOT #1



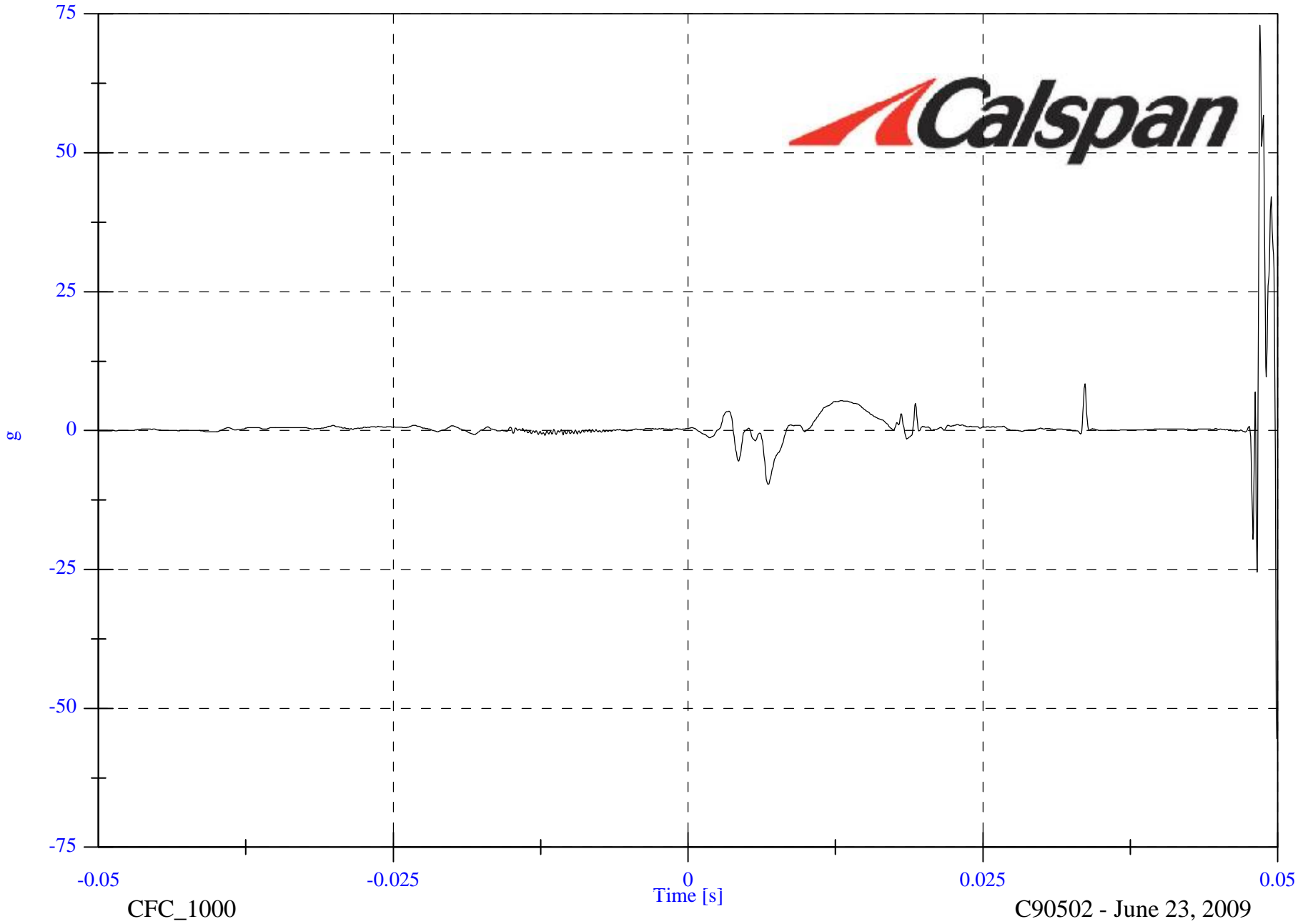
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 73.0 [g] at 0.048 [s]

Min: -55.5 [g] at 0.050 [s]

C90502 PASS. SIDE OP1 IMPACT PLOT #2



CFC_1000

C90502 - June 23, 2009

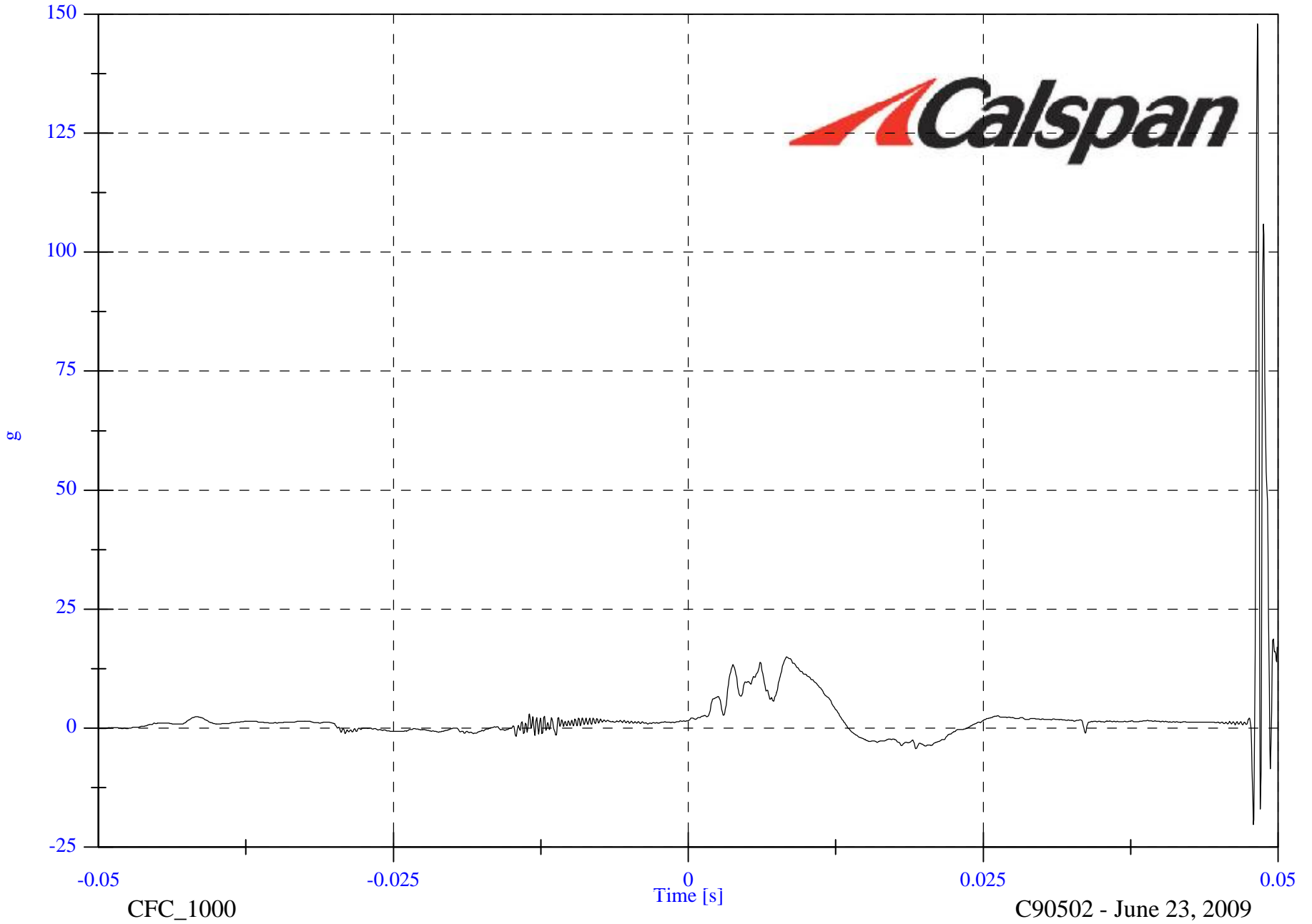
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 148.0 [g] at 0.048 [s]

Min: -20.3 [g] at 0.048 [s]

C90502 PASS. SIDE OP1 IMPACT PLOT #3



C90502 - June 23, 2009

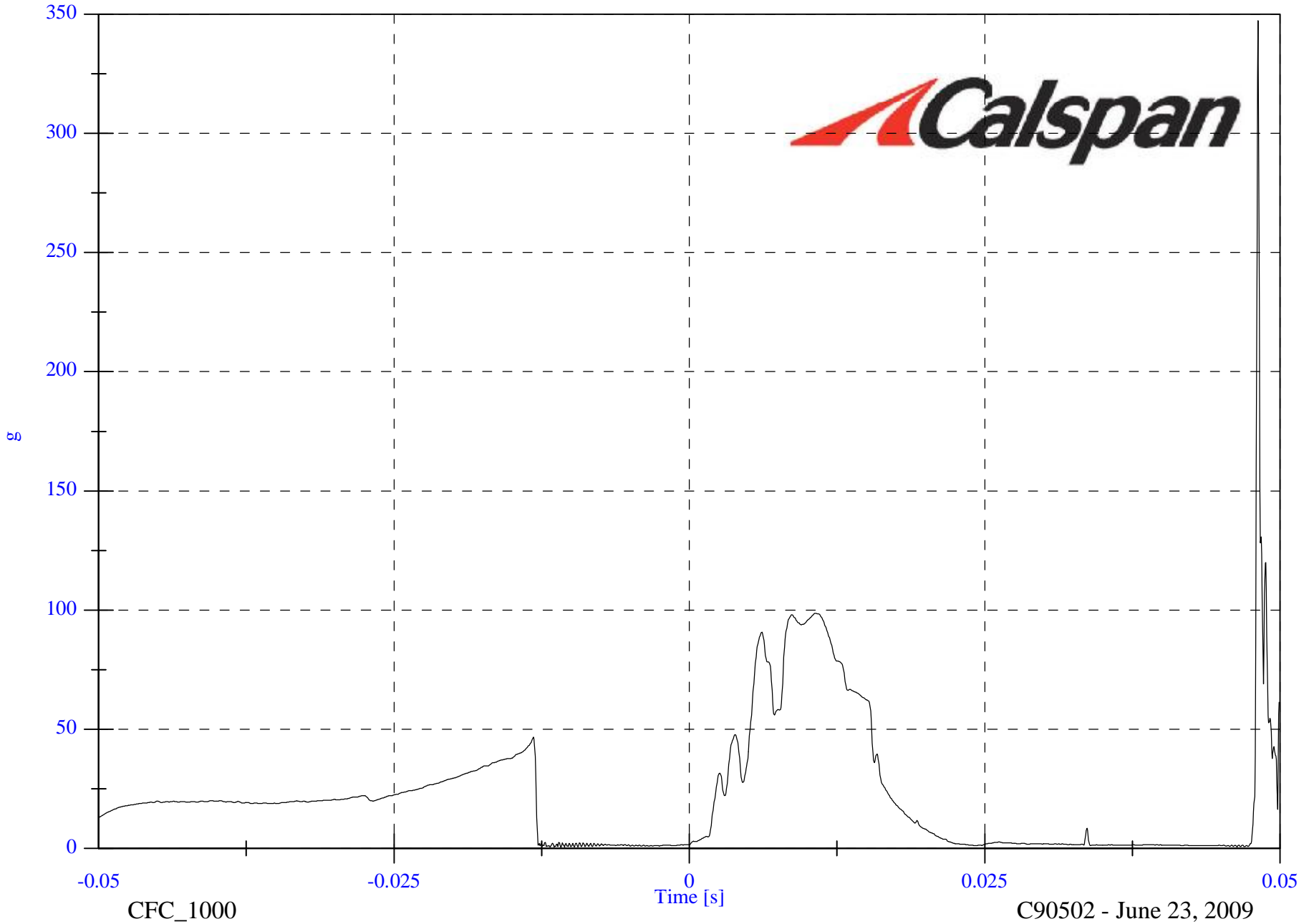
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 347.2 [g] at 0.048 [s]

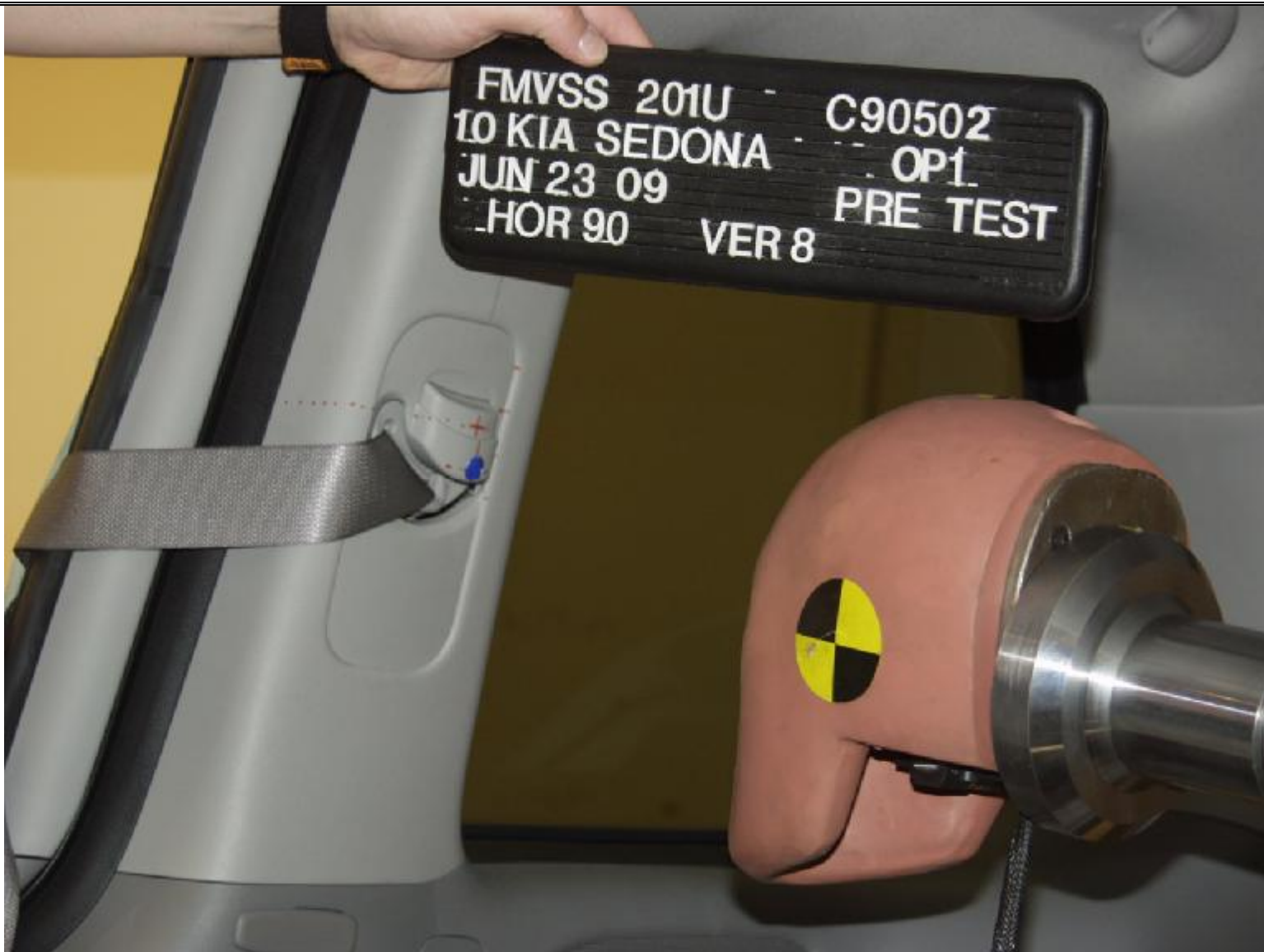
Min: 0.4 [g] at -0.011 [s]

C90502 PASS. SIDE OP1 IMPACT PLOT #4



CFC_1000

C90502 - June 23, 2009



PRE-IMPACT OP1 (2009 KIA SEDONA)



POST-IMPACT OP1 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	03
Test Date:	06/23/09
Target Location:	UPPER ROOF
Target Code:	URRP
Horizontal Impact Angle:	38°
Vertical Impact Angle:	50°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	10:00
Headform Number:	1140

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	0	<input type="checkbox"/>	mm right	<input type="checkbox"/>	mm left
On Centerline	34				mm up



POST-IMPACT URRP HEADFORM (2009 KIA SEDONA)

Free Motion HIC	501.7
HIC(d)	544.9
Impact Velocity (kph)	23.5
HIC T1 (msec)	3.1
HIC T2 (msec)	12.8

FMVSS 201U 2009 Kia Sedona C90502 - URRP

FMH Headform 1140

Location: URRP

Test Date: June 23, 2009

Work File: URRP

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 544.9

Lab Humidity: 41 %

HIC (36ms): 501.7

Velocity at Impact: 23.50 KPH

t1: 3.1 msec

t2: 12.8 msec

Free Flight Distance: 222.64 mm

Duration: 9.7 msec

Average Acceleration: 10.0 g

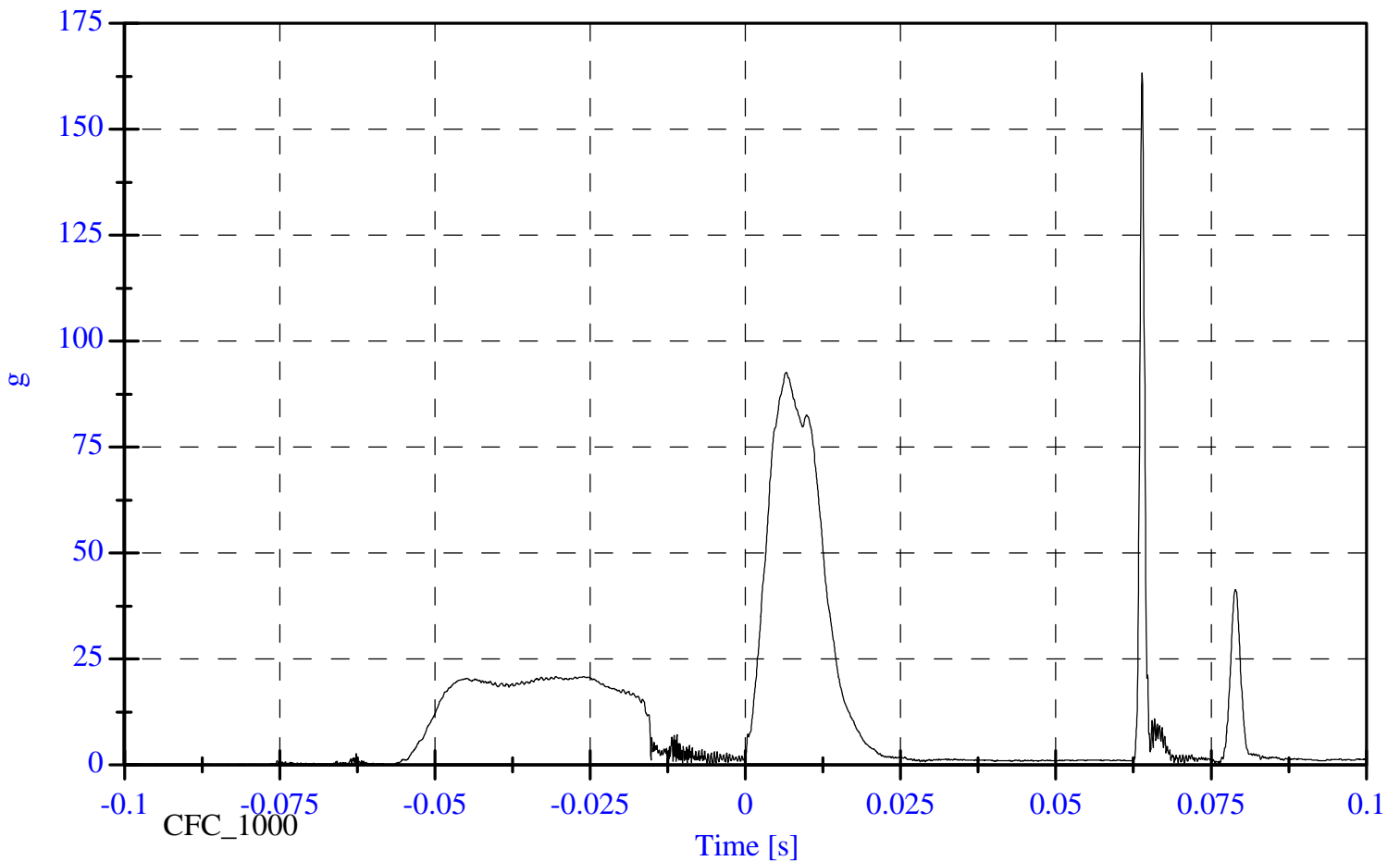
Maximum: 92.6 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 92.6 [g] at 0.007 [s]

Min: 0.0 [g] at -0.092 [s]



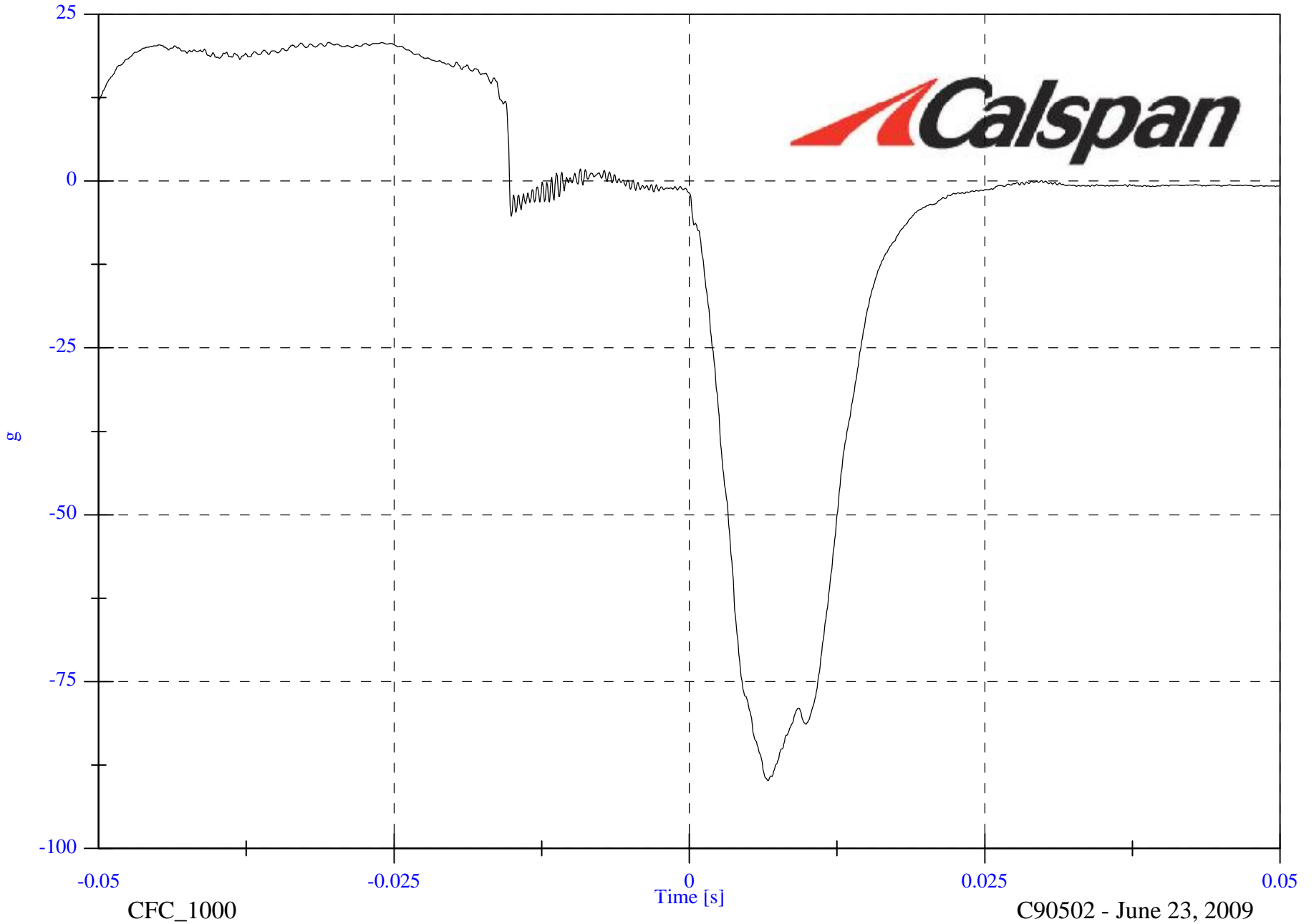
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 20.8 [g] at -0.031 [s]

Min: -89.8 [g] at 0.007 [s]

C90502 PASS, SIDE URRP IMPACT PLOT #1



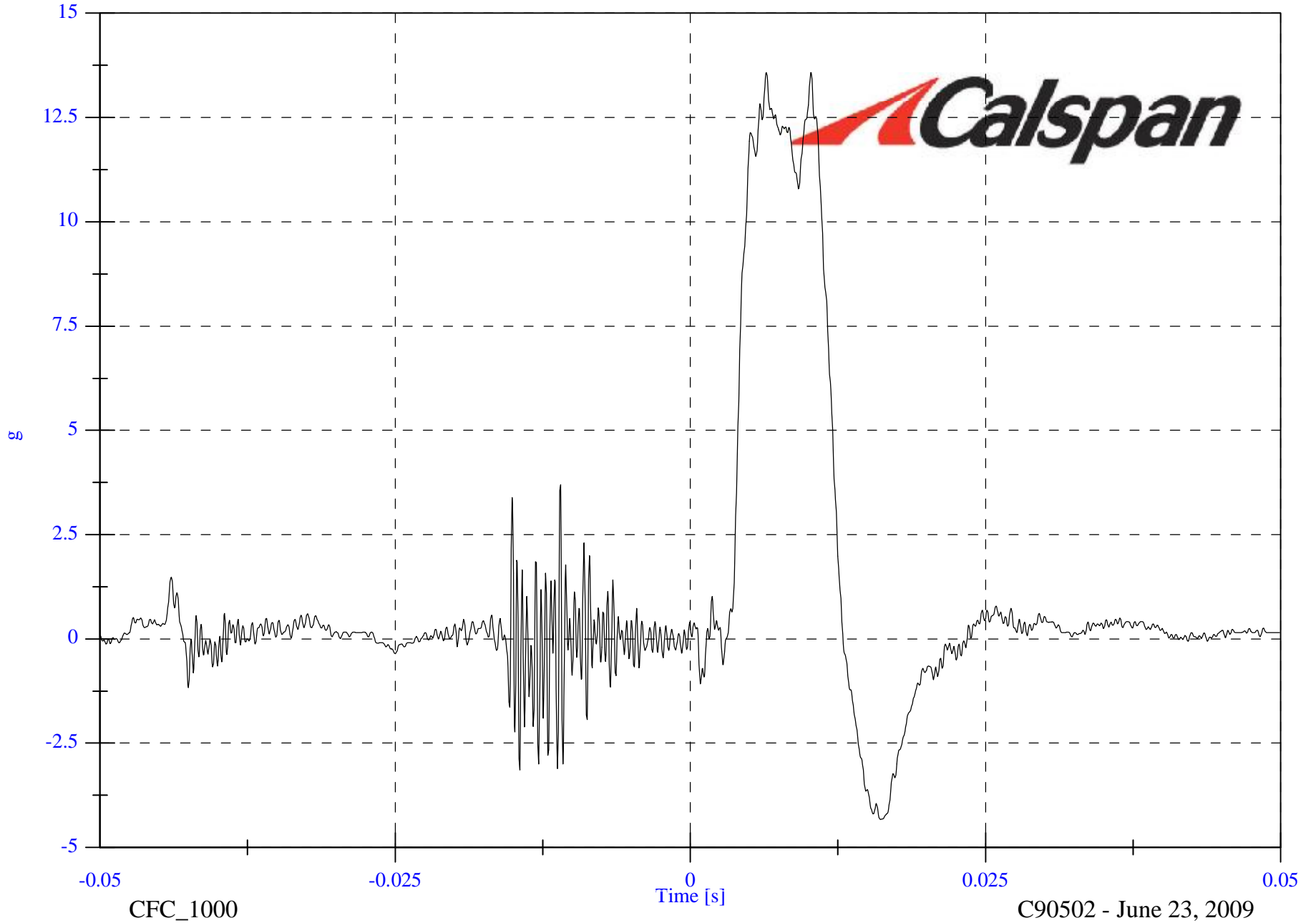
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 13.6 [g] at 0.010 [s]

Min: -4.3 [g] at 0.016 [s]

C90502 PASS, SIDE URRP IMPACT PLOT #2



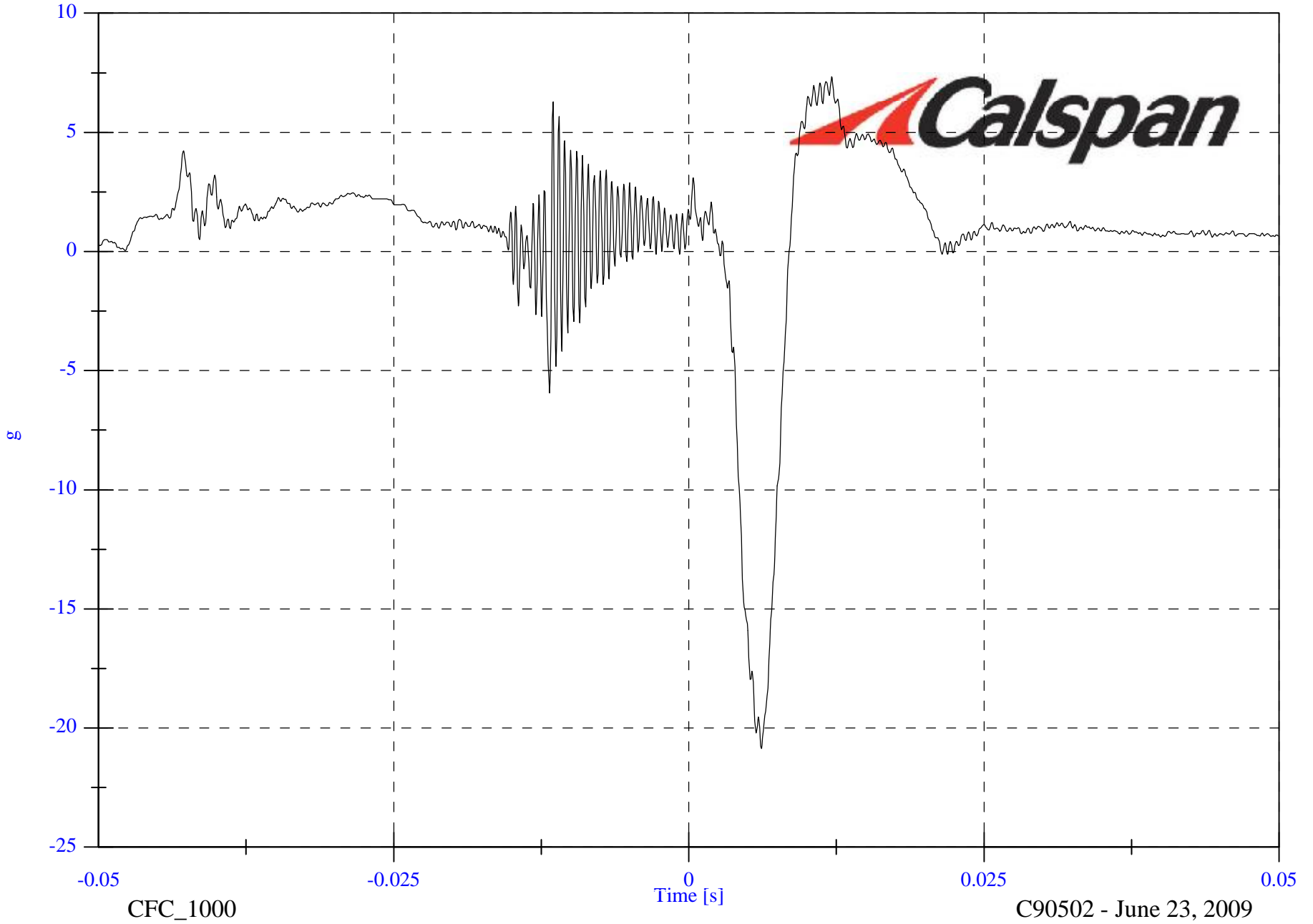
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 7.3 [g] at 0.012 [s]

Min: -20.9 [g] at 0.006 [s]

C90502 PASS, SIDE URRP IMPACT PLOT #3



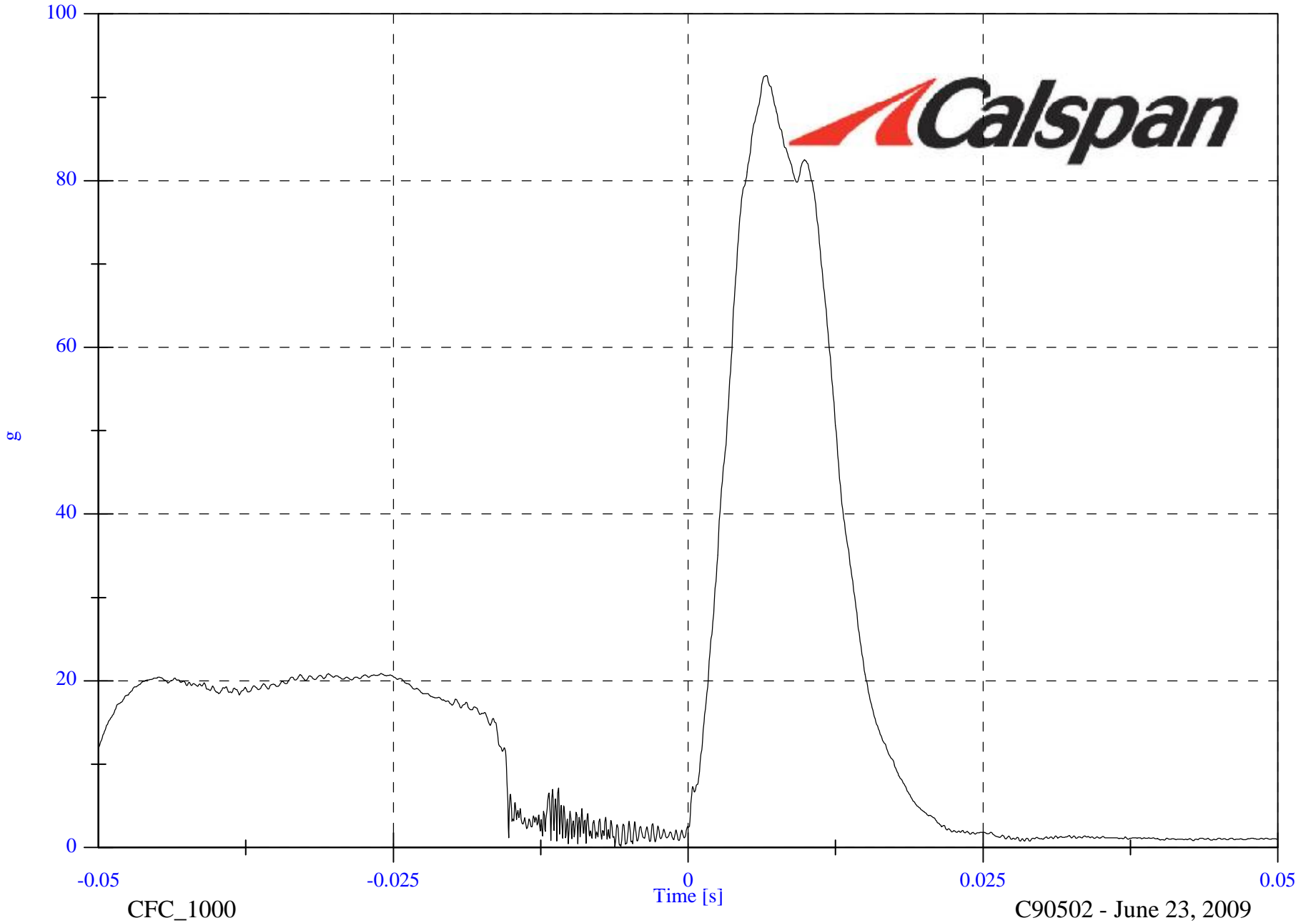
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 92.6 [g] at 0.007 [s]

Min: 0.0 [g] at -0.006 [s]

C90502 PASS, SIDE URRP IMPACT PLOT #4



CFC_1000

C90502 - June 23, 2009

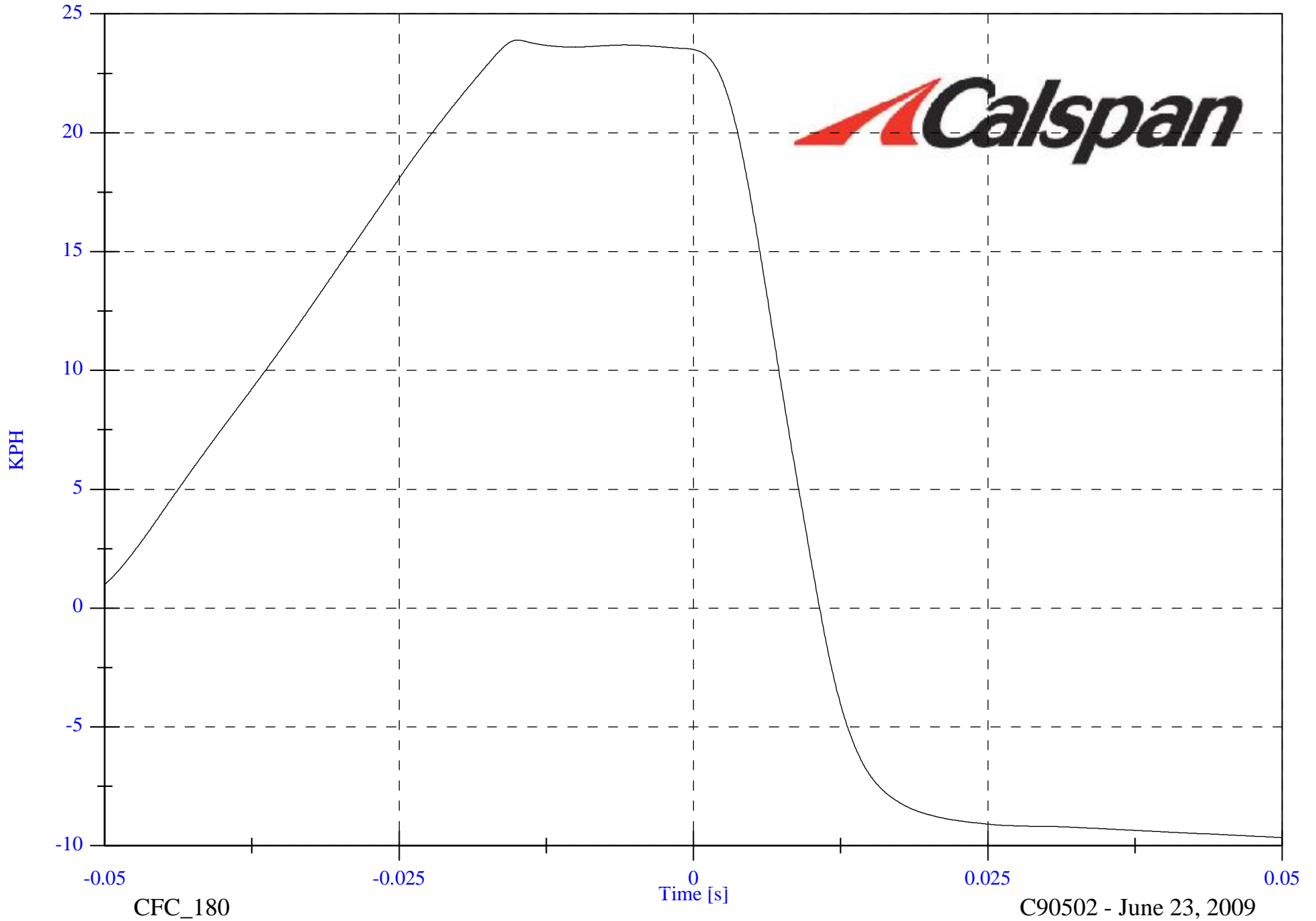
FMVSS 201U 2009 Kia Sedona

Max: 23.9 [KPH] at -0.015 [s]
Min: -9.7 [KPH] at 0.050 [s]

Headform Velocity



C90502 PASS. SIDE URRP IMPACT PLOT #5



CFC_180

C90502 - June 23, 2009



PRE-IMPACT URRP (2009 KIA SEDONA)



POST-IMPACT URRP (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	04
Test Date:	06/23/09
Target Location:	UPPER ROOF
Target Code:	UROP
Horizontal Impact Angle:	90°
Vertical Impact Angle:	50°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	10:30
Headform Number:	0805

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	0	mm right	mm left
On Centerline	52	mm up	



POST-IMPACT UROP HEADFORM (2009 KIA SEDONA)

Free Motion HIC	379.5
HIC(d)	452.7
Impact Velocity (kph)	23.62
HIC T1 (msec)	4.0
HIC T2 (msec)	16.4

FMVSS 201U 2009 Kia Sedona C90502 - UROP

FMH Headform 805

Location: UROP

Test Date: June 23, 2009

Work File: UROP

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 452.7

Lab Humidity: 41 %

HIC (36ms): 379.5

Velocity at Impact: 23.62 KPH

t1: 4.0 msec

t2: 16.4 msec

Free Flight Distance: 227.14 mm

Duration: 12.4 msec

Average Acceleration: 11.1 g

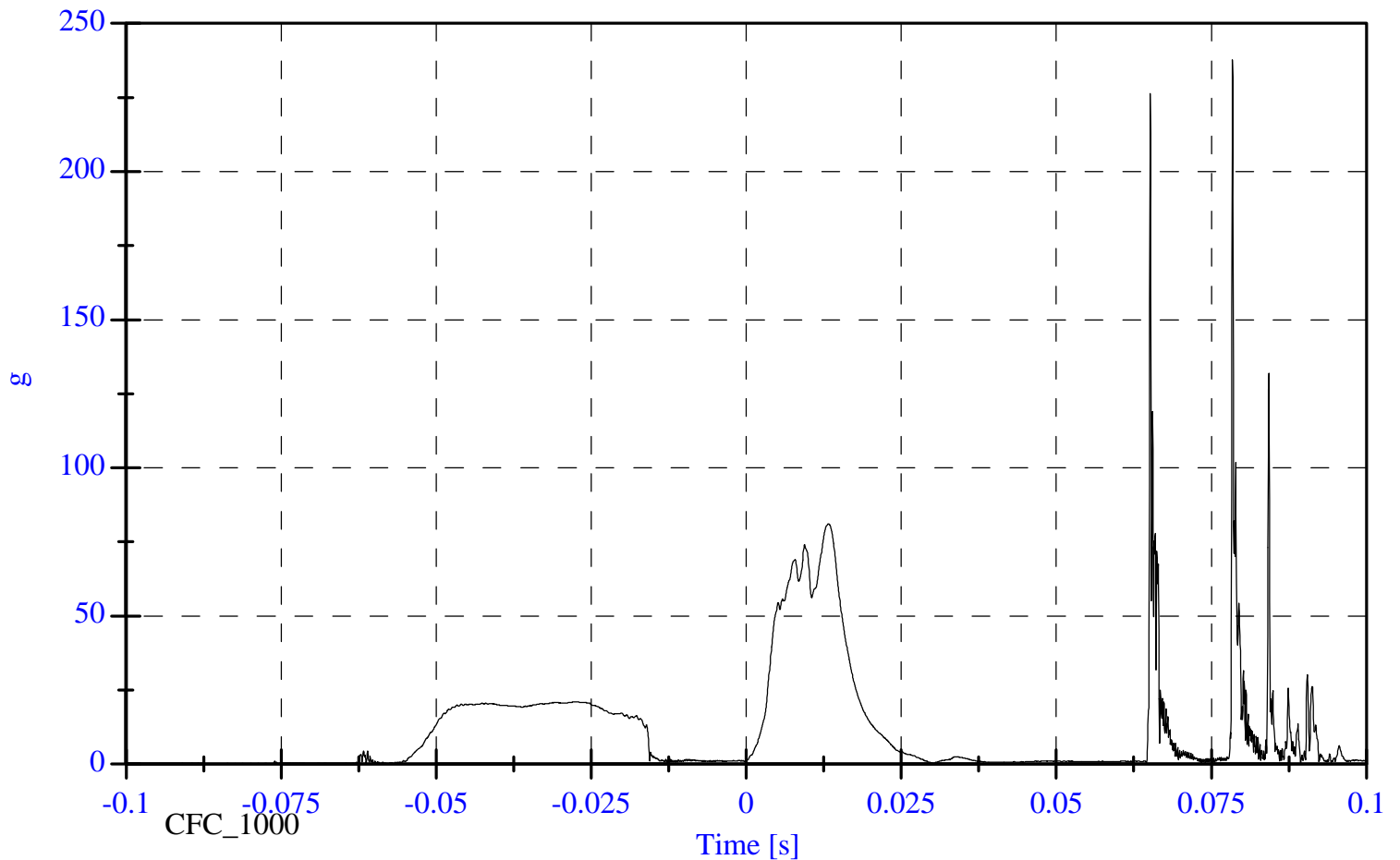
Maximum: 81.1 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 81.1 [g] at 0.013 [s]

Min: 0.0 [g] at -0.084 [s]



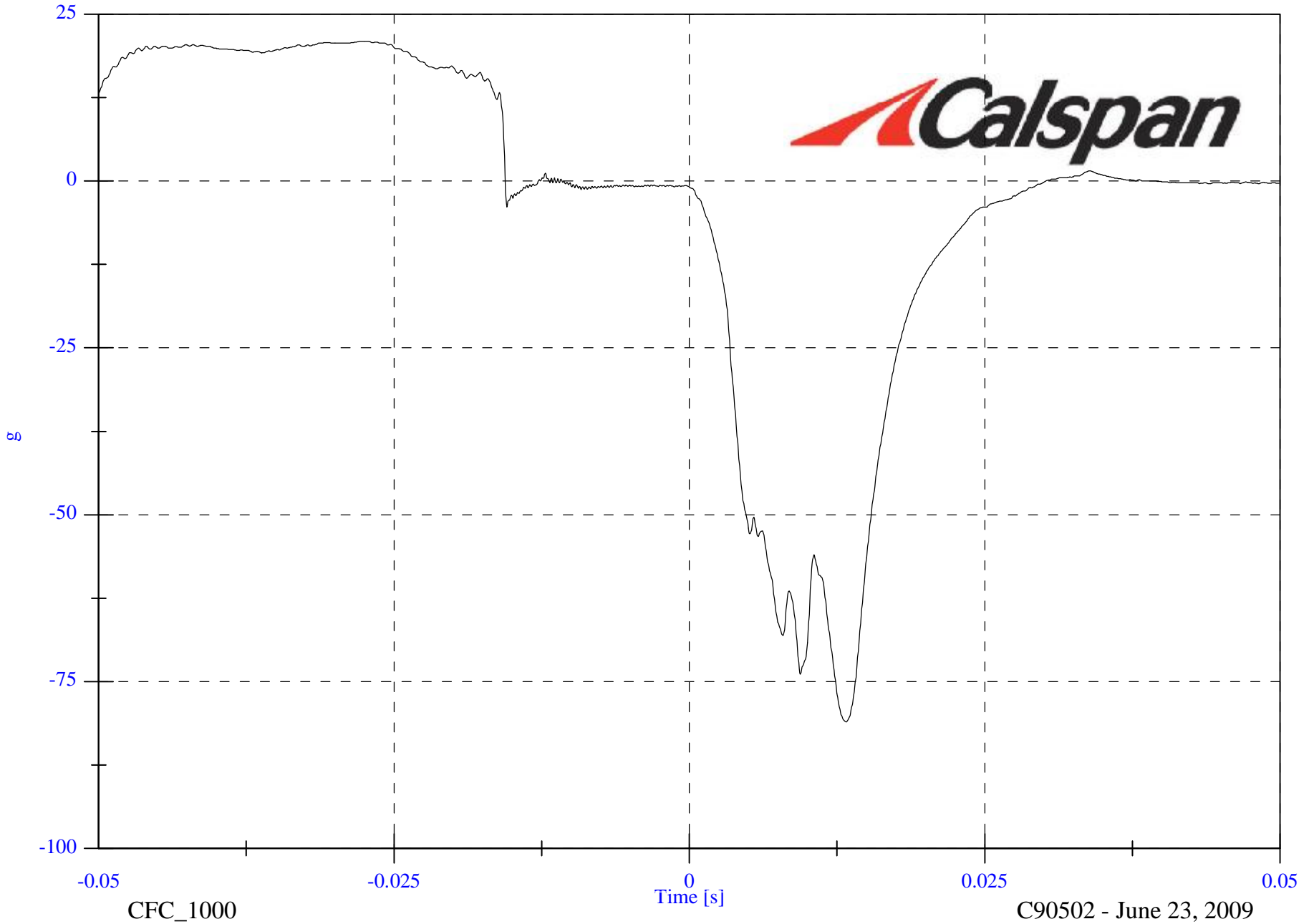
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 20.9 [g] at -0.027 [s]

Min: -81.0 [g] at 0.013 [s]

C90502 PASS, SIDE UROP IMPACT PLOT #1



CFC_1000

C90502 - June 23, 2009

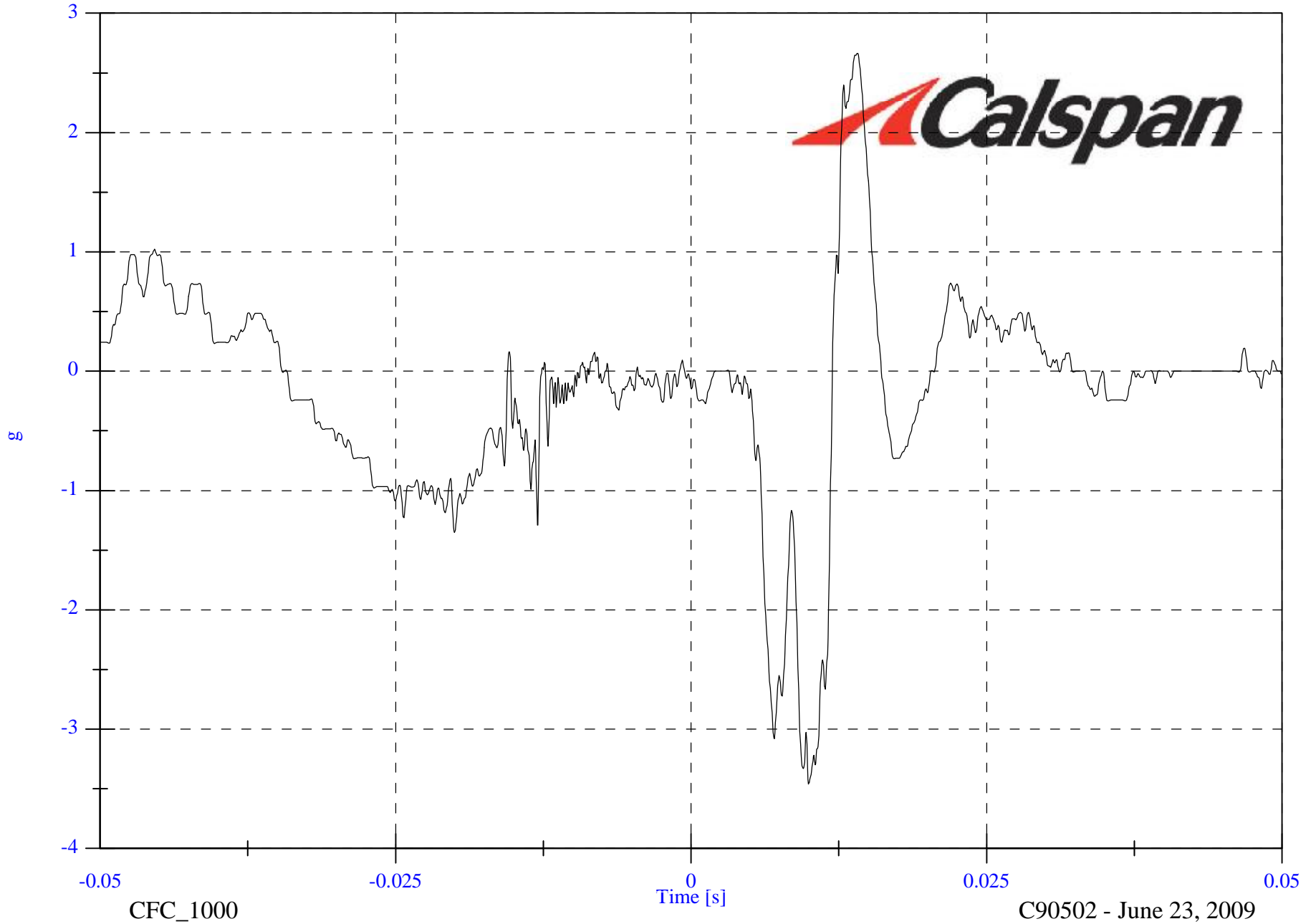
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 2.7 [g] at 0.014 [s]

Min: -3.5 [g] at 0.010 [s]

C90502 PASS, SIDE UROP IMPACT PLOT #2



C90502 - June 23, 2009

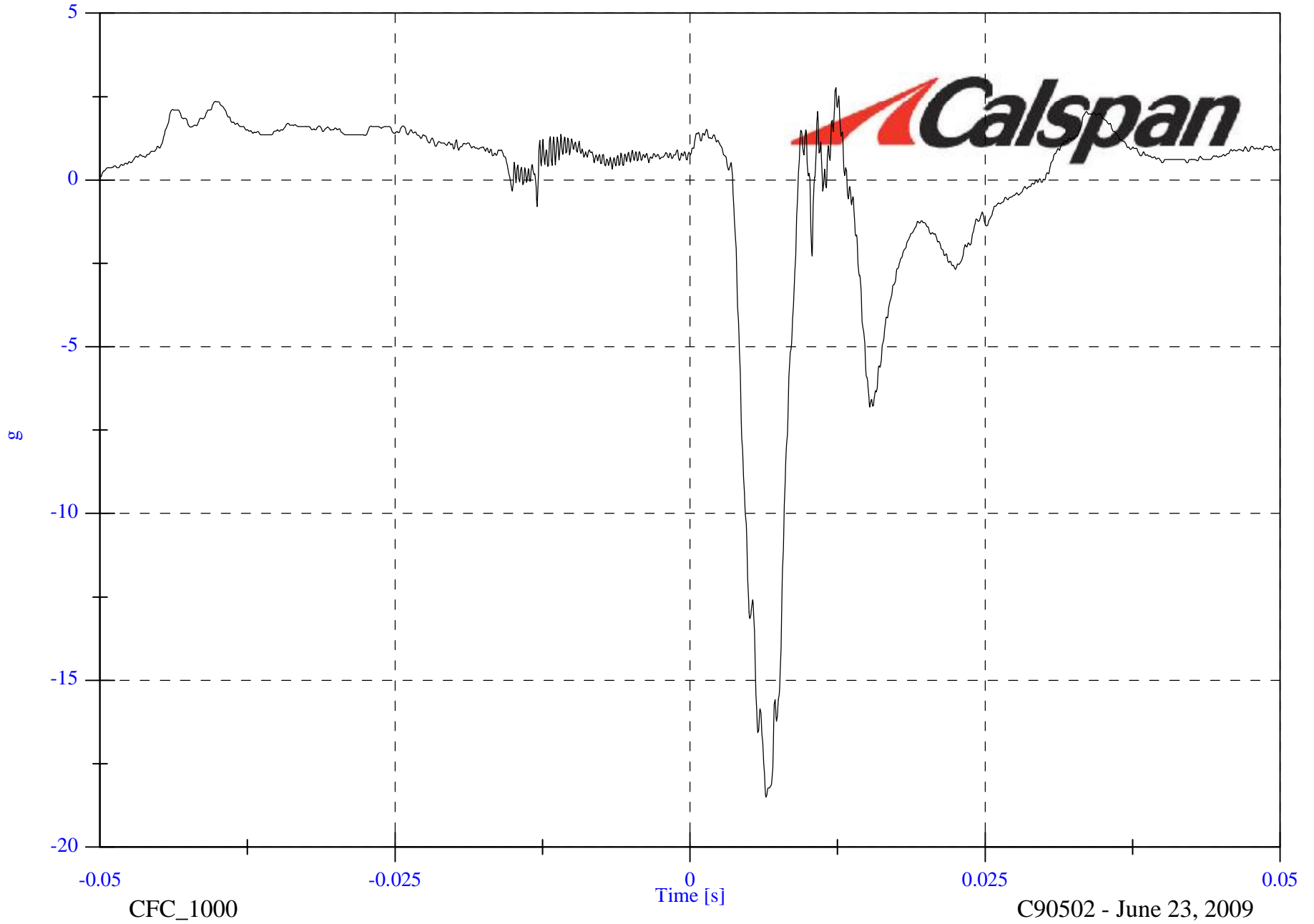
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 2.8 [g] at 0.012 [s]

Min: -18.5 [g] at 0.006 [s]

C90502 PASS, SIDE UROP IMPACT PLOT #3



CFC_1000

C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

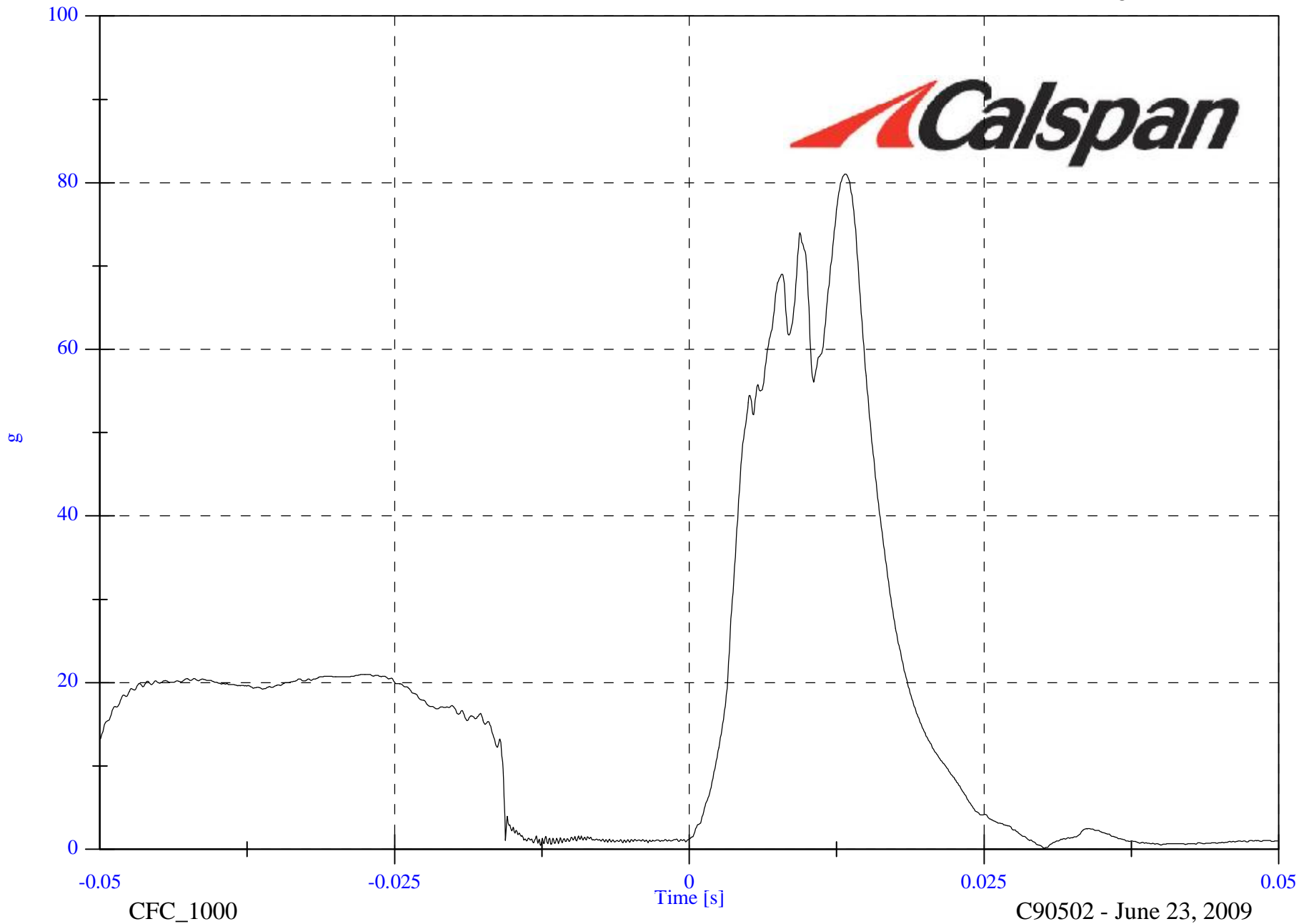
Headform Resultant

Max: 81.1 [g] at 0.013 [s]

Min: 0.1 [g] at 0.030 [s]



C90502 PASS, SIDE UROP IMPACT PLOT #4



CFC_1000

C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

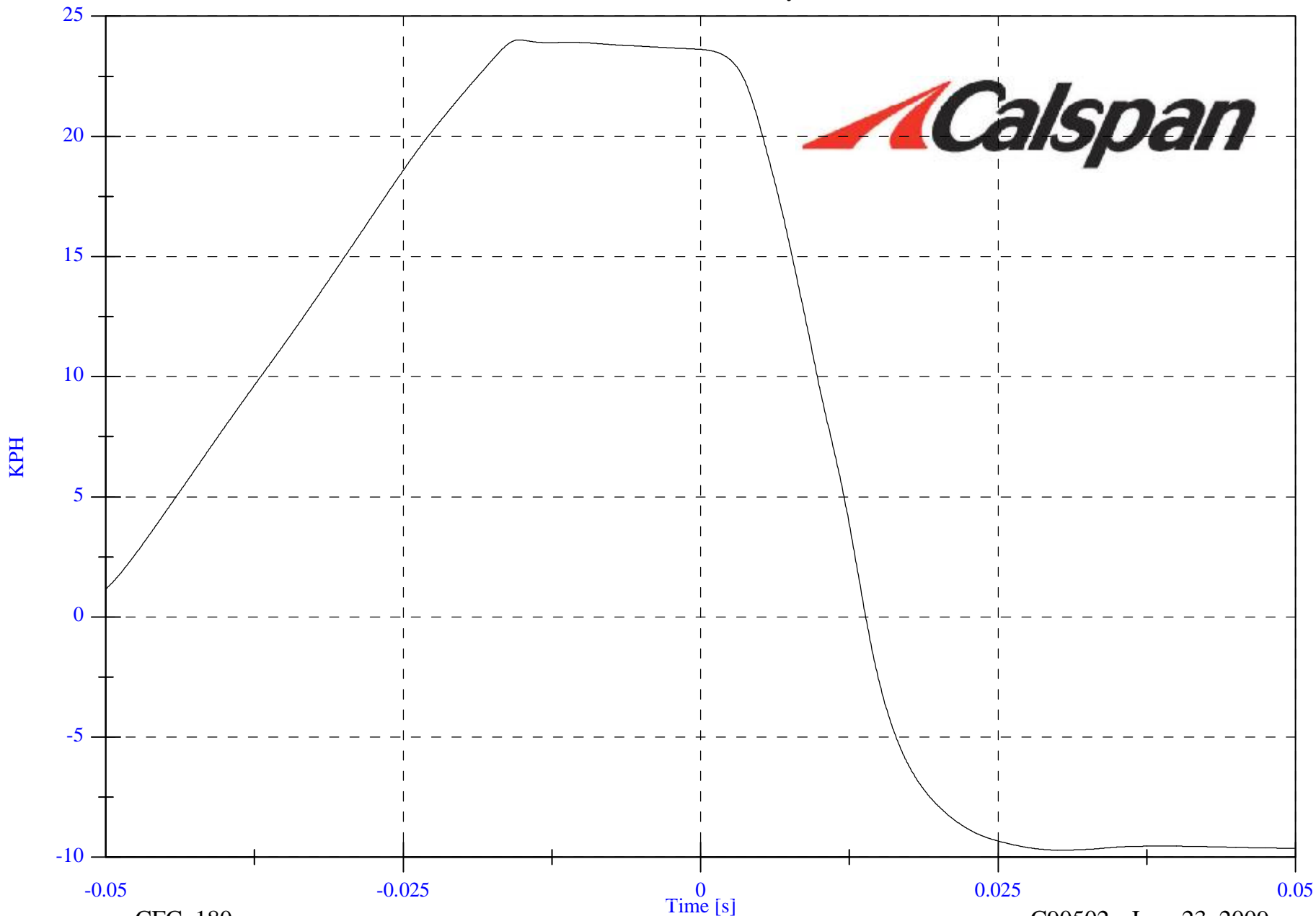
Max: 24.0 [KPH] at -0.015 [s]

Min: -9.7 [KPH] at 0.030 [s]

Headform Velocity



C90502 PASS, SIDE UROP IMPACT PLOT #5



CFC_180

C90502 - June 23, 2009



PRE-IMPACT UROP (2009 KIA SEDONA)



POST-IMPACT UROP (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	05
Test Date:	06/23/09
Target Location:	SLIDING DOOR
Target Code:	SD
Horizontal Impact Angle:	90°
Vertical Impact Angle:	10°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	11:15
Headform Number:	0355

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	5	<input type="checkbox"/> mm right	<input checked="" type="checkbox"/> mm left
On Centerline	19	mm up	



POST-IMPACT SD HEADFORM (2009 KIA SEDONA)

Free Motion HIC	72.7
HIC(d)	221.3
Impact Velocity (kph)	18.45
HIC T1 (msec)	3.6
HIC T2 (msec)	13.8

FMVSS 201U 2009 Kia Sedona C90502 - SD

FMH Headform 0355

Location: SD

Test Date: June 23, 2009

Work File: SD

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 221.3

Lab Humidity: 41 %

HIC (36ms): 72.7

Velocity at Impact: 18.45 KPH

t1: 3.6 msec

t2: 13.8 msec

Free Flight Distance: 224.66 mm

Duration: 10.2 msec

Average Acceleration: 6.1 g

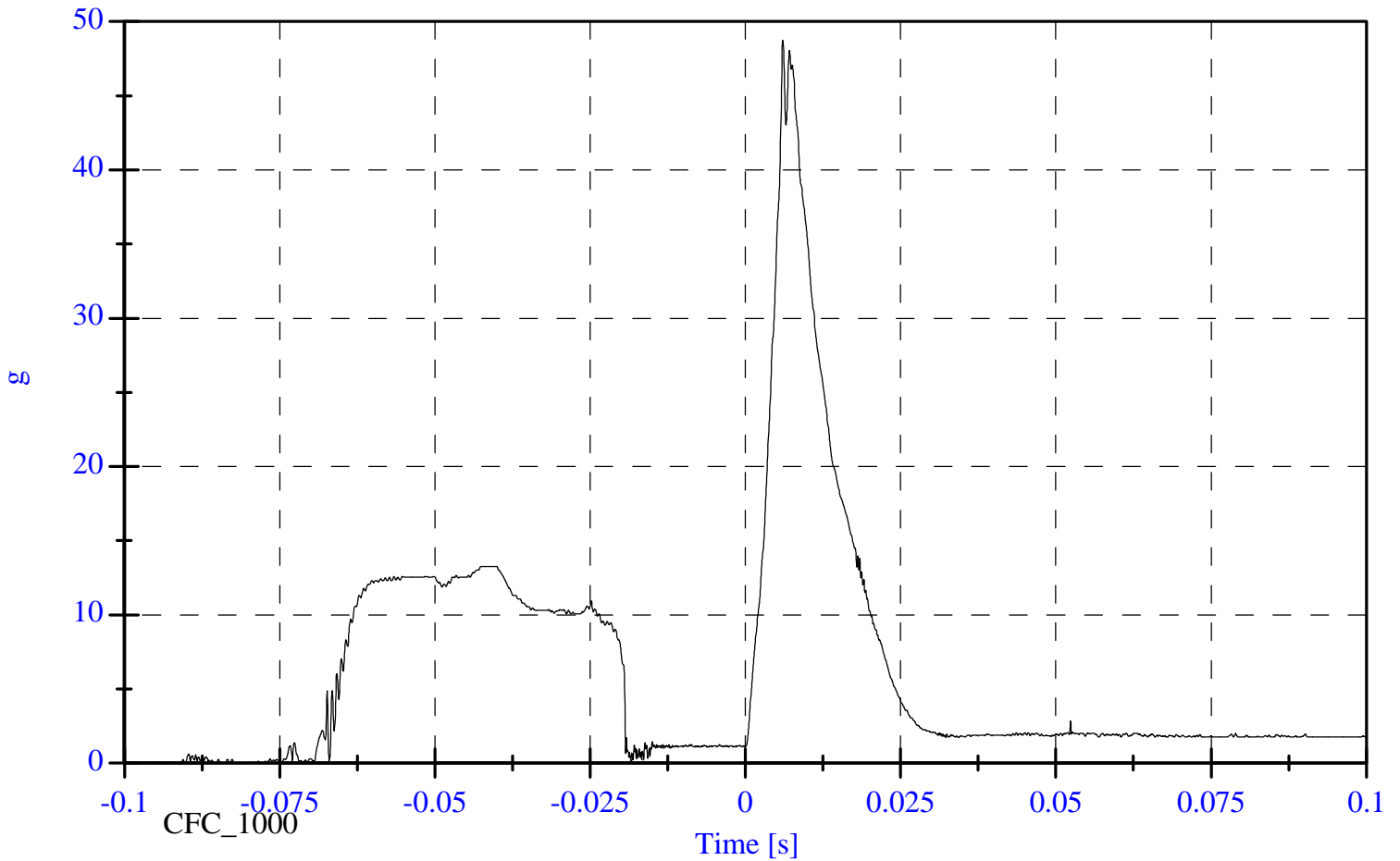
Maximum: 48.7 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 48.7 [g] at 0.006 [s]

Min: 0.0 [g] at -0.083 [s]



FMVSS 201U 2009 Kia Sedona

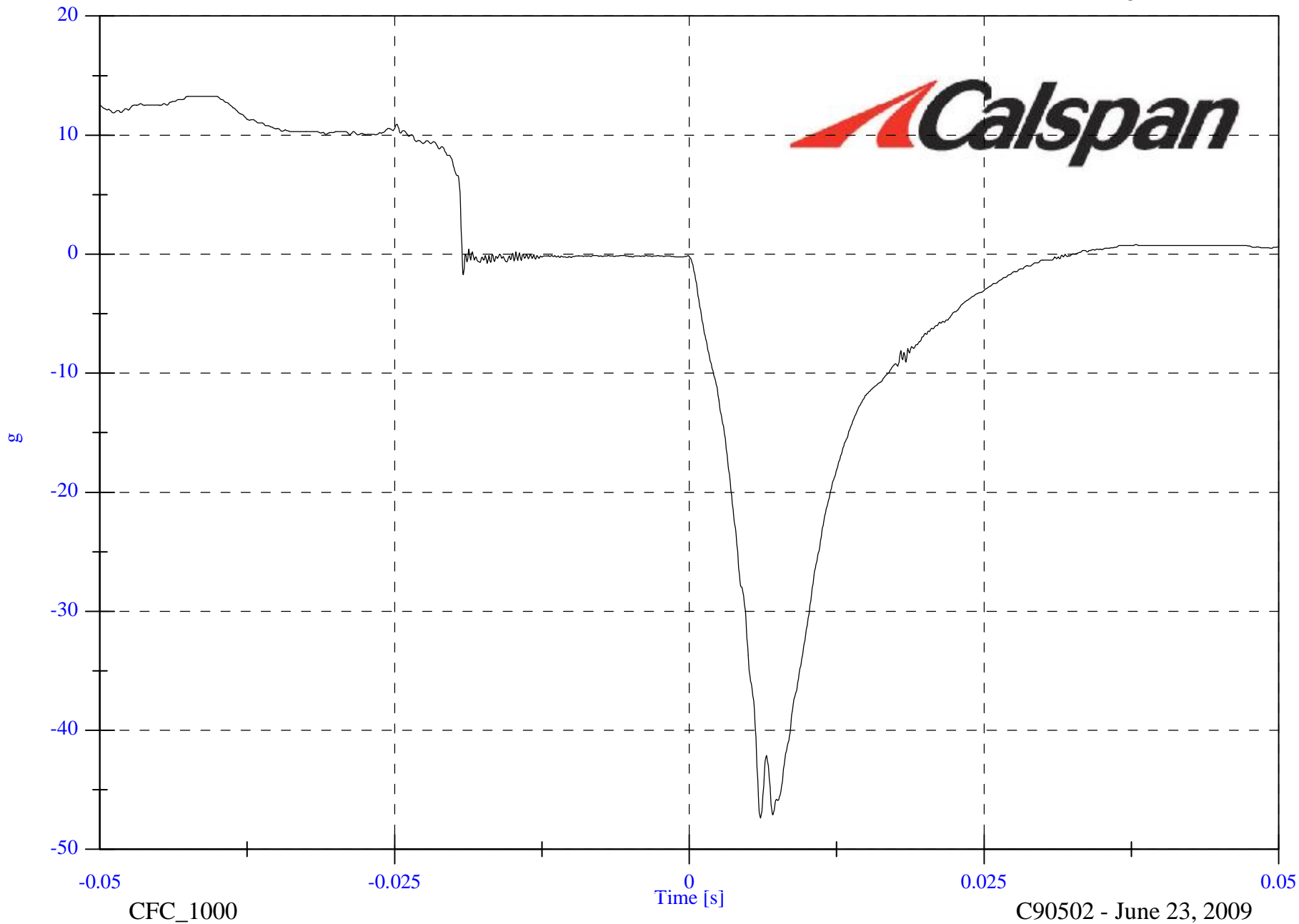
Headform X Acceleration

Max: 13.3 [g] at -0.043 [s]

Min: -47.4 [g] at 0.006 [s]



C90502 PASS. SIDE SD IMPACT PLOT #1



C90502 - June 23, 2009

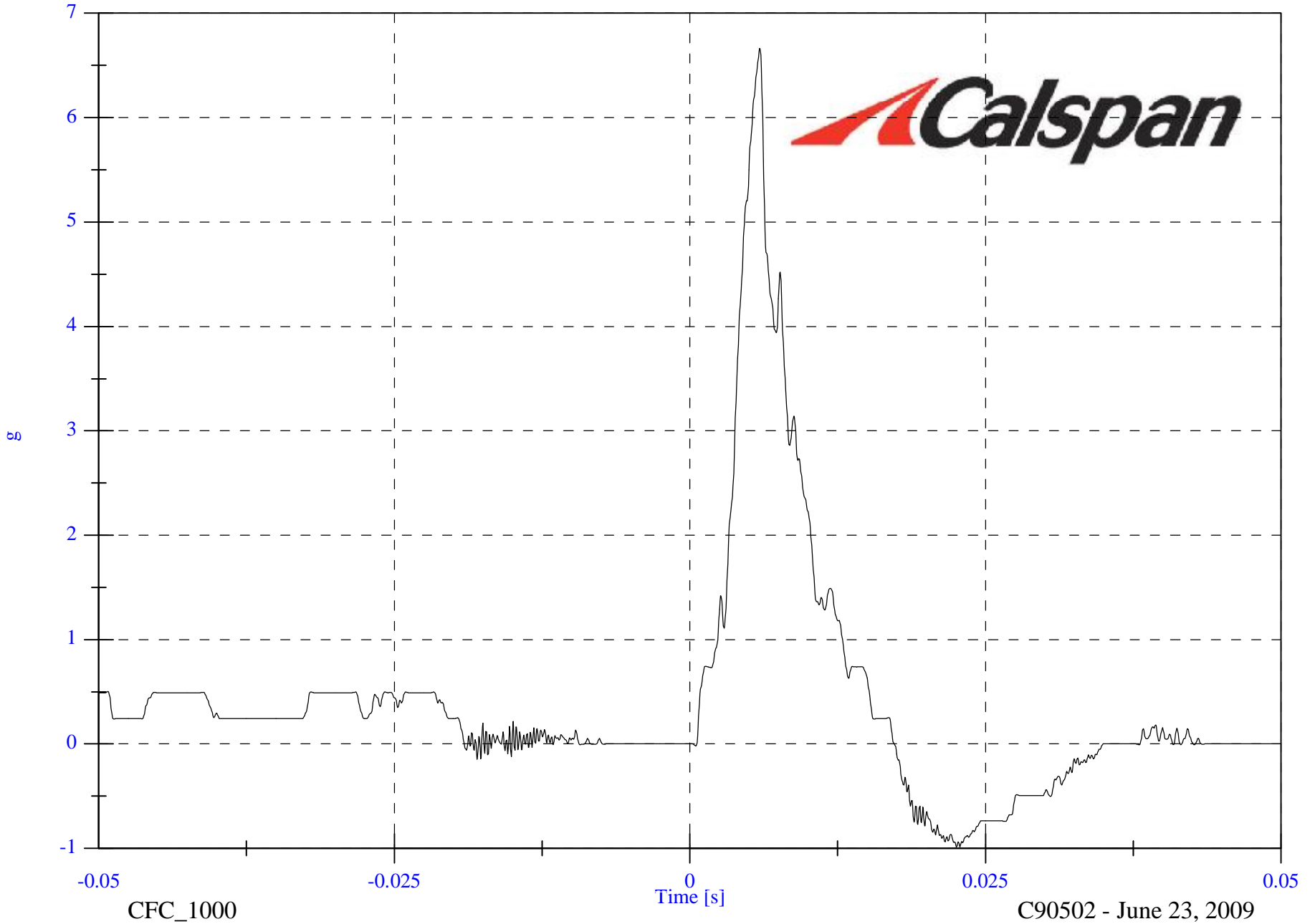
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 6.7 [g] at 0.006 [s]

Min: -1.0 [g] at 0.023 [s]

C90502 PASS. SIDE SD IMPACT PLOT #2



CFC_1000

C90502 - June 23, 2009

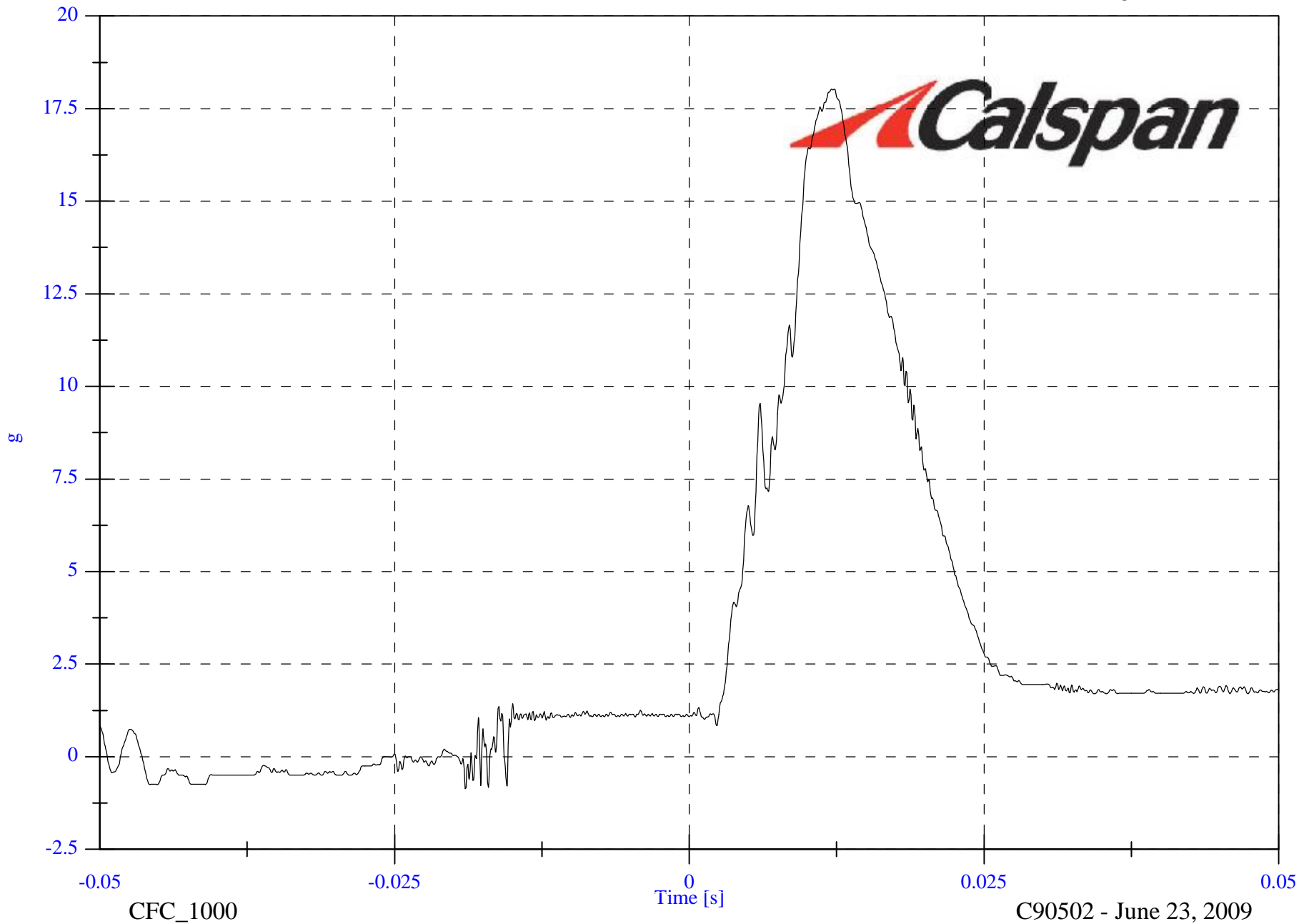
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 18.0 [g] at 0.012 [s]

Min: -0.9 [g] at -0.019 [s]

C90502 PASS, SIDE SD IMPACT PLOT #3



C90502 - June 23, 2009

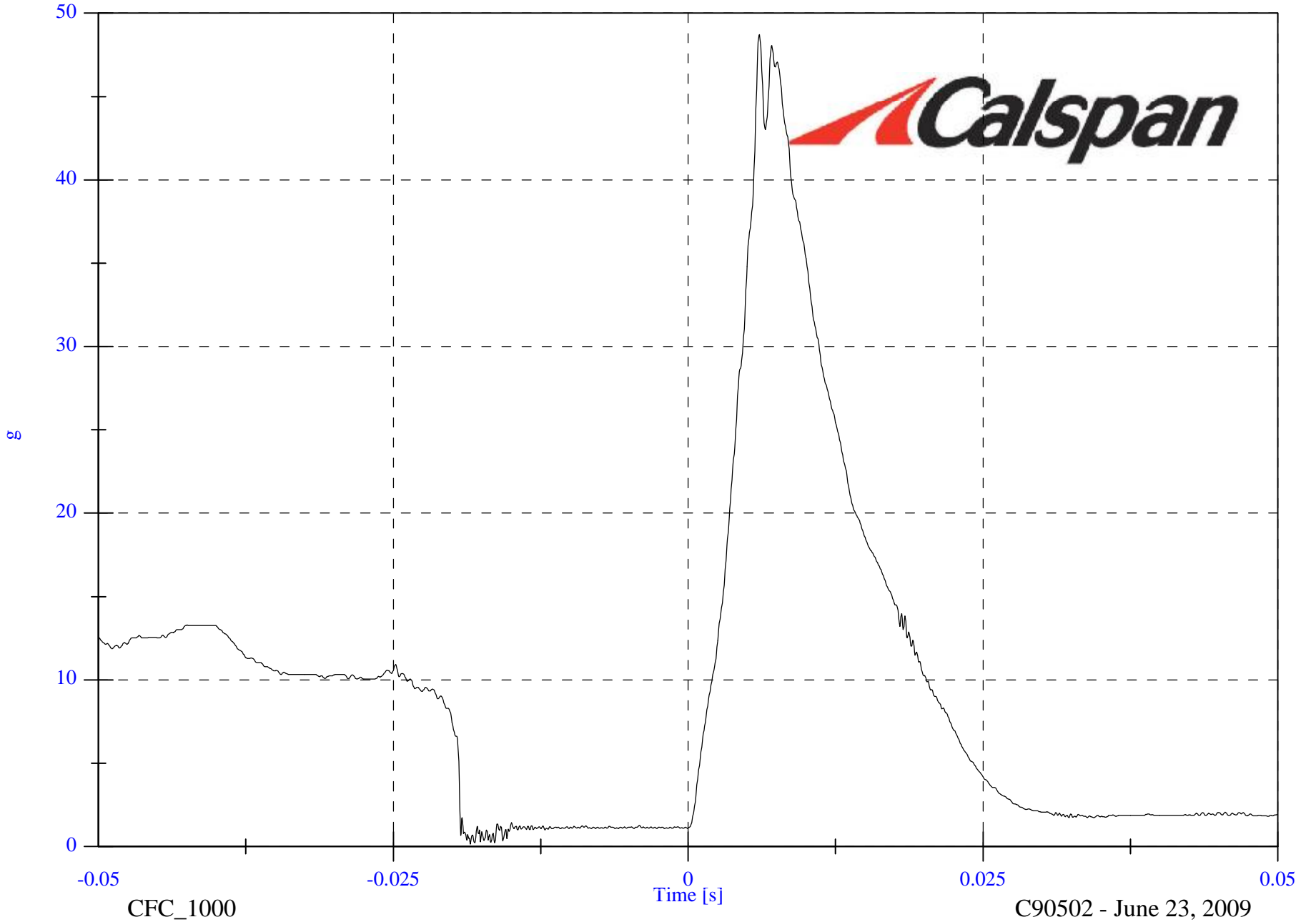
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 48.7 [g] at 0.006 [s]

Min: 0.1 [g] at -0.018 [s]

C90502 PASS. SIDE SD IMPACT PLOT #4



CFC_1000

C90502 - June 23, 2009

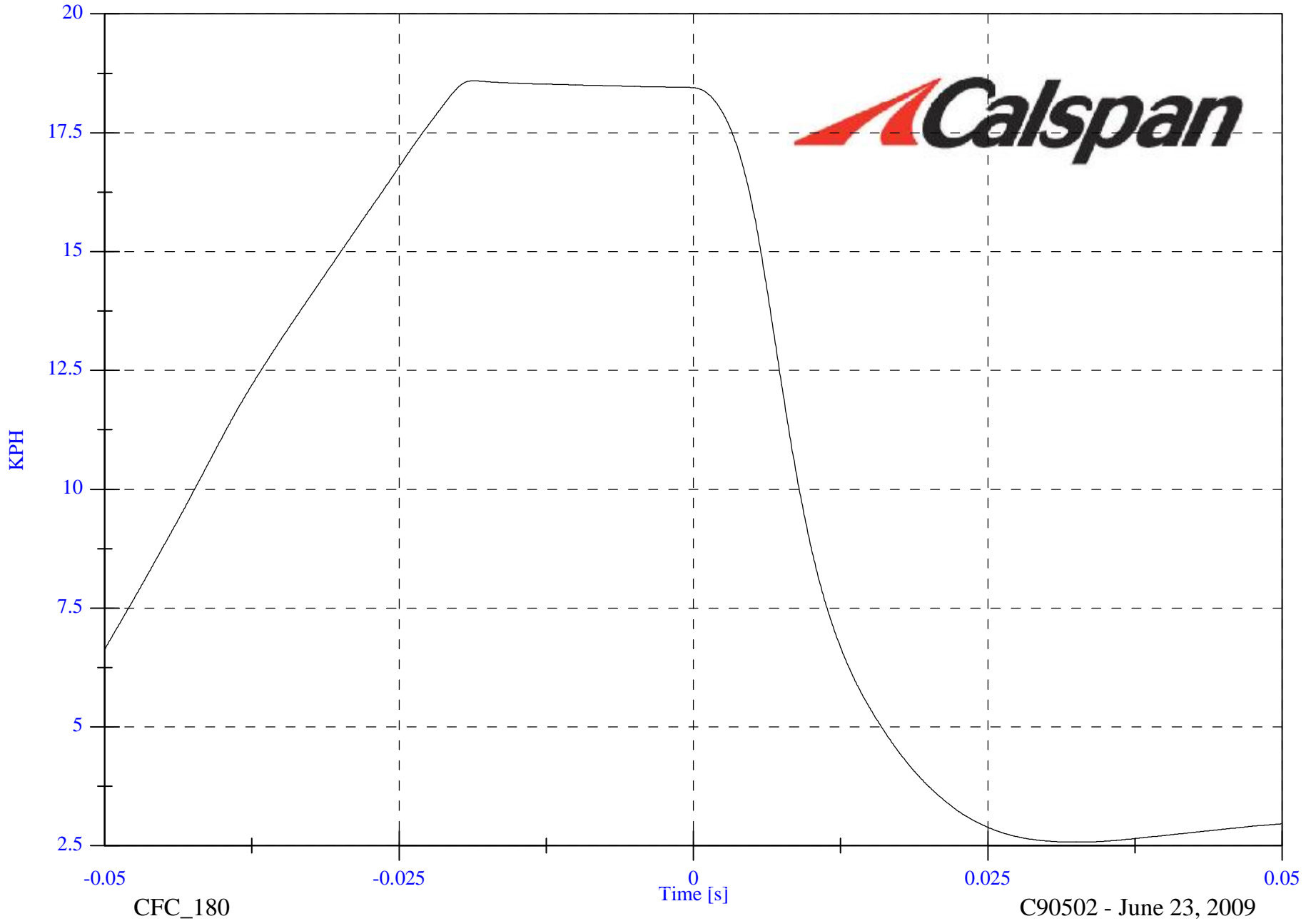
FMVSS 201U 2009 Kia Sedona

Headform Velocity

Max: 18.6 [KPH] at -0.019 [s]

Min: 2.6 [KPH] at 0.033 [s]

C90502 PASS. SIDE SD IMPACT PLOT #5



CFC_180

C90502 - June 23, 2009



PRE-IMPACT SD (2009 KIA SEDONA)

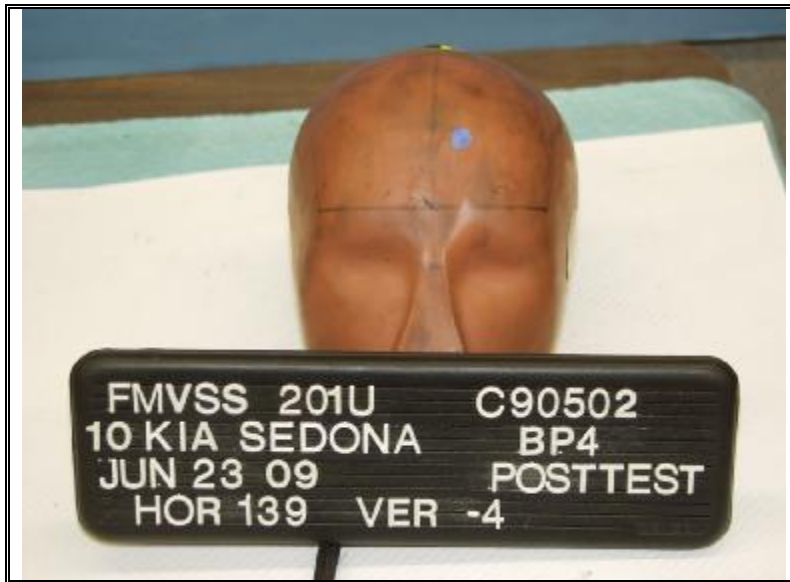


POST-IMPACT SD (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	06
Test Date:	06/23/09
Target Location:	B-PILLAR
Target Code:	BP4
Horizontal Impact Angle:	139°
Vertical Impact Angle:	-4°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	12:00
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	15	<input type="checkbox"/>	mm right <input checked="" type="checkbox"/> mm left
On Centerline	33		mm up



POST-IMPACT BP4 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	286.2
HIC(d)	382.3
Impact Velocity (kph)	23.54
HIC T1 (msec)	2.5
HIC T2 (msec)	9.4

FMVSS 201U 2009 Kia Sedona C90502 - BP4

FMH Headform 0062

Location: BP4

Test Date: June 23, 2009

Work File: BP4

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 382.3

Lab Humidity: 41 %

HIC (36ms): 286.1

Velocity at Impact: 23.54 KPH

t1: 2.5 msec

t2: 9.4 msec

Free Flight Distance: 231.52 mm

Duration: 6.9 msec

Average Acceleration: 8.4 g

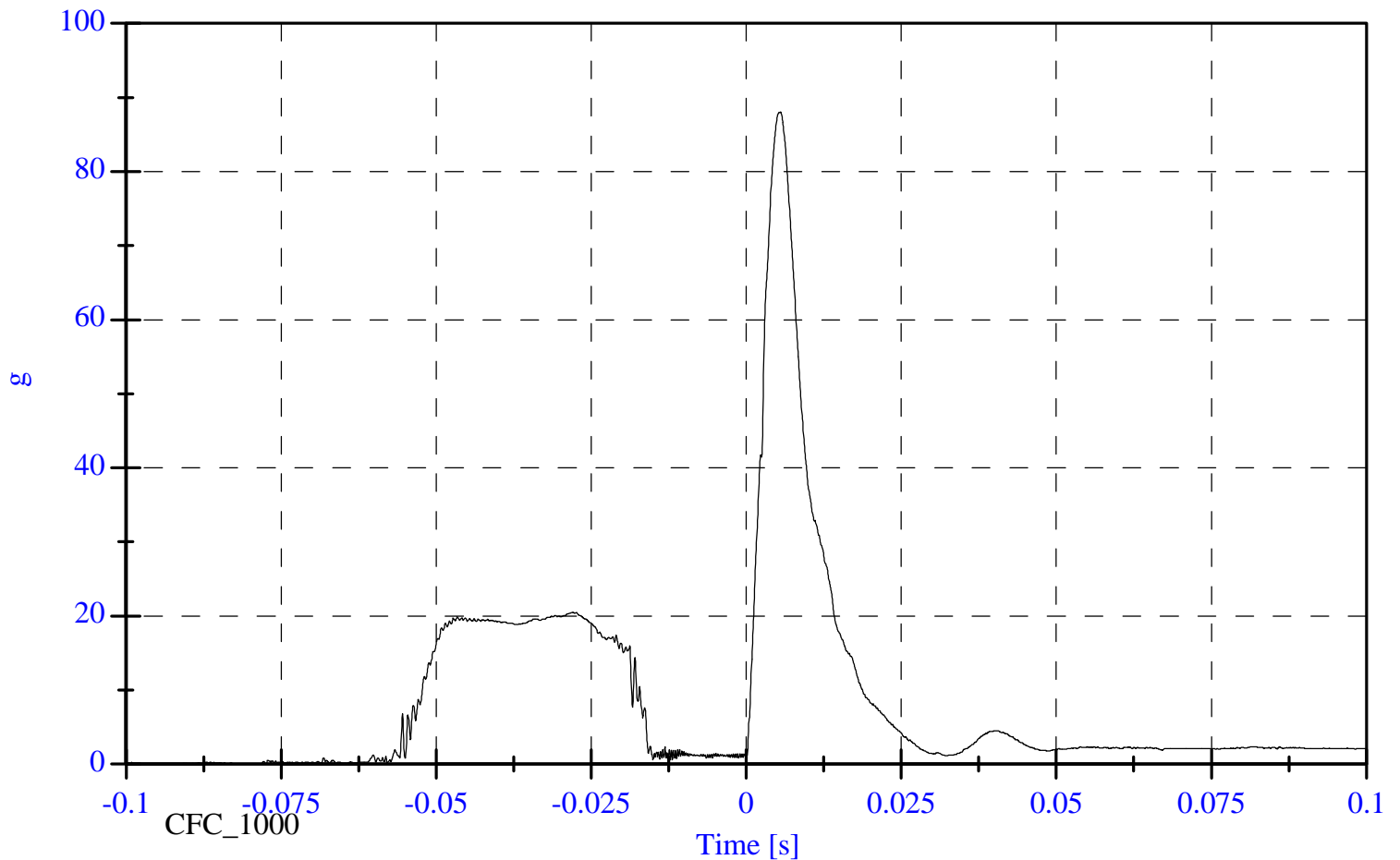
Maximum: 88.0 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 88.0 [g] at 0.006 [s]

Min: 0.0 [g] at -0.096 [s]



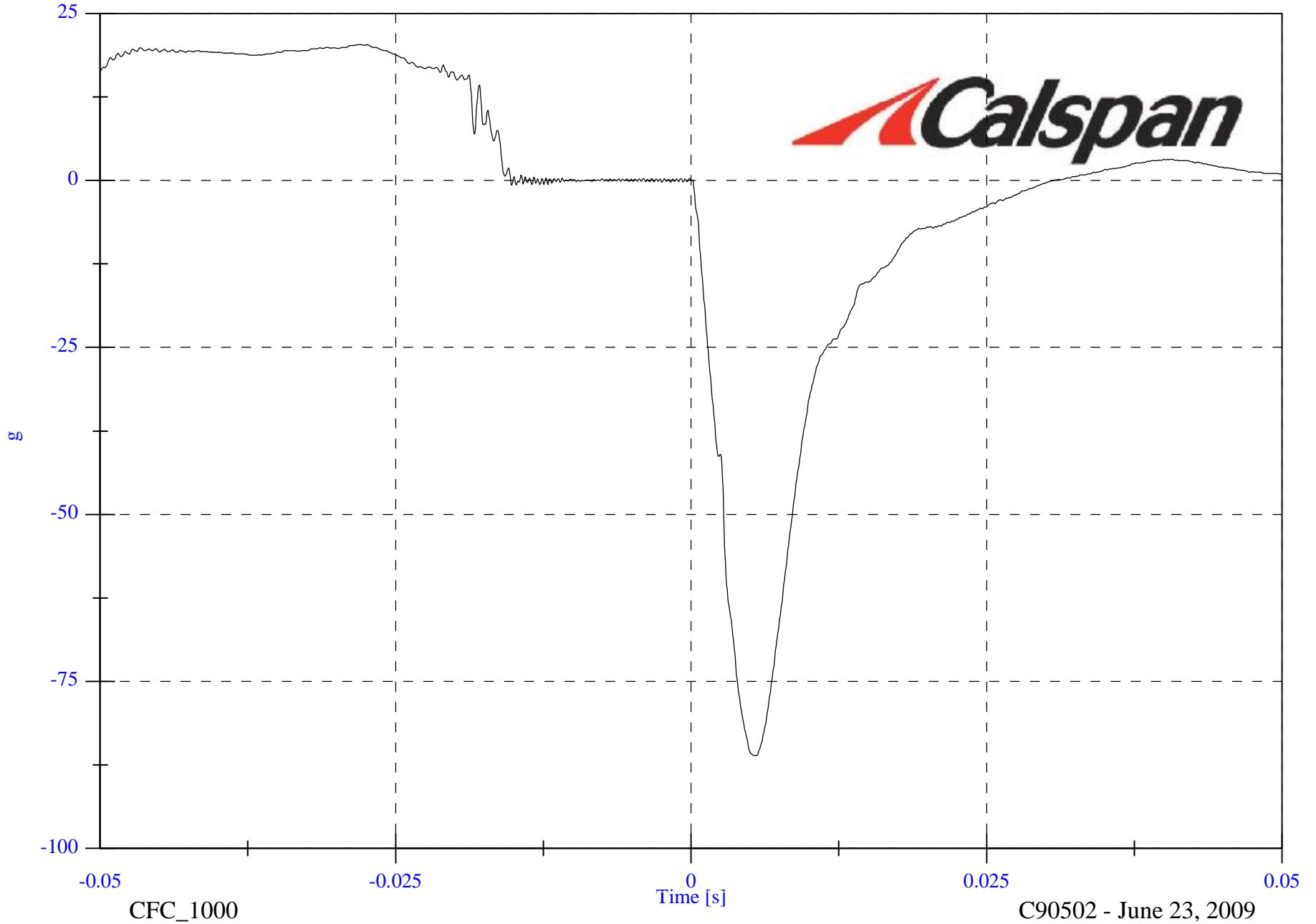
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 20.3 [g] at -0.028 [s]

Min: -86.1 [g] at 0.006 [s]

C90502 PASS.SIDE BP4 IMPACT PLOT #1



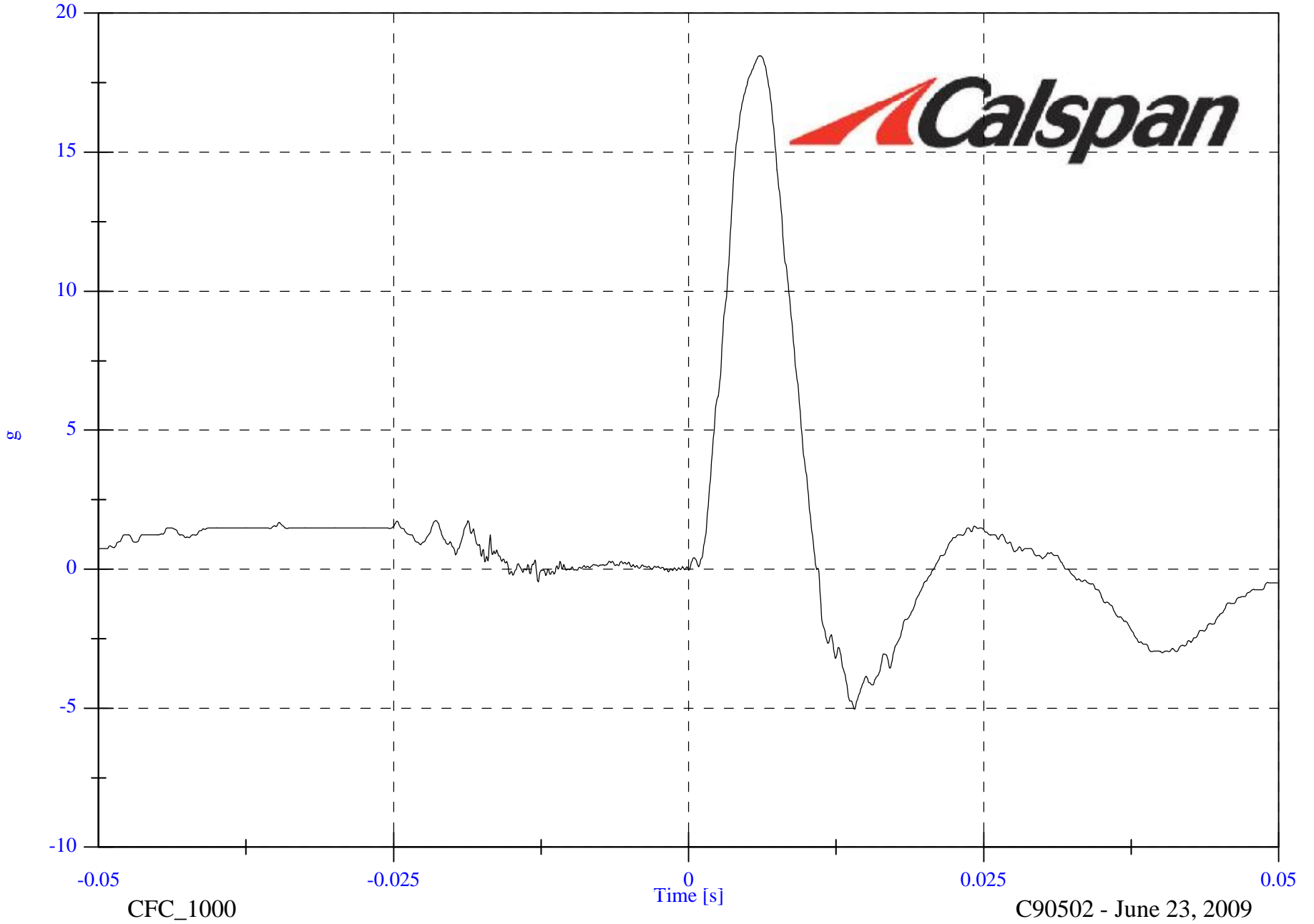
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 18.5 [g] at 0.006 [s]

Min: -5.0 [g] at 0.014 [s]

C90502 PASS.SIDE BP4 IMPACT PLOT #2



CFC_1000

C90502 - June 23, 2009

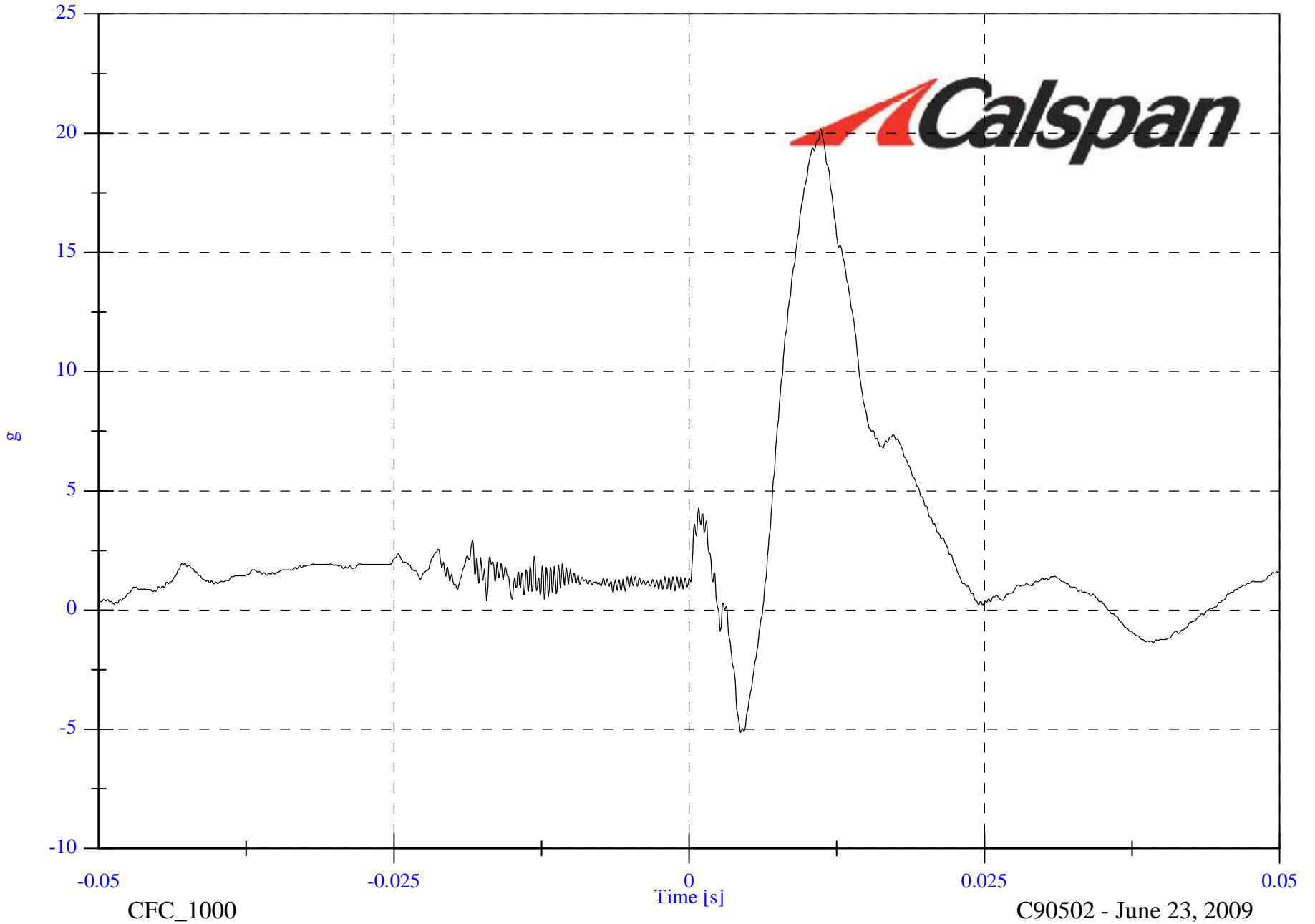
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 20.2 [g] at 0.011 [s]

Min: -5.1 [g] at 0.004 [s]

C90502 PASS.SIDE BP4 IMPACT PLOT #3



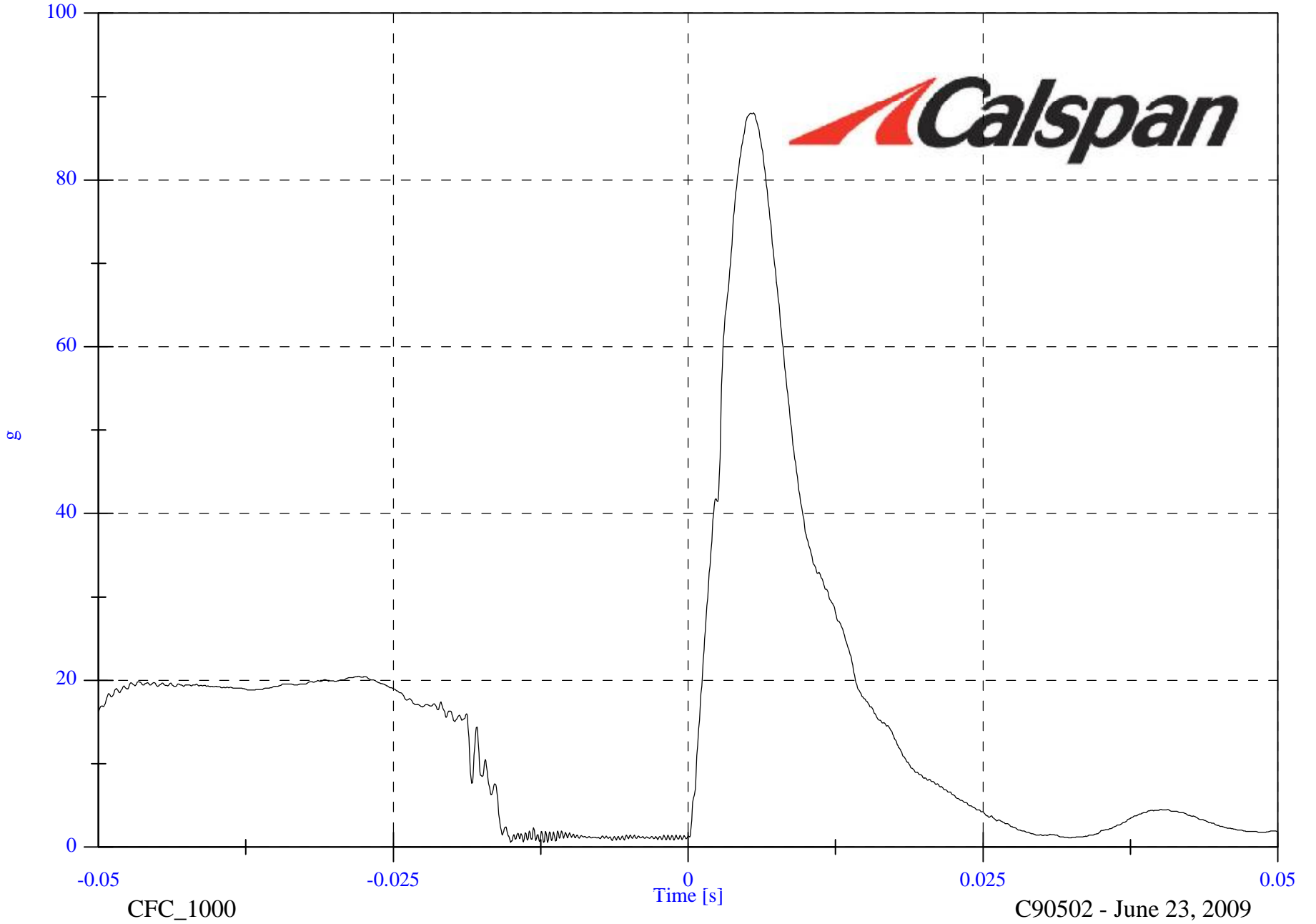
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 88.0 [g] at 0.006 [s]

Min: 0.5 [g] at -0.015 [s]

C90502 PASS.SIDE BP4 IMPACT PLOT #4



CFC_1000

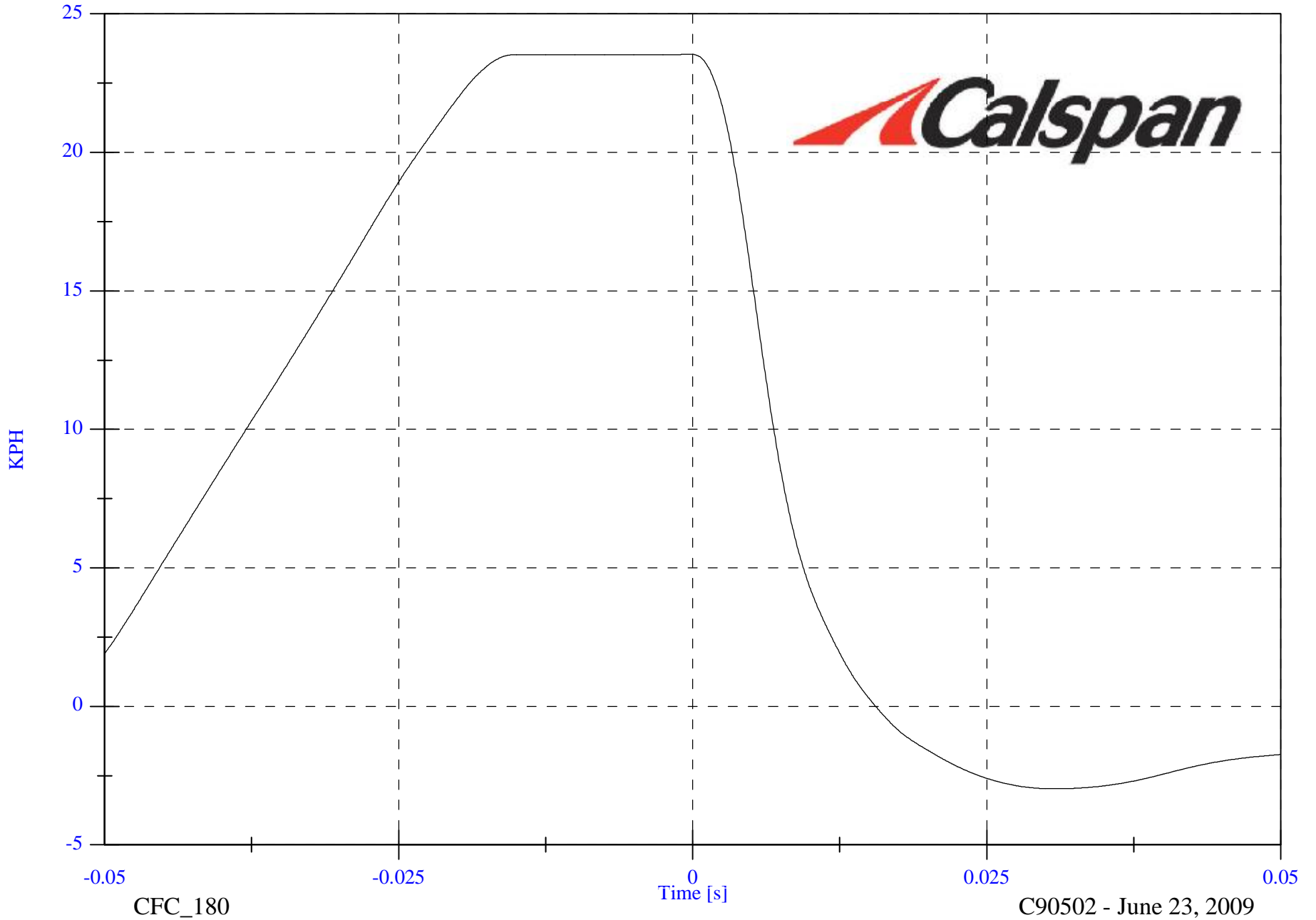
C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Max: 23.5 [KPH] at -0.000 [s]

Min: -3.0 [KPH] at 0.031 [s]

Headform Velocity



C90502 PASS.SIDE BP4 IMPACT PLOT #5

CFC_180

C90502 - June 23, 2009



PRE-IMPACT BP4 (2009 KIA SEDONA)



POST-IMPACT BP4 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	07
Test Date:	06/23/09
Target Location:	B-PILLAR
Target Code:	BP2
Horizontal Impact Angle:	90°
Vertical Impact Angle:	0°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	13:55
Headform Number:	1140

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	5	<input checked="" type="checkbox"/>	mm right	<input type="checkbox"/>	mm left
On Centerline	10				mm up



POST-IMPACT BP2 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	377.3
HIC(d)	451.1
Impact Velocity (kph)	23.55
HIC T1 (msec)	5.1
HIC T2 (msec)	12.8

FMVSS 201U 2009 Kia Sedona C90502 - BP2

FMH Headform 1140

Location: BP2

Test Date: June 23, 2009

Work File: BP2

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 451.1

Lab Humidity: 41 %

HIC (36ms): 377.3

Velocity at Impact: 23.55 KPH

t1: 5.1 msec

t2: 12.8 msec

Free Flight Distance: 222.81 mm

Duration: 7.7 msec

Average Acceleration: 8.7 g

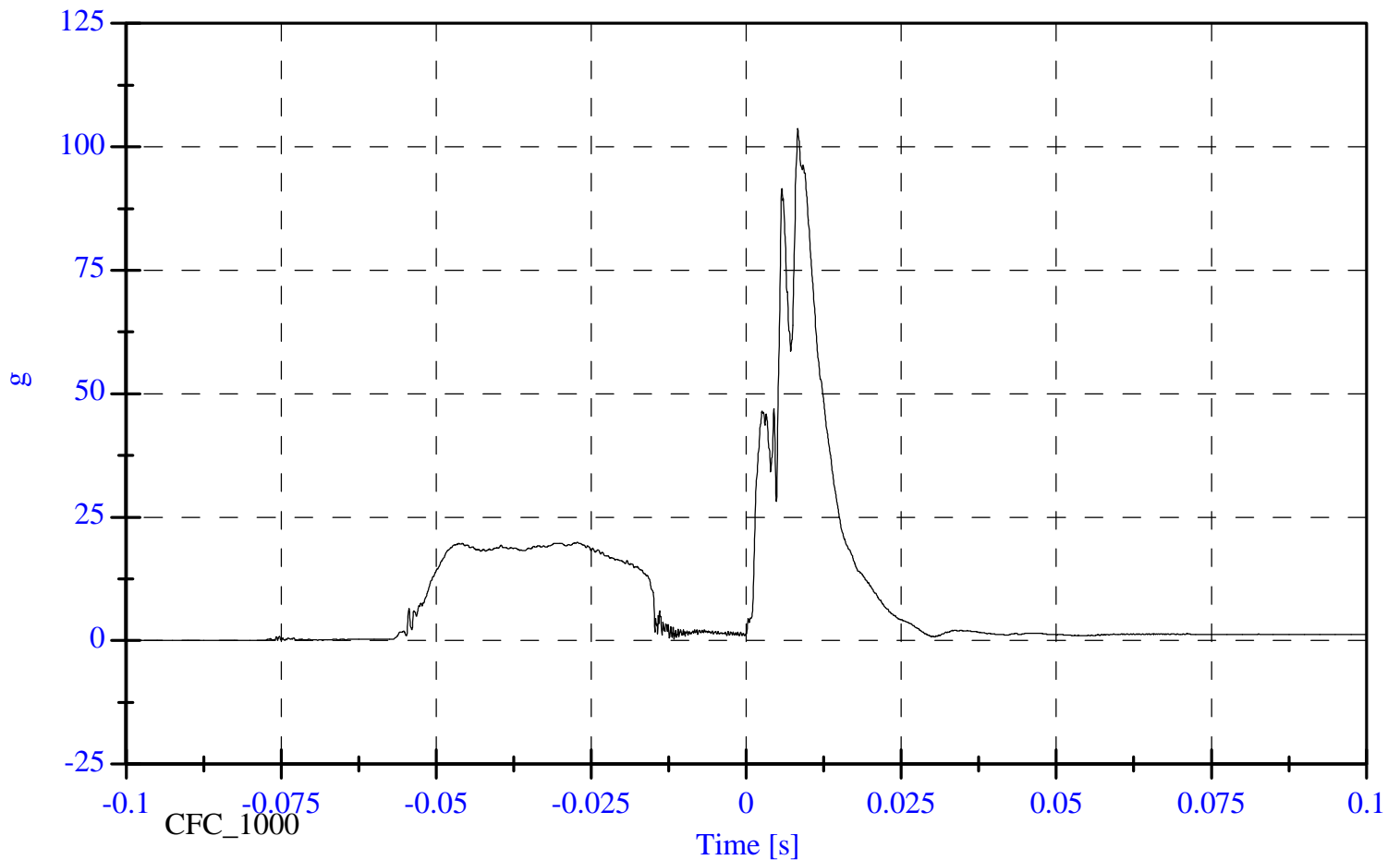
Maximum: 103.7 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 103.7 [g] at 0.008 [s]

Min: -0.0 [g] at -0.100 [s]



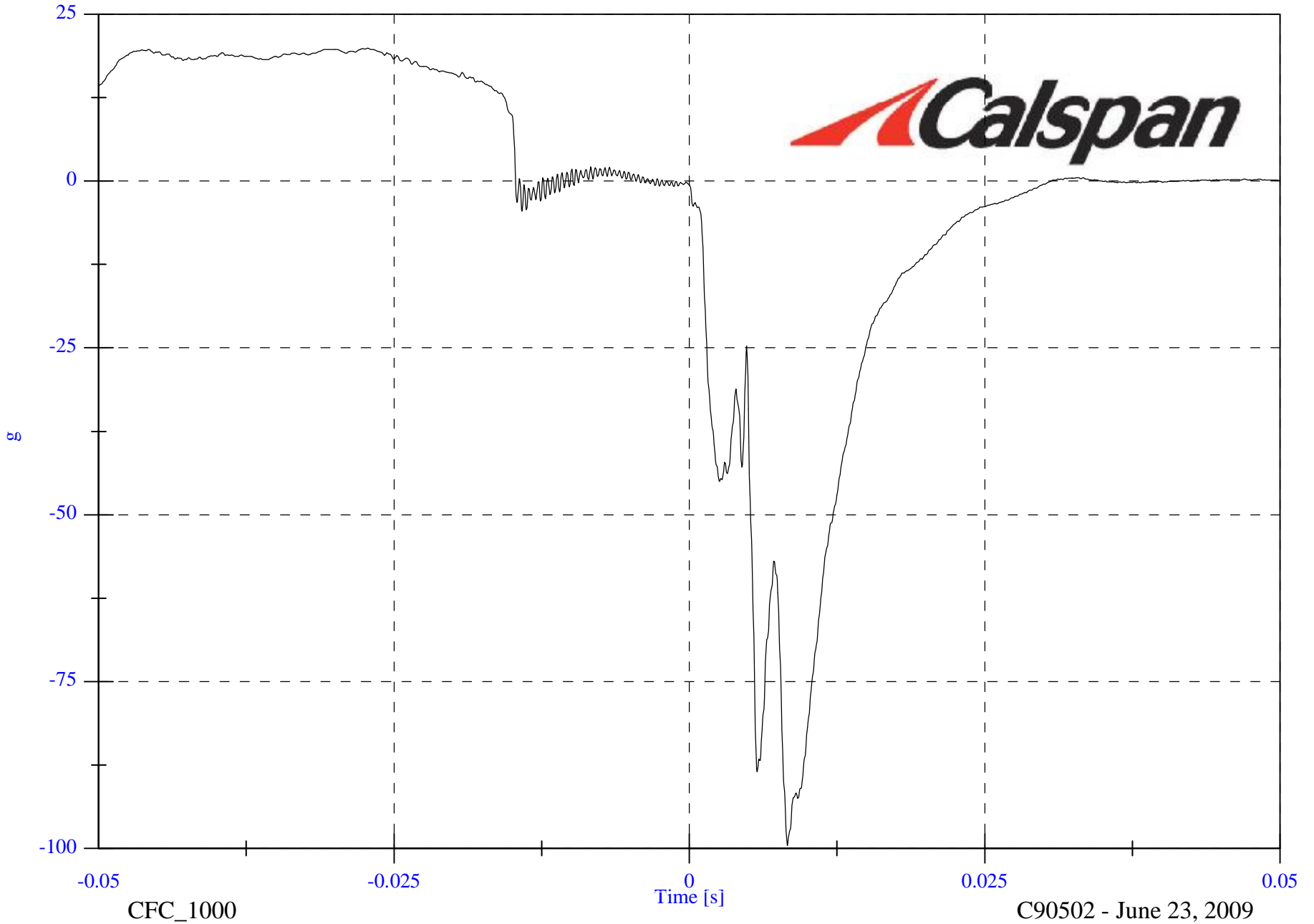
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 19.9 [g] at -0.027 [s]

Min: -99.6 [g] at 0.008 [s]

C90502 PASS. SIDE BP2 IMPACT PLOT #1



CFC_1000

C90502 - June 23, 2009

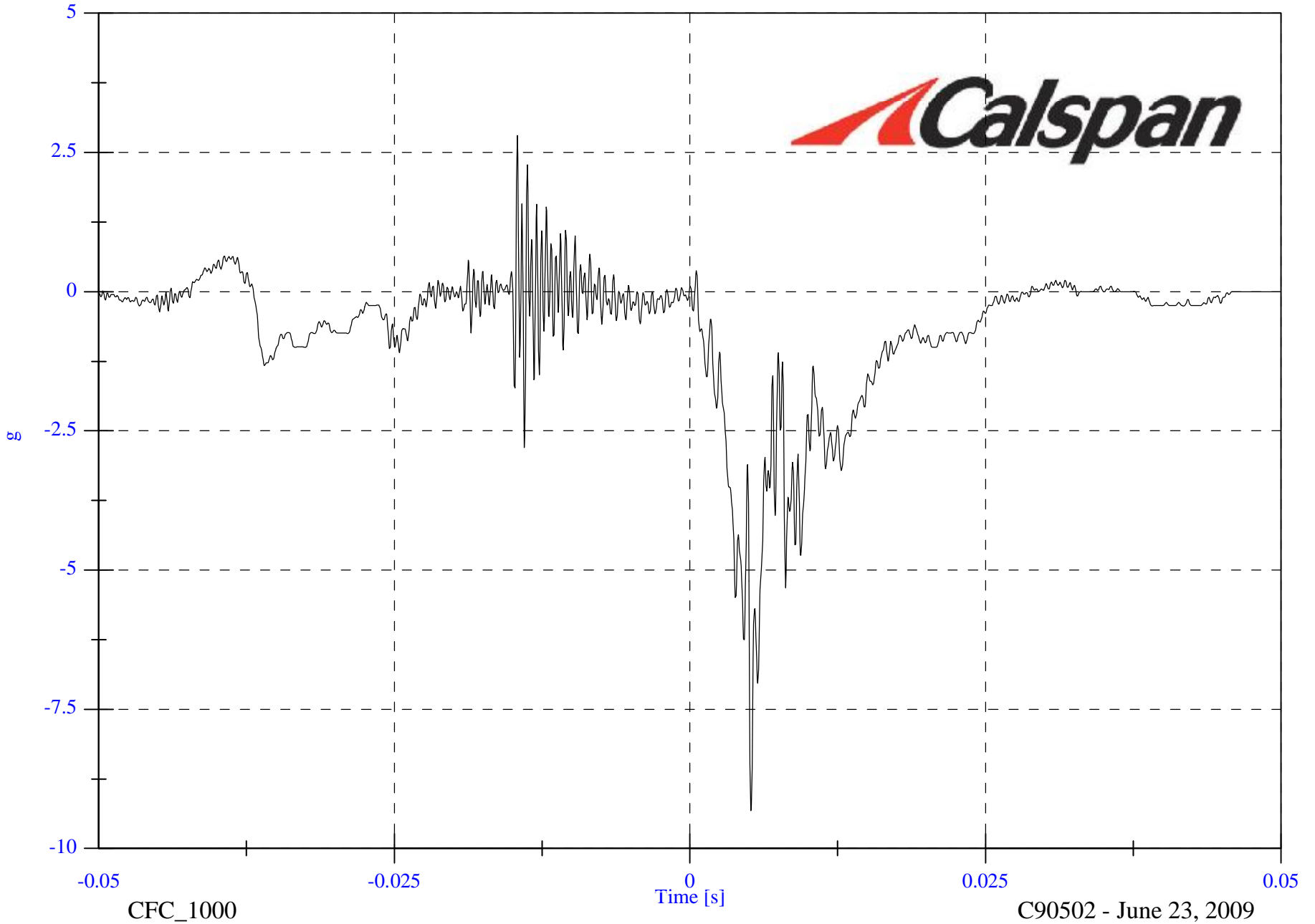
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 2.8 [g] at -0.015 [s]

Min: -9.3 [g] at 0.005 [s]

C90502 PASS, SIDE BP2 IMPACT PLOT #2



CFC_1000

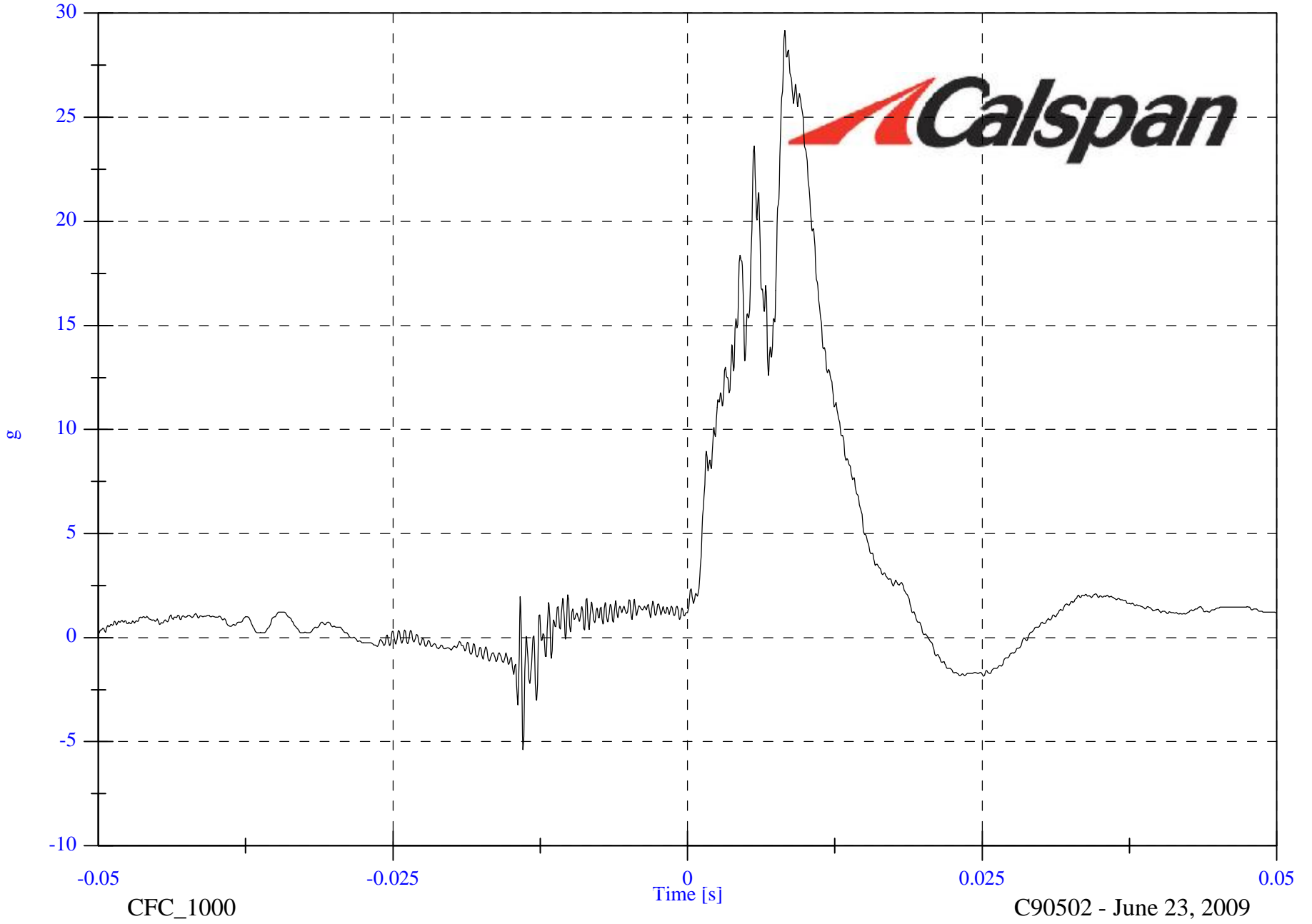
C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 29.2 [g] at 0.008 [s]
Min: -5.4 [g] at -0.014 [s]

C90502 PASS, SIDE BP2 IMPACT PLOT #3



CFC_1000

C90502 - June 23, 2009

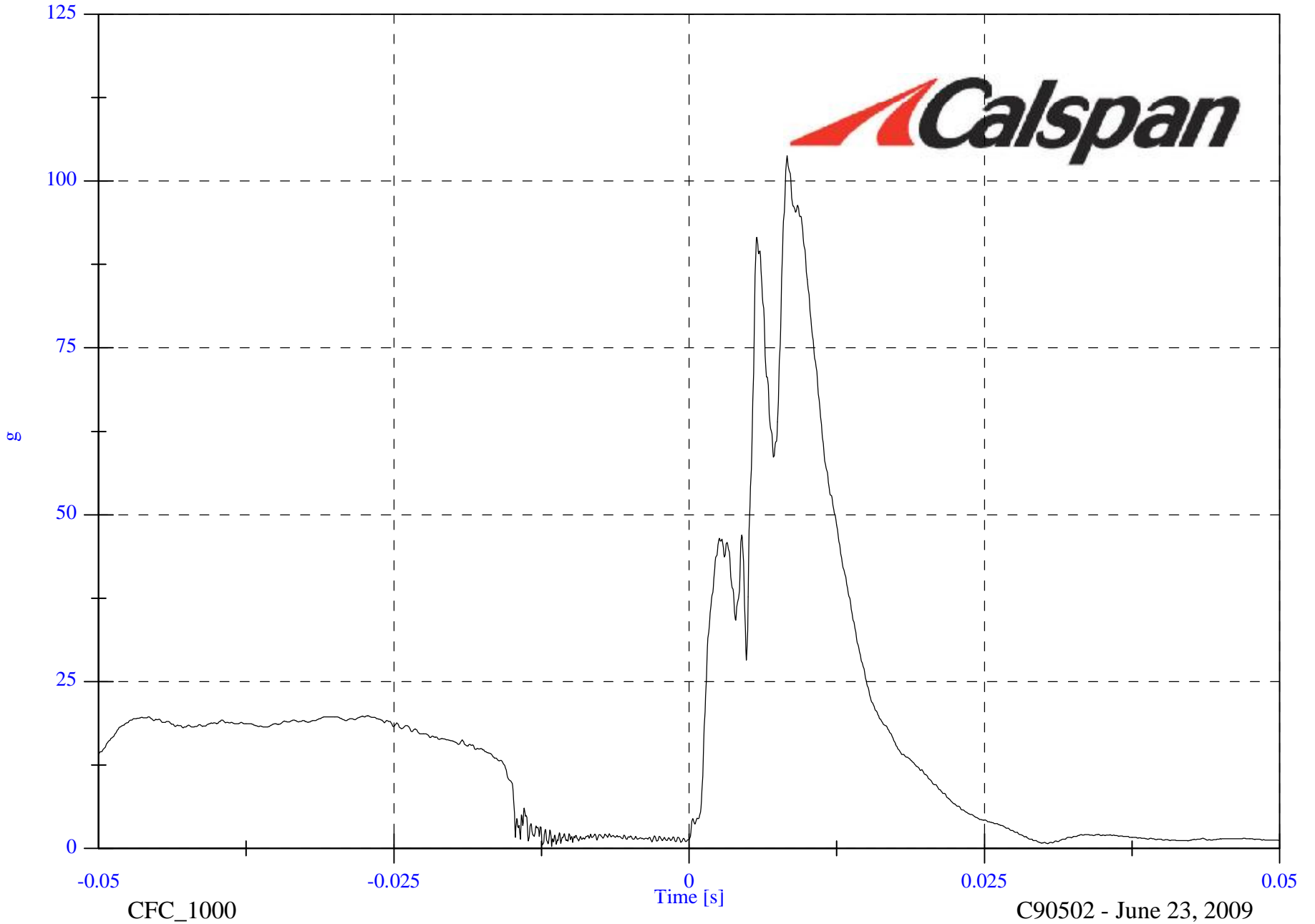
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 103.7 [g] at 0.008 [s]

Min: 0.3 [g] at -0.012 [s]

C90502 PASS, SIDE BP2 IMPACT PLOT #4



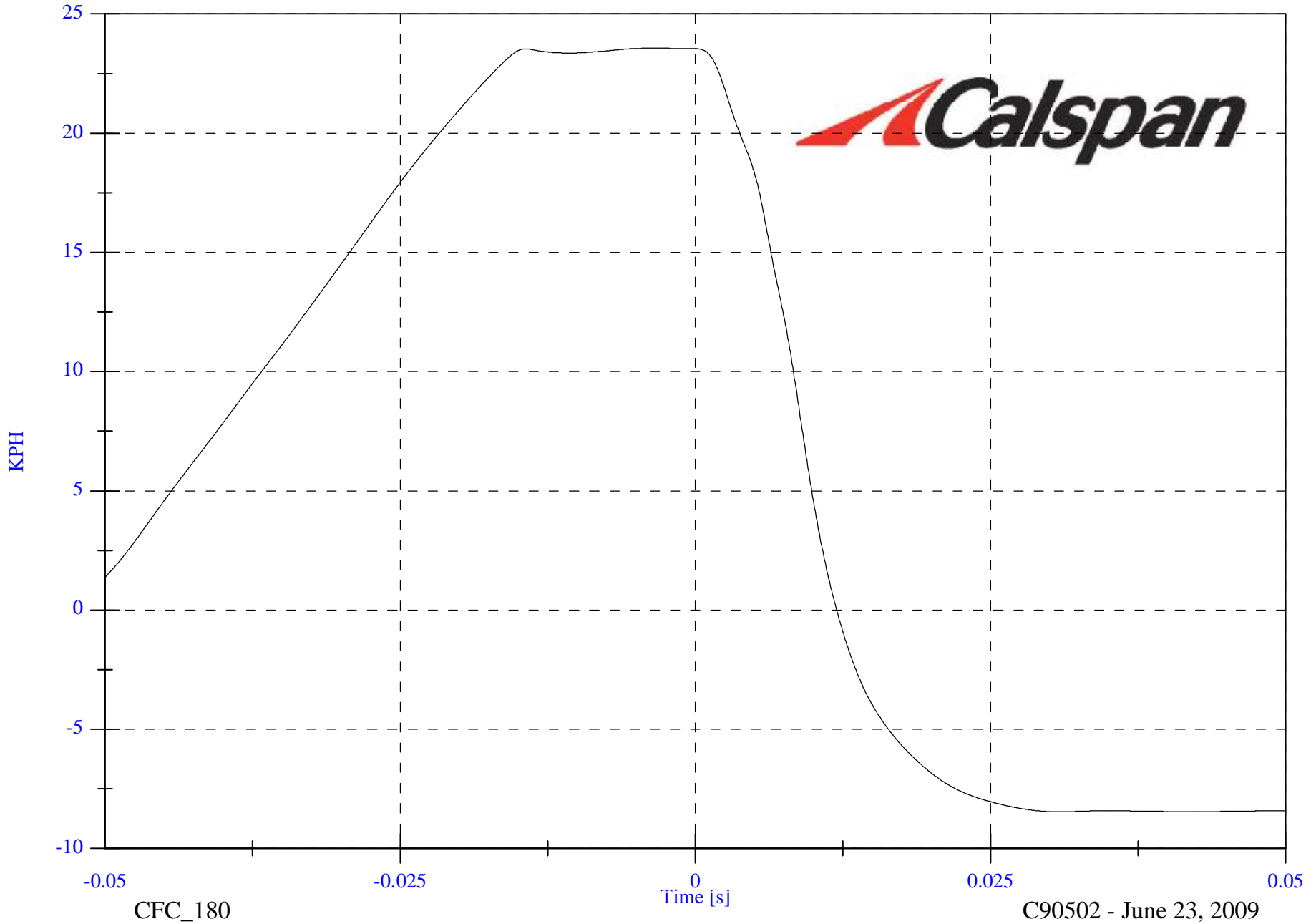
CFC_1000

C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Max: 23.6 [KPH] at -0.004 [s]
Min: -8.5 [KPH] at 0.031 [s]

Headform Velocity



C90502 PASS. SIDE BP2 IMPACT PLOT #5

CFC_180

C90502 - June 23, 2009



PRE-IMPACT BP2 (2009 KIA SEDONA)



POST-IMPACT BP2 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	08
Test Date:	06/23/09
Target Location:	B-PILLAR
Target Code:	BP1
Horizontal Impact Angle:	90°
Vertical Impact Angle:	25°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	14:30
Headform Number:	0805

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	27	<input checked="" type="checkbox"/>	mm right	<input type="checkbox"/>	mm left
On Centerline	51				mm up



POST-IMPACT BP1 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	552.7
HIC(d)	583.4
Impact Velocity (kph)	18.45
HIC T1 (msec)	6.3
HIC T2 (msec)	12.4

FMVSS 201U 2009 Kia Sedona C90502 - BP1

FMH Headform 0805

Location: BP1

Test Date: June 23, 2009

Work File: BP1

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 583.4

Lab Humidity: 41 %

HIC (36ms): 552.7

Velocity at Impact: 18.45 KPH

t1: 6.3 msec

t2: 12.4 msec

Free Flight Distance: 226.25 mm

Duration: 6.1 msec

Average Acceleration: 9.3 g

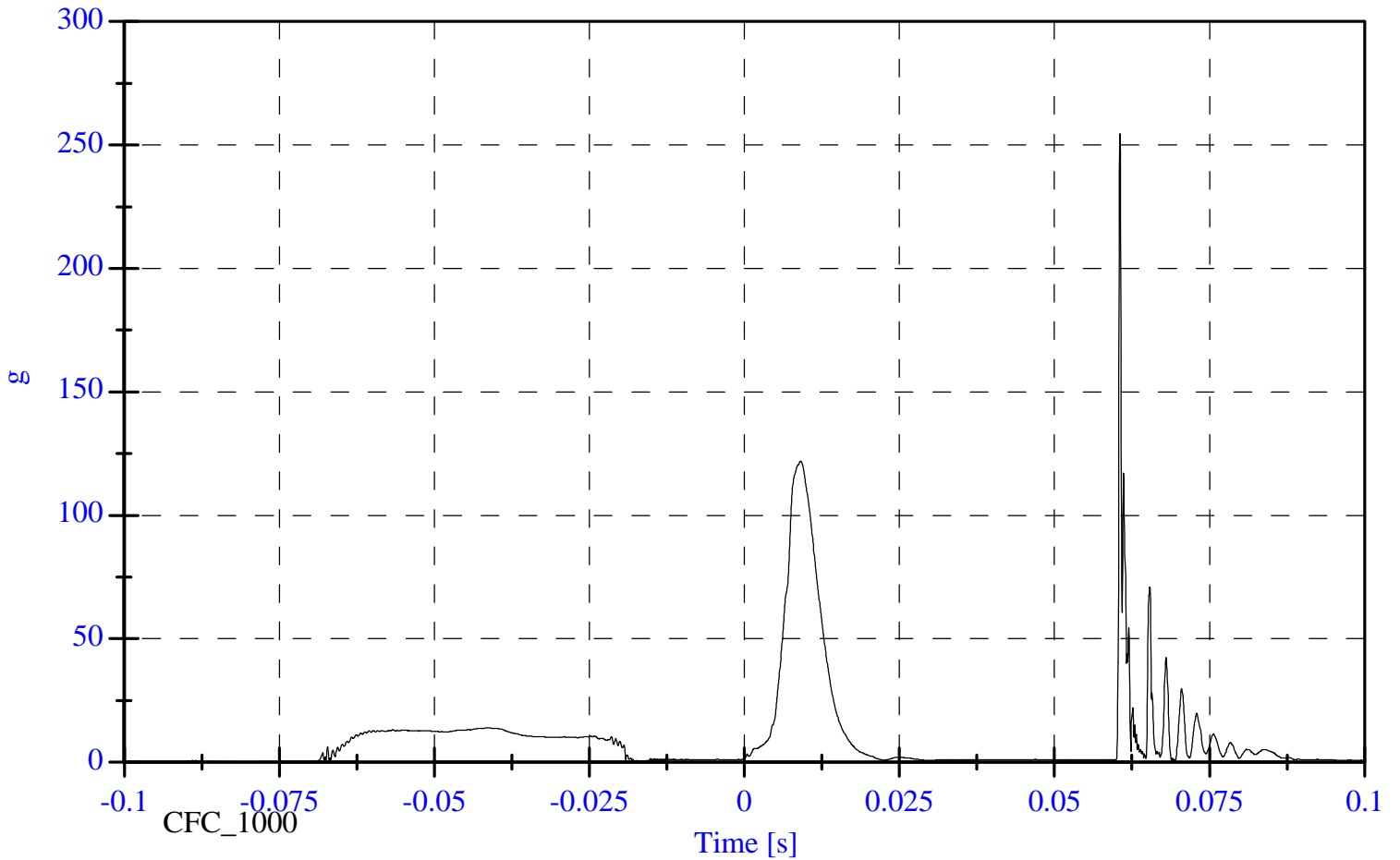
Maximum: 122.0 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 122.0 [g] at 0.009 [s]

Min: 0.0 [g] at -0.079 [s]



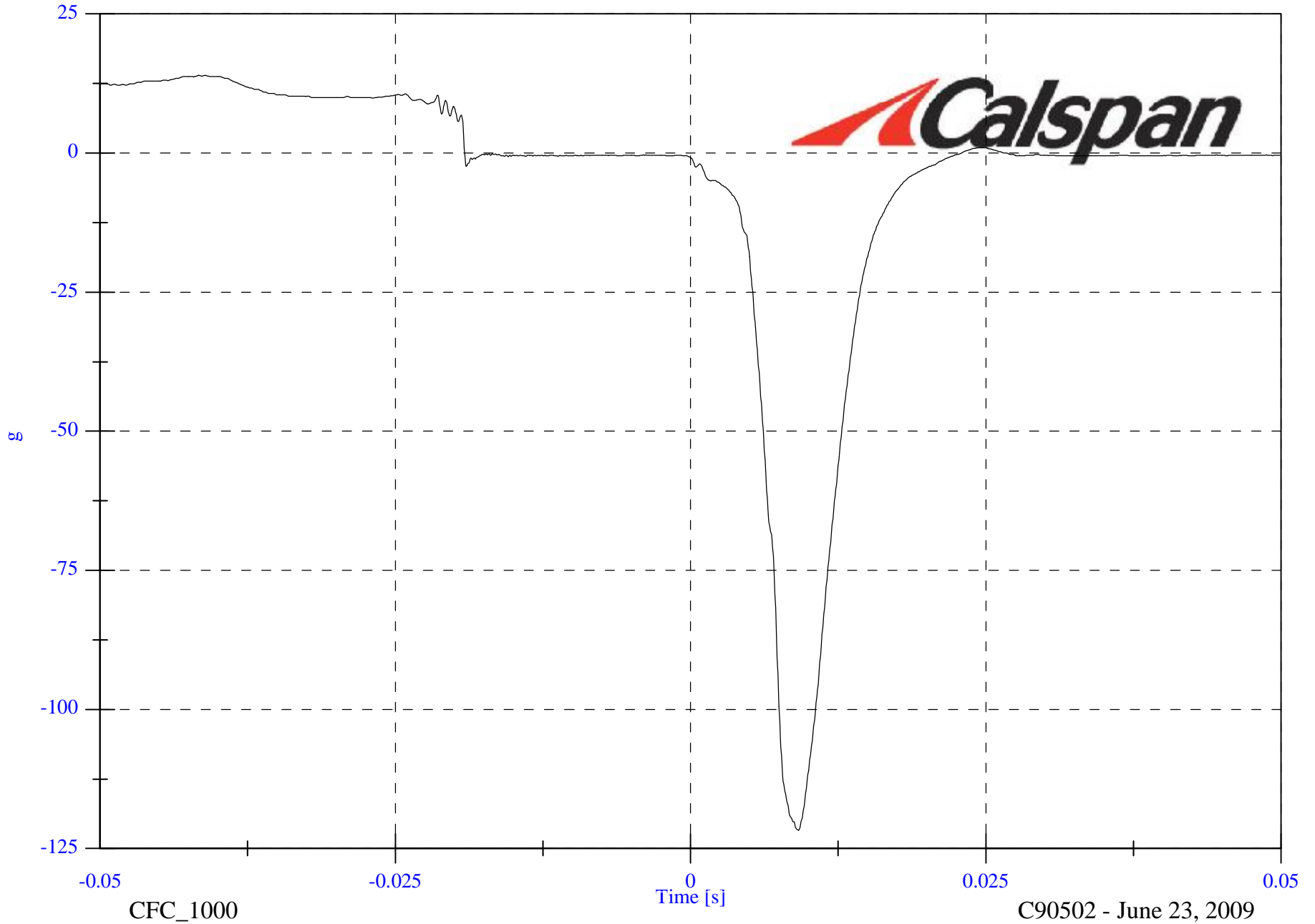
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 14.0 [g] at -0.042 [s]

Min: -121.8 [g] at 0.009 [s]

C90502 PASS, SIDE BP1 IMPACT PLOT #1



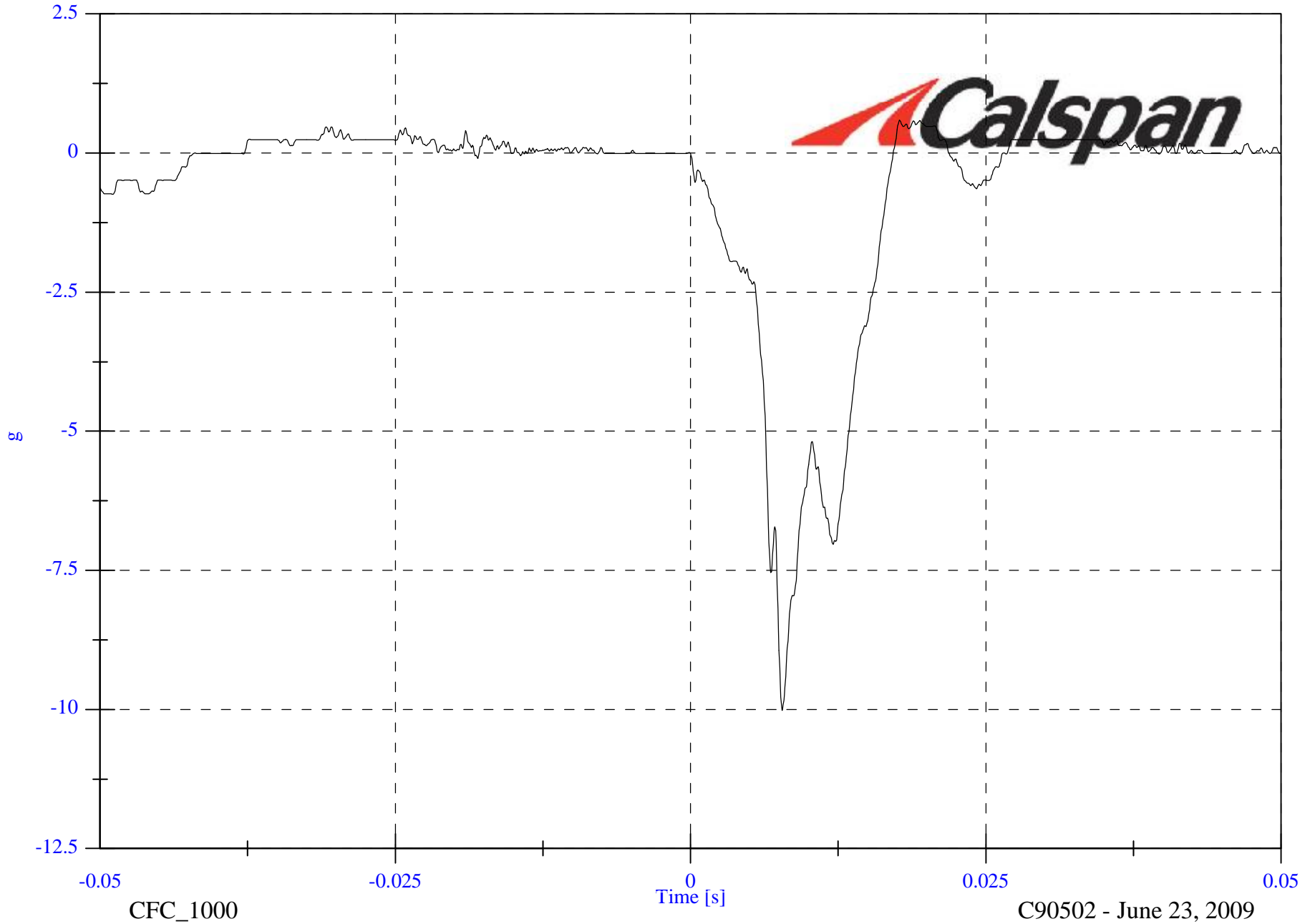
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 0.6 [g] at 0.018 [s]

Min: -10.0 [g] at 0.008 [s]

C90502 PASS, SIDE BP1 IMPACT PLOT #2



C90502 - June 23, 2009

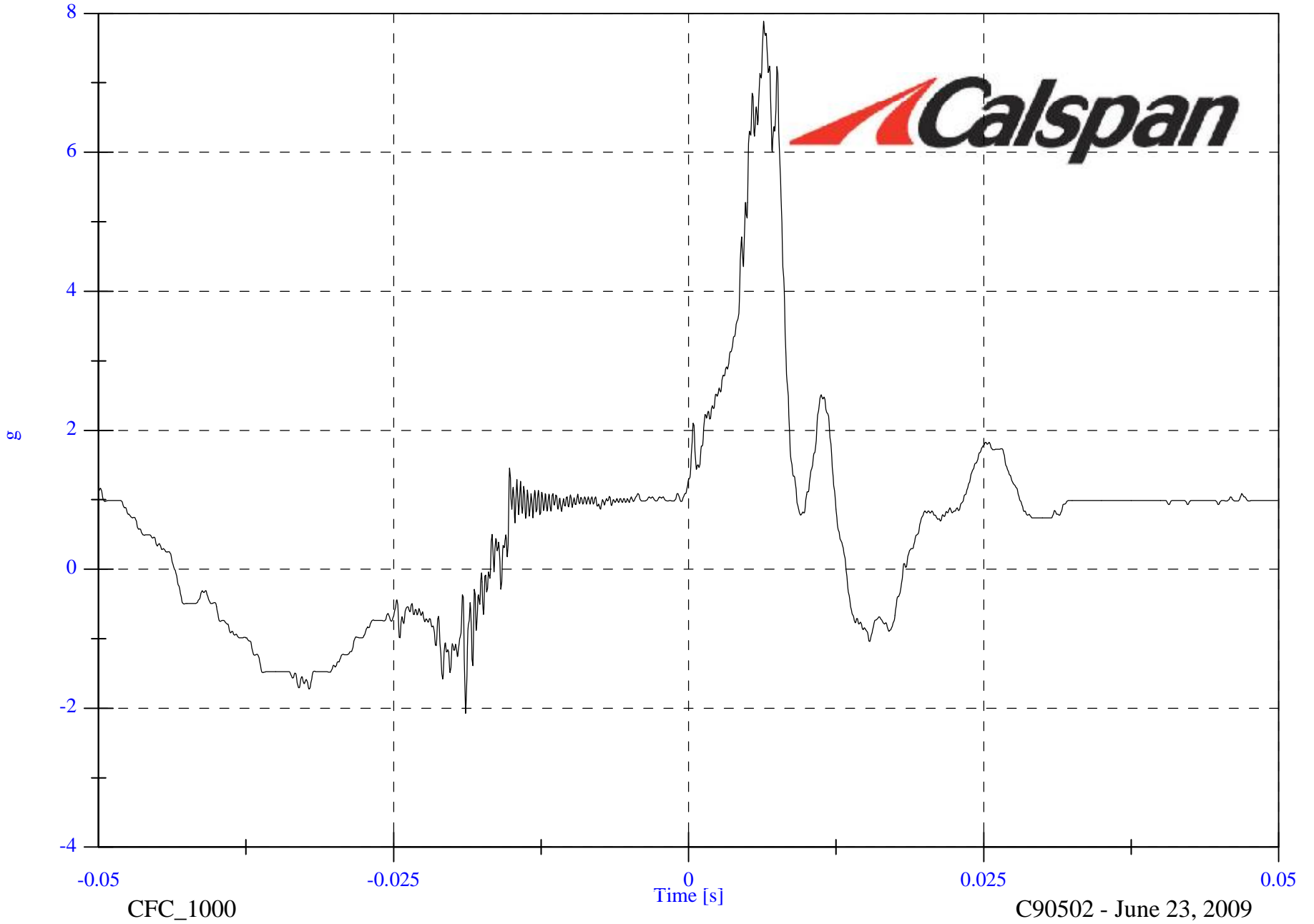
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 7.9 [g] at 0.006 [s]

Min: -2.1 [g] at -0.019 [s]

C90502 PASS, SIDE BP1 IMPACT PLOT #3



CFC_1000

C90502 - June 23, 2009

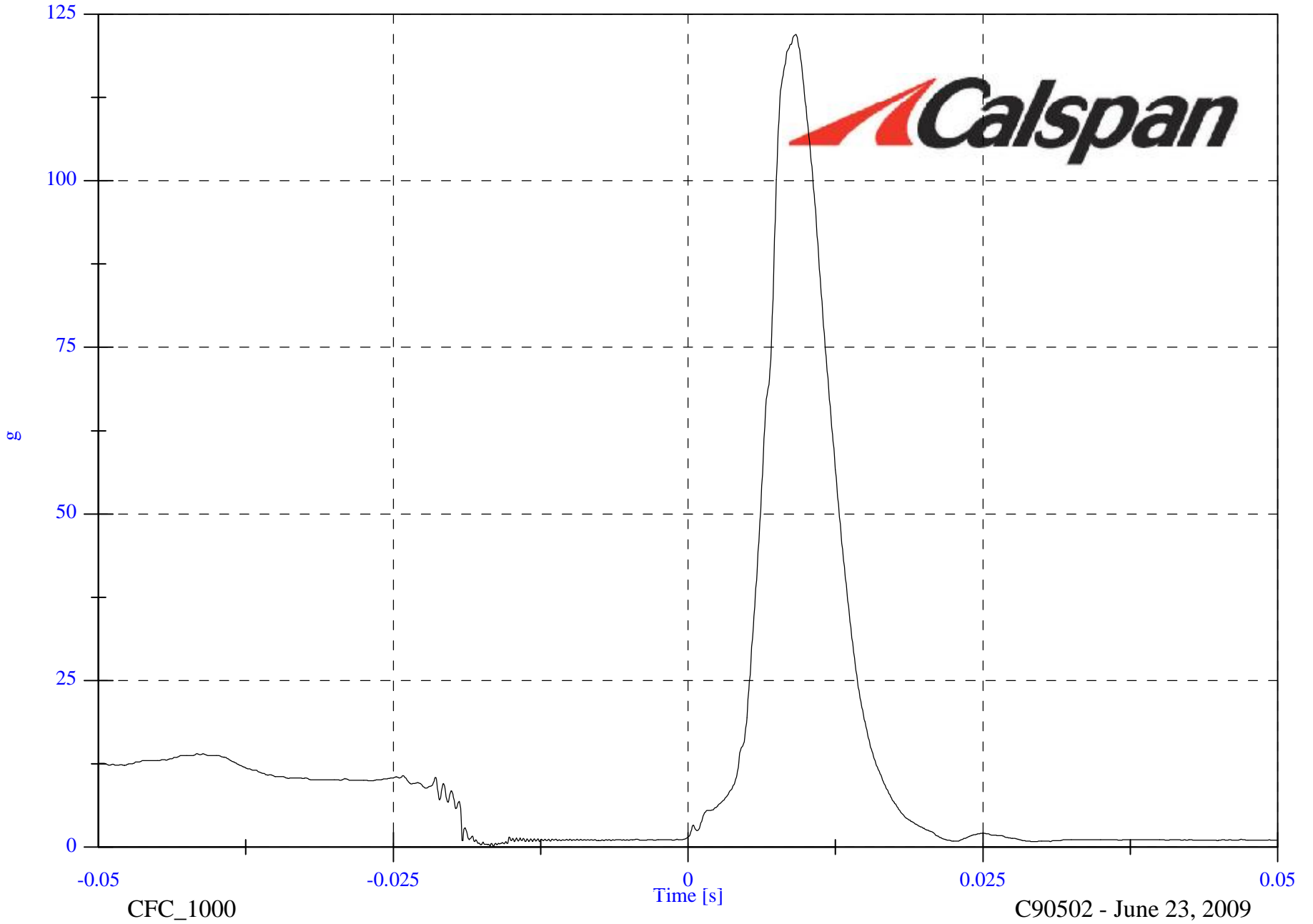
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 122.0 [g] at 0.009 [s]

Min: 0.2 [g] at -0.017 [s]

C90502 PASS, SIDE BP1 IMPACT PLOT #4



CFC_1000

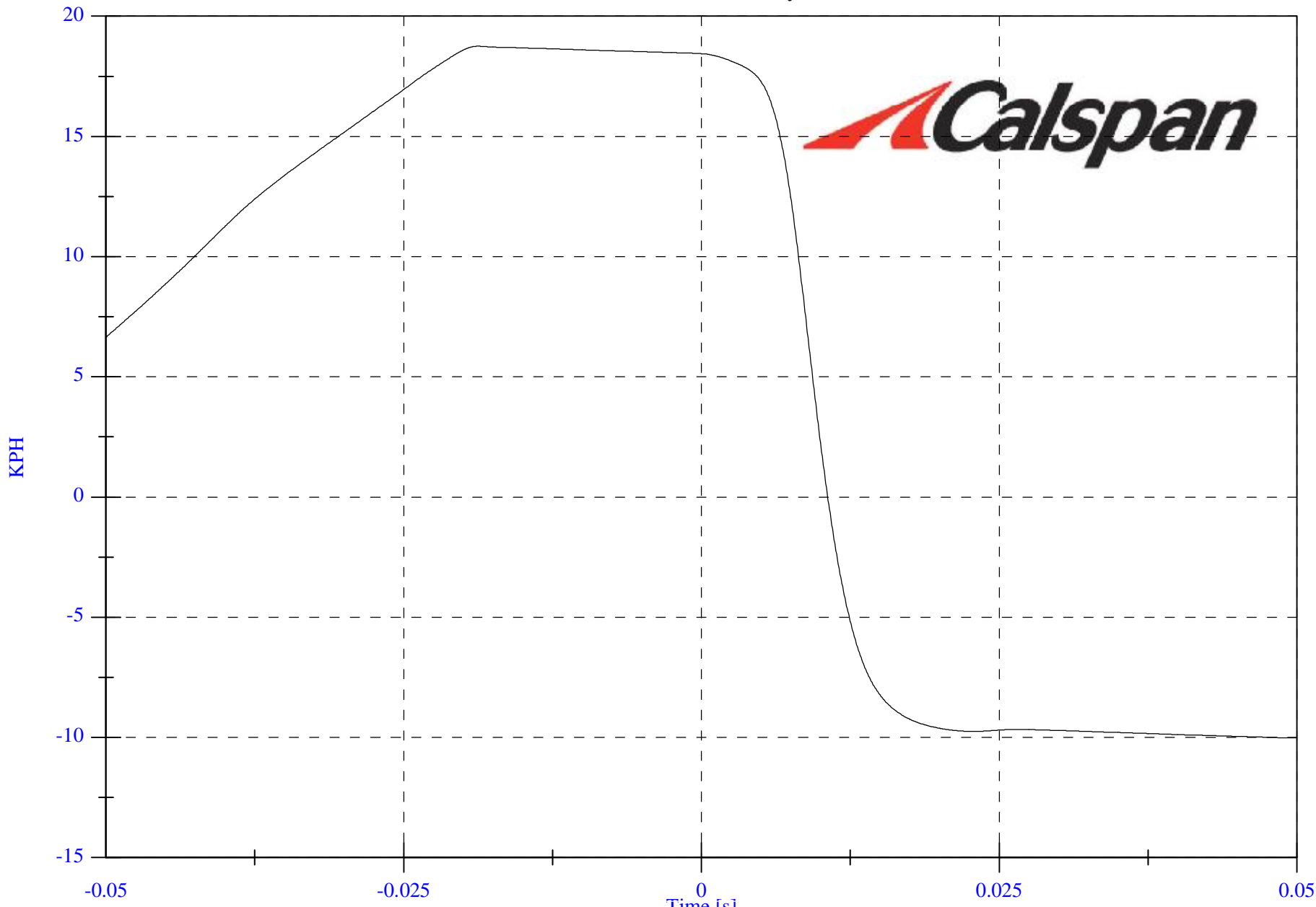
C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Max: 18.8 [KPH] at -0.019 [s]

Min: -10.0 [KPH] at 0.050 [s]

Headform Velocity



C90502 PASS. SIDE BP1 IMPACT PLOT #5

CFC_180

C90502 - June 23, 2009



PRE-IMPACT BP1 (2009 KIA SEDONA)



POST-IMPACT BP1 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	09
Test Date:	06/23/09
Target Location:	A-PILLAR
Target Code:	AP3
Horizontal Impact Angle:	141°
Vertical Impact Angle:	39°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	15:15
Headform Number:	0355

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	0	mm right	mm left
On Centerline	19	mm up	



POST-IMPACT AP3 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	244.9
HIC(d)	351.2
Impact Velocity (kph)	18.47
HIC T1 (msec)	1.6
HIC T2 (msec)	13.9

FMVSS 201U 2009 Kia Sedona C90502 - AP3

FMH Headform 0355

Location: AP3

Test Date: June 23, 2009

Work File: AP3

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 351.2

Lab Humidity: 41 %

HIC (36ms): 244.9

Velocity at Impact: 18.47 KPH

t1: 1.6 msec

t2: 13.9 msec

Free Flight Distance: 225.55 mm

Duration: 12.2 msec

Average Acceleration: 8.6 g

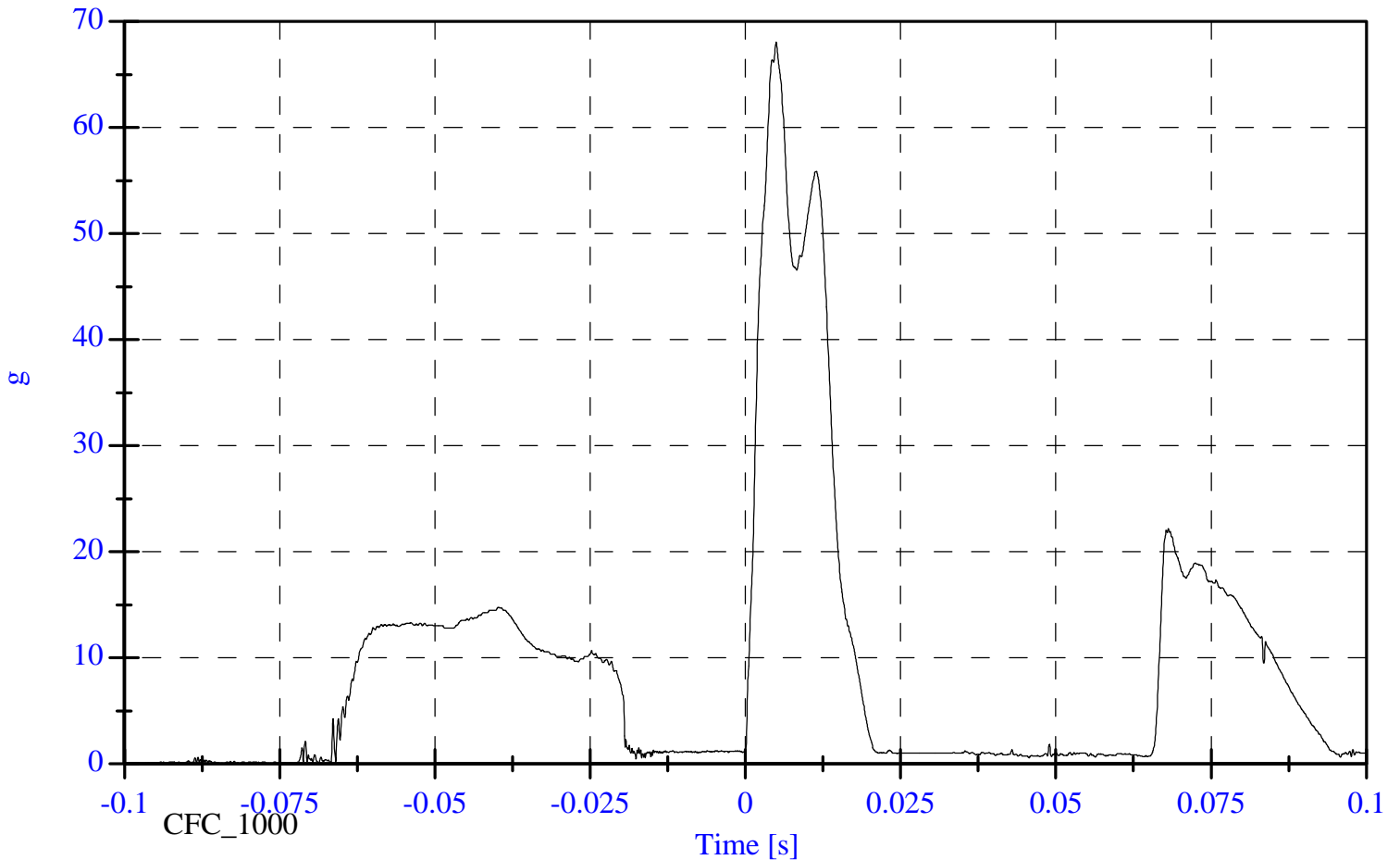
Maximum: 68.0 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 68.0 [g] at 0.005 [s]

Min: 0.0 [g] at -0.073 [s]



FMVSS 201U 2009 Kia Sedona

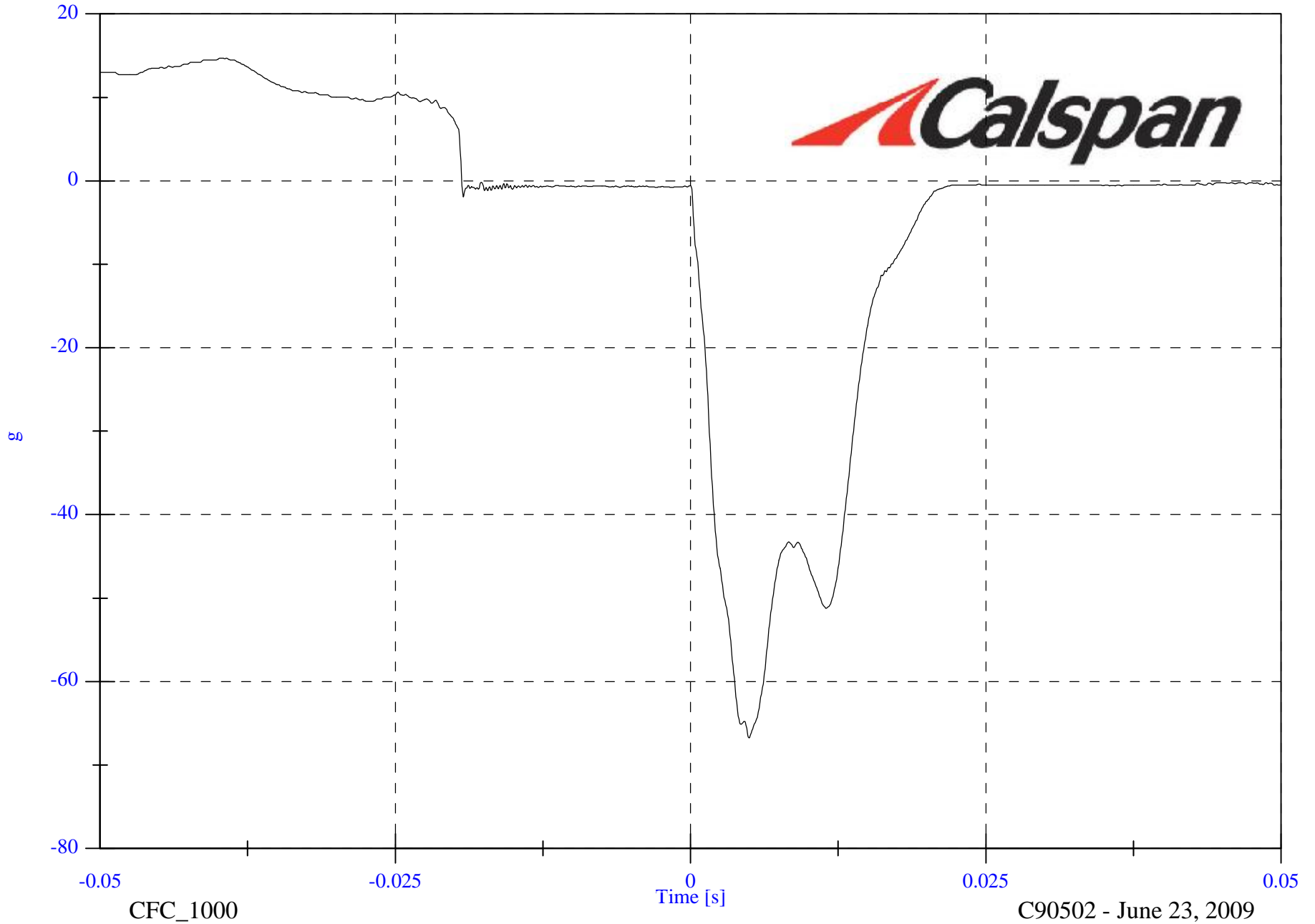
Headform X Acceleration

Max: 14.7 [g] at -0.040 [s]

Min: -66.8 [g] at 0.005 [s]



C90502 PASS. SIDE AP3 IMPACT PLOT #1



CFC_1000

C90502 - June 23, 2009

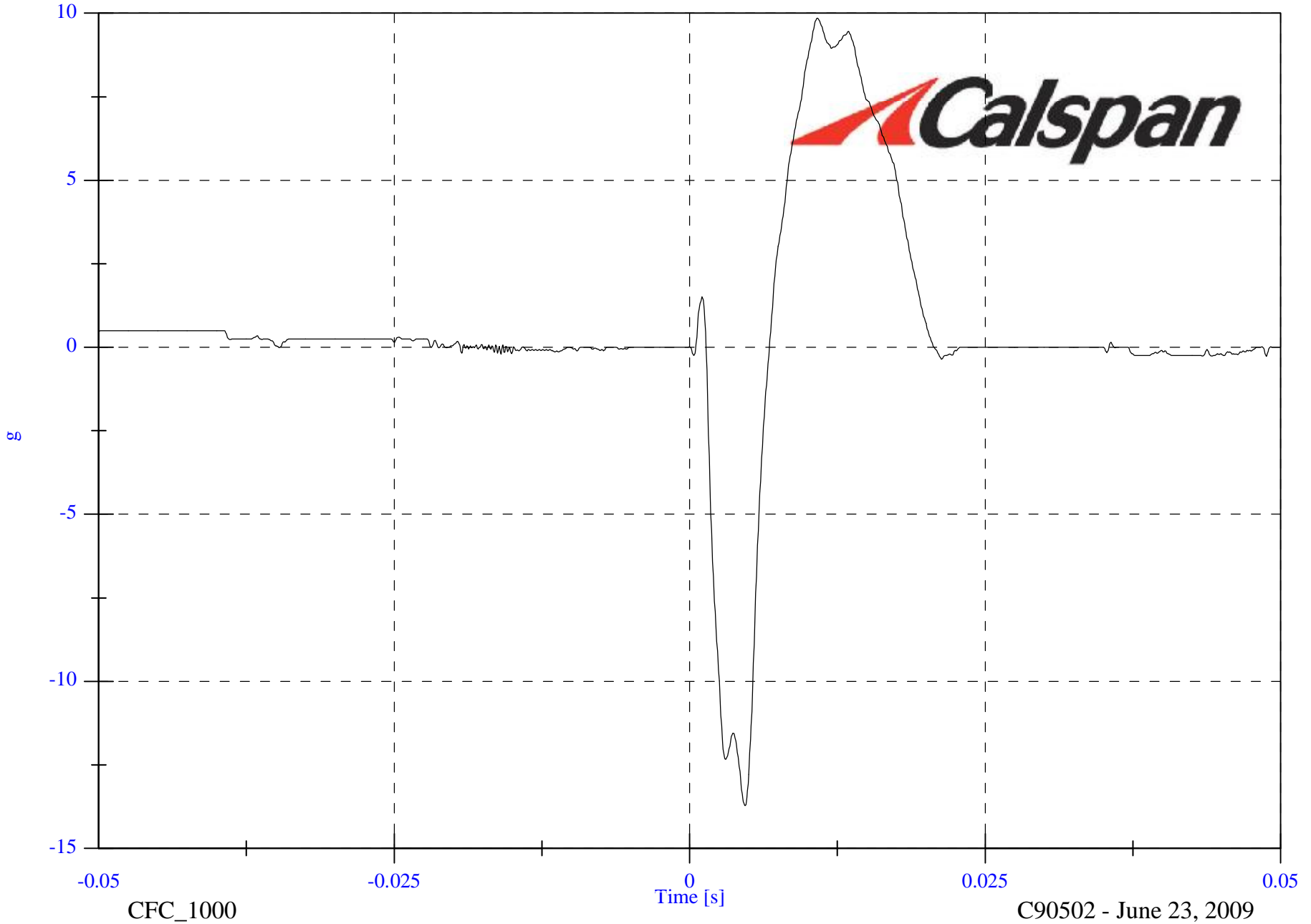
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 9.8 [g] at 0.011 [s]

Min: -13.7 [g] at 0.005 [s]

C90502 PASS. SIDE AP3 IMPACT PLOT #2



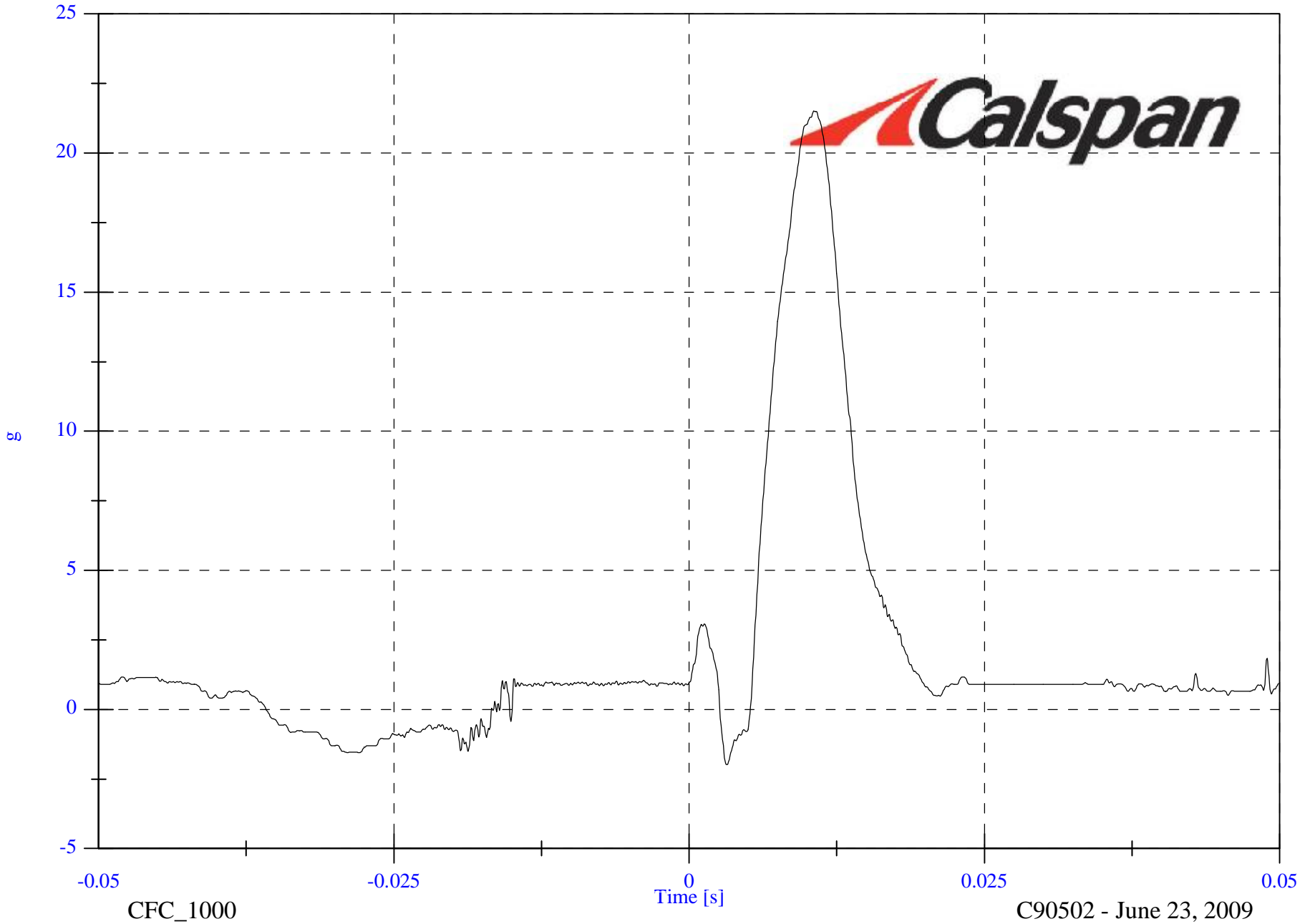
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 21.5 [g] at 0.011 [s]

Min: -2.0 [g] at 0.003 [s]

C90502 PASS. SIDE AP3 IMPACT PLOT #3



CFC_1000

C90502 - June 23, 2009

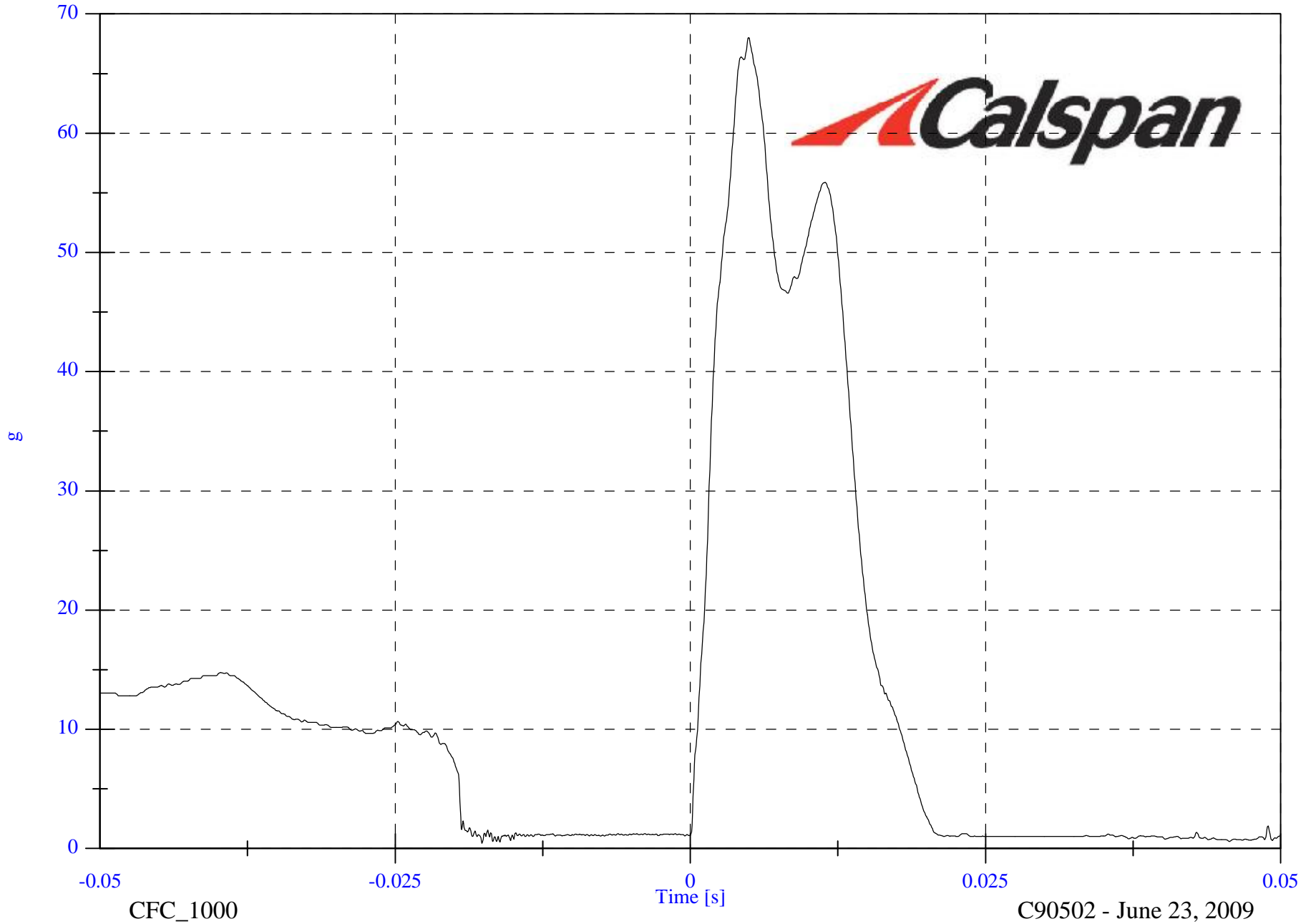
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 68.0 [g] at 0.005 [s]

Min: 0.4 [g] at -0.018 [s]

C90502 PASS. SIDE AP3 IMPACT PLOT #4



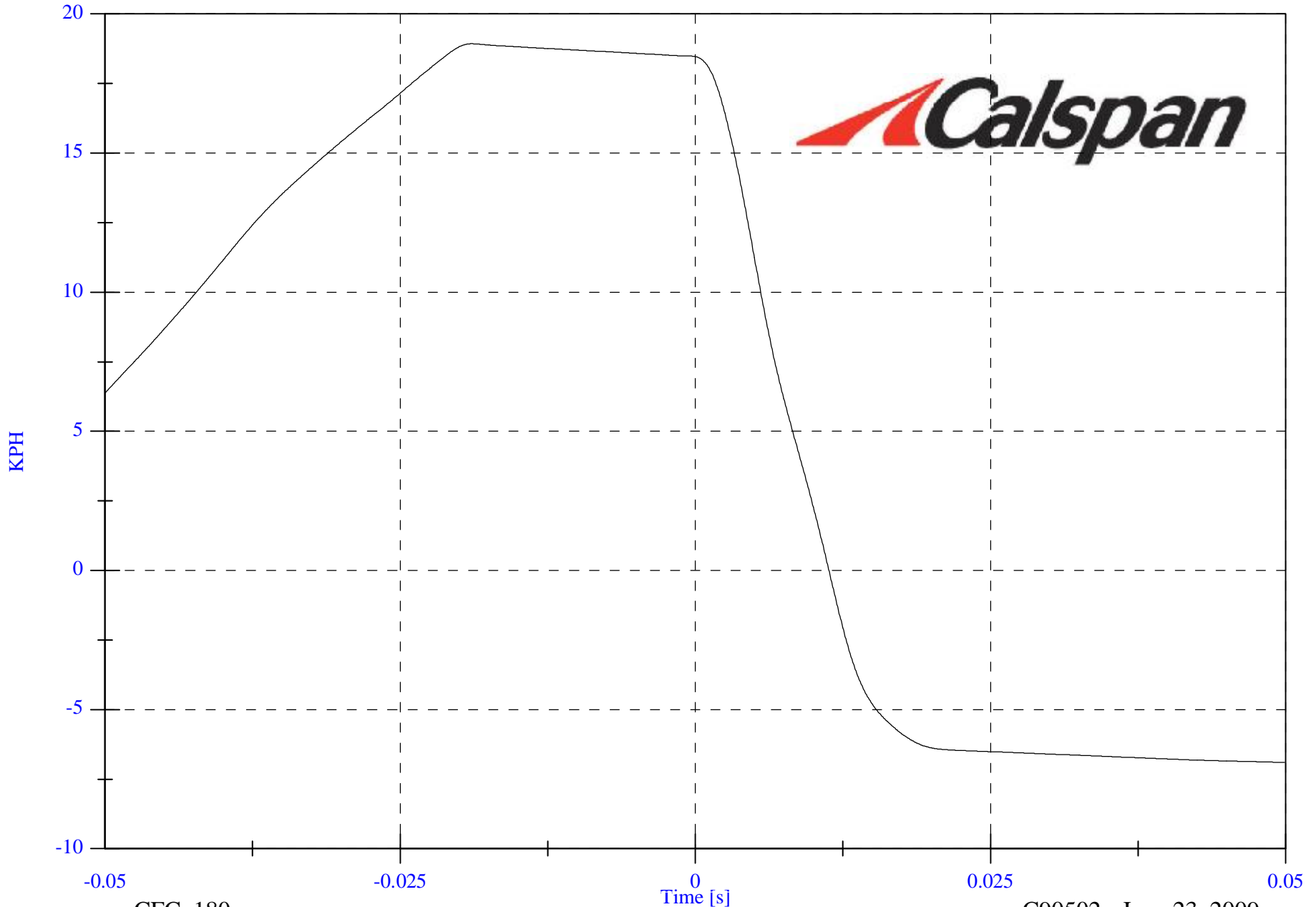
CFC_1000

C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Max: 18.9 [KPH] at -0.019 [s]
Min: -6.9 [KPH] at 0.050 [s]

Headform Velocity



C90502 PASS. SIDE AP3 IMPACT PLOT #5

CFC_180

C90502 - June 23, 2009



x

PRE-IMPACT AP3 (2009 KIA SEDONA)



POST-IMPACT AP3 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	10
Test Date:	06/23/09
Target Location:	A-PILLAR
Target Code:	AP1
Horizontal Impact Angle:	115°
Vertical Impact Angle:	42°
Ambient Temperature:	22°C
Relative Humidity:	41
Time of Impact:	16:00
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	7	<input checked="" type="checkbox"/>	mm right	<input type="checkbox"/>	mm left
On Centerline	16				mm up



POST-IMPACT AP1 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	630.1
HIC(d)	641.8
Impact Velocity (kph)	18.82
HIC T1 (msec)	6.8
HIC T2 (msec)	11.8

FMVSS 201U 2009 Kia Sedona C90502 - AP1

FMH Headform 0062

Location: AP1

Test Date: June 23, 2009

Work File: AP1

-----TEST RESULTS-----

Lab Temperature: 22 C

HICd: 641.8

Lab Humidity: 41 %

HIC (36ms): 630.1

Velocity at Impact: 18.82 KPH

t1: 6.8 msec

t2: 11.8 msec

Free Flight Distance: 222.90 mm

Duration: 5.0 msec

Average Acceleration: 9.6 g

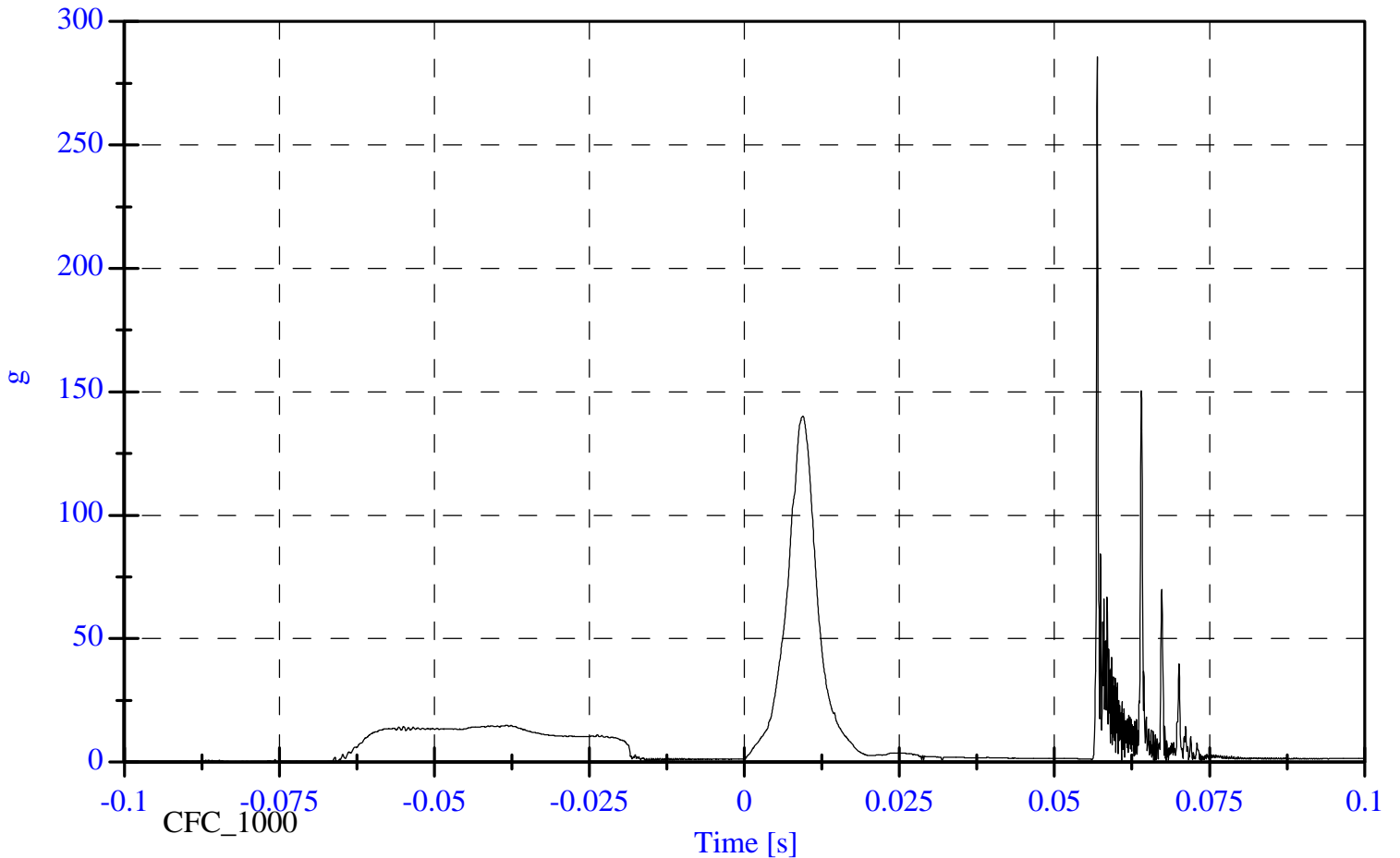
Maximum: 140.1 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 140.1 [g] at 0.009 [s]

Min: 0.0 [g] at -0.098 [s]

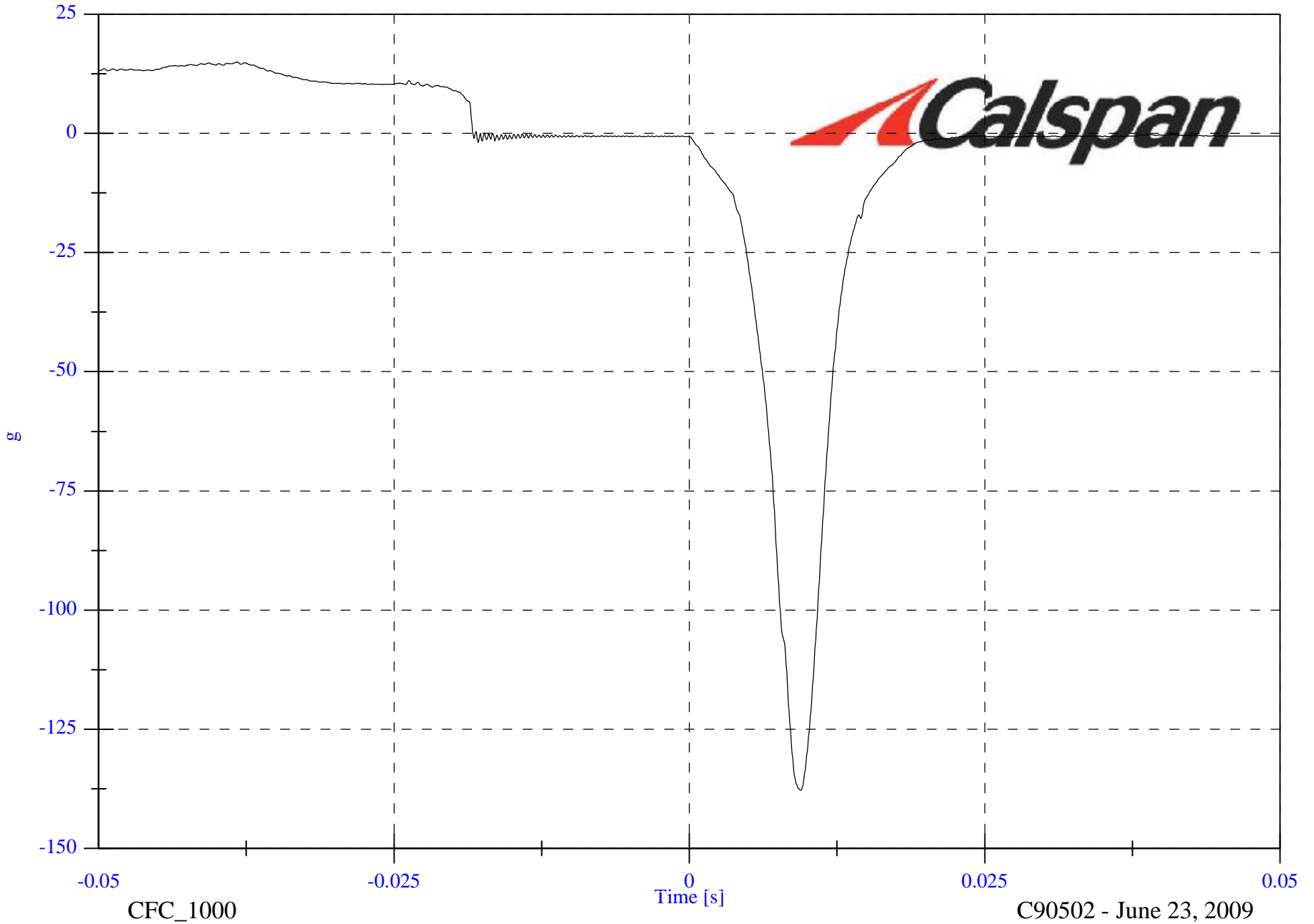


FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 14.9 [g] at -0.038 [s]

Min: -137.8 [g] at 0.009 [s]



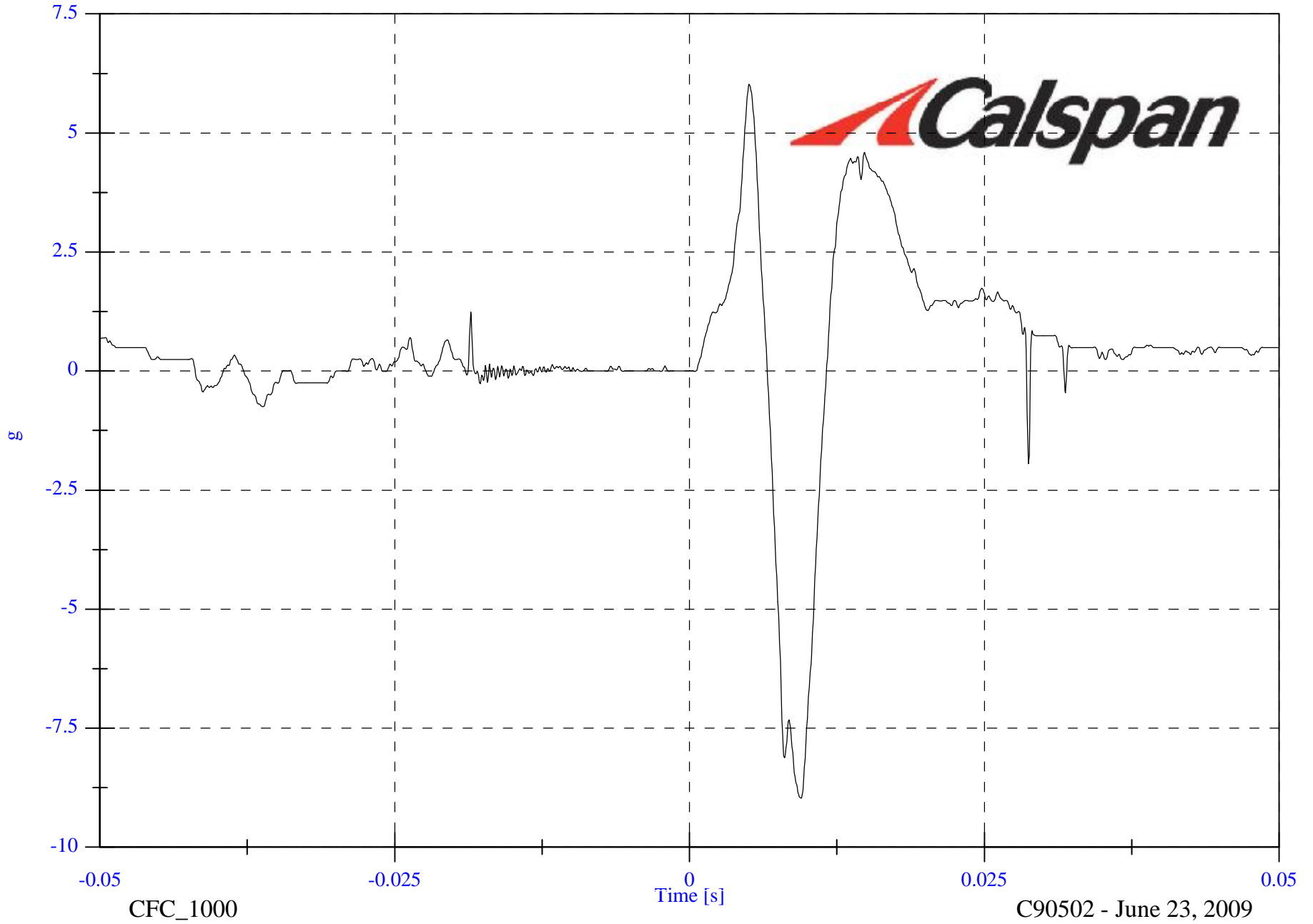
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 6.0 [g] at 0.005 [s]

Min: -9.0 [g] at 0.009 [s]

C90502 PASS. SIDE AP1 IMPACT PLOT #2



C90502 - June 23, 2009

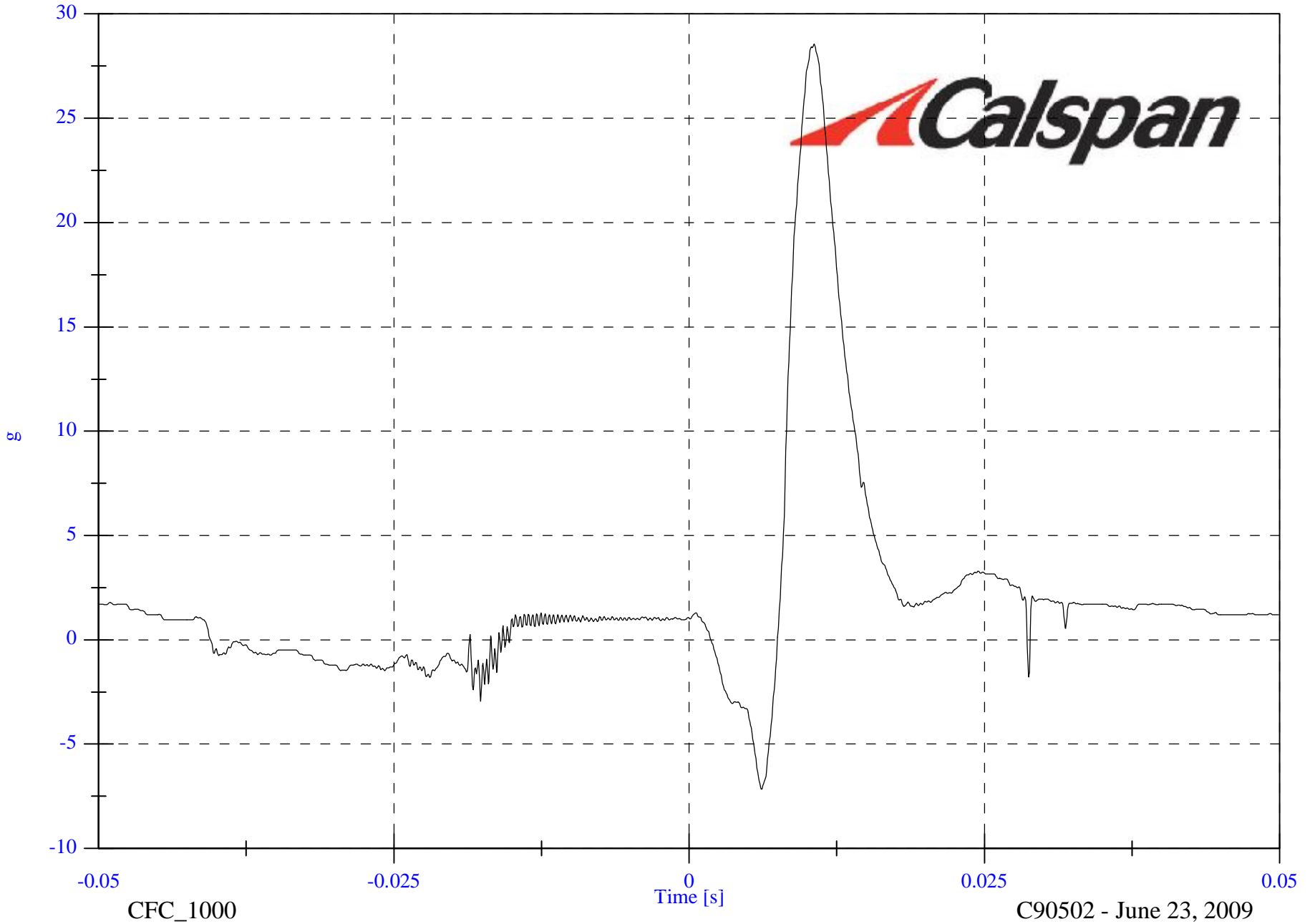
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 28.6 [g] at 0.011 [s]

Min: -7.2 [g] at 0.006 [s]

C90502 PASS. SIDE AP1 IMPACT PLOT #3



CFC_1000

C90502 - June 23, 2009

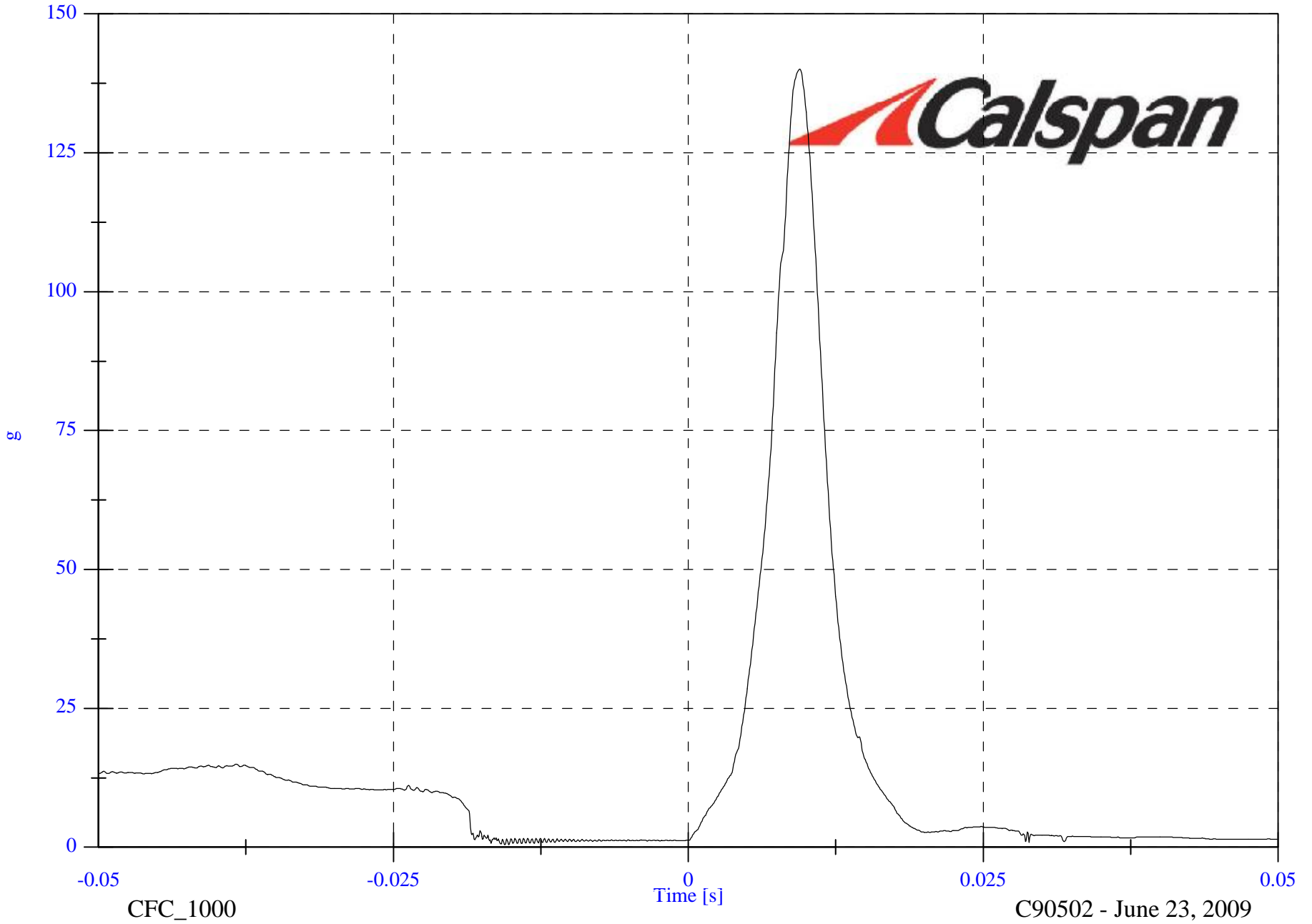
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 140.1 [g] at 0.009 [s]

Min: 0.4 [g] at -0.015 [s]

C90502 PASS. SIDE AP1 IMPACT PLOT #4



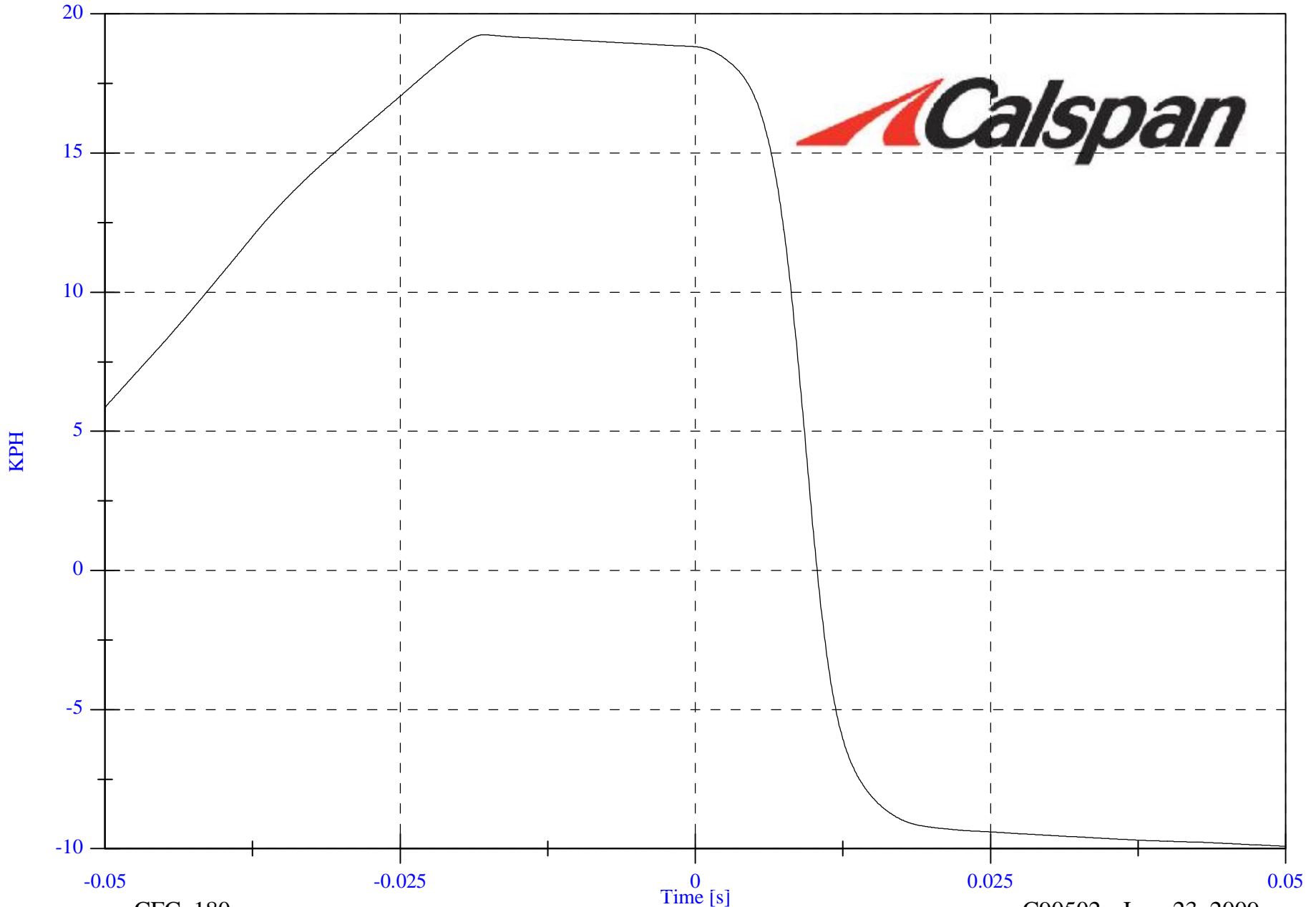
CFC_1000

C90502 - June 23, 2009

FMVSS 201U 2009 Kia Sedona

Max: 19.2 [KPH] at -0.018 [s]
Min: -9.9 [KPH] at 0.050 [s]

Headform Velocity



C90502 PASS. SIDE AP1 IMPACT PLOT #5

CFC_180

C90502 - June 23, 2009



PRE-IMPACT AP1 (2009 KIA SEDONA)

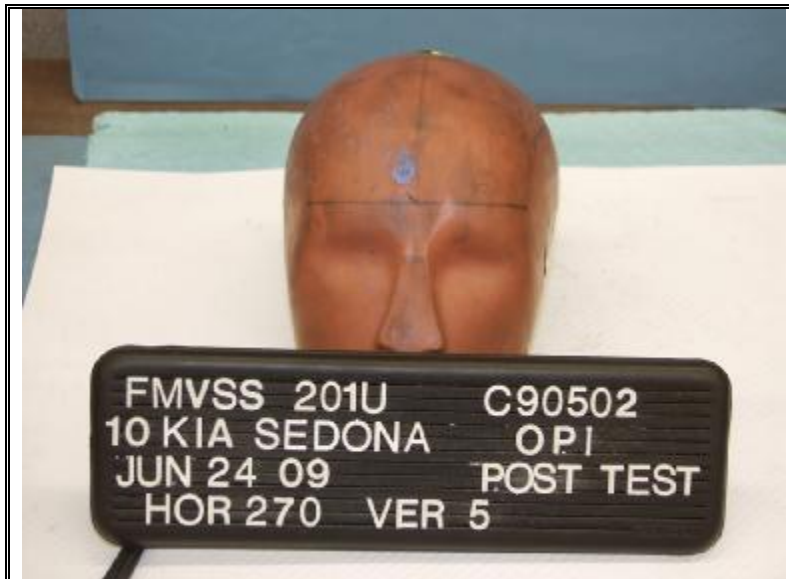


POST-IMPACT AP1 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	11
Test Date:	06/24/09
Target Location:	OTHER PILLAR
Target Code:	OP1
Horizontal Impact Angle:	270°
Vertical Impact Angle:	5°
Ambient Temperature:	23°C
Relative Humidity:	40
Time of Impact:	9:00
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)					
On Centerline	6	<input checked="" type="checkbox"/>	mm right	<input type="checkbox"/>	mm left
On Centerline	14				mm up



POST-IMPACT OP1 HEADFORM (2009 KIA SEDONA)

Free Motion HIC	523.2
HIC(d)	561.1
Impact Velocity (kph)	23.56
HIC T1 (msec)	4.7
HIC T2 (msec)	15.1

FMVSS 201U 2009 Kia Sedona C90502 - OP1

FMH Headform 0062

Location: OP1

Test Date: June 24, 2009

Work File: OP1

-----TEST RESULTS-----

Lab Temperature: 23 C

HICd: 561.1

Lab Humidity: 40 %

HIC (36ms): 523.2

Velocity at Impact: 23.56 KPH

t1: 4.7 msec

t2: 15.1 msec

Free Flight Distance: 220.74 mm

Duration: 10.4 msec

Average Acceleration: 10.1 g

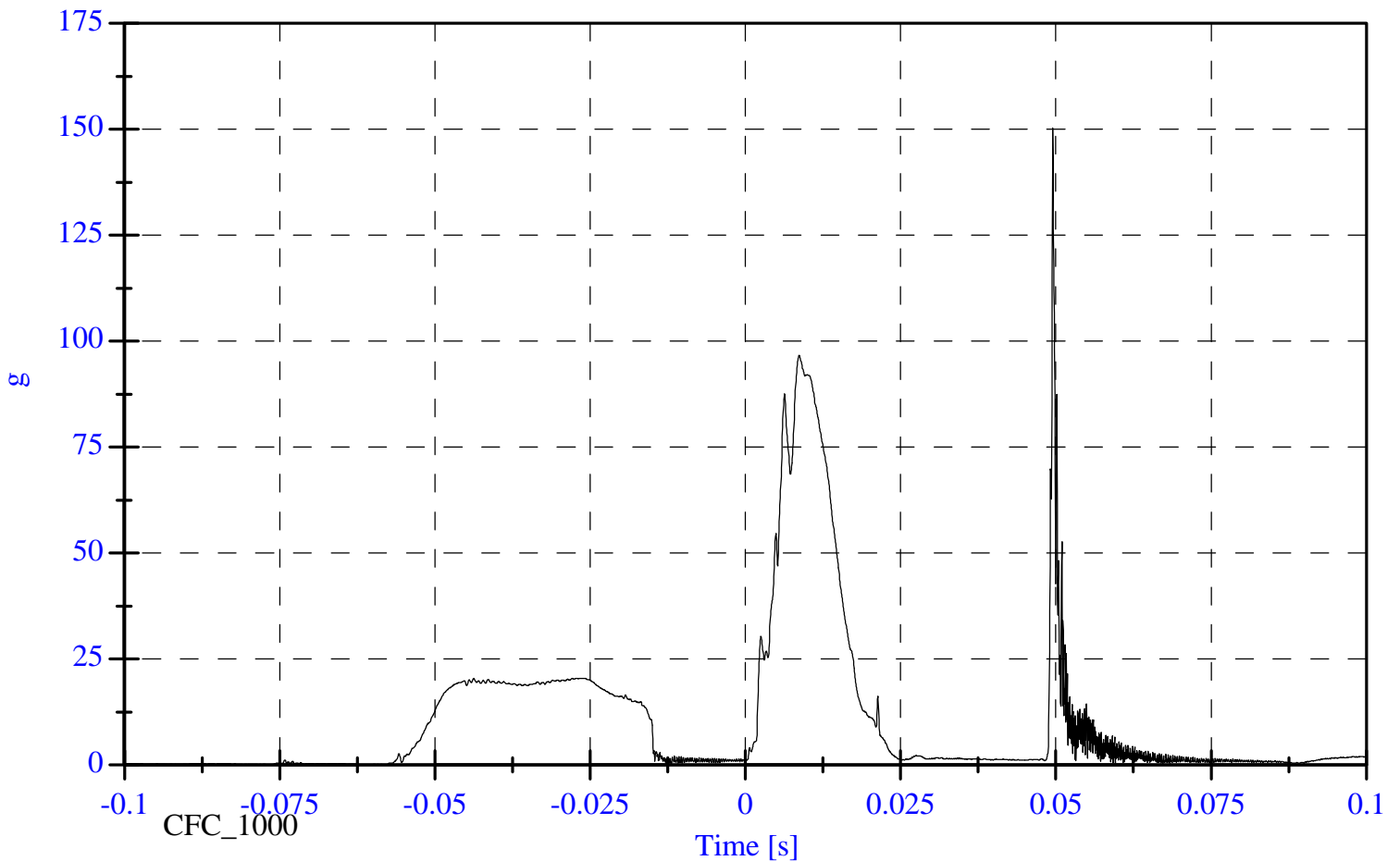
Maximum: 96.7 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 96.7 [g] at 0.009 [s]

Min: 0.0 [g] at -0.090 [s]



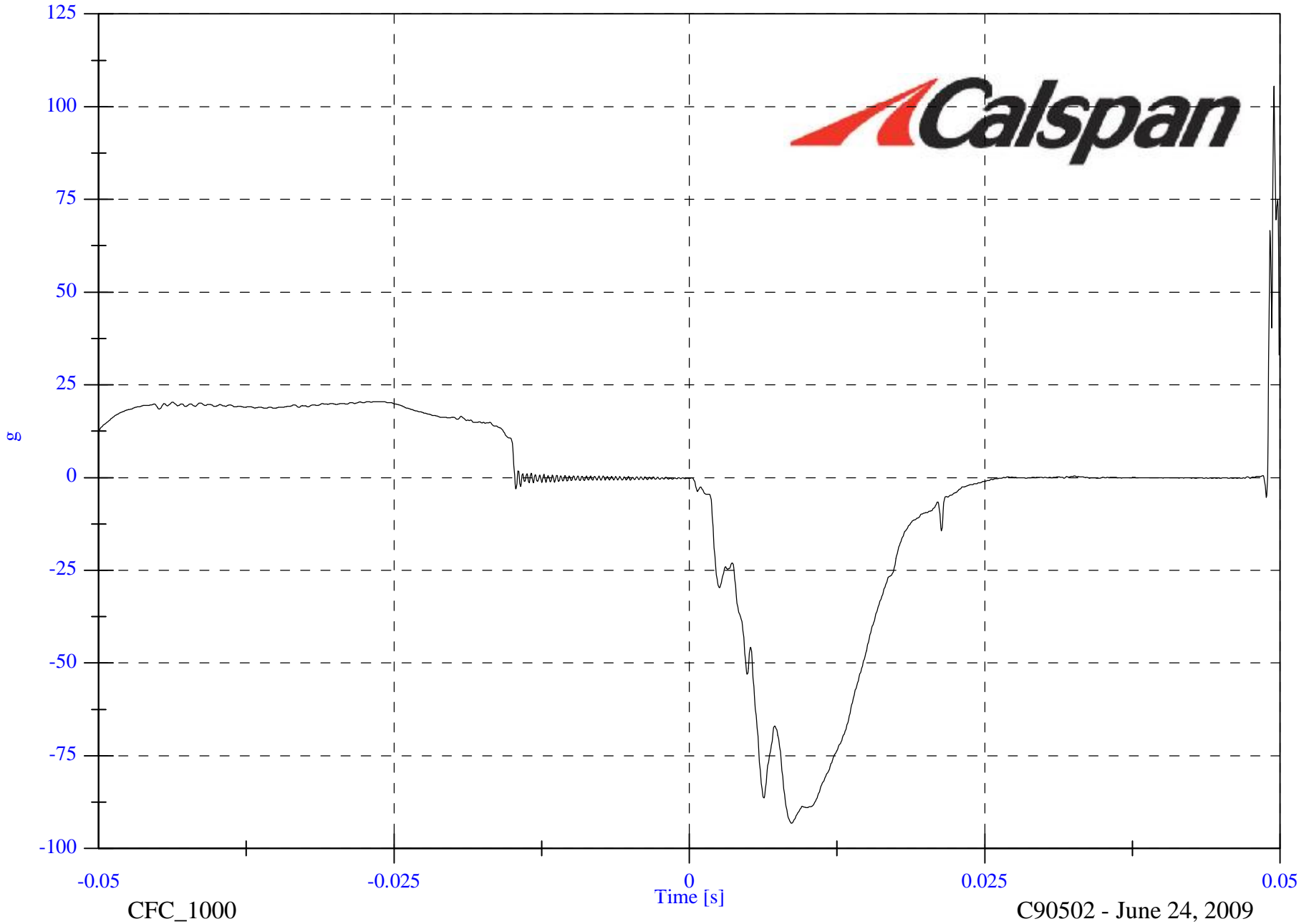
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 105.5 [g] at 0.049 [s]

Min: -93.3 [g] at 0.009 [s]

C90502 DRIV. SIDE OP1 IMPACT PLOT #1



C90502 - June 24, 2009

FMVSS 201U 2009 Kia Sedona

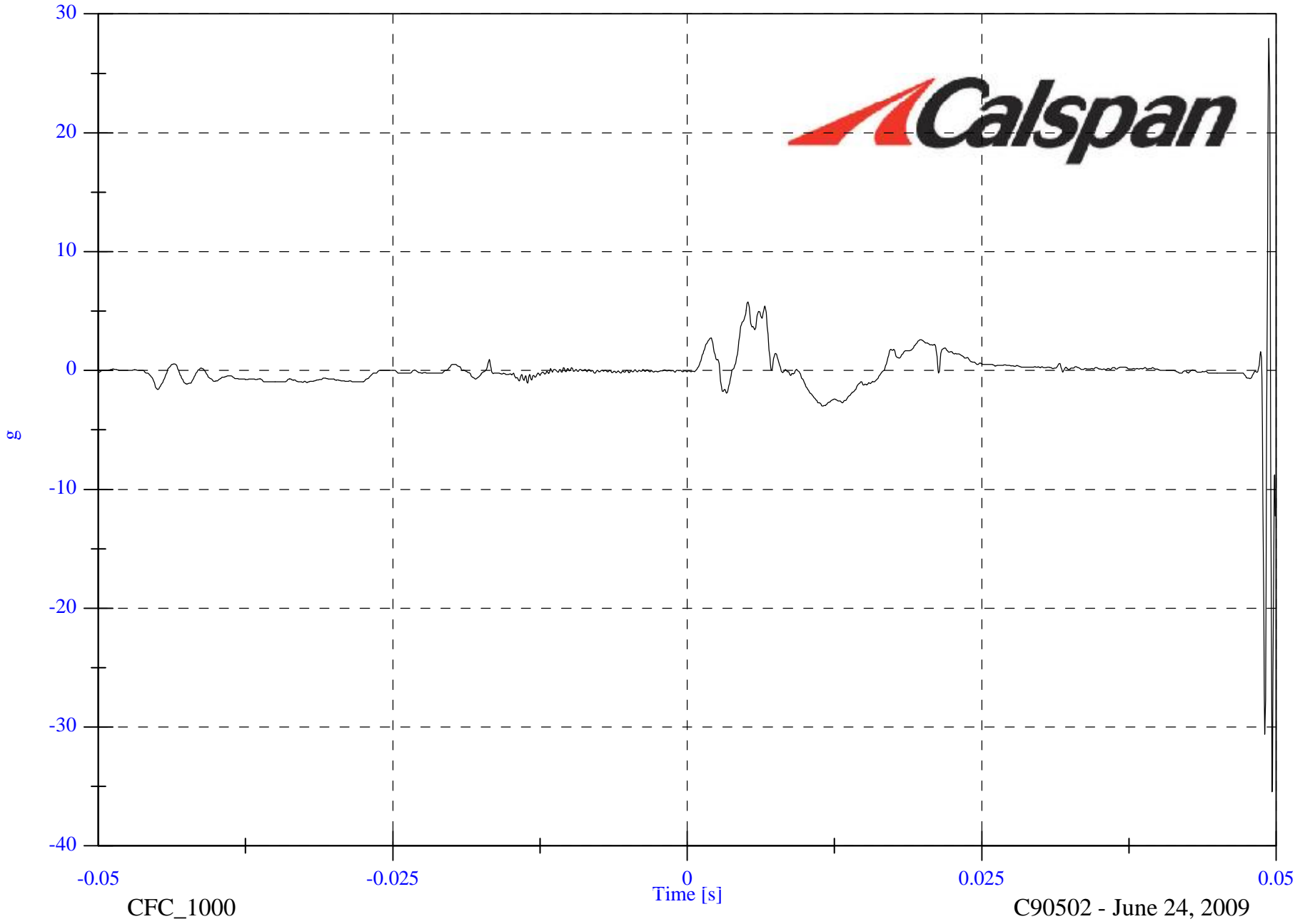
Headform Y Acceleration

Max: 27.9 [g] at 0.049 [s]

Min: -35.5 [g] at 0.050 [s]



C90502 DRIV. SIDE OP1 IMPACT PLOT #2



FMVSS 201U 2009 Kia Sedona

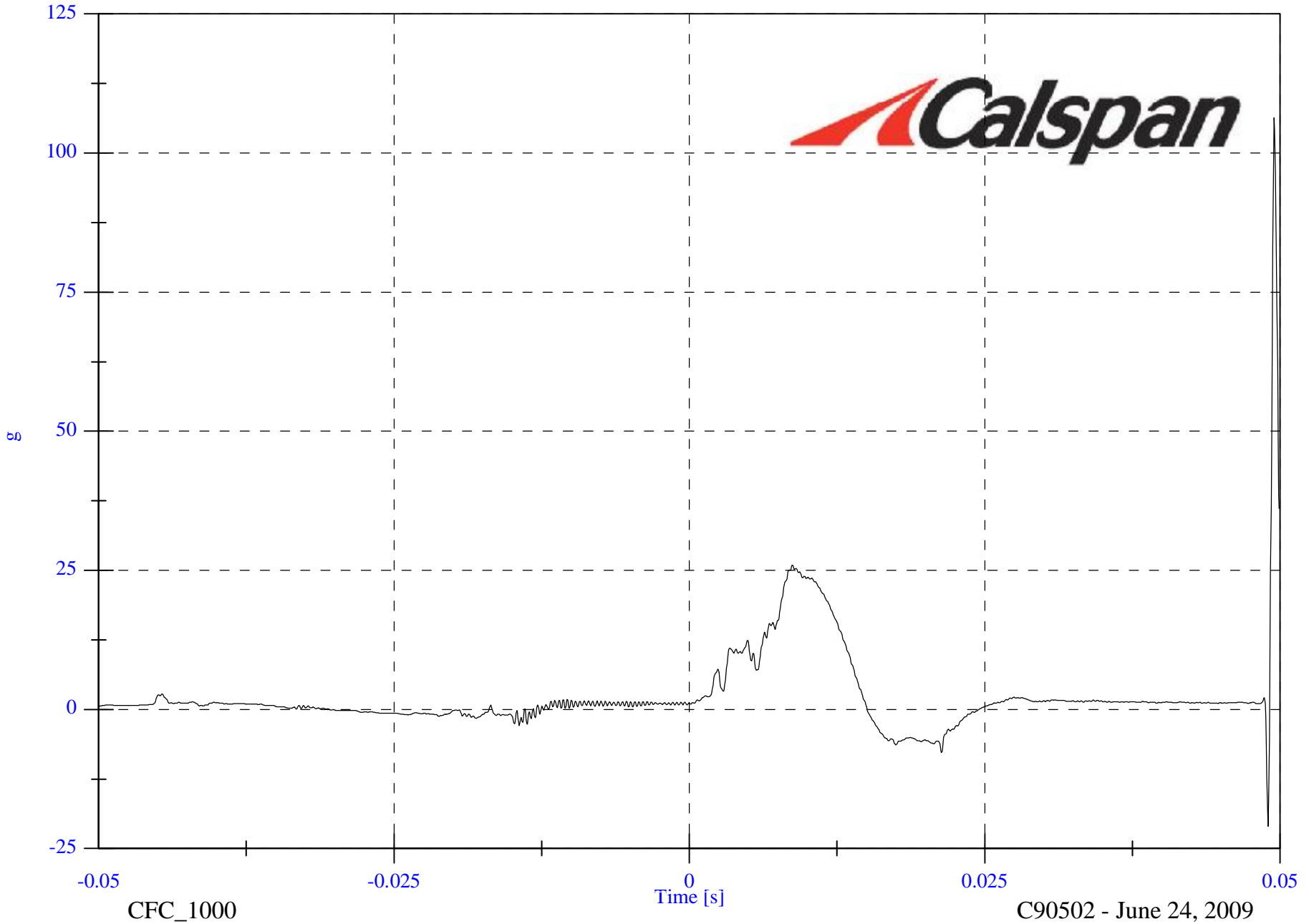
Headform Z Acceleration

Max: 106.3 [g] at 0.049 [s]

Min: -21.0 [g] at 0.049 [s]



C90502 DRIV. SIDE OP1 IMPACT PLOT #3



CFC_1000

C90502 - June 24, 2009

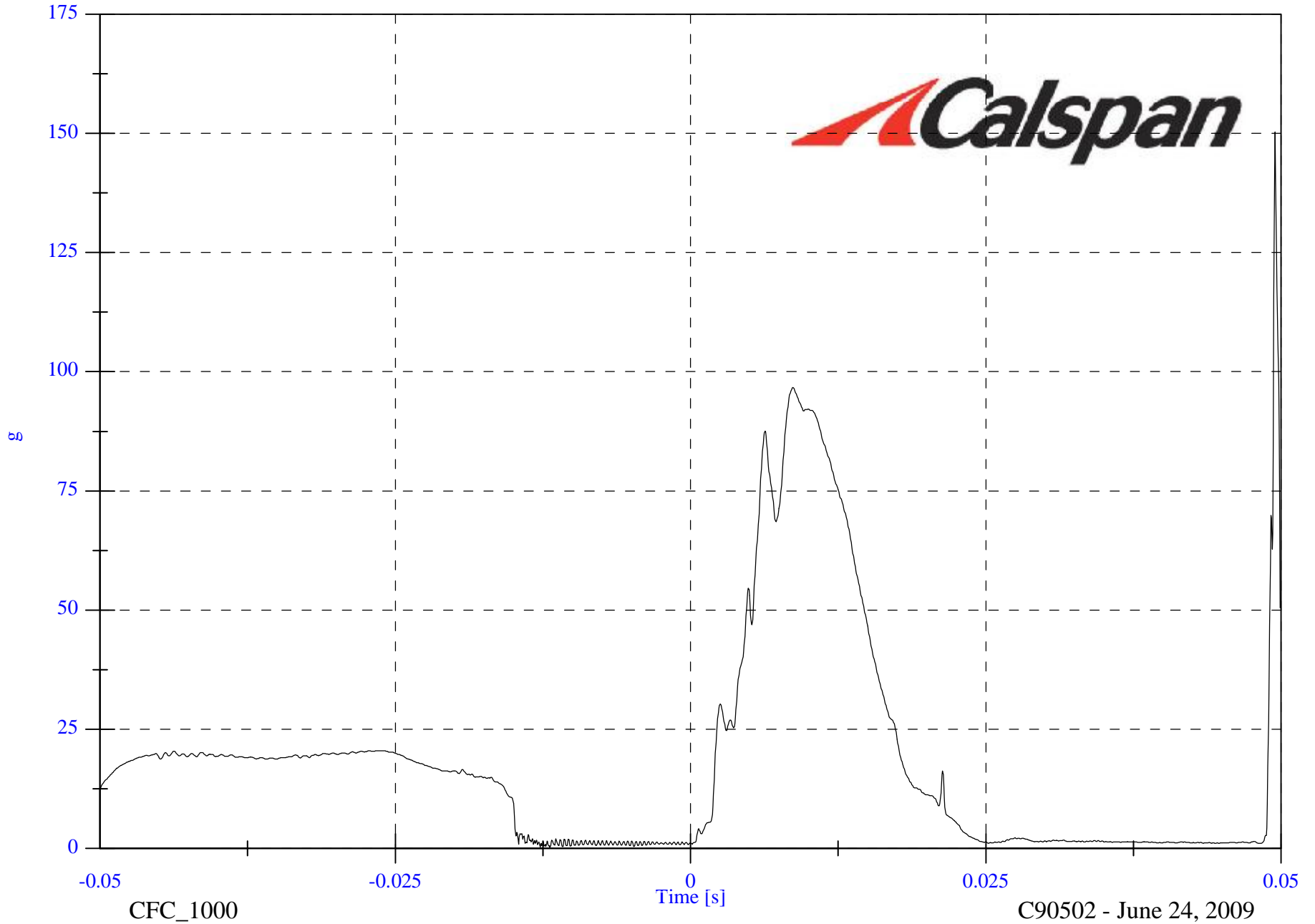
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 150.3 [g] at 0.049 [s]

Min: 0.3 [g] at -0.012 [s]

C90502 DRIV. SIDE OP1 IMPACT PLOT #4



CFC_1000

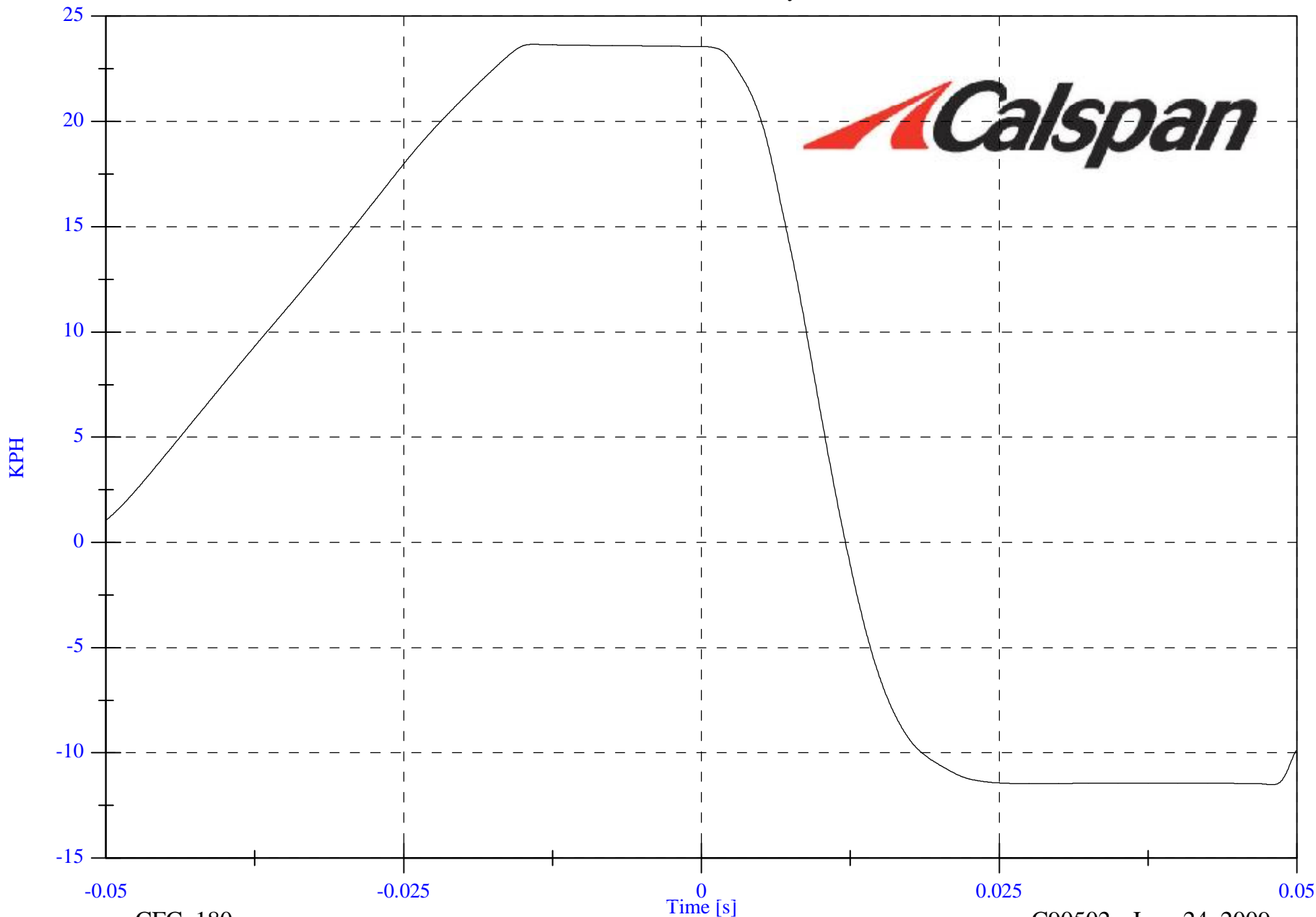
C90502 - June 24, 2009

FMVSS 201U 2009 Kia Sedona

Max: 23.7 [KPH] at -0.014 [s]

Min: -11.5 [KPH] at 0.048 [s]

Headform Velocity



C90502 DRIV. SIDE OP1 IMPACT PLOT #5

CFC_180

C90502 - June 24, 2009



PRE-IMPACT OP1 (2009 KIA SEDONA)



POST-IMPACT OP1 (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	12
Test Date:	06/24/09
Target Location:	UPPER ROOF
Target Code:	URBP
Horizontal Impact Angle:	270°
Vertical Impact Angle:	25°
Ambient Temperature:	23°C
Relative Humidity:	40
Time of Impact:	9:45
Headform Number:	1140

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	6	<input type="checkbox"/> mm right	<input checked="" type="checkbox"/> mm left
On Centerline	61	mm up	



POST-IMPACT URBP HEADFORM (2009 KIA SEDONA)

Free Motion HIC	252.0
HIC(d)	356.0
Impact Velocity (kph)	23.8
HIC T1 (msec)	3.5
HIC T2 (msec)	17.2

FMVSS 201U 2009 Kia Sedona C90502 - URBP

FMH Headform 1140

Location: URBP

Test Date: June 24, 2009

Work File: URBP

-----TEST RESULTS-----

Lab Temperature: 23 C

HICd: 356.5

Lab Humidity: 40 %

HIC (36ms): 252.0

Velocity at Impact: 23.80 KPH

t1: 3.5 msec

t2: 17.2 msec

Free Flight Distance: 222.01 mm

Duration: 13.7 msec

Average Acceleration: 8.3 g

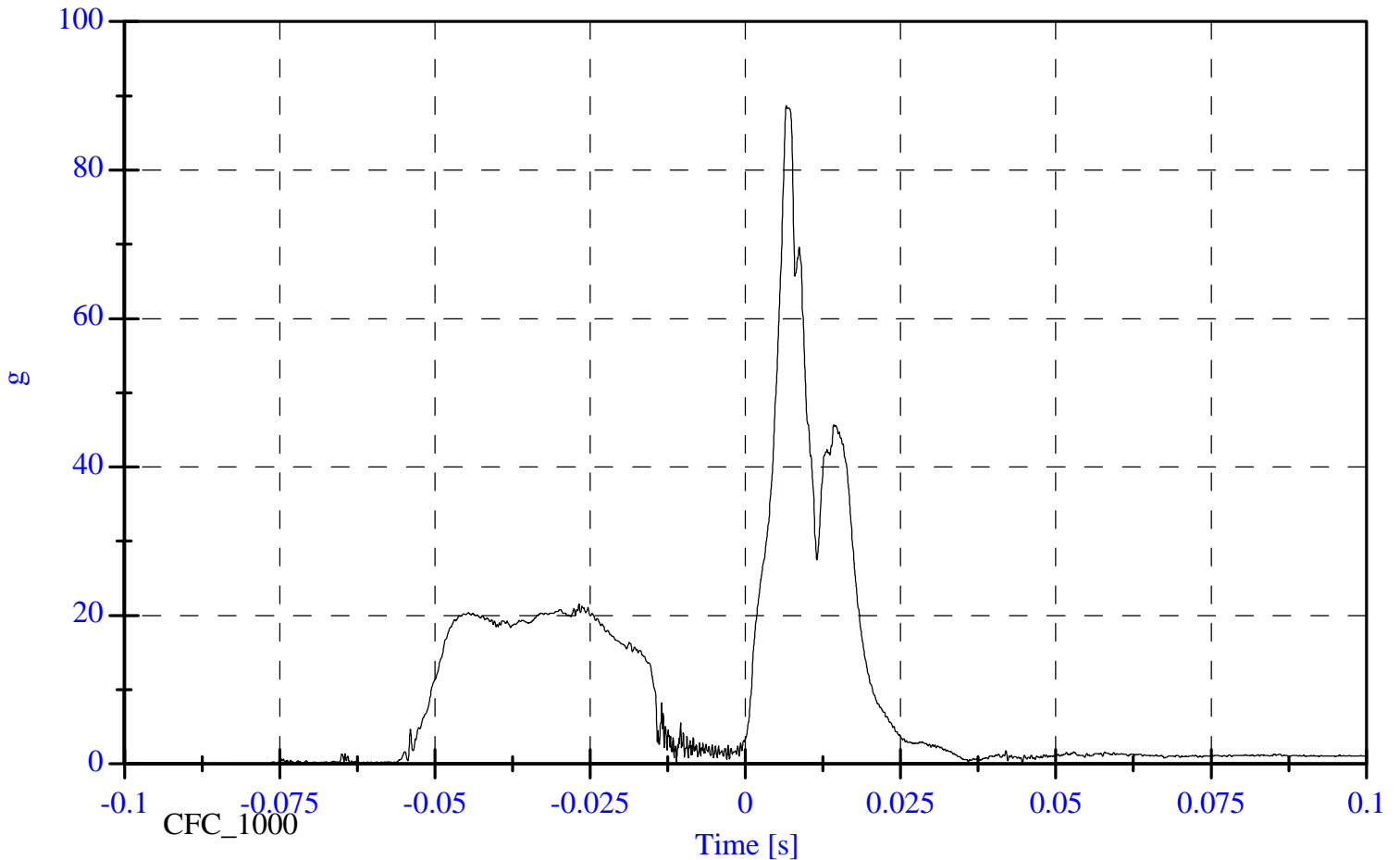
Maximum: 88.7 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 88.7 [g] at 0.007 [s]

Min: 0.0 [g] at -0.096 [s]



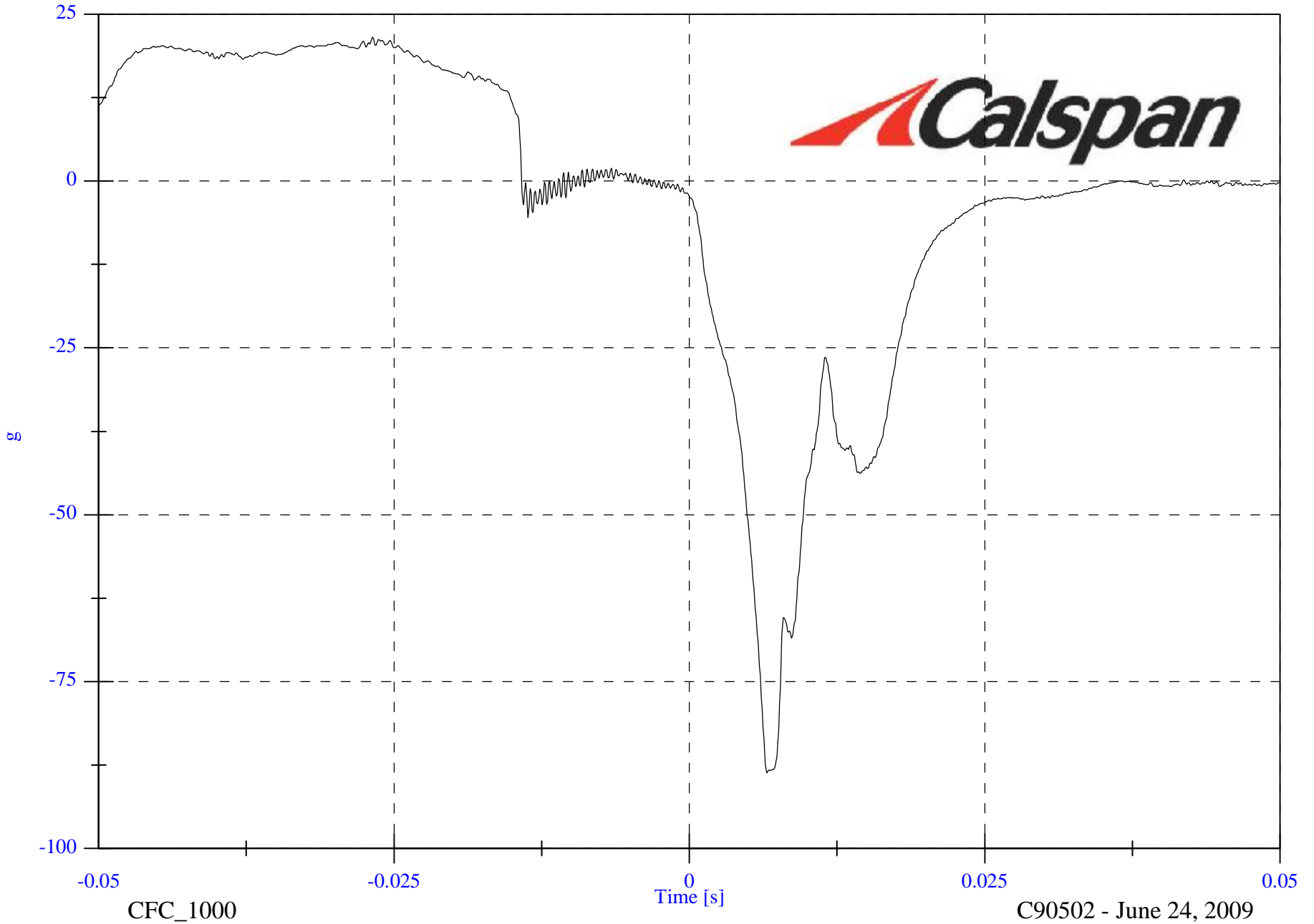
FMVSS 201U 2009 Kia Sedona

Headform X Acceleration

Max: 21.5 [g] at -0.027 [s]

Min: -88.6 [g] at 0.007 [s]

C90502 DRIV. SIDE URBP IMPACT PLOT #1



CFC_1000

C90502 - June 24, 2009

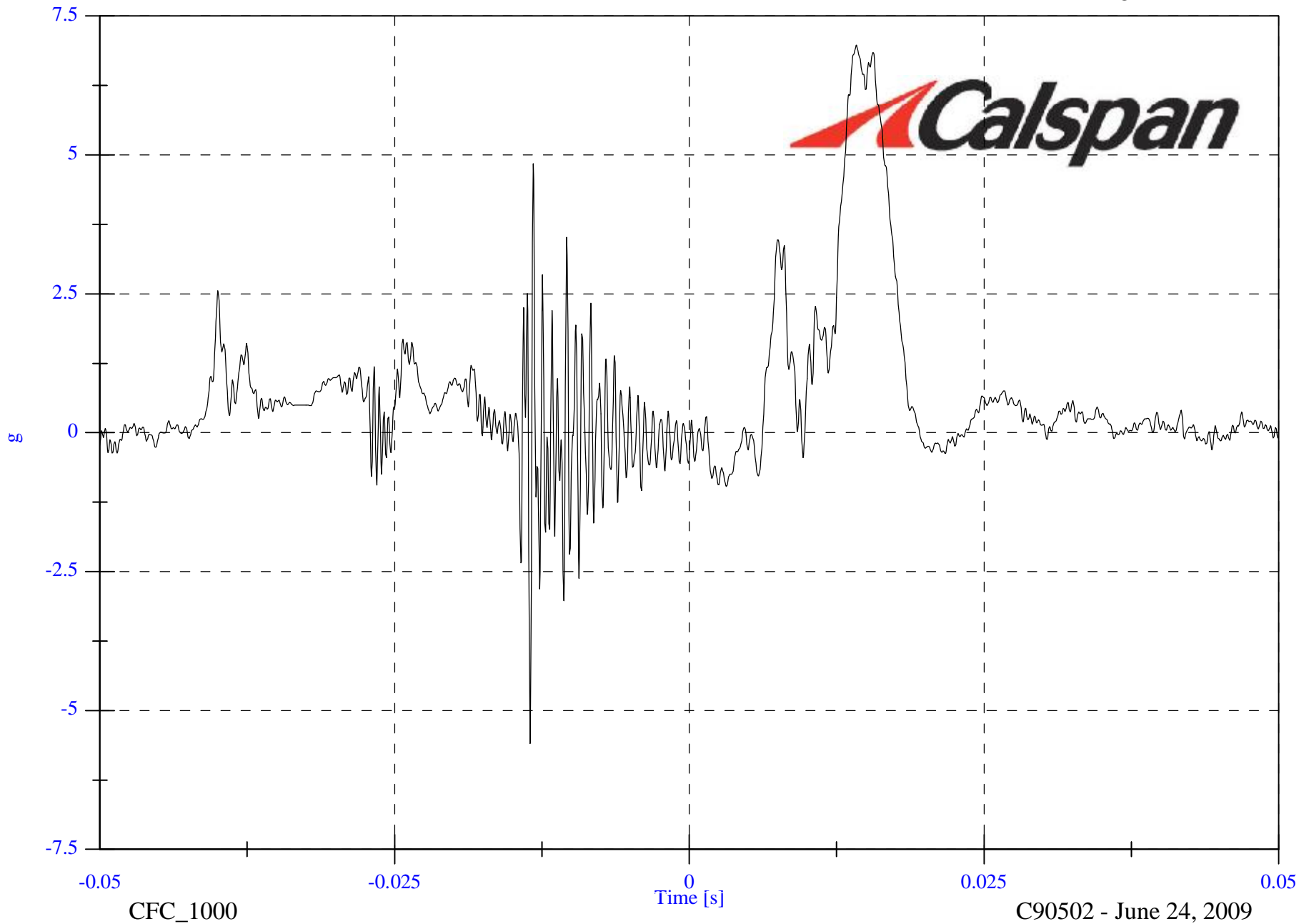
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 7.0 [g] at 0.014 [s]

Min: -5.6 [g] at -0.013 [s]

C90502 DRIV. SIDE URBP IMPACT PLOT #2



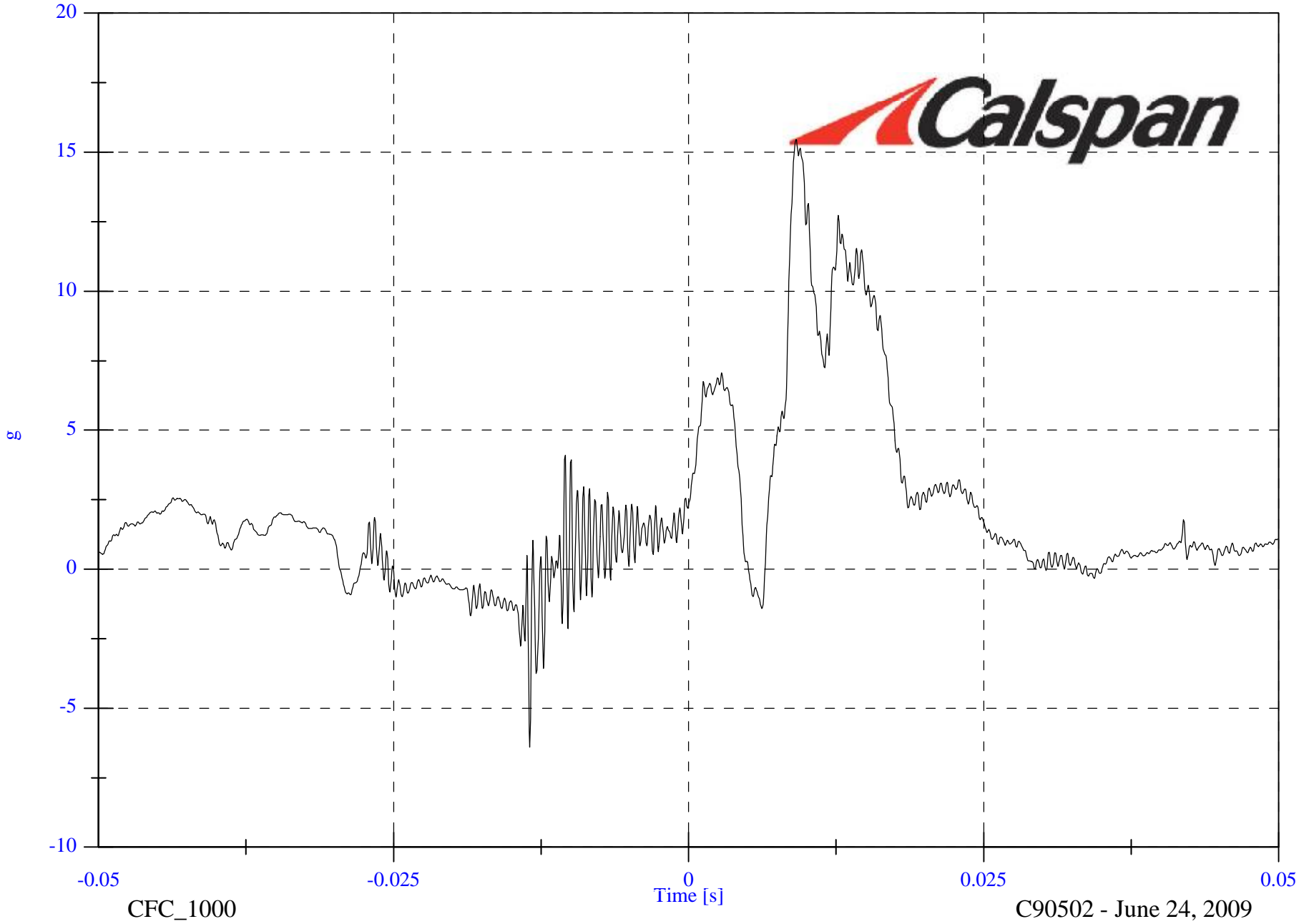
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 15.5 [g] at 0.009 [s]

Min: -6.4 [g] at -0.013 [s]

C90502 DRIV. SIDE URBP IMPACT PLOT #3



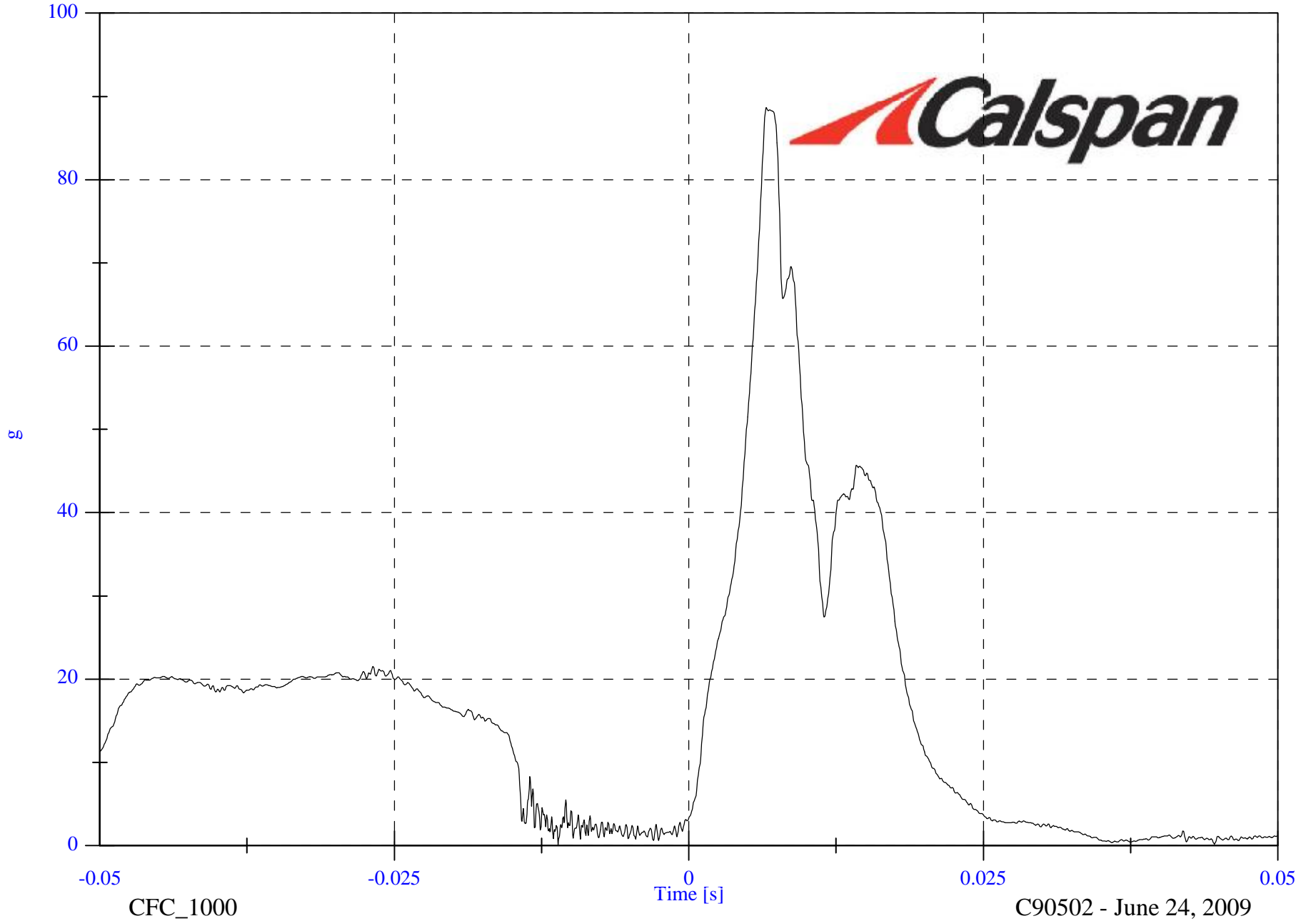
FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 88.7 [g] at 0.007 [s]

Min: 0.2 [g] at -0.011 [s]

C90502 DRIV. SIDE URBP IMPACT PLOT #4



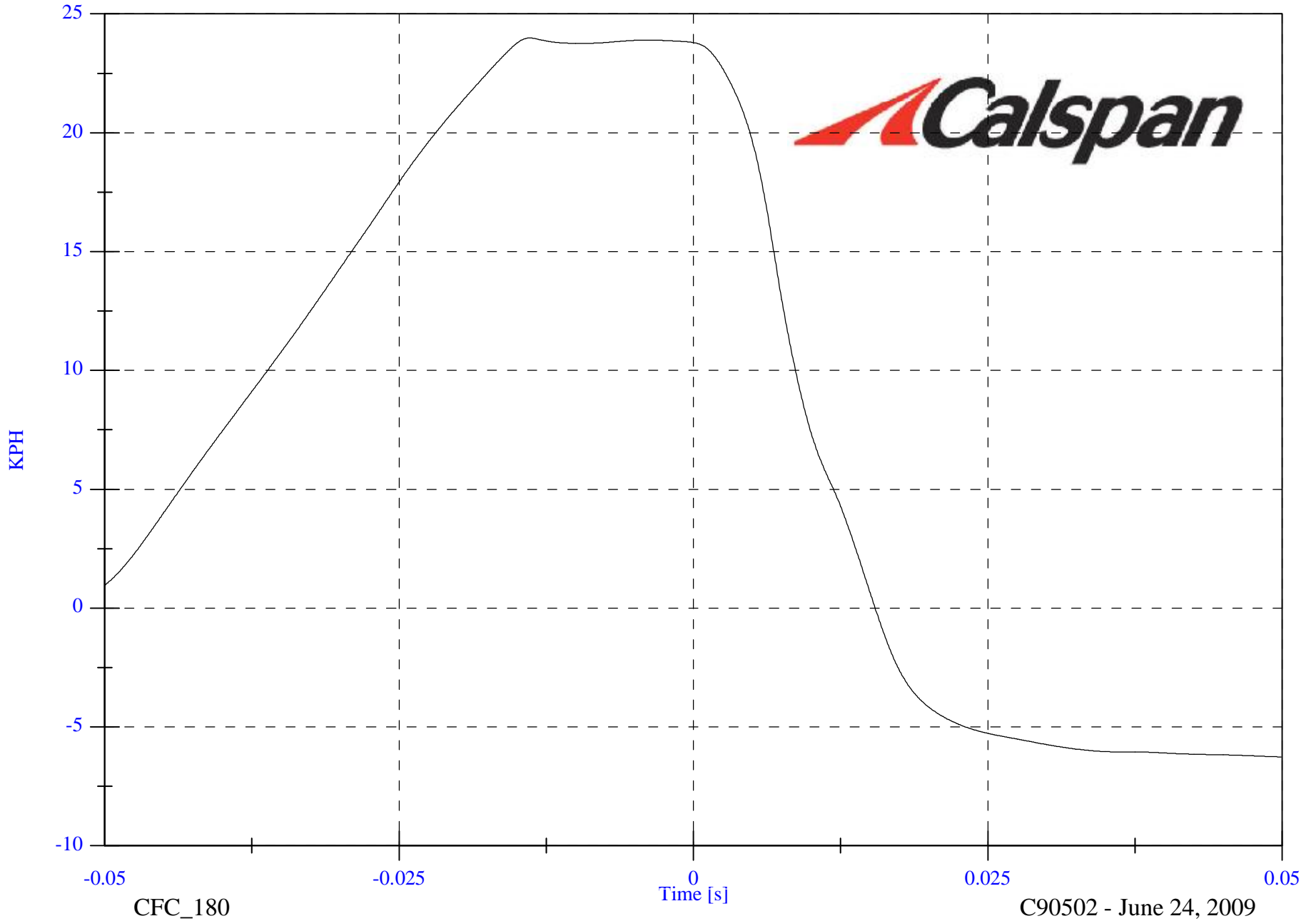
CFC_1000

C90502 - June 24, 2009

FMVSS 201U 2009 Kia Sedona

Max: 24.0 [KPH] at -0.014 [s]
Min: -6.3 [KPH] at 0.050 [s]

Headform Velocity



C90502 DRIV. SIDE URBP IMPACT PLOT #5

CFC_180

C90502 - June 24, 2009



PRE-IMPACT URBP (2009 KIA SEDONA)

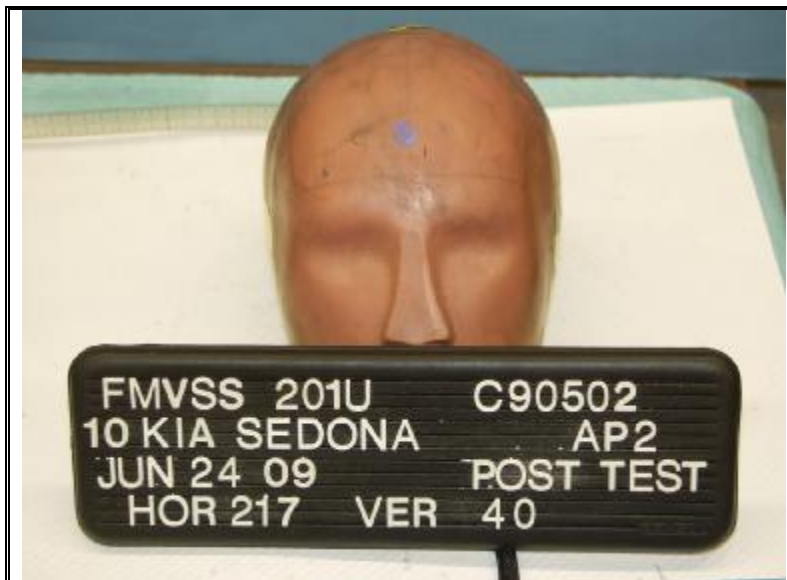


POST-IMPACT URBP (2009 KIA SEDONA)

VEHICLE YEAR/MAKE/MODEL/STYLE:	2009 Kia Sedona
VIN:	KNDMB133096286580
DATE OF MANUFACTURE:	07/08(SEE CERTIFICATION LABEL)
COLOR:	Blue

Test Number:	13
Test Date:	06/24/09
Target Location:	A-PILLAR
Target Code:	AP2
Horizontal Impact Angle:	217°
Vertical Impact Angle:	40°
Ambient Temperature:	23°C
Relative Humidity:	40
Time of Impact:	10:15
Headform Number:	0805

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	0	mm right	mm left
On Centerline	23		mm up



POST-IMPACT URBP HEADFORM (2009 KIA SEDONA)

Free Motion HIC	206.7
HIC(d)	322.4
Impact Velocity (kph)	18.38
HIC T1 (msec)	1.7
HIC T2 (msec)	15.2

FMVSS 201U 2009 Kia Sedona C90502 - AP2

FMH Headform 0805

Location: AP2

Test Date: June 24, 2009

Work File: AP2

-----TEST RESULTS-----

Lab Temperature: 23 C

HICd: 322.4

Lab Humidity: 40 %

HIC (36ms): 206.7

Velocity at Impact: 18.38 KPH

t1: 1.7 msec

t2: 15.2 msec

Free Flight Distance: 218.60 mm

Duration: 13.5 msec

Average Acceleration: 7.3 g

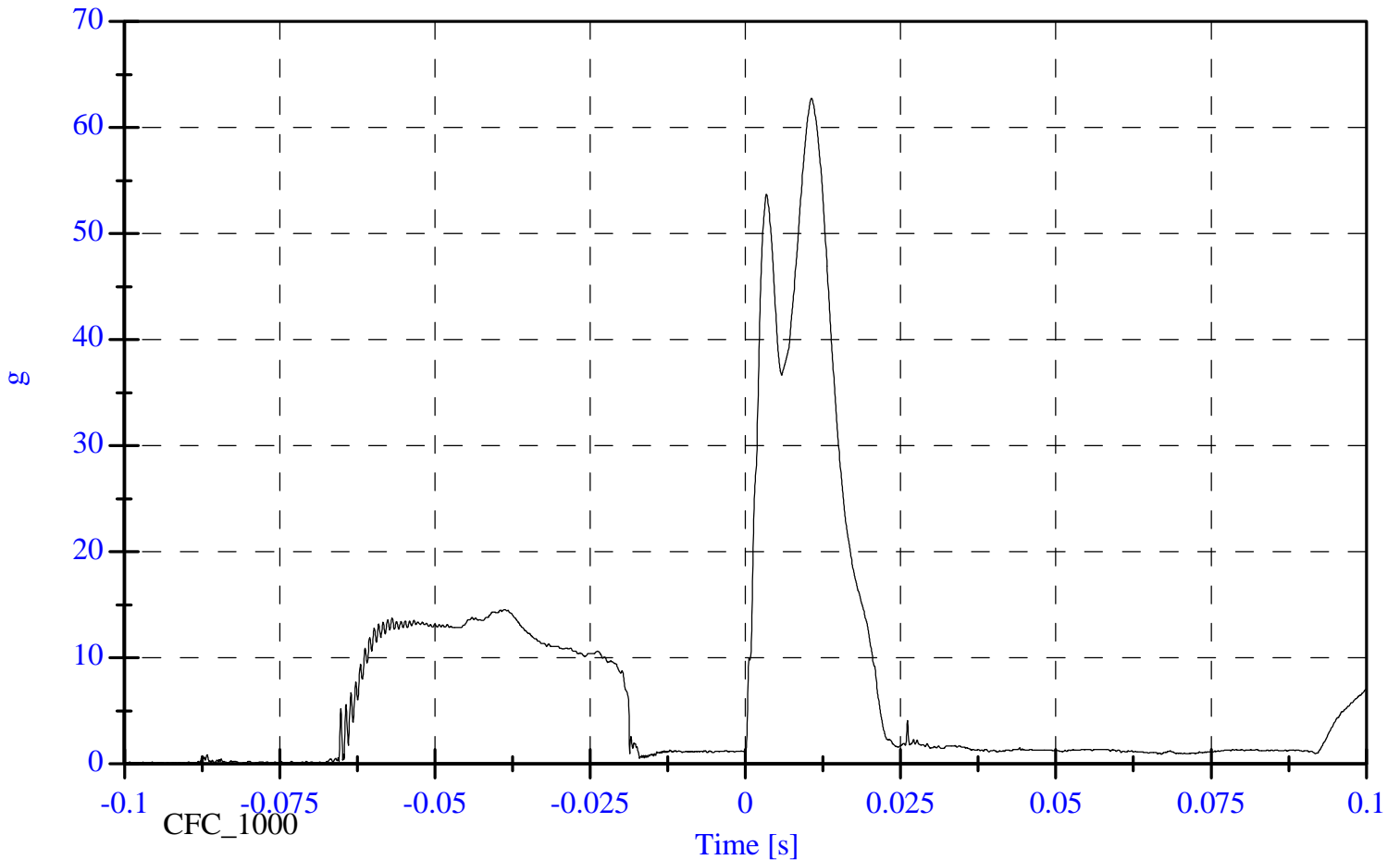
Maximum: 62.8 g

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 62.8 [g] at 0.011 [s]

Min: 0.0 [g] at -0.092 [s]



FMVSS 201U 2009 Kia Sedona

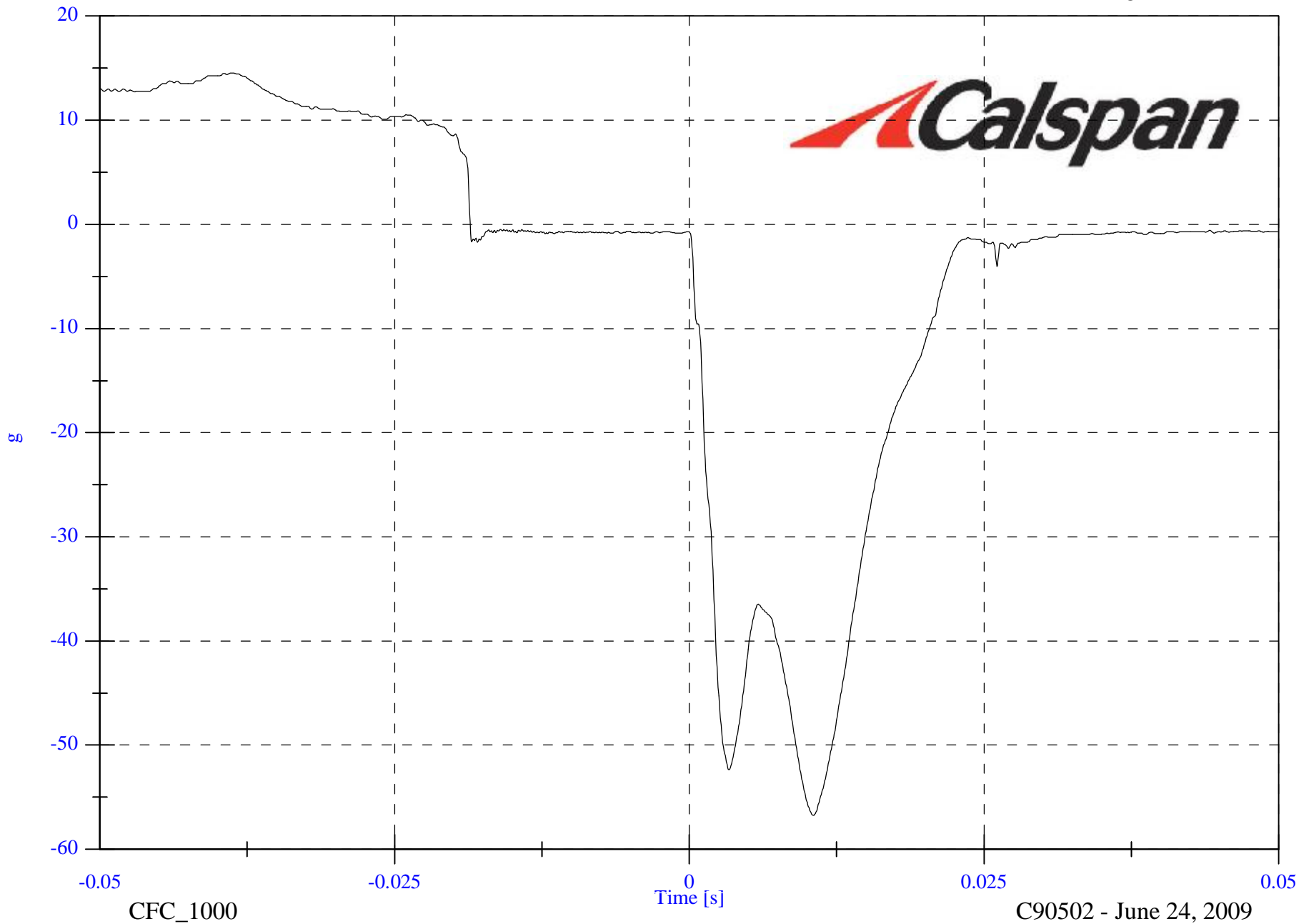
Headform X Acceleration

Max: 14.5 [g] at -0.039 [s]

Min: -56.7 [g] at 0.011 [s]



C90502 DRIV. SIDE AP2 IMPACT PLOT #1



CFC_1000

C90502 - June 24, 2009

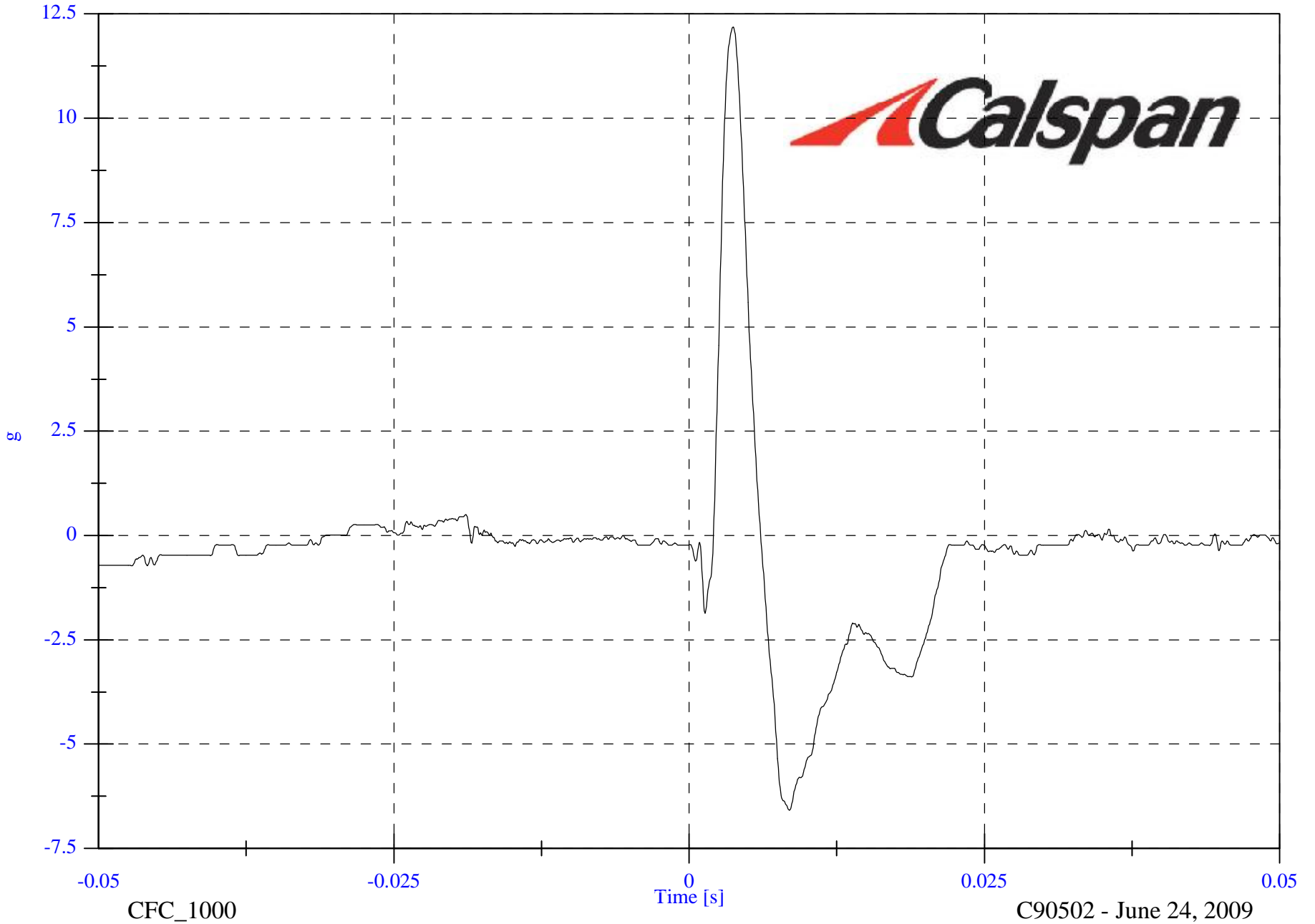
FMVSS 201U 2009 Kia Sedona

Headform Y Acceleration

Max: 12.2 [g] at 0.004 [s]

Min: -6.6 [g] at 0.008 [s]

C90502 DRIV. SIDE AP2 IMPACT PLOT #2



CFC_1000

C90502 - June 24, 2009

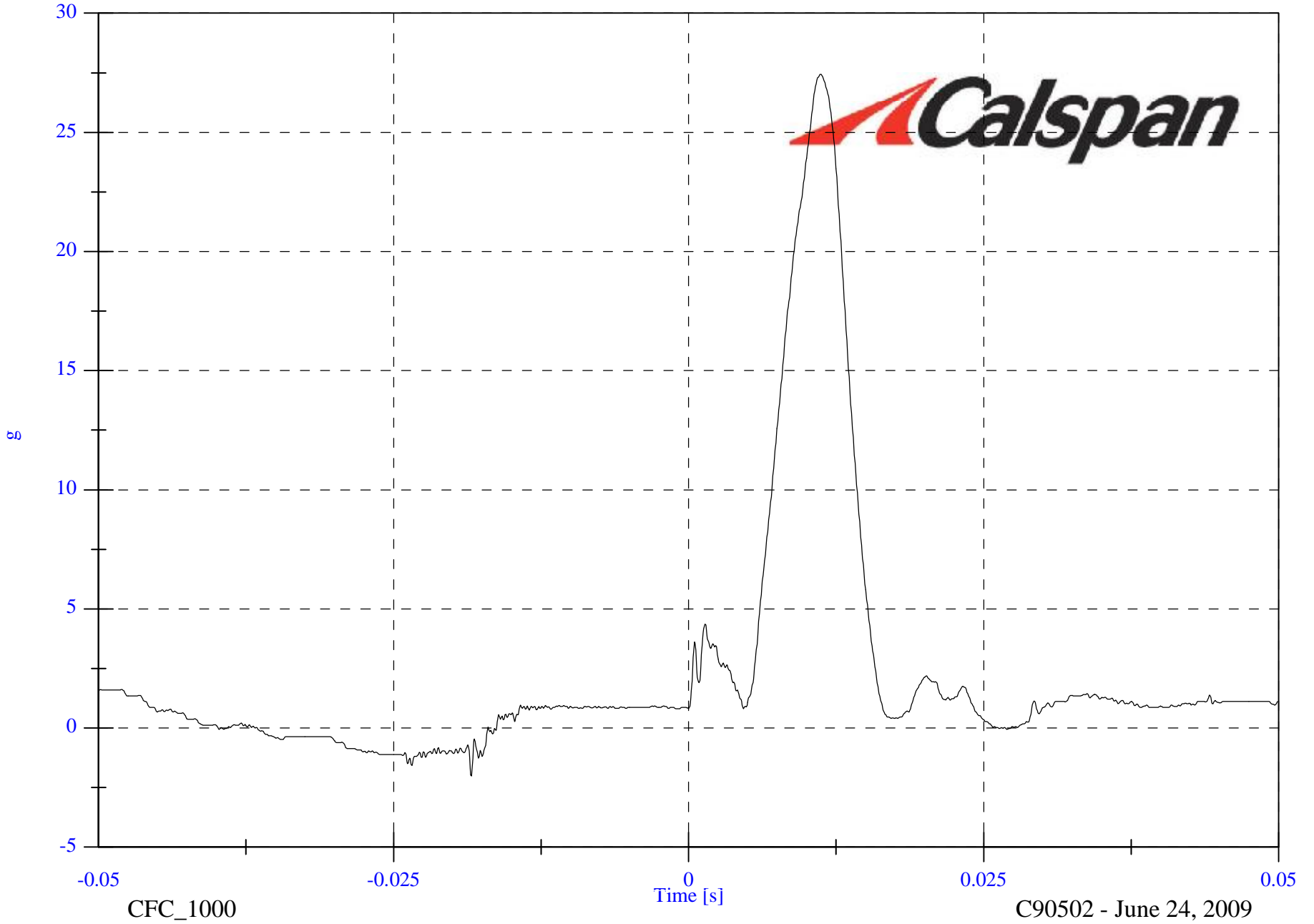
FMVSS 201U 2009 Kia Sedona

Headform Z Acceleration

Max: 27.4 [g] at 0.011 [s]

Min: -2.0 [g] at -0.018 [s]

C90502 DRIV. SIDE AP2 IMPACT PLOT #3



CFC_1000

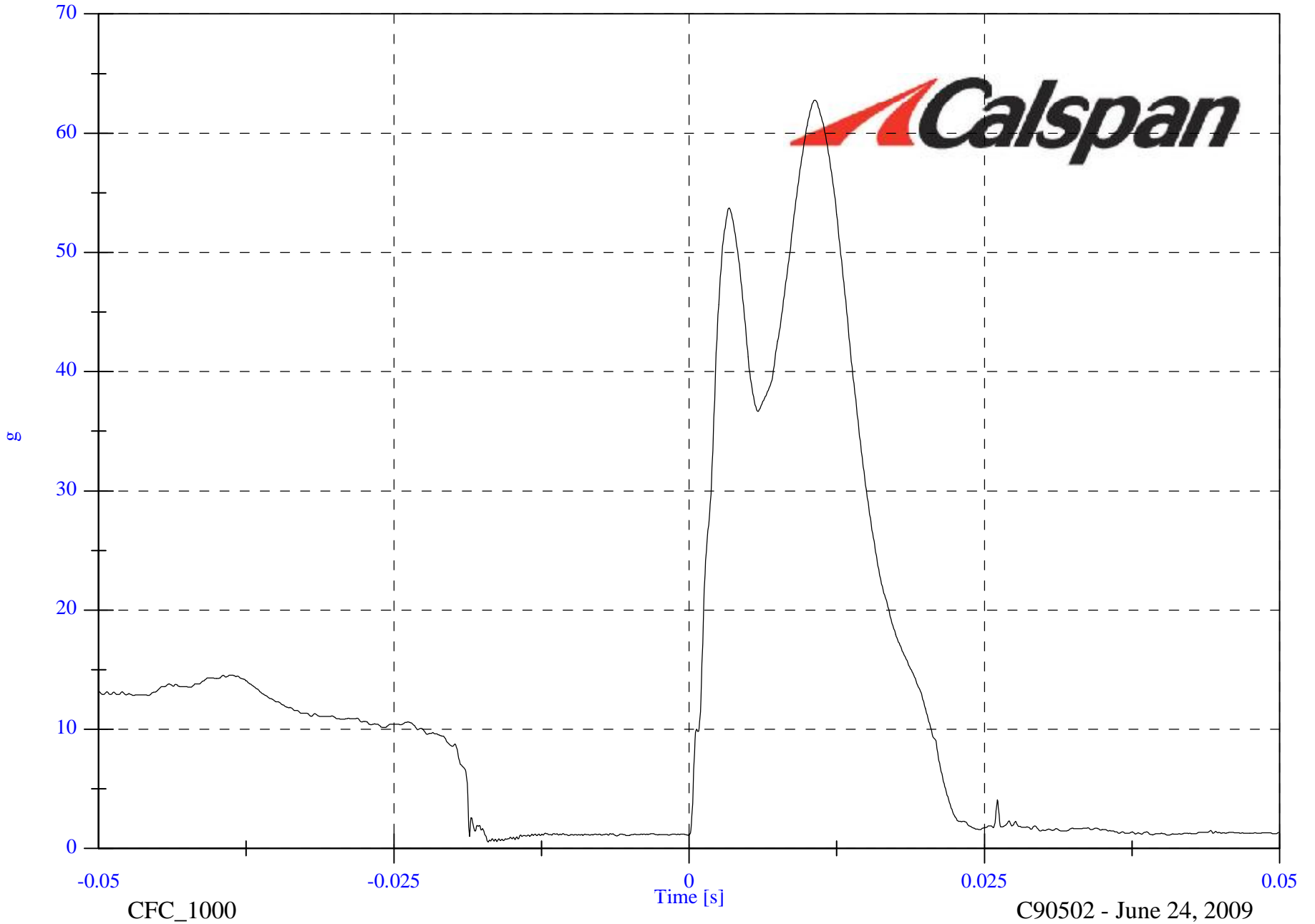
C90502 - June 24, 2009

FMVSS 201U 2009 Kia Sedona

Headform Resultant

Max: 62.8 [g] at 0.011 [s]
Min: 0.5 [g] at -0.017 [s]

C90502 DRIV. SIDE AP2 IMPACT PLOT #4



CFC_1000

C90502 - June 24, 2009

FMVSS 201U 2009 Kia Sedona

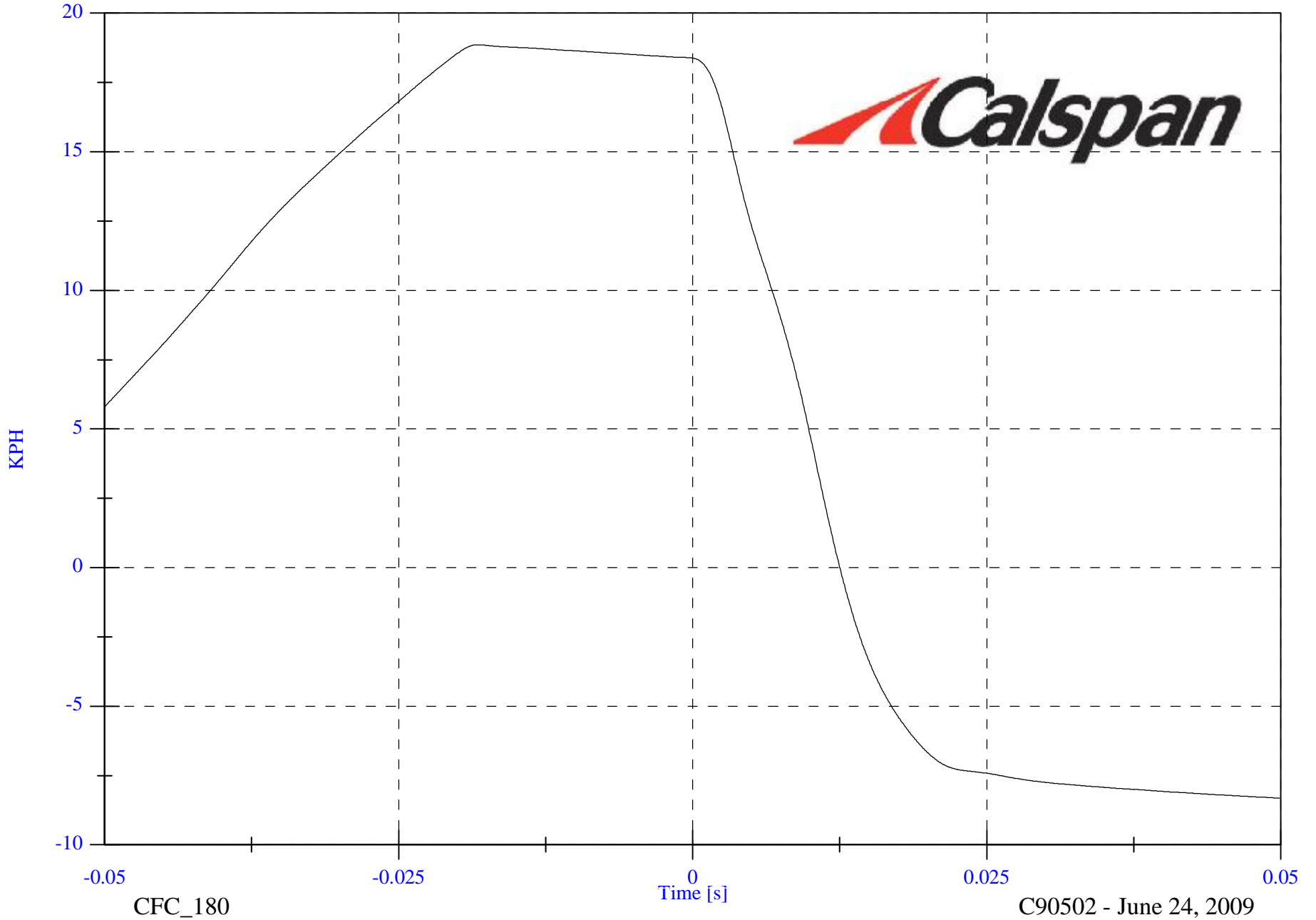
Max: 18.9 [KPH] at -0.018 [s]

Min: -8.3 [KPH] at 0.050 [s]

Headform Velocity



C90502 DRIV. SIDE AP2 IMPACT PLOT #5



CFC_180

C90502 - June 24, 2009



PRE-IMPACT URBP (2009 KIA SEDONA)



POST-IMPACT URBP (2009 KIA SEDONA)

APPENDIX A

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PHOTOGRAPHS

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Figure A-1 : LEFT SIDE VIEW OF VEHICLE



A-4

8877-09

Figure A-2 : RIGHT SIDE VIEW OF VEHICLE



Figure A-3 : 3/4 FRONTAL VIEW FROM RIGHT SIDE OF VEHICLE



Figure A-4 : 3/4 REAR VIEW FROM LEFT SIDE OF VEHICLE



Figure A-5 : VEHICLE'S CERTIFICATION LABEL



Figure A-6 : VEHICLE'S TIRE INFORMATION LABEL



Figure A-7 : PRE-TEST DRIVER SIDE A-PILLAR



Figure A-8 : PRE-TEST DRIVER SIDE FRONT HEADER



Figure A-9 : PRE-TEST DRIVER SIDE SIDE RAIL



Figure A-10 : PRE-TEST DRIVER SIDE B-PILLAR



Figure A-11 : PRE-TEST DRIVER SIDE SLIDING DOOR



Figure A-12 : PRE-TEST DRIVER SIDE OTHER PILLAR

PHOTO NOT AVAILABLE

Figure A-13 : PRE-TEST DRIVER SIDE REAR PILLAR



Figure A-14 : PRE-TEST PASSENGER SIDE A-PILLAR



Figure A-15 : PRE-TEST PASSENGER SIDE FRONT HEADER



Figure A-16 : PRE-TEST PASSENGER SIDE SIDE RAIL



Figure A-17 : PRE-TEST PASSENGER SIDE B-PILLAR



Figure A-18 : PRE-TEST PASSENGER SIDE SLIDING DOOR



Figure A-19 : PRE-TEST PASSENGER SIDE OTHER PILLAR



Figure A-20 : PRE-TEST PASSENGER SIDE REAR PILLAR



Figure A-21 : POST-TEST DRIVER SIDE A-PILLAR



Figure A-22 : POST-TEST DRIVER SIDE FRONT HEADER



Figure A-23 : POST-TEST DRIVER SIDE SIDE RAIL



Figure A-24 : POST-TEST DRIVER SIDE B-PILLAR



Figure A-25 : POST-TEST DRIVER SIDE SLIDING DOOR



Figure A-26 : POST-TEST DRIVER SIDE OTHER PILLAR



Figure A-27 : POST-TEST DRIVER SIDE REAR PILLAR



Figure A-28 : POST-TEST PASSENGER SIDE A-PILLAR



Figure A-29 : POST-TEST PASSENGER SIDE FRONT HEADER



Figure A-30 : POST-TEST PASSENGER SIDE SIDE RAIL



Figure A-31 : POST-TEST PASSENGER SIDE B-PILLAR



Figure A-32 : POST-TEST PASSENGER SIDE SLIDING DOOR



Figure A-33 : POST-TEST PASSENGER SIDE OTHER PILLAR



Figure A-34 : POST-TEST PASSENGER SIDE REAR PILLAR

APPENDIX B

PART 572L PERFORMANCE CALIBRATION IN SUPPORT OF VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT PROTECTION IN INTERIOR IMPACT

Appendix B contains the results from certification tests performed on the Free Motion Headforms utilized in this test program. The results indicate that the headforms meet all of the performance specifications given in 49 CFR Part 572 Subpart L.

The tests were conducted at the Dummy Certification Test Facility of Calspan Corporation. A summary of the test results are included in this Appendix.

**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		1142	
CALIBRATION DATE:		JUNE 5, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	21	
RELATIVE HUMIDITY	10% to 70%	37	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	250.5	
PEAK LATERAL ACCELERATION	15 Gs Maximum	9.2	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

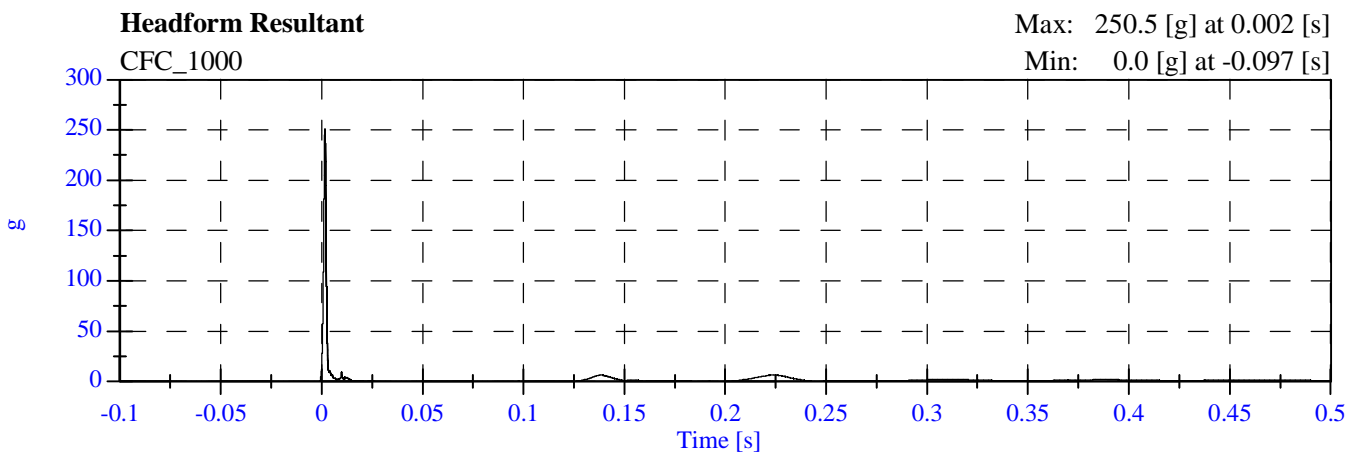
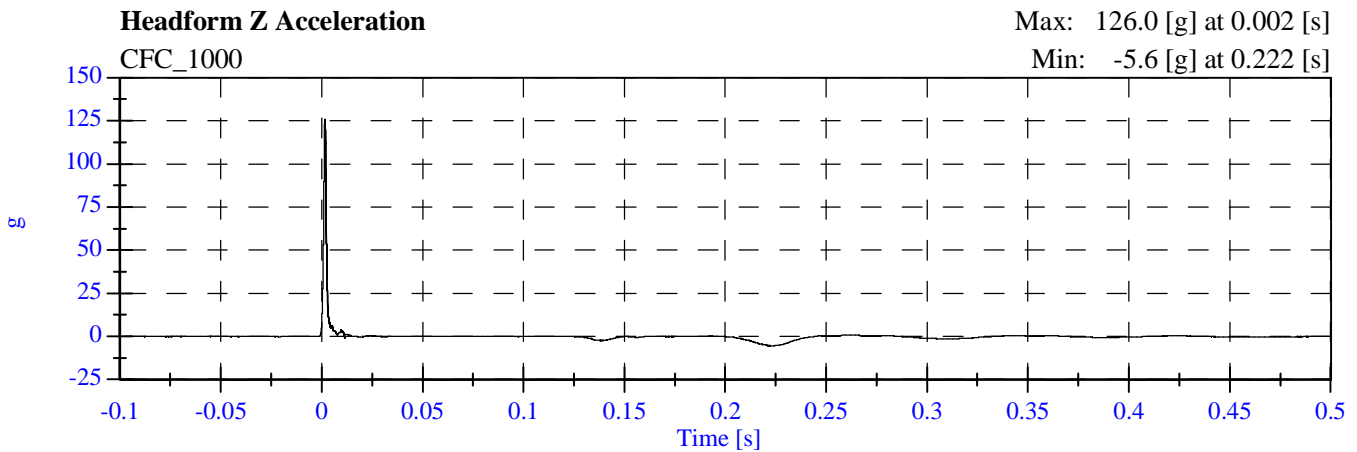
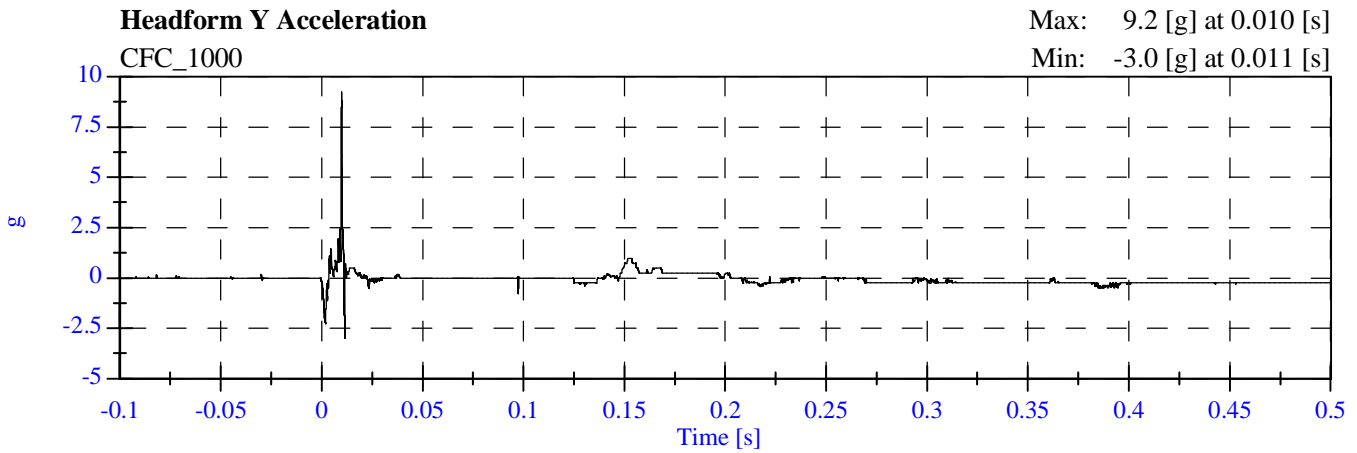
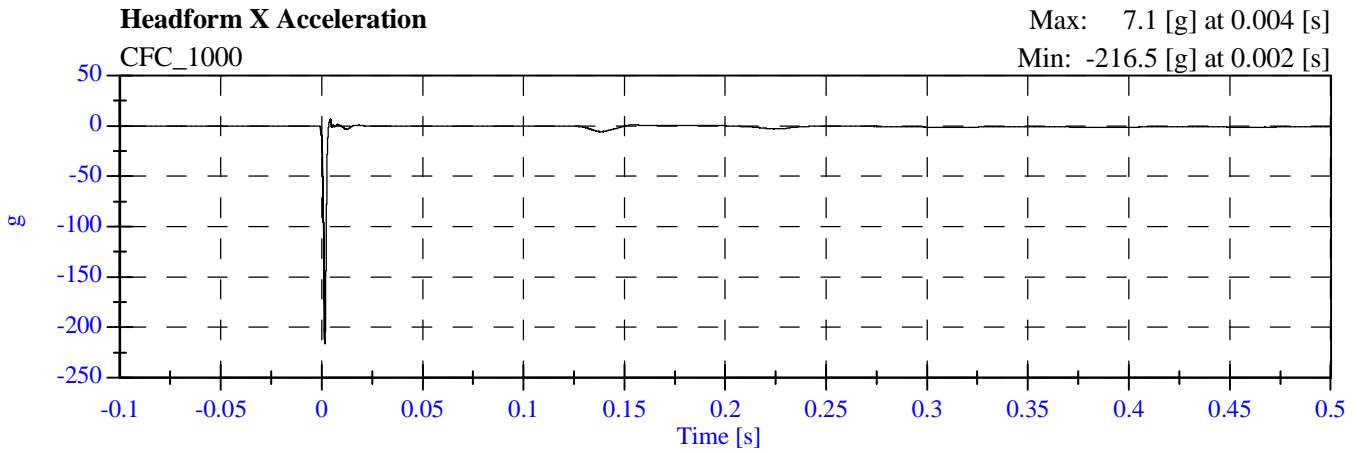
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J24876	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J33030	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J31009	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 05, 2009



**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		DENTON ATD INC.	
SERIAL NUMBER:		0062	
CALIBRATION DATE:		JUNE 5, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	21	
RELATIVE HUMIDITY	10% to 70%	37	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	257.5	
PEAK LATERAL ACCELERATION	15 Gs Maximum	6.7	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

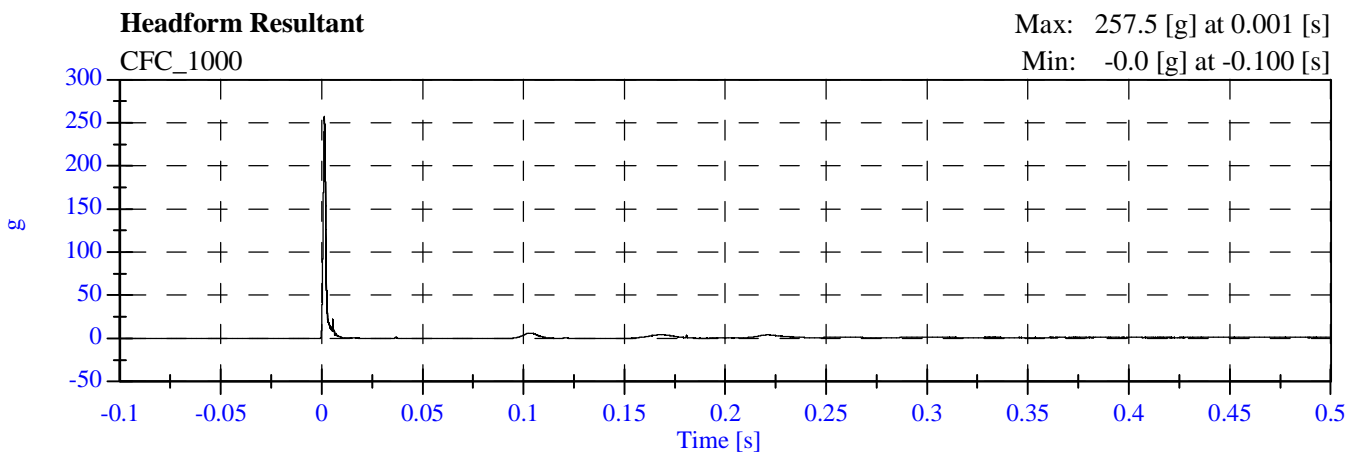
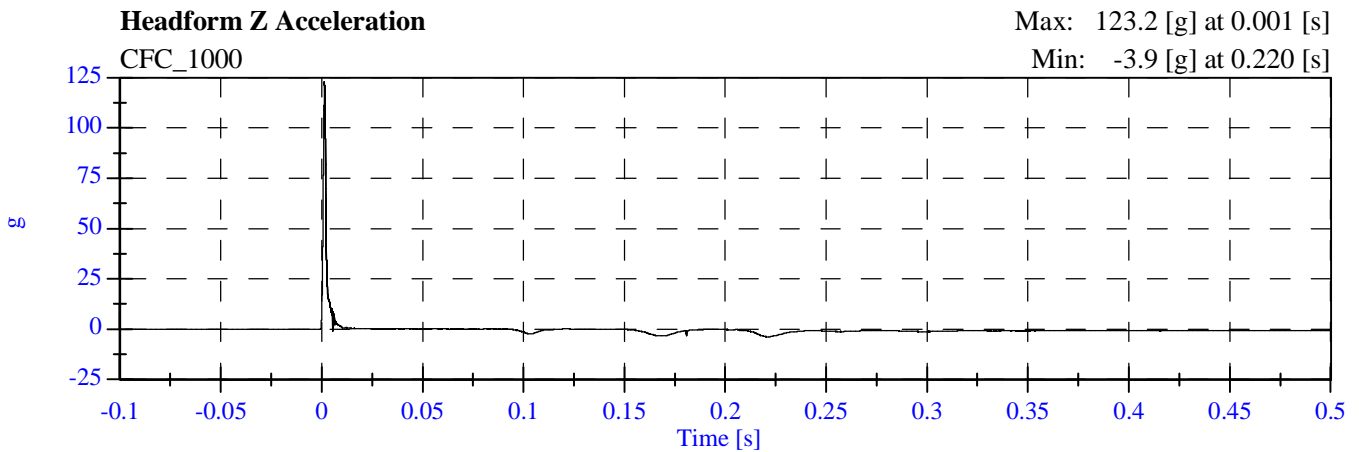
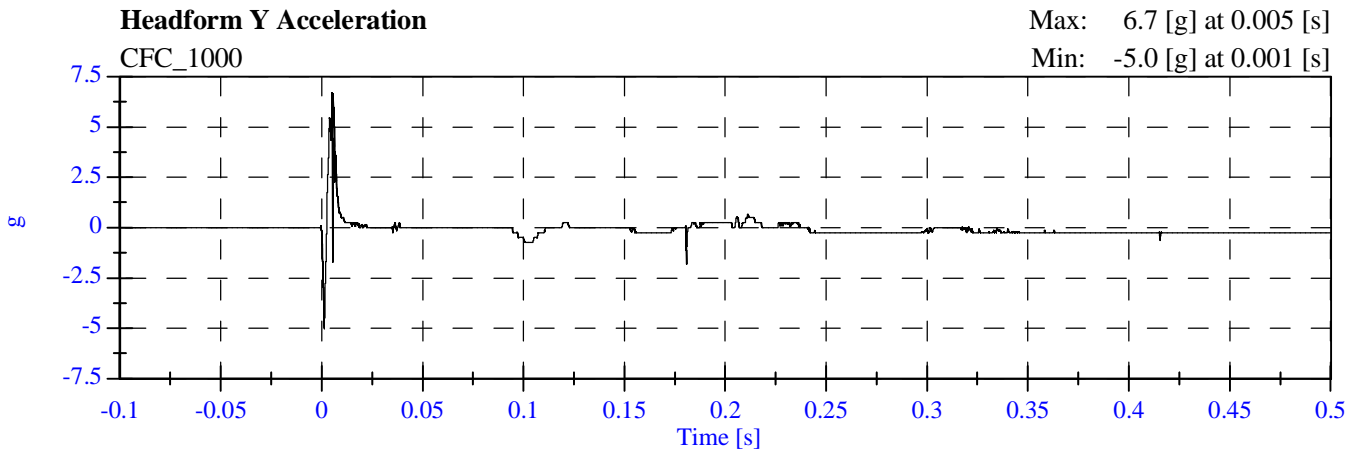
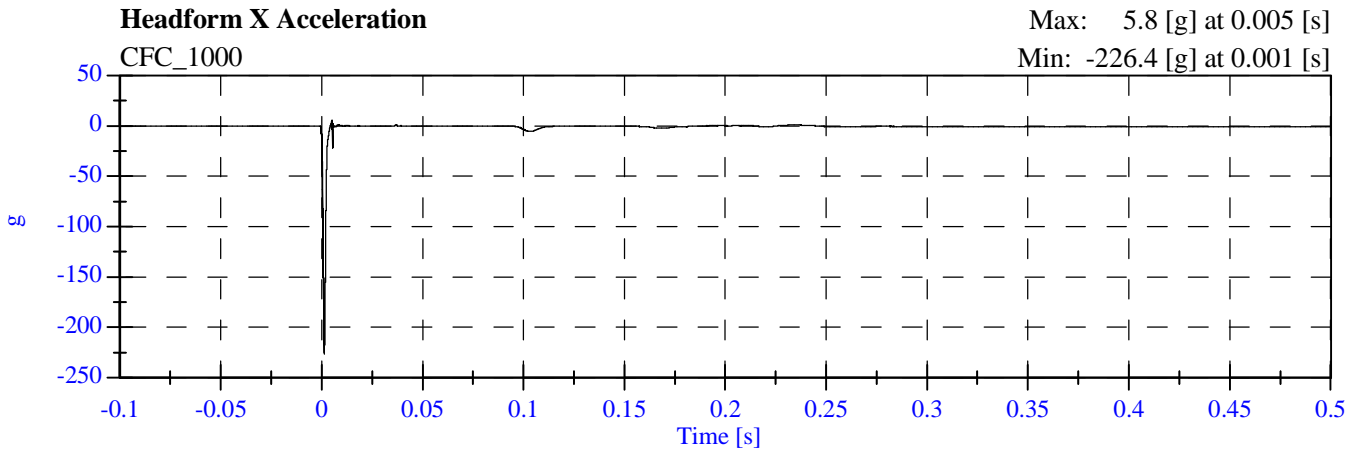
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J33127	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J33019	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J32782	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 05, 2009



**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		805	
CALIBRATION DATE:		JUNE 5, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	21	
RELATIVE HUMIDITY	10% to 70%	37	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	254.2	
PEAK LATERAL ACCELERATION	15 Gs Maximum	3.5	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

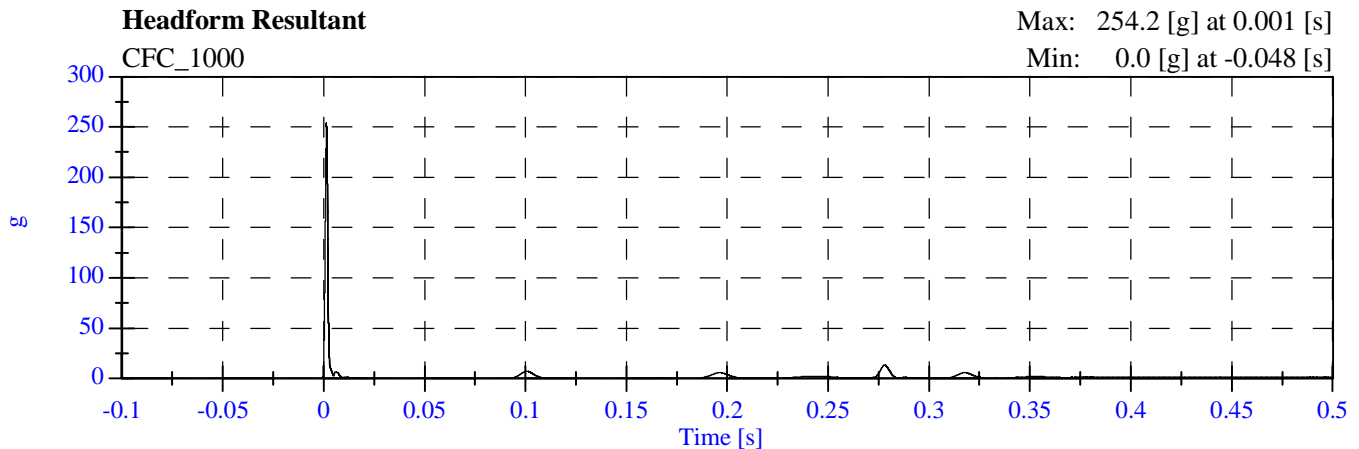
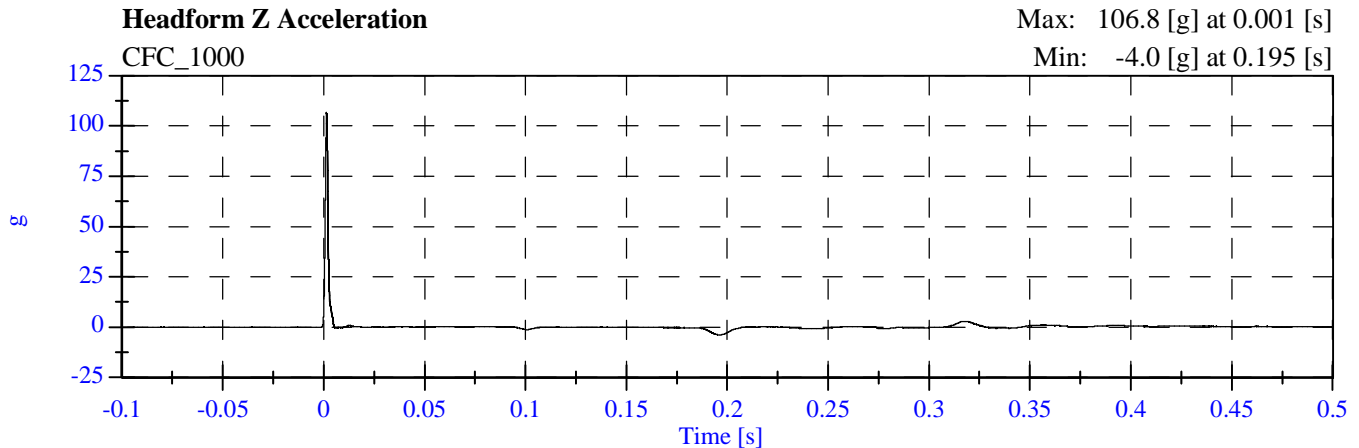
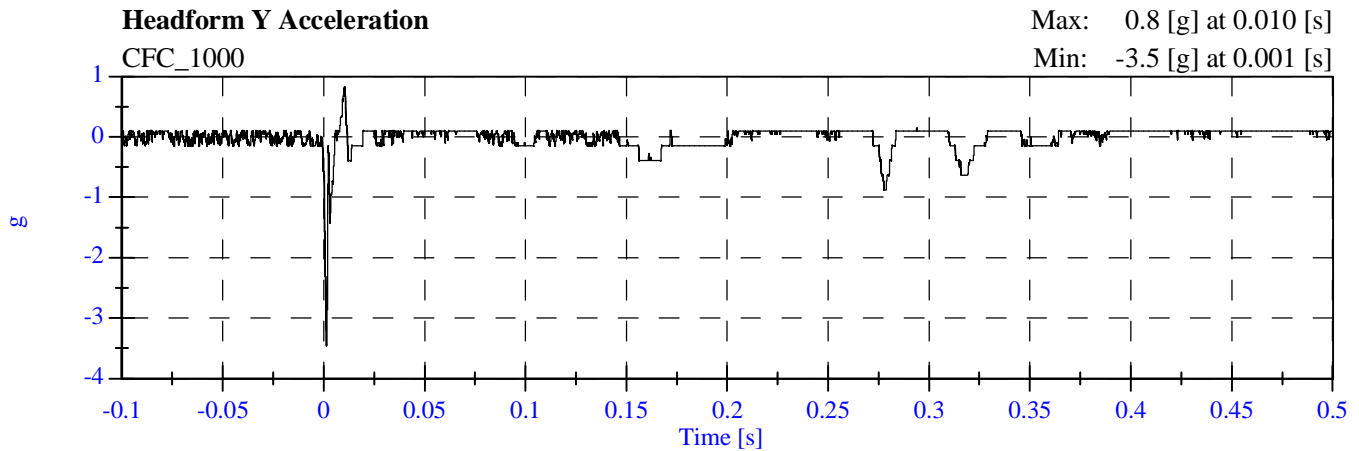
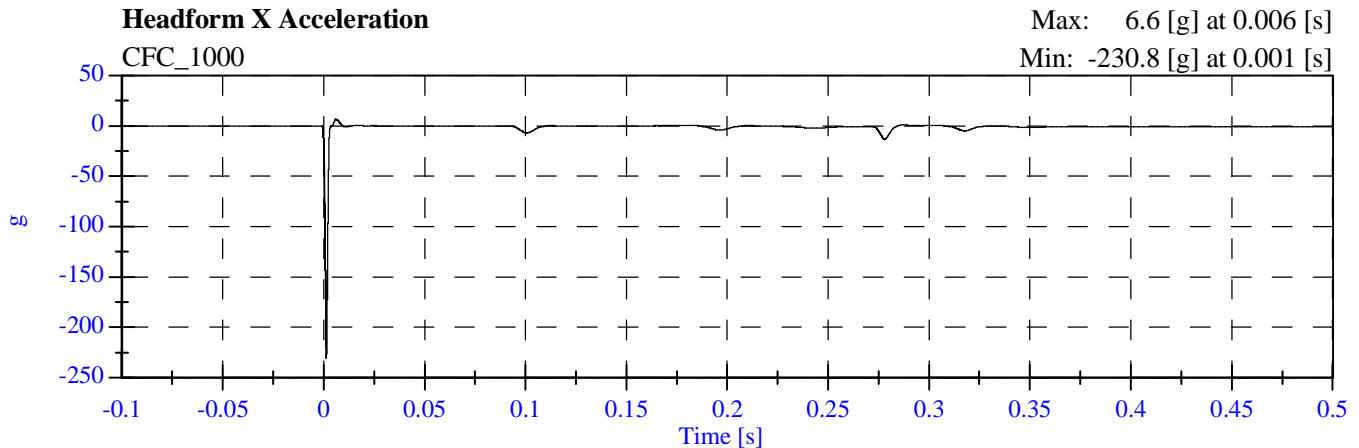
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I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J41004	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J37496	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J41016	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 05, 2009



**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		DENTON ATD INC.	
SERIAL NUMBER:		0355	
CALIBRATION DATE:		JUNE 5, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	21	
RELATIVE HUMIDITY	10% to 70%	37	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	245.5	
PEAK LATERAL ACCELERATION	15 Gs Maximum	8.3	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

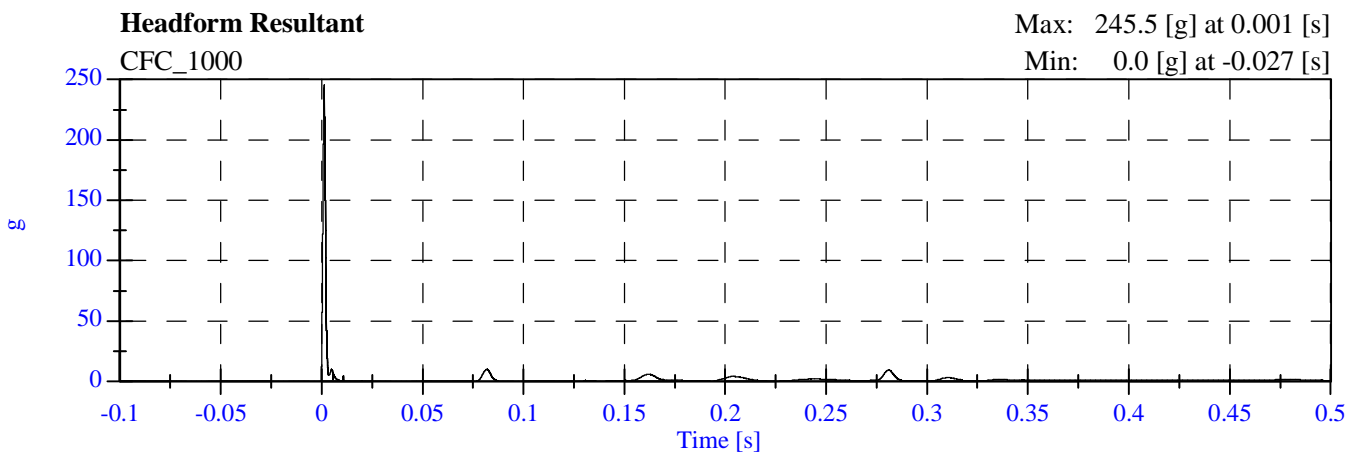
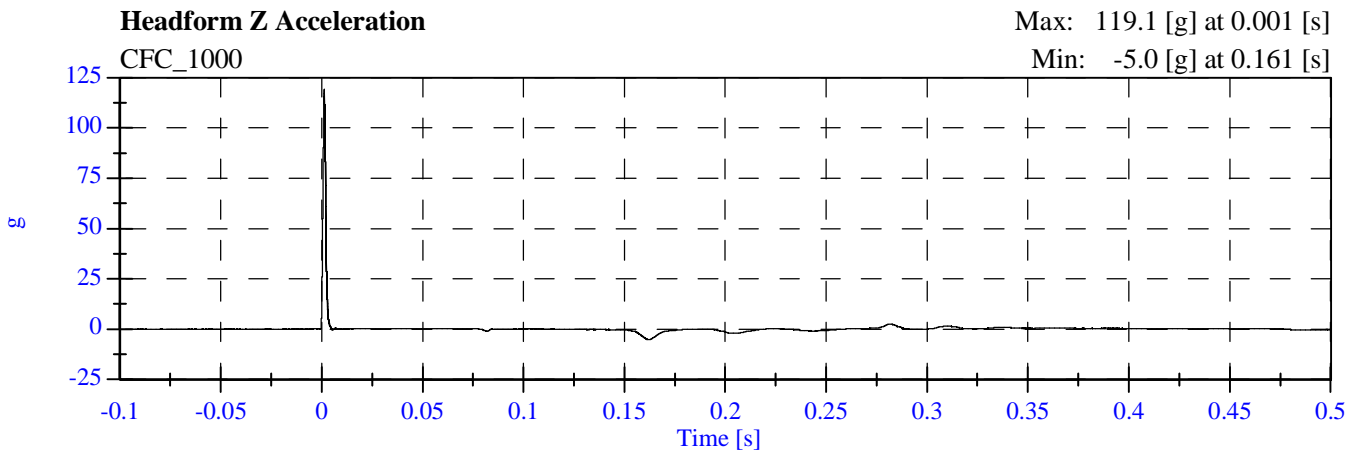
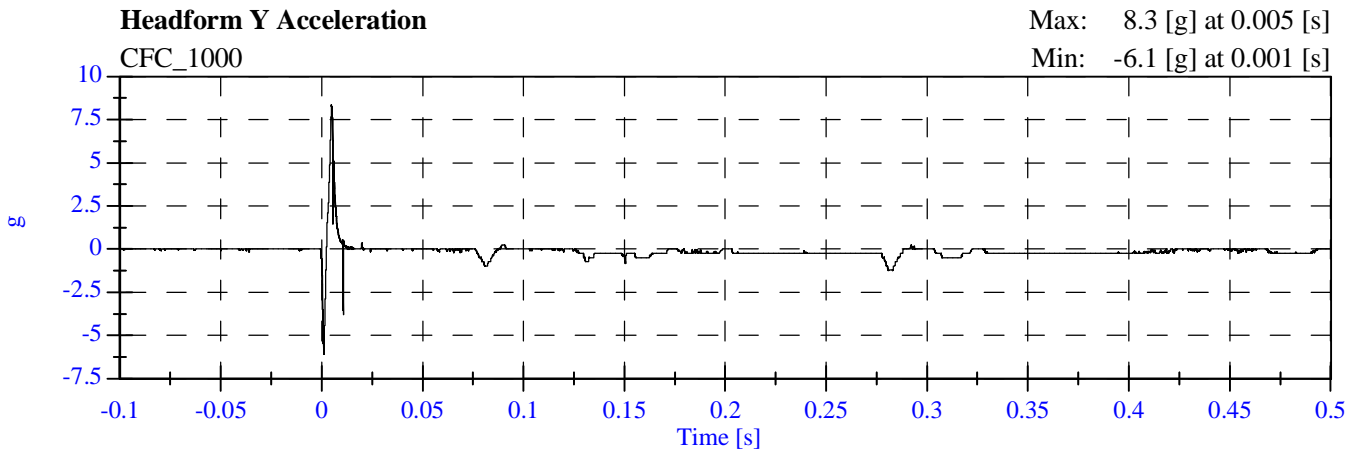
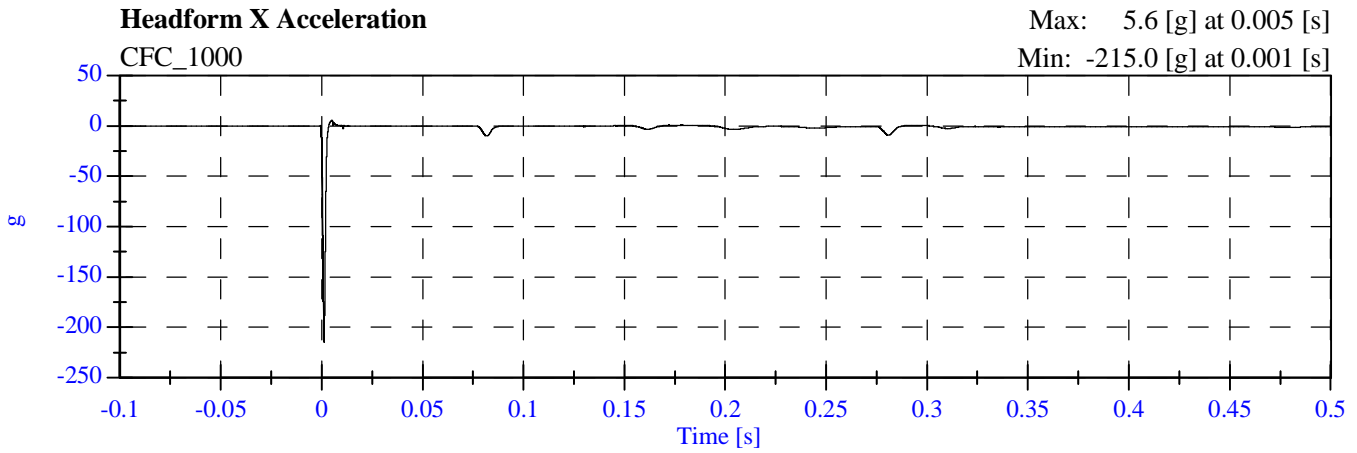
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
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2 - LATERAL	ENDEVCO	7264-2000T	J32779	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J25854	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 05, 2009



**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		1140	
CALIBRATION DATE:		JUNE 5, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	21	
RELATIVE HUMIDITY	10% to 70%	37	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	243.9	
PEAK LATERAL ACCELERATION	15 Gs Maximum	5.6	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

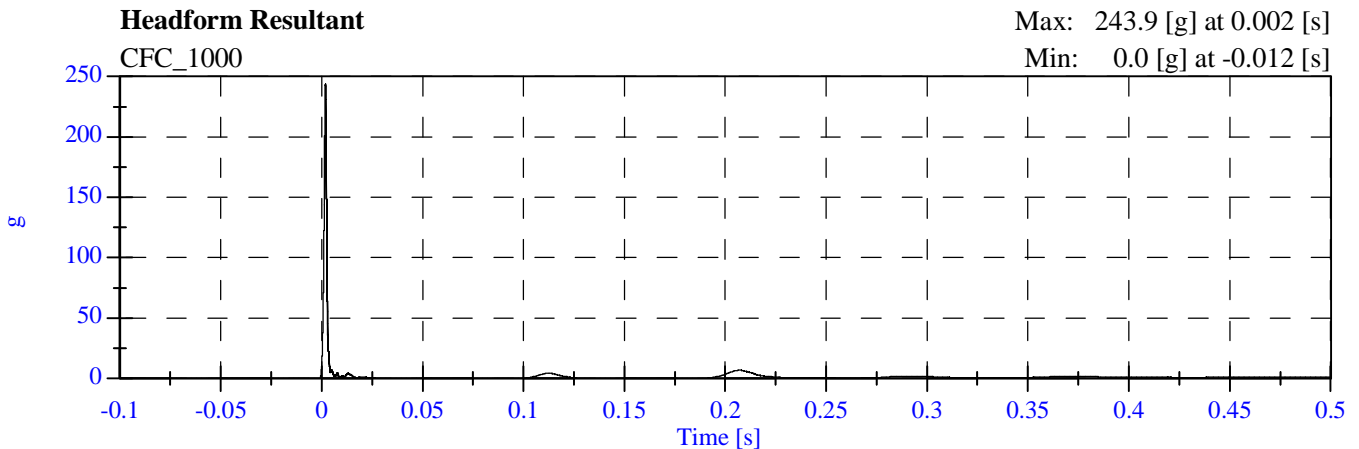
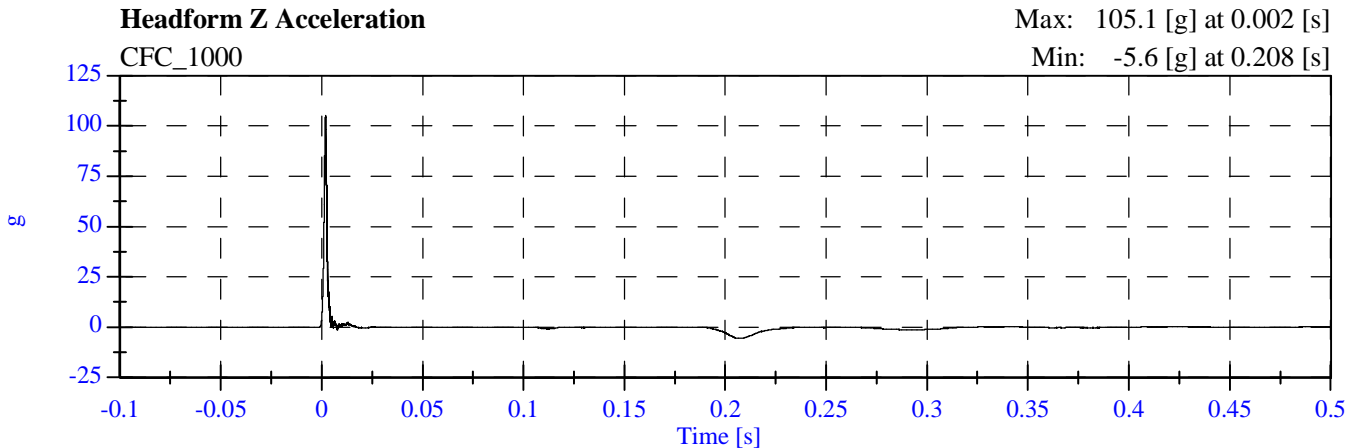
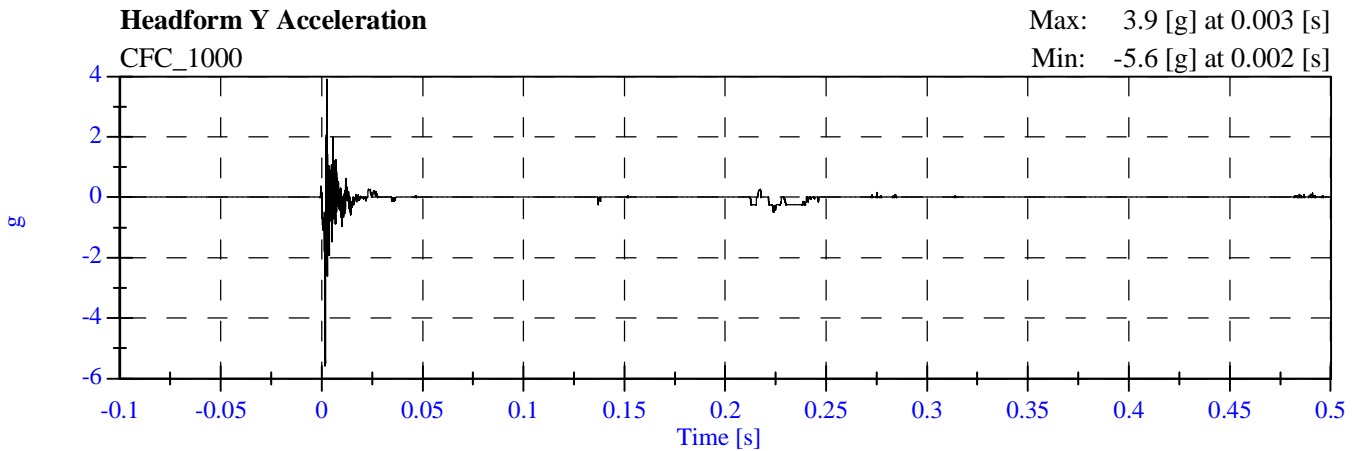
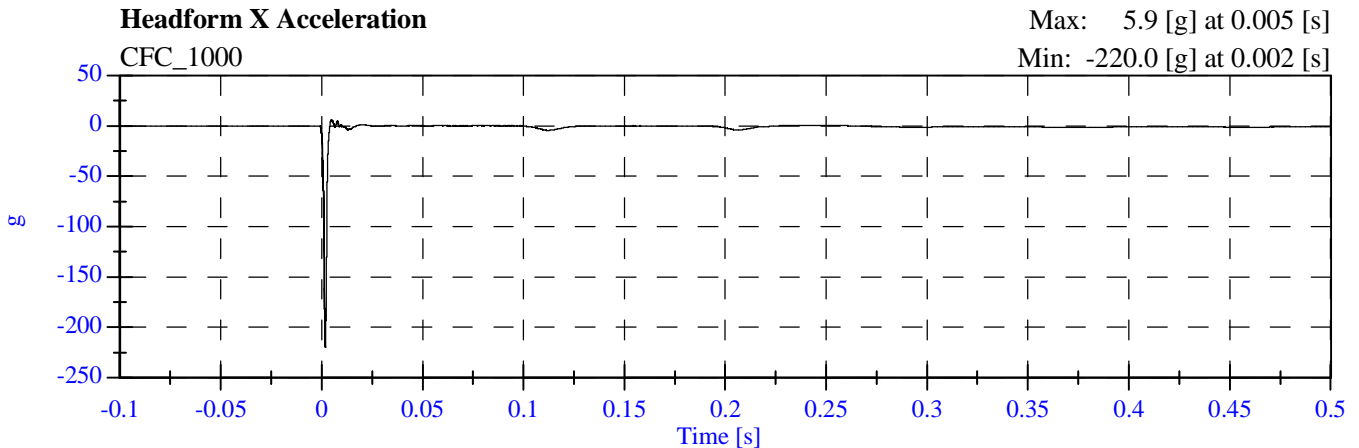
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 -LONGITUDINAL	ENDEVCO	7264-2000T	J41006	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J40994	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J41007	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 05, 2009



**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		1142	
CALIBRATION DATE:		July 24, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	23	
RELATIVE HUMIDITY	10% to 70%	51	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	233.6	
PEAK LATERAL ACCELERATION	15 Gs Maximum	10.8	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

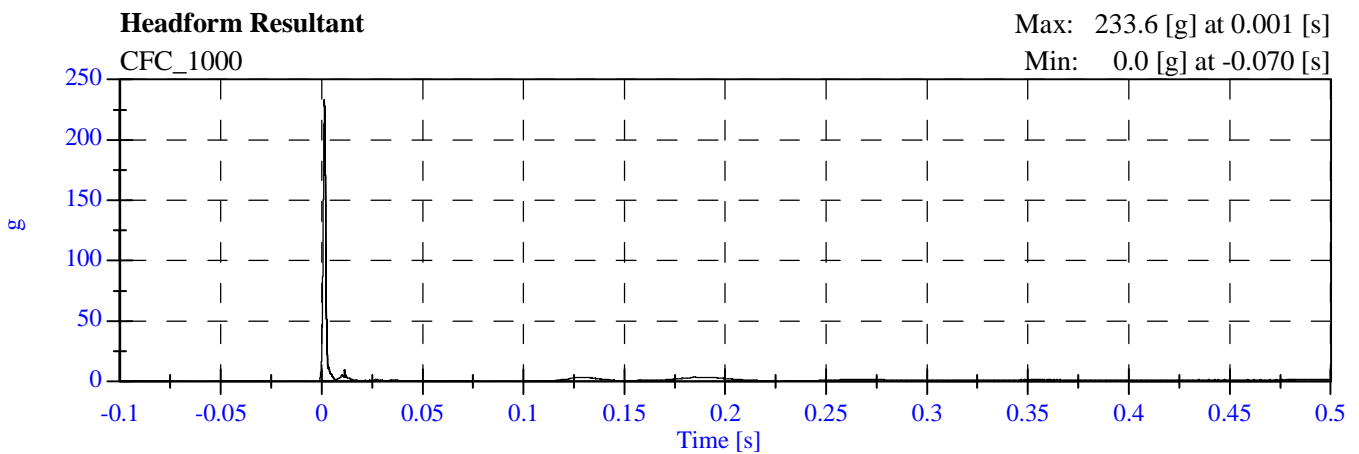
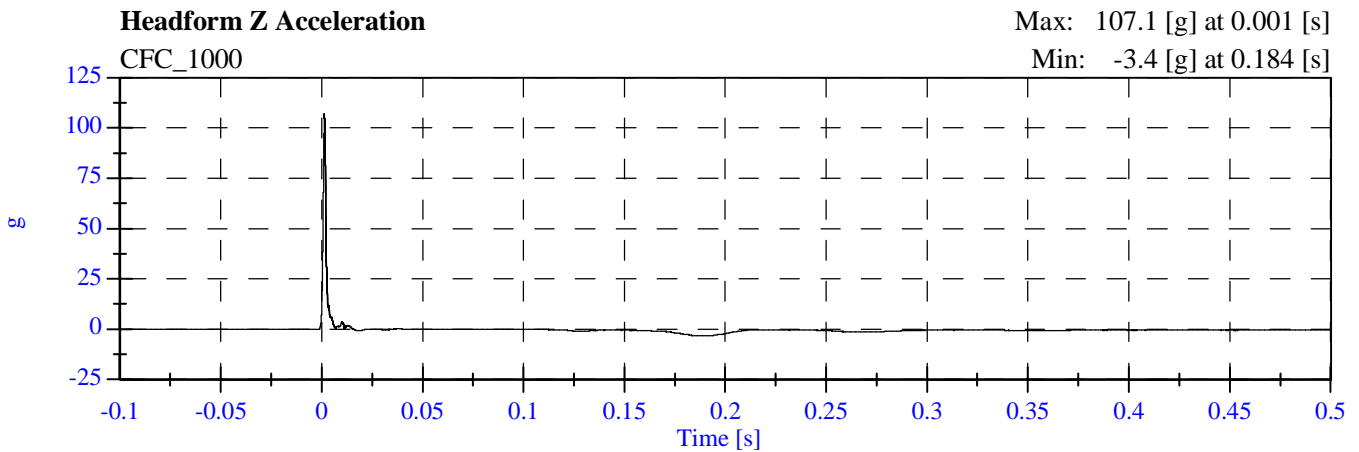
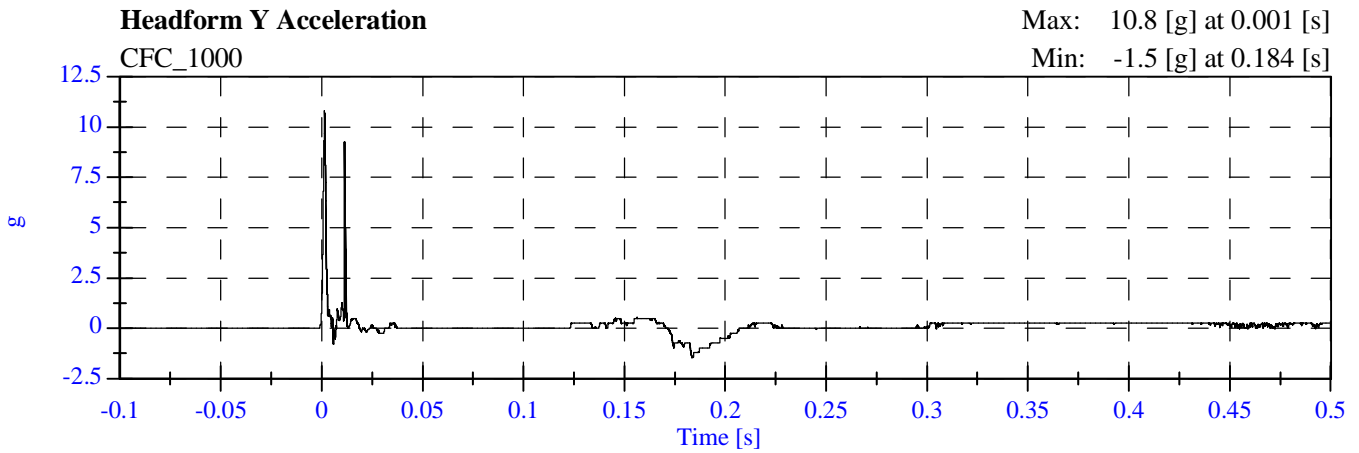
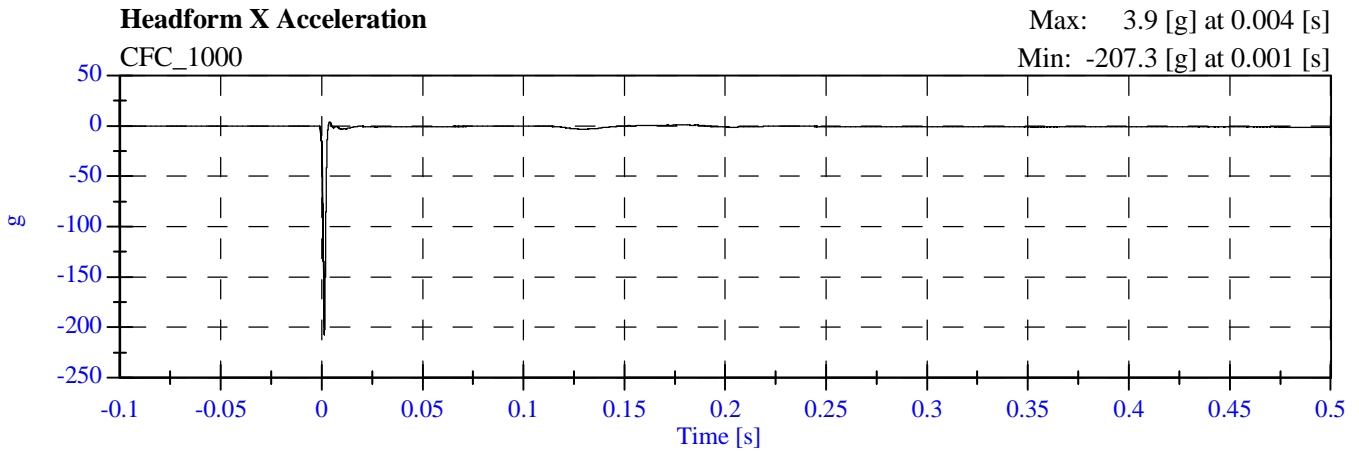
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J24876	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J33030	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J31009	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 24, 2009



**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		DENTON ATD INC.	
SERIAL NUMBER:		0062	
CALIBRATION DATE:		July 24, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	23	
RELATIVE HUMIDITY	10% to 70%	51	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	262.6	
PEAK LATERAL ACCELERATION	15 Gs Maximum	6.7	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

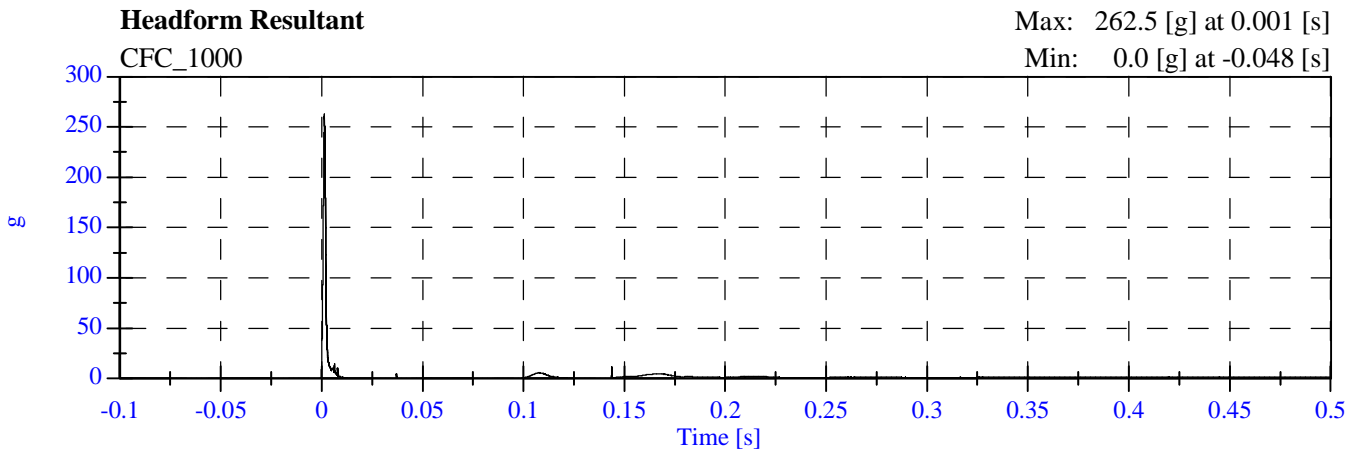
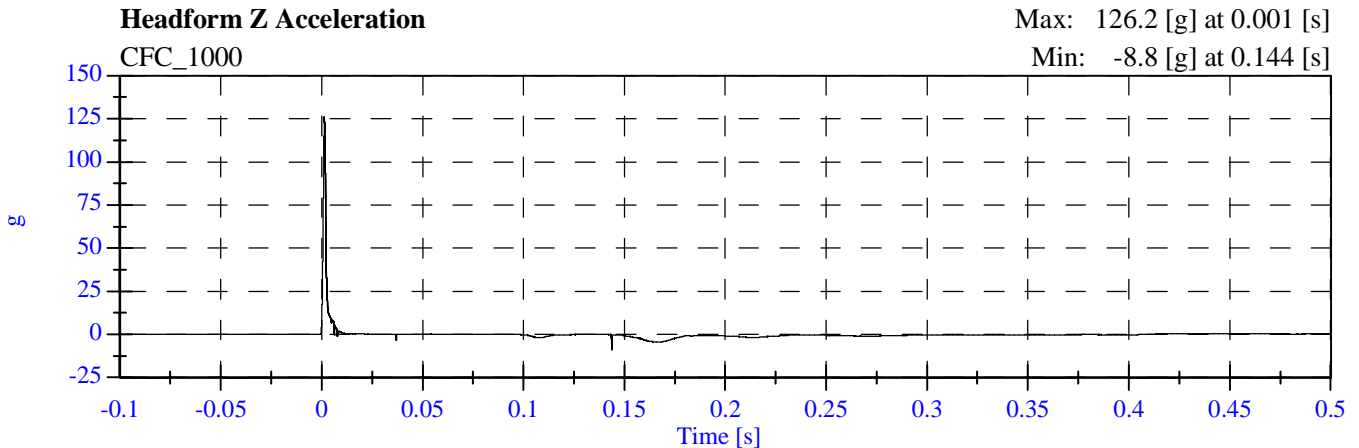
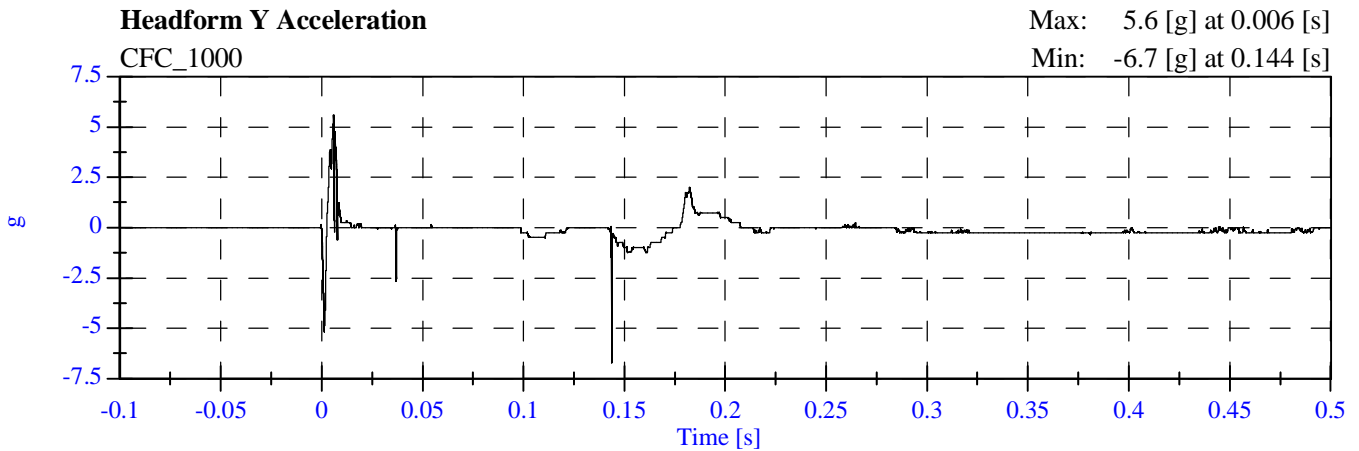
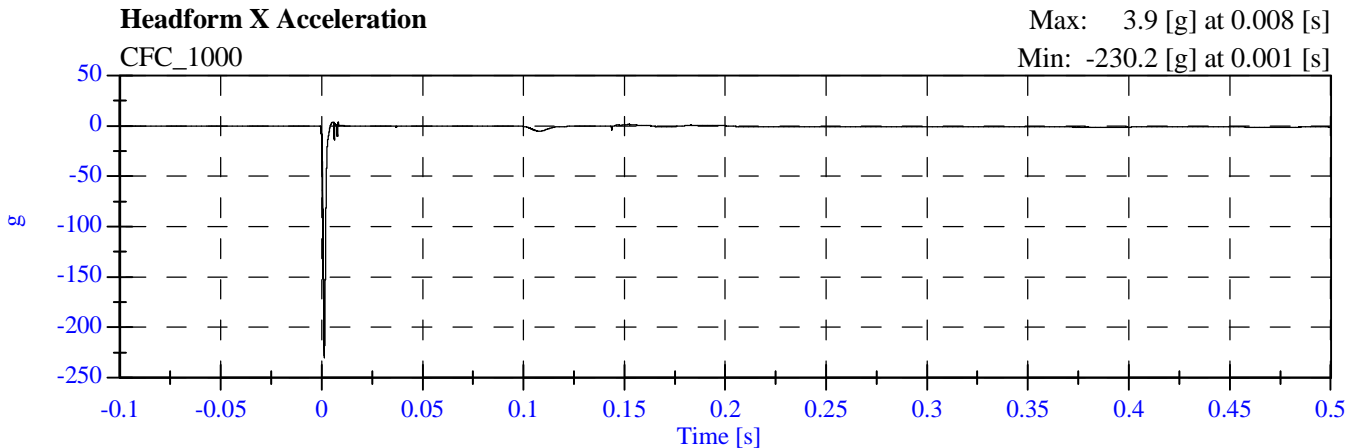
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J33127	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J33019	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J32782	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 24, 2009



**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		805	
CALIBRATION DATE:		July 24, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	23	
RELATIVE HUMIDITY	10% to 70%	51	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	264.1	
PEAK LATERAL ACCELERATION	15 Gs Maximum	8.8	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

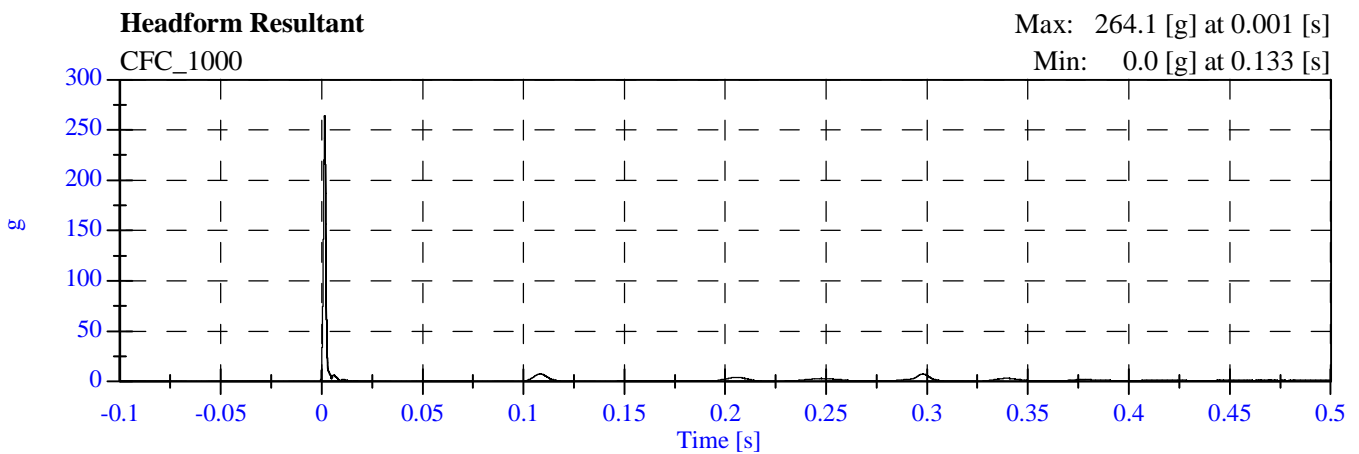
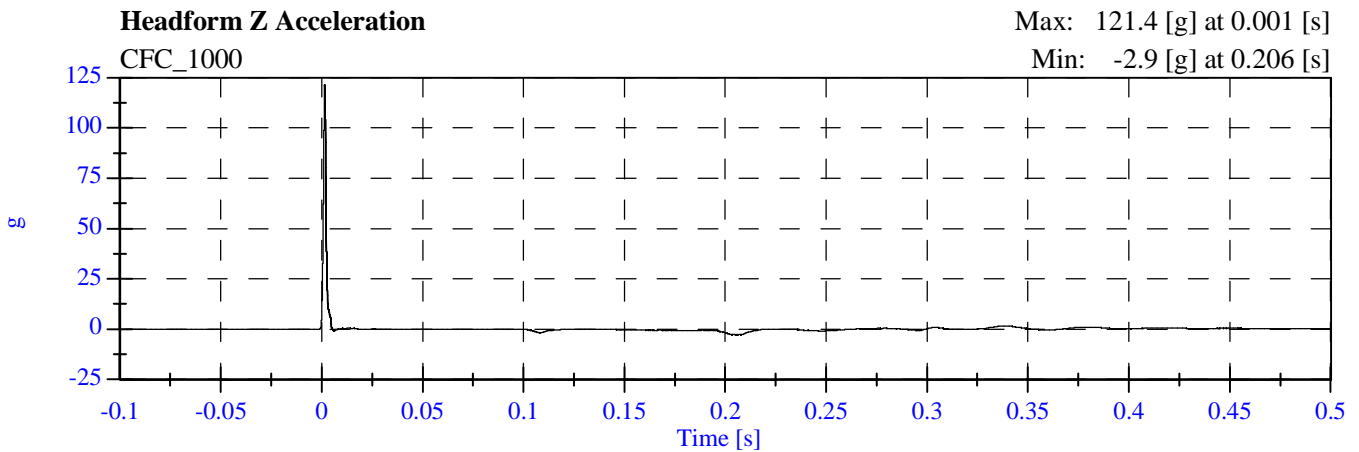
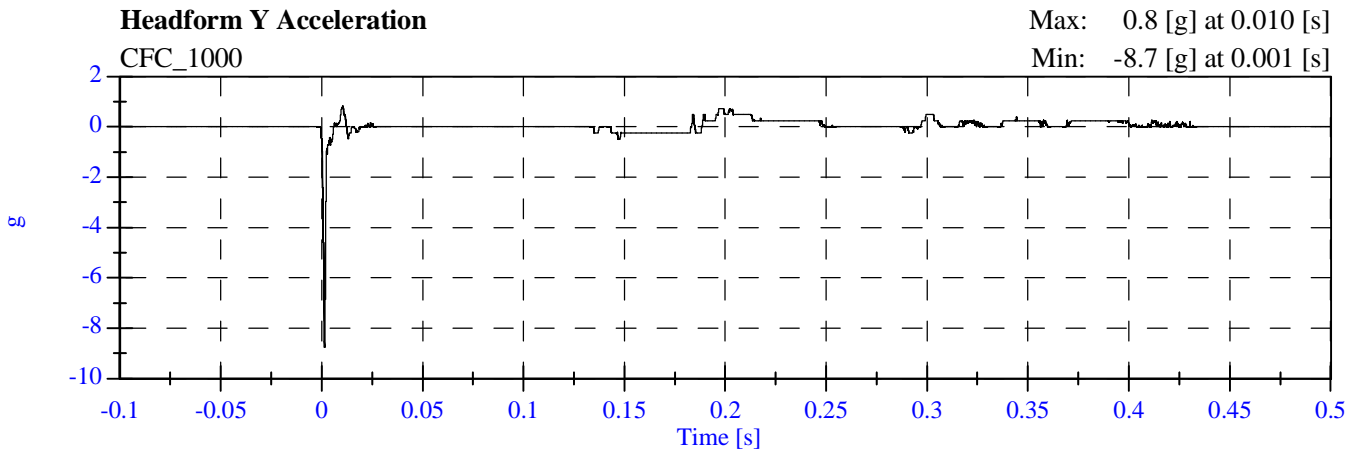
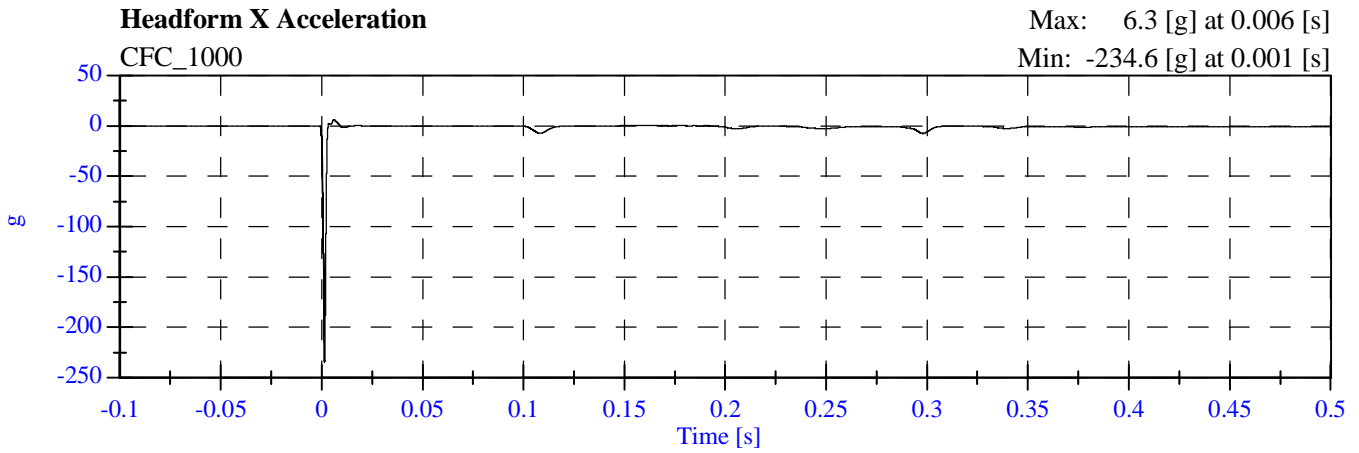
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J41004	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J37496	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J41016	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 24, 2009



**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		DENTON ATD INC.	
SERIAL NUMBER:		0355	
CALIBRATION DATE:		July 24, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	23	
RELATIVE HUMIDITY	10% to 70%	51	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	253.6	
PEAK LATERAL ACCELERATION	15 Gs Maximum	1.5	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

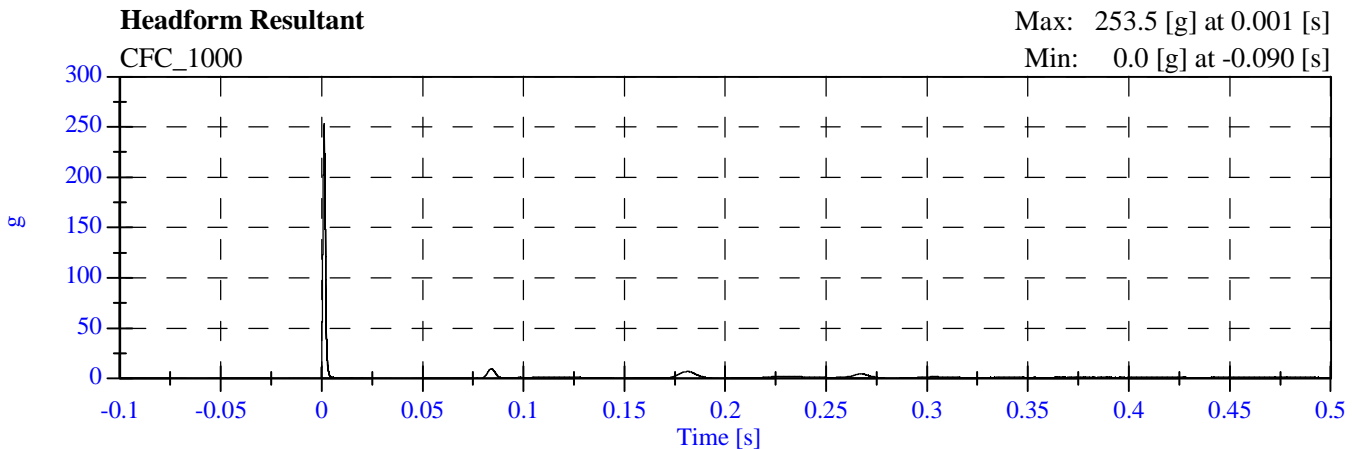
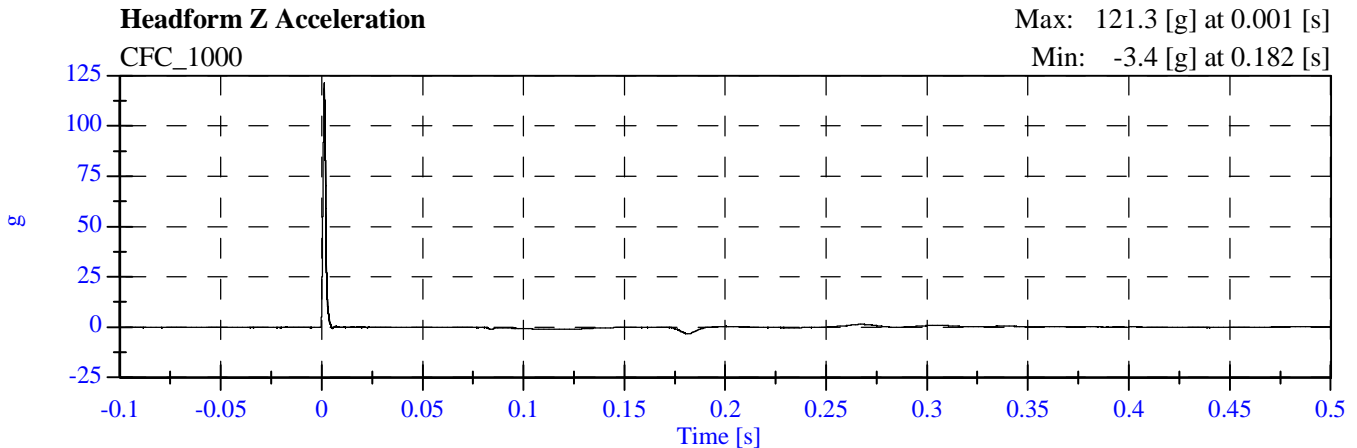
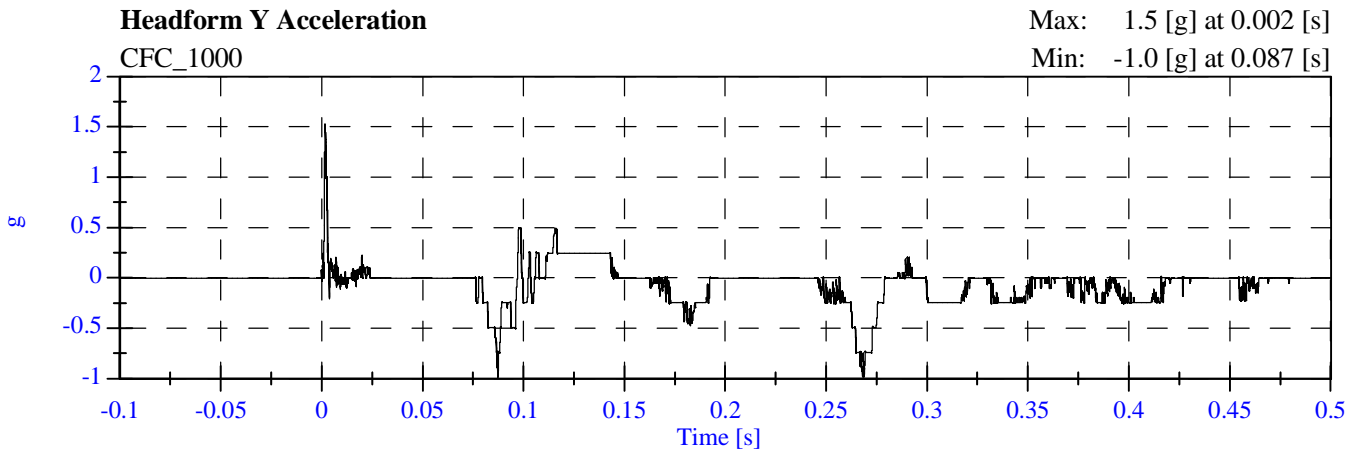
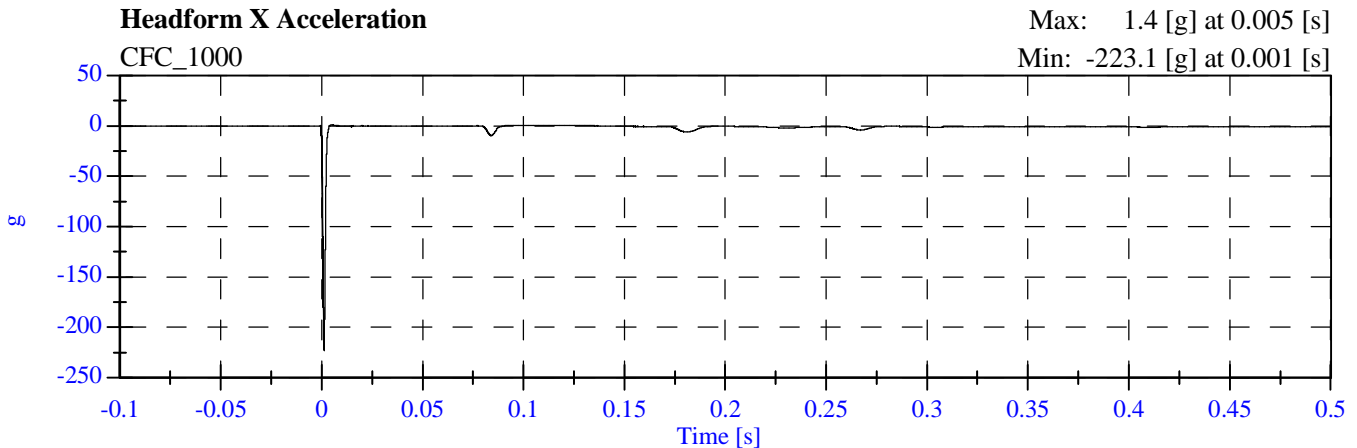
HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 -LONGITUDINAL	ENDEVCO	7264-2000T	J28671	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J32779	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J25854	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 24, 2009



**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		1140	
CALIBRATION DATE:		July 24, 2009	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	23	
RELATIVE HUMIDITY	10% to 70%	51	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	257.3	
PEAK LATERAL ACCELERATION	15 Gs Maximum	9.9	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

HEAD ACCELEROMETER CALIBRATION INFORMATION

I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J41006	3/2/2009	9/2/2009
2 - LATERAL	ENDEVCO	7264-2000T	J40994	3/2/2009	9/2/2009
3 - VERTICAL	ENDEVCO	7264-2000T	J41007	3/2/2009	9/2/2009

REMARKS:

FMVSS 201U - Headform Calibration Drops

C90502 - June 24, 2009

