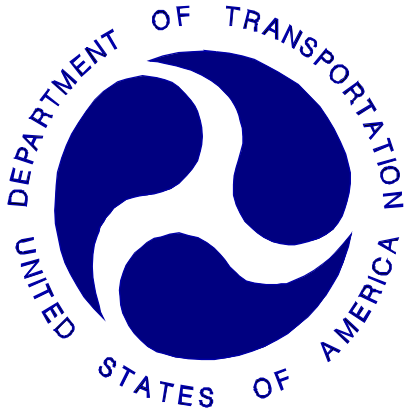
REPORT NUMBER: 214-CAL-02-05

SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT

TOYOTA MOTOR CORPORATION
2002 TOYOTA CAMRY
4-DOOR SEDAN

NHTSA NUMBER: C25103

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



February 20, 2002

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6111 (NSA-30)
Washington, DC 20590

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16. Abstract

A 55/28 kph 90^0 Side Impact (Moving Deformable Barrier) Indicant Test was conducted on the subject Toyota Camry 4-Door Sedan. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001). This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on February 20, 2002.

The impact velocity of the Moving Deformable Barrier (MDB) was 61.80 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 22.2^0C. The target vehicle post-test maximum crush was 302 mm at level 2.

The test vehicle's performance follows:

	Front SID		Rear SID	
Left Upper Rib Acceleration (LUR):	86	g's	49	g's
Left Lower Rib Acceleration (LLR):	78	g's	53	g's
Lower Spine Acceleration (T_{12}):	97	g's	57	g's
Thoracic Trauma Index (TTI):	92	g's	55	g's
Pelvis Acceleration (PEV):	69	g's	66	g's

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID)	18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Reference Division (TIS) Room 5108 (NAD-40) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946

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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-97-C-01033. The purpose of this indicant test was to evaluate side impact protection in a 2002 Toyota Camry 4-Door Sedan when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

A 2002 Toyota Camry 4-Door Sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27^{o} crabbed position to the monorail at a velocity of 61.80 kph (38.4 mph). The target vehicle was stationary and was positioned at an angle of 63^{o} to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on February 20, 2002. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

Two restrained Side Impact Dummies (SIDs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure. Both SIDs were certified prior to this test. The side impact test was documented by one real-time camera and 10 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SIDs were instrumented with the following accelerometers:
1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T_{12}) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Head triaxial accelerometers (X-, Y- and Z-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 48 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID	Rear SID
TTI (g)	92	55
PEV (g)	69	66

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2002 Toyota Camry 4-Door Sedan

Vehicle Body Color: Silver VIN: JTDBE32K320006033

Vehicle NHTSA No.: C25103 Month & Year of Manufacture: 08/01

Engine Data: 4 Cylinders; - CID; 2.4 Liters; - cc

Engine Placement: - Longitudinal; or X Lateral

Transmission: 5 Speed; X Manual; - Automatic; - Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive

Odometer Reading 161 km

Options: X A/C; X Power Steering; X Power Brakes; X Power Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 200 kPa FRONT

200 kPa REAR

Recommended Tire Size: P205/65R15

Tires on Test Vehicle: P205/65R15 ; Manufacturer: Goodyear

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 Total

Type of Front Seat: X Bucket; - Bench; - Split Bench

Type of Rear Seat: - Bucket; X Bench; - Contoured

Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob

Type of Rear Seat Back: X Fixed; - Adjustable with - Lever or - Knob

Vehicle Max Capacity Loading = 410.0 kg (A)

No. of Occupants x 68.04 kg. = 340.2 kg (B)

Vehicle Cargo Capacity = 69.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front =	411.0 kg	Left Rear =	294.0 kg
Right Front =	415.5 kg	Right Rear =	285.0 kg
TOTAL FRONT =	826.5 kg	TOTAL REAR =	579.0 kg
% of Total Weight =	58.8 %	% of Total Weight =	41.2 %

TOTAL WEIGHT = 1405.5 kg

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	1405.5	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	69.8	kg (B)
Weight of instrumented Side Impact Dummies (2 X 81.2 kg)	=	162.4	kg (C)
TEST VEHICLE TARGET WEIGHT:	=	1637.7	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 or 2 SID(s) + CARGO):

Left Front	=	464.5 kg	Left Rear	=	406.5 kg
Right Front	=	419.5 kg	Right Rear	=	354.5 kg
TOTAL FRONT	=	884.0 kg	TOTAL REAR	=	761.0 kg
% of Total Weight	=	53.7% %	% of Total Weight	=	46.3% %

TOTAL TEST WEIGHT = 1645.0 kg

AS TESTED WEIGHT OF TEST VEHICLE (1 OR 2 SID(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	=	443.5 kg	Left Rear	=	410.5 kg
Right Front	=	411.0 kg	Right Rear	=	367.0 kg
TOTAL FRONT	=	854.5 kg	TOTAL REAR	=	777.5 kg
% of Total Weight	=	52.4% %	% of Total Weight	=	47.6% %

TOTAL TEST WEIGHT = 1632 kg

TEST VEHICLE ATTITUDE (all dimensions in millimeters);

AS DELIVERED:

Left Front 717 Right Front 719 Left Rear 704 Right Rear 713

FULLY LOADED:

Left Front 701 Right Front 713 Left Rear 659 Right Rear 680

READY FOR TEST:

Left Front 703 Right Front 718 Left Rear 664 Right Rear 680

Test Vehicle Wheelbase: 2720 millimeters

C.G. = 1296 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4710 millimeters

Left Side = 4710 millimeters

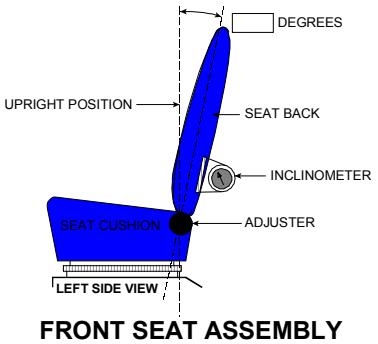
Centerline = 4805 millimeters

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

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



FRONT SEAT ASSEMBLY

FRONT SEAT CUSHION PLACEMENT: Mid-position (detent 8, where the forward most position is detent 0)

Total Length of Adjustment Travel: 240 millimeters

Total Number of Adjustment Positions or Detents: 17

FRONT SEAT BACK ADJUSTMENT POSITION: Detent 3, where the most upright position is detent 0

Seat Back Torso Angle: 89 degrees (measured at headrest post with side sills level)

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: fixed

ADJUSTABLE STEERING COLUMN POSITION: Mid-position

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

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

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

70 liters (Fuel Tank Usable Capacity)

64.0 liters used for test (92%-94% of Fuel Tank Usable Capacity)

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

Wheelbase = 2720 millimeters

Impact Point is 420 millimeters rearward of front axle centerline

(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 416 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2002 Toyota Camry

Body Style: 4-Door Sedan VIN: JTDBE32K320006033

NHTSA No.: C25103 Test Date: February 20, 2002

Overall Length = 4805 millimeters; Overall Width = 1796 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	443.5 kg	Left Rear	=	410.5 kg
Right Front	=	411.0 kg	Right Rear	=	367.0 kg
TOTAL FRONT	=	854.5 kg	TOTAL REAR	=	777.5 kg

TOTAL VEHICLE WEIGHT 1632.0 kg

Wheelbase = 2720 millimeters

Longitudinal C.G. from Center of Front Axle = 1295.83 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 4 mm forward of nominal impact ref. line (Lateral)

Actual Impact Point is 8 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (	246 mm above ground)	=	98	millimeters
2. LEVEL 2 (	510 mm above ground)	=	302	millimeters
3. LEVEL 3 (	596 mm above ground)	=	273	millimeters
4. LEVEL 4 (	859 mm above ground)	=	281	millimeters
5. LEVEL 5 (	1406 mm above ground)	=	24	millimeters

Maximum Post-Test Intrusion = 302 millimeters

OCCUPANTS:	Front Passenger:	Rear Passenger:
Dummy Identification	013	026
Restraints Used	3-point active seat belt	3-point active seat belt

INSTRUMENTATION:

Number of Vehicle Data Channels:		=	21
Number of Cameras:	Onboard	=	3
	Offboard	=	7
	TOTAL	=	10

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore: 085B1001-3; 020C1001

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	=	1250	millimeters
Overall Length of MDB (incl. honeycomb impact face)	=	4120	millimeters
Wheelbase of Framework Carriage	=	2590	millimeters
Tread of Framework Carriage (Front & Rear)	=	1875	millimeters
C.G. Location Rearward of Front Axle	=	1104	millimeters

MDB WEIGHT:

Left Front	=	409.5	kg	Left Rear	=	281.5	kg
Right Front	=	372.5	kg	Right Rear	=	299.0	kg
TOTAL FRONT	=	782.0	kg	TOTAL REAR	=	580.5	kg
TOTAL MDB WEIGHT	=	1362.5	kg				

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

Impact Speed = 61.80 kph

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	197	millimeters
2. Row B at Top of Bumper Level	=	99	millimeters
3. Row C at Mid Level	=	95	millimeters
4. Row D at Top of Stack Level	=	145	millimeters

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

VISIBLE DUMMY CONTACT POINTS:

	LEFT FRONT SID	LEFT REAR SID
Head:	Left side of head to left shoulder, top of head to top of door trim	Left side of head to C-pillar trim
Upper Torso:	Left shoulder and arm to upper door trim	Left shoulder and arm to upper door trim
Lower Torso:	Pelvis to rear portion of door trim below arm rest	Pelvis to rear portion of door trim below arm rest
Left Knee:	Left knee to forward portion of door trim below arm rest	Left knee to forward portion of door trim below arm rest
Right Knee:	Right knee to left knee	Right knee to left knee

DOOR OPENING:

	LEFT DOOR	RIGHT DOOR
Front:	Closed / Inoperable	Closed / Operable
Rear:	Closed / Inoperable	Closed / Operable

MDB DISTANCE FROM TARGET IMPACT POINT: Vertical: 8 mm below

Horizontal: 4 mm forward

ARM REST LOCATIONS:

Front: 285 mm below bottom of window opening

Rear: 280 mm below bottom of window opening

SEAT MOVEMENT:

Front: Seat was pushed inboard

Rear: Seat bolster was pushed inboard

GLAZING DAMAGE:

Windshield: None

Window: Left side door windows shattered during the event

PILLAR PERFORMANCE:

Tear of the inboard B-pillar sheet metal at mid-height was visible

SILL SEPARATION:

None

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
FRONT	No	No	N/A
SIDE	N/A	N/A	N/A

OTHER NOTABLE IMPACT EFFECTS:

None

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

	Front Dummy ID# 013				Rear Dummy ID# 026			
	Pos. Direction		Neg. Direction		Pos. Direction		Neg. Direction	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
HEAD ACCELERATIONS:								
Longitudinal X	7.6	164.3	-41.4	74.4	4.8	184.6	-14.0	55.3
Lateral Y	51.1	74.4	-7.3	61.2	83.5	53.4	-4.6	199.9
Vertical Z	54.4	55.6	-0.5	23.0	15.5	45.9	-40.2	61.0
Resultant R	66.3	74.4	-	-	86.1	55.7	-	-
HIC	480.9				564.1			
RIB ACCELERATIONS:								
Upper Rib Lateral Y	86.1	27.5	-15.9	83.1	49.0	40.7	-3.7	148.7
Upper Rib Lateral Y(R)	88.7	27.5	-15.3	81.9	48.8	40.7	-3.7	148.7
Lower Rib Lateral Y	77.6	29.4	-14.0	67.5	53.3	40.6	-6.6	70.7
Lower Rib Lateral Y(R)	80.8	29.4	-14.1	80.7	53.9	40.6	-8.0	71.3
SPINE ACCELERATIONS:								
Lower Lateral Y	97.4	32.5	-20.4	61.9	56.9	45.0	-8.9	70.7
Lower Lateral Y(R)	95.5	32.5	-20.3	61.9	57.8	50.6	-9.0	70.7
PELVIC ACCELERATIONS:								
Lateral Y	69.0	32.5	-12.9	89.4	66.1	41.3	-4.6	86.9
Lateral Y(R)	†	-	†	-	65.6	41.3	-4.8	86.3

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

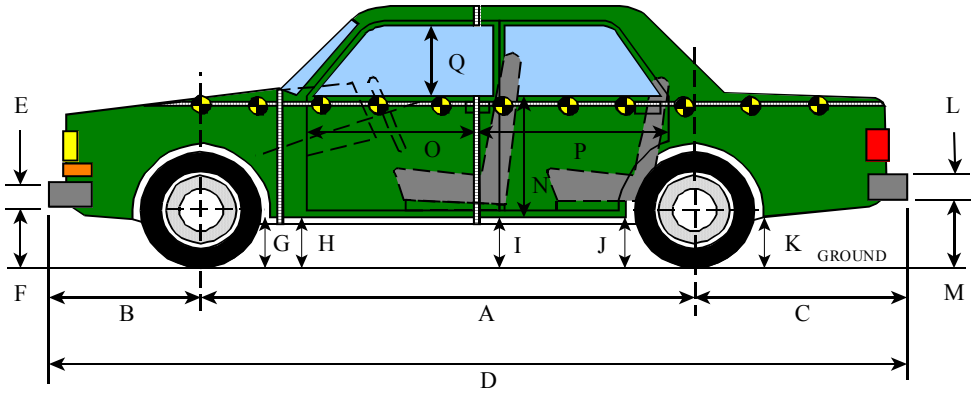
Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
Head Accelerations are filtered at SAE Class 1000.

† Transducer cable was damaged during the event, data is not accurate.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



LEFT SIDE VIEW

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

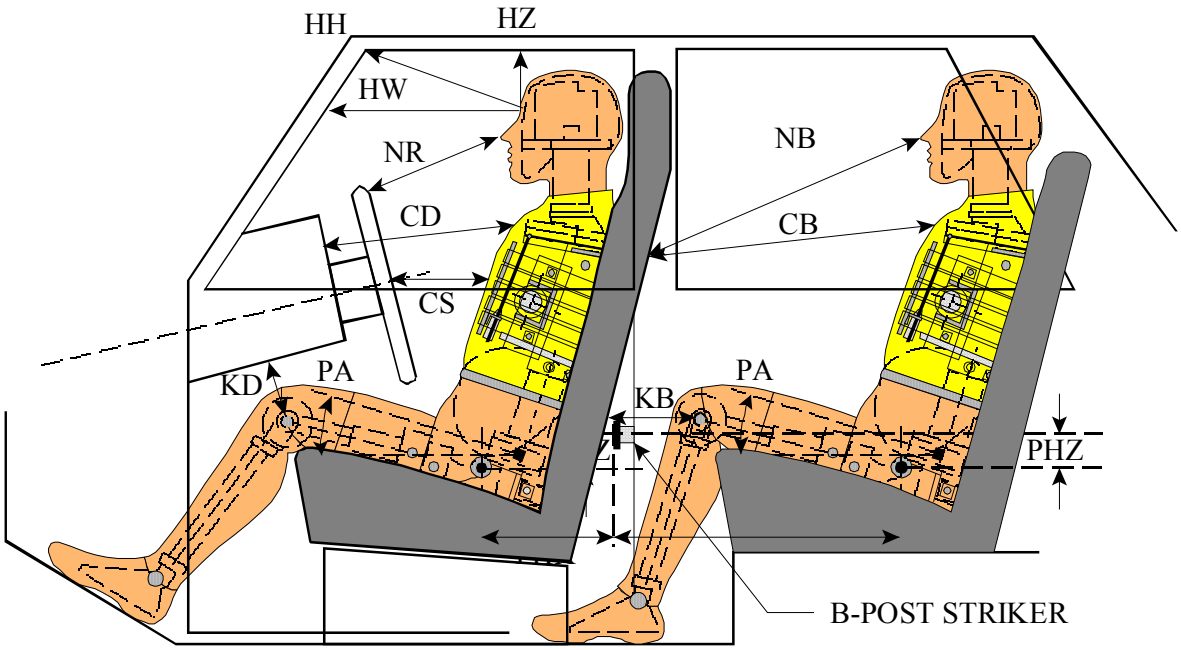
	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	[a] CHANGE
A	2715	2720	2689	-31
B	955	952	993	41
C	1135	1133	1117	-16
D	4805	-	4799	-6
E	165	-	165	0
F	403	410	435	25
G	233	213	198	-15
H	233	213	215	2
I	243	208	274	66
J1	200	159	194	35
J2	238	195	196	1
K	275	230	234	4
L	225	-	225	0
M	420	369	361	-8
N	695	-	669	-26
O	841	-	768	-73
P	1187	-	1134	-53
Q	470	-	418	-52
R	4710	-	4714	4
S	4710	-	4696	-14
T	1796	-	1651	-145

D = Length at Centerline E&L = Bumper Thickness R = Right Side Length S = Left Side Length
T = Width at B-Pillar J1 = To Pinch Weld J2 = To Sill

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN. REAR DUMMY PHX & PHZ MEASUREMENTS FOR A 4-DOOR VEHICLE WOULD USE THE C-POST STRIKER AS A REFERENCE POINT

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

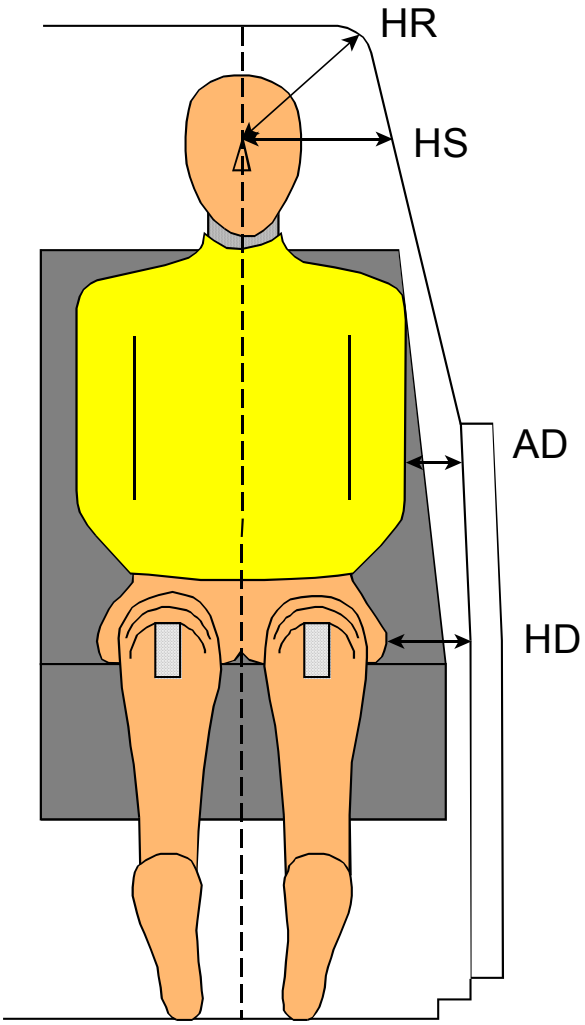
	DRIVER ID# 013	LEFT REAR PASS. ID# 026
HH	328	N/A
HW	612	N/A
HZ	169	190
NR/NB	391	668
CD/CB	515	610
CS	279	N/A
KDL(KDA°)/KBL(KDA°)	183 / (38 °)	280 / (16 °)
KDR(KBA°)/KBR(KBA°)	140 / (35 °)	280 / (16 °)
PA°	24.0°	25.0°
PHX	195	367
PHZ	226	331

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

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



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

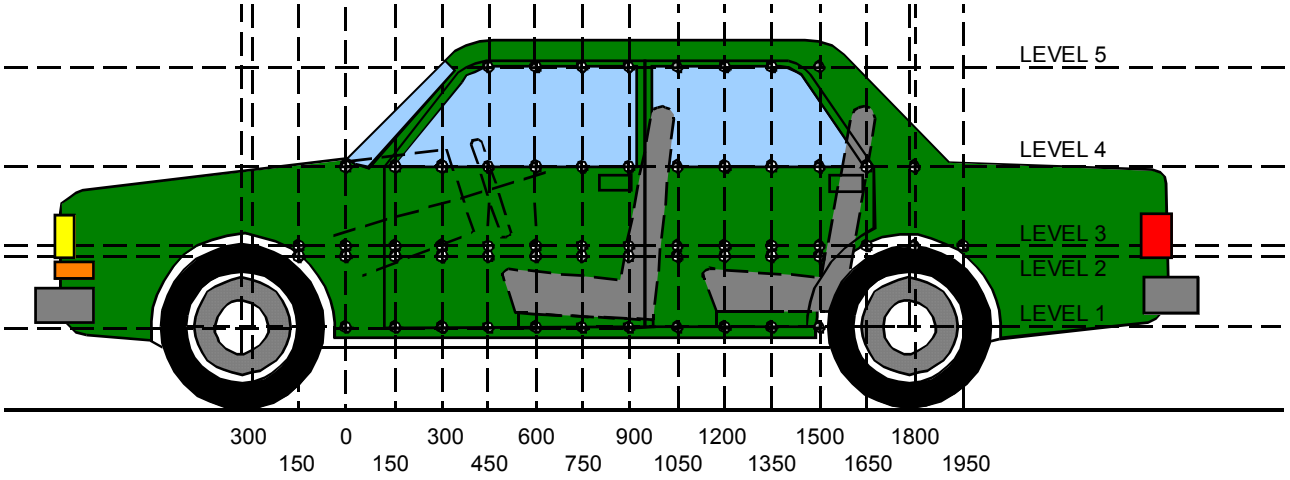
	DRIVER ID # 013	LEFT REAR PASS. ID # 026
HR	217	208
HS	343	236
AD*	LOWER: 120 UPPER: 130	LOWER: 125 UPPER: 105
HD	152	165

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

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

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

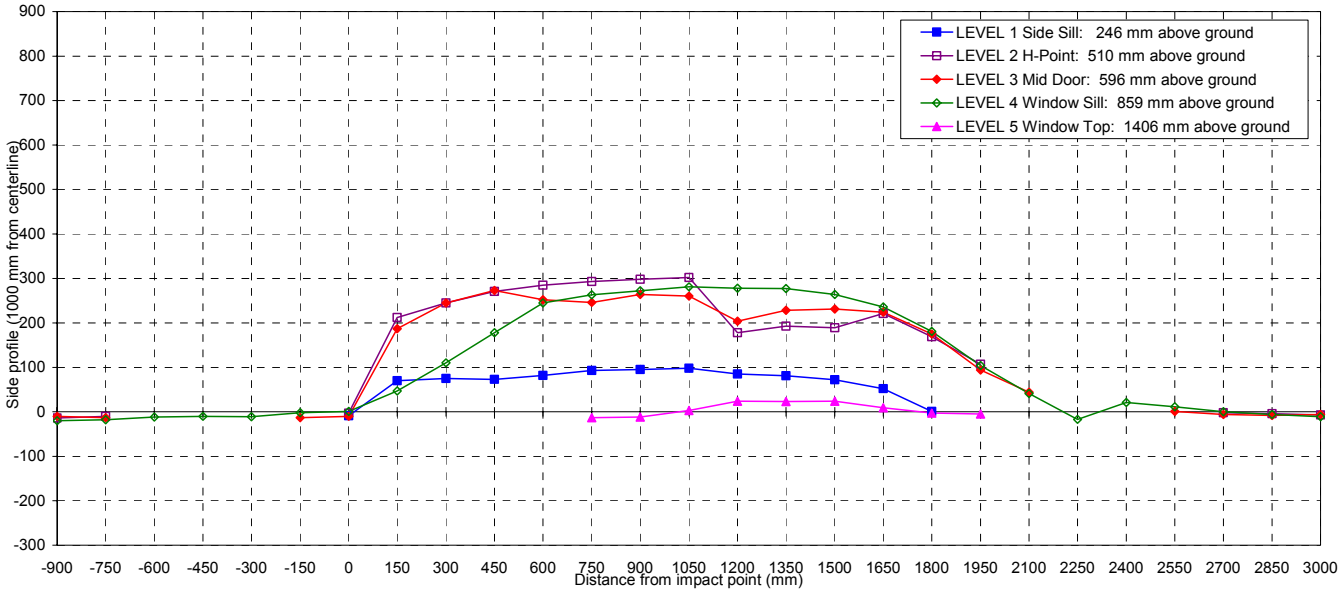
MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.
Measurements Along the Vertical 750 mm Line Shown Above:

Level 5 @ Window Top	=	1406	millimeters
Level 4 @ Window Sill	=	859	millimeters
Level 3 @ Mid Door	=	596	millimeters
Level 2 @ Occupant H-Point	=	510	millimeters
Level 1 @ Sill Top Height	=	246	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



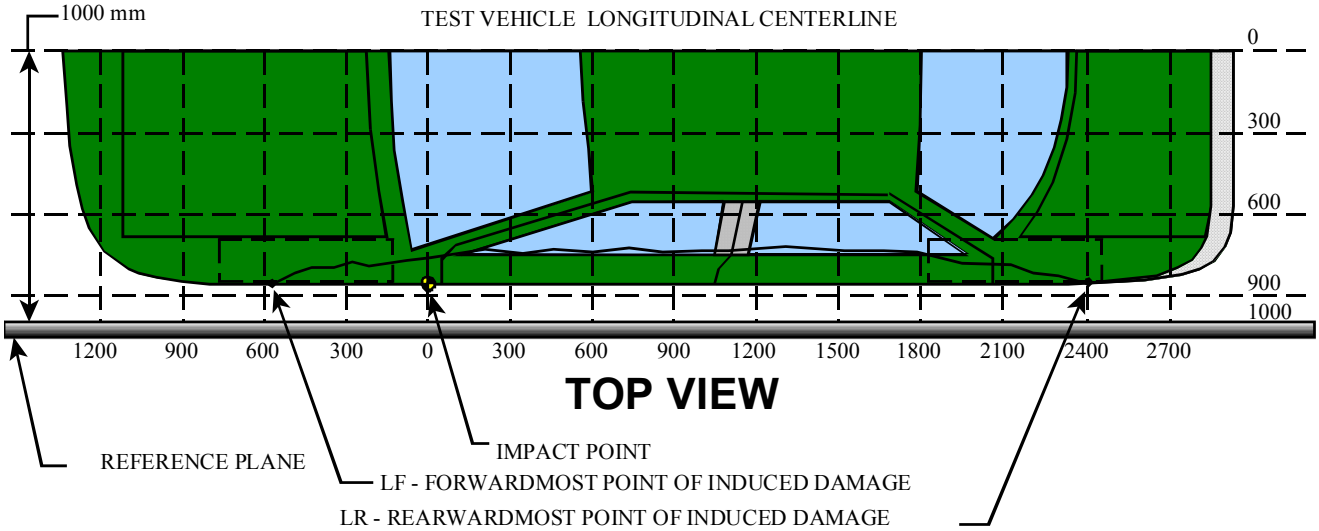
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

			DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																										
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
LEVEL 1 SIDE SILL	246	PRE	--	--	--	--	--	--	147	149	149	155	154	151	157	160	169	166	166	166	162	--	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	138	219	224	228	236	244	252	258	254	247	238	218	163	--	--	--	--	--	--	--	--
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	-9	70	75	73	82	93	95	98	85	81	72	52	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2 H POINT	510	PRE	154	122	--	--	--	--	106	108	112	113	112	118	116	118	122	116	129	91	120	83	--	--	--	--	134	142	152
		POST	140	112	--	--	--	--	103	320	357	384	397	411	414	420	300	309	318	312	289	190	--	--	--	--	132	138	145
		CRUSH	-14	-10	N/A	N/A	N/A	N/A	-3	212	245	271	285	293	298	302	178	193	189	221	169	107	N/A	N/A	N/A	N/A	-2	-4	-7
LEVEL 3 MID DOOR	596	PRE	171	135	--	--	--	109	105	102	105	106	123	122	109	118	118	114	115	113	125	125	103	--	--	119	140	149	160
		POST	161	122	--	--	--	96	95	289	350	379	375	368	373	378	322	342	346	337	300	219	147	--	--	120	134	141	154
		CRUSH	-10	-13	N/A	N/A	N/A	-13	-10	187	245	273	252	246	264	260	204	228	231	224	175	94	44	N/A	N/A	1	-6	-8	-6
LEVEL 4 WINDOW SILL	859	PRE	286	237	201	181	169	157	152	147	144	141	137	136	138	138	132	135	137	139	143	140	125	147	150	155	166	179	193
		POST	266	219	189	171	158	155	153	194	254	319	382	399	410	419	410	412	401	375	324	244	166	130	171	166	166	173	182
		CRUSH	-20	-18	-12	-10	-11	-2	1	47	110	178	245	263	272	281	278	277	264	236	181	104	41	-17	21	11	0	-6	-11
LEVEL 5 WINDOW TOP	1406	PRE	--	--	--	--	--	--	--	--	--	--	--	751	512	418	410	407	409	417	468	670	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	--	--	--	--	--	738	500	421	434	430	433	426	465	665	--	--	--	--	--	--	--
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-13	-12	3	24	23	24	9	-3	-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



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

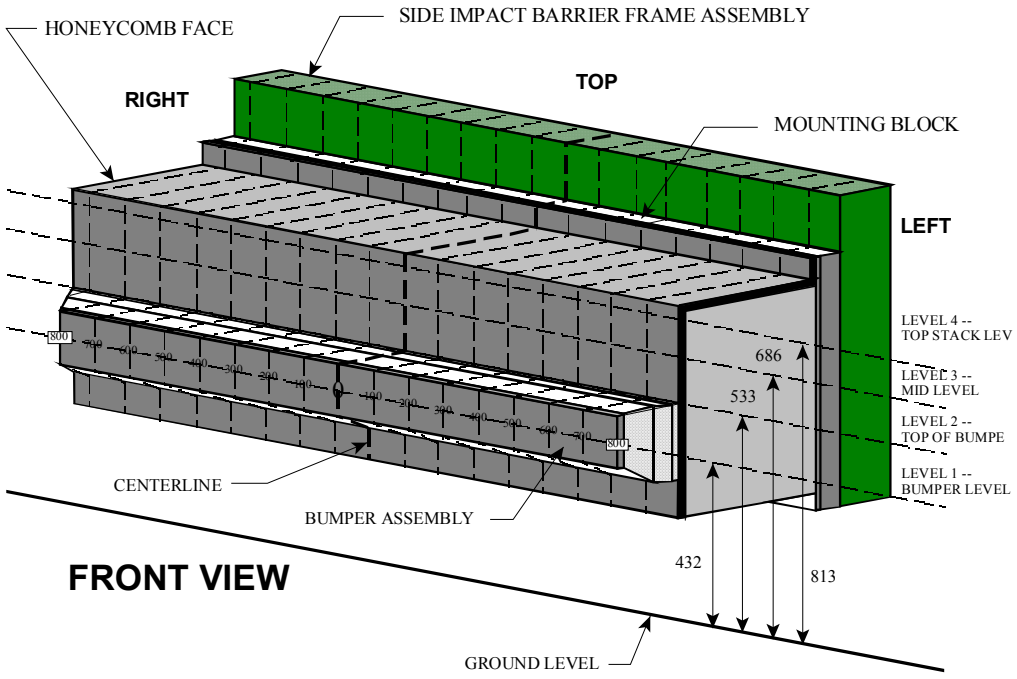
NOTE: All dimensions are in millimeters with tolerance of ±3 mm.

DPD MEASUREMENTS		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1	(LR = 2700 mm)	166	166	0
2	2160	152	134	18
3	1620	380	139	241
4	1080	417	137	280
5	540	392	112	280
6	(LF = 0 mm)	153	152	1

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



NOTE: Dimensions are shown in millimeters, mm

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

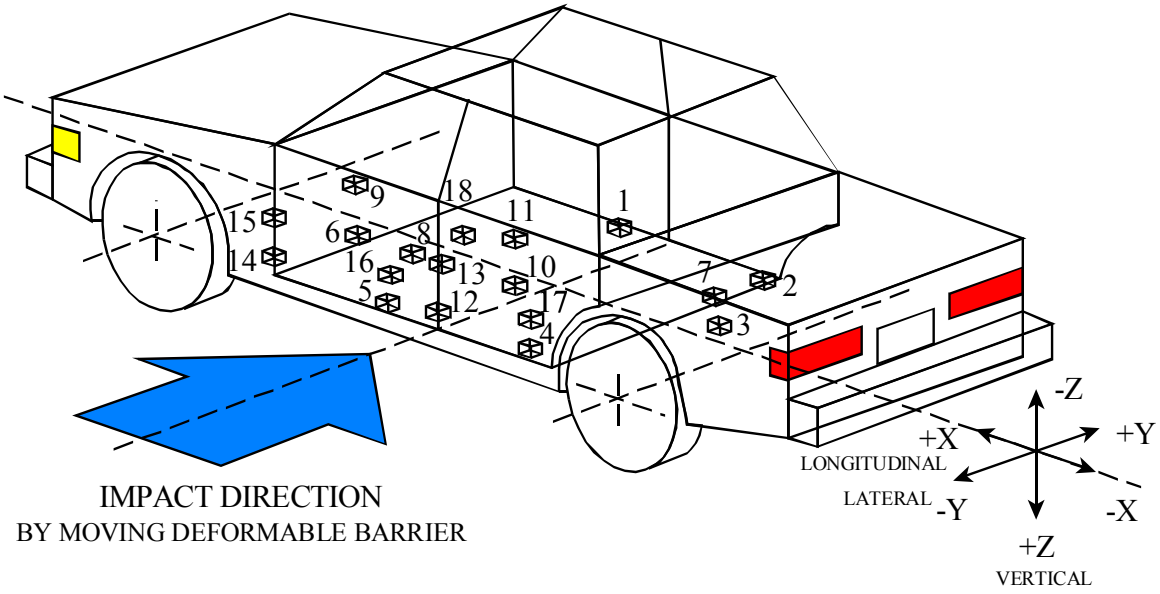
			DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)							
LEVEL	HEIGHT AT CL (mm)*		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
LEVEL 4		PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
TOP	813	POST	709	657	619	605	607	611	623	640	645	637	629	628	629	640	676	719	764
STACK		CRUSH	90	38	0	-14	-12	-8	4	21	26	18	10	9	10	21	57	100	145
LEVEL 3		PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
MID	686	POST	714	669	639	617	619	615	627	635	626	622	623	625	627	634	646	661	703
LEVEL		CRUSH	95	50	20	-2	0	-4	8	16	7	3	4	6	8	15	27	42	84
LEVEL 2		PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
TOP	533	POST	718	703	691	681	678	673	672	673	675	673	691	669	668	669	671	679	689
BUMPER		CRUSH	99	84	72	62	59	54	53	54	56	54	72	50	49	50	52	60	70
LEVEL 1		PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535
MID	432	POST	732	707	688	670	658	650	650	648	643	642	643	642	637	638	639	642	664
BUMPER		CRUSH	197	188	170	152	140	132	132	130	125	124	125	124	119	120	121	123	129

*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



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

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

Accel. No.		Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
1	Right Side Sill at Front Seat	3055	652		pos.	2.7	61.2	26.7	5.4	4.2	66.1	27.7	5.5
					neg.	-4.7	34.1		197.8	-7.8	6.0	-	-
2	Right Side Sill at Rear Seat		630		pos.		60.6	31.8	5.9	4.9	62.4	32.0	5.9
					neg.	-4.6	47.6		172.4	-7.4	18.9	-	-
3	Rear Floorpan Above Axle	1327		-494	pos.		66.7	25.9	6.3	5.4	29.1	26.2	6.3
					neg.	-7.0	38.2	-1.9	177.0	-8.2	49.1	-	-
4	Left Side Sill at Rear Seat	2269		-176		-		32.4	3.9	-	-	-	-
					neg.	-		-14.7	58.7	-	-	-	-
5	Left Side Sill at Front Seat	3040		-229	pos.	-		38.1	10.7	-	-	-	-
					neg.	-	-		168.2	-	-	-	-
6**	Left Front Door on Centerline		-		pos.	-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
7	Right Rear Occupant Compartment	2128	401	-196	pos.	-	-	31.0	5.8	-	-	-	-
					neg.	-		-1.7	172.6	-	-	-	-
8**	Midrear of Left Front Door	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
9**	Left Front Door Upper Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
10**	Midrear of Left Rear Door	-	-	-	Pos.			-	-				
					neg.	-	-	-	-	-	-	-	-
11**	Left Rear Door Upper Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-

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

**Accelerometer was not requested by COTR.

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	2257	-703	-340	pos.	-	-	131.0†	3.3	-	-	-	-
					neg.	-	-	-130.7†	50.4	-	-	-	-
13	Left Middle B-Pillar	2224	-693	-946	pos.	-	-	161.8	4.3	-	-	-	-
					neg.	-	-	-57.1	32.0	-	-	-	-
14	Left Lower A-Pillar	3408	-651	-493	pos.	-	-	110.8	5.9	-	-	-	-
					neg.	-	-	-57.0	10.0	-	-	-	-
15	Left Middle A-Pillar	3289	-690	-980	pos.	-	-	30.2	41.0	-	-	-	-
					neg.	-	-	-17.7	26.5	-	-	-	-
16	Front Seat Track	2420	-559	-200	pos.	-	-	73.9	14.9	-	-	-	-
					neg.	-	-	-18.0	24.3	-	-	-	-
17	Rear Seat Track	1967	-682	-261	pos.	-	-	33.3	5.1	-	-	-	-
					neg.	-	-	-6.6	15.3	-	-	-	-
18	Vehicle CG	2458	19	-477	pos.	4.1	27.6	27.6	26.4	14.9	30.1	28.1	27.0
					neg.	-8.5	16.3	-10.0	31.5	-12.2	21.0	-	-

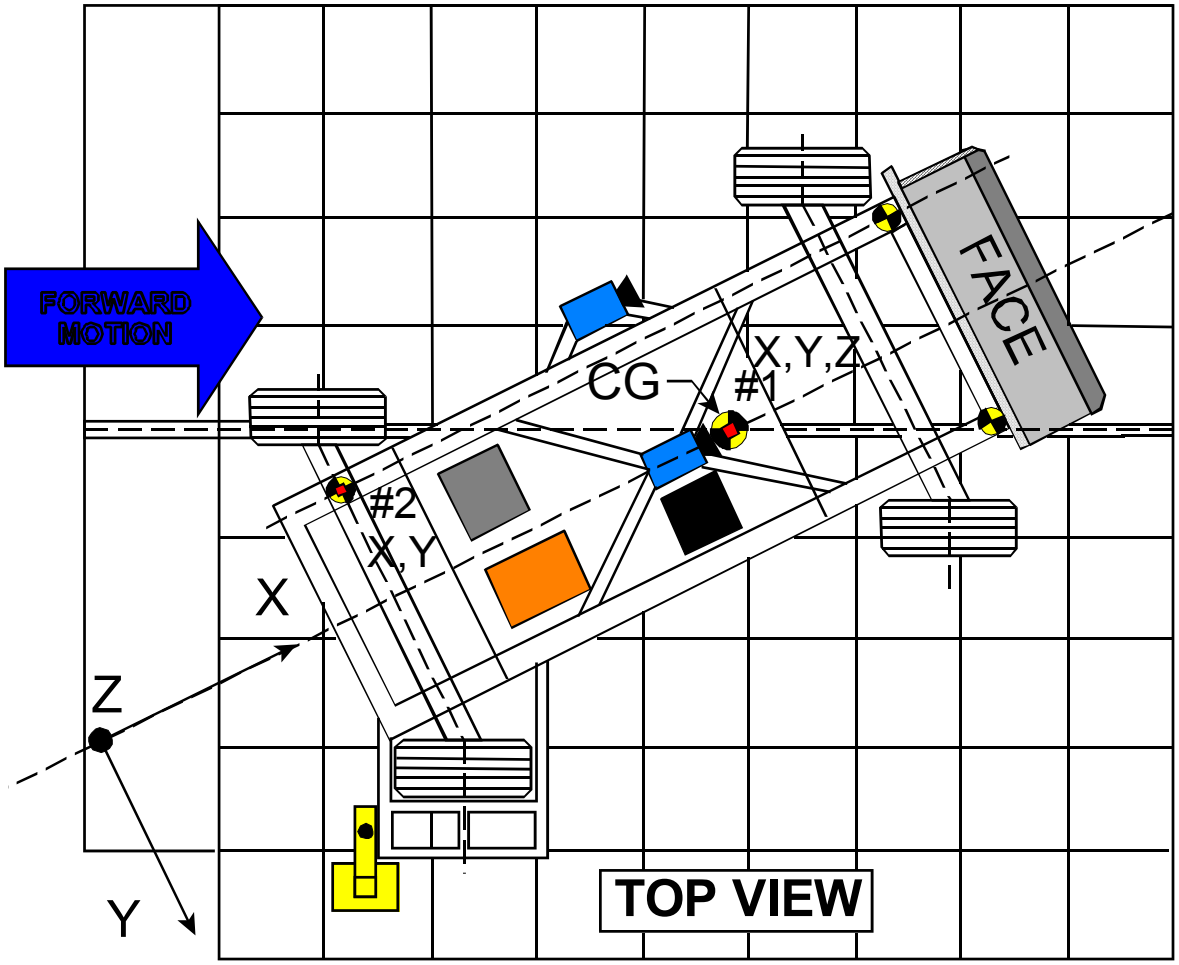
*Reference: X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

† Transducer cable was damaged during the event, data is questionable.

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



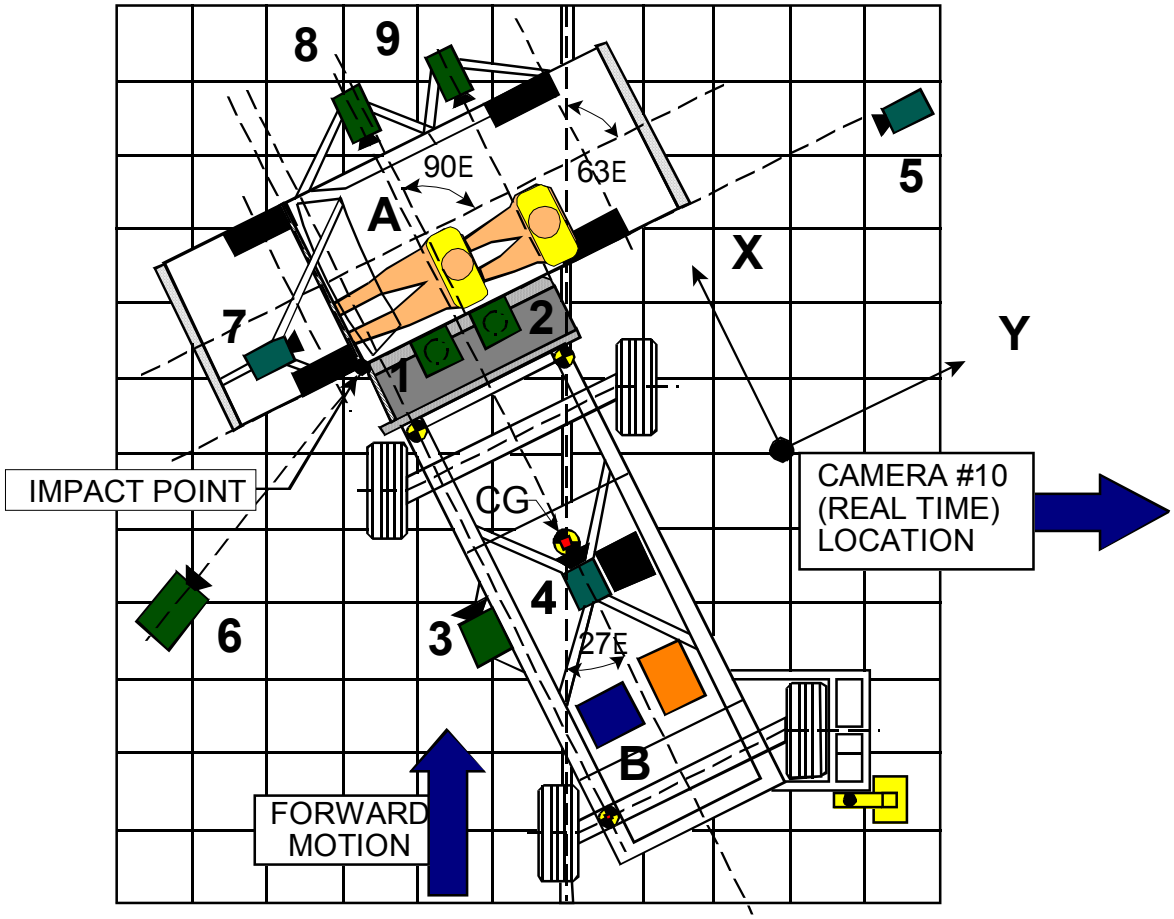
Accel. No.	Location		Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
			X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity								
	Longitudinal...	X	1859	0	-330	0.9	94.9	-17.0	29.0
	Lateral.....	Y				1.0	67.2	-9.3	45.2
	Vertical.....	Z				10.6	60.7	-17.1	18.1
	Resultant.....	R				22.1	18.4	-	-
2	Rear Frame Member								
	Longitudinal...	X	386	-660	-660	1.8	96.1	-20.2	32.9
	Lateral.....	Y				3.3	21.2	-2.1	68.8

*Reference: X = Rear Bumper (+ Forward)
Y = Vehicle Centerline (+ To Right)
Z = Ground Level (+ Down)
All measurements accurate to within ±3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No. C25103



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	161	855	-4880	-90	8	1010
2	Overhead closeup view of impact plane	298	921	-4880	-90	12.5	1005
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	1030
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	1020
5	Right side ground level overall view	80	9325	-1050	-3	25	1010
6	Left side ground level overall view	-1856	-1680	-1060	-5	13	1005
7	Test vehicle onboard driver front view	550	-430	-1275	-12	13	1010
8	Test vehicle onboard driver side view	1835	760	-1055	-11	8	910
9	Test vehicle onboard passenger side view	1835	1627	-1070	-9	8	1005
10	Real time film coverage of test	-	-	-	-	-	24

* Reference (from point of impact); all measurements accurate to within ±6 mm.
X = (Impact Point) + Forward
Y = (Impact Point) + To Right
Z = (Ground Level) + Down

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: C25103 TEST DATE: February 20, 2002

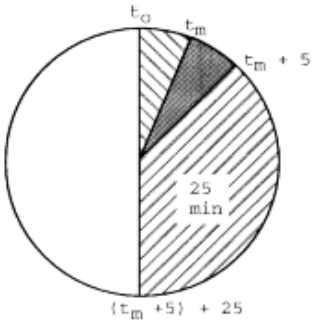
Vehicle Mfgr./Make/Model: Toyota Motor Corporation 2002 Toyota Camry 4-Door Sedan

****

TEST VEHICLE IMPACT TYPE:

- \- Frontal (48.28 kph)
- \- Oblique (48.28 kph) with - ° barrier face first contacting the - side (driver/passenger)
- \- Rear Moving Barrier (48.28 kph)
- \- Lateral Moving Barrier (32.19 kph)
- X Side Impact Moving Deformable Barrier (61.80 kph) contacting the driver side side (driver/passenger)

FUEL SPILLAGE MEASUREMENT:



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

	ACTUAL	MAX ALLOWED
1.	0 g	28 g
2.	0 g	142 g
3.	0 g	28 g/1 min.

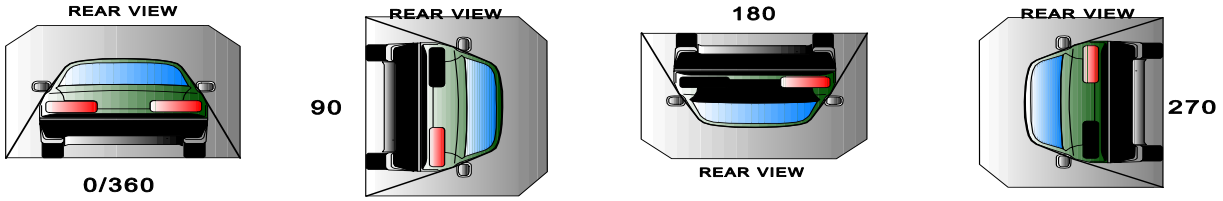
SOLVENT SPILLAGE DETAILS:

None

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2002 Toyota Camry 4-Door Sedan NHTSA No.: C25103



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0º - 90º	1	minutes	16	seconds	5	minutes	6	minutes	16	seconds	7	minutes
90º - 180º	1	minutes	14	seconds	5	minutes	6	minutes	14	seconds	7	minutes
180º-270º	1	minutes	2	seconds	5	minutes	6	minutes	2	seconds	7	minutes
270º-360º	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0º - 90º	0	0	0	N/A
90º - 180º	0	0	0	N/A
180º-270º	0	0	0	N/A
270º-360º	0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0º - 90º	None
90º - 180º	None
180º-270º	None
270º-360º	None

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Figure A-1: PRE-TEST FRONTAL VIEW OF TEST VEHICLE

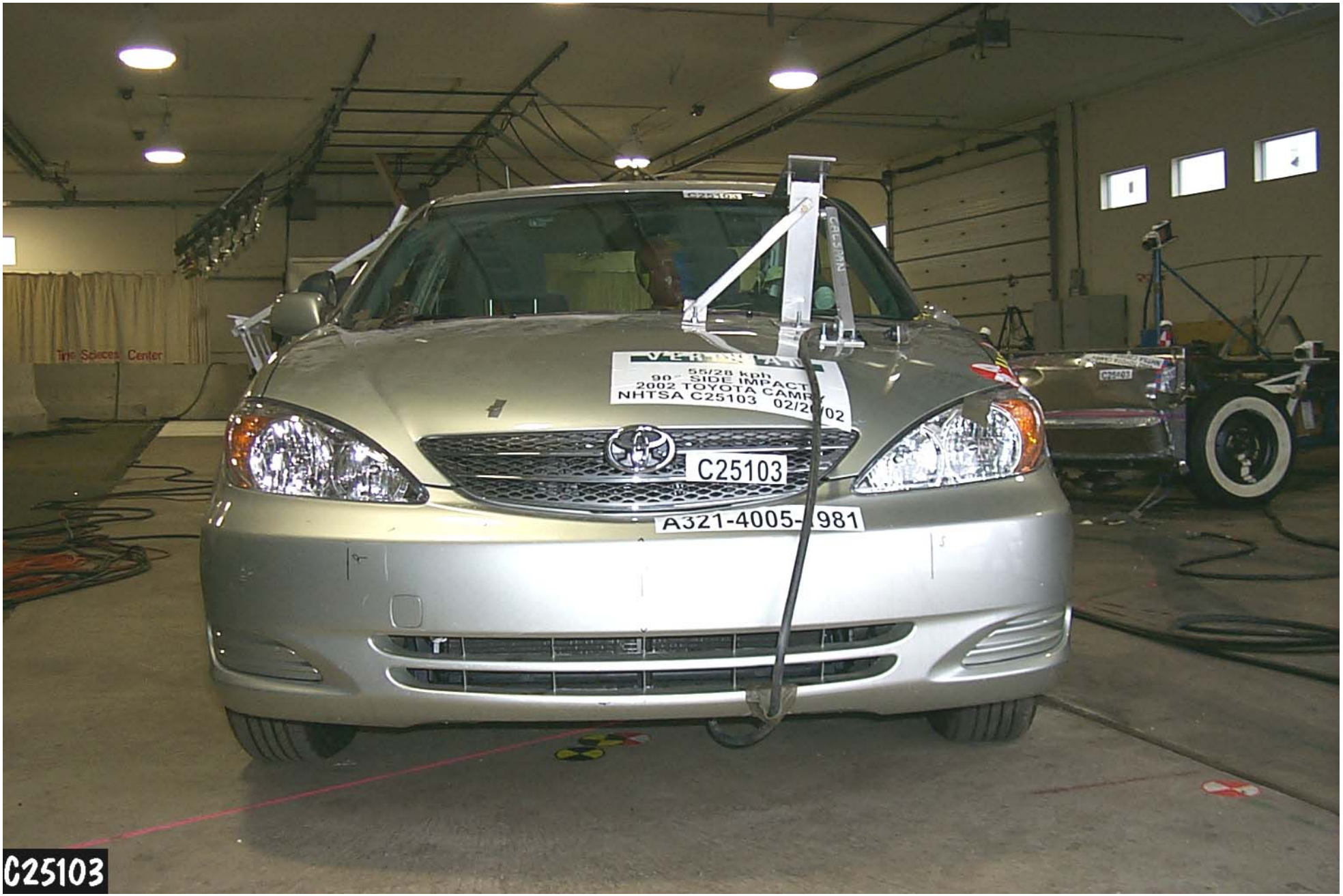


Figure A-2: POST-TEST FRONTAL VIEW OF TEST VEHICLE

Figure A-3: PRE-TEST REAR VIEW OF TEST VEHICLE

Figure A-4: POST-TEST REAR VIEW OF TEST VEHICLE

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

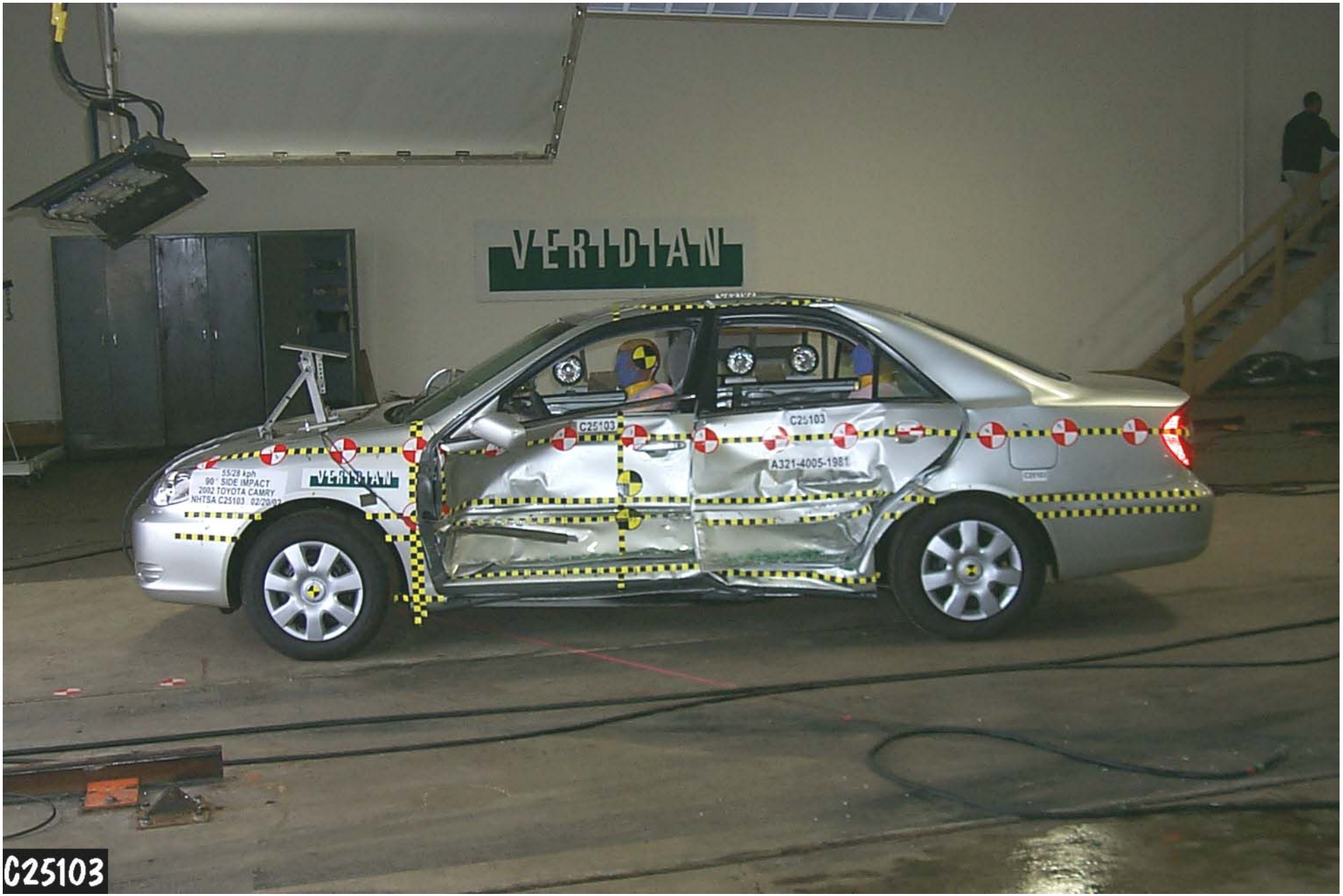


Figure A-6: POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

Figure A-7: PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

Figure A-8: POST-TEST FRONTAL VIEW OF IMPACTOR FACE

Figure A-9: PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE

Figure A-10: POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE

Figure A-11: PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

Figure A-12: POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

Figure A-13: PRE-TEST TOP VIEW OF IMPACTOR FACE

Figure A-14: POST-TEST TOP VIEW OF IMPACTOR FACE

Figure A-15: PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE

Figure A-16: POST-TEST OVERHEAD VIEW OF MDB AND VEHICLE

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

Figure A-18: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID

Figure A-19: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID

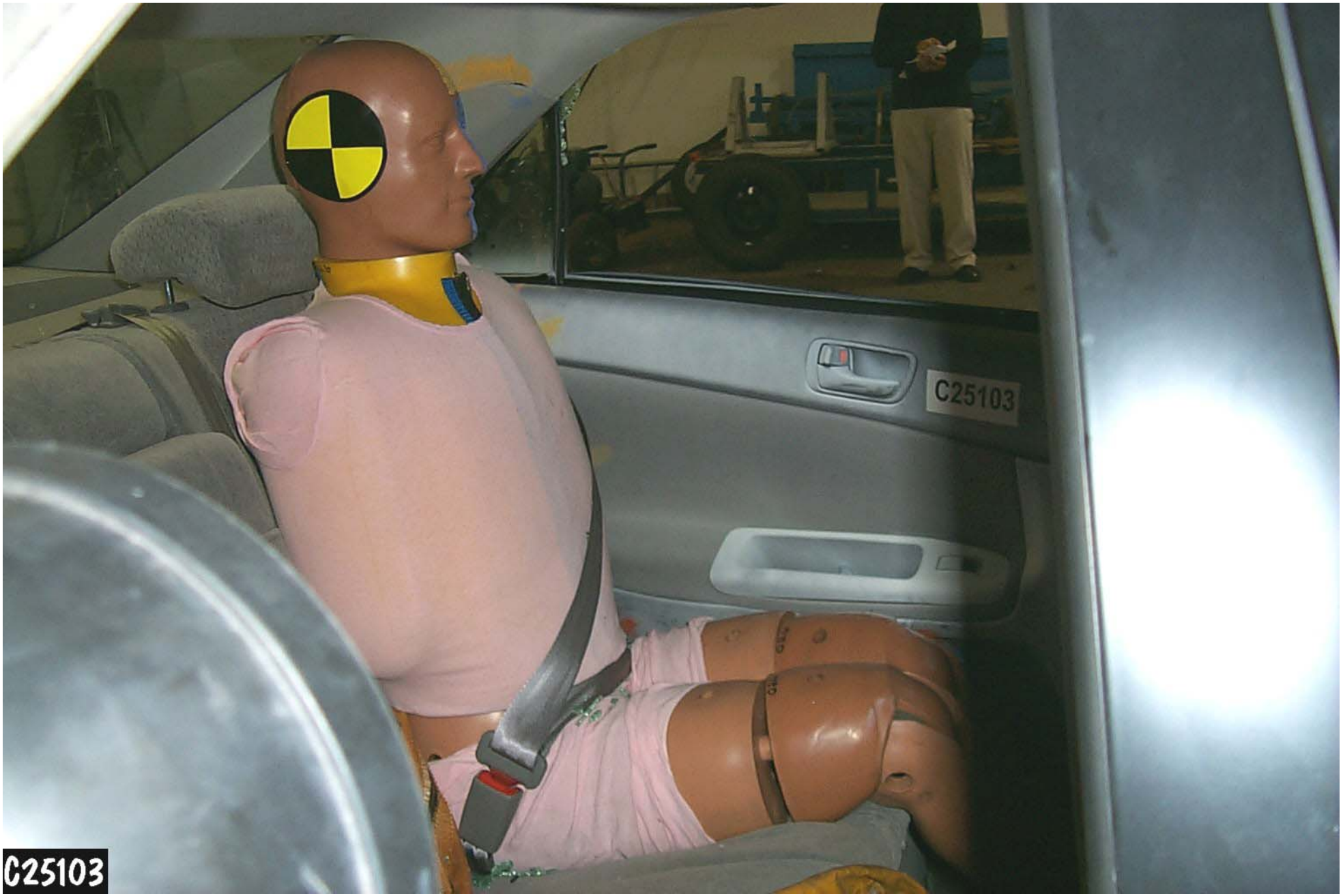


Figure A-20: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID

Figure A-21: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

Figure A-22: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

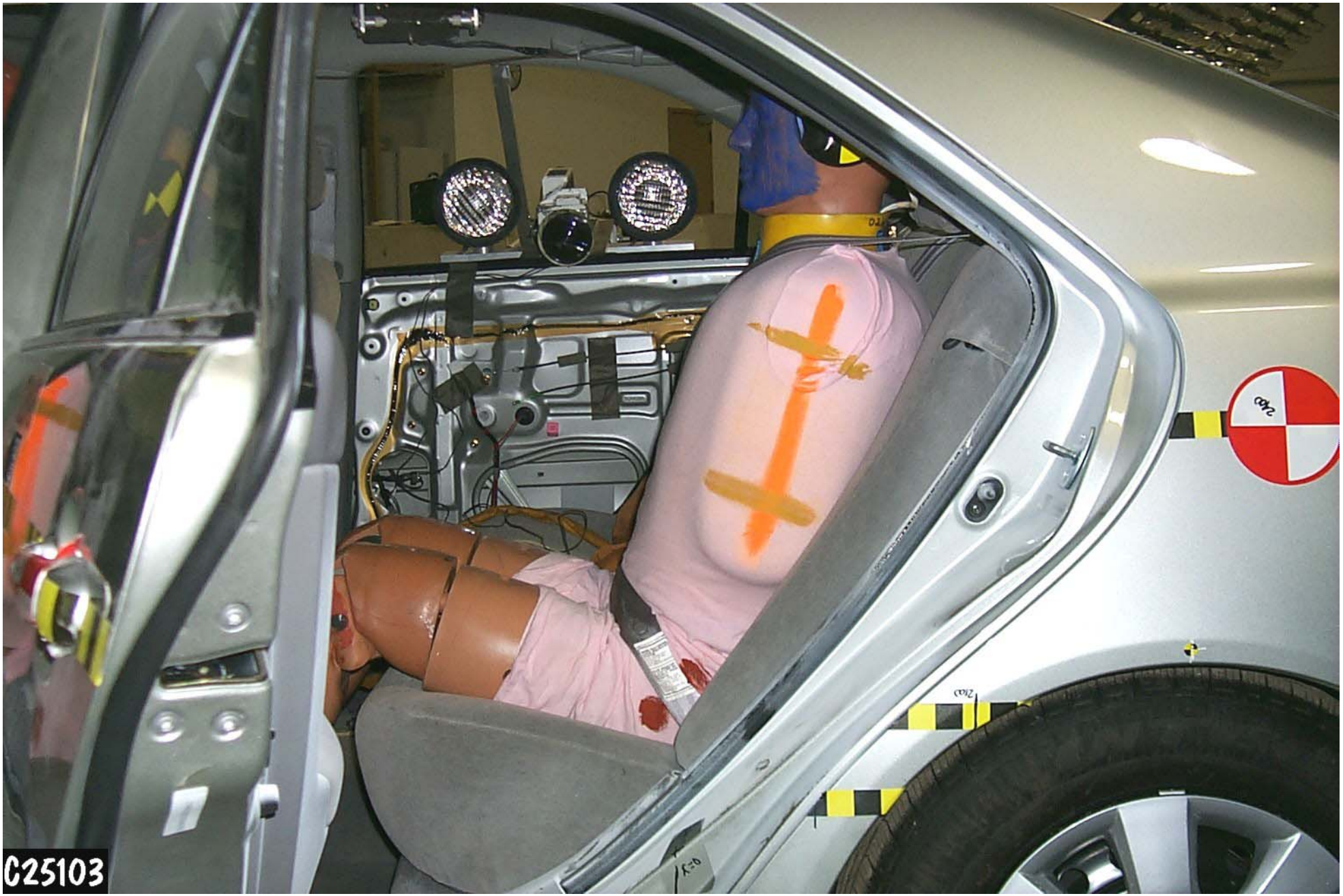


Figure A-23: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID

Figure A-24: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID

Figure A-25: PRE-TEST FRONT INTERIOR TRIM

Figure A-26: POST-TEST FRONT INTERIOR TRIM SHOWING SID IMPACT LOCATIONS

Figure A-27: PRE-TEST REAR INTERIOR TRIM

Figure A-28: POST-TEST REAR INTERIOR TRIM SHOWING SID IMPACT LOCATIONS

Figure A-29: PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

Figure A-30: PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

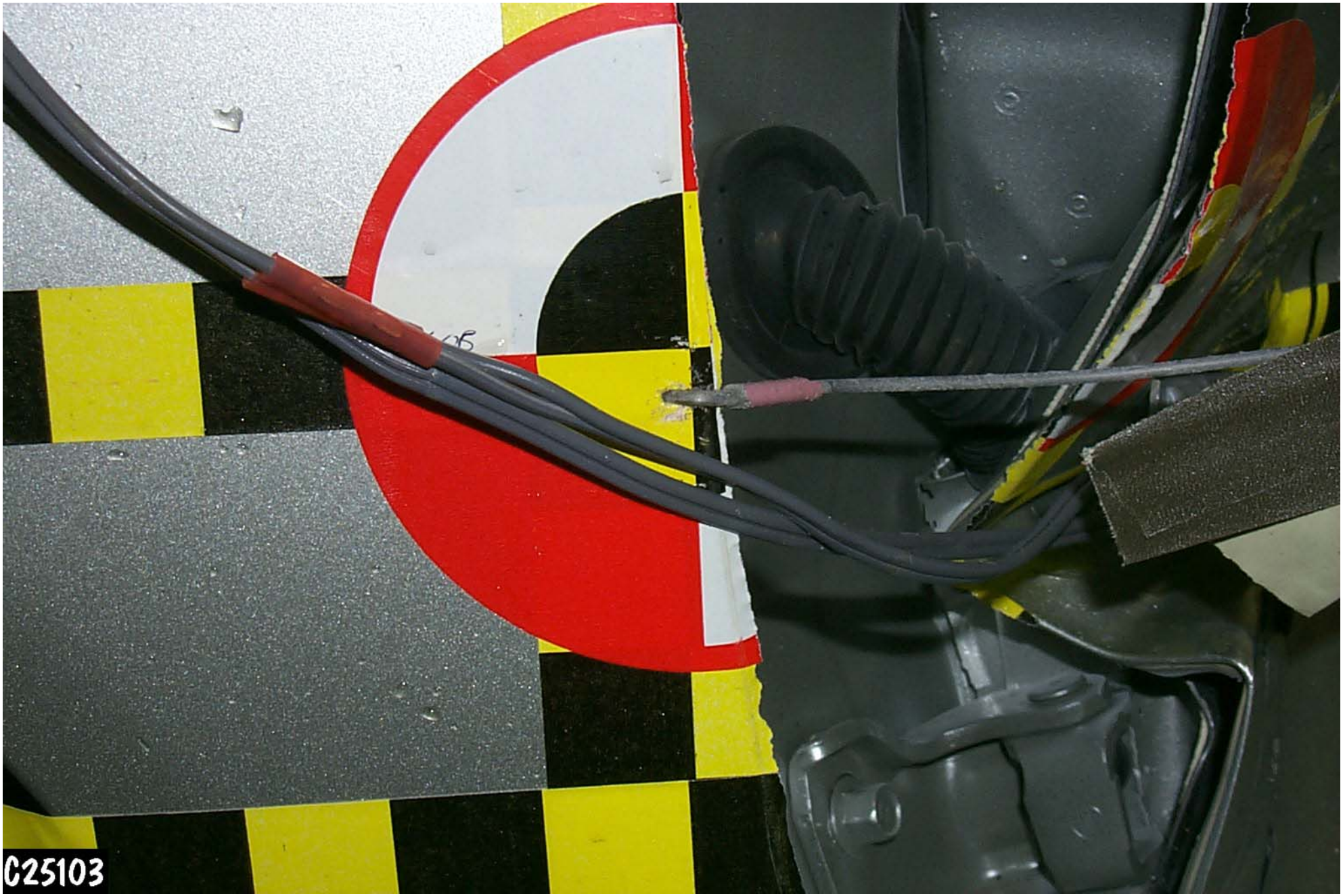


Figure A-31: POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

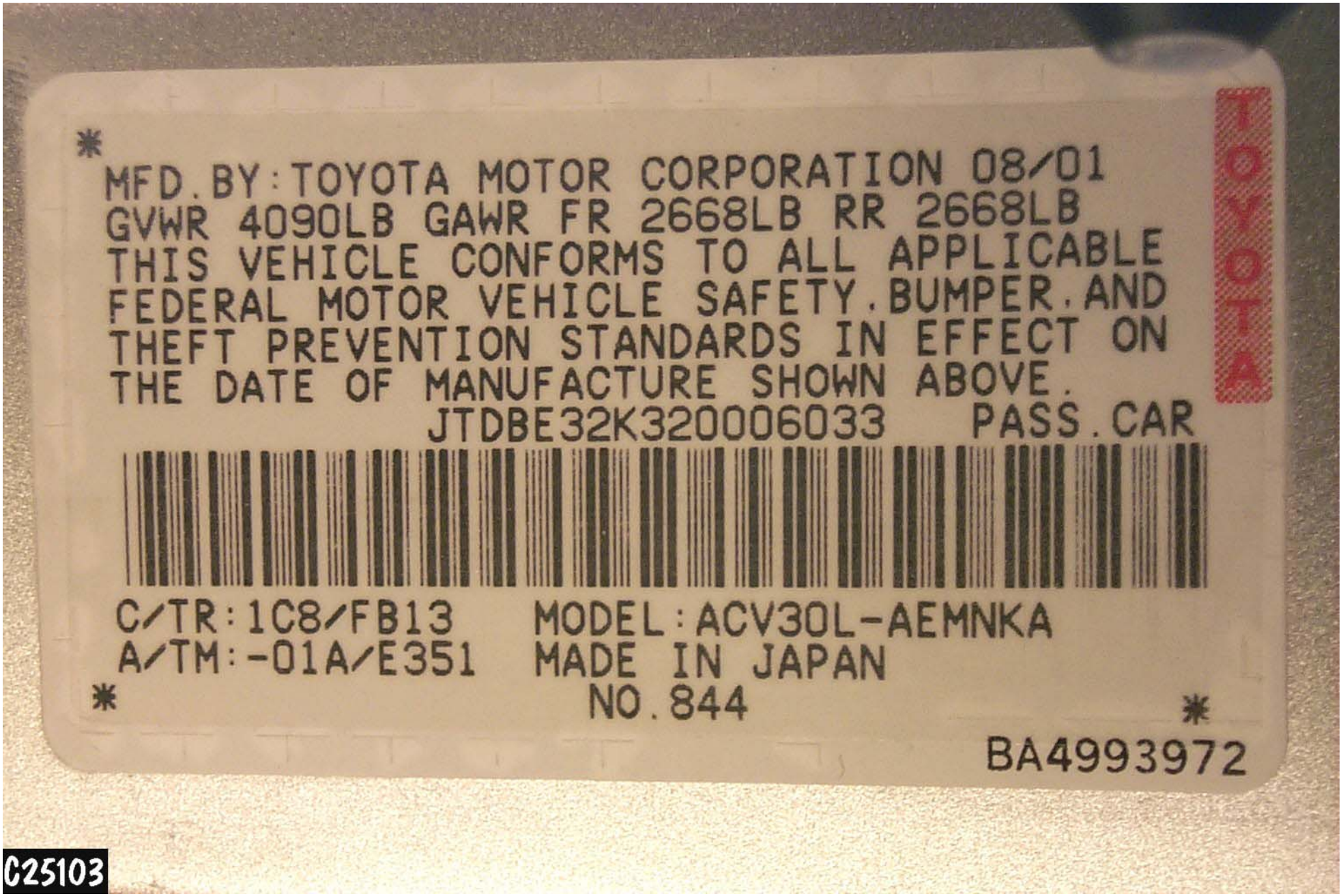


Figure A-32: CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL

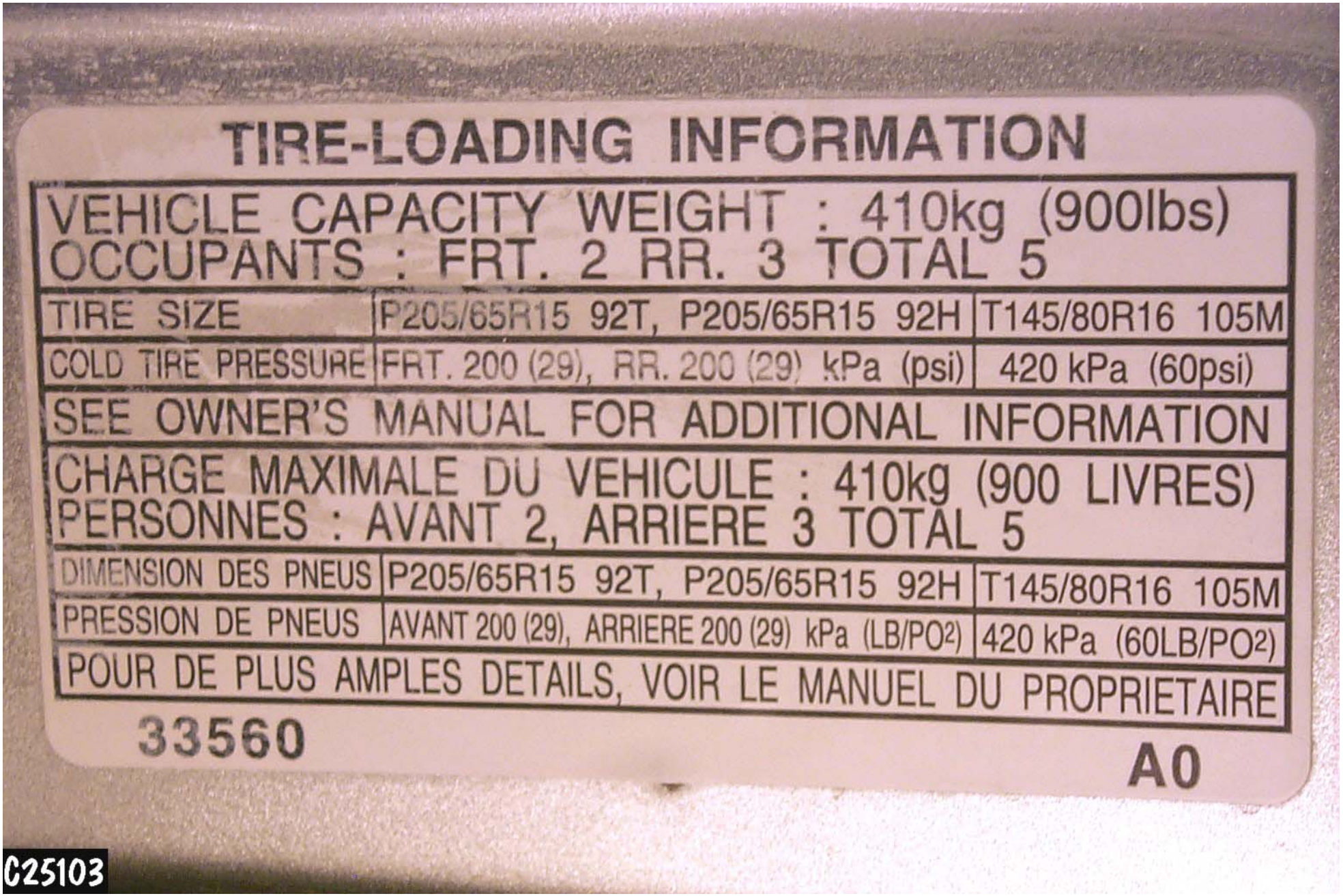


Figure A-33: CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL

Figure A-34: IMPACT PHOTO

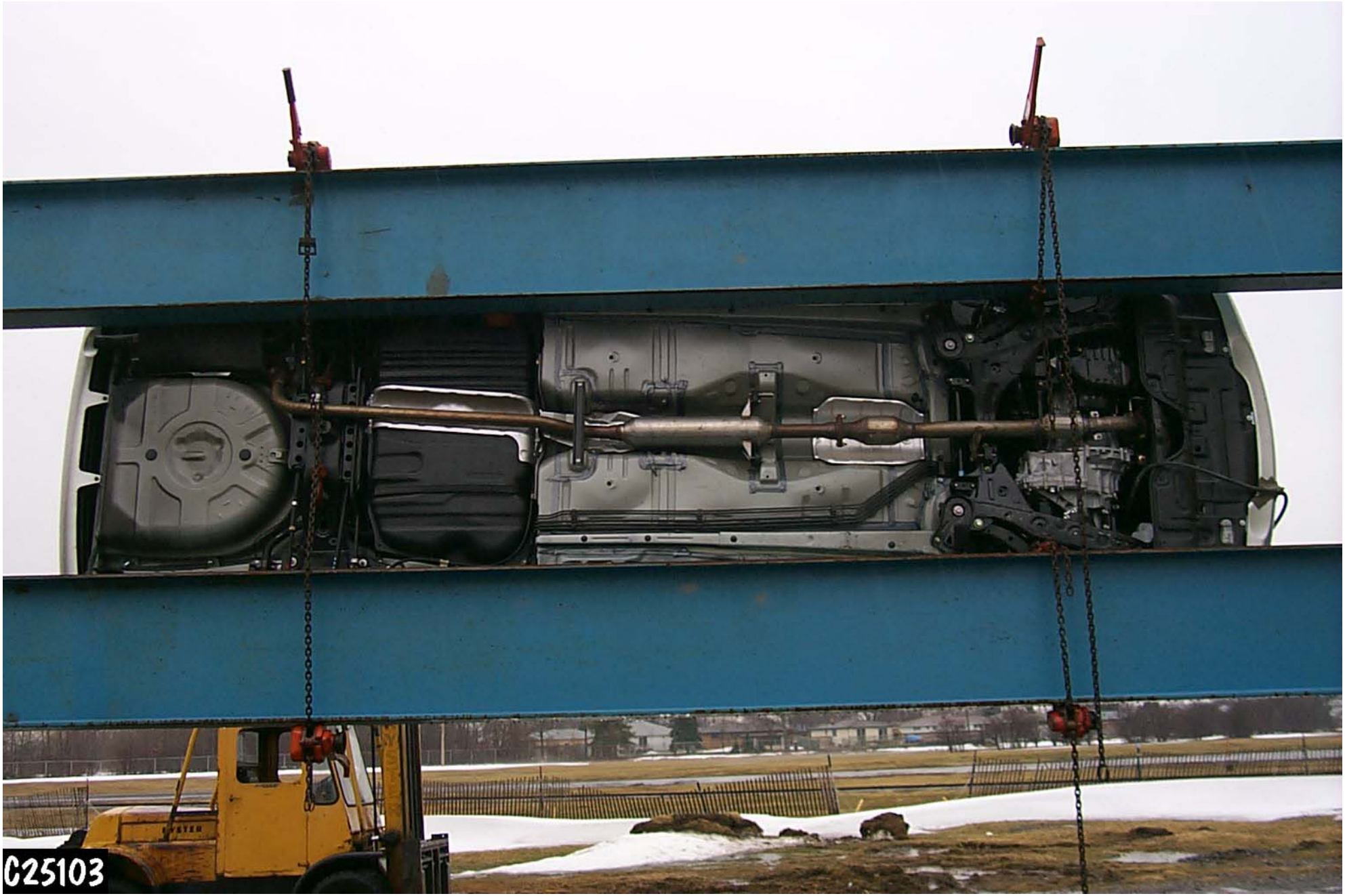


Figure A-35: ROLLOVER 90 DEGREES

Figure A-36: ROLLOVER 180 DEGREES

Figure A-37: ROLLOVER 270 DEGREES

Figure A-38: ROLLOVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID RESPONSE DATA

TABLE OF DATA PLOTS

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS
ACCELERATION DATA - FIR FILTERED

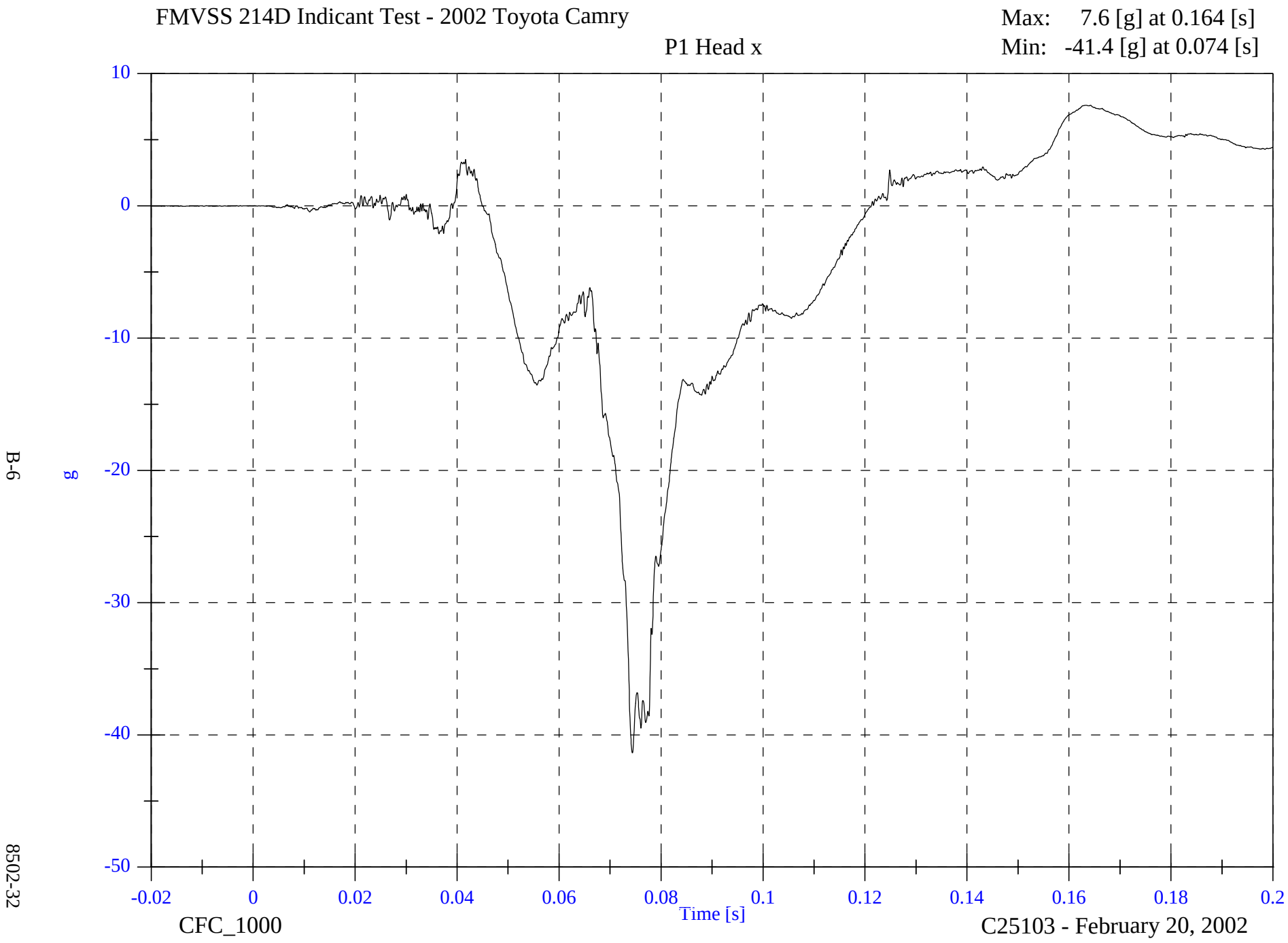
TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

MDB INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FIR FILTERED


FMVSS 214D Indicant Test - 2002 Toyota Camry
P1 Head x
Max: 7.6 [g] at 0.164 [s]
Min: -41.4 [g] at 0.074 [s]
10
0
-10
-20
-30
-40
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C25103 - February 20, 2002

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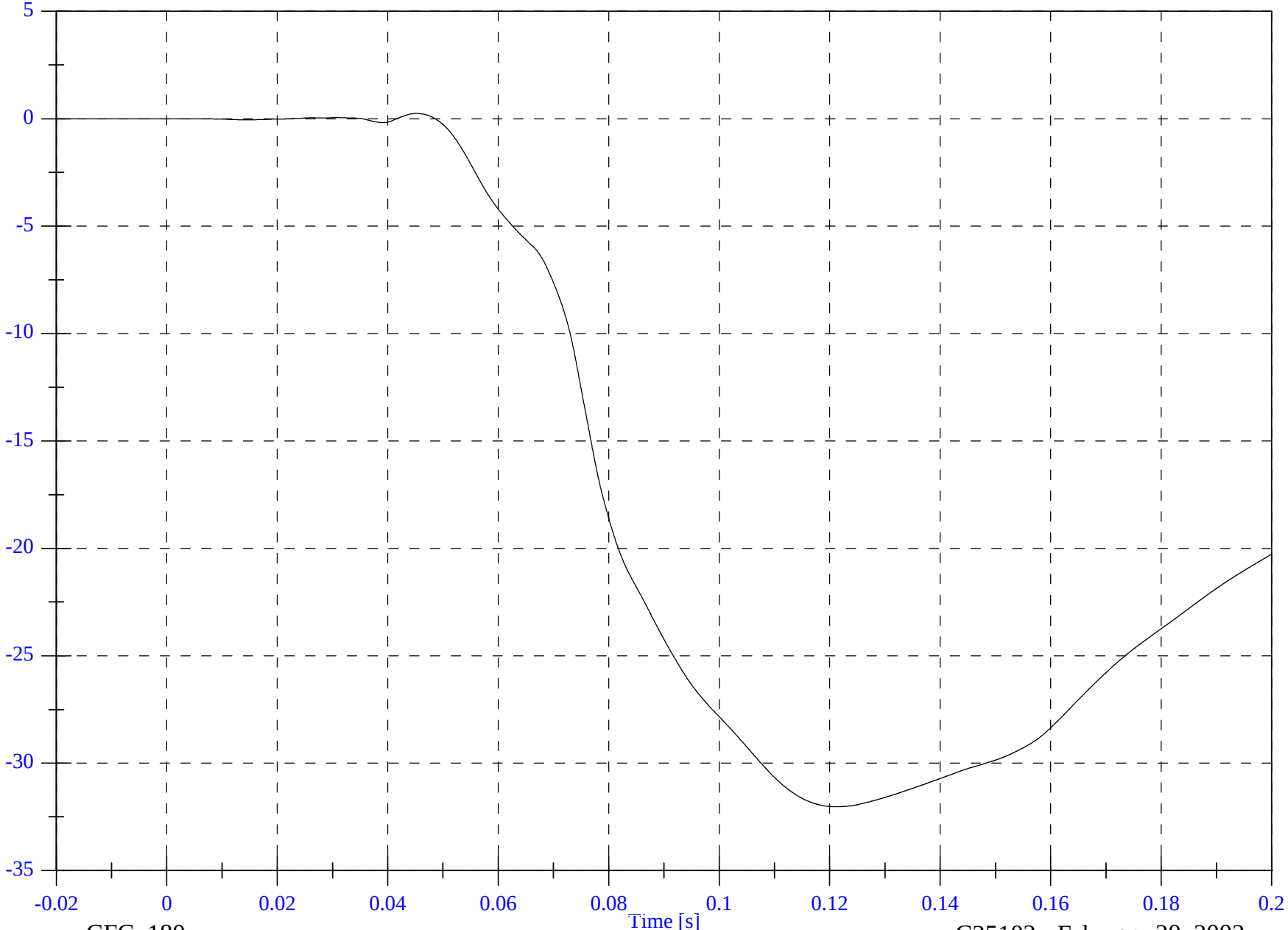
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Head x Velocity

Max: 0.2 [kph] at 0.045 [s]

Min: -32.0 [kph] at 0.121 [s]



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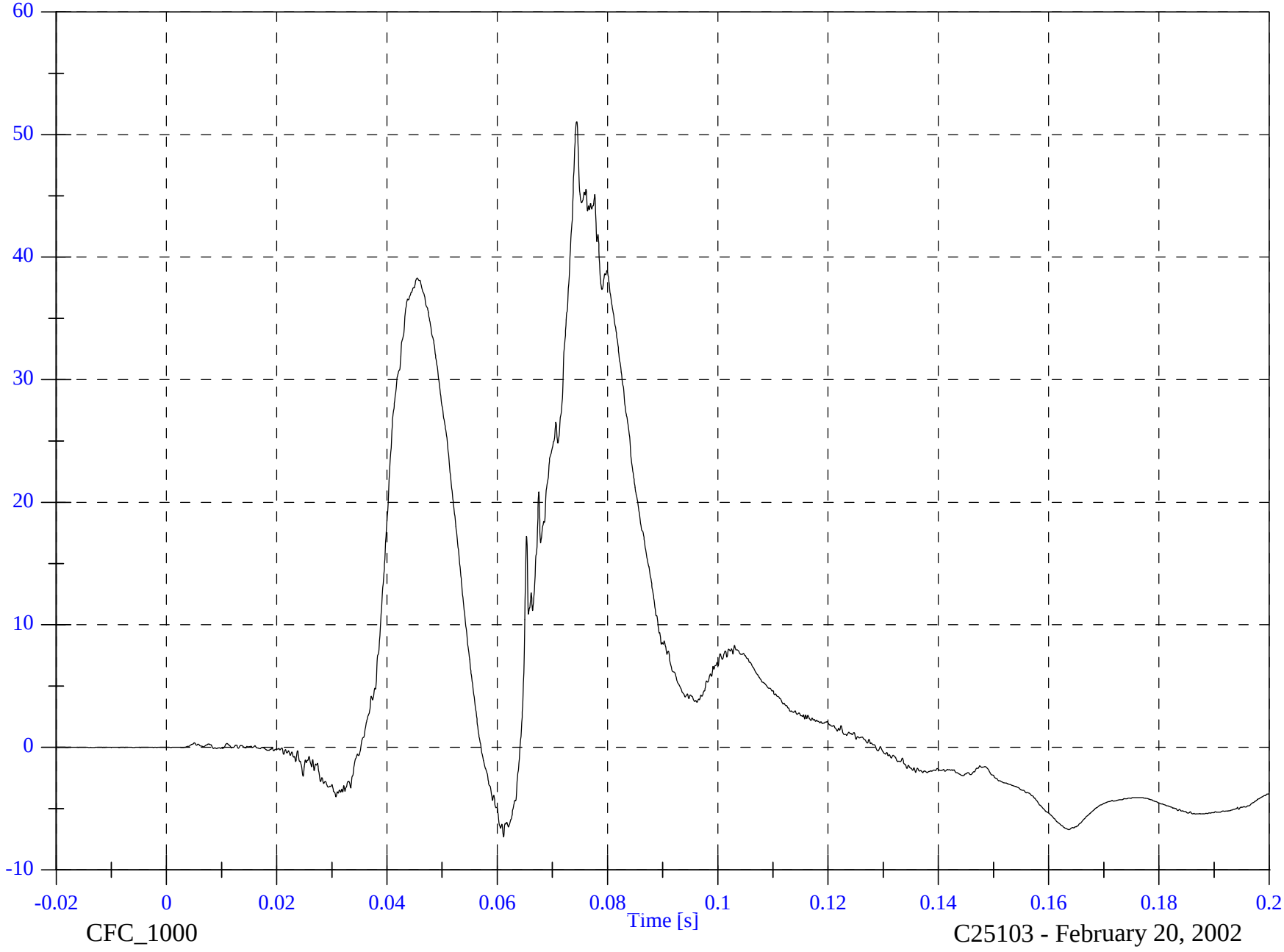
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Head y

Max: 51.1 [g] at 0.074 [s]

Min: -7.3 [g] at 0.061 [s]



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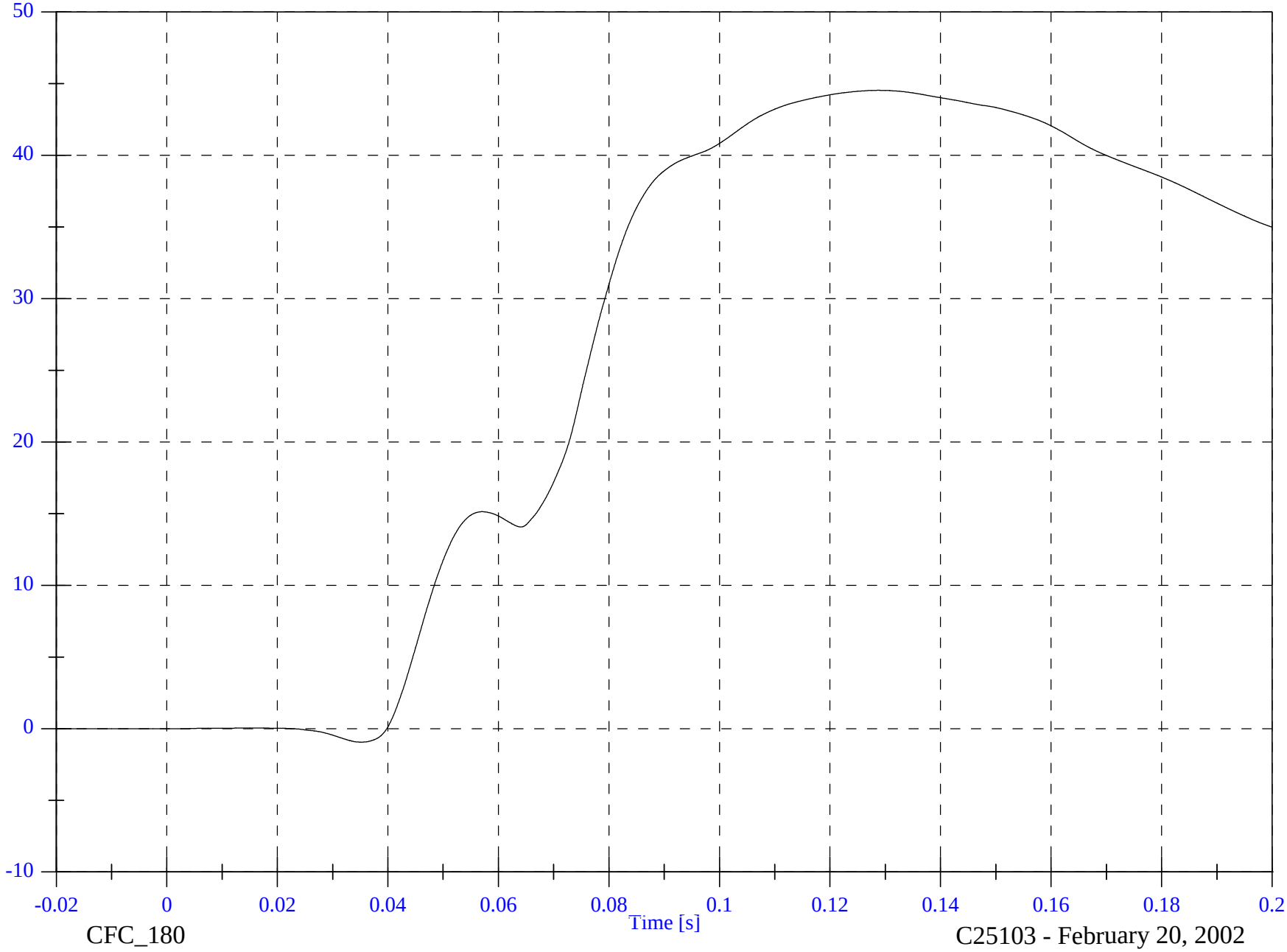
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Head y Velocity

Max: 44.5 [kph] at 0.129 [s]

Min: -0.9 [kph] at 0.035 [s]



CFC_180

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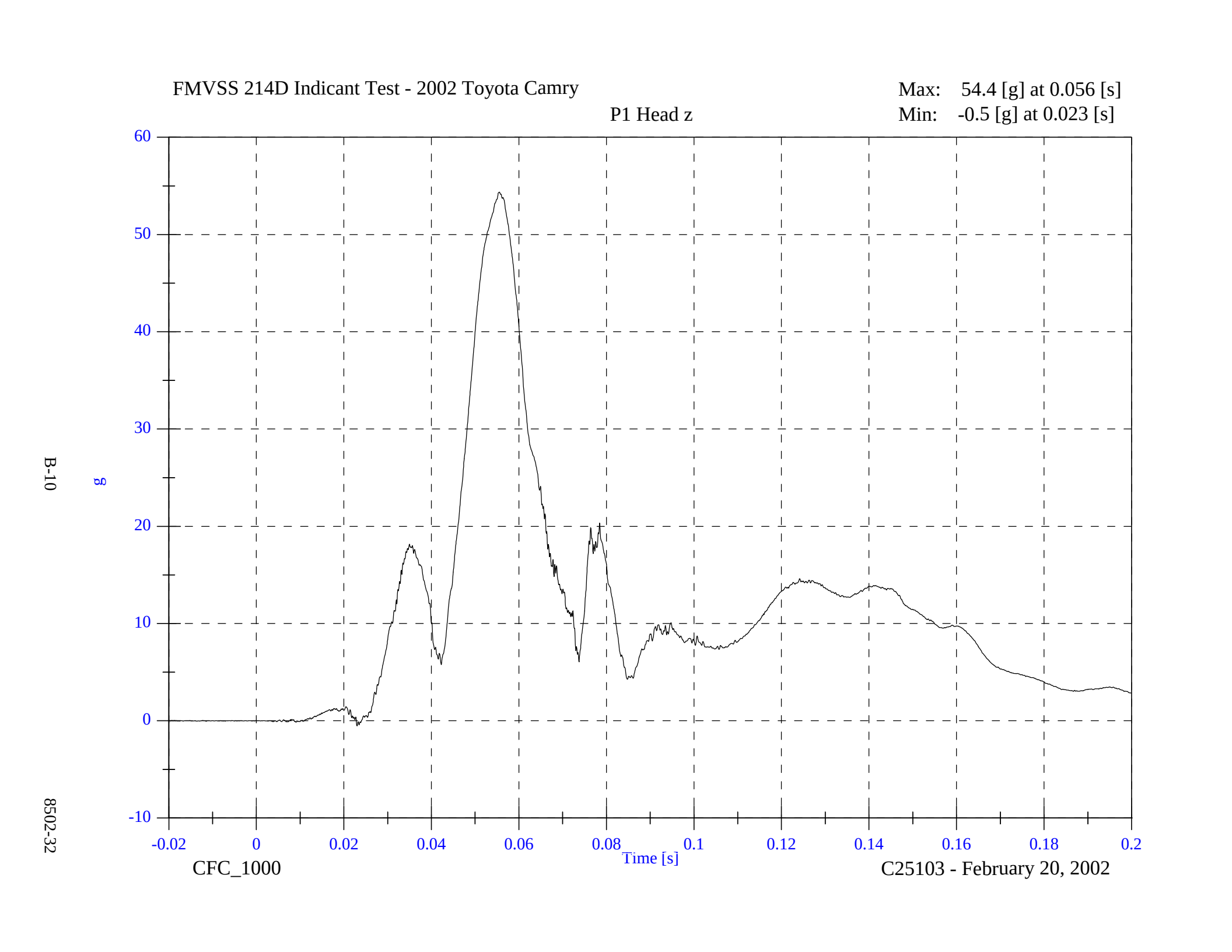
FMVSS 214D Indicant Test - 2002 Toyota Camry
P1 Head z
Max: 54.4 [g] at 0.056 [s]
Min: -0.5 [g] at 0.023 [s]
60
50
40
30
20
10
0
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
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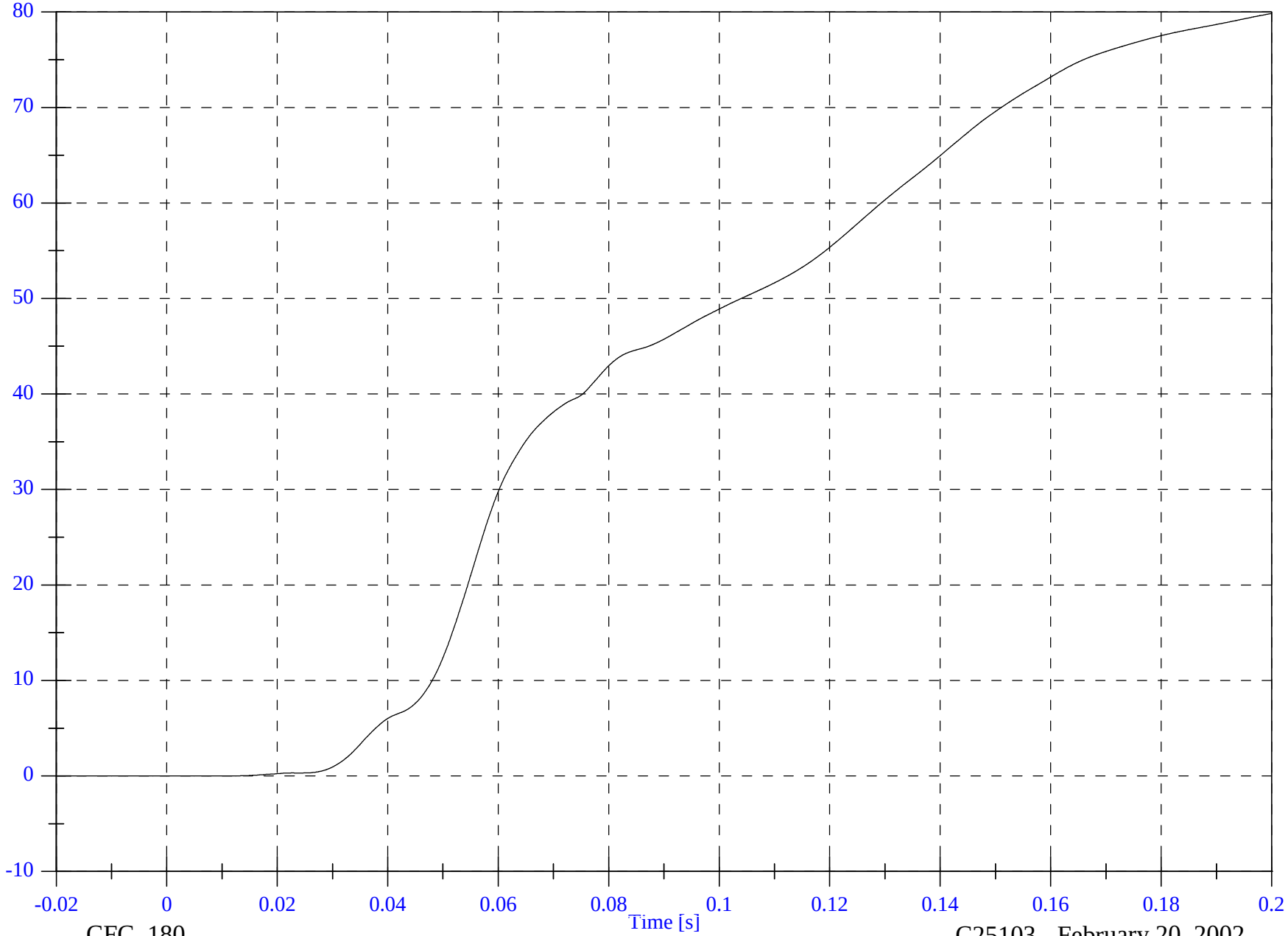
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Head z Velocity

Max: 79.8 [kph] at 0.200 [s]

Min: -0.0 [kph] at 0.011 [s]



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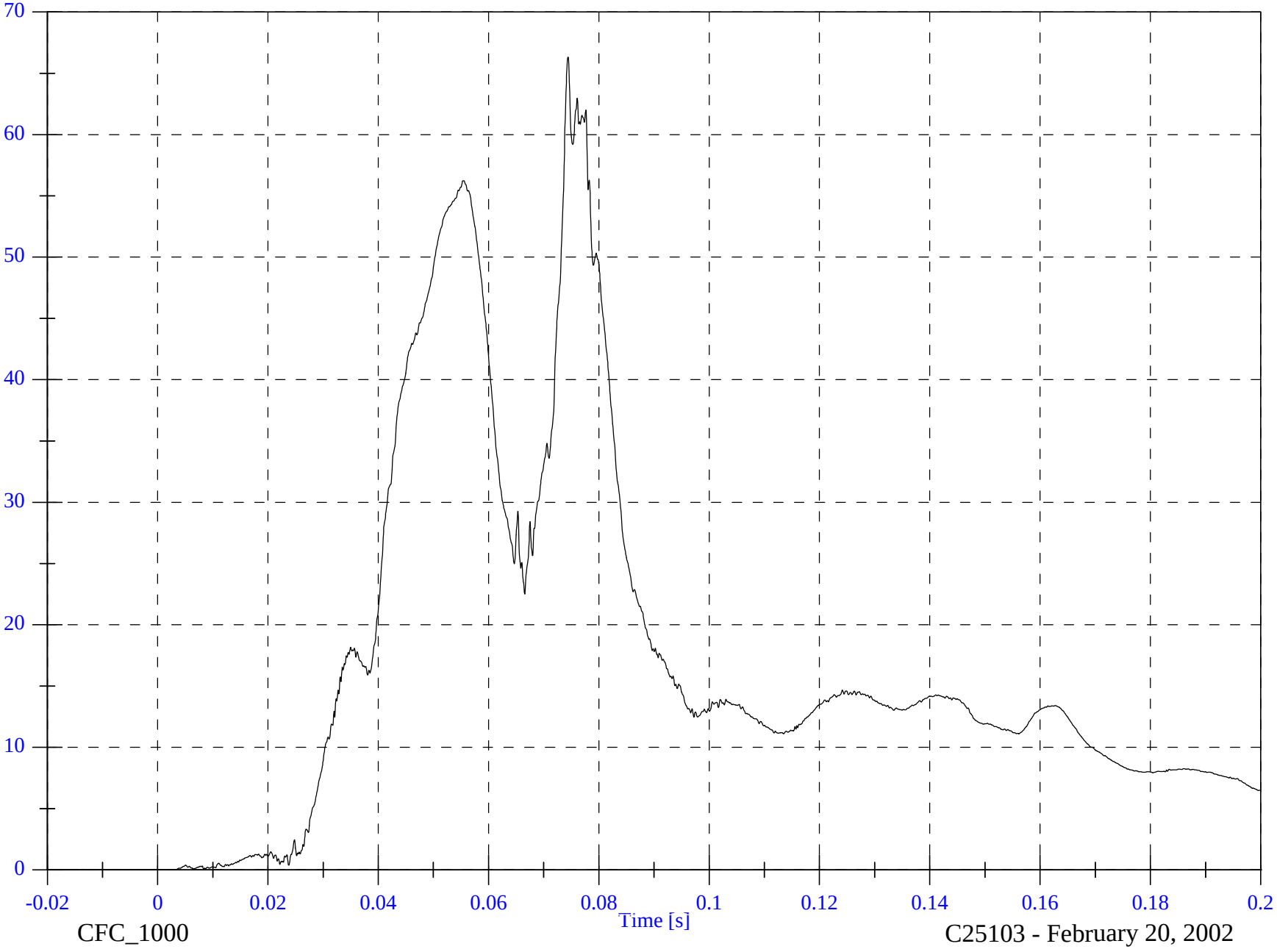
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Head Resultant

Max: 66.3 [g] at 0.074 [s]

Min: 0.0 [g] at -0.004 [s]



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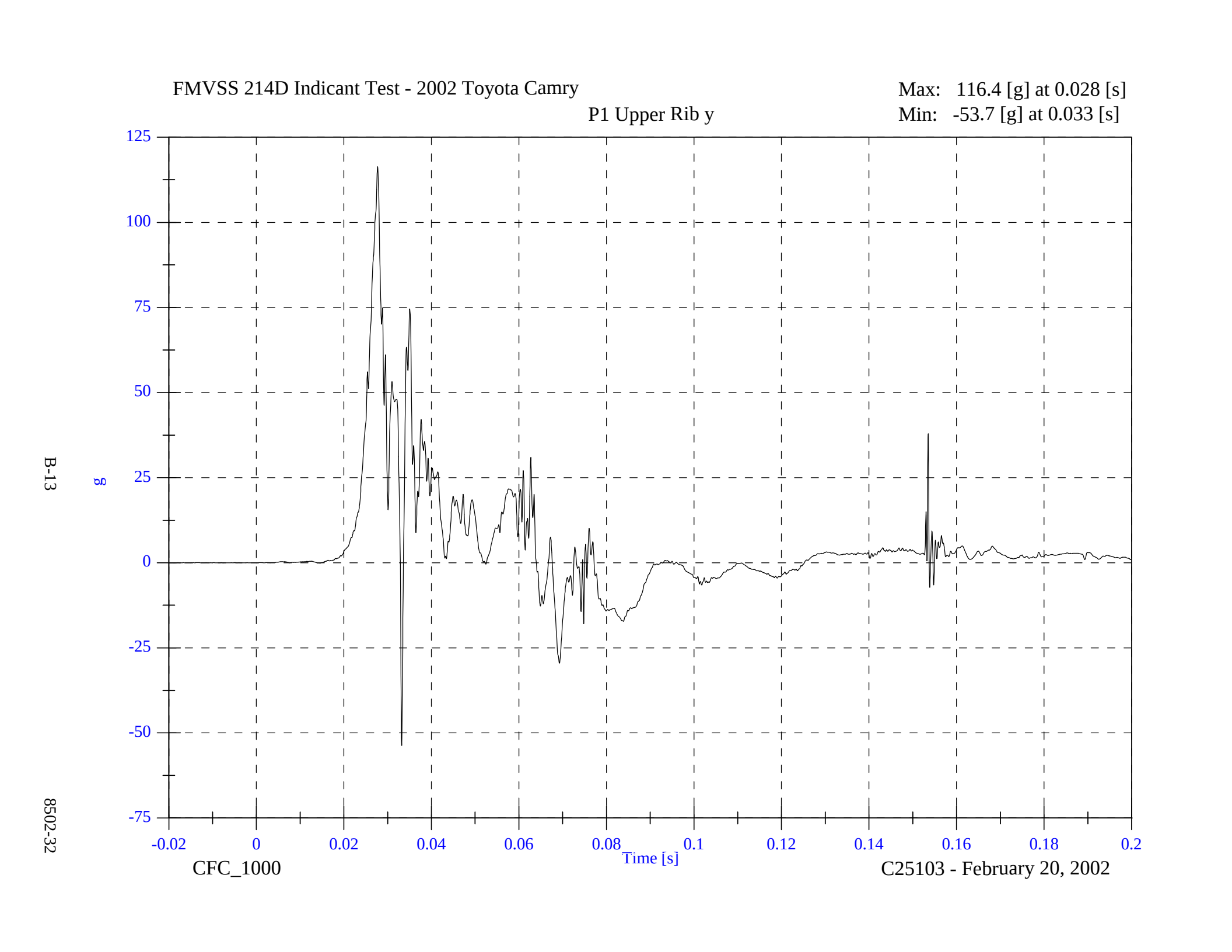
FMVSS 214D Indicant Test - 2002 Toyota Camry
P1 Upper Rib y
Max: 116.4 [g] at 0.028 [s]
Min: -53.7 [g] at 0.033 [s]
125
100
75
50
25
0
-25
-50
-75
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
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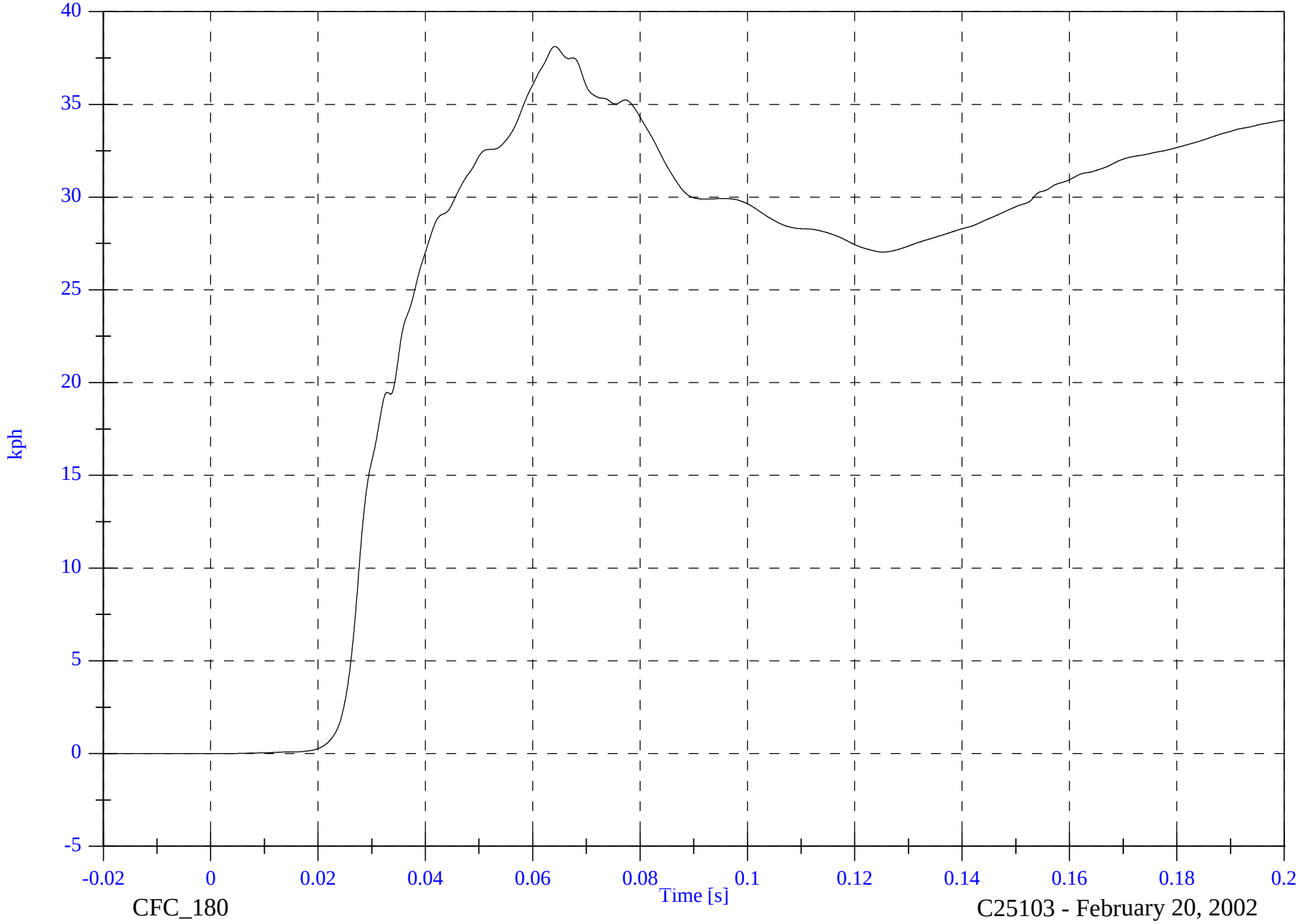
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Upper Rib y Velocity

Max: 38.1 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.000 [s]



CFC_180

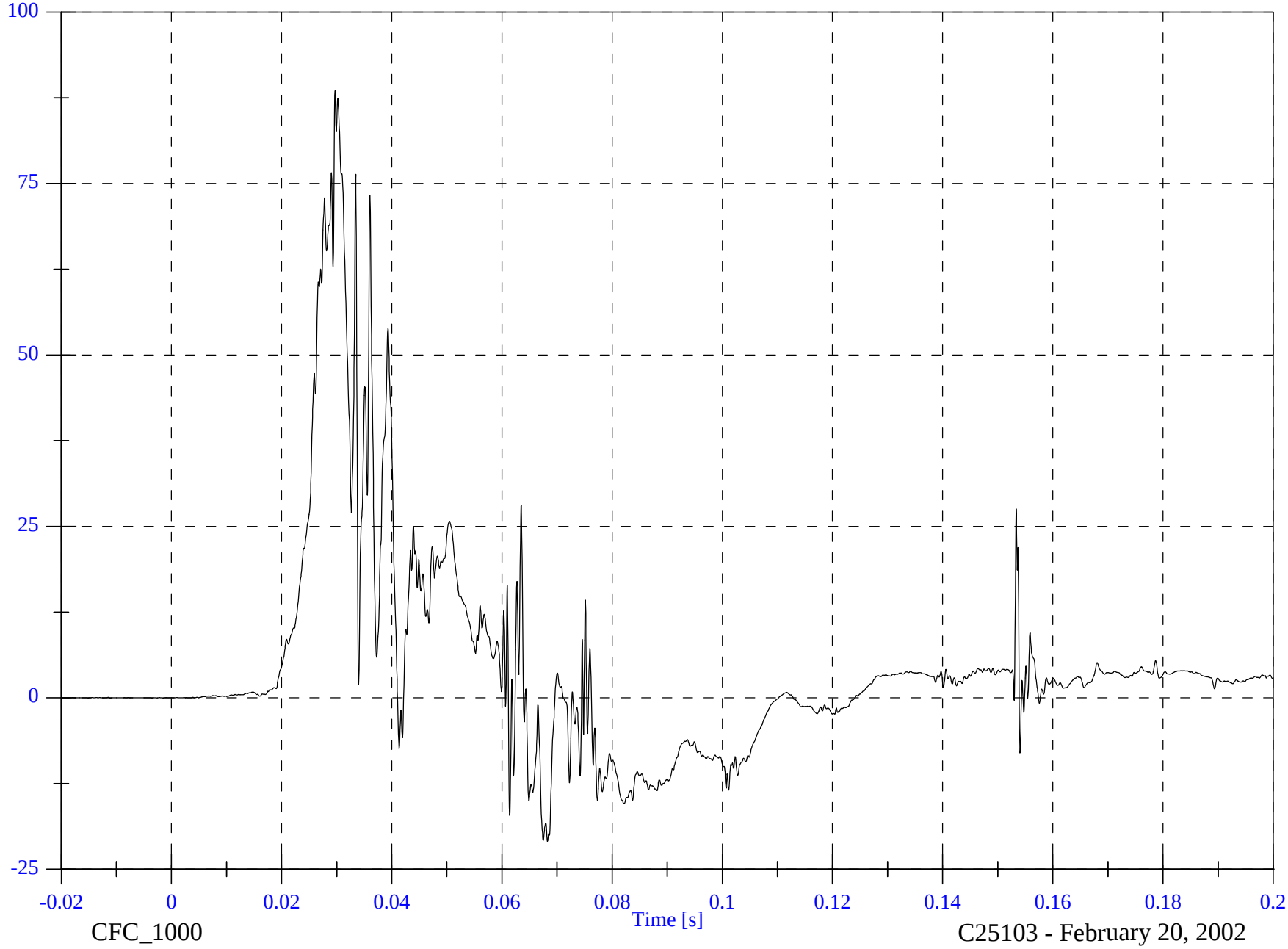
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Rib y

Max: 88.6 [g] at 0.030 [s]

Min: -21.0 [g] at 0.068 [s]



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CFC_1000

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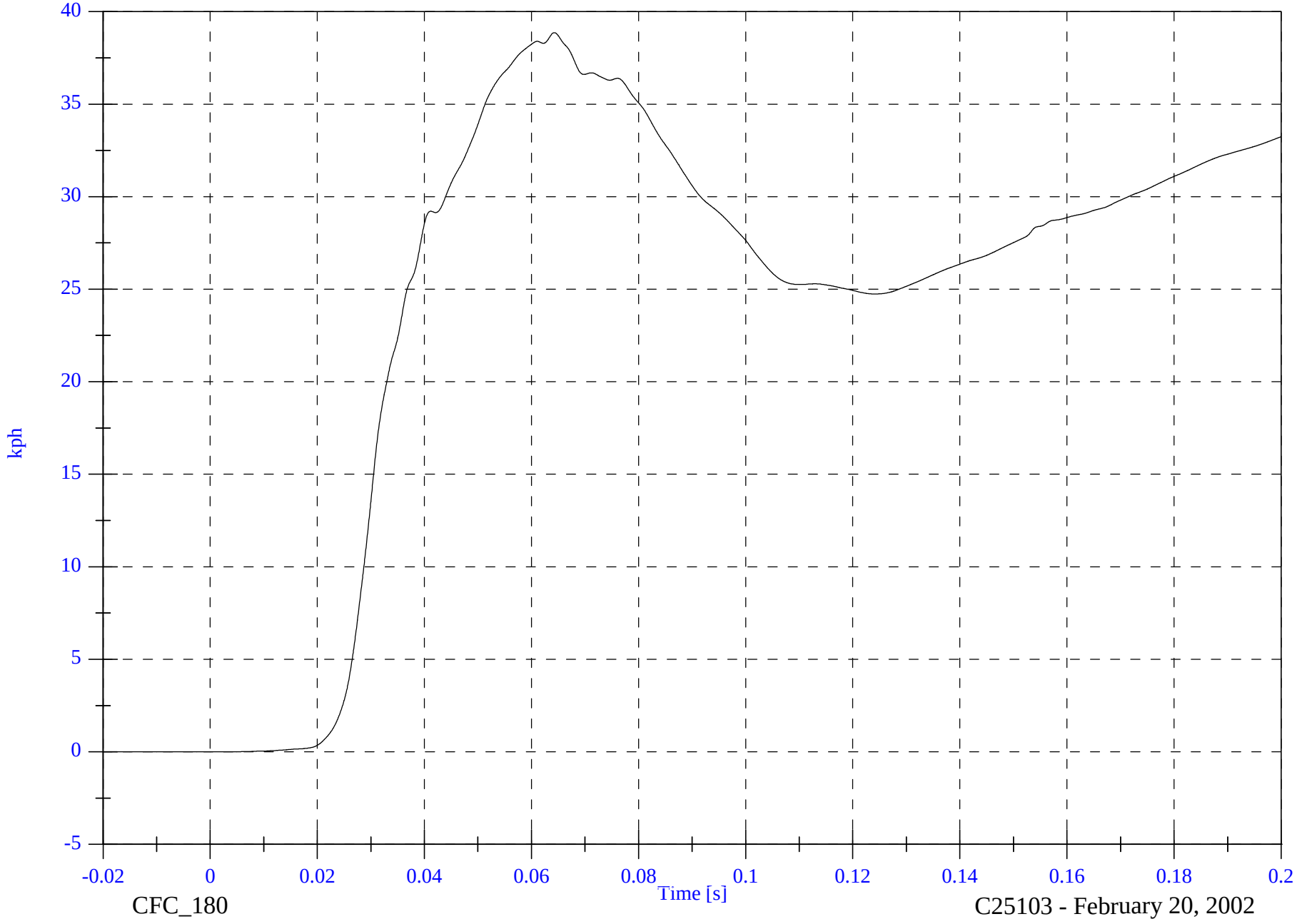
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Rib y Velocity

Max: 38.9 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.018 [s]



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C25103 - February 20, 2002

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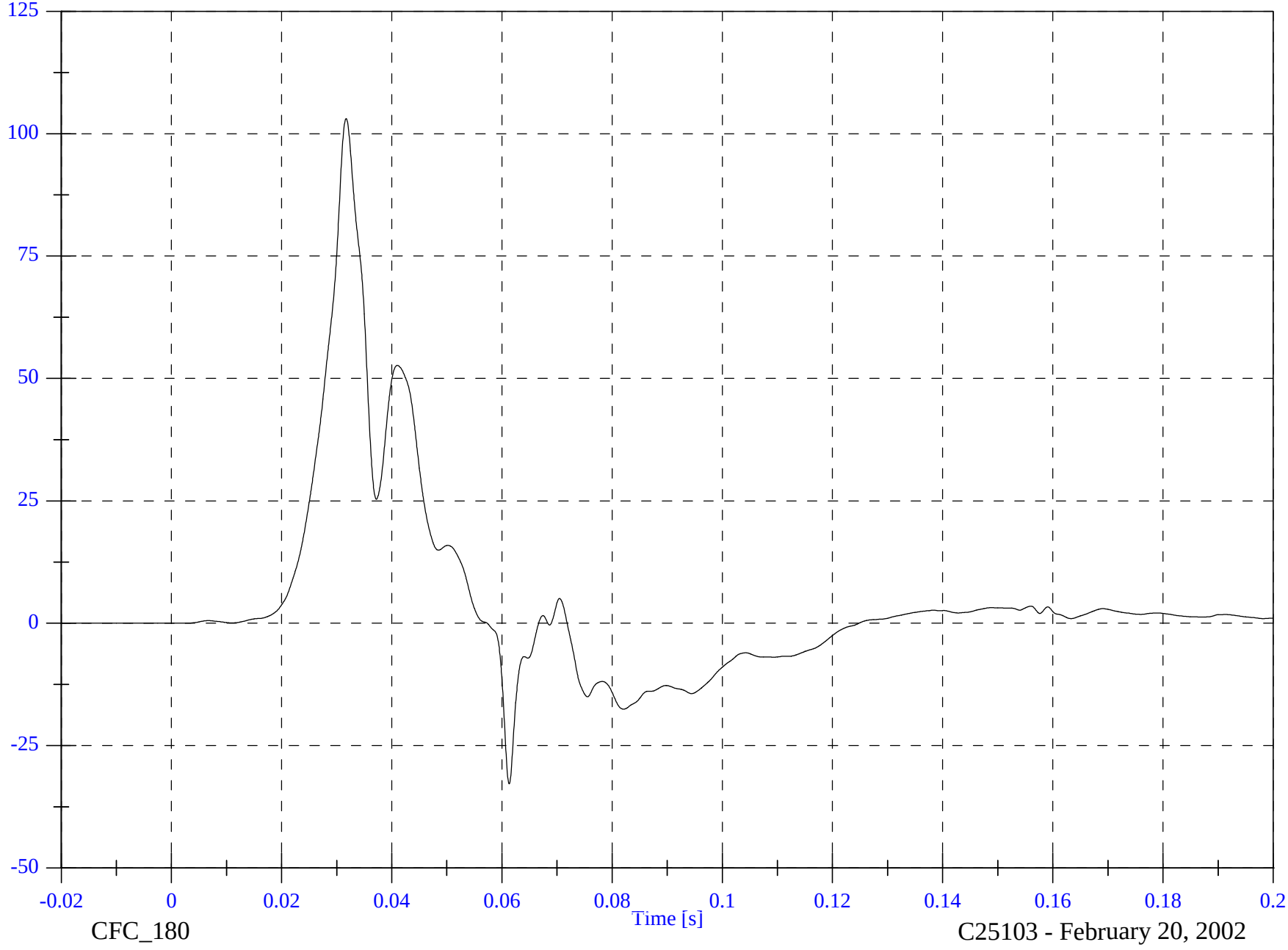
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Spine y

Max: 103.1 [g] at 0.032 [s]

Min: -32.8 [g] at 0.061 [s]



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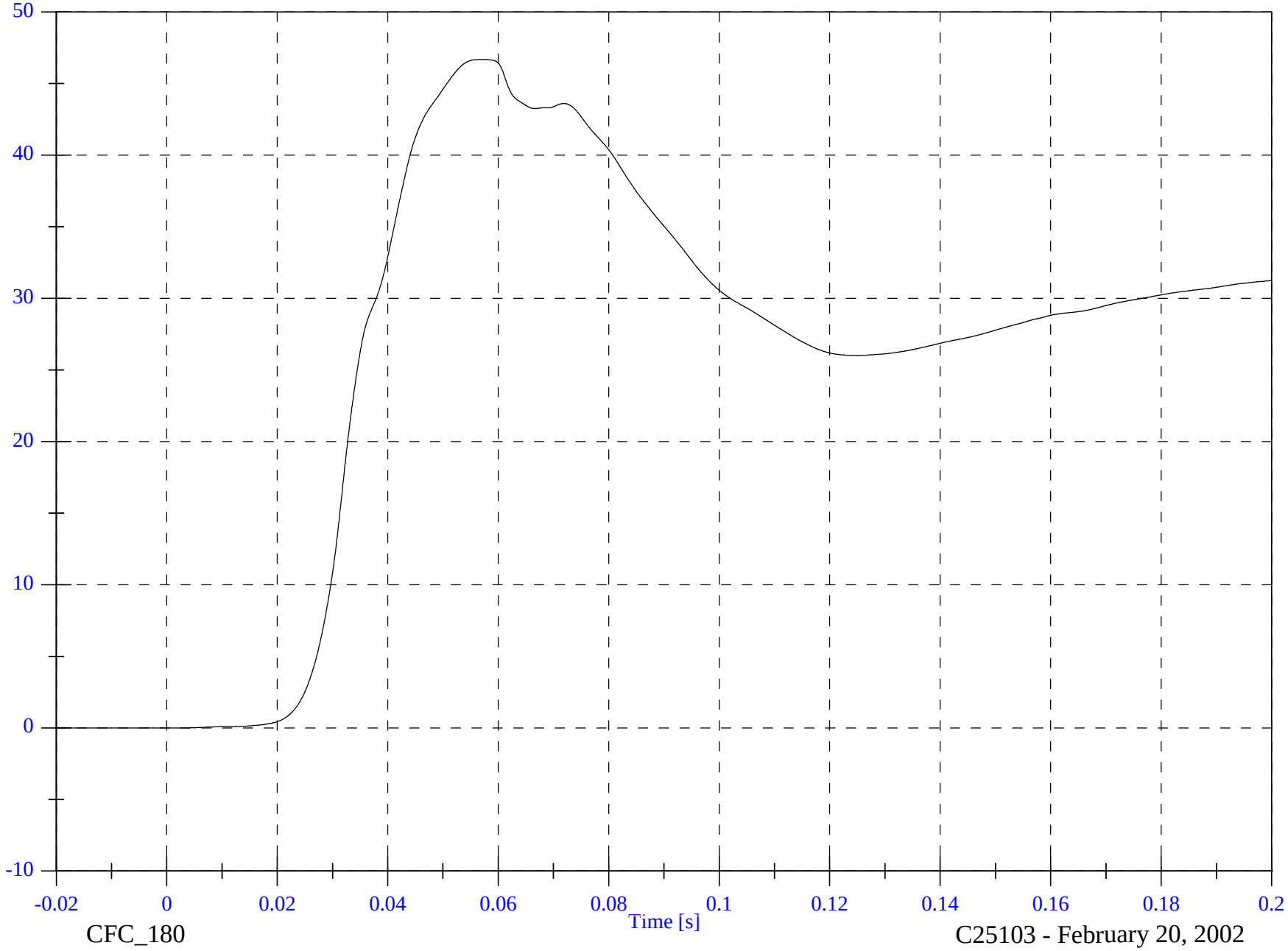
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Spine y Velocity

Max: 46.7 [kph] at 0.057 [s]

Min: -0.0 [kph] at -0.019 [s]



CFC_180

C25103 - February 20, 2002

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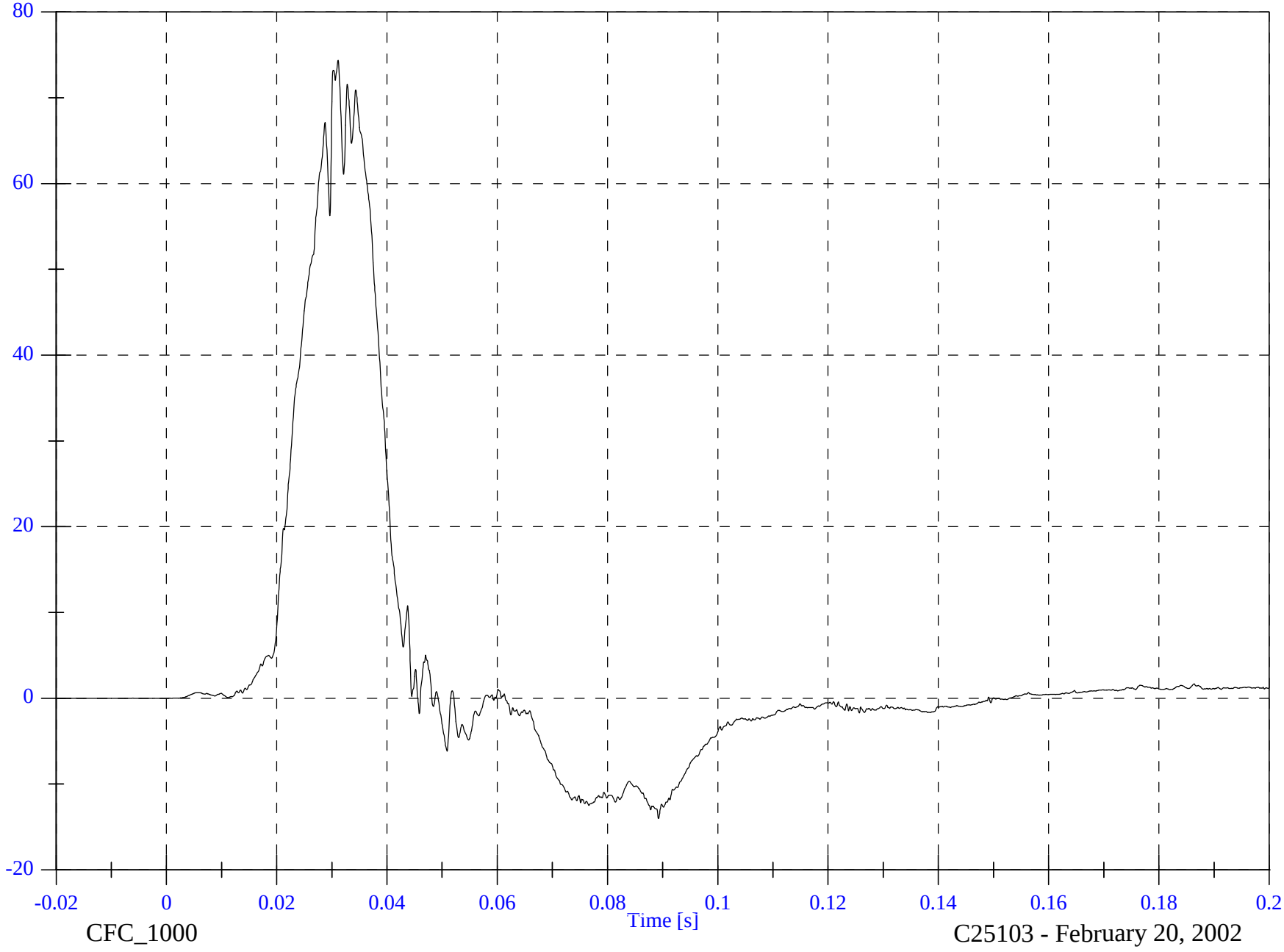
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Pelvic y

Max: 74.4 [g] at 0.031 [s]

Min: -14.0 [g] at 0.089 [s]



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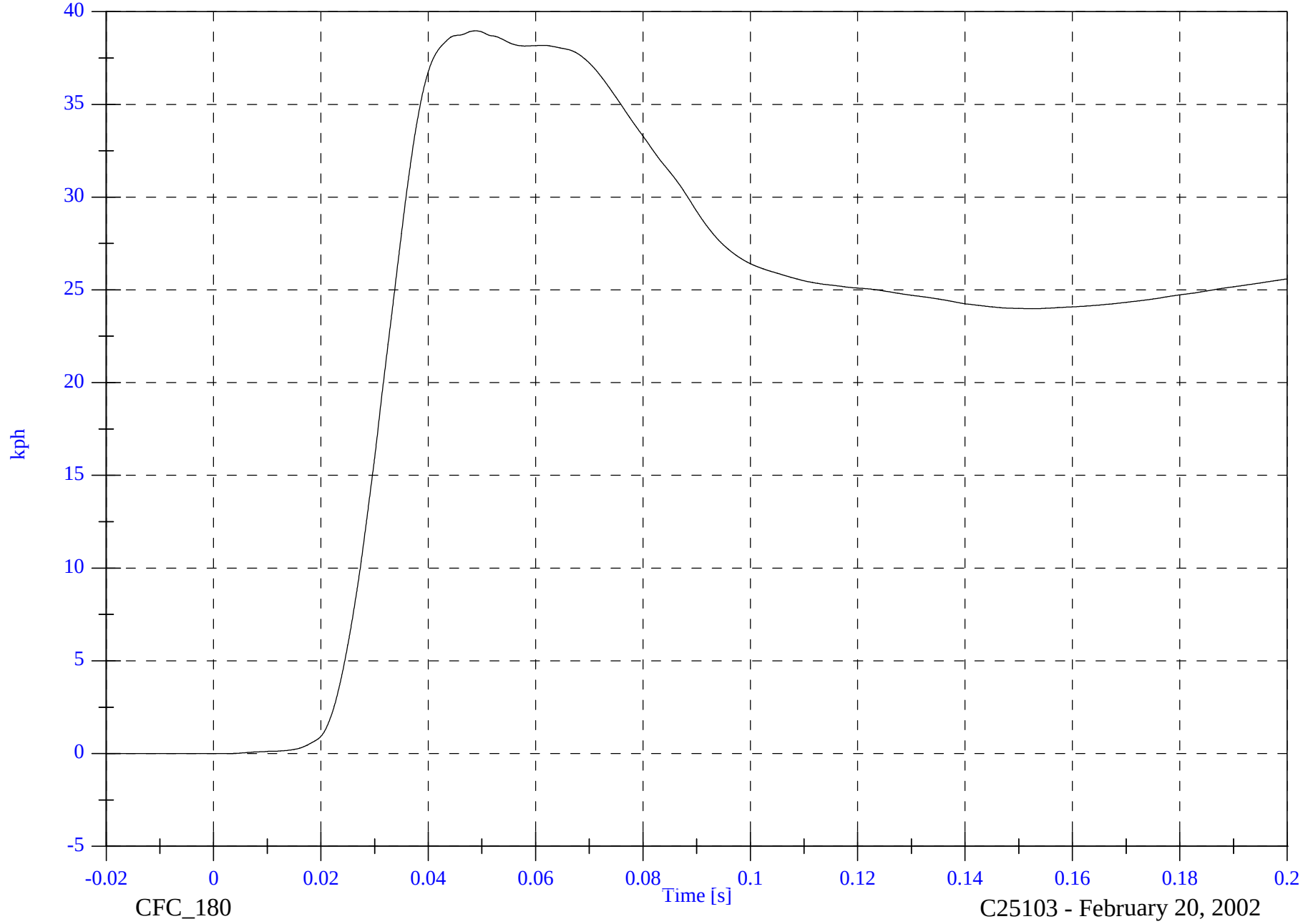
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Pelvic y Velocity

Max: 39.0 [kph] at 0.049 [s]

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



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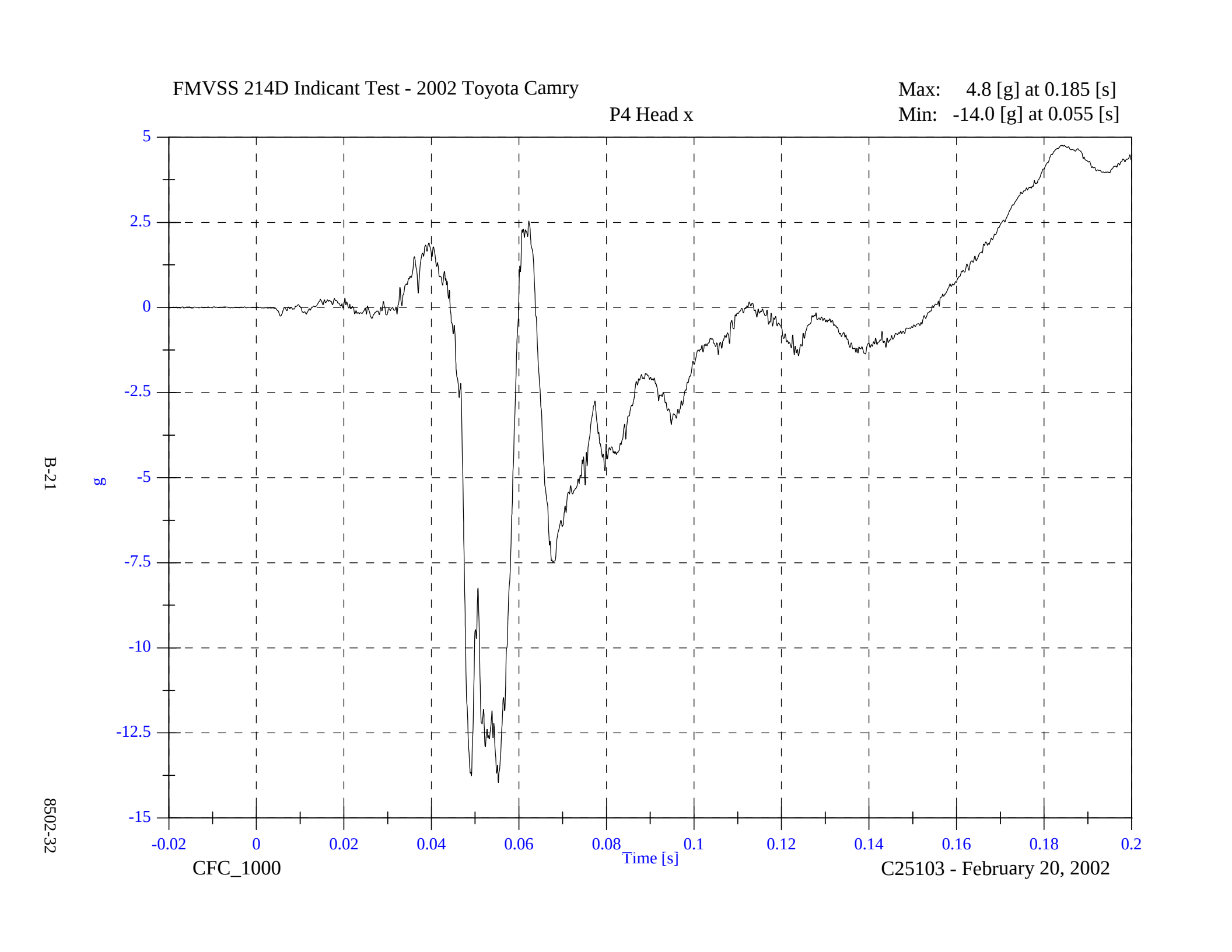
FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Head x
Max: 4.8 [g] at 0.185 [s]
Min: -14.0 [g] at 0.055 [s]
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
-15
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
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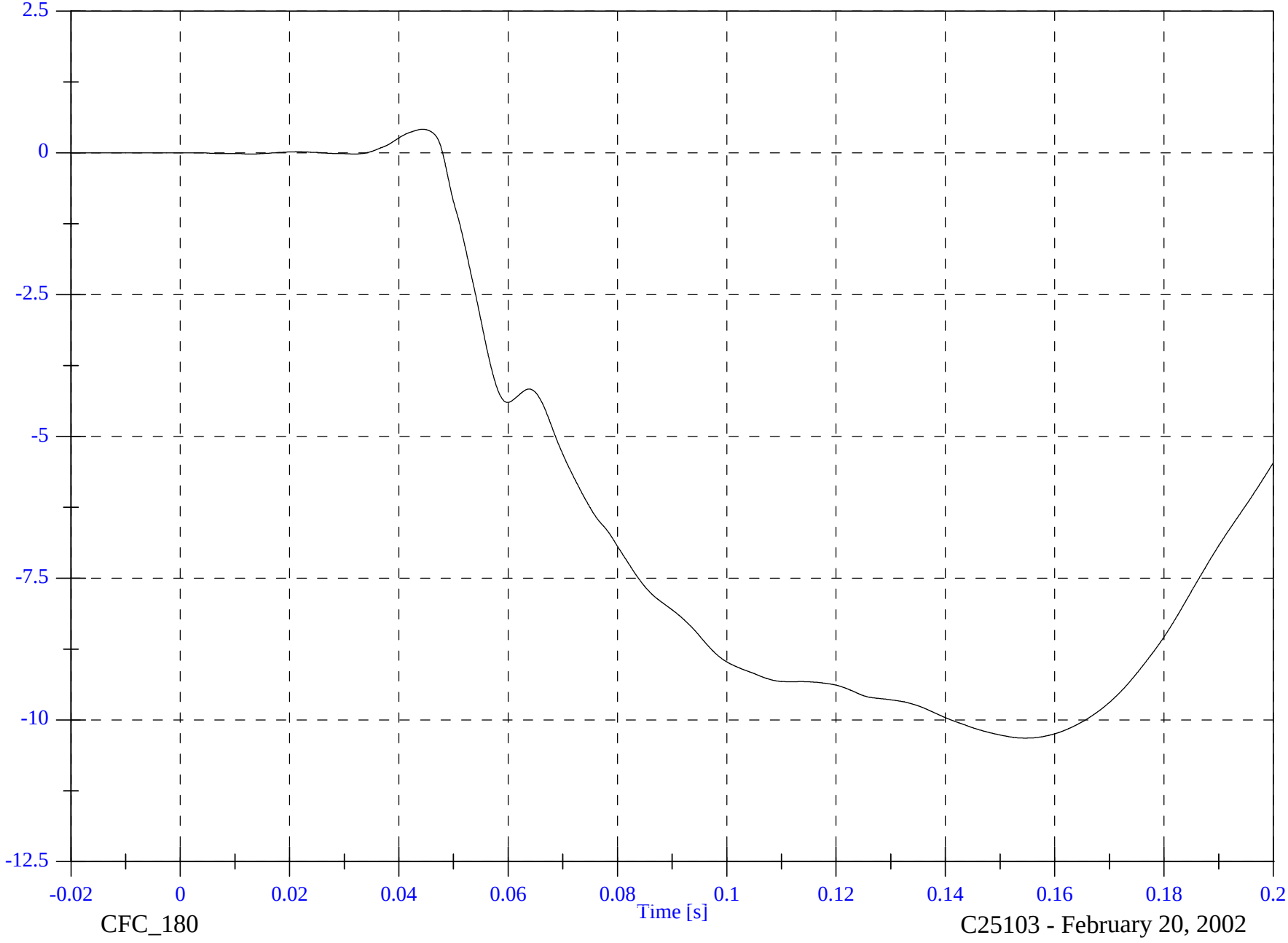
FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Head x Velocity

Max: 0.4 [kph] at 0.044 [s]

Min: -10.3 [kph] at 0.155 [s]



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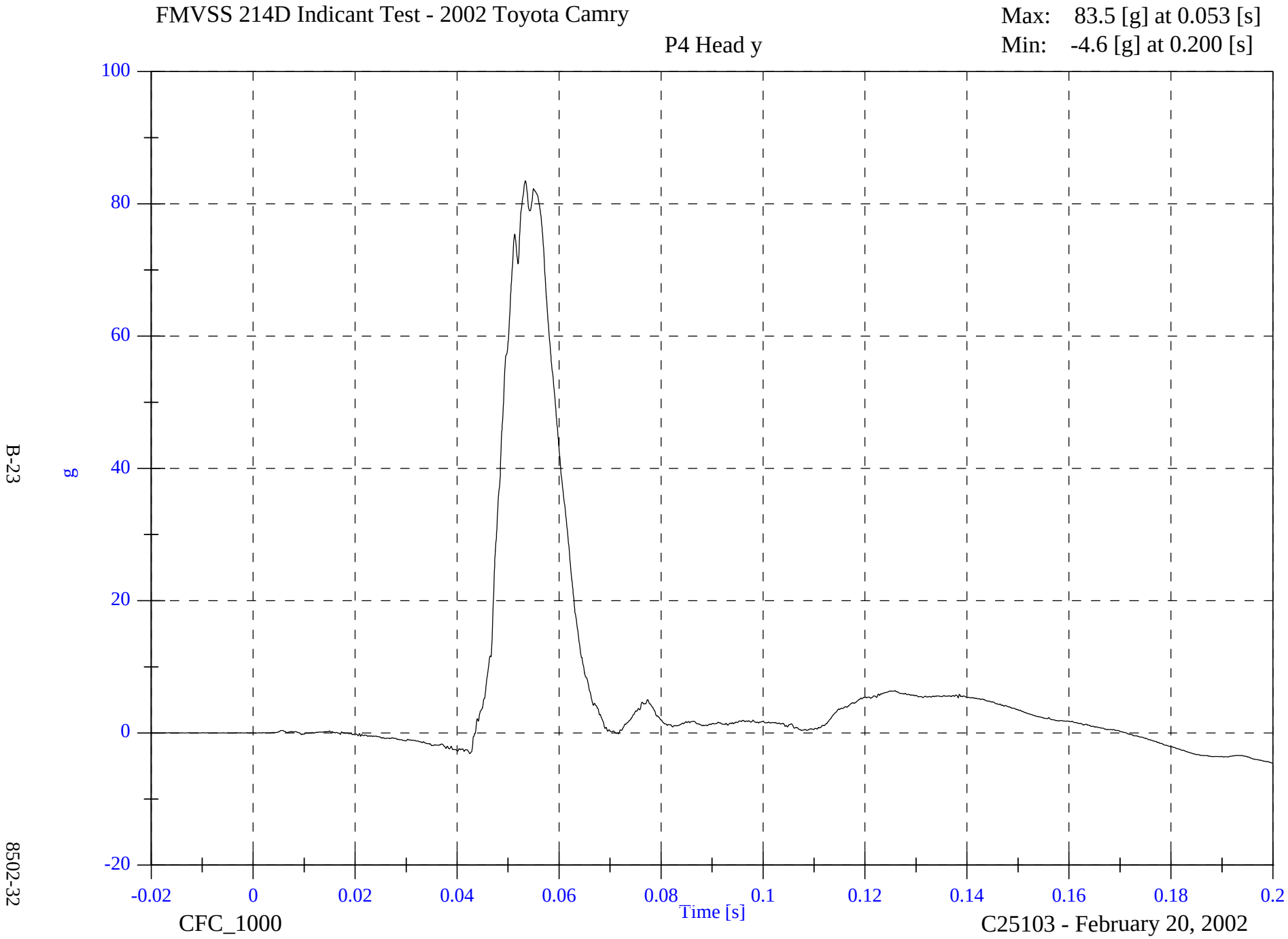
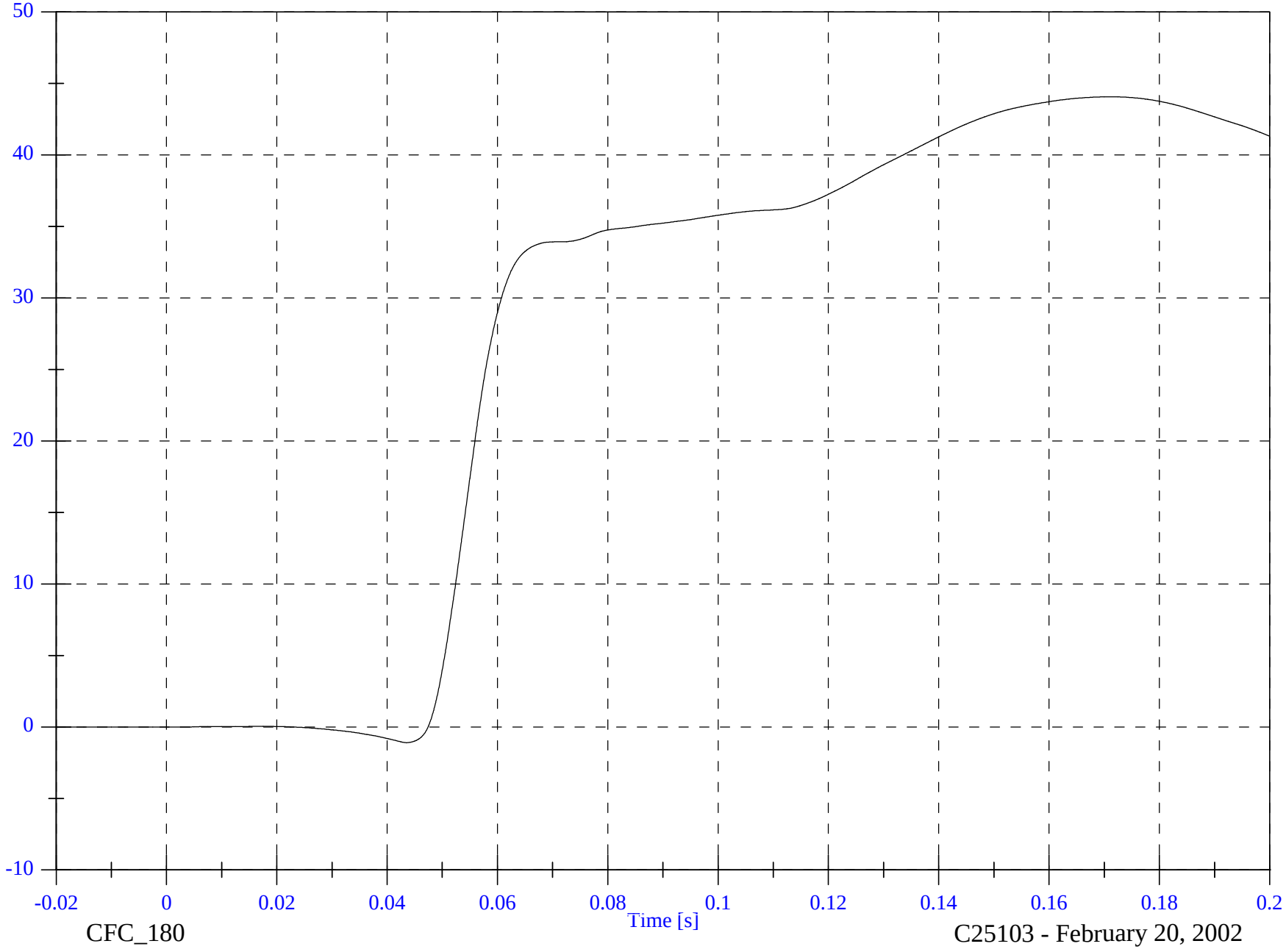

FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Head y
Max: 83.5 [g] at 0.053 [s]
Min: -4.6 [g] at 0.200 [s]
100
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Head y Velocity

Max: 44.1 [kph] at 0.171 [s]

Min: -1.1 [kph] at 0.044 [s]



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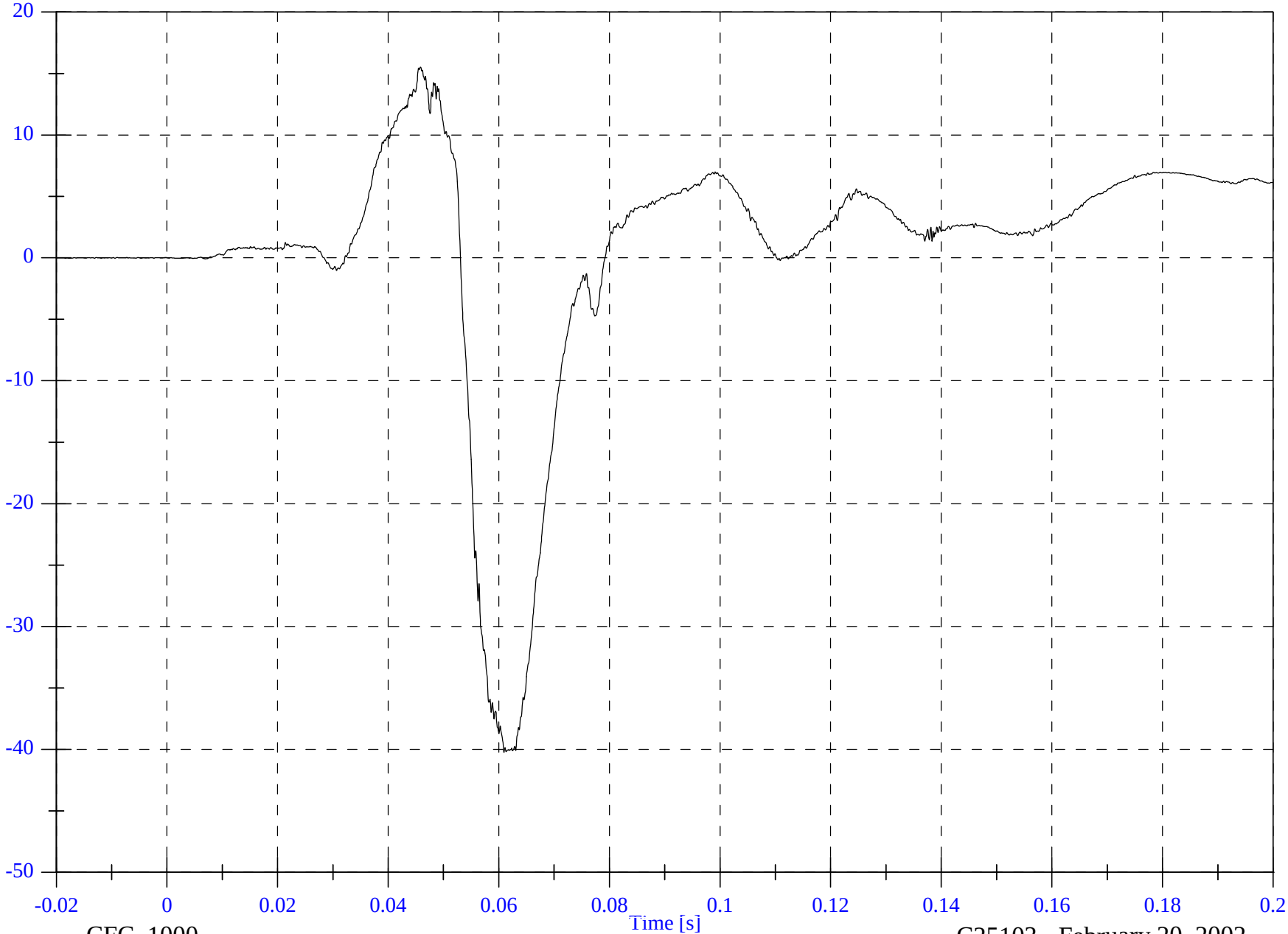
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Head z

Max: 15.5 [g] at 0.046 [s]

Min: -40.2 [g] at 0.061 [s]



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CFC_1000

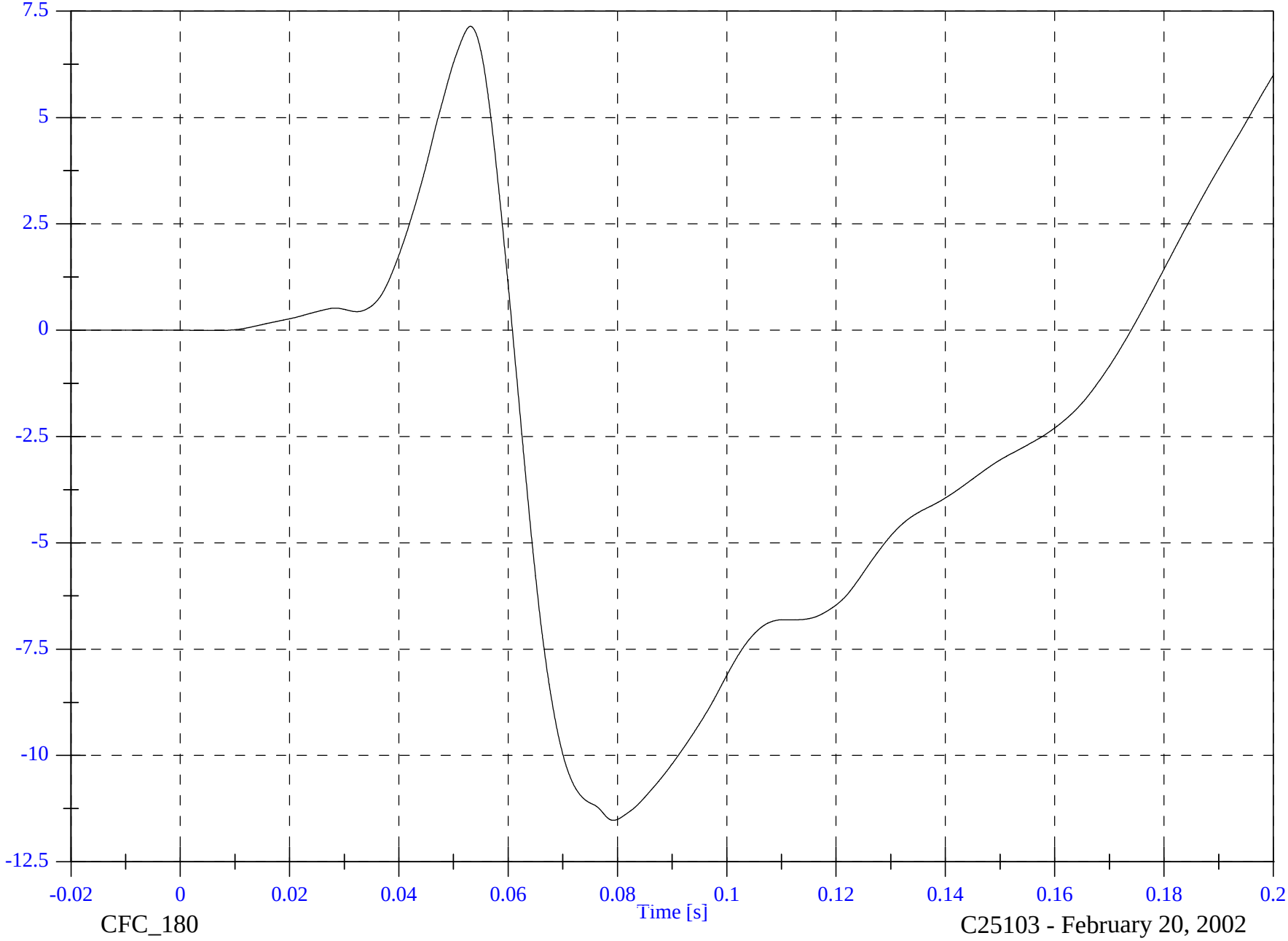
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Head z Velocity

Max: 7.1 [kph] at 0.053 [s]

Min: -11.5 [kph] at 0.079 [s]



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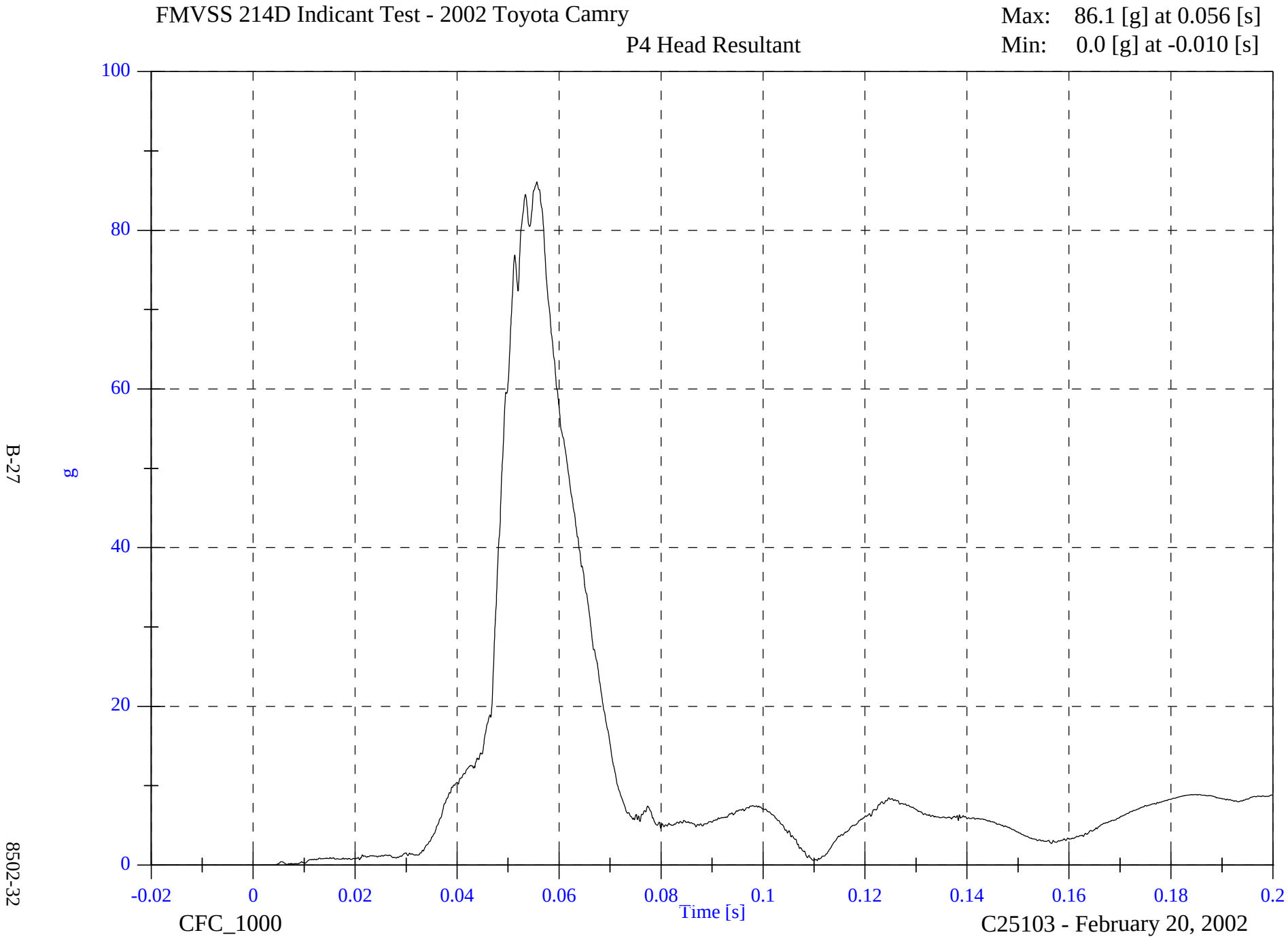
FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Head Resultant
Max: 86.1 [g] at 0.056 [s]
Min: 0.0 [g] at -0.010 [s]
100
80
60
40
20
0
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
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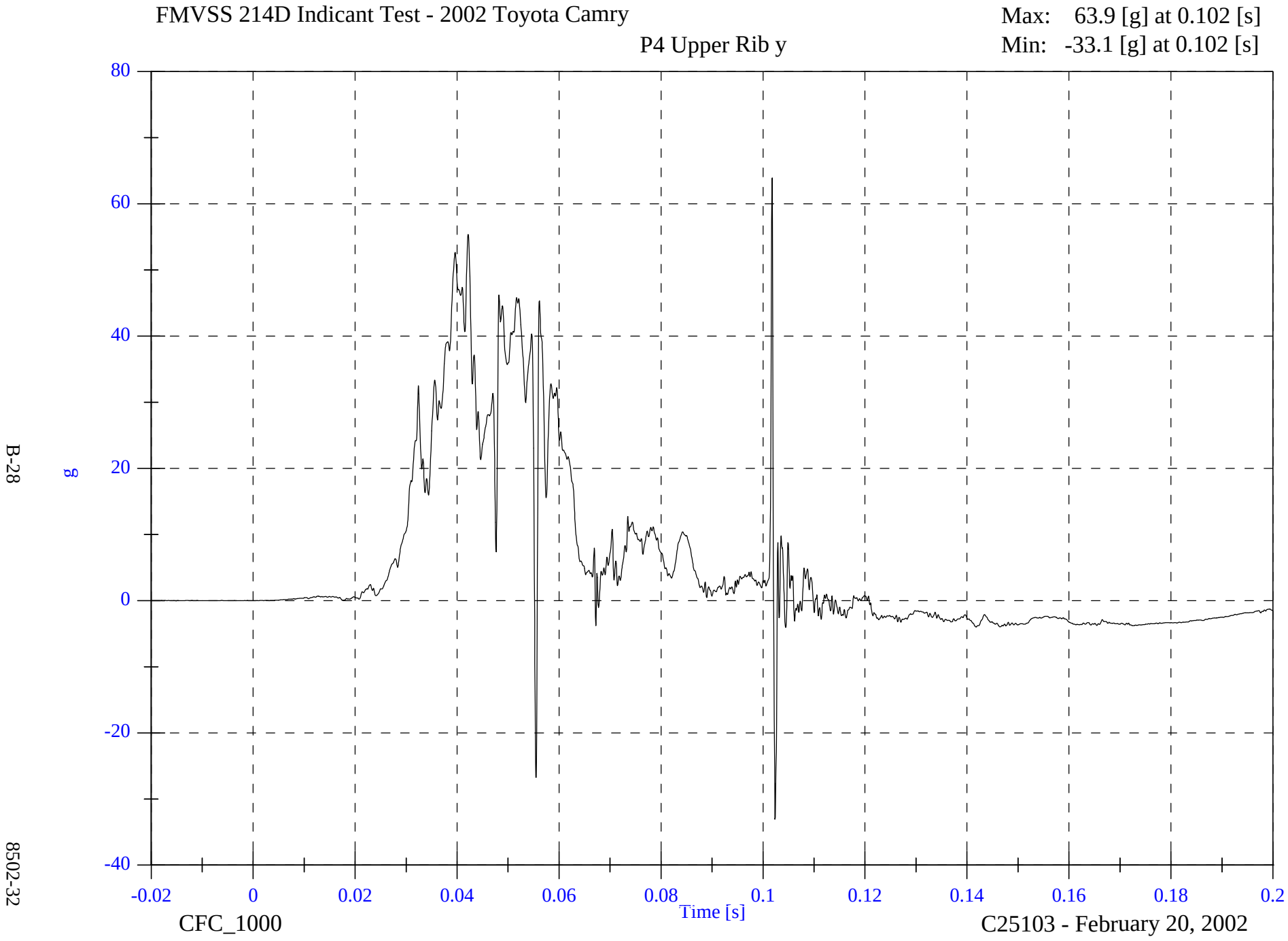
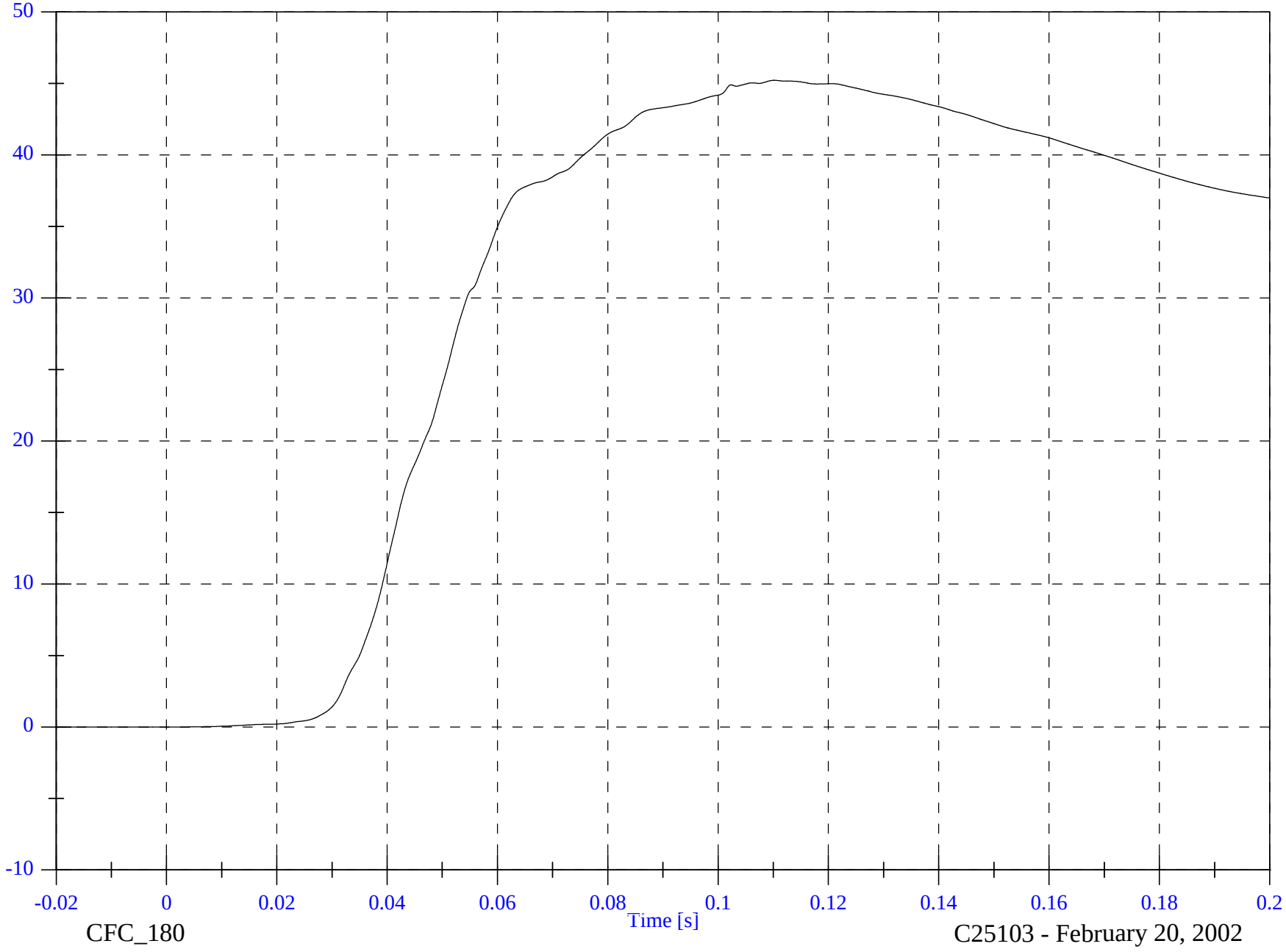

FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Upper Rib y
Max: 63.9 [g] at 0.102 [s]
Min: -33.1 [g] at 0.102 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Upper Rib y Velocity

Max: 45.2 [kph] at 0.110 [s]

Min: -0.0 [kph] at -0.018 [s]



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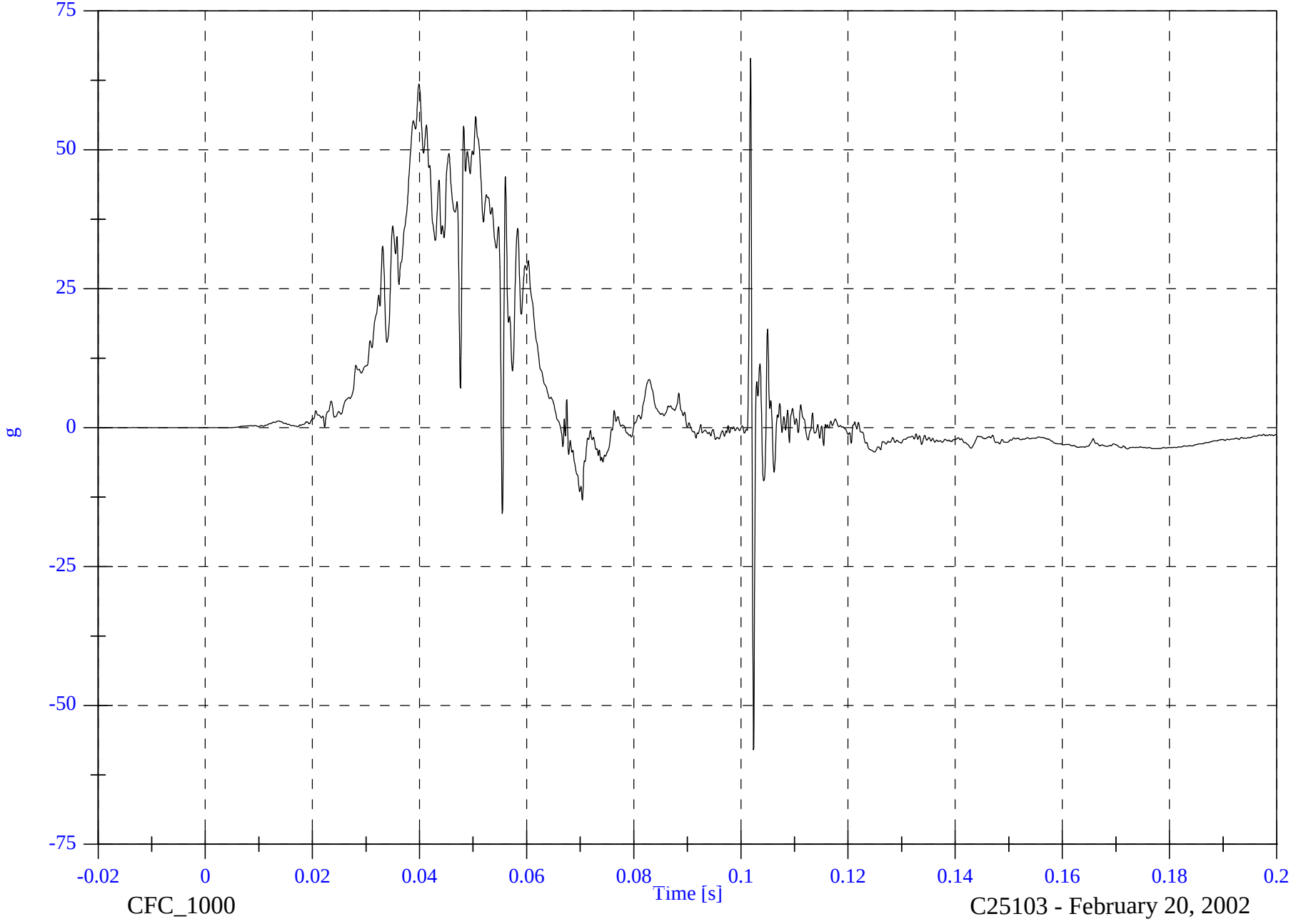
FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Rib y

Max: 66.5 [g] at 0.102 [s]

Min: -58.0 [g] at 0.102 [s]



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CFC_1000

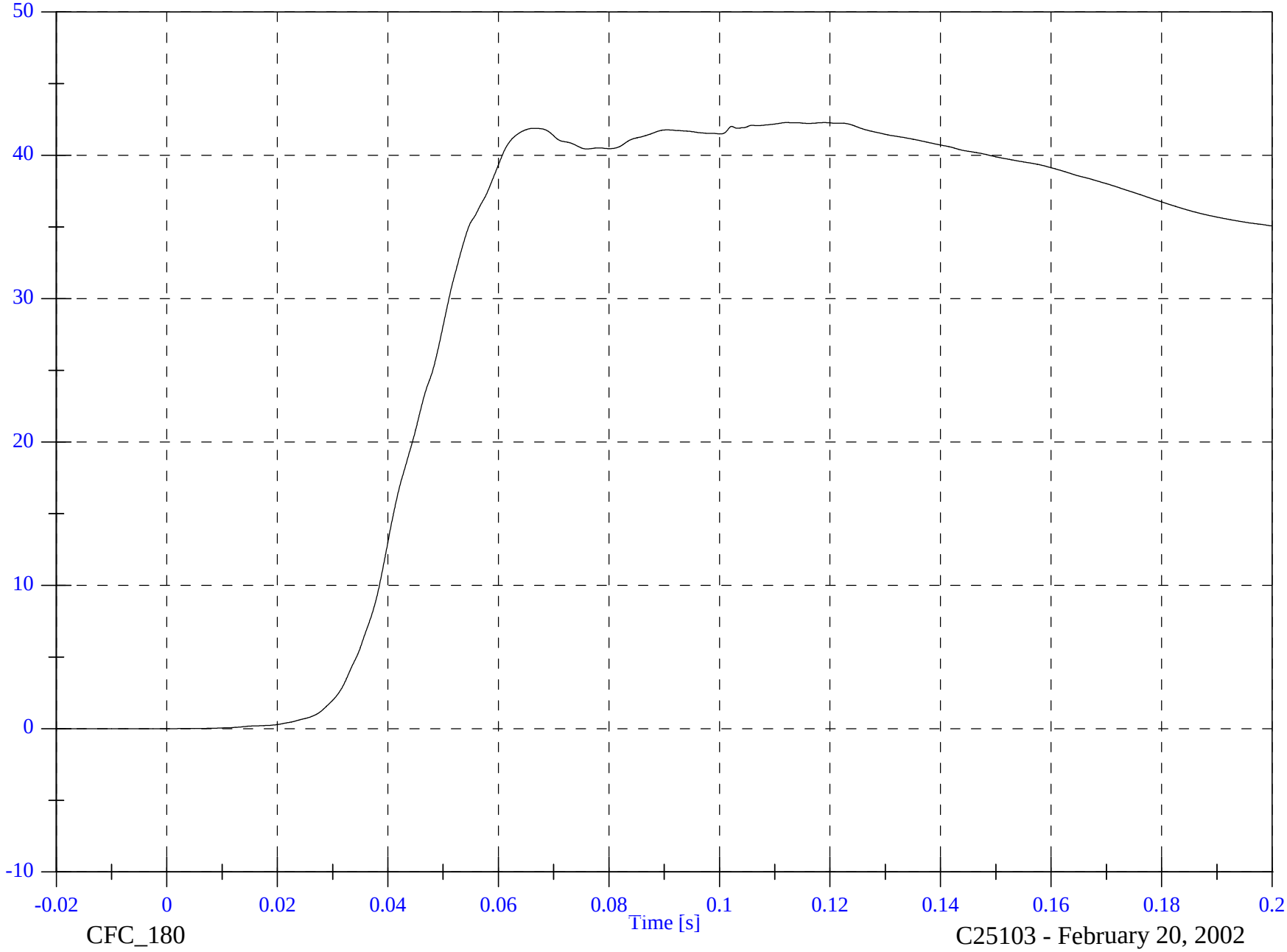
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Rib y Velocity

Max: 42.3 [kph] at 0.112 [s]

Min: -0.0 [kph] at -0.014 [s]



CFC_180

C25103 - February 20, 2002

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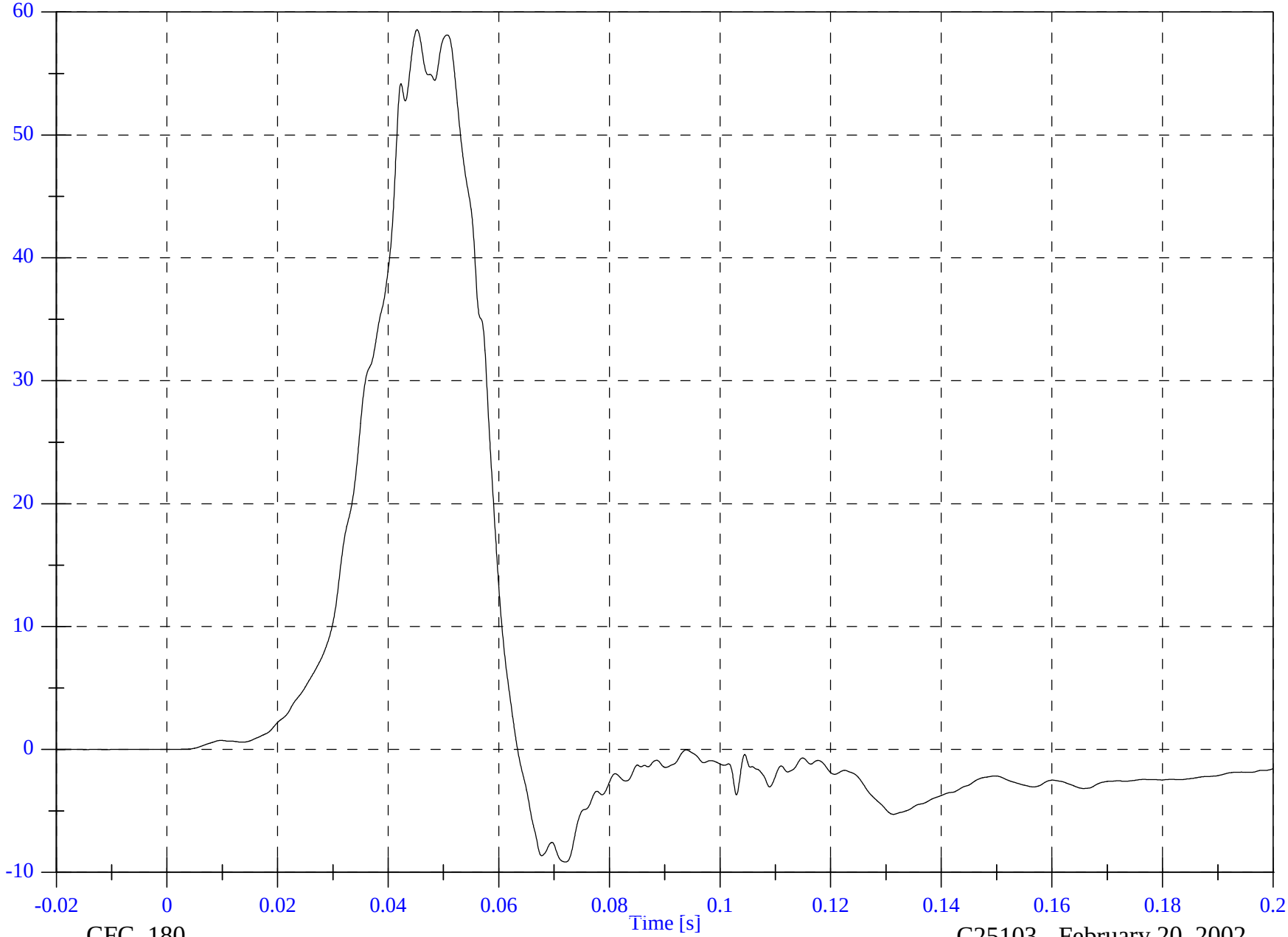
FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Spine y

Max: 58.6 [g] at 0.045 [s]

Min: -9.1 [g] at 0.072 [s]



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8502-32

CFC_180

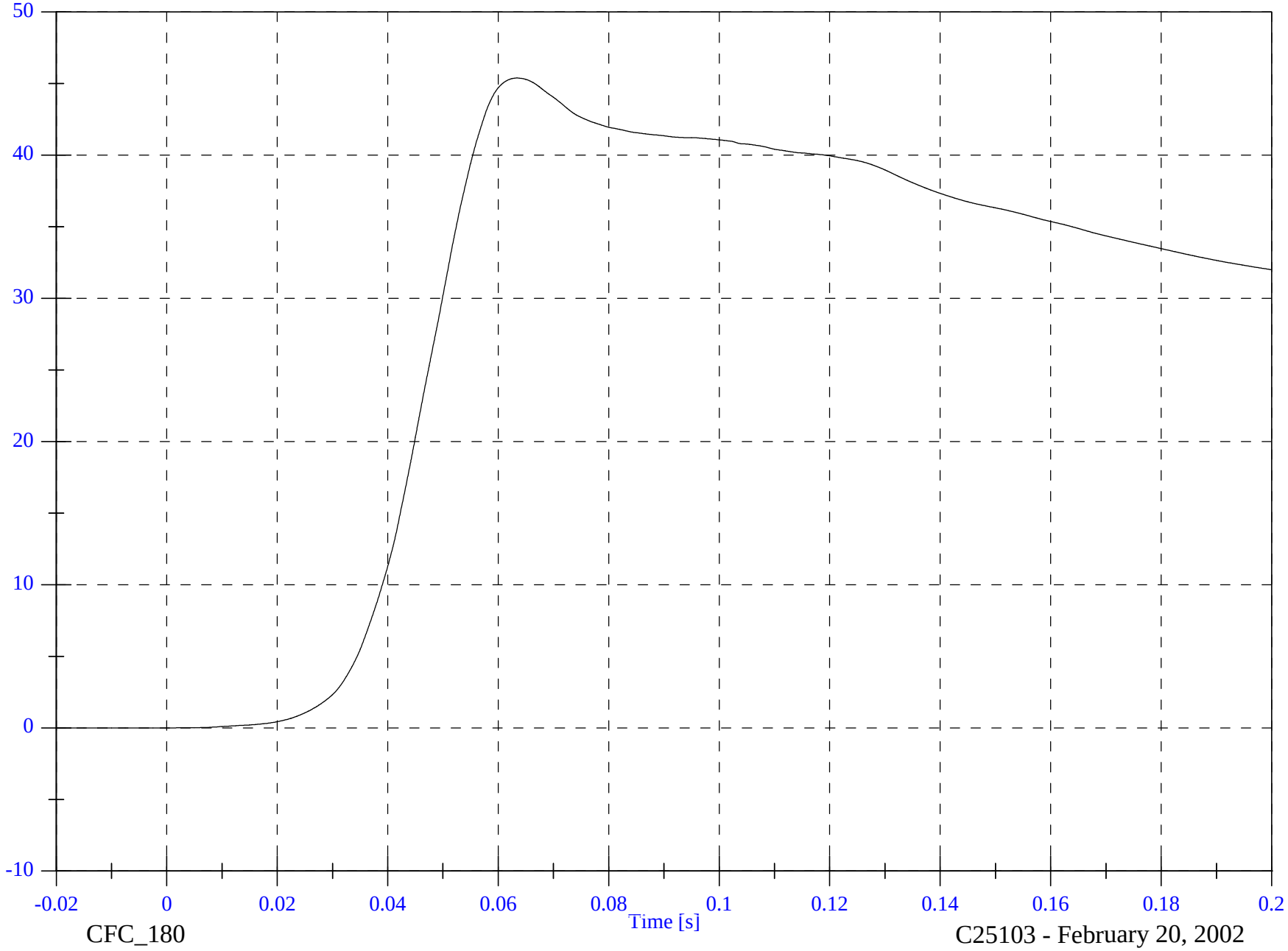
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Spine y Velocity

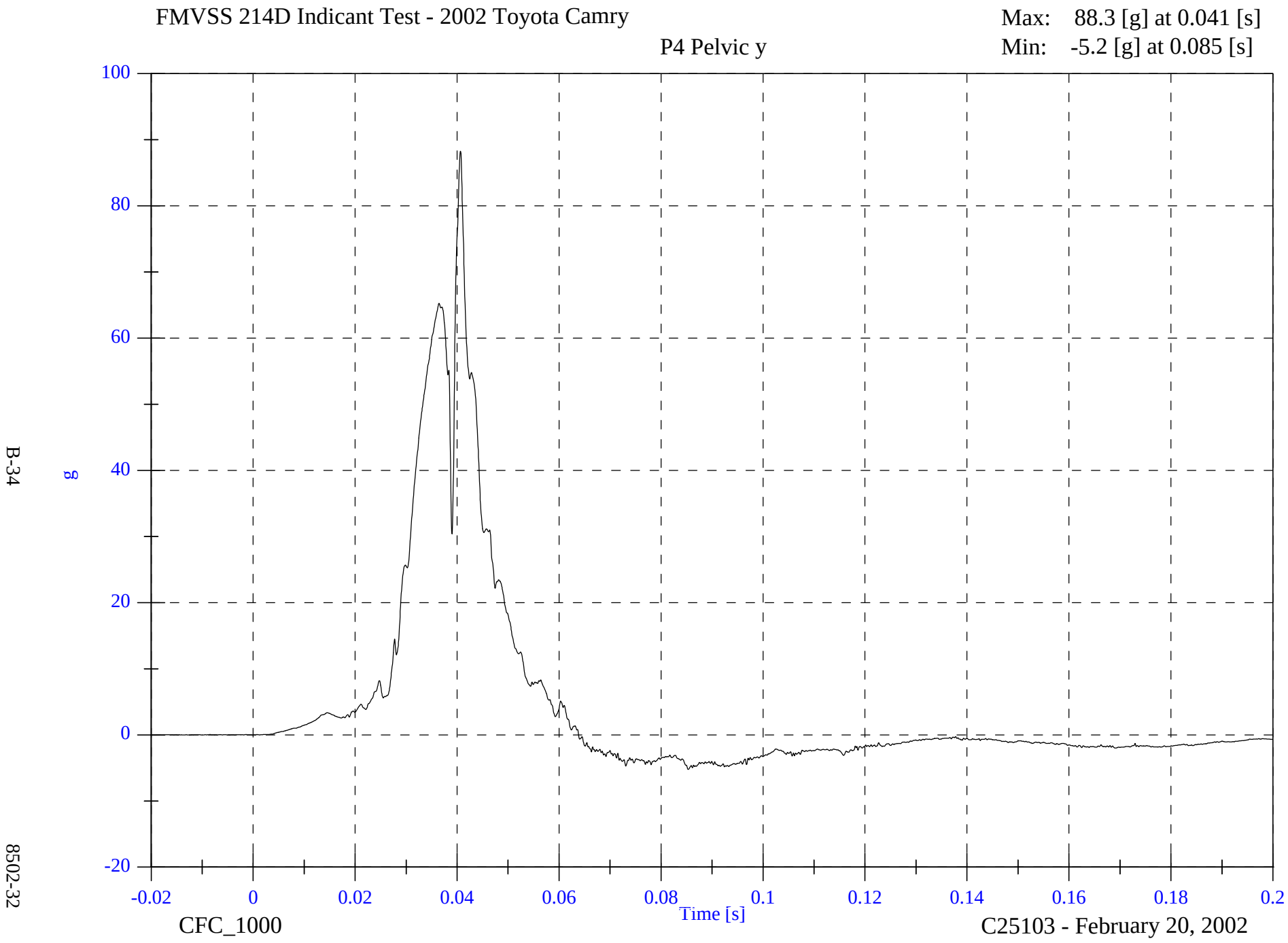
Max: 45.4 [kph] at 0.063 [s]

Min: -0.0 [kph] at -0.009 [s]



CFC_180

C25103 - February 20, 2002

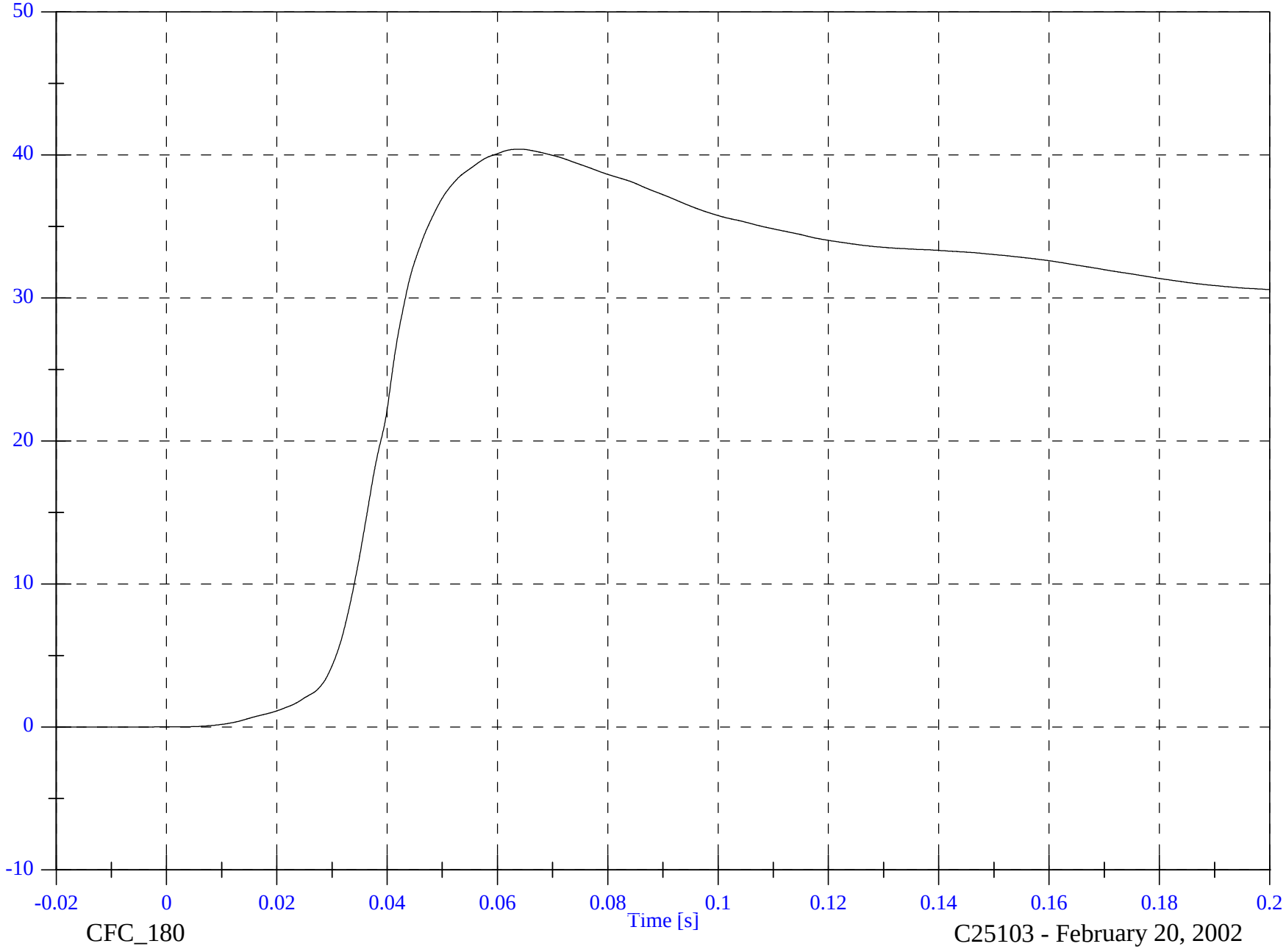

FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Pelvic y
Max: 88.3 [g] at 0.041 [s]
Min: -5.2 [g] at 0.085 [s]
100
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Pelvic y Velocity

Max: 40.4 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.020 [s]



CFC_180

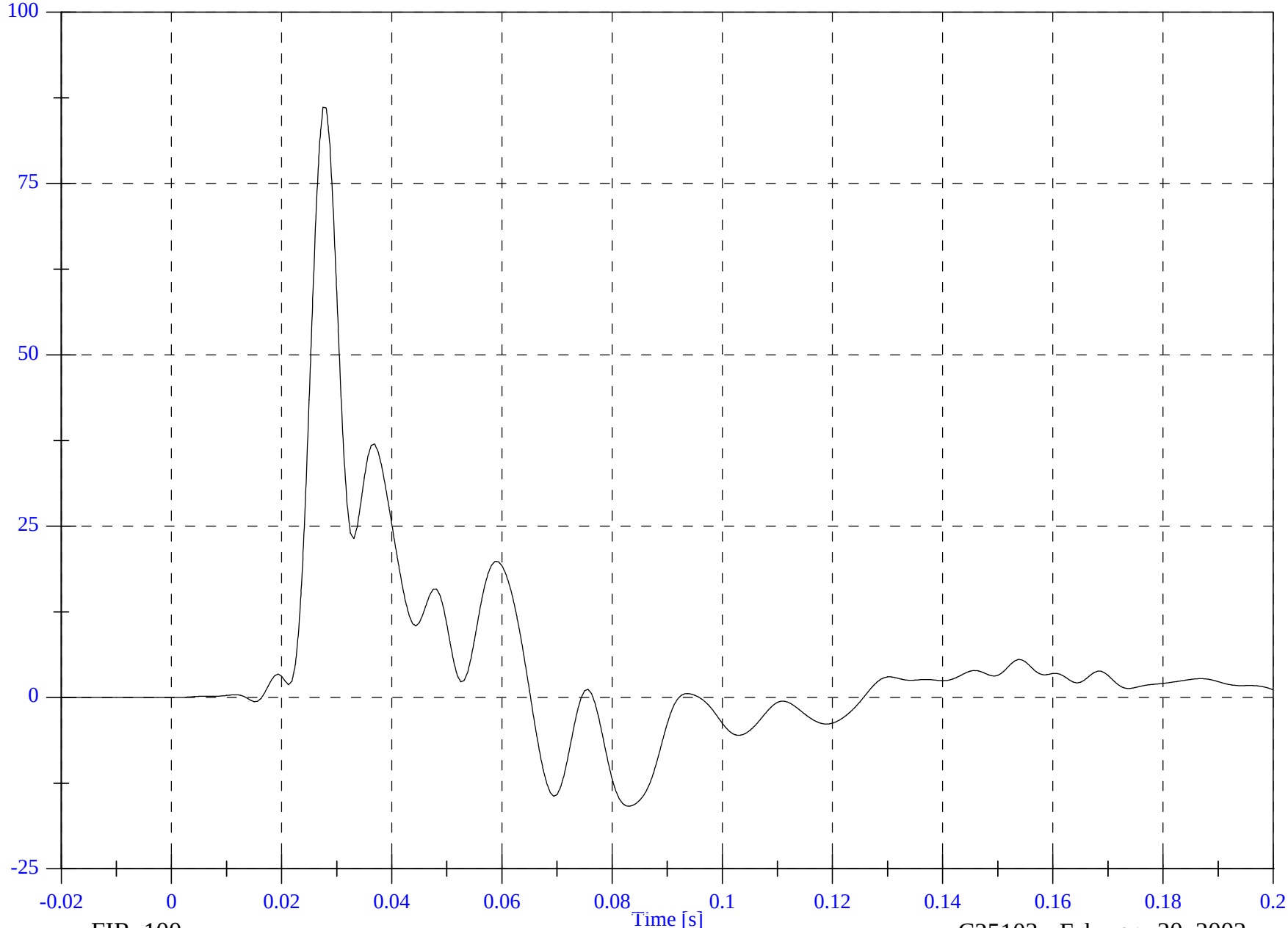
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Upper Rib y

Max: 86.1 [g] at 0.028 [s]

Min: -15.9 [g] at 0.083 [s]



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FIR_100

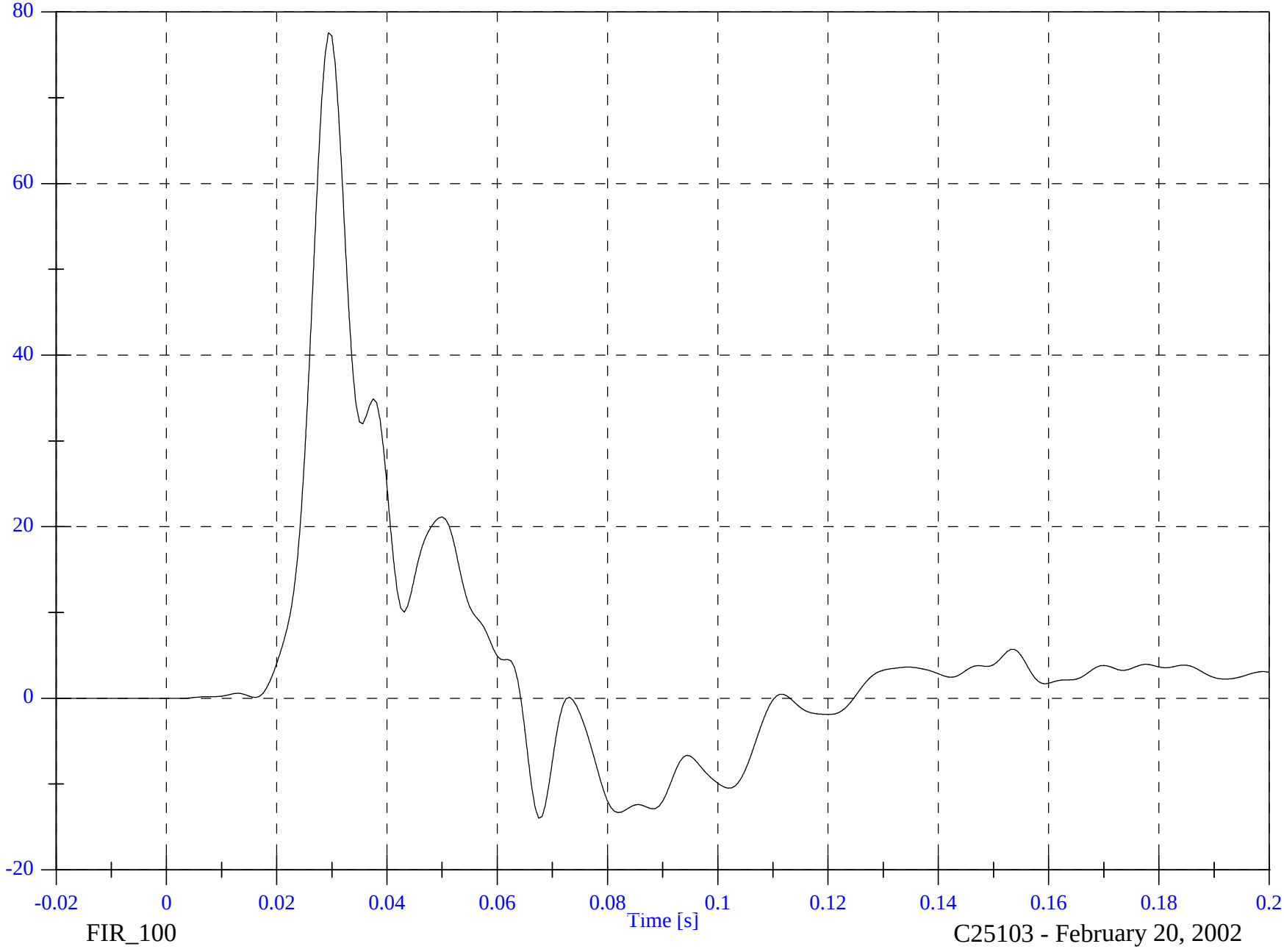
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Rib y

Max: 77.6 [g] at 0.029 [s]

Min: -14.0 [g] at 0.068 [s]



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FIR_100

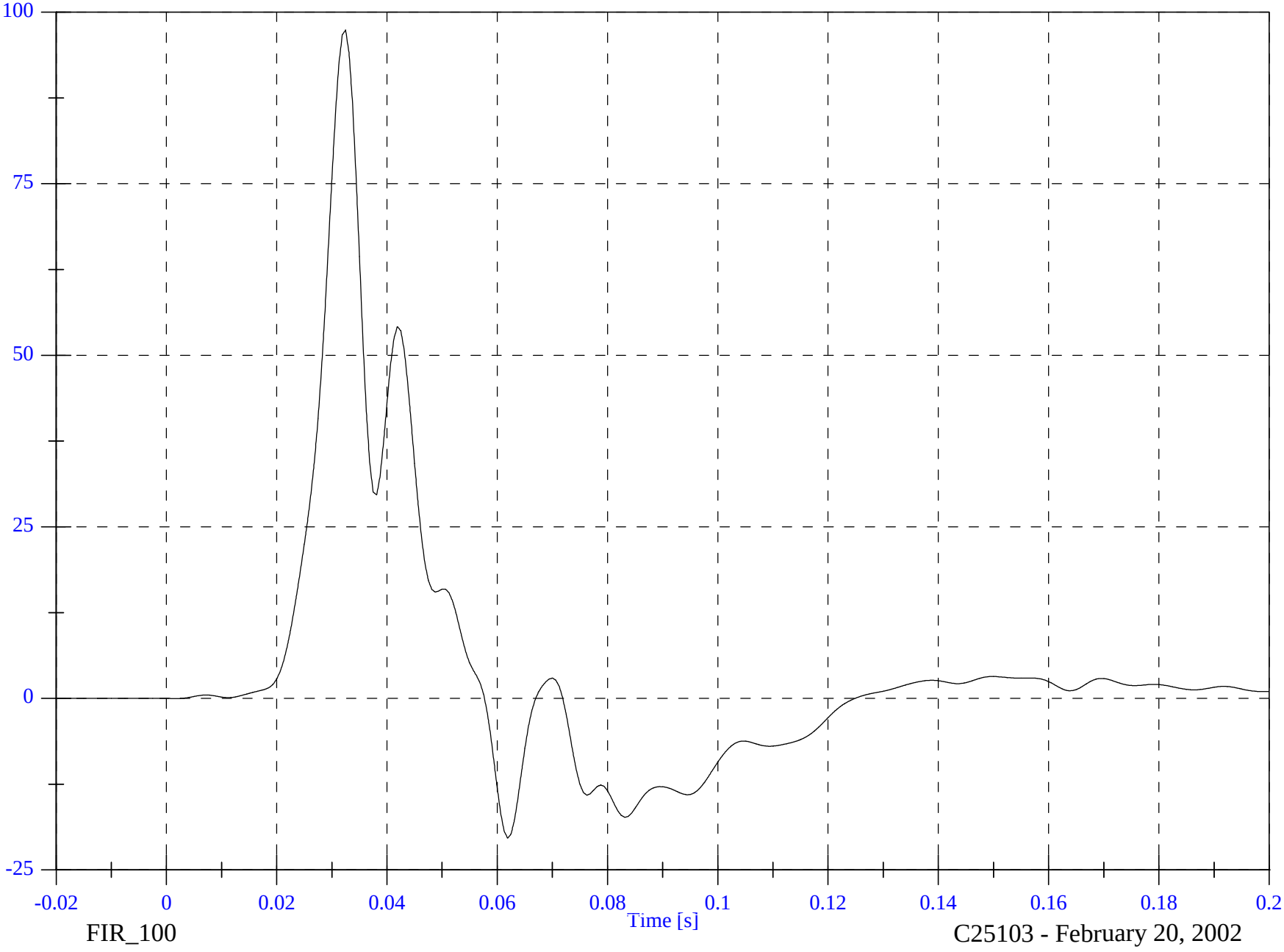
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Spine y

Max: 97.4 [g] at 0.032 [s]

Min: -20.4 [g] at 0.062 [s]



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FIR_100

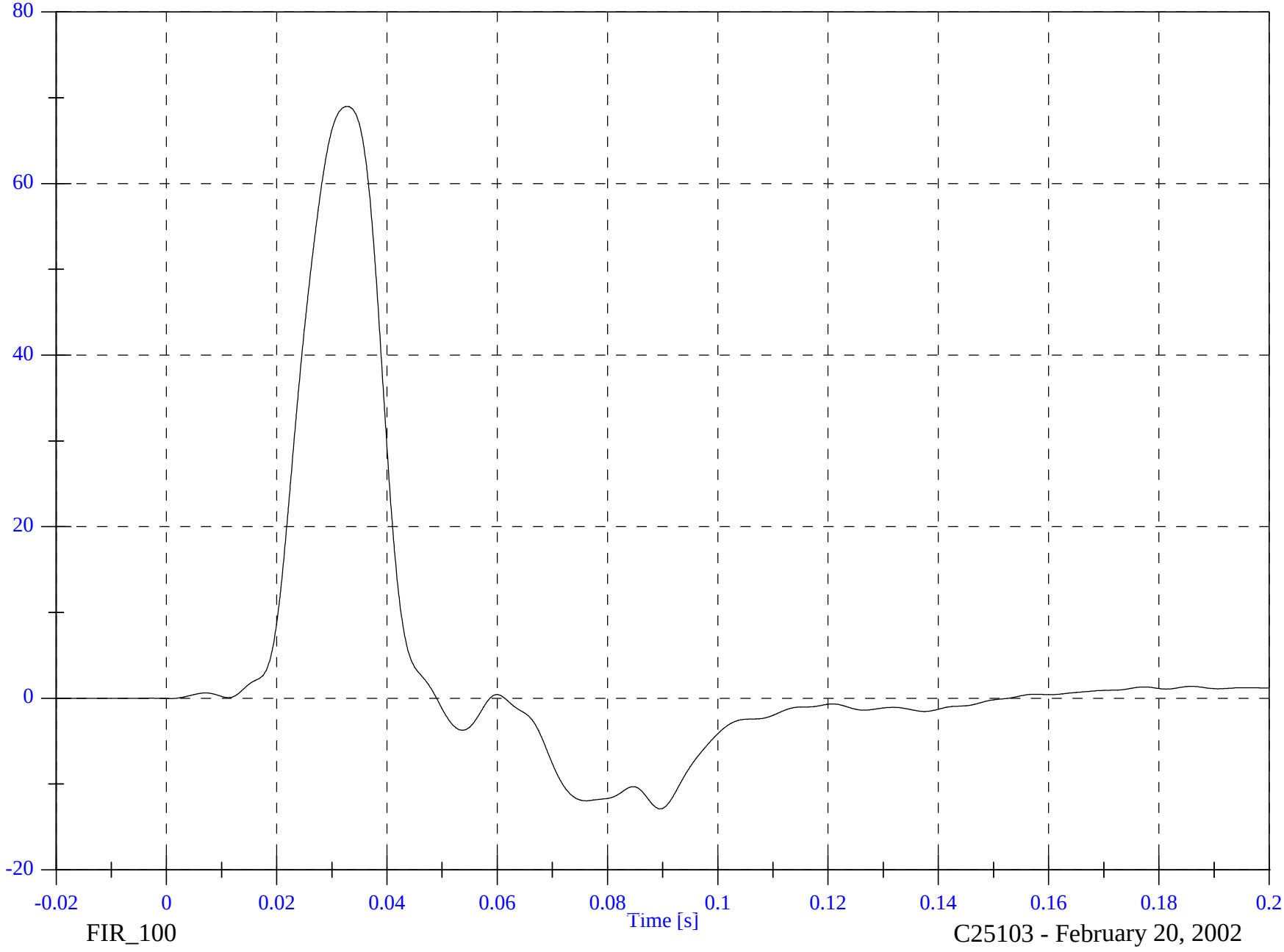
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Pelvic y

Max: 69.0 [g] at 0.032 [s]

Min: -12.9 [g] at 0.089 [s]



B-39

8502-32

FIR_100

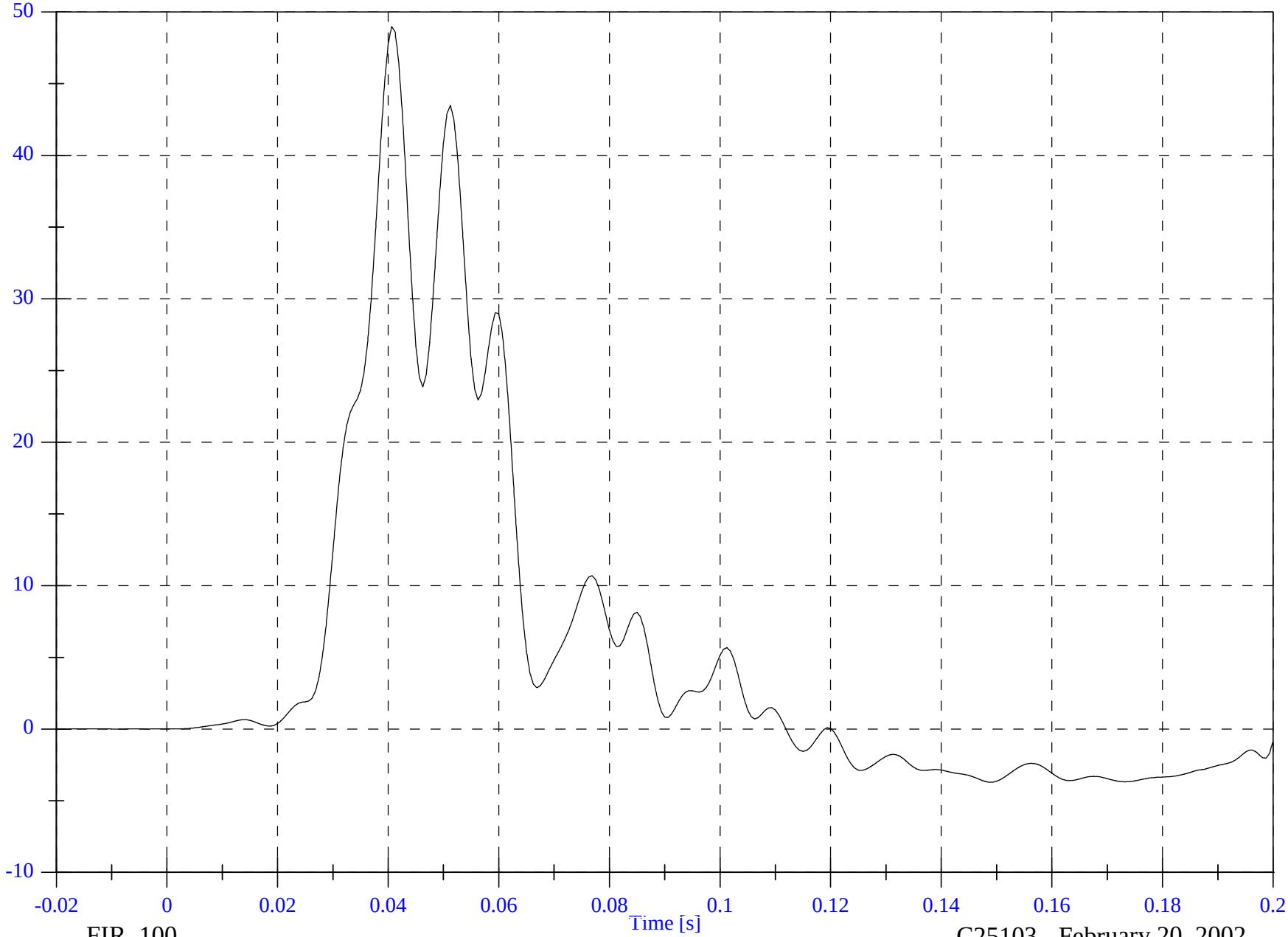
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Upper Rib y

Max: 49.0 [g] at 0.041 [s]

Min: -3.7 [g] at 0.149 [s]



B-40

8502-32

FIR_100

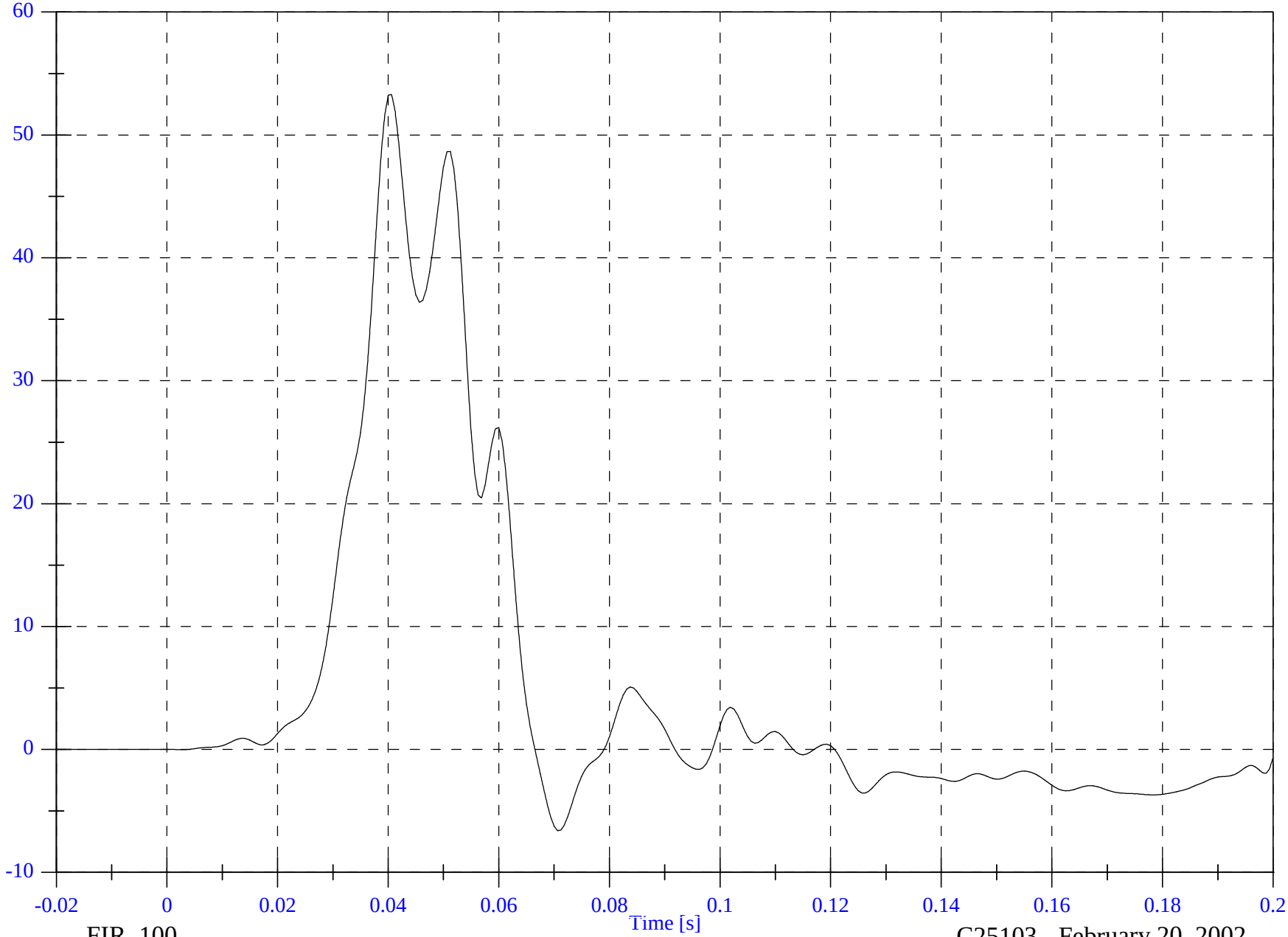
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Rib y

Max: 53.3 [g] at 0.041 [s]

Min: -6.6 [g] at 0.071 [s]



FIR_100

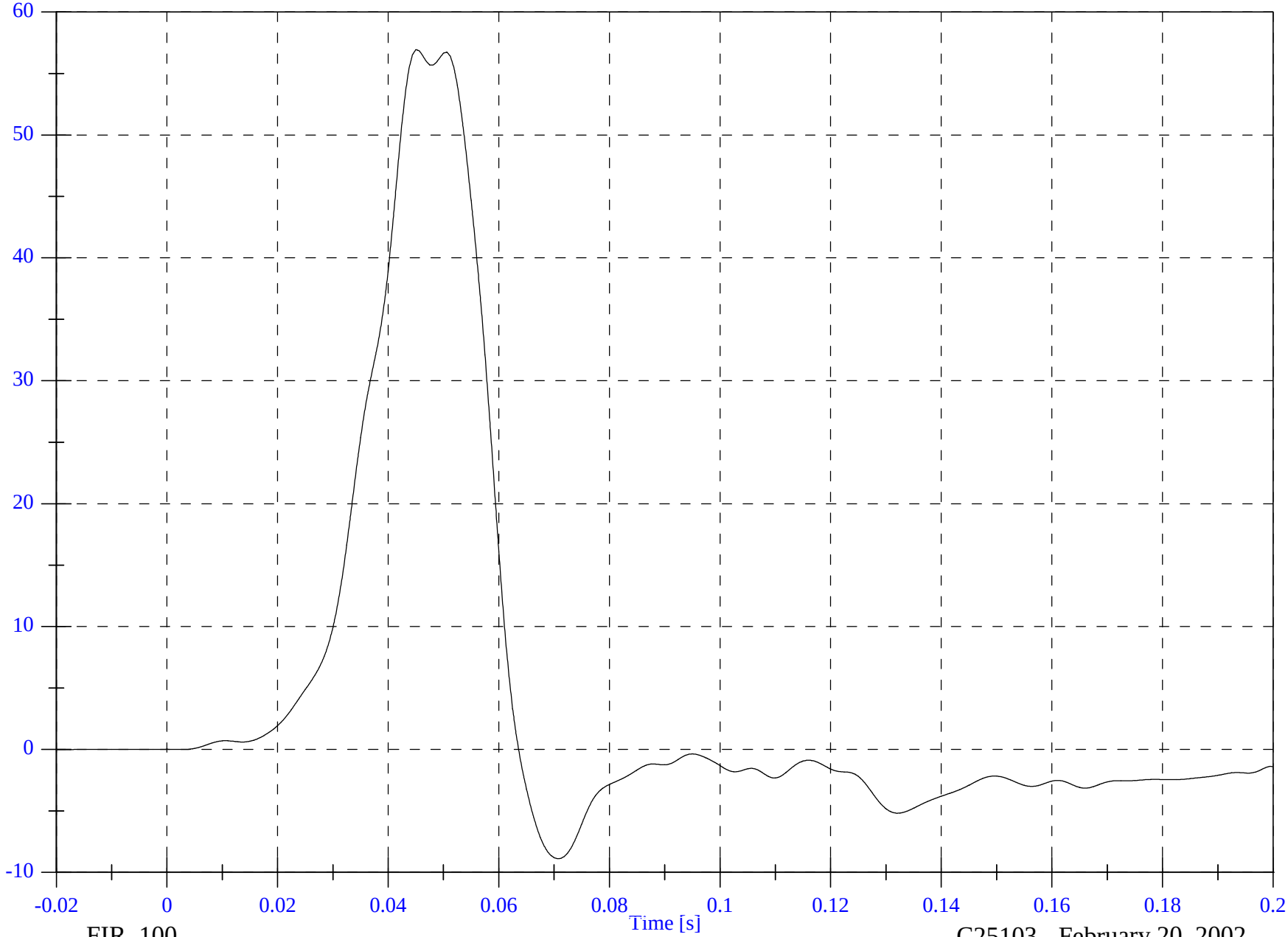
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Spine y

Max: 56.9 [g] at 0.045 [s]

Min: -8.9 [g] at 0.071 [s]



B-42

8502-32

FIR_100

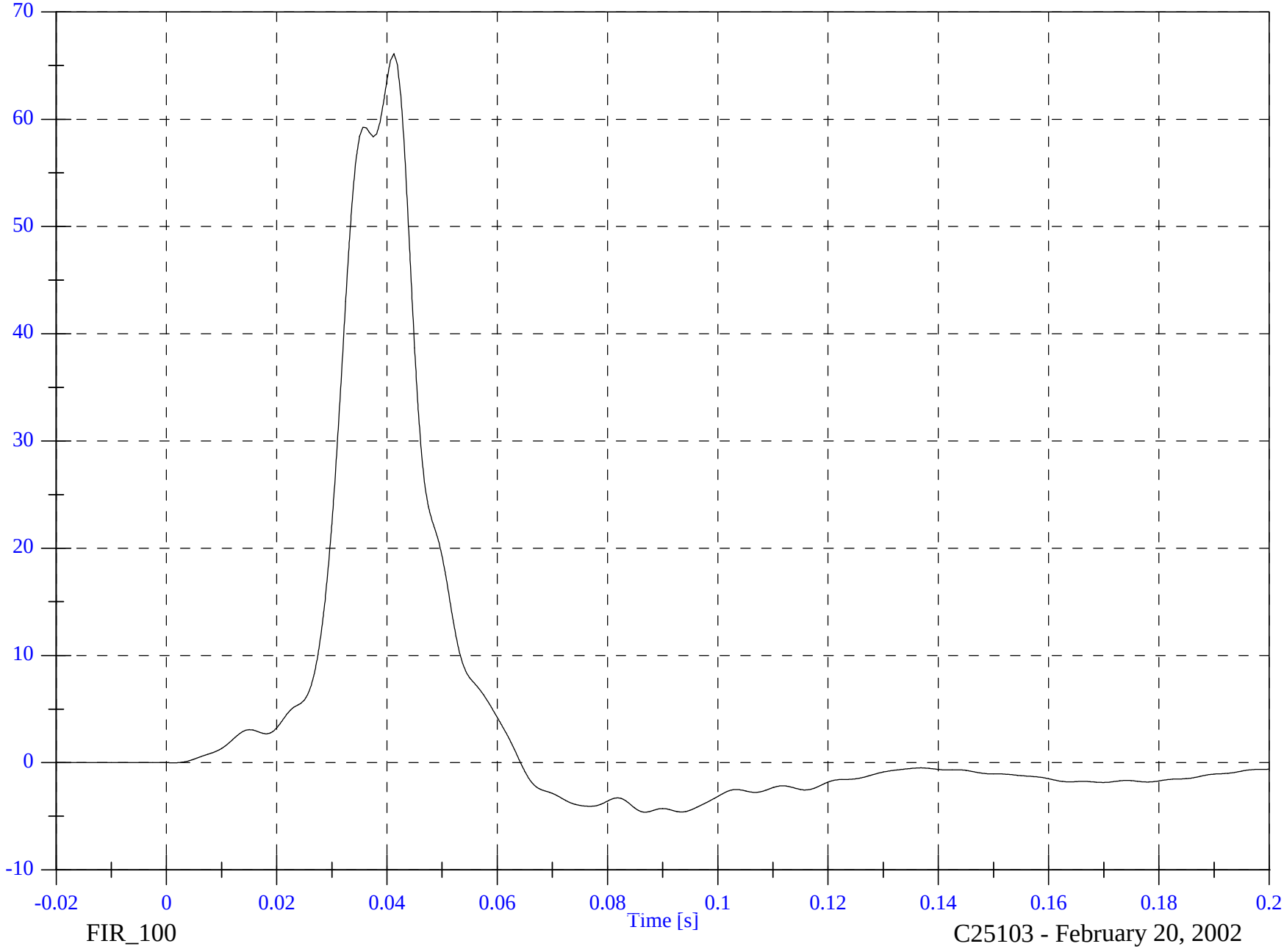
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Pelvic y

Max: 66.1 [g] at 0.041 [s]

Min: -4.6 [g] at 0.087 [s]



B-43

8502-32

FIR_100

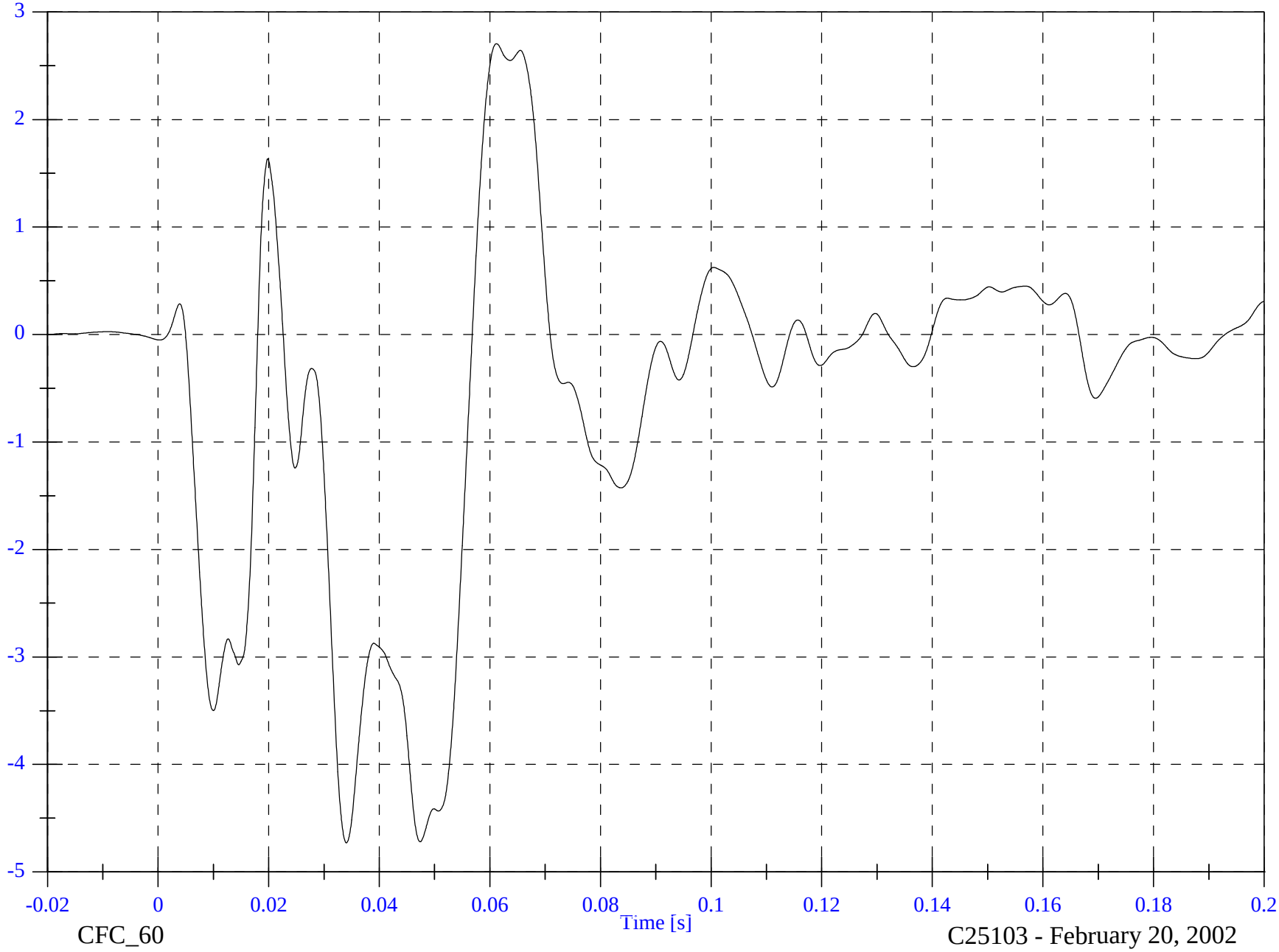
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat X

Max: 2.7 [g] at 0.061 [s]

Min: -4.7 [g] at 0.034 [s]



CFC_60

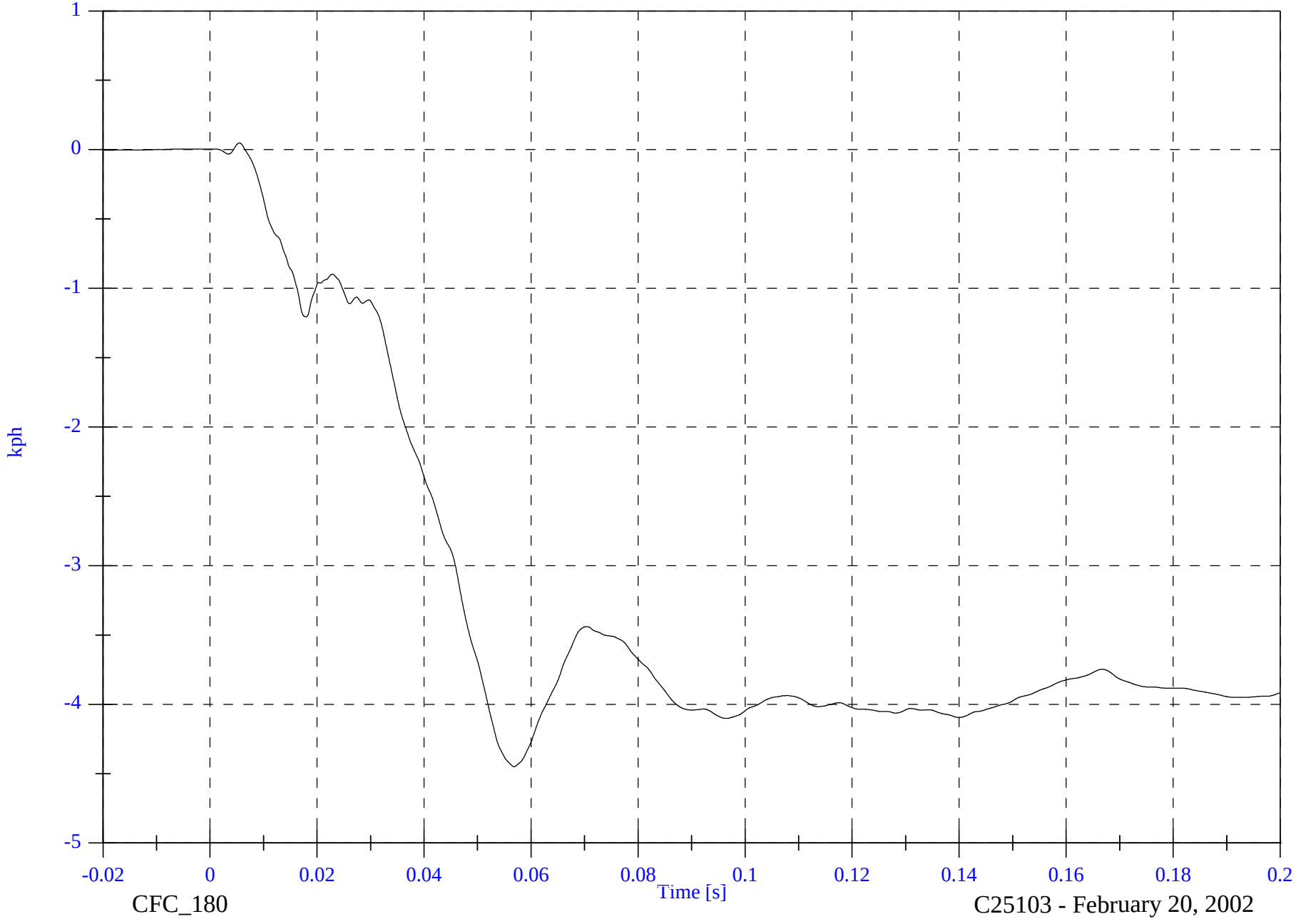
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat X Velocity

Max: 0.0 [kph] at 0.006 [s]

Min: -4.4 [kph] at 0.057 [s]



CFC_180

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat Y

Max: 26.7 [g] at 0.005 [s]

Min: -1.6 [g] at 0.198 [s]

CFC_60

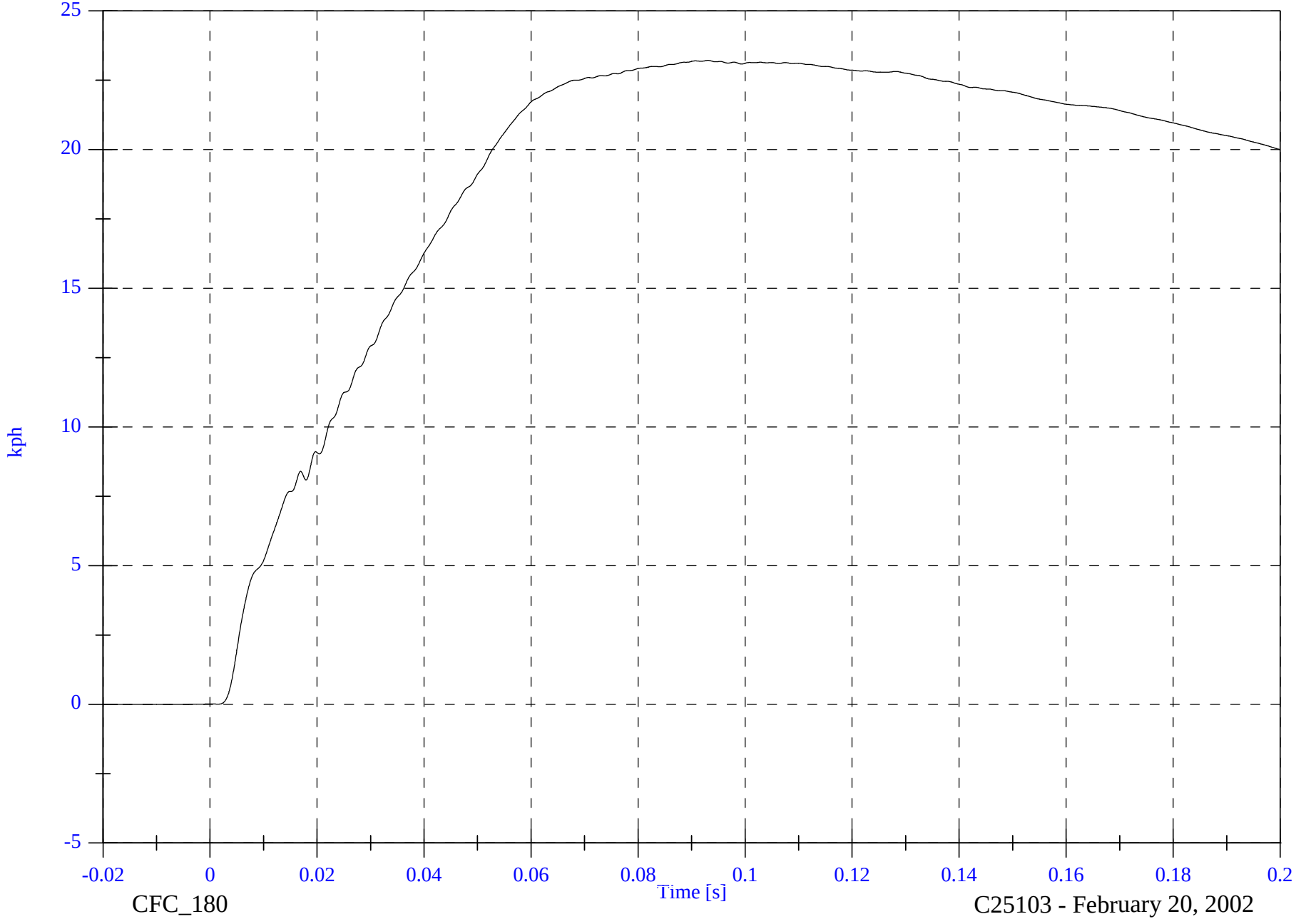
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat Y Velocity

Max: 23.2 [kph] at 0.093 [s]

Min: -0.0 [kph] at -0.017 [s]



CFC_180

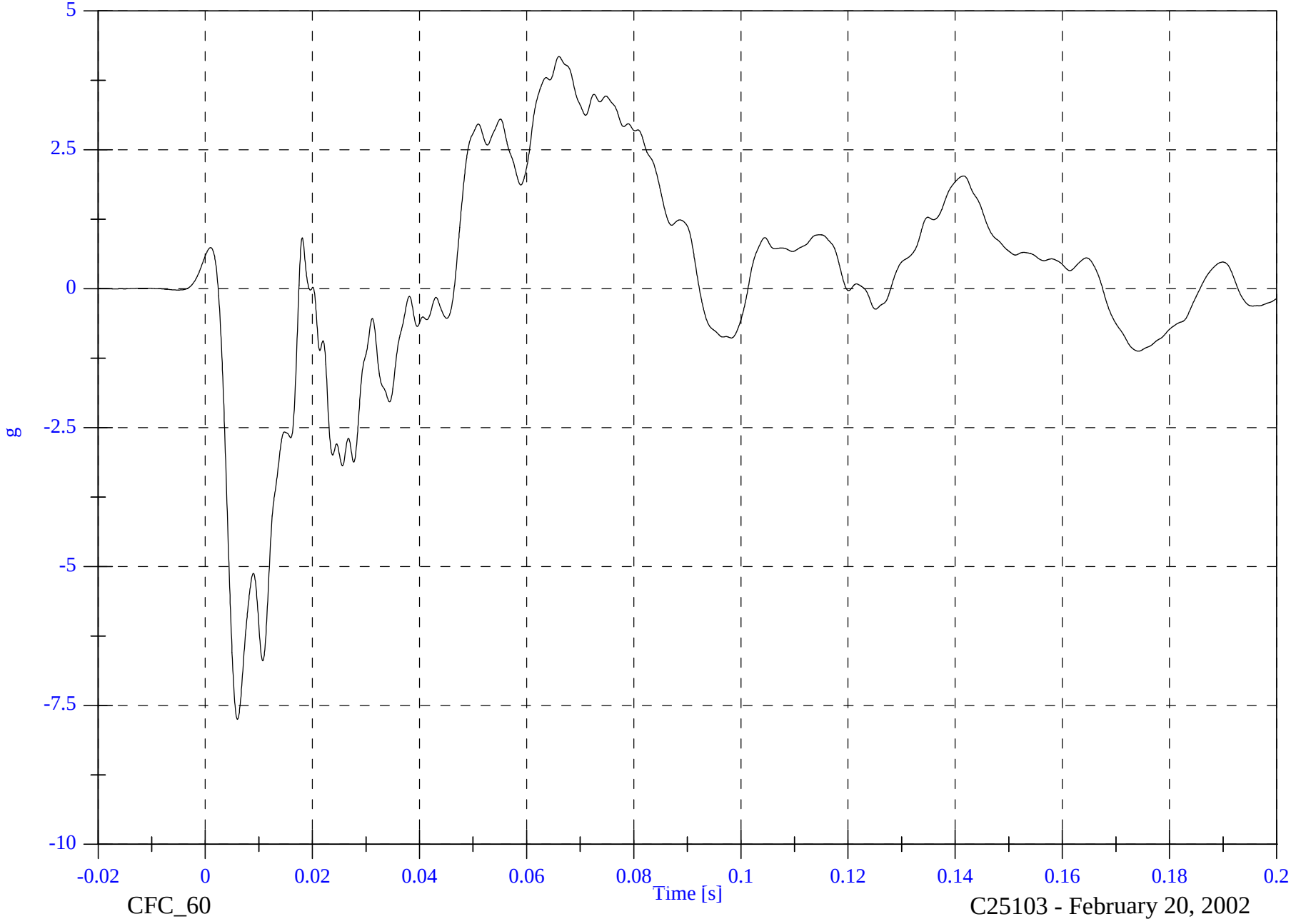
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat Z

Max: 4.2 [g] at 0.066 [s]

Min: -7.8 [g] at 0.006 [s]



CFC_60

C25103 - February 20, 2002

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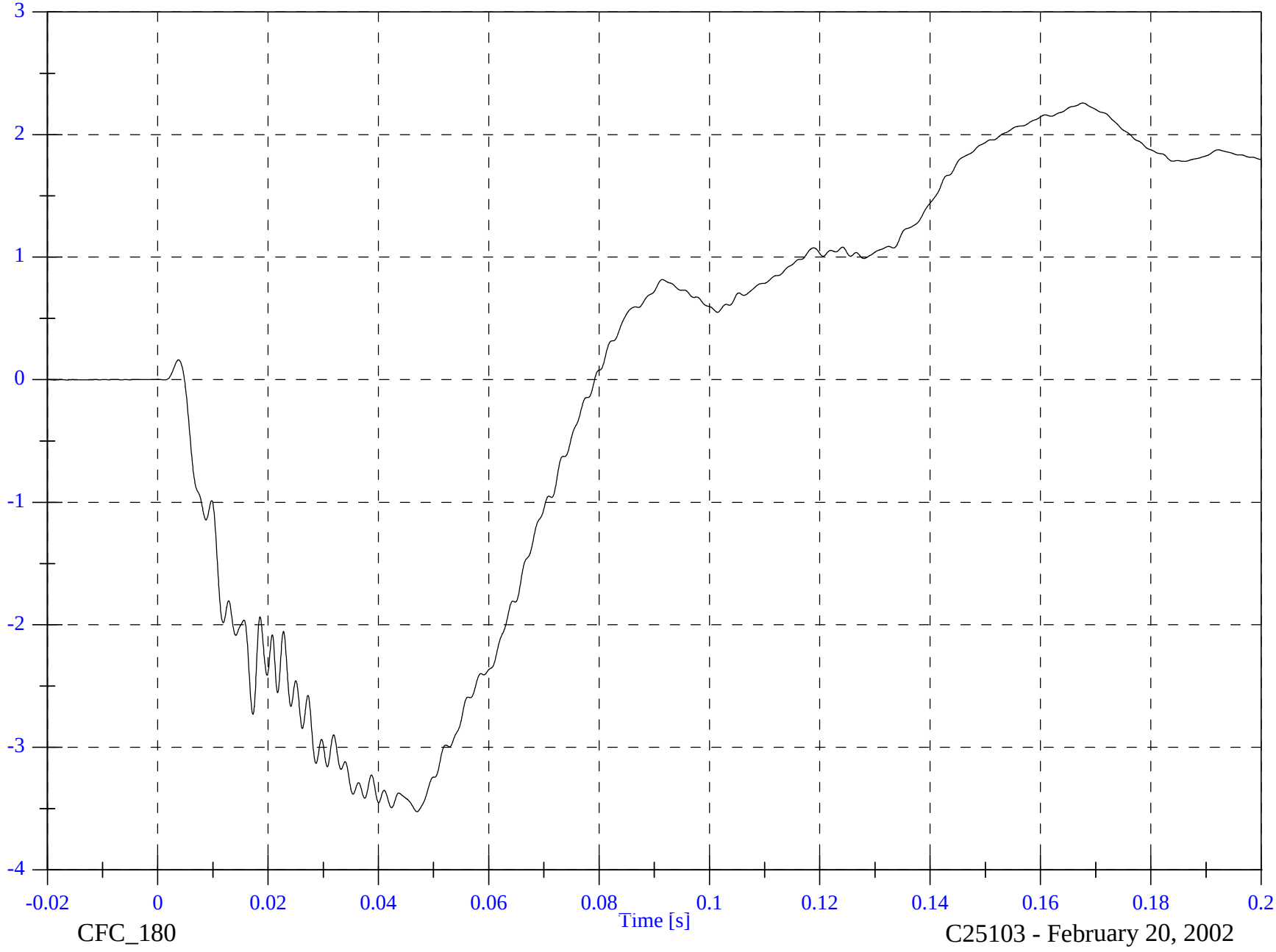
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat Z Velocity

Max: 2.3 [kph] at 0.168 [s]

Min: -3.5 [kph] at 0.047 [s]



CFC_180

C25103 - February 20, 2002

B-49

8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 1 Right Front Sill at Front Seat Resultant

Max: 27.7 [g] at 0.006 [s]

Min: 0.0 [g] at -0.019 [s]

CFC_60

C25103 - February 20, 2002

B-50

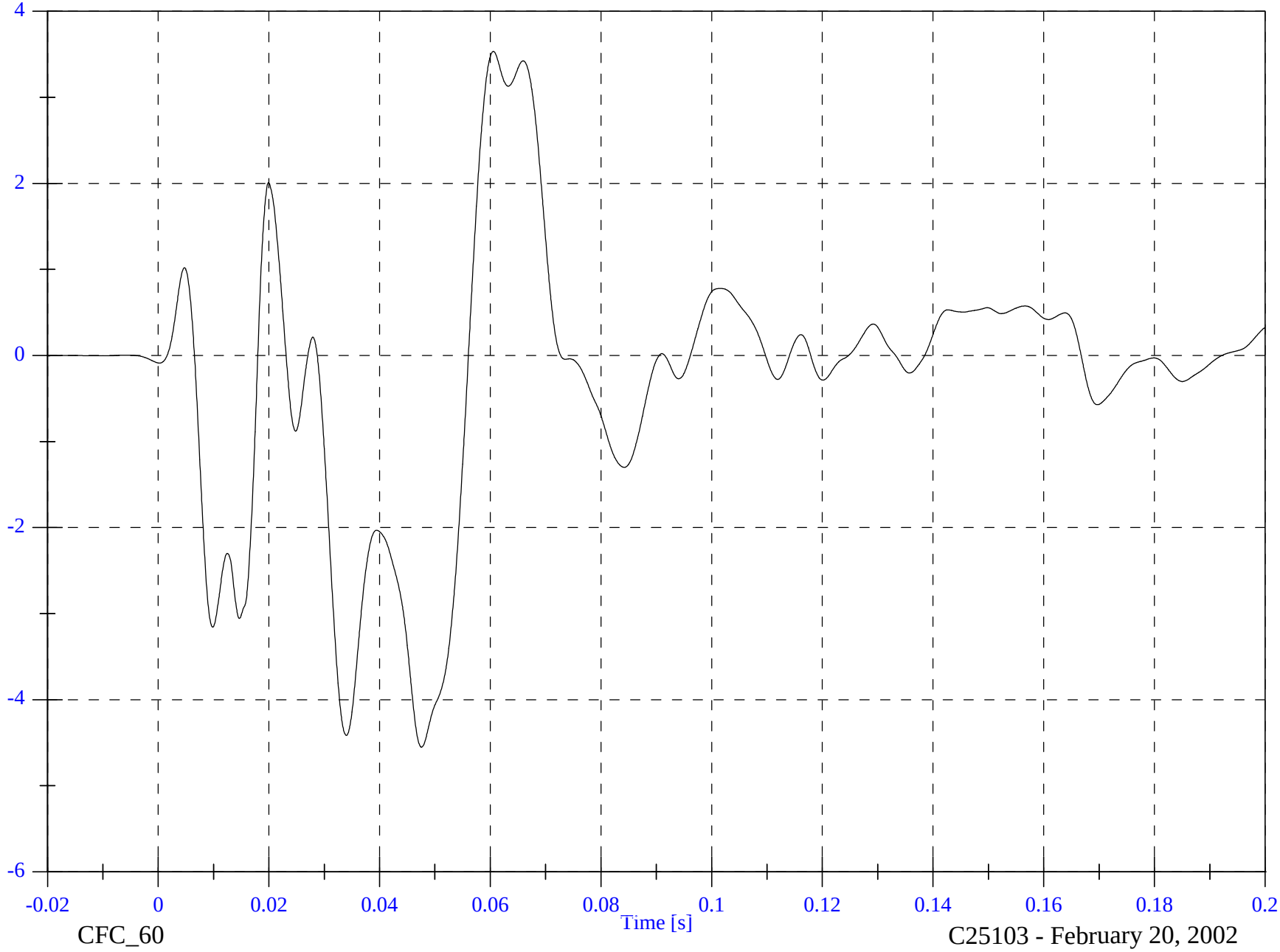
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat X

Max: 3.5 [g] at 0.061 [s]

Min: -4.6 [g] at 0.048 [s]



CFC_60

C25103 - February 20, 2002

B-51

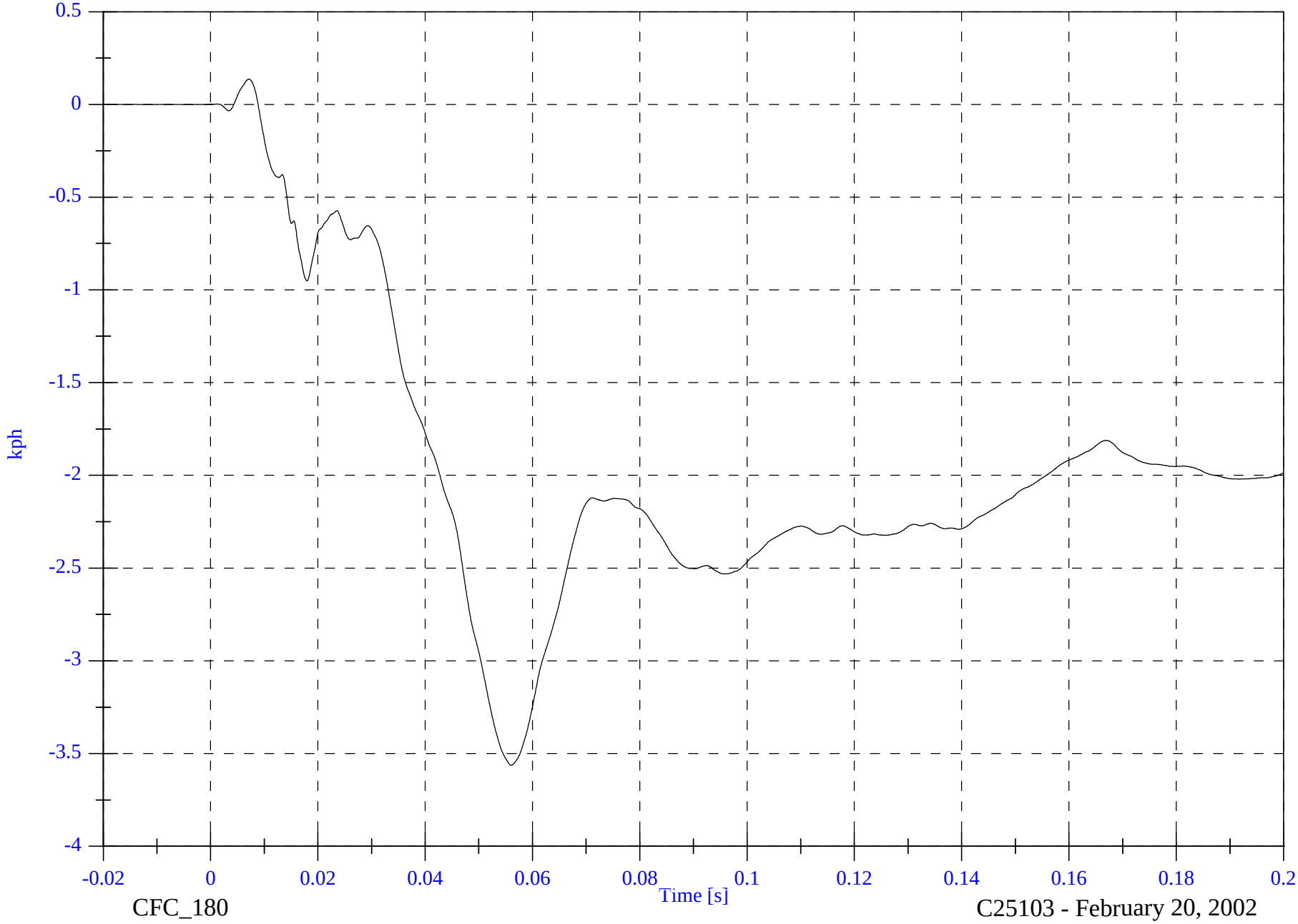
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat X Velocity

Max: 0.1 [kph] at 0.007 [s]

Min: -3.6 [kph] at 0.056 [s]



CFC_180

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat Y

Max: 31.8 [g] at 0.006 [s]

Min: -1.7 [g] at 0.172 [s]

CFC_60

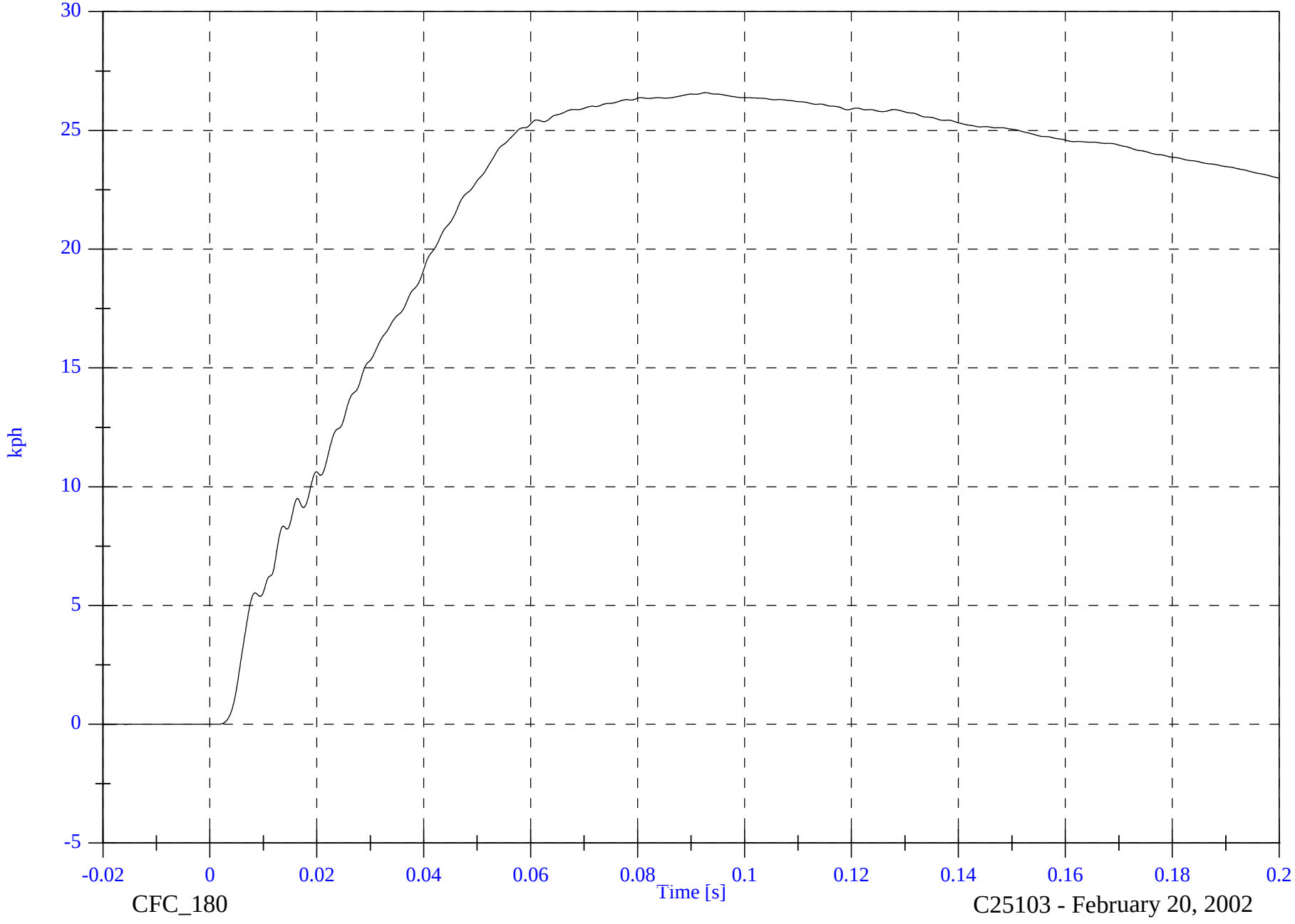
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat Y Velocity

Max: 26.6 [kph] at 0.093 [s]

Min: -0.0 [kph] at -0.018 [s]



CFC_180

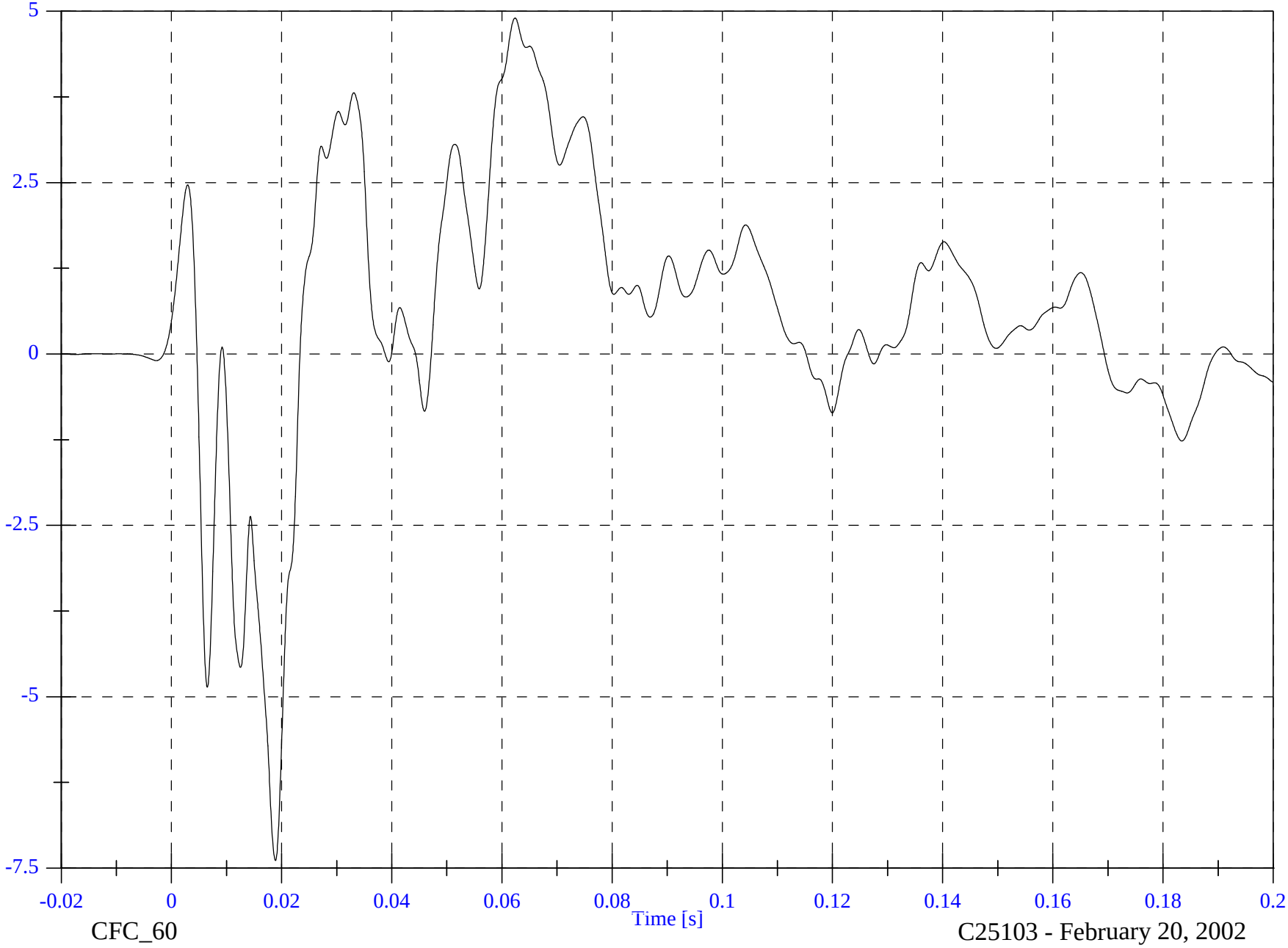
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat Z

Max: 4.9 [g] at 0.062 [s]

Min: -7.4 [g] at 0.019 [s]



B-55

8502-32

CFC_60

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat Z Velocity

Max: 4.8 [kph] at 0.169 [s]

Min: -2.3 [kph] at 0.023 [s]

CFC_180

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 2 Right Rear Sill at Rear Seat Resultant

Max: 32.0 [g] at 0.006 [s]

Min: 0.0 [g] at -0.016 [s]

CFC_60

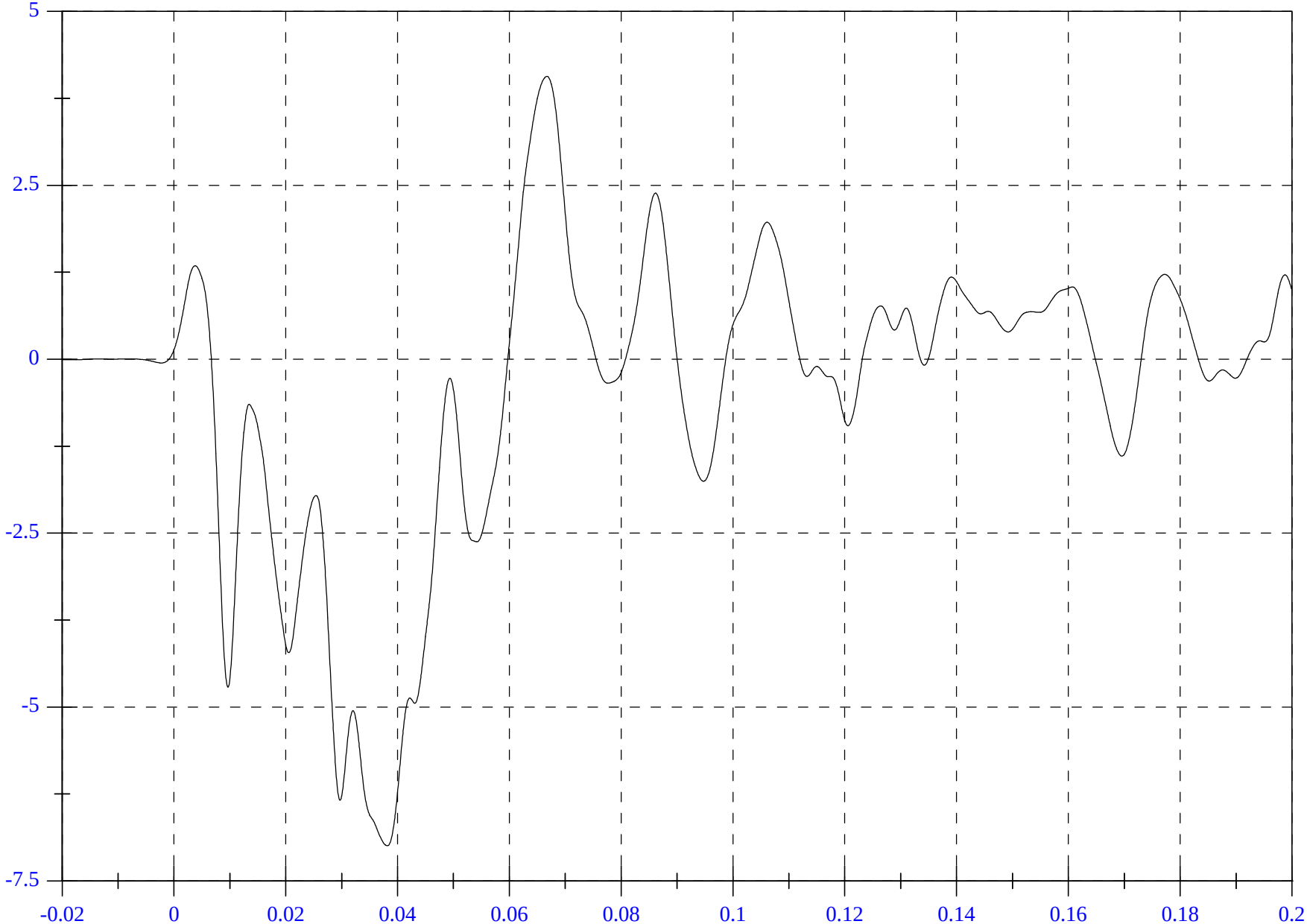
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan X

Max: 4.1 [g] at 0.067 [s]

Min: -7.0 [g] at 0.038 [s]



CFC_60

C25103 - February 20, 2002

B-58

8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan X Velocity

Max: 0.3 [kph] at 0.008 [s]

Min: -6.2 [kph] at 0.059 [s]

CFC_180

C25103 - February 20, 2002

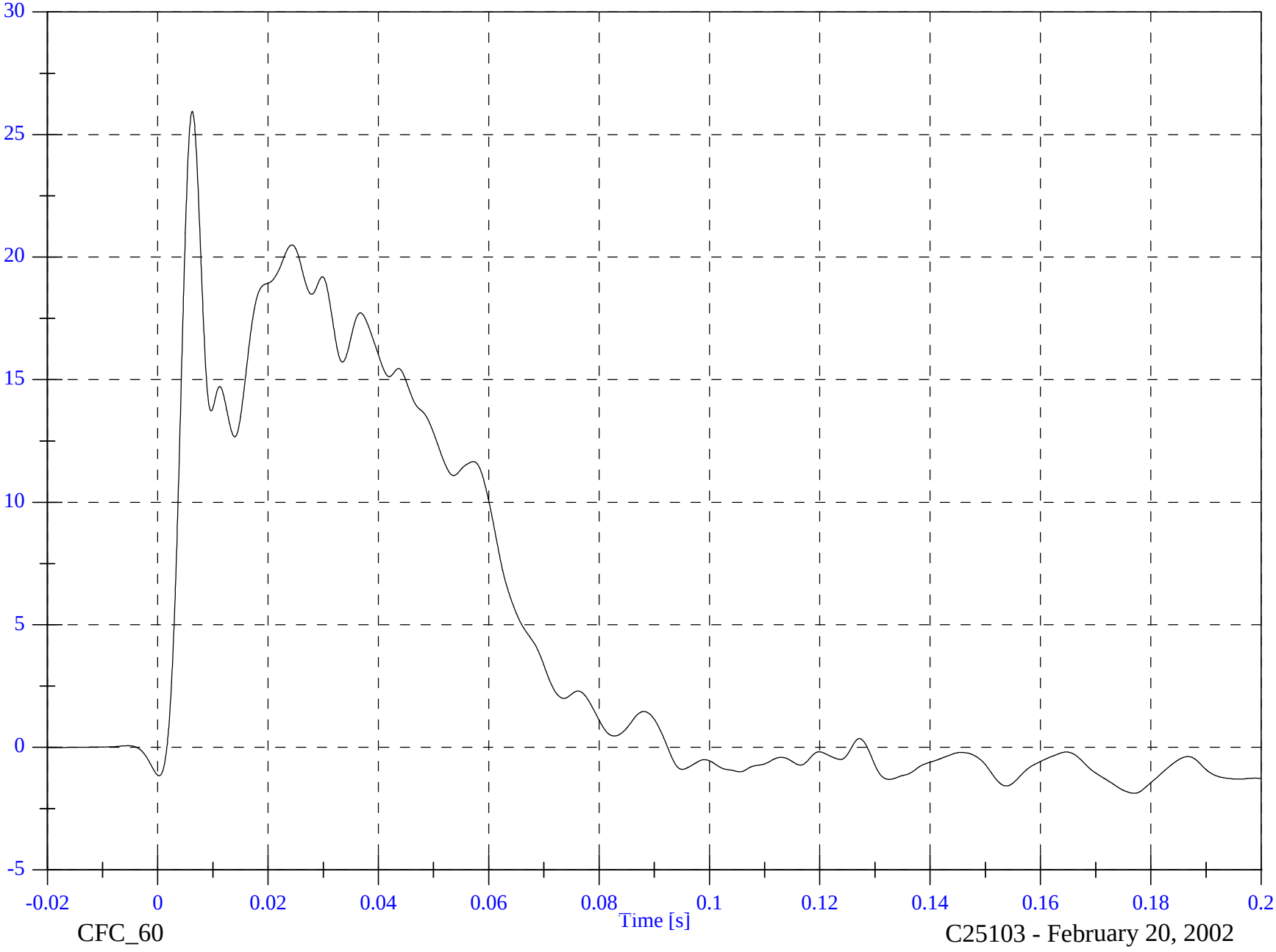
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan Y

Max: 25.9 [g] at 0.006 [s]

Min: -1.9 [g] at 0.177 [s]



B-60

8502-32

CFC_60

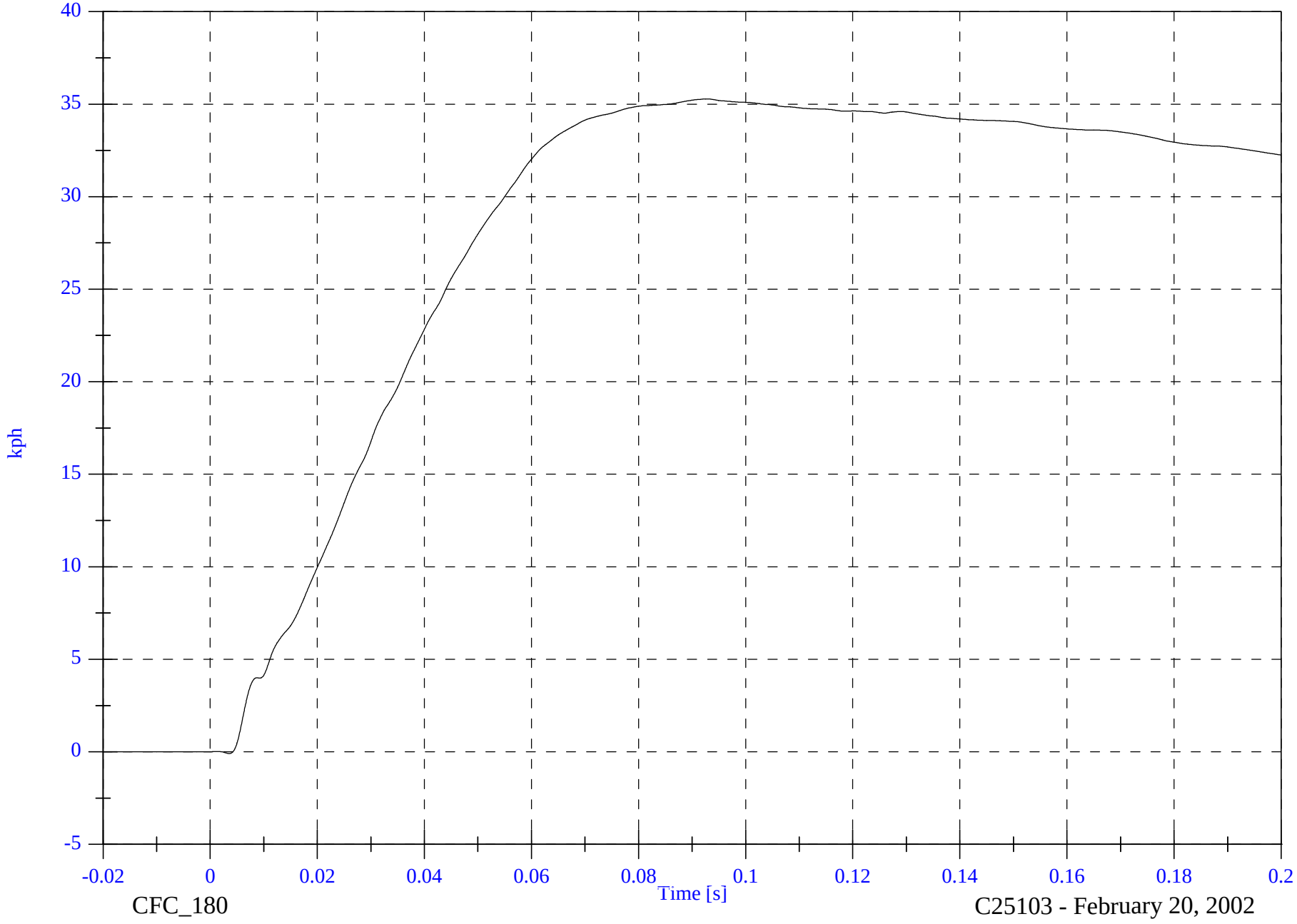
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan Y Velocity

Max: 35.3 [kph] at 0.093 [s]

Min: -0.1 [kph] at 0.004 [s]



CFC_180

C25103 - February 20, 2002

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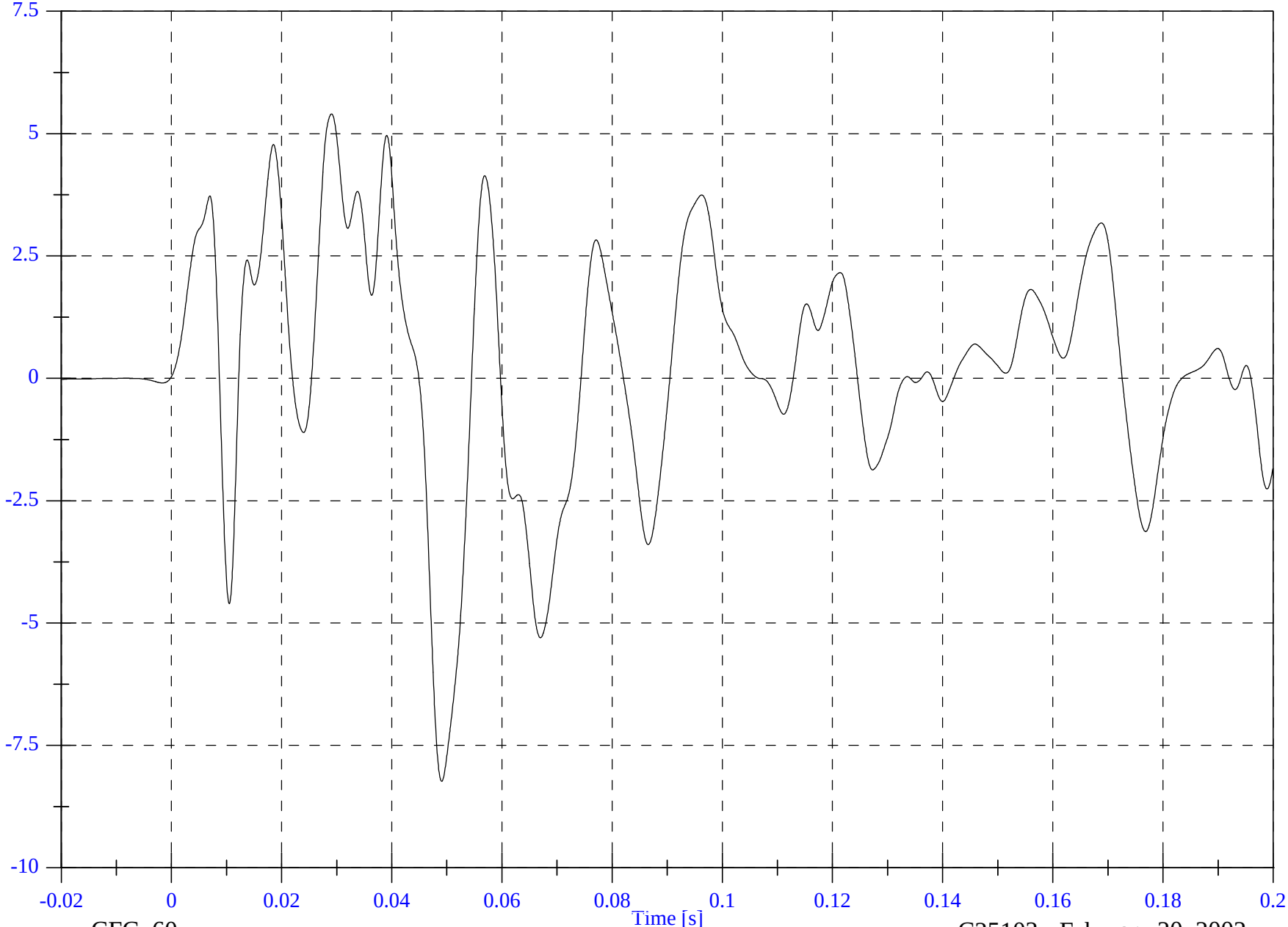
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan Z

Max: 5.4 [g] at 0.029 [s]

Min: -8.2 [g] at 0.049 [s]



CFC_60

C25103 - February 20, 2002

B-62

8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan Z Velocity

Max: 3.3 [kph] at 0.047 [s]

Min: -0.1 [kph] at 0.012 [s]

CFC_180

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 3 Rear Floorpan Resultant

Max: 26.2 [g] at 0.006 [s]

Min: 0.0 [g] at -0.013 [s]

CFC_60

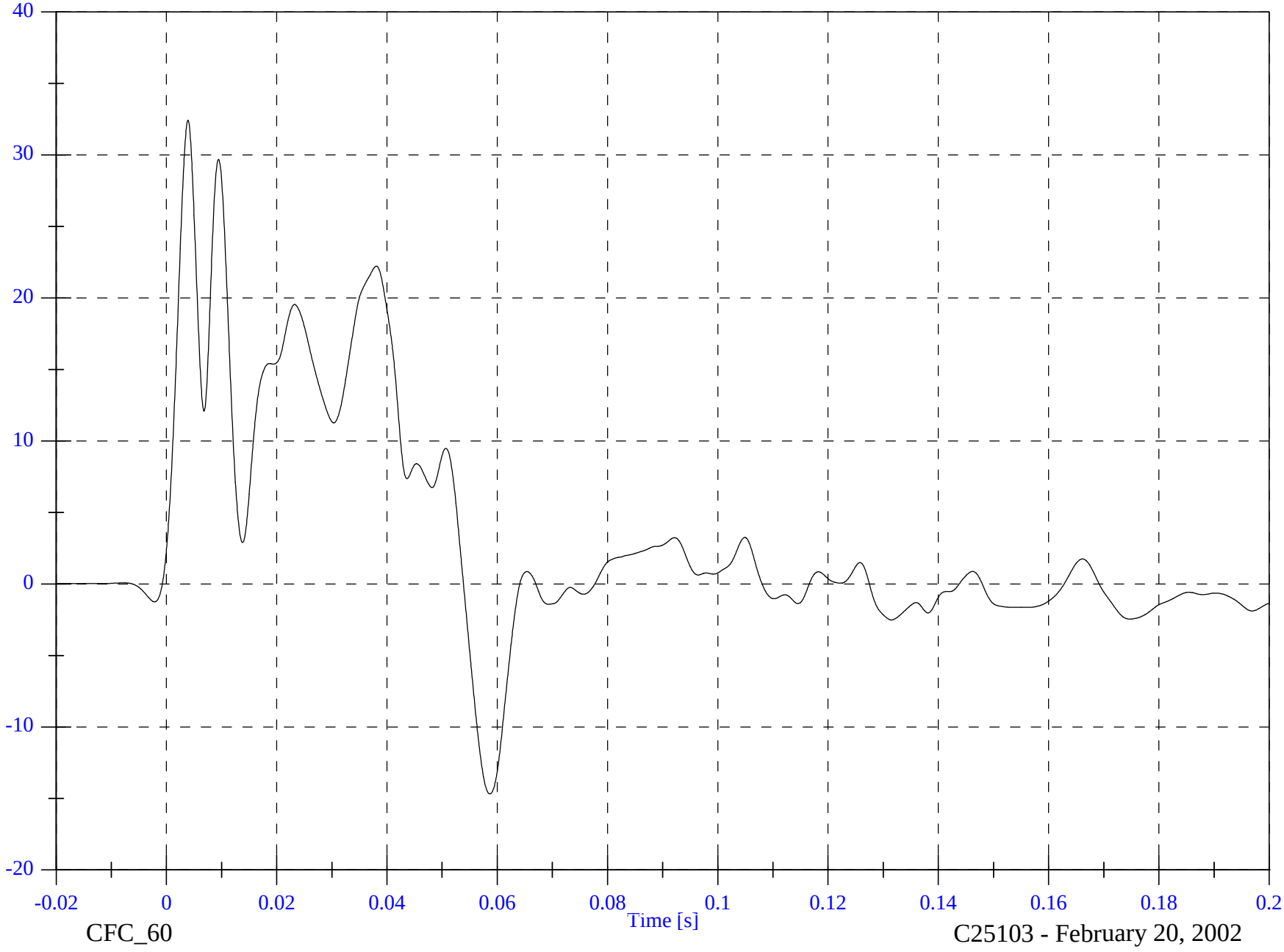
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 4 Left Rear Sill Y

Max: 32.4 [g] at 0.004 [s]

Min: -14.7 [g] at 0.059 [s]



B-65

8502-32

CFC_60

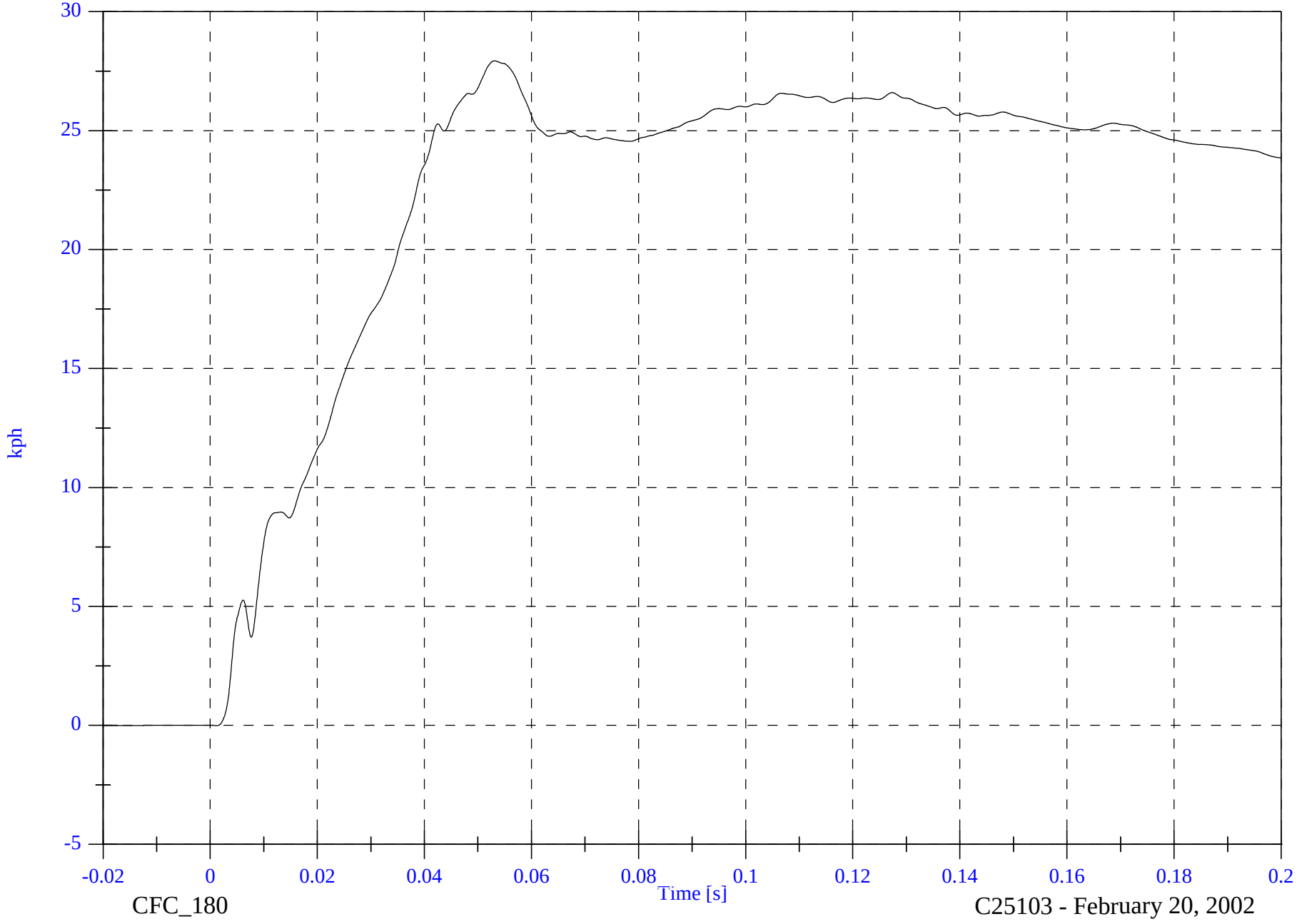
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 4 Left Rear Sill Y Velocity

Max: 27.9 [kph] at 0.053 [s]

Min: -0.0 [kph] at 0.001 [s]



B-66

8502-32

CFC_180

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 5 Left Front Sill Y

Max: 38.1 [g] at 0.011 [s]

Min: -1.8 [g] at 0.168 [s]

CFC_60

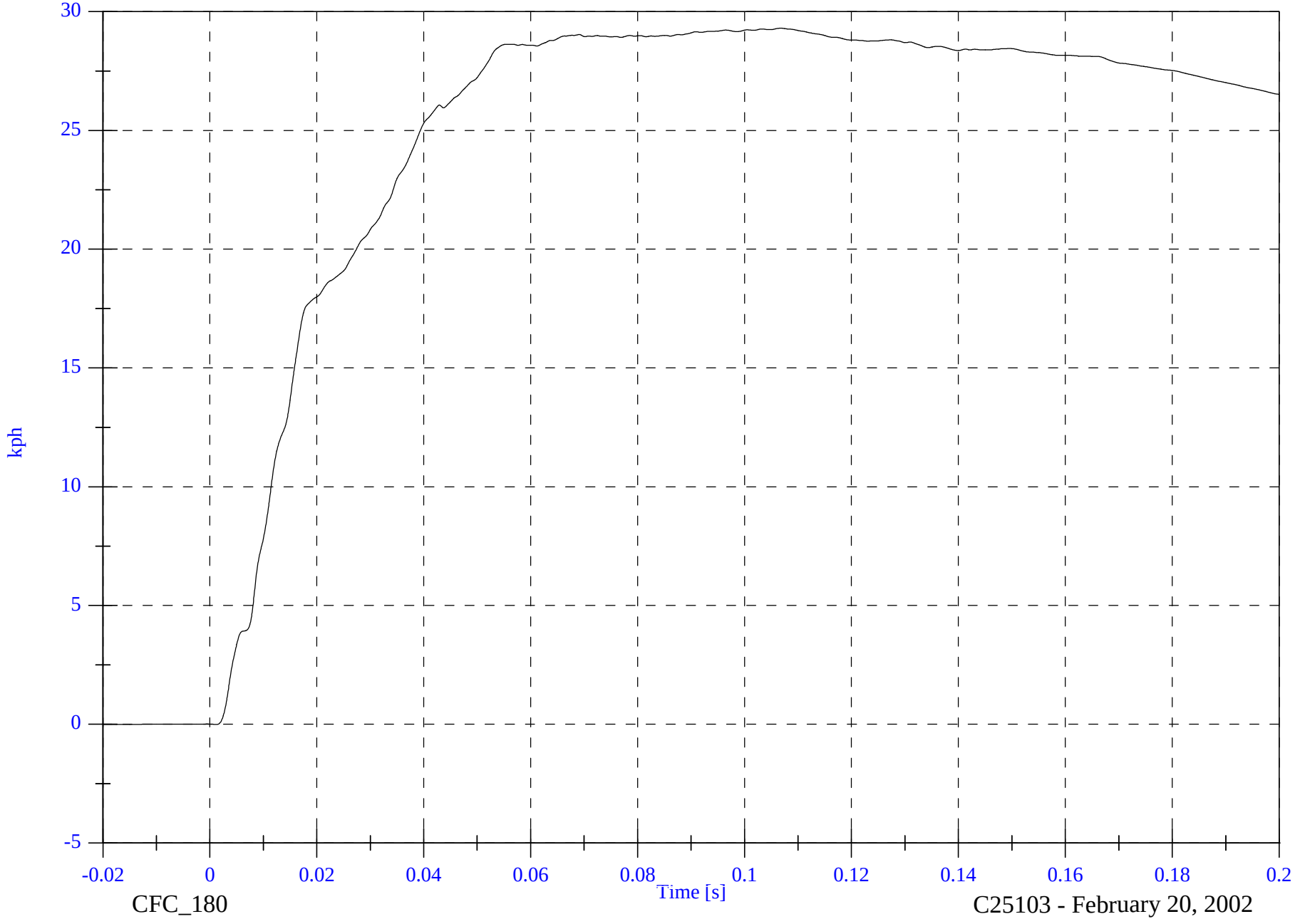
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 5 Left Front Sill Y Velocity

Max: 29.3 [kph] at 0.107 [s]

Min: -0.0 [kph] at 0.001 [s]



CFC_180

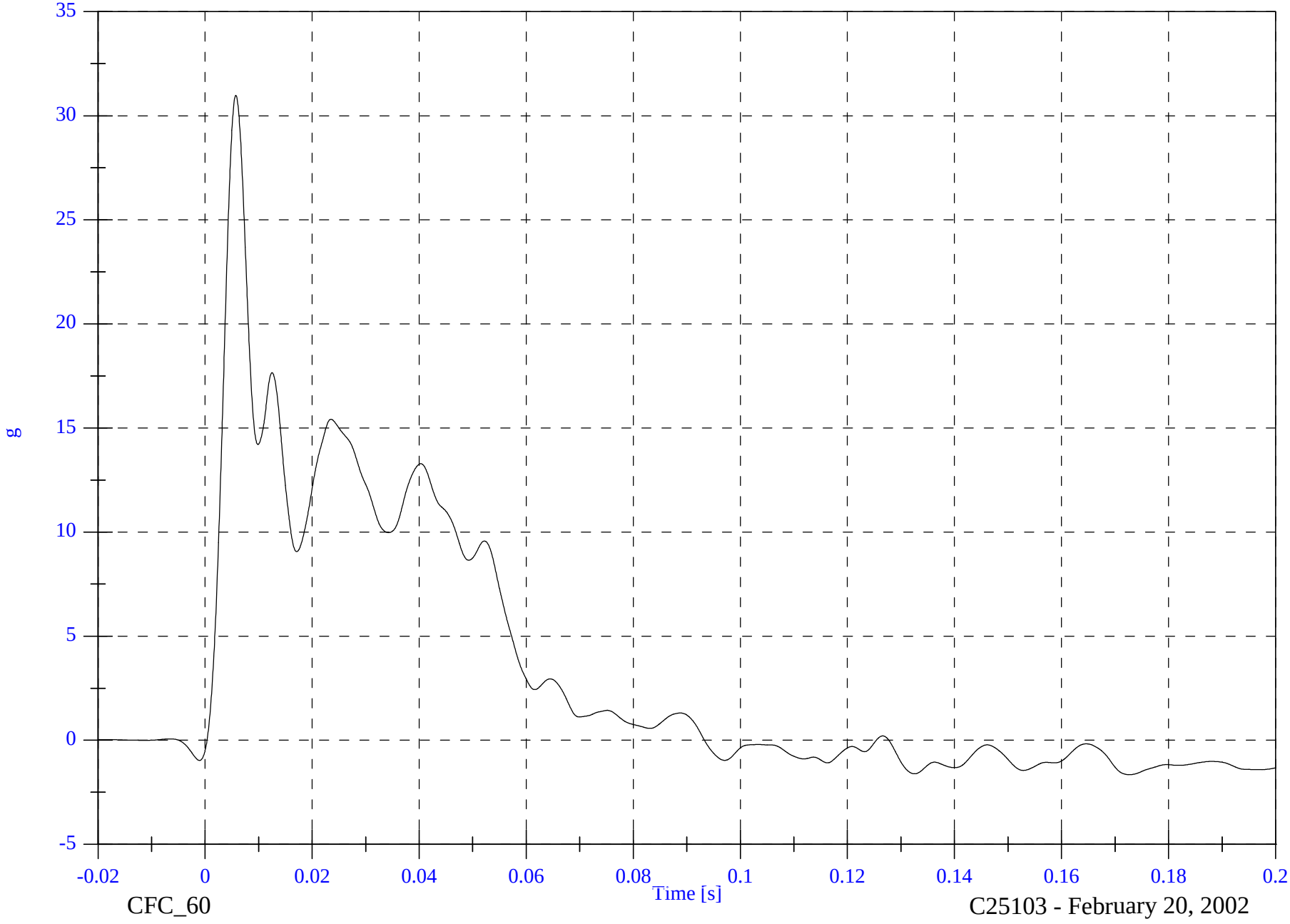
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 7 Right Rear Compartment Y

Max: 31.0 [g] at 0.006 [s]

Min: -1.7 [g] at 0.173 [s]



CFC_60

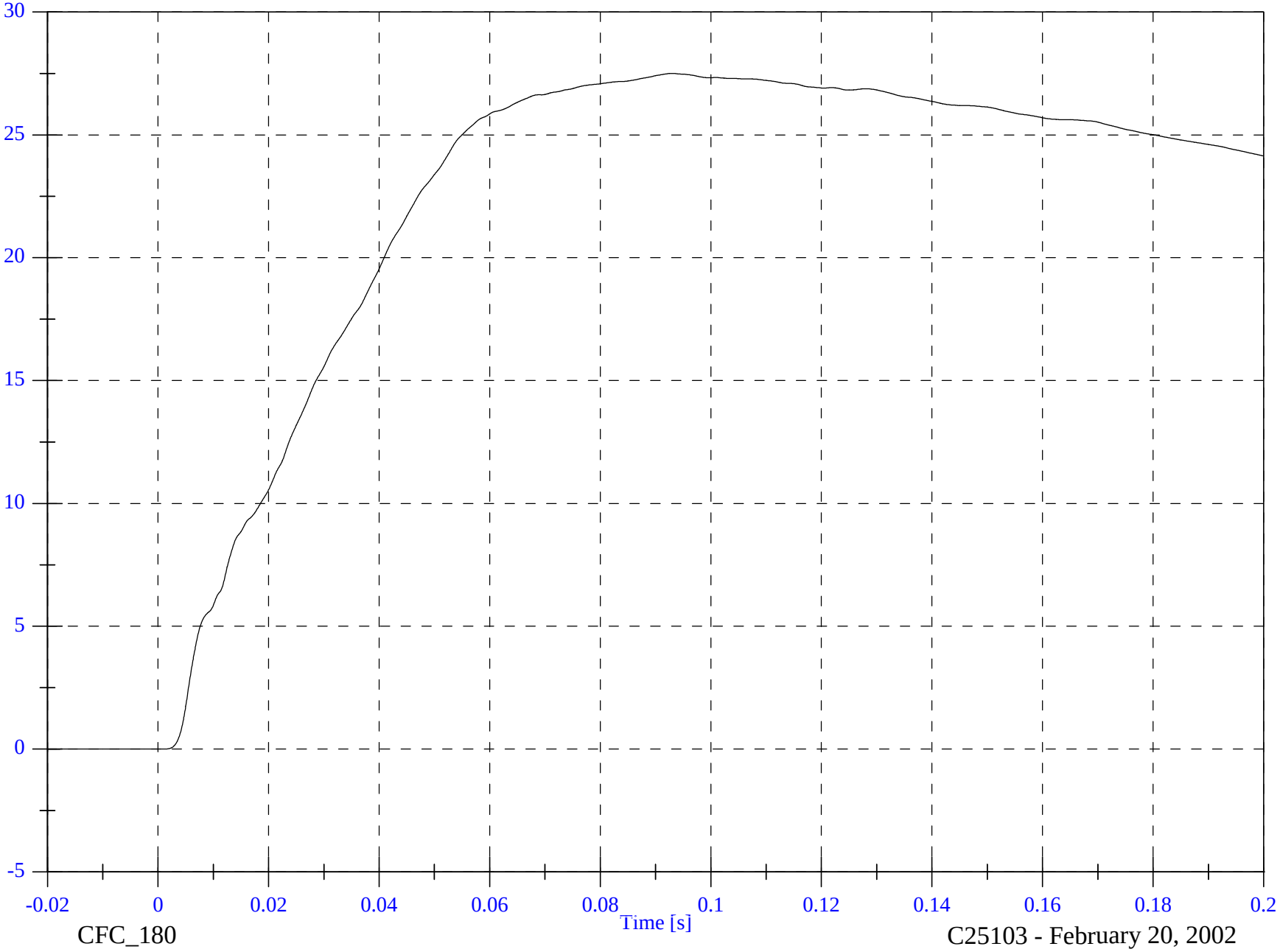
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 7 Right Rear Compartment Y Velocity

Max: 27.5 [kph] at 0.093 [s]

Min: -0.0 [kph] at -0.020 [s]



CFC_180

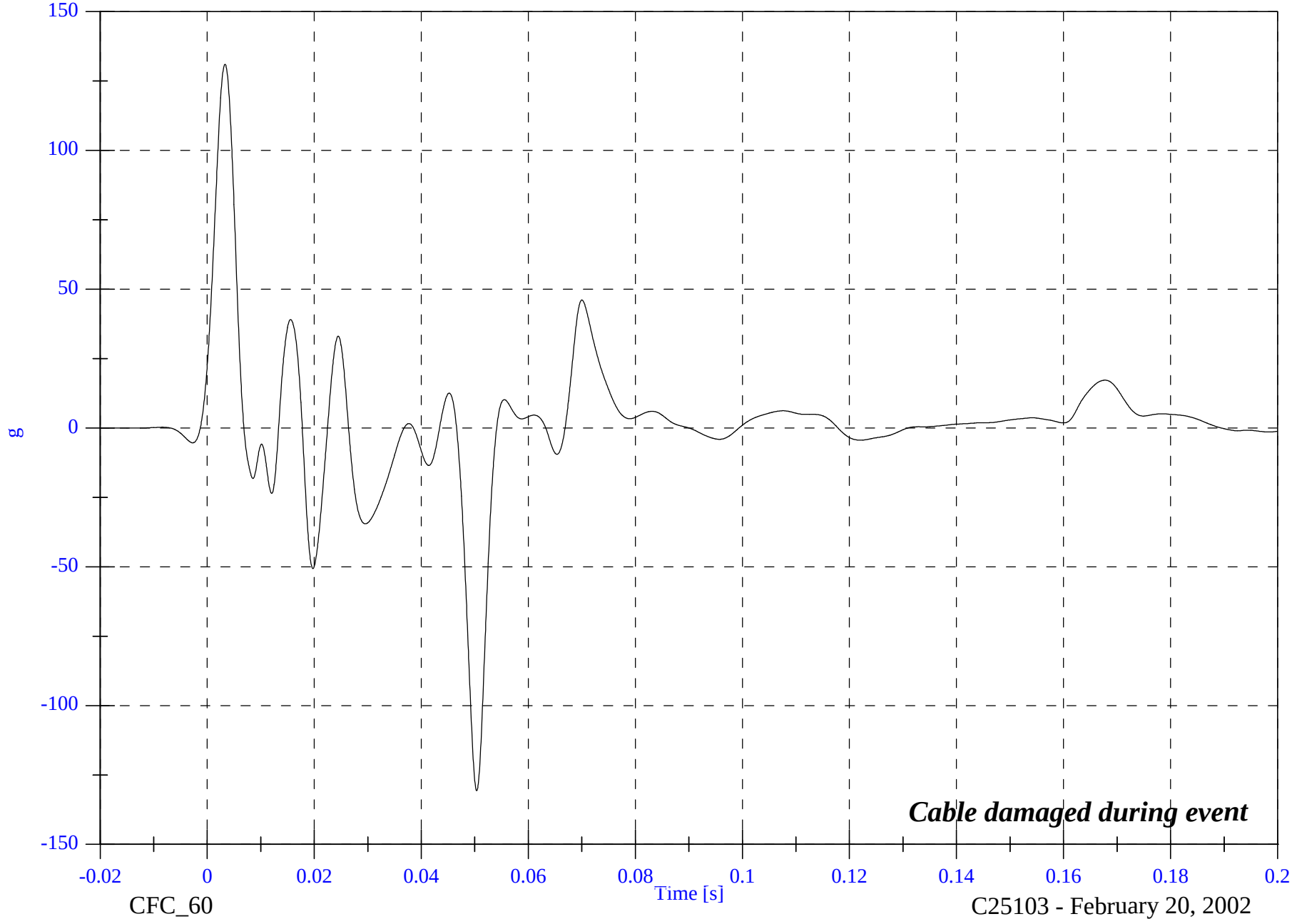
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 12 Left Lower B-Pillar Y

Max: 131.0 [g] at 0.003 [s]

Min: -130.7 [g] at 0.050 [s]



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8502-32

CFC_60

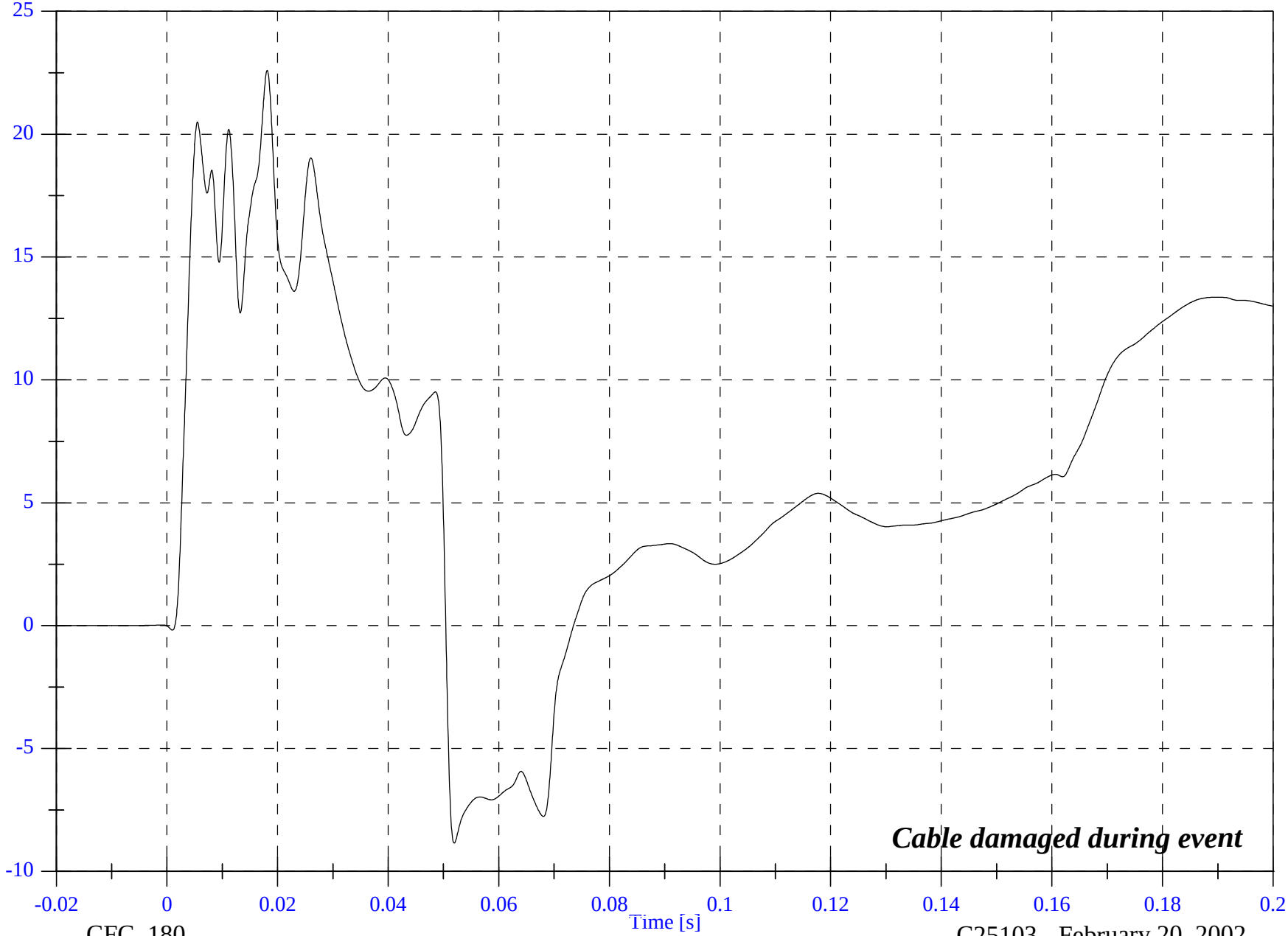
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 12 Left Lower B-Pillar Y Velocity

Max: 22.6 [kph] at 0.018 [s]

Min: -8.9 [kph] at 0.052 [s]



CFC_180

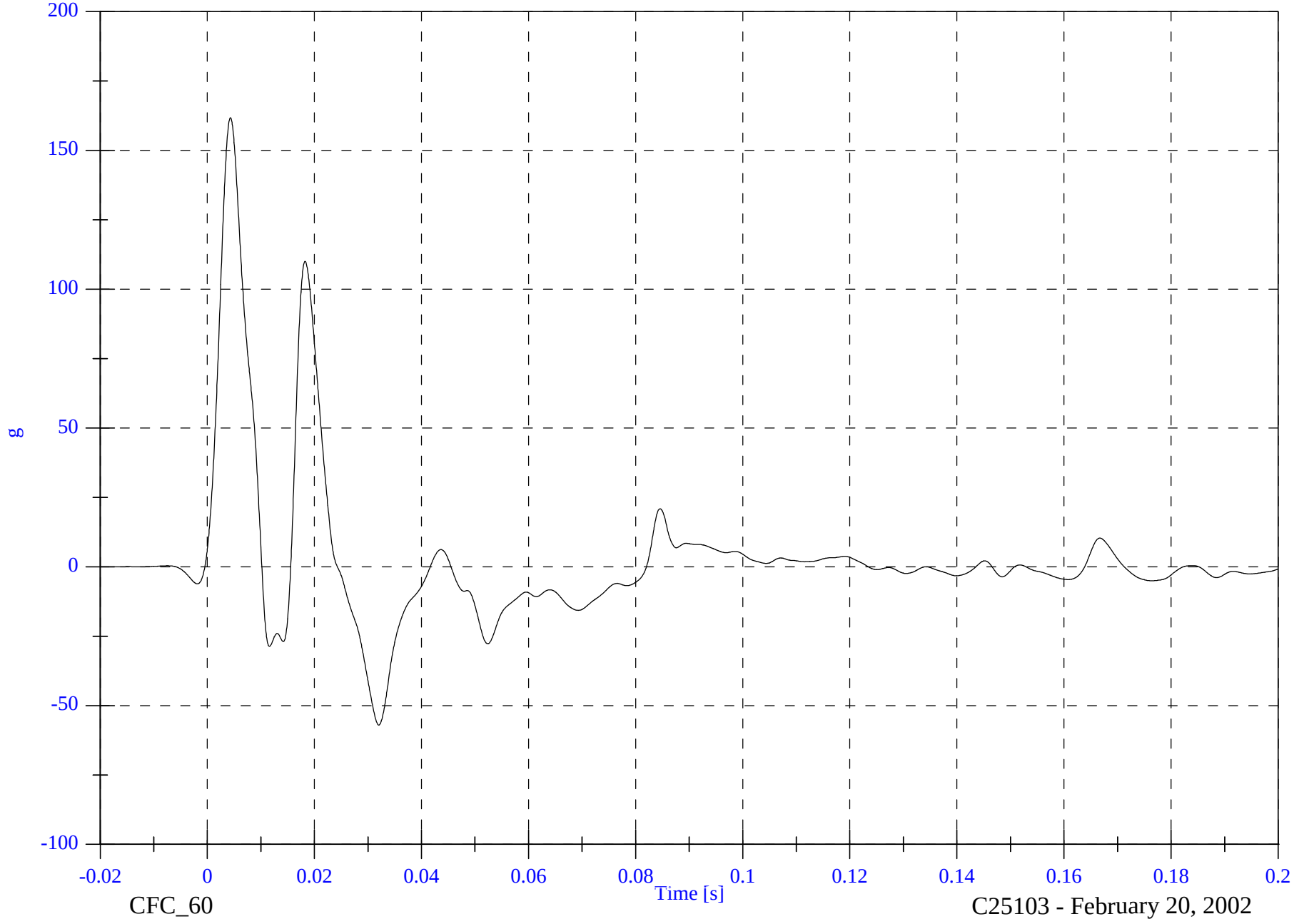
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 13 Left Middle B-Pillar Y

Max: 161.8 [g] at 0.004 [s]

Min: -57.1 [g] at 0.032 [s]



CFC_60

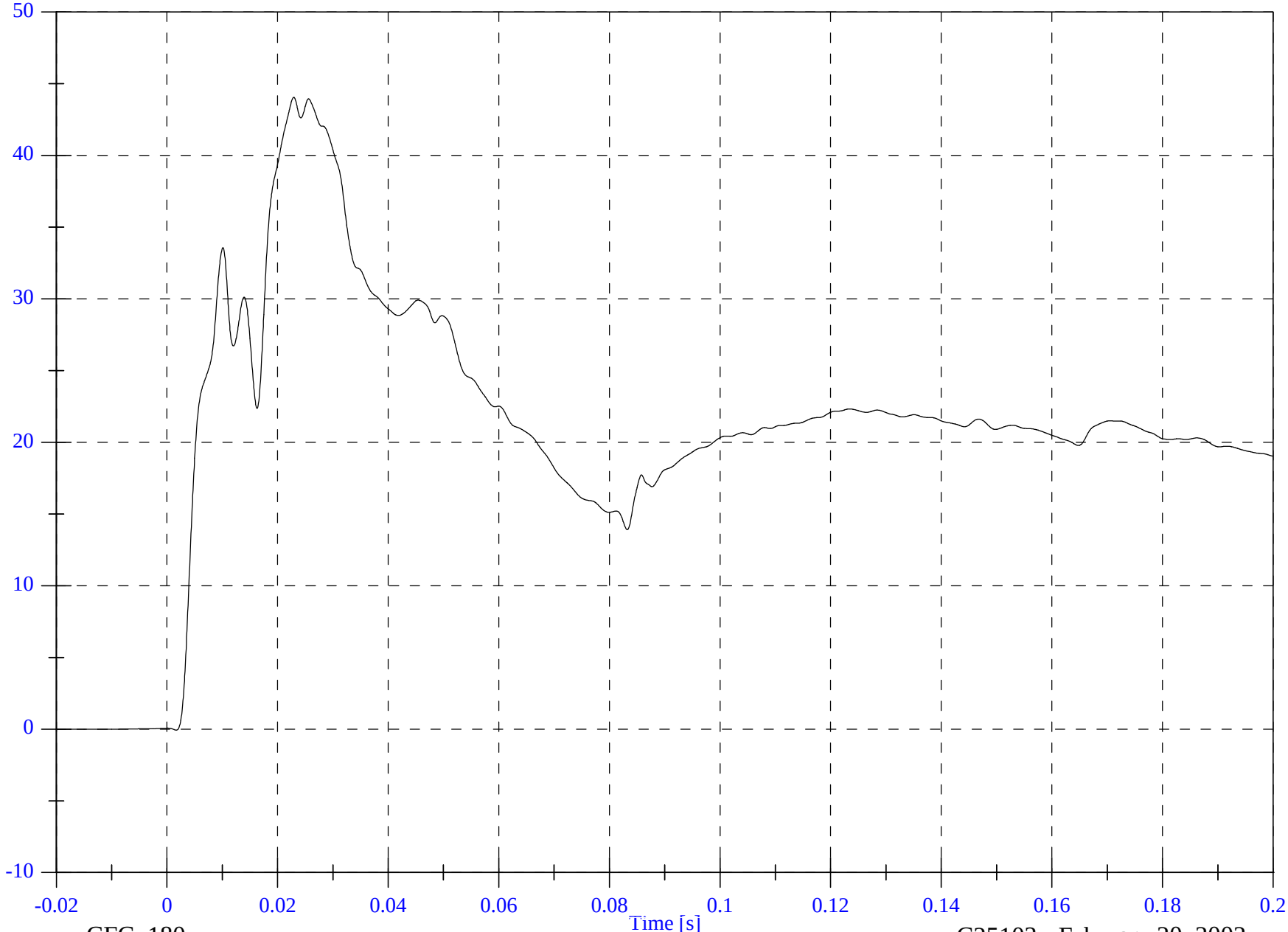
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 13 Left Middle B-Pillar Y Velocity

Max: 44.1 [kph] at 0.023 [s]

Min: -0.1 [kph] at 0.002 [s]



CFC_180

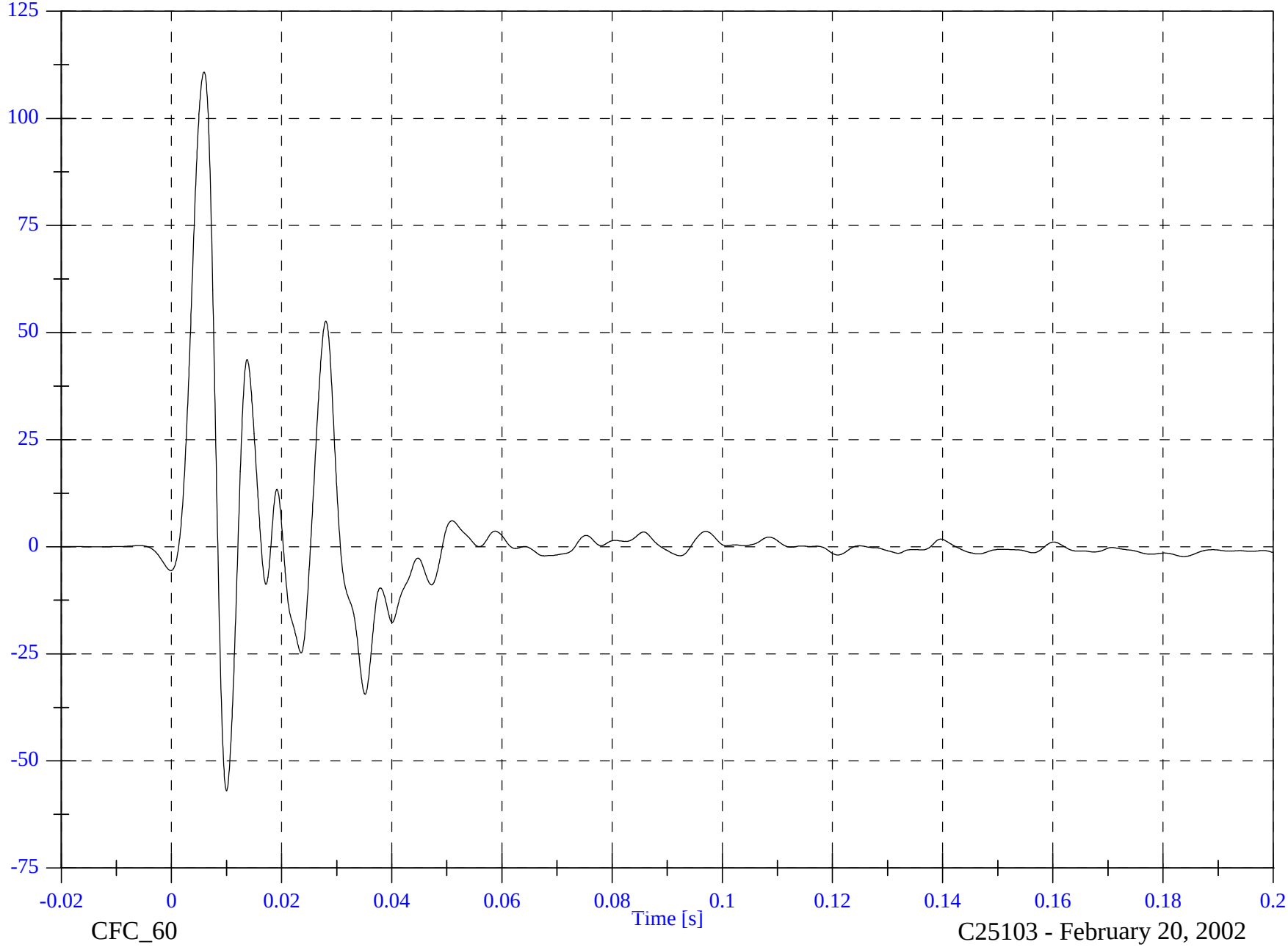
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 14 Left Lower A-Pillar Y

Max: 110.8 [g] at 0.006 [s]

Min: -57.0 [g] at 0.010 [s]



CFC_60

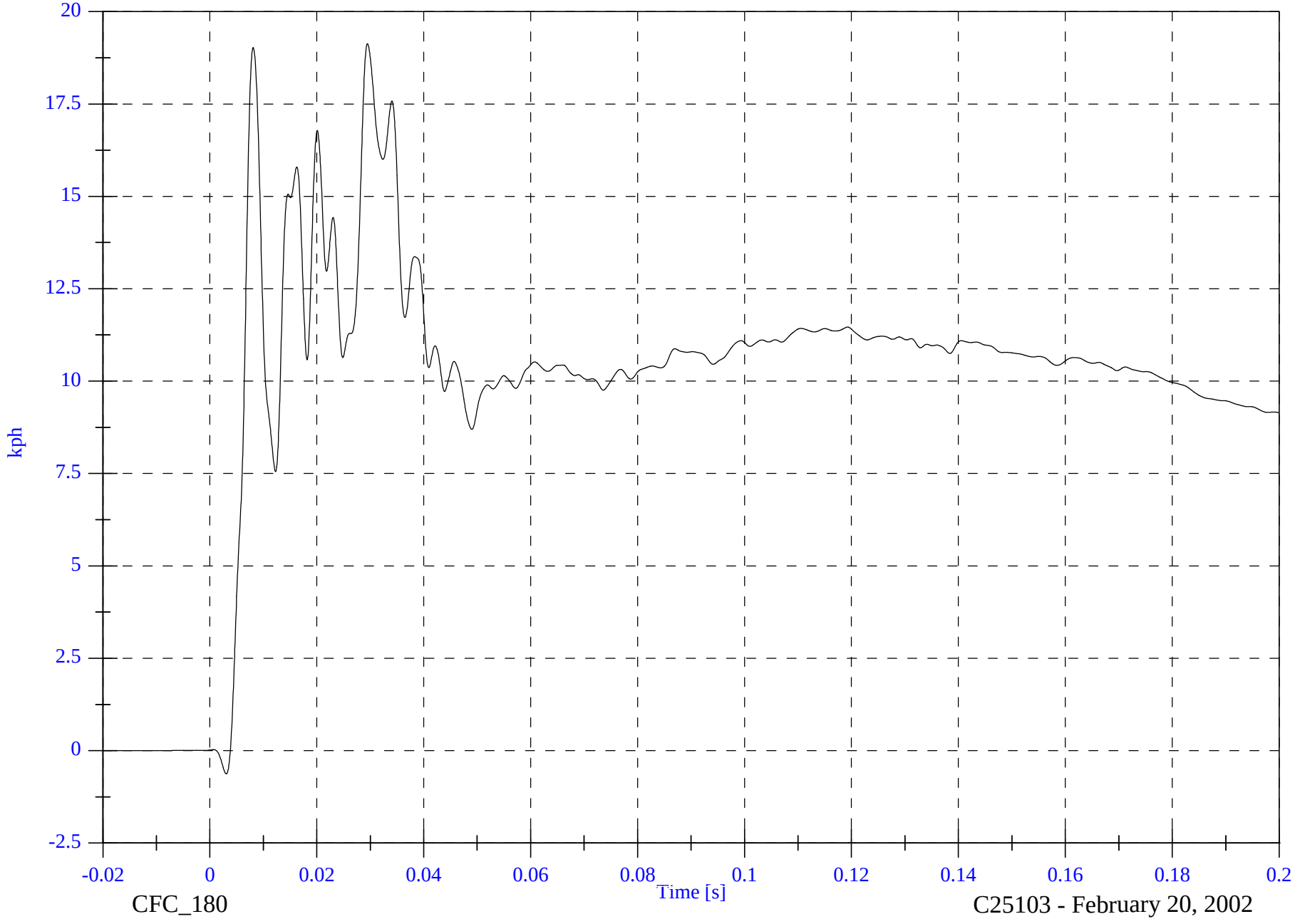
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 14 Left Lower A-Pillar Y Velocity

Max: 19.1 [kph] at 0.029 [s]

Min: -0.6 [kph] at 0.003 [s]



CFC_180

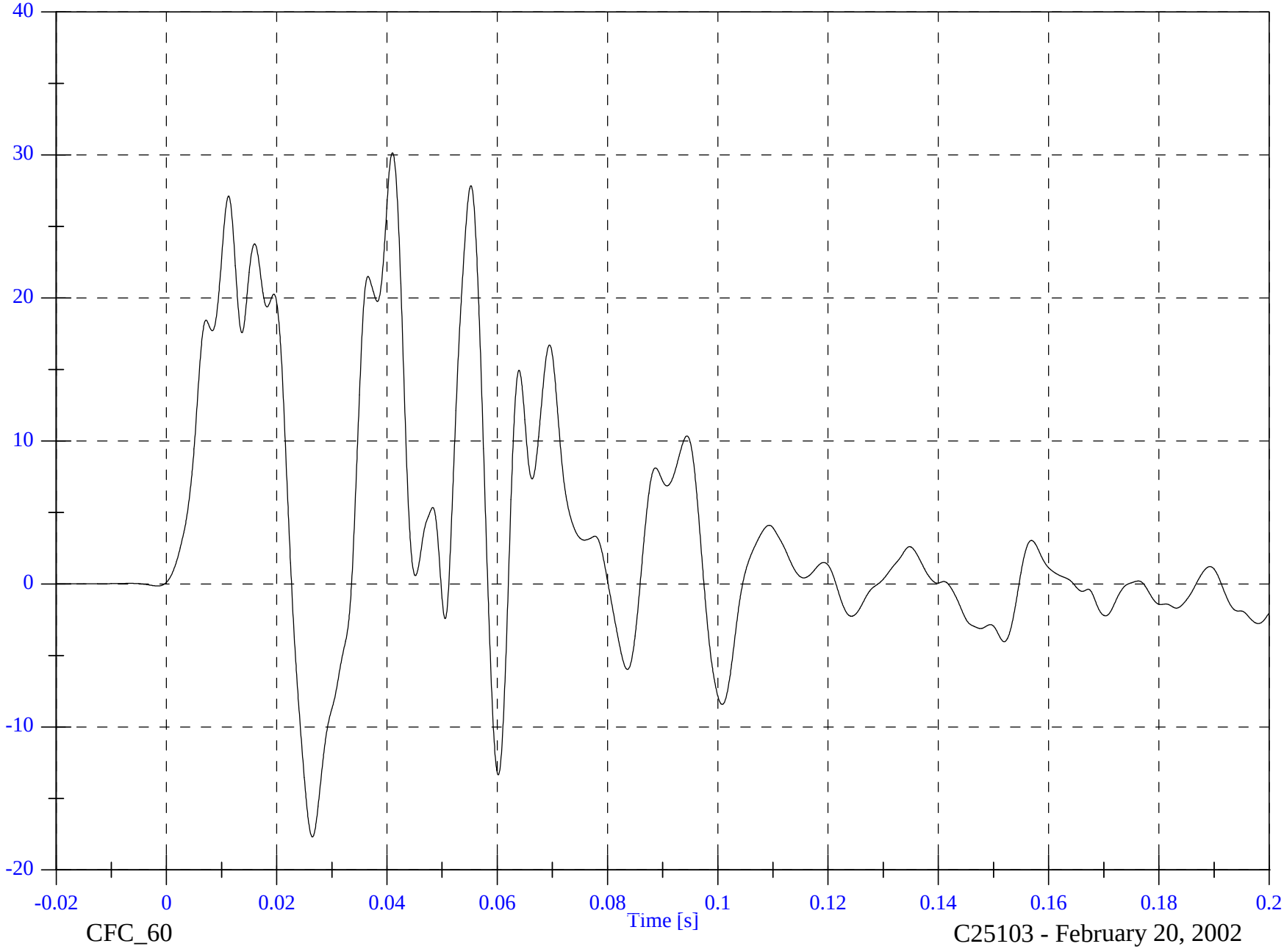
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 15 Left Middle A-Pillar Y

Max: 30.2 [g] at 0.041 [s]

Min: -17.7 [g] at 0.026 [s]



CFC_60

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 15 Left Middle A-Pillar Y Velocity

Max: 26.5 [kph] at 0.097 [s]

Min: -0.0 [kph] at -0.018 [s]

CFC_180

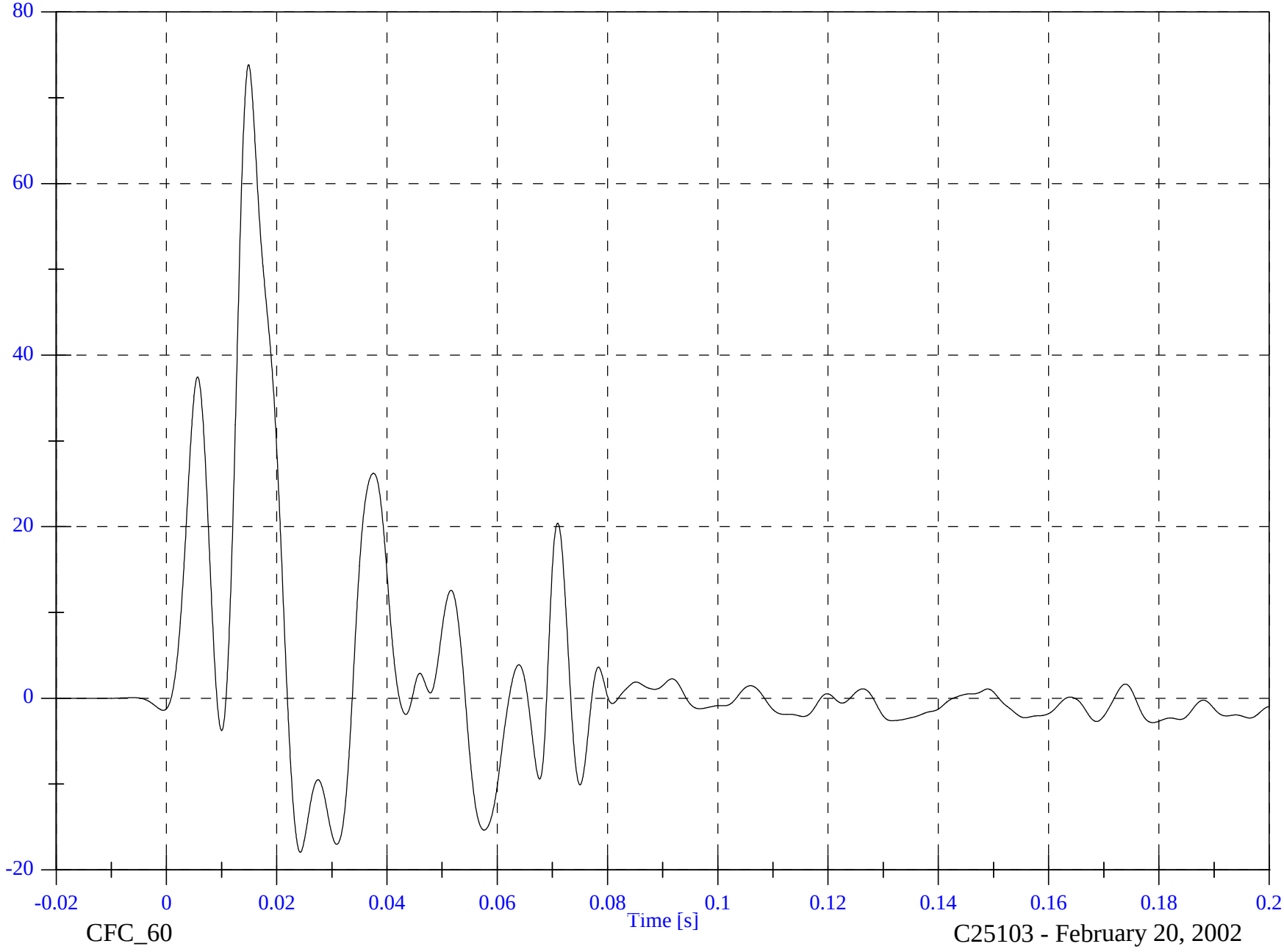
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 16 Front Seat Track Y

Max: 73.9 [g] at 0.015 [s]

Min: -18.0 [g] at 0.024 [s]



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8502-32

CFC_60

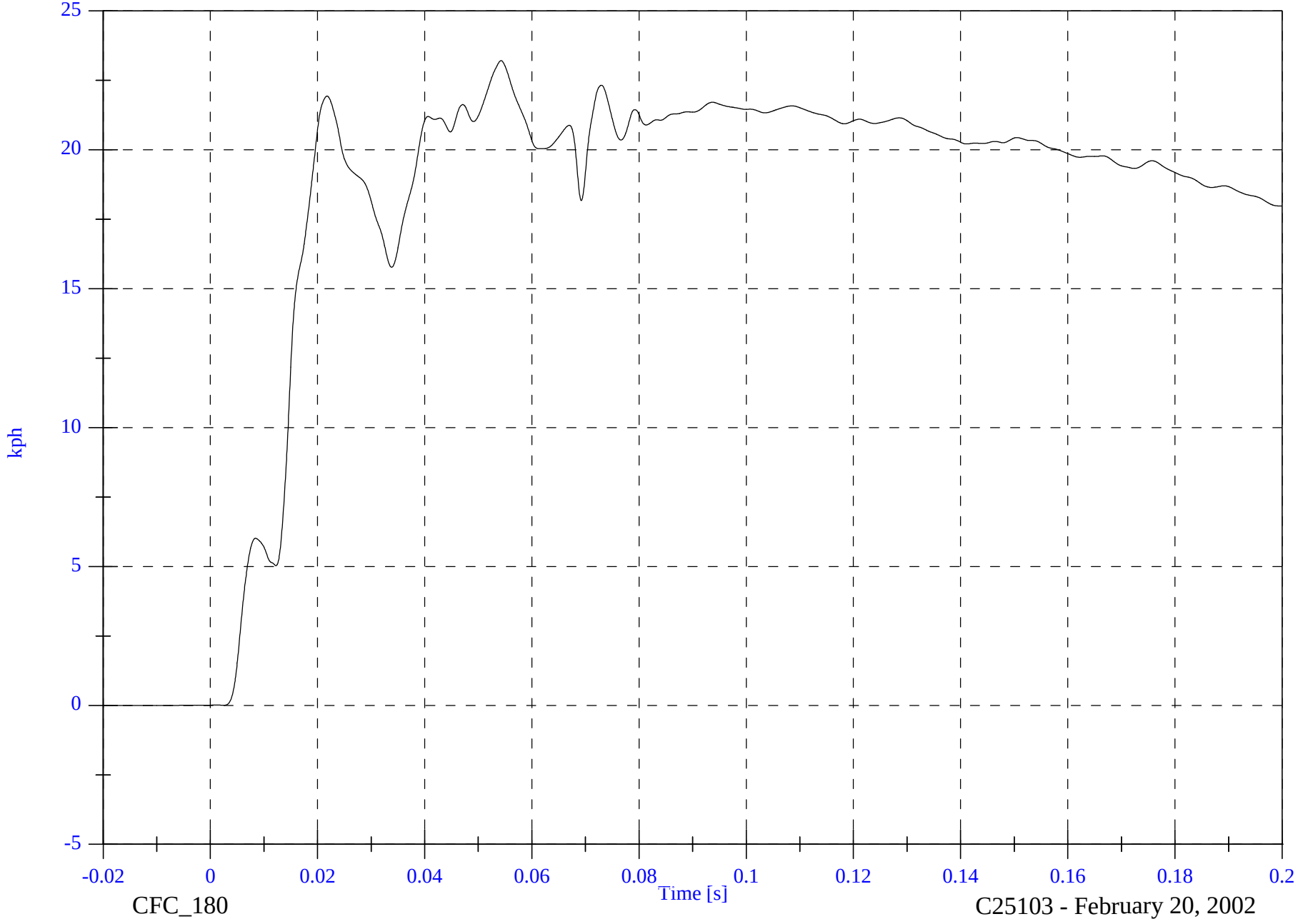
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 16 Front Seat Track Y Velocity

Max: 23.2 [kph] at 0.054 [s]

Min: -0.0 [kph] at -0.020 [s]



CFC_180

C25103 - February 20, 2002

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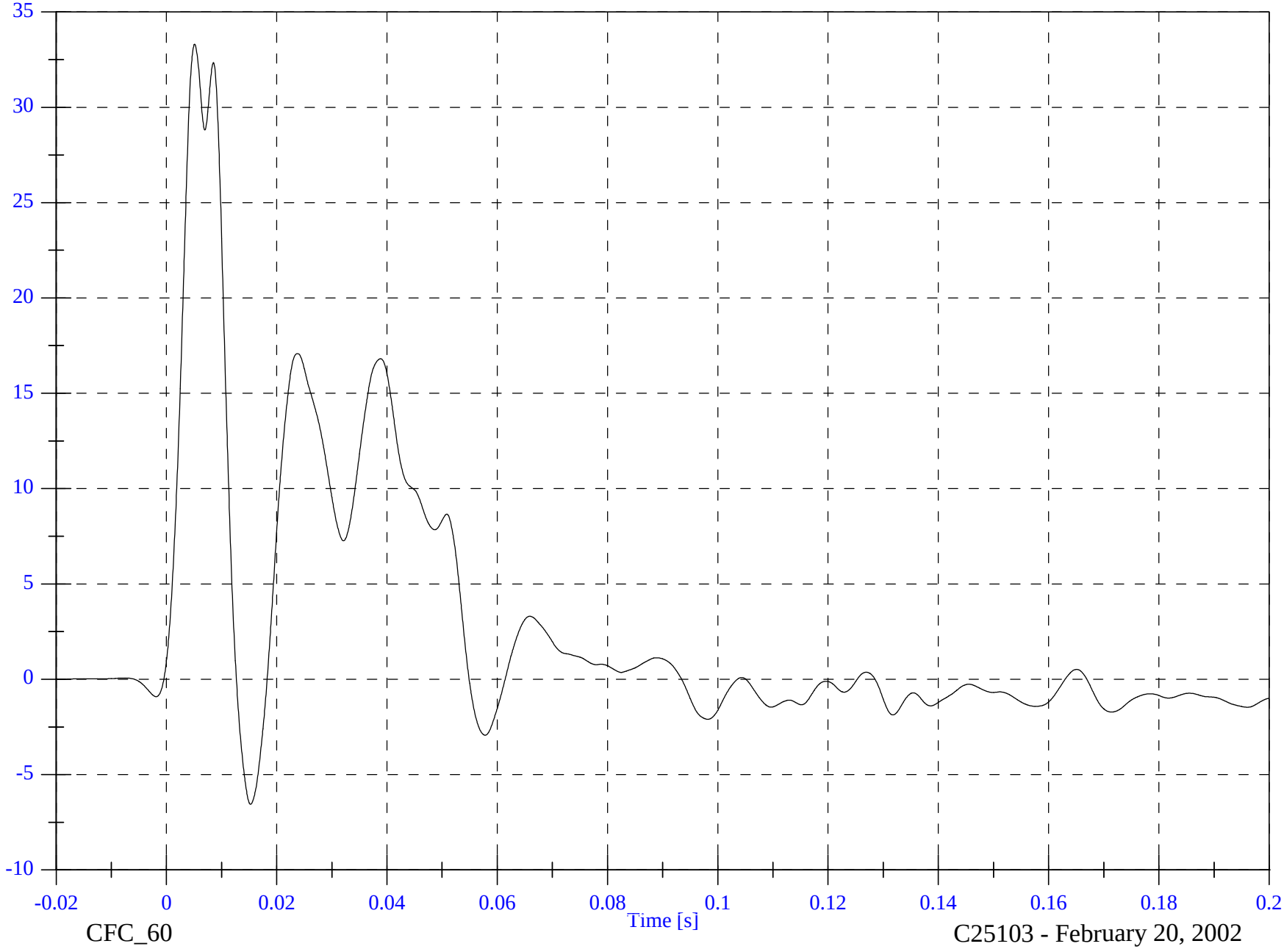
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 17 Rear Seat Track Y

Max: 33.3 [g] at 0.005 [s]

Min: -6.6 [g] at 0.015 [s]



CFC_60

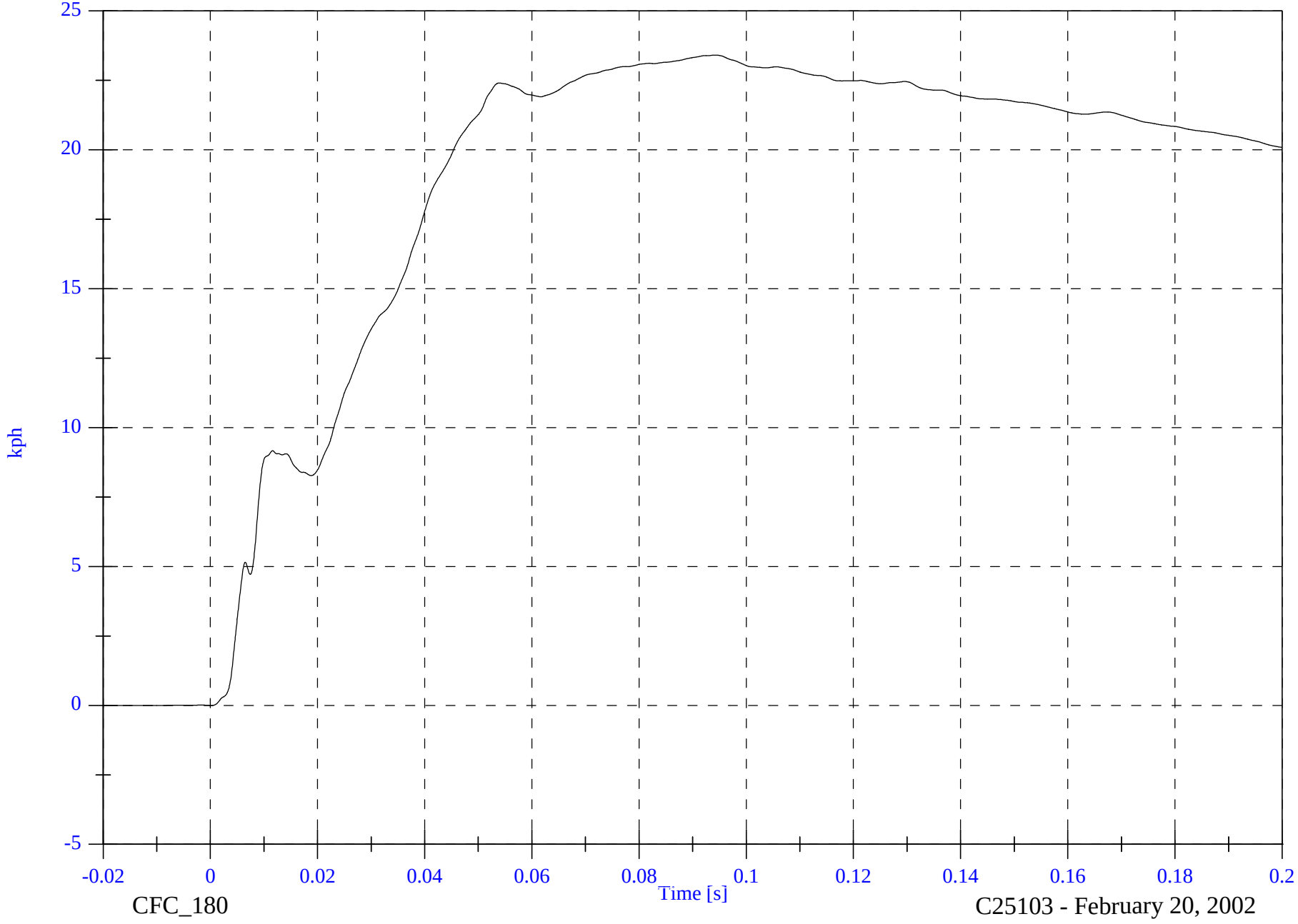
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 17 Rear Seat Track Y Velocity

Max: 23.4 [kph] at 0.094 [s]

Min: -0.0 [kph] at -0.018 [s]



CFC_180

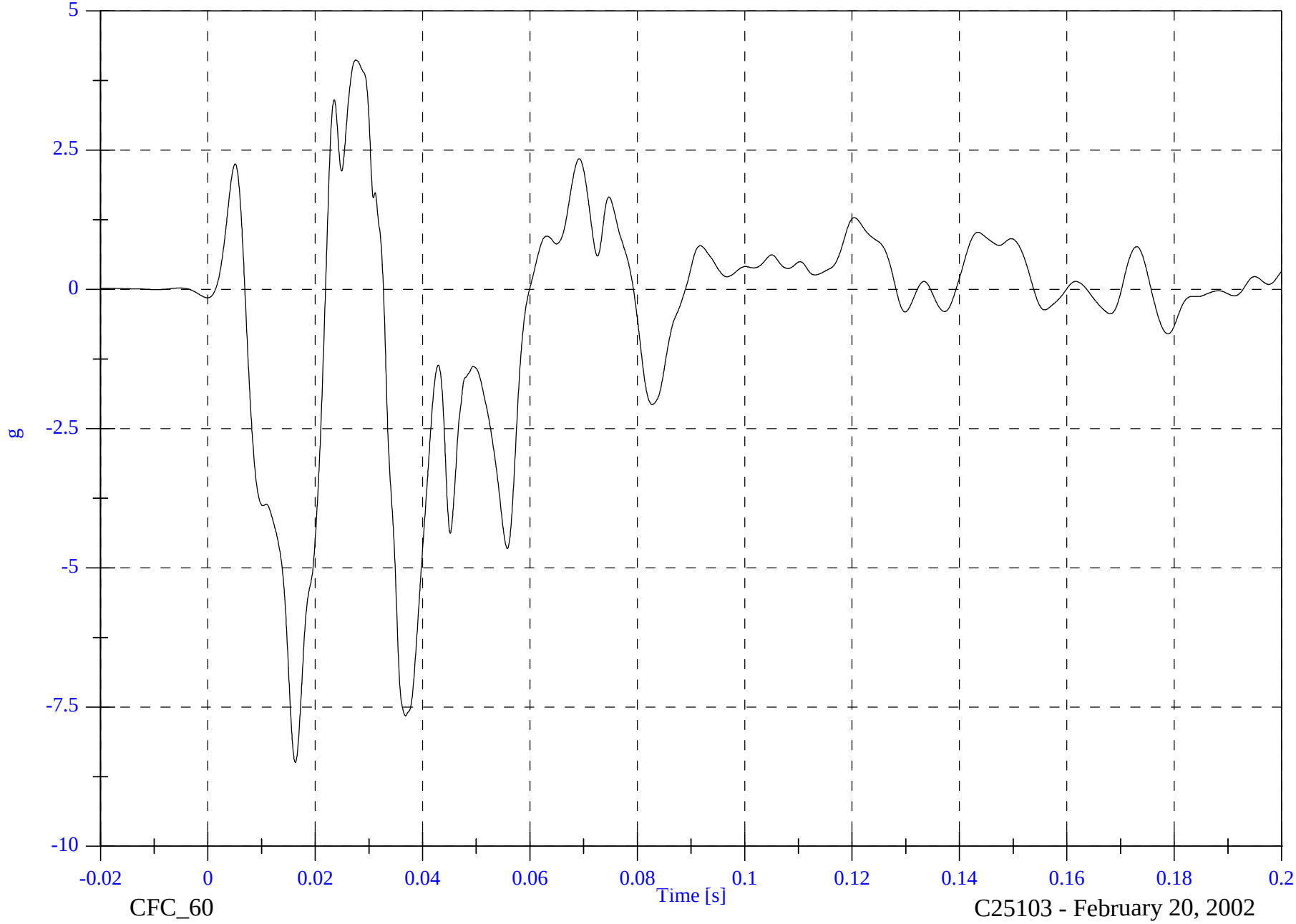
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG X

Max: 4.1 [g] at 0.028 [s]

Min: -8.5 [g] at 0.016 [s]



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CFC_60

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG X Velocity

Max: 0.3 [kph] at 0.007 [s]

Min: -4.4 [kph] at 0.057 [s]

CFC_180

C25103 - February 20, 2002

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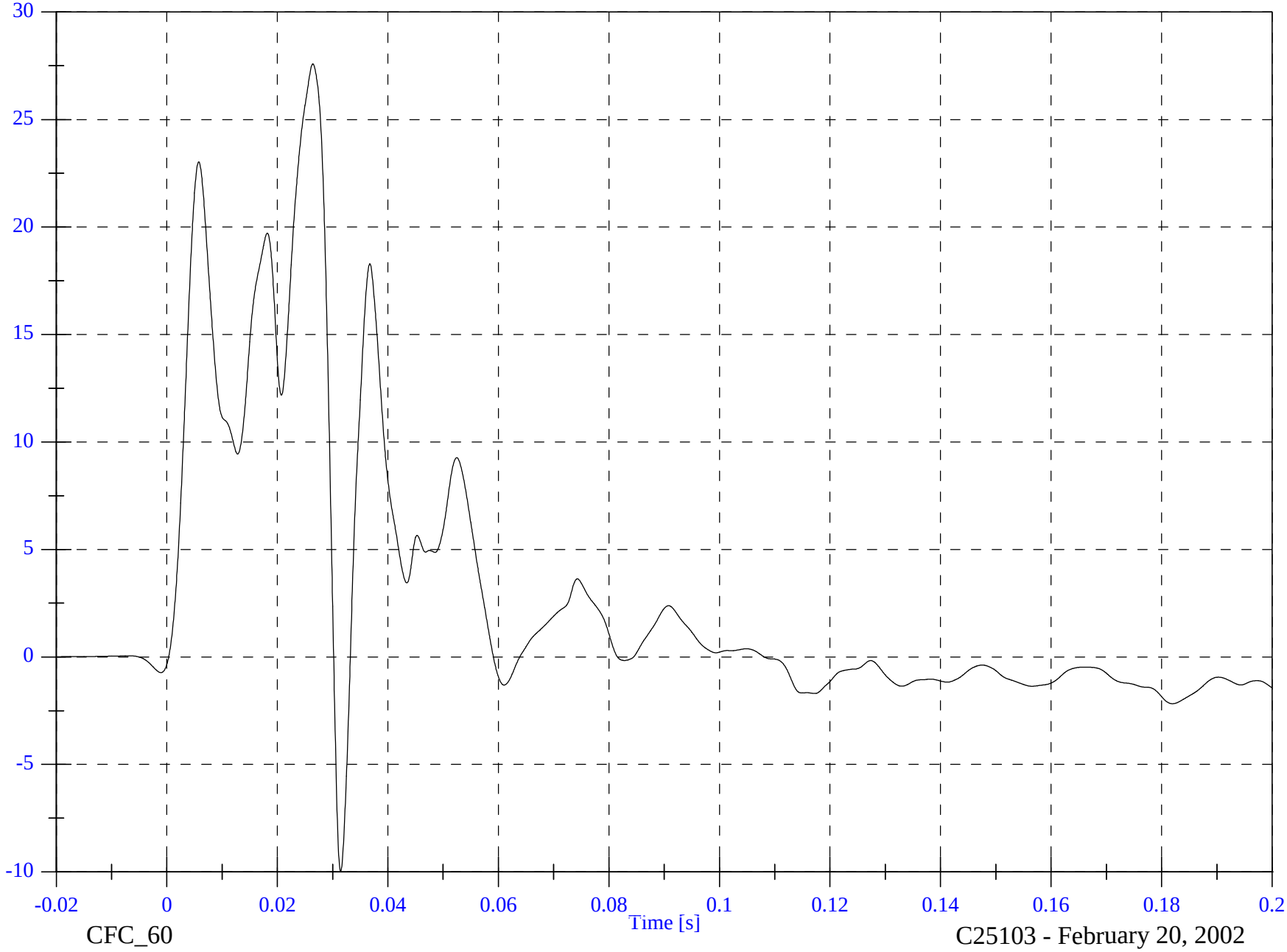
FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG Y

Max: 27.6 [g] at 0.026 [s]

Min: -10.0 [g] at 0.031 [s]



CFC_60

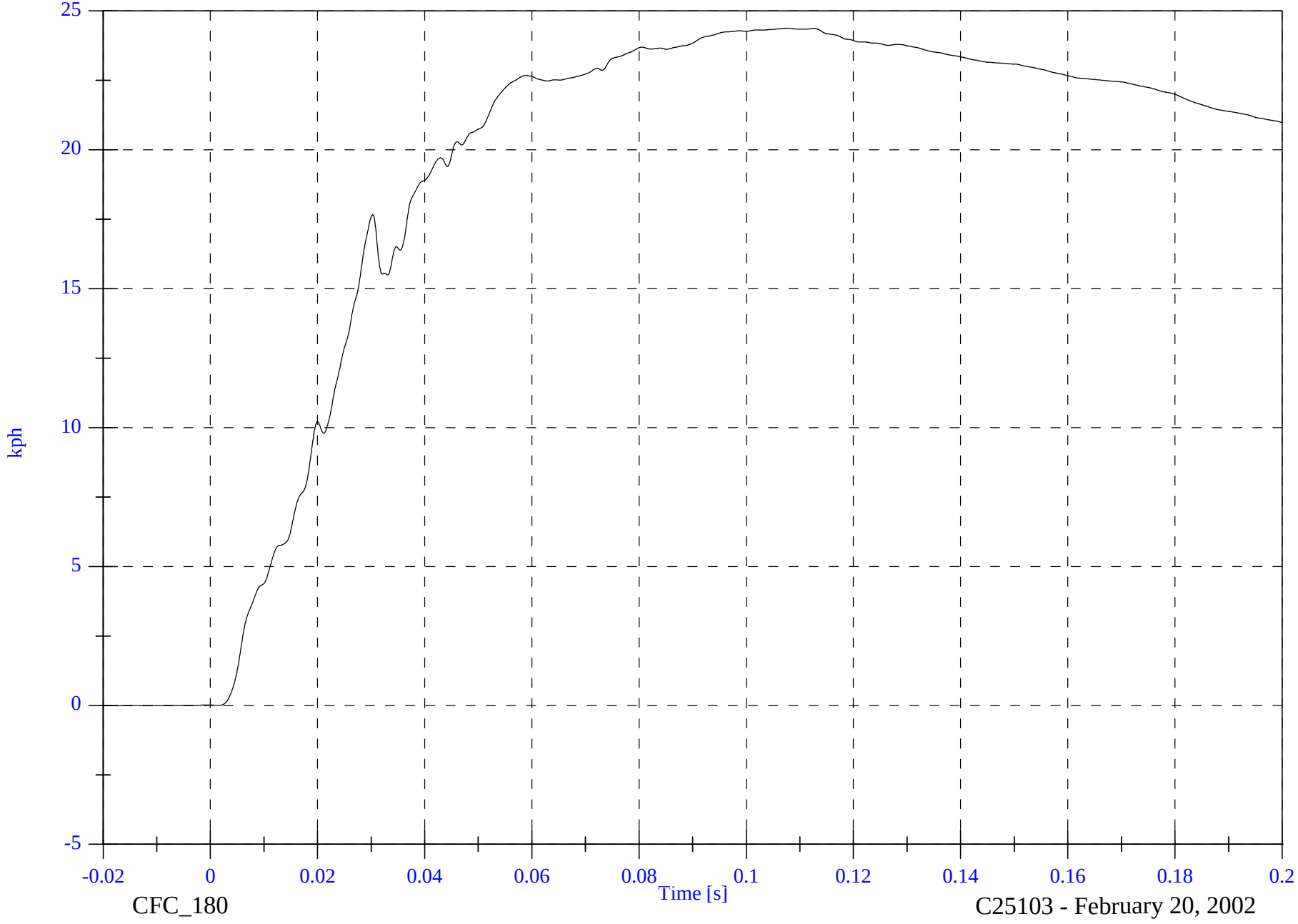
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG Y Velocity

Max: 24.4 [kph] at 0.108 [s]

Min: -0.0 [kph] at -0.020 [s]



CFC_180

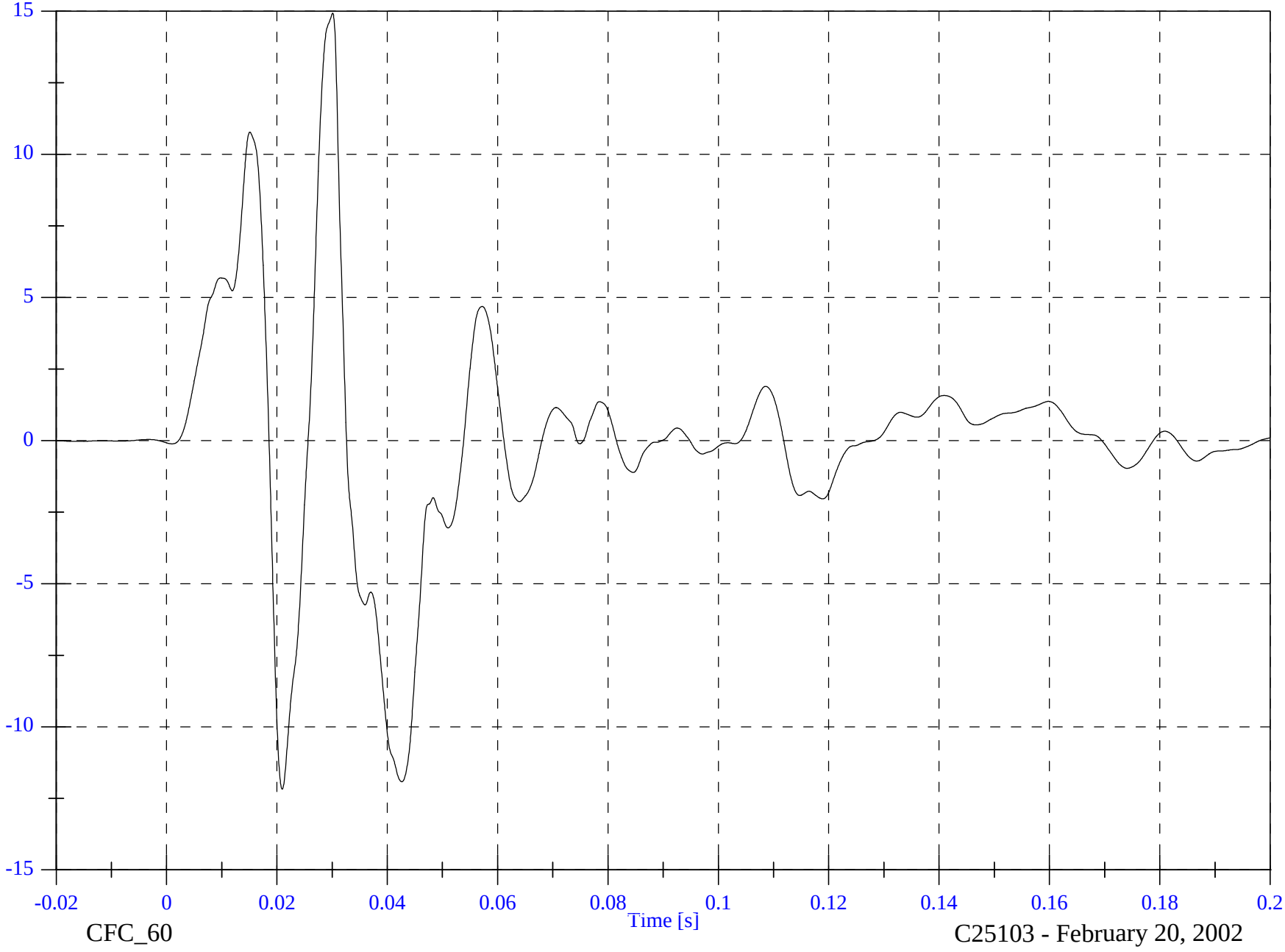
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG Z

Max: 14.9 [g] at 0.030 [s]

Min: -12.2 [g] at 0.021 [s]



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8502-32

CFC_60

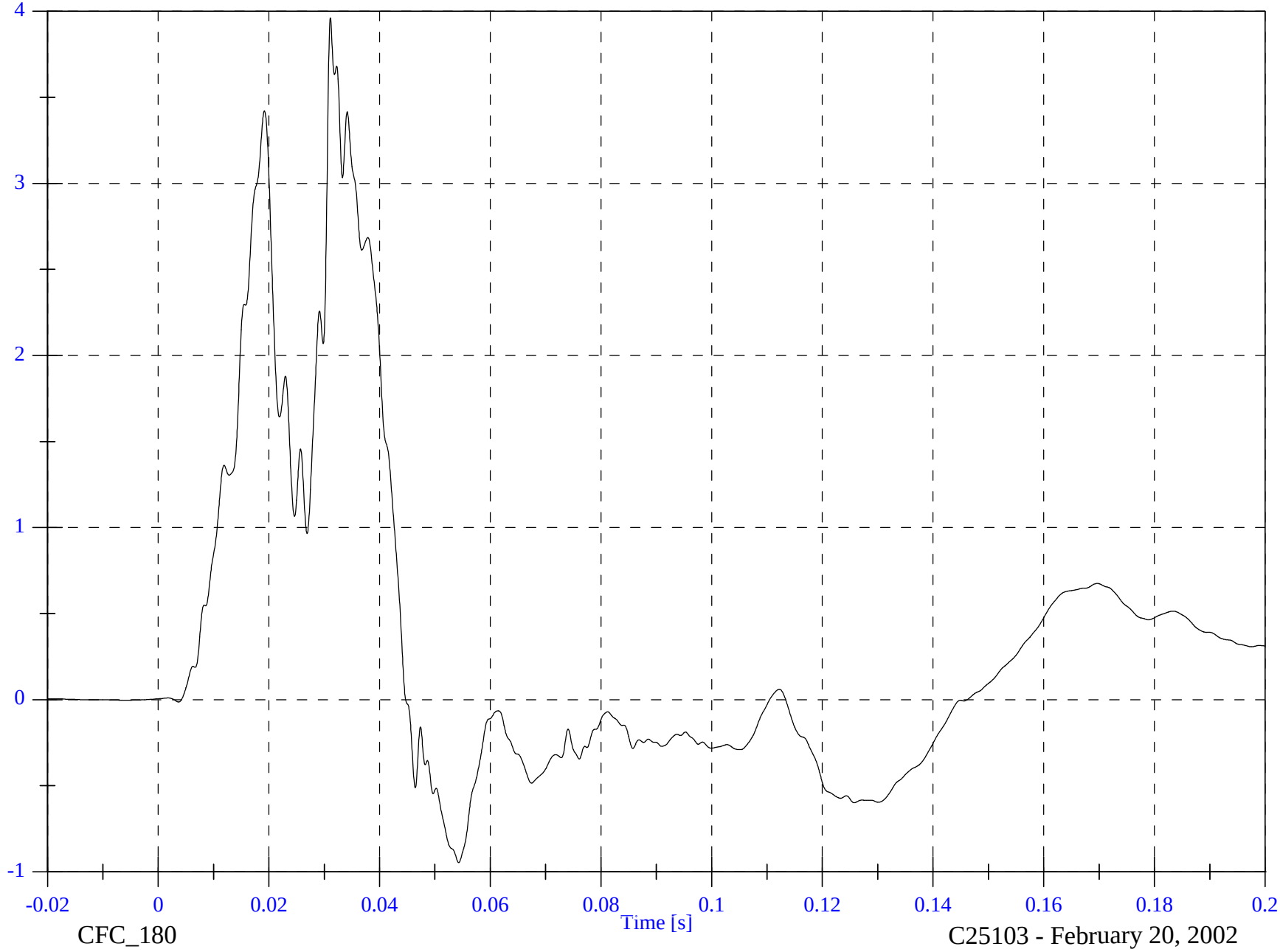
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG Z Velocity

Max: 4.0 [kph] at 0.031 [s]

Min: -0.9 [kph] at 0.054 [s]



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8502-32

CFC_180

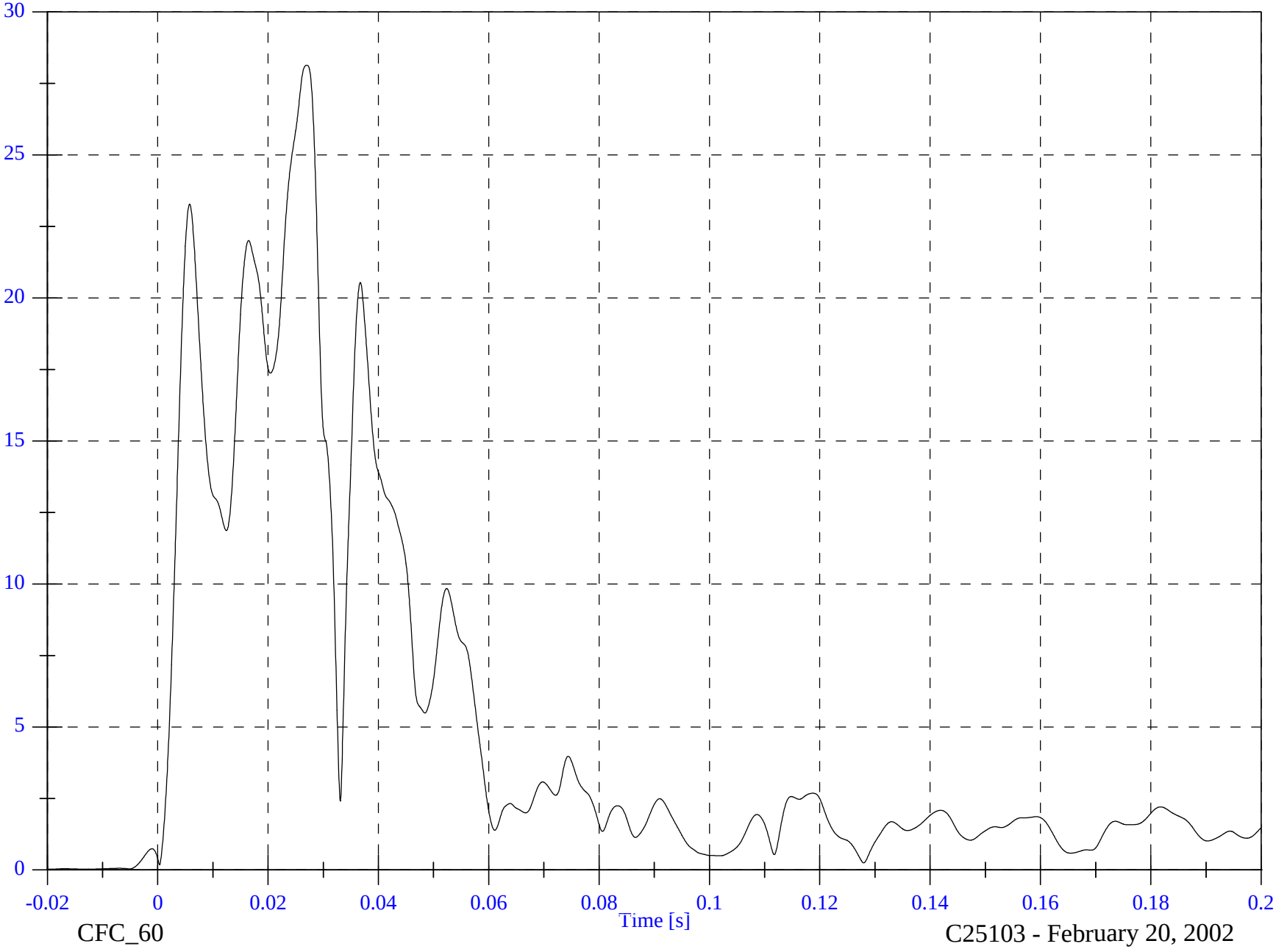
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Acc 18 Target CG Resultant

Max: 28.1 [g] at 0.027 [s]

Min: 0.0 [g] at -0.020 [s]



CFC_60

C25103 - February 20, 2002

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FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG X

Max: 0.9 [g] at 0.095 [s]

Min: -17.0 [g] at 0.029 [s]

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8502-32

CFC_60

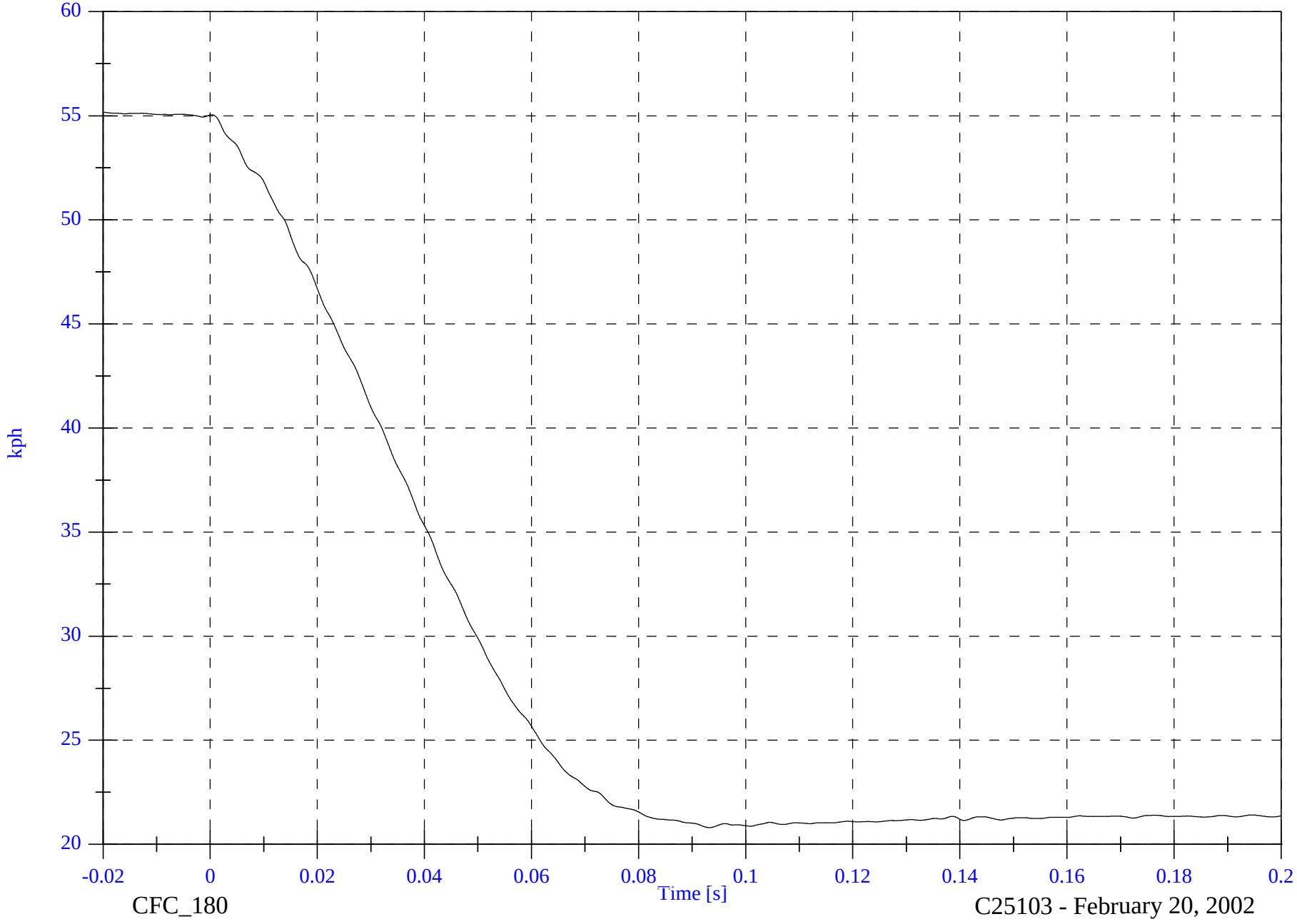
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG X Velocity

Max: 55.2 [kph] at -0.020 [s]

Min: 20.8 [kph] at 0.093 [s]



CFC_180

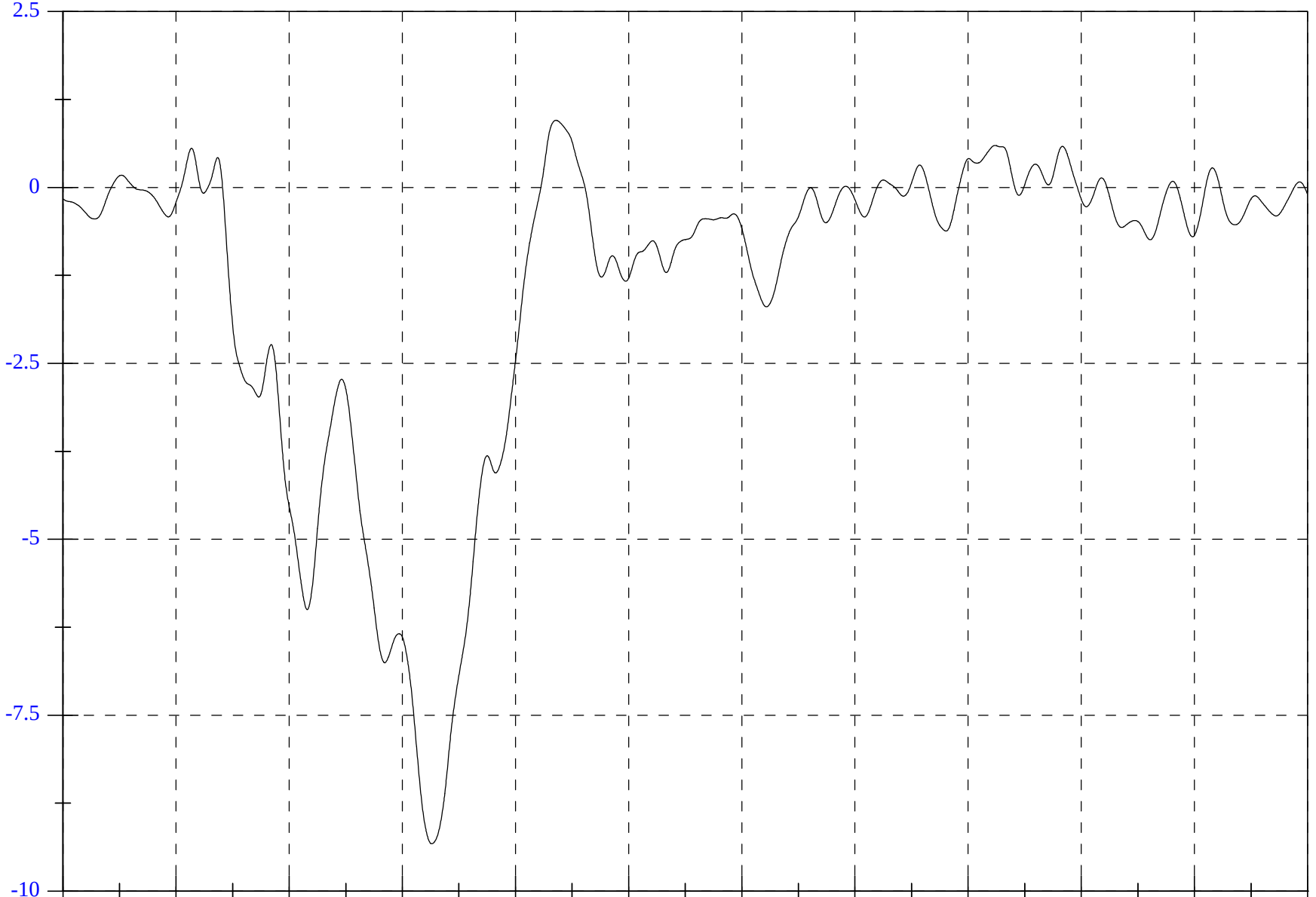
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG Y

Max: 1.0 [g] at 0.067 [s]

Min: -9.3 [g] at 0.045 [s]



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8502-32

CFC_60

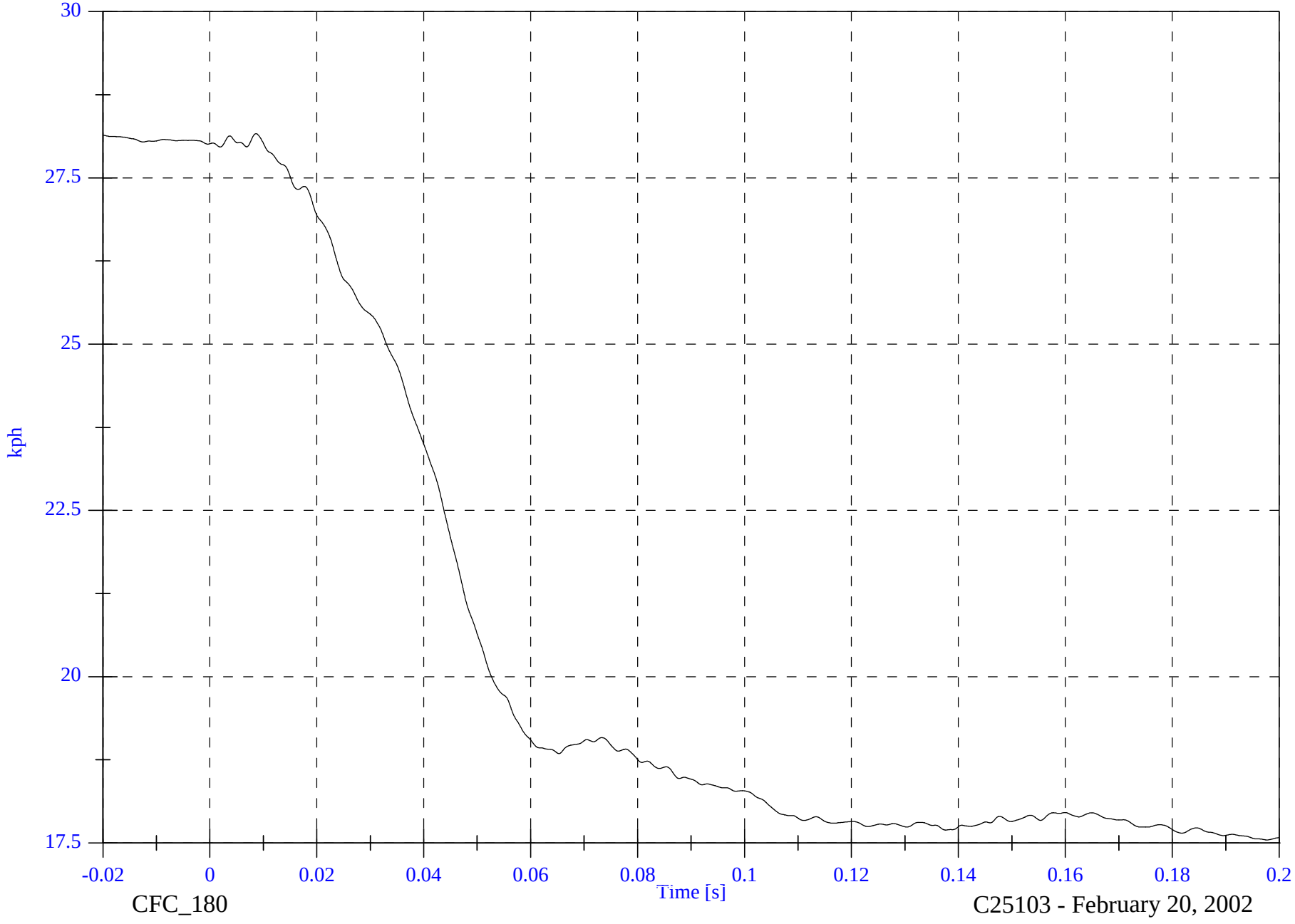
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG Y Velocity

Max: 28.2 [kph] at 0.009 [s]

Min: 17.5 [kph] at 0.198 [s]



B-93

8502-32

CFC_180

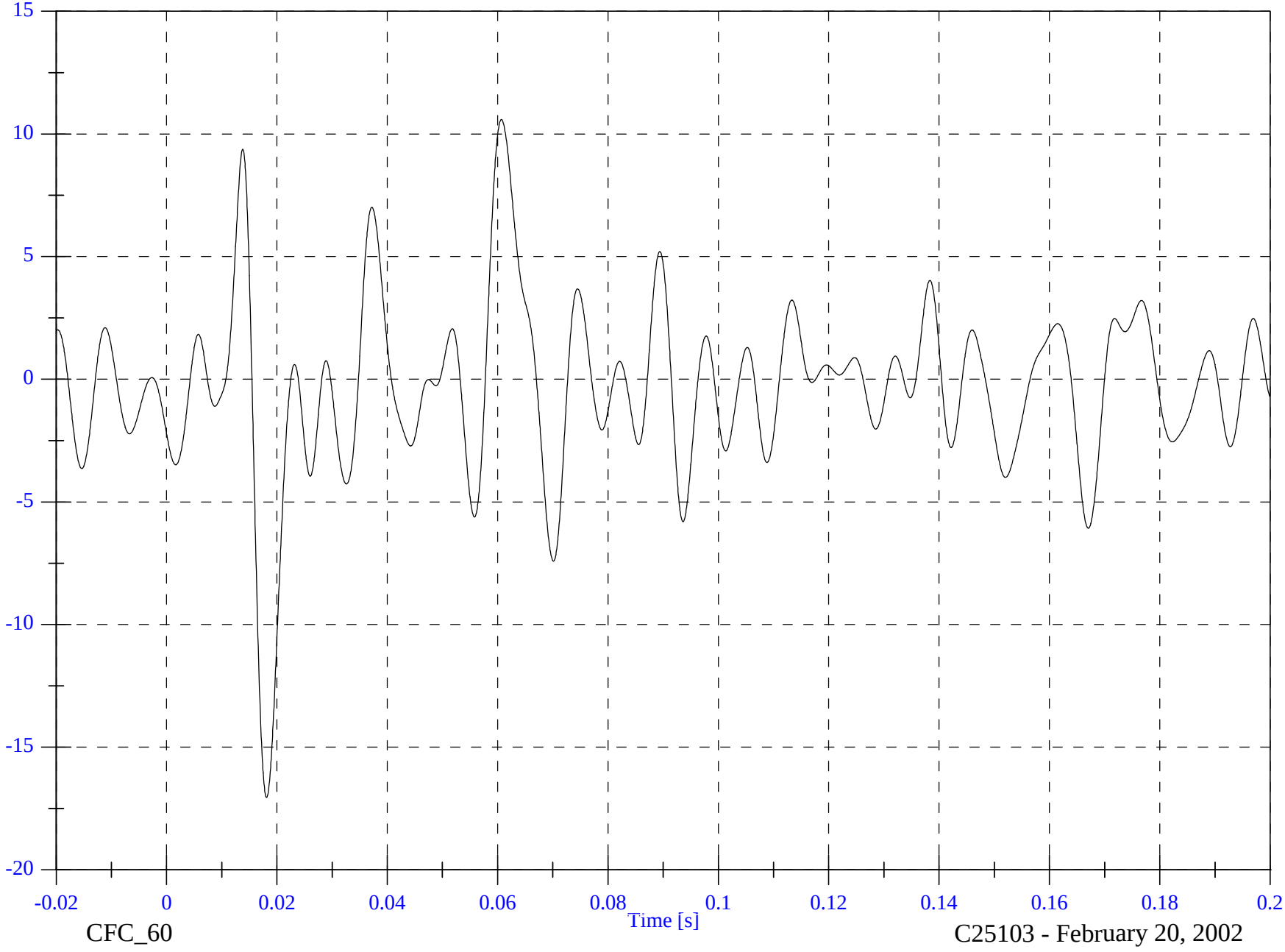
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG Z

Max: 10.6 [g] at 0.061 [s]

Min: -17.1 [g] at 0.018 [s]



CFC_60

C25103 - February 20, 2002

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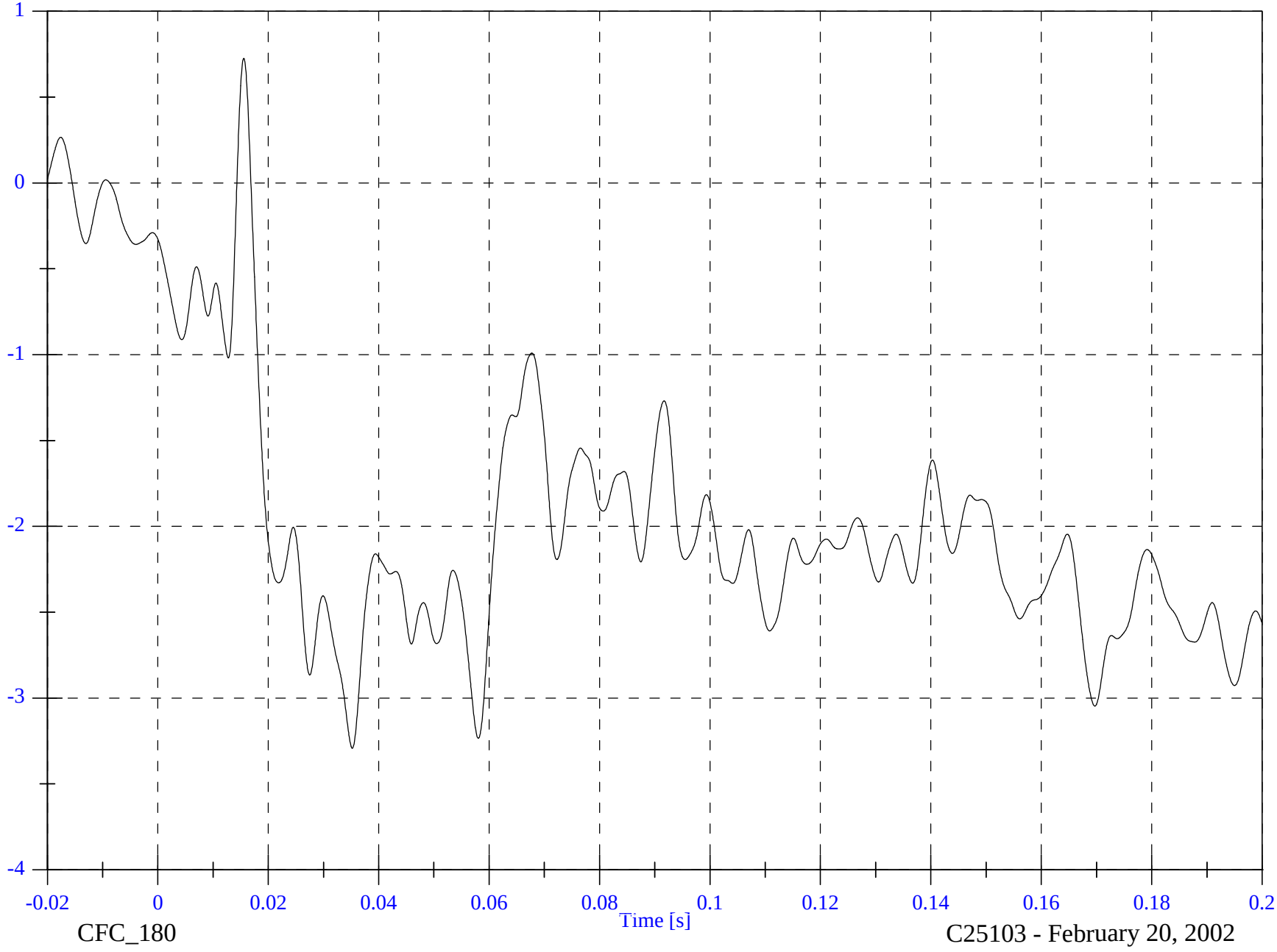
8502-32

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG Z Velocity

Max: 0.7 [kph] at 0.016 [s]

Min: -3.3 [kph] at 0.035 [s]



CFC_180

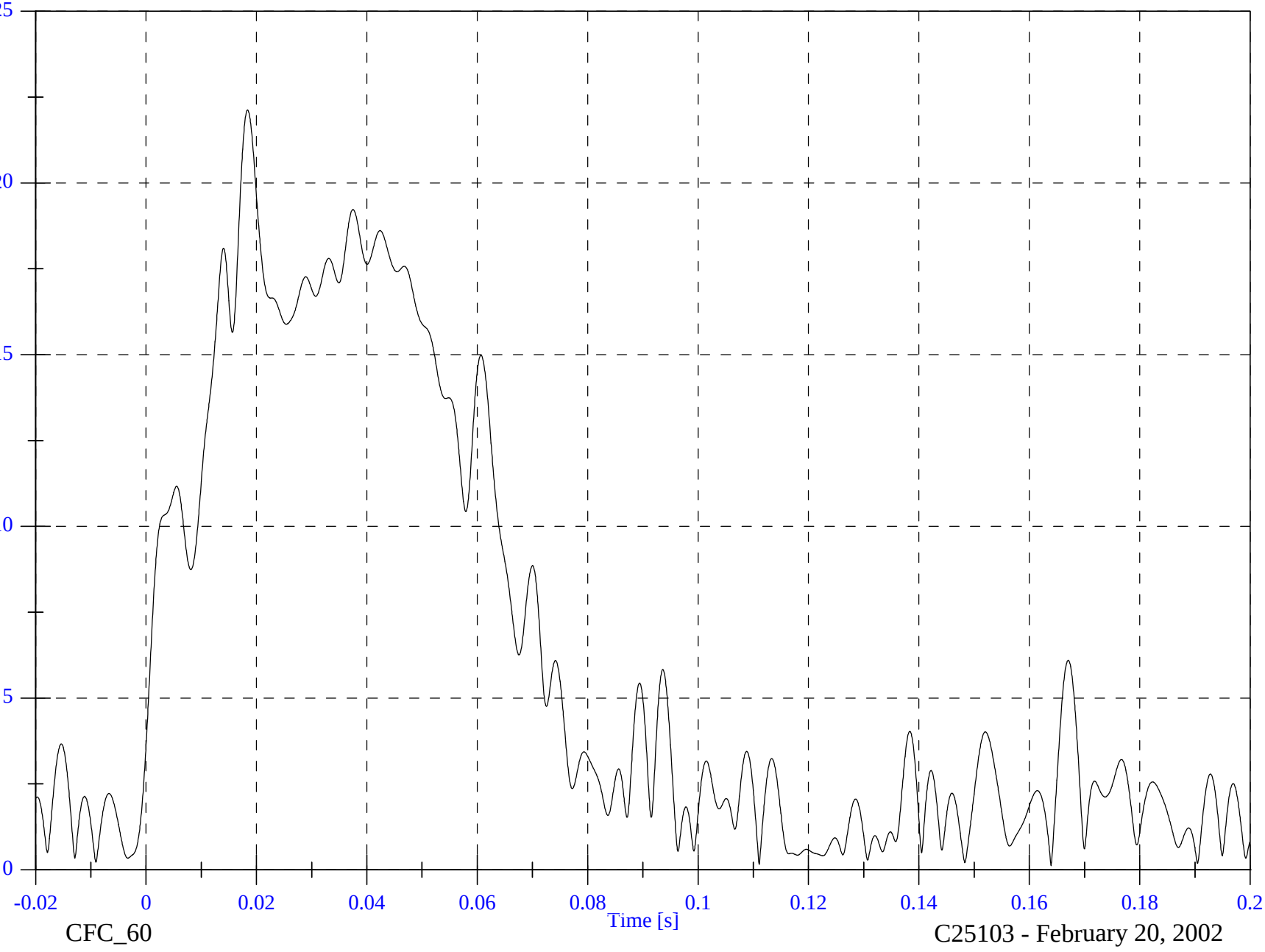
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier CG Resultant

Max: 22.1 [g] at 0.018 [s]

Min: 0.1 [g] at 0.164 [s]



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8502-32

CFC_60

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier Left Rail X

Max: 1.8 [g] at 0.096 [s]

Min: -20.2 [g] at 0.033 [s]

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8502-32

CFC_60

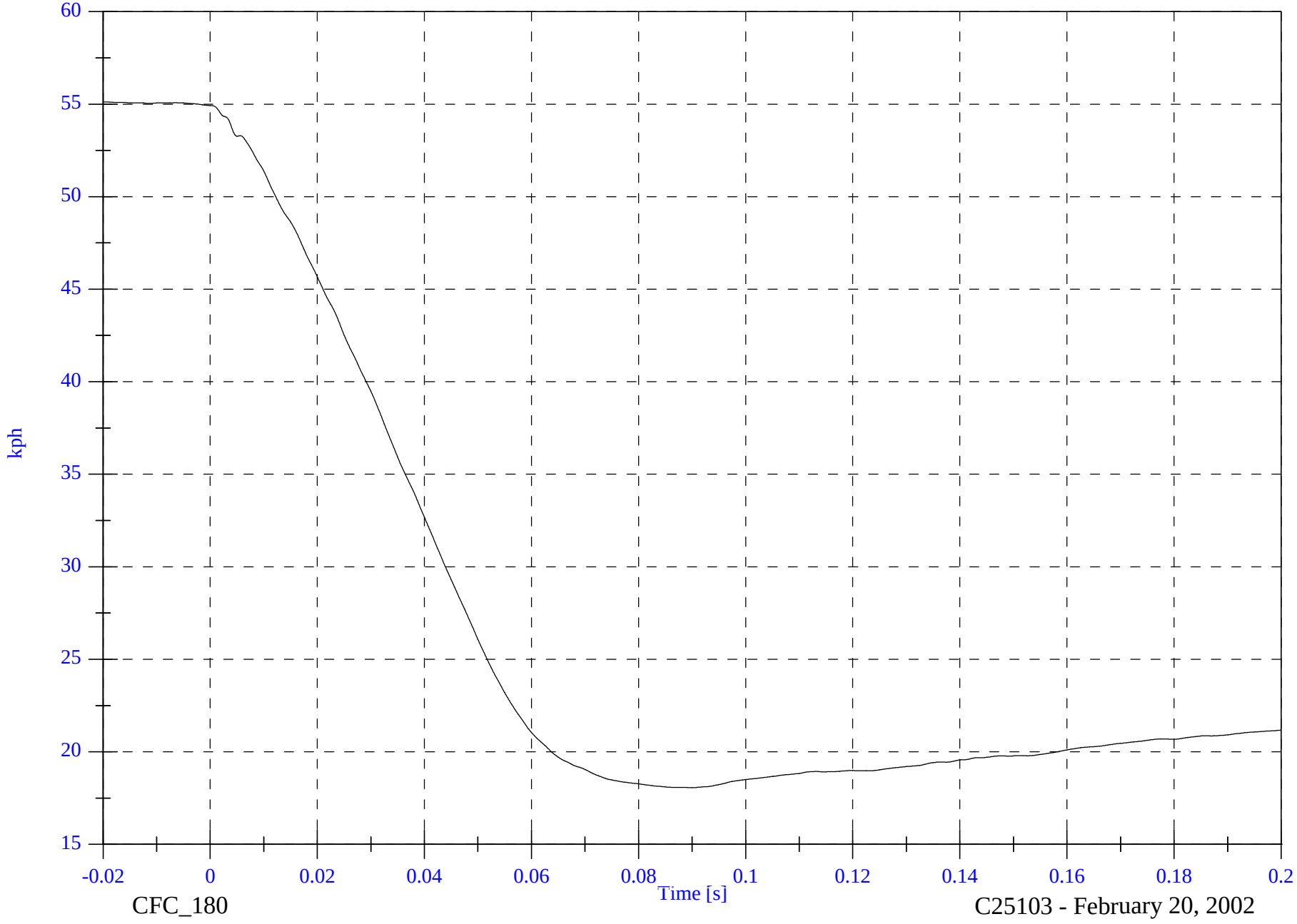
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier Left Rail X Velocity

Max: 55.1 [kph] at -0.020 [s]

Min: 18.1 [kph] at 0.090 [s]



CFC_180

C25103 - February 20, 2002

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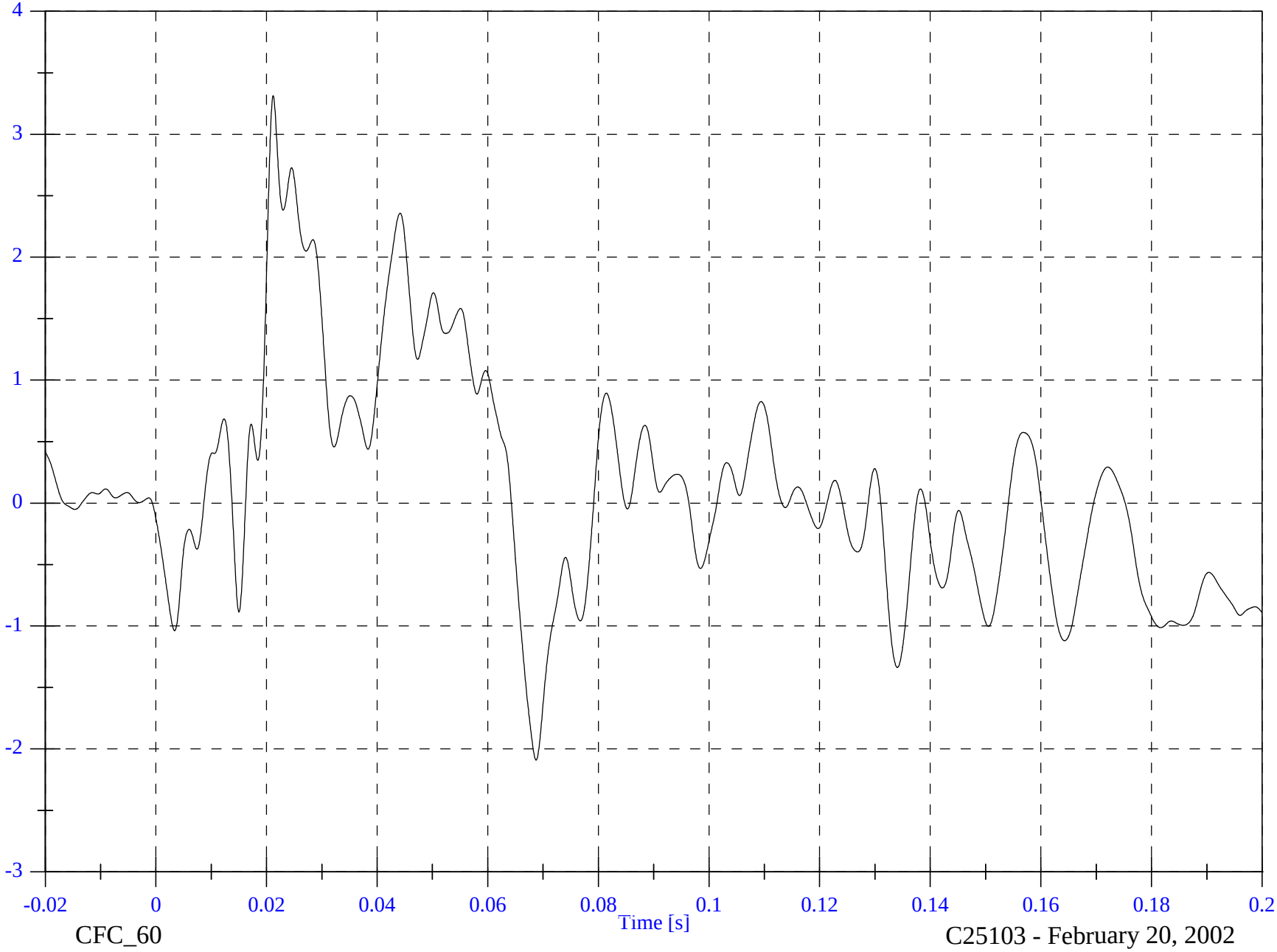
FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier Left Rail Y

Max: 3.3 [g] at 0.021 [s]

Min: -2.1 [g] at 0.069 [s]



B-99

8502-32

CFC_60

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

Moving Barrier Left Rail Y Velocity

Max: 30.3 [kph] at 0.064 [s]

Min: 27.8 [kph] at 0.016 [s]

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8502-32

CFC_180

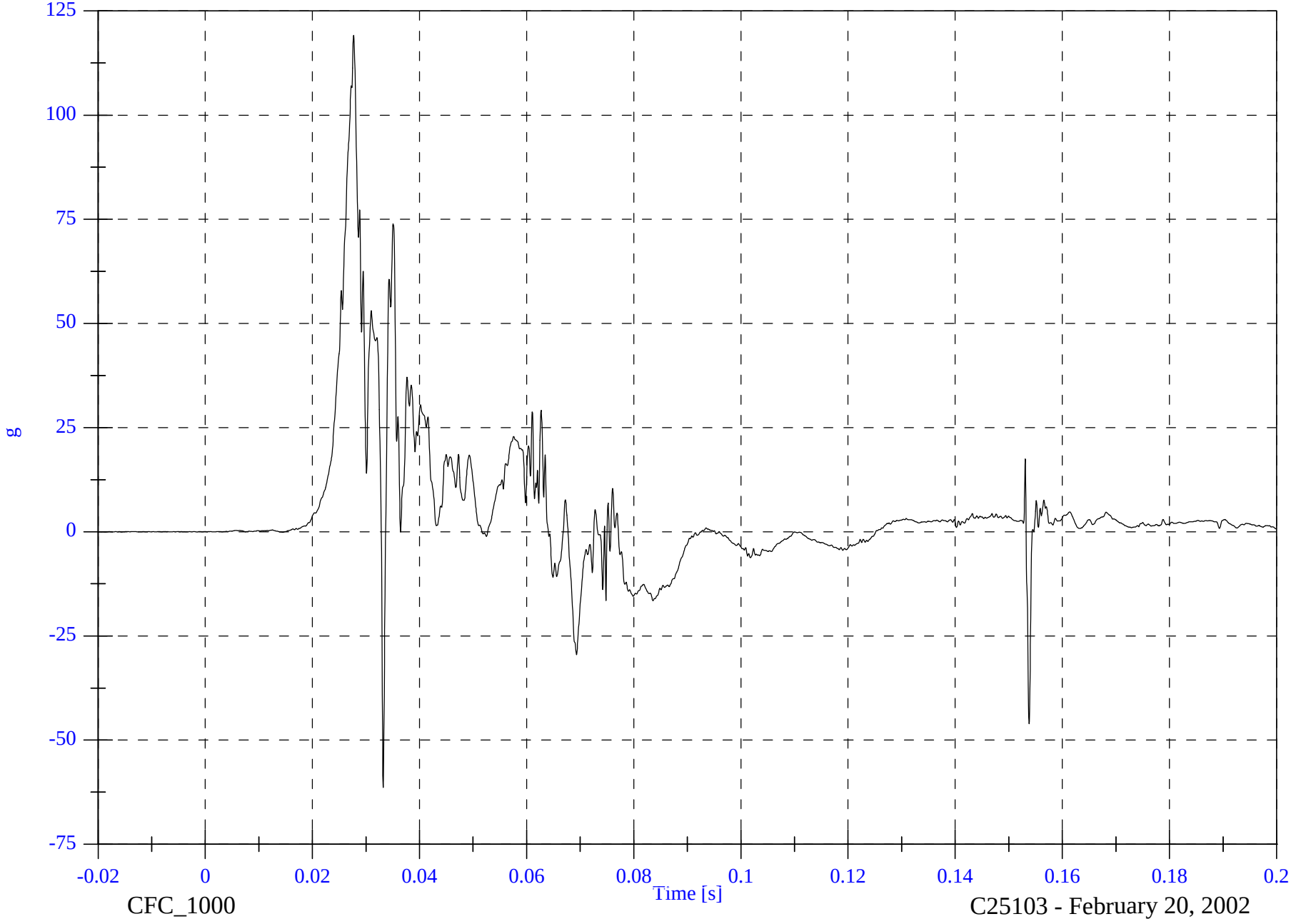
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Upper Rib Ry

Max: 119.2 [g] at 0.028 [s]

Min: -61.4 [g] at 0.033 [s]



B-101

8502-32

CFC_1000

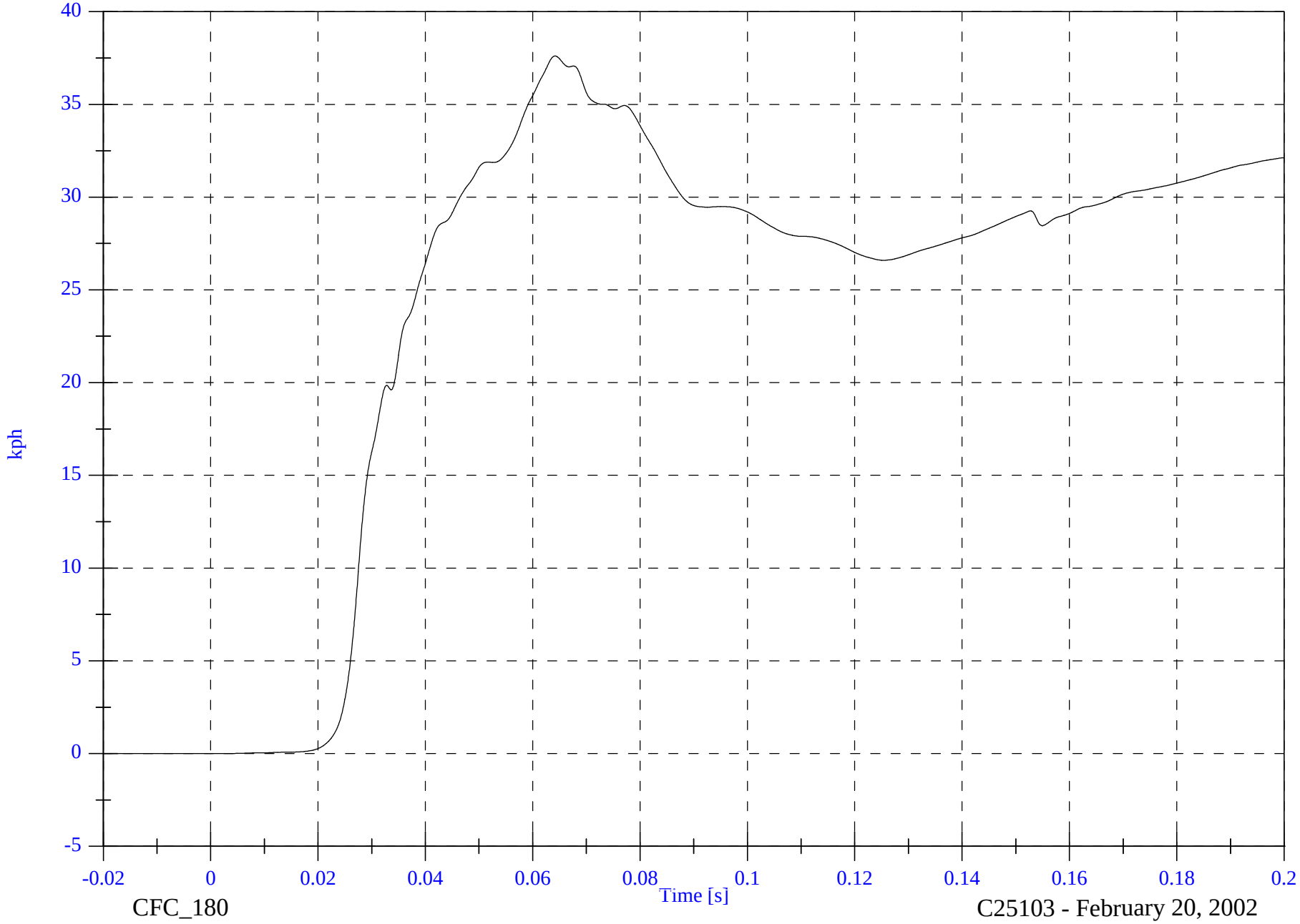
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Upper Rib Ry Velocity

Max: 37.6 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.015 [s]



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8502-32

CFC_180

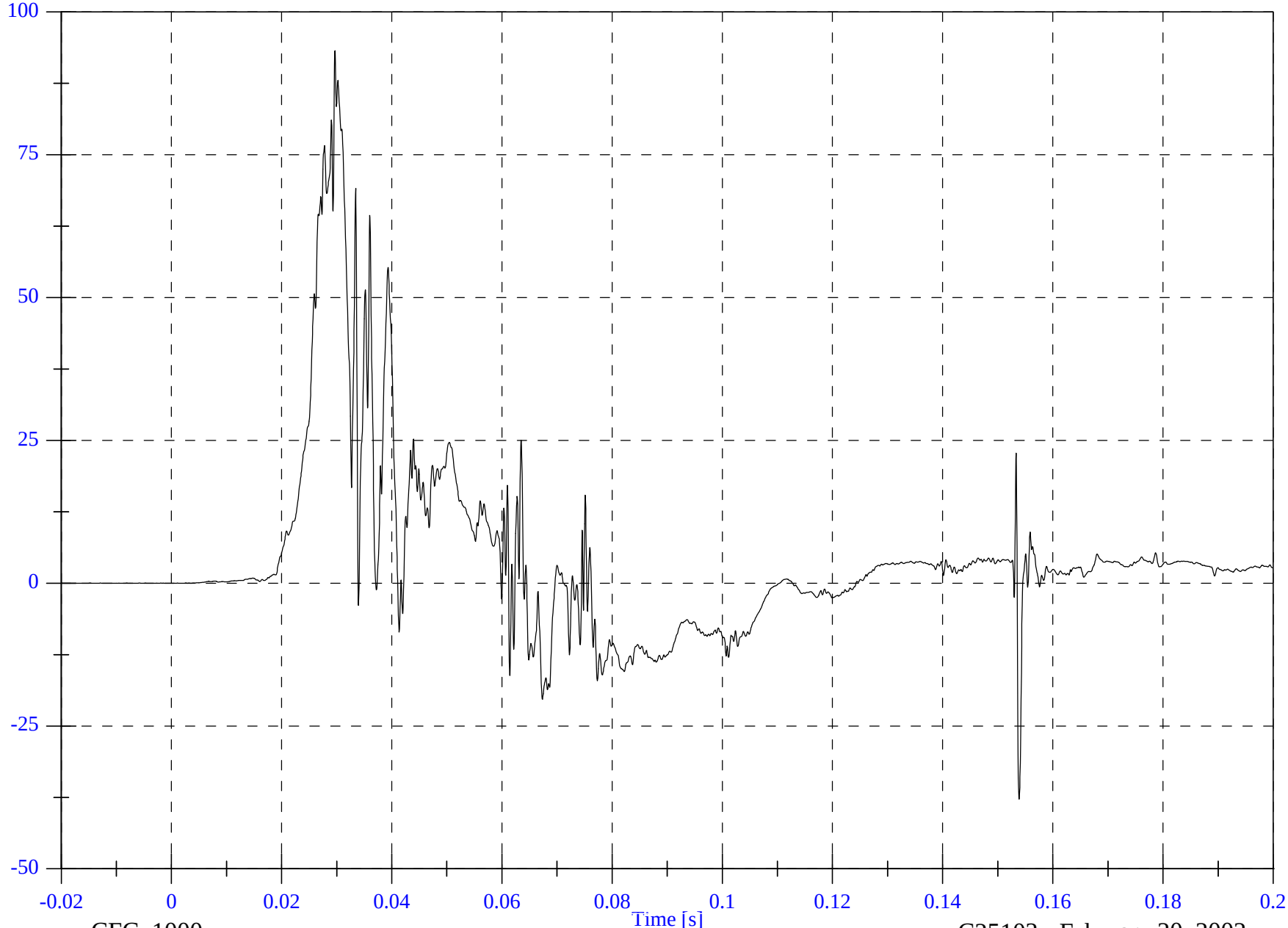
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Rib Ry

Max: 93.3 [g] at 0.030 [s]

Min: -37.8 [g] at 0.154 [s]



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8502-32

CFC_1000

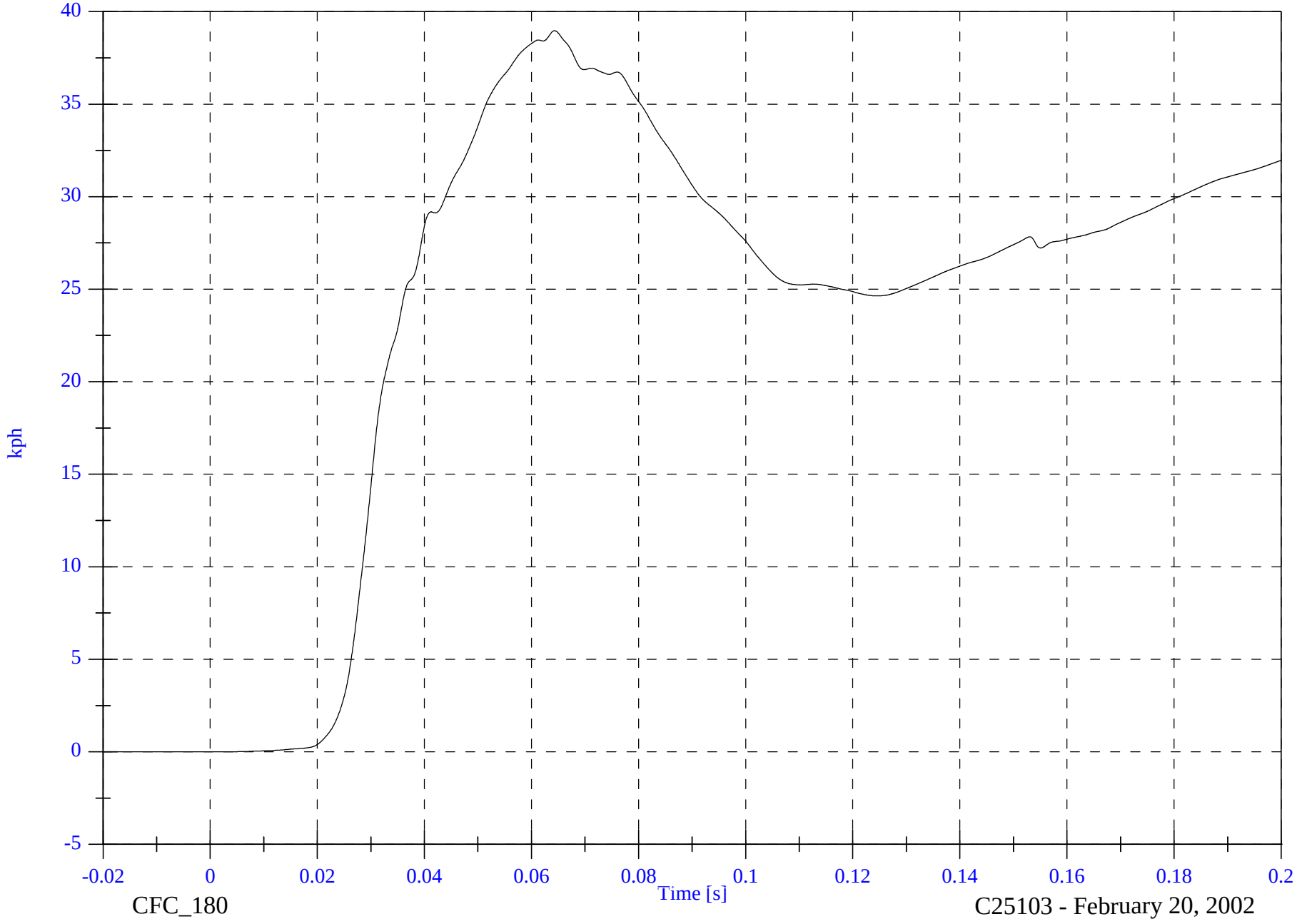
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Rib Ry Velocity

Max: 39.0 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.019 [s]



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8502-32

CFC_180

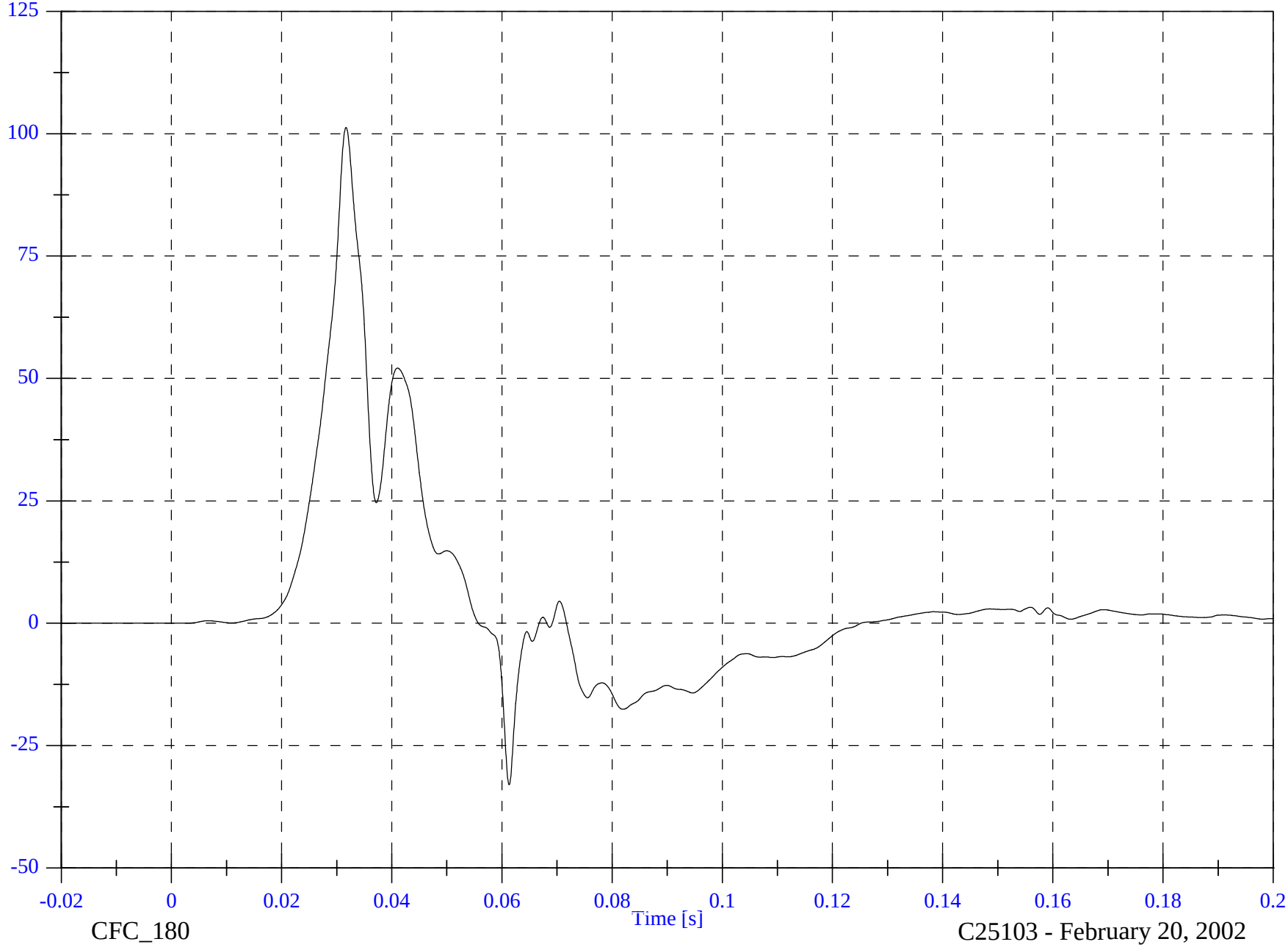
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Spine Ry

Max: 101.3 [g] at 0.032 [s]

Min: -33.0 [g] at 0.061 [s]



B-105

8502-32

CFC_180

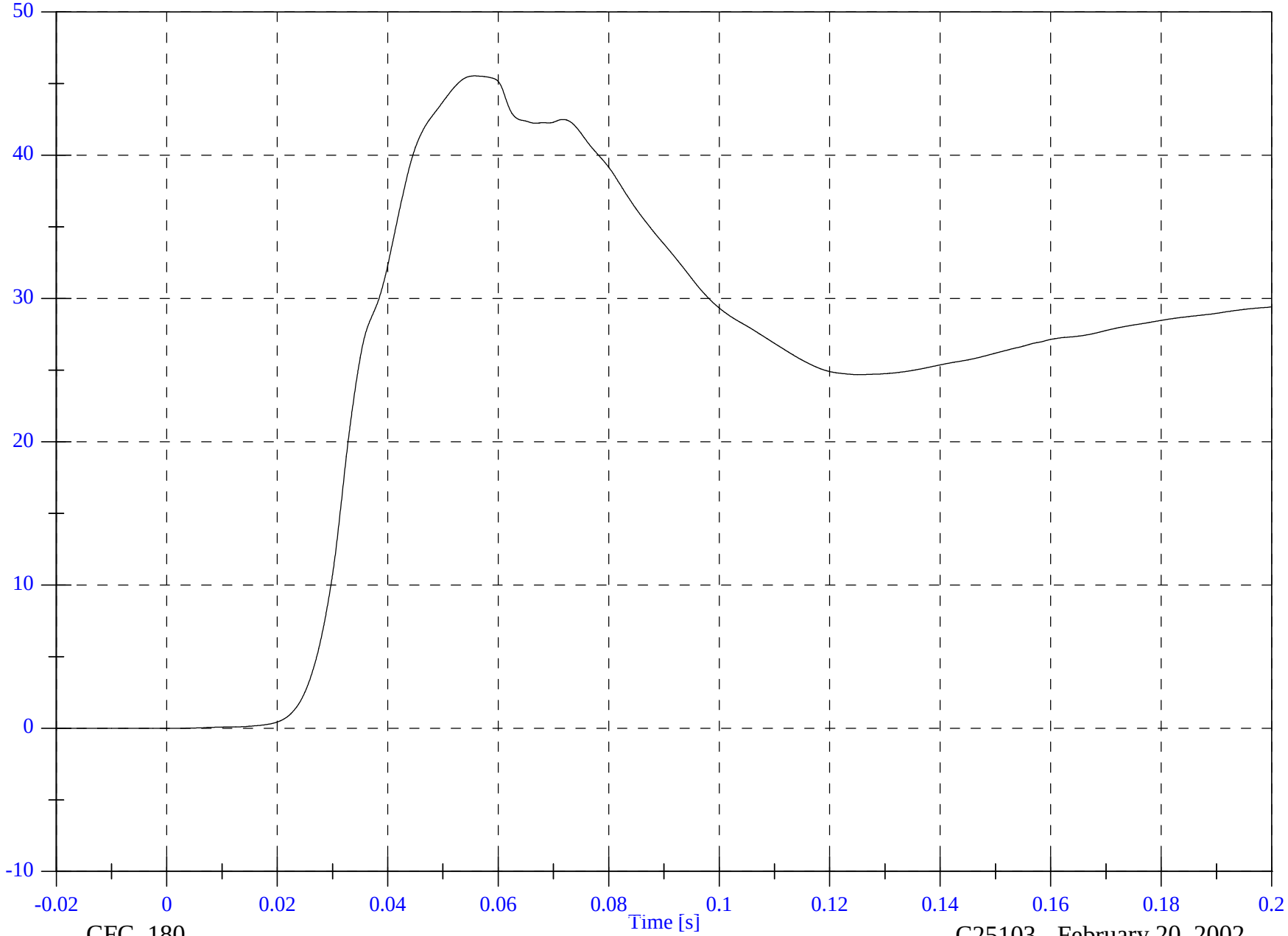
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Spine Ry Velocity

Max: 45.5 [kph] at 0.056 [s]

Min: -0.0 [kph] at -0.019 [s]



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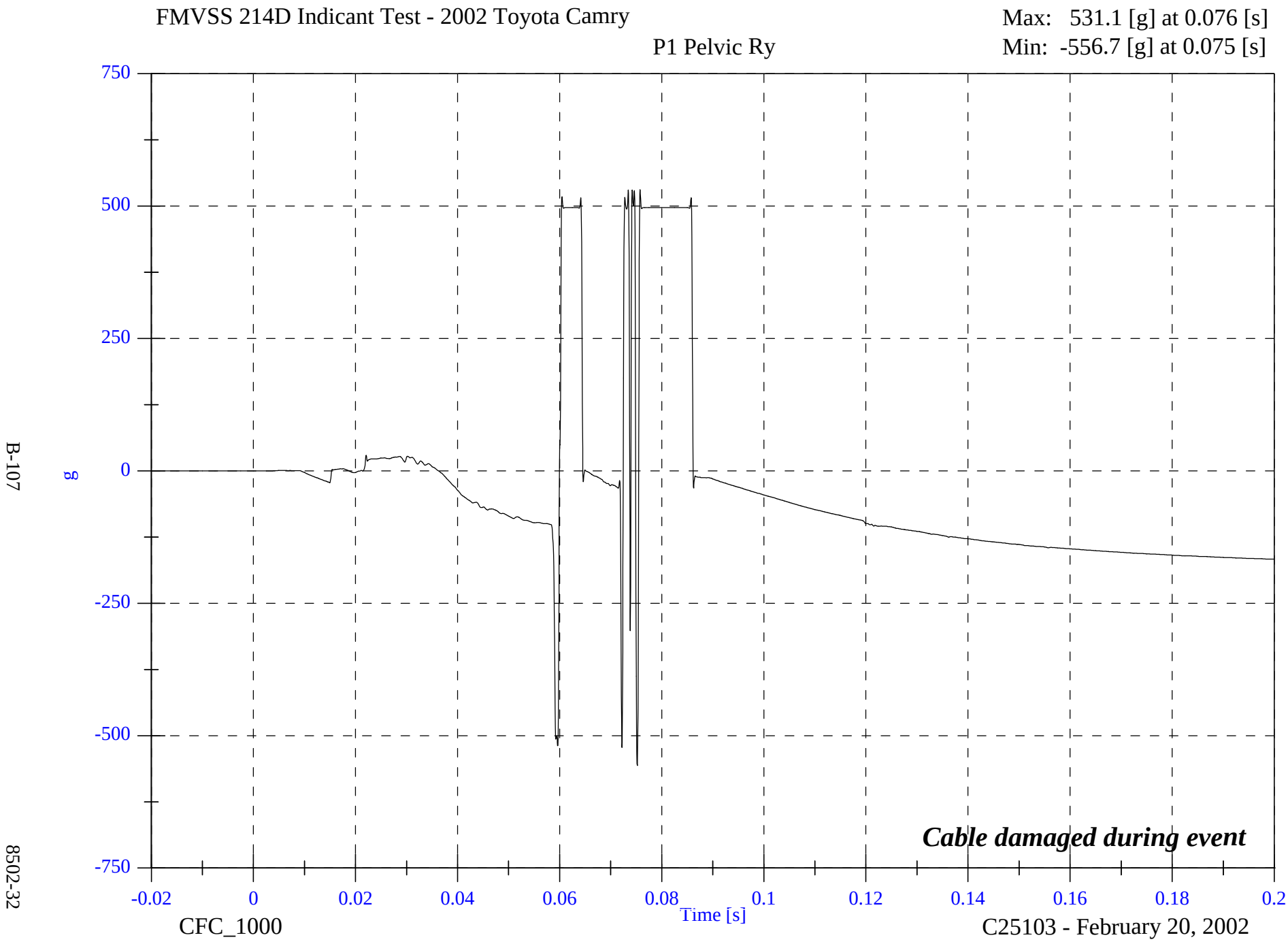
CFC_180

C25103 - February 20, 2002


FMVSS 214D Indicant Test - 2002 Toyota Camry
P1 Pelvic Ry
Max: 531.1 [g] at 0.076 [s]
Min: -556.7 [g] at 0.075 [s]
750
500
250
0
-250
-500
-750
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
Cable damaged during event
CFC_1000
C25103 - February 20, 2002

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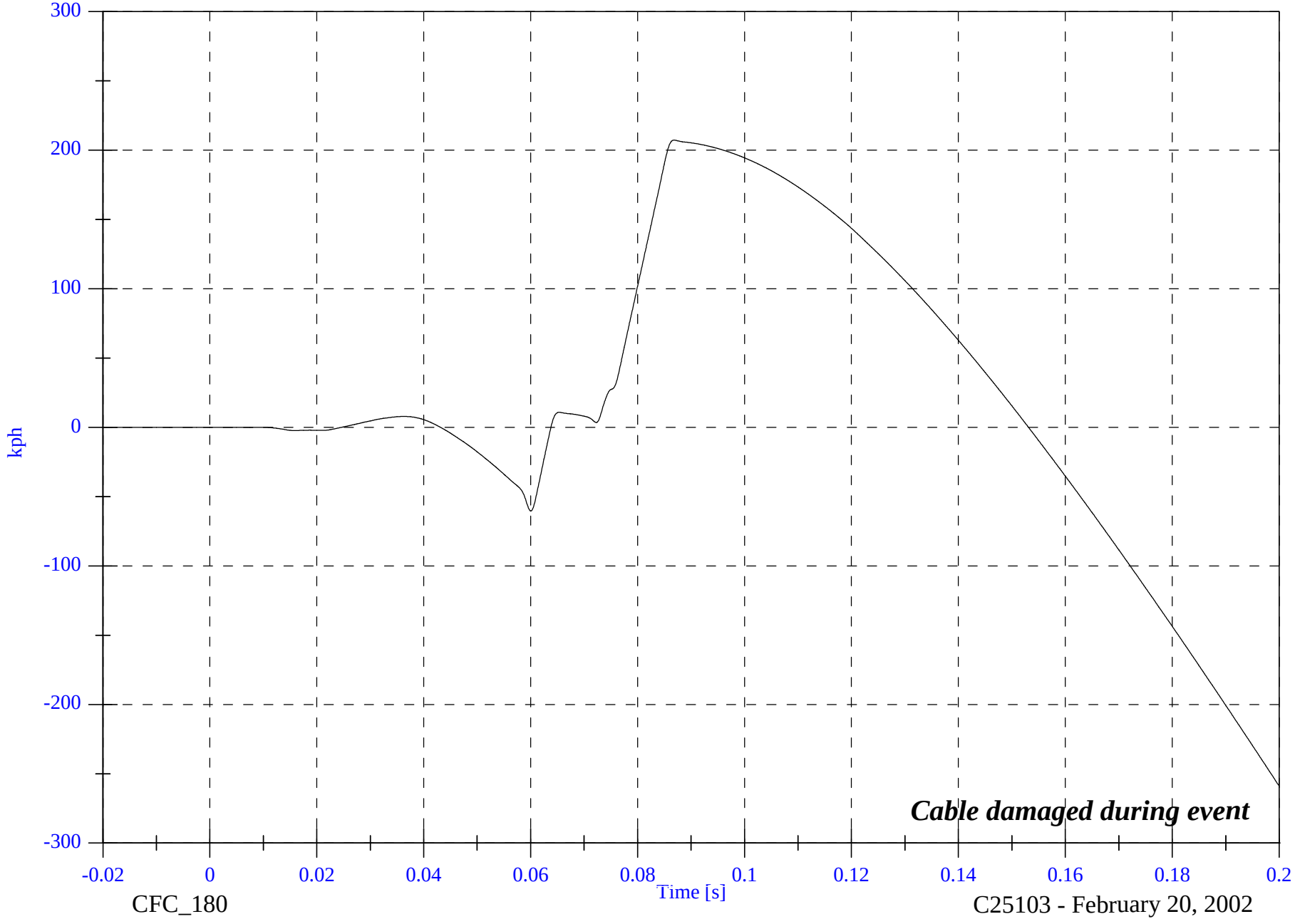
FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Pelvic Ry Velocity

Max: 207.3 [kph] at 0.087 [s]

Min: -258.6 [kph] at 0.200 [s]



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8502-32

CFC_180

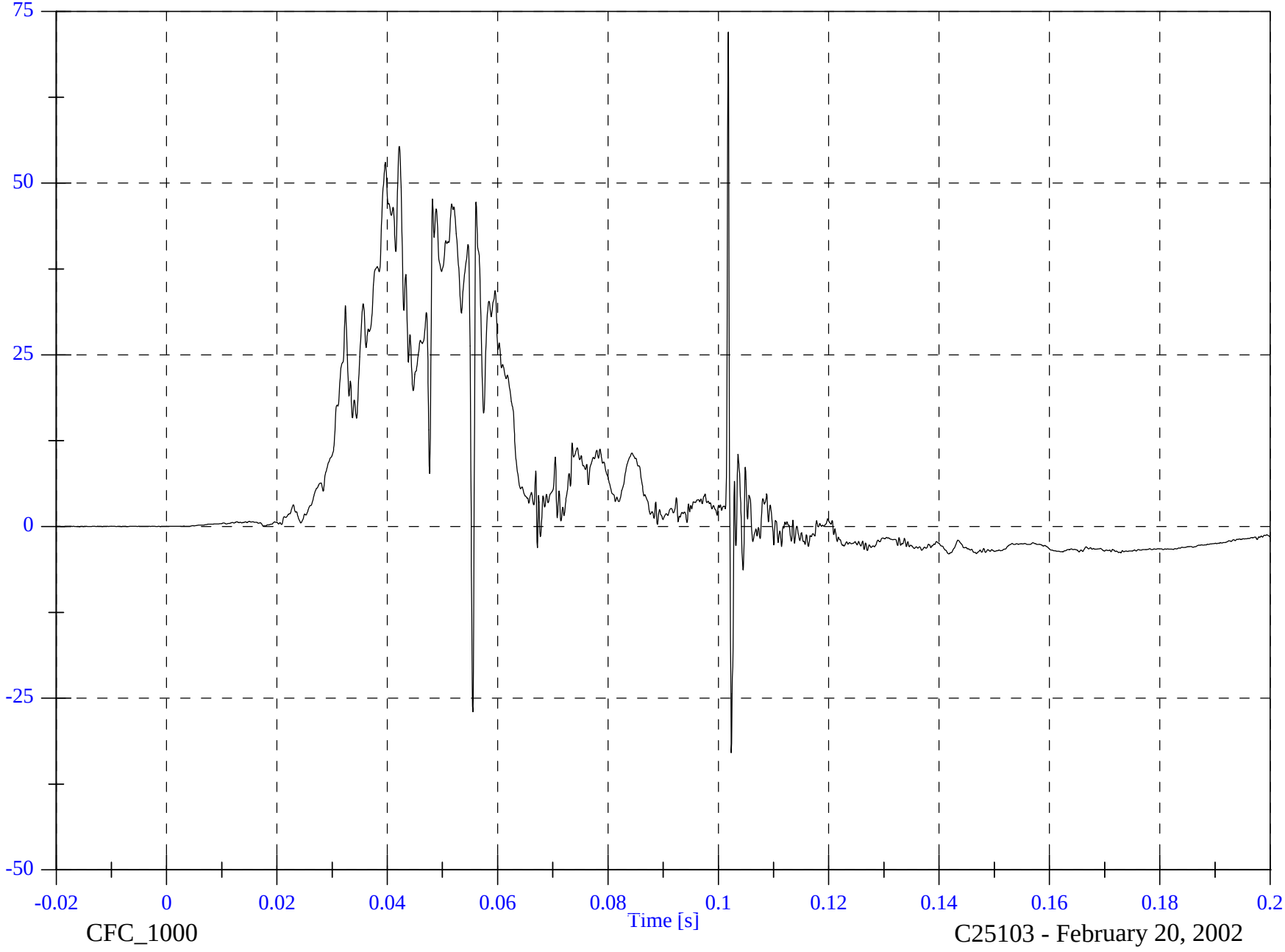
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Upper Rib Ry

Max: 72.0 [g] at 0.102 [s]

Min: -32.9 [g] at 0.102 [s]



B-109

8502-32

CFC_1000

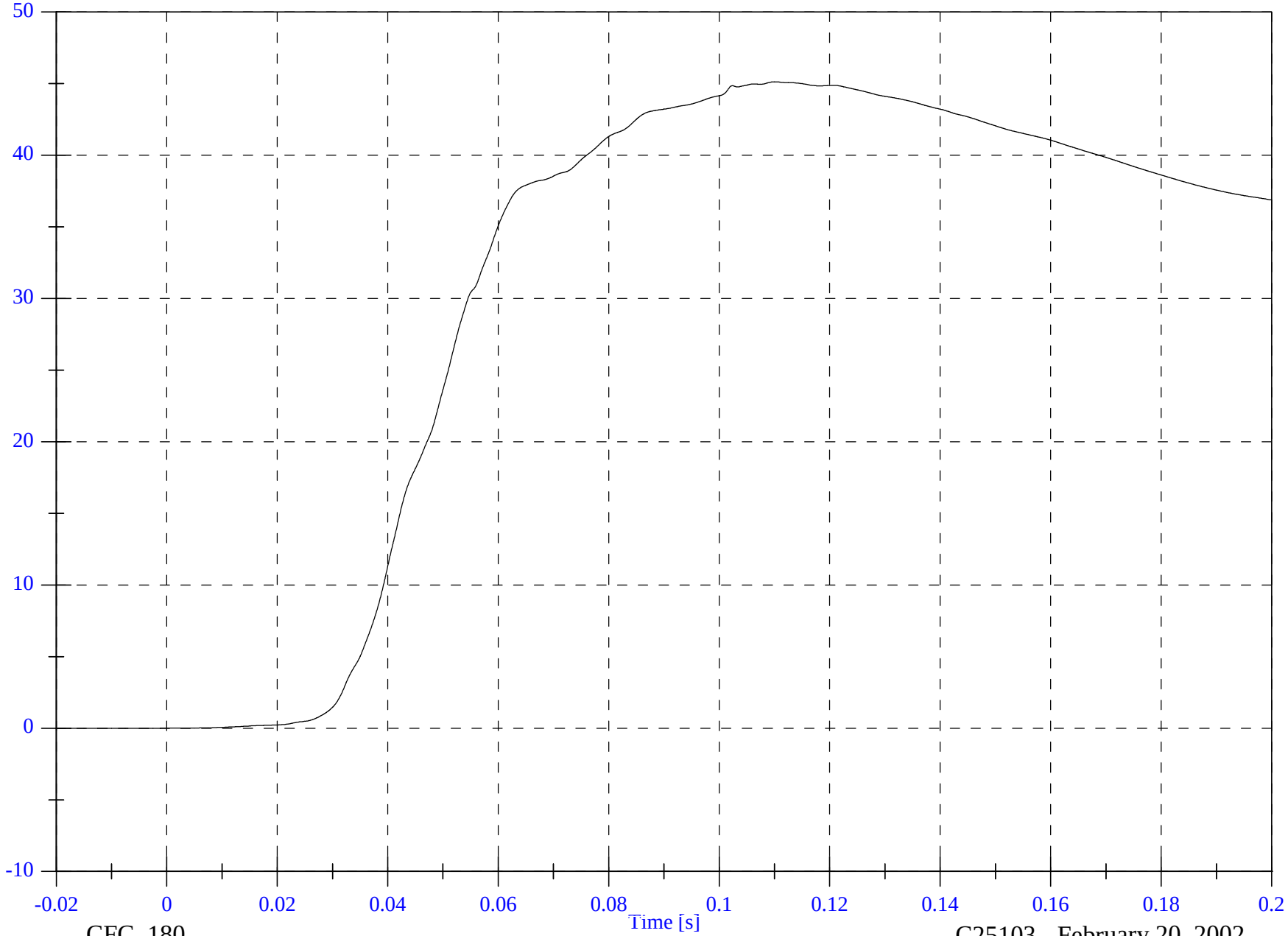
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Upper Rib Ry Velocity

Max: 45.1 [kph] at 0.110 [s]

Min: -0.0 [kph] at -0.018 [s]



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8502-32

CFC_180

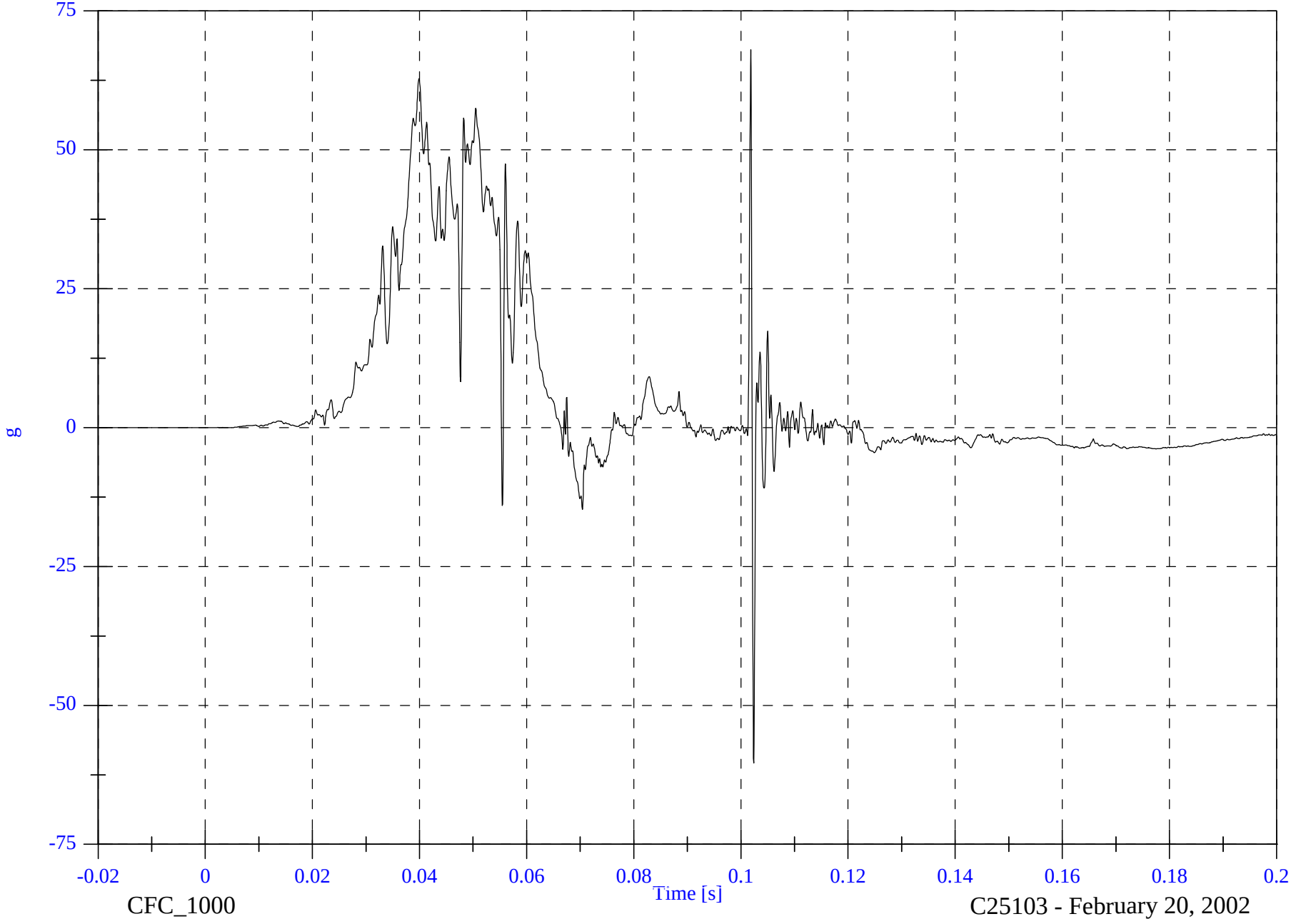
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Rib Ry

Max: 68.0 [g] at 0.102 [s]

Min: -60.4 [g] at 0.102 [s]



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8502-32

CFC_1000

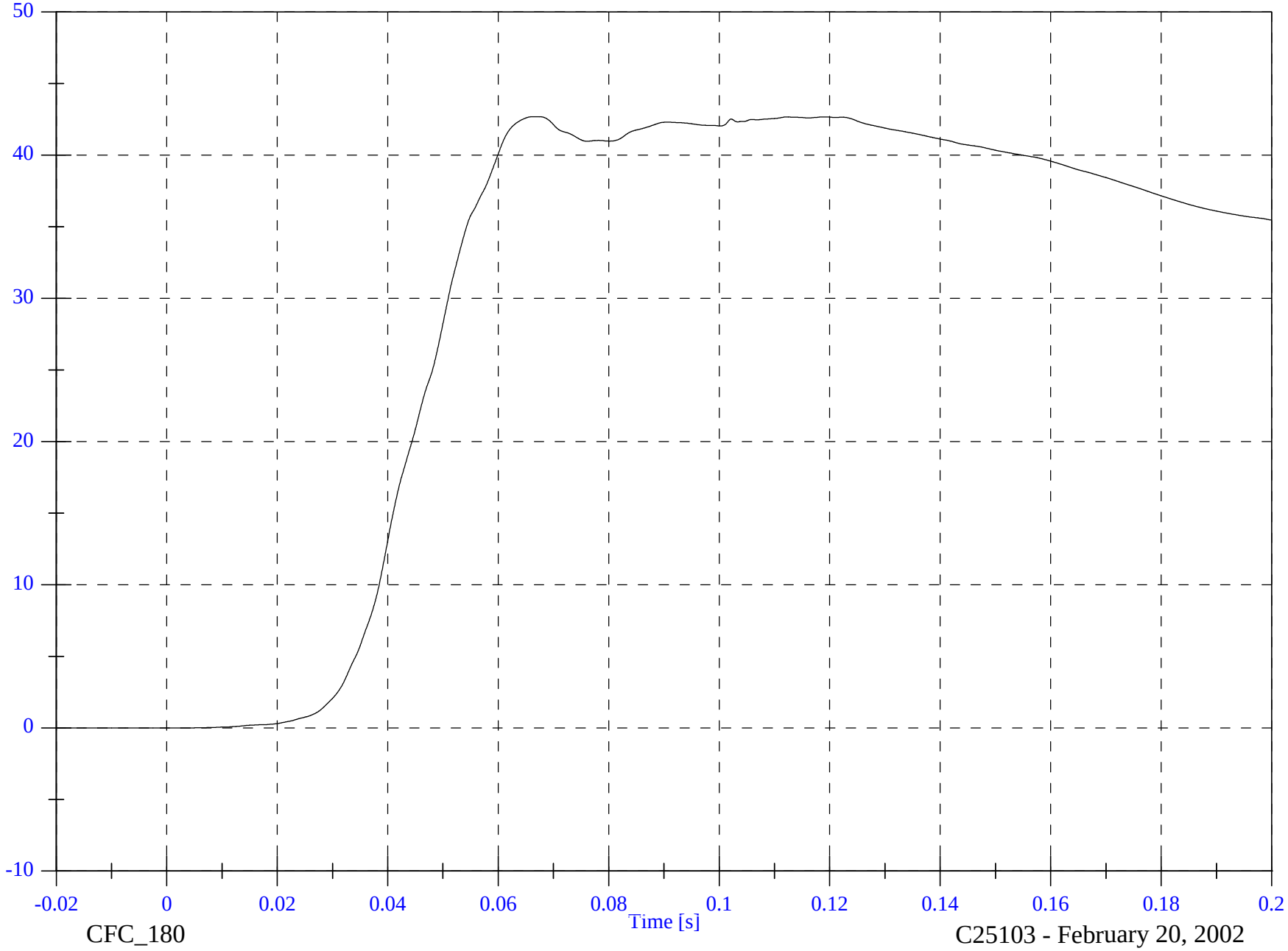
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Rib Ry Velocity

Max: 42.7 [kph] at 0.066 [s]

Min: -0.0 [kph] at -0.020 [s]



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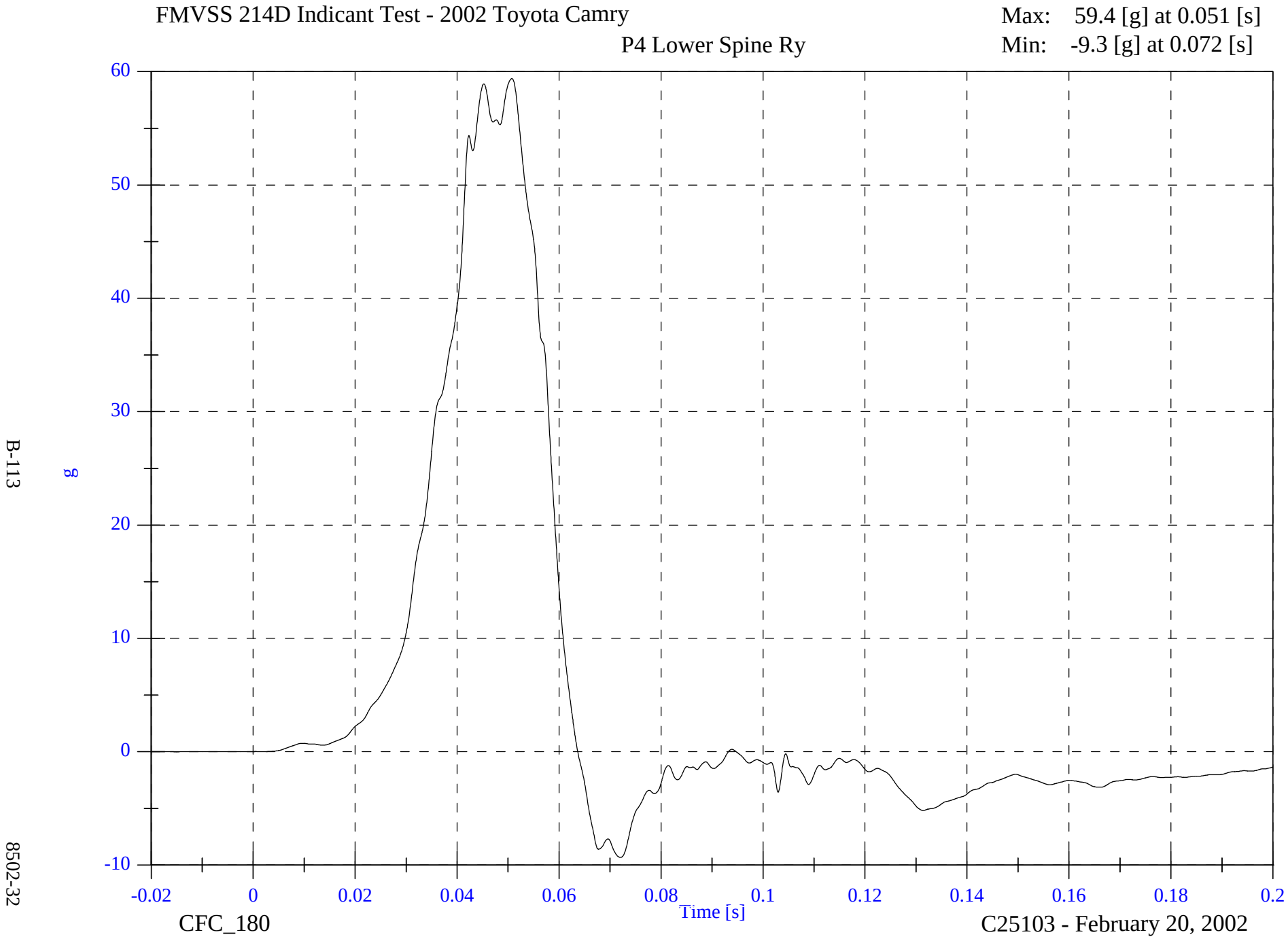
CFC_180

C25103 - February 20, 2002


FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Lower Spine Ry
Max: 59.4 [g] at 0.051 [s]
Min: -9.3 [g] at 0.072 [s]
60
50
40
30
20
10
0
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C25103 - February 20, 2002

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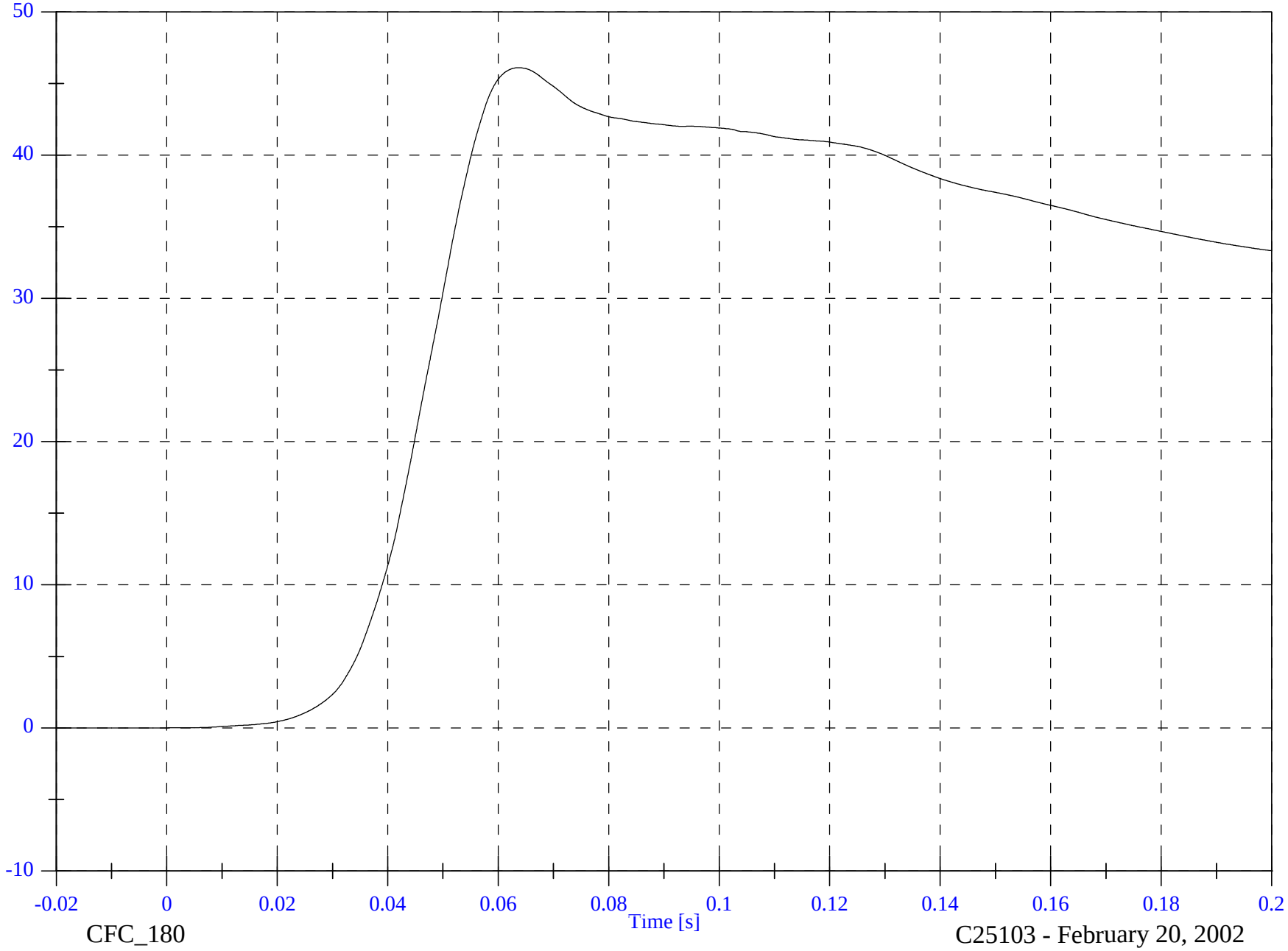
FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Spine Ry Velocity

Max: 46.1 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.014 [s]



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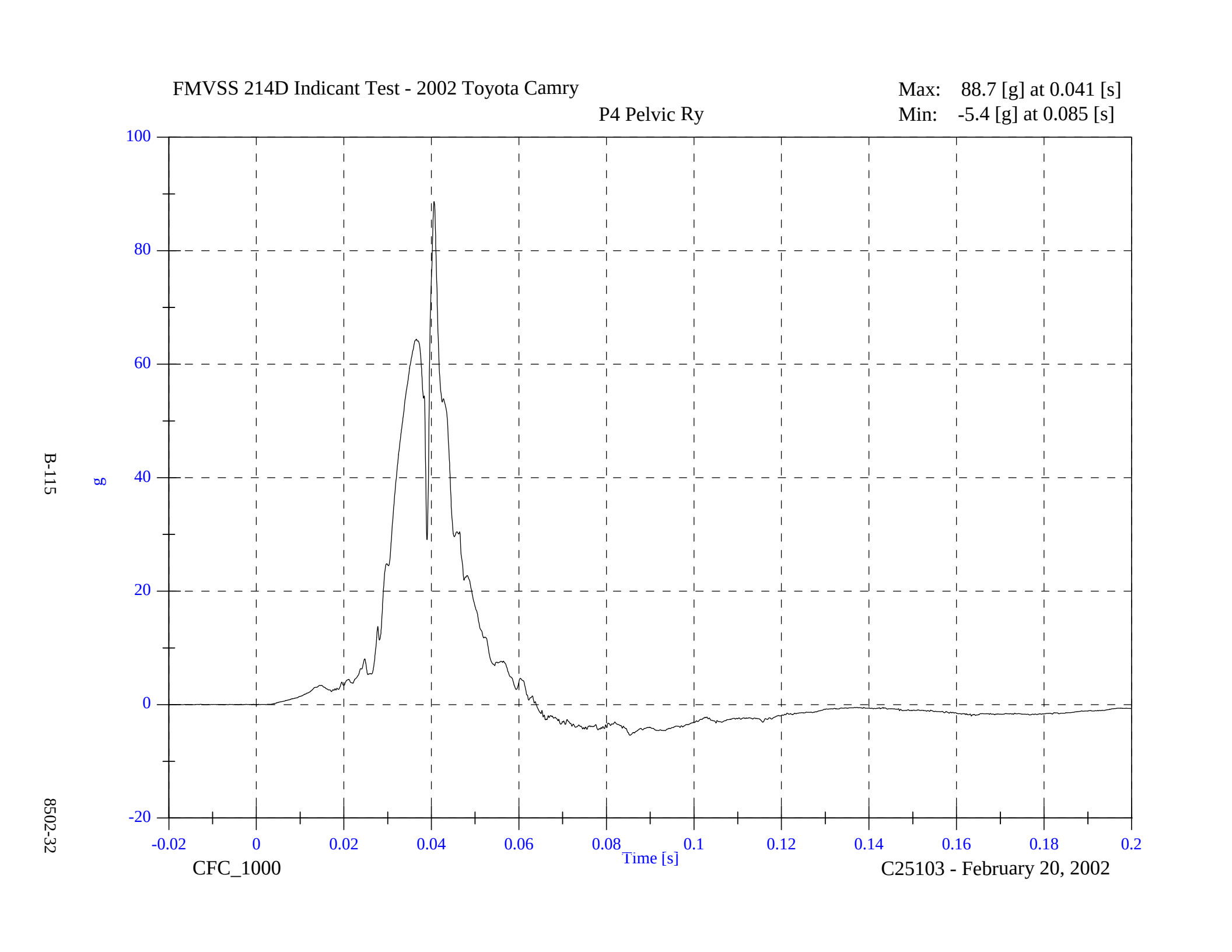
CFC_180

C25103 - February 20, 2002


FMVSS 214D Indicant Test - 2002 Toyota Camry
P4 Pelvic Ry
Max: 88.7 [g] at 0.041 [s]
Min: -5.4 [g] at 0.085 [s]
100
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C25103 - February 20, 2002
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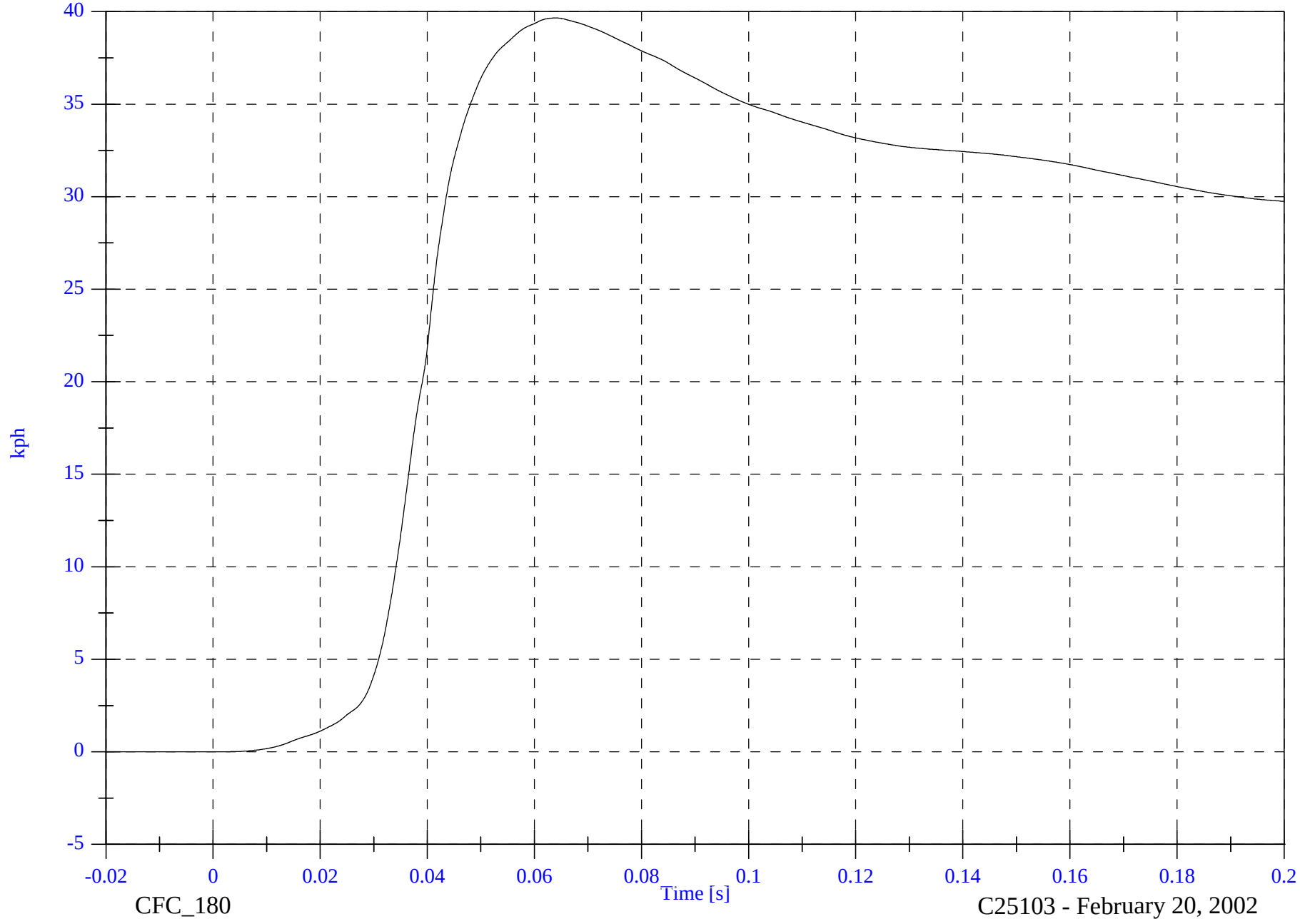
FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Pelvic Ry Velocity

Max: 39.7 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.014 [s]



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8502-32

CFC_180

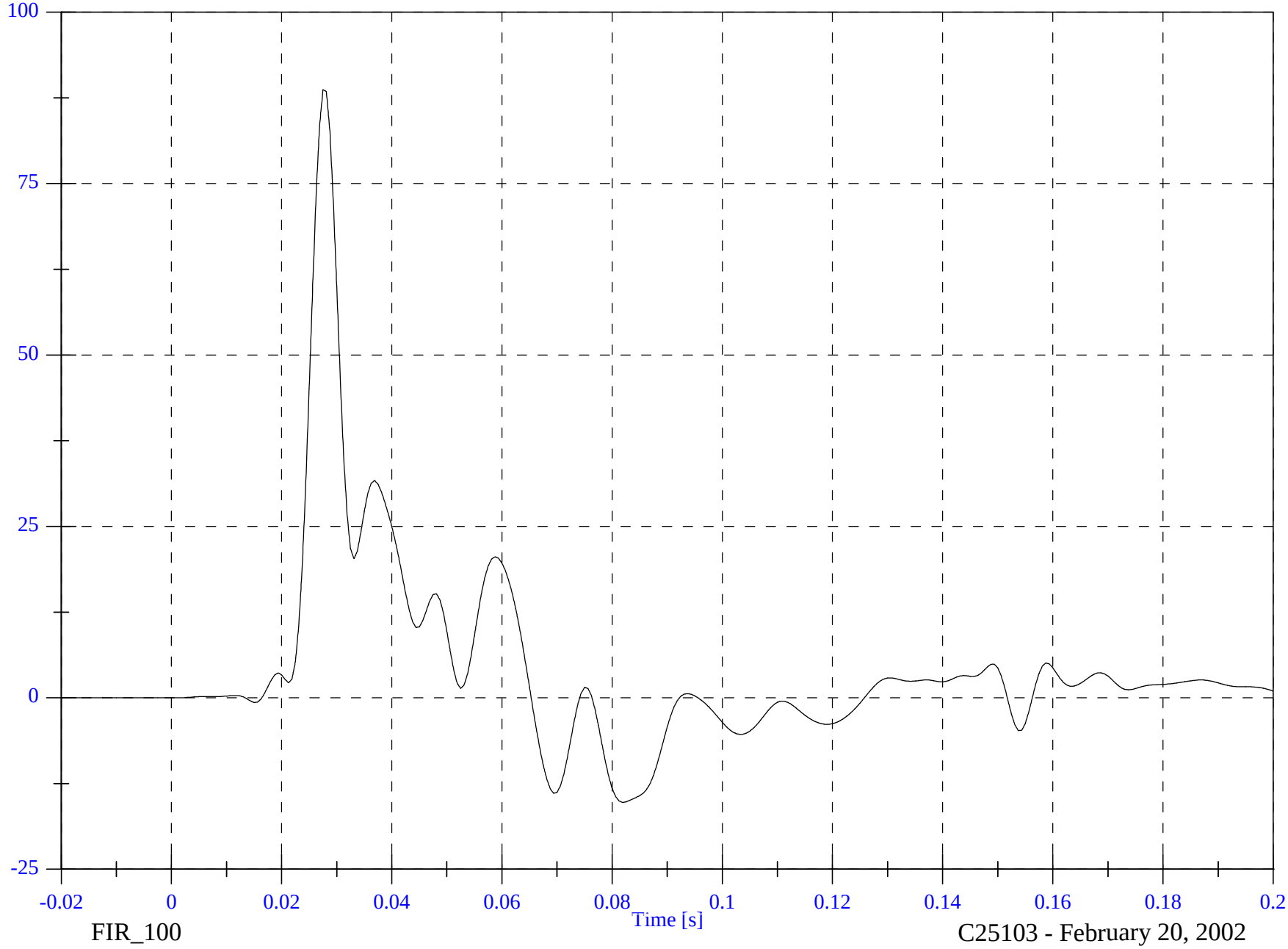
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Upper Rib Ry

Max: 88.7 [g] at 0.028 [s]

Min: -15.3 [g] at 0.082 [s]



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8502-32

FIR_100

C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Rib Ry

Max: 80.8 [g] at 0.029 [s]

Min: -14.1 [g] at 0.081 [s]

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8502-32

FIR_100

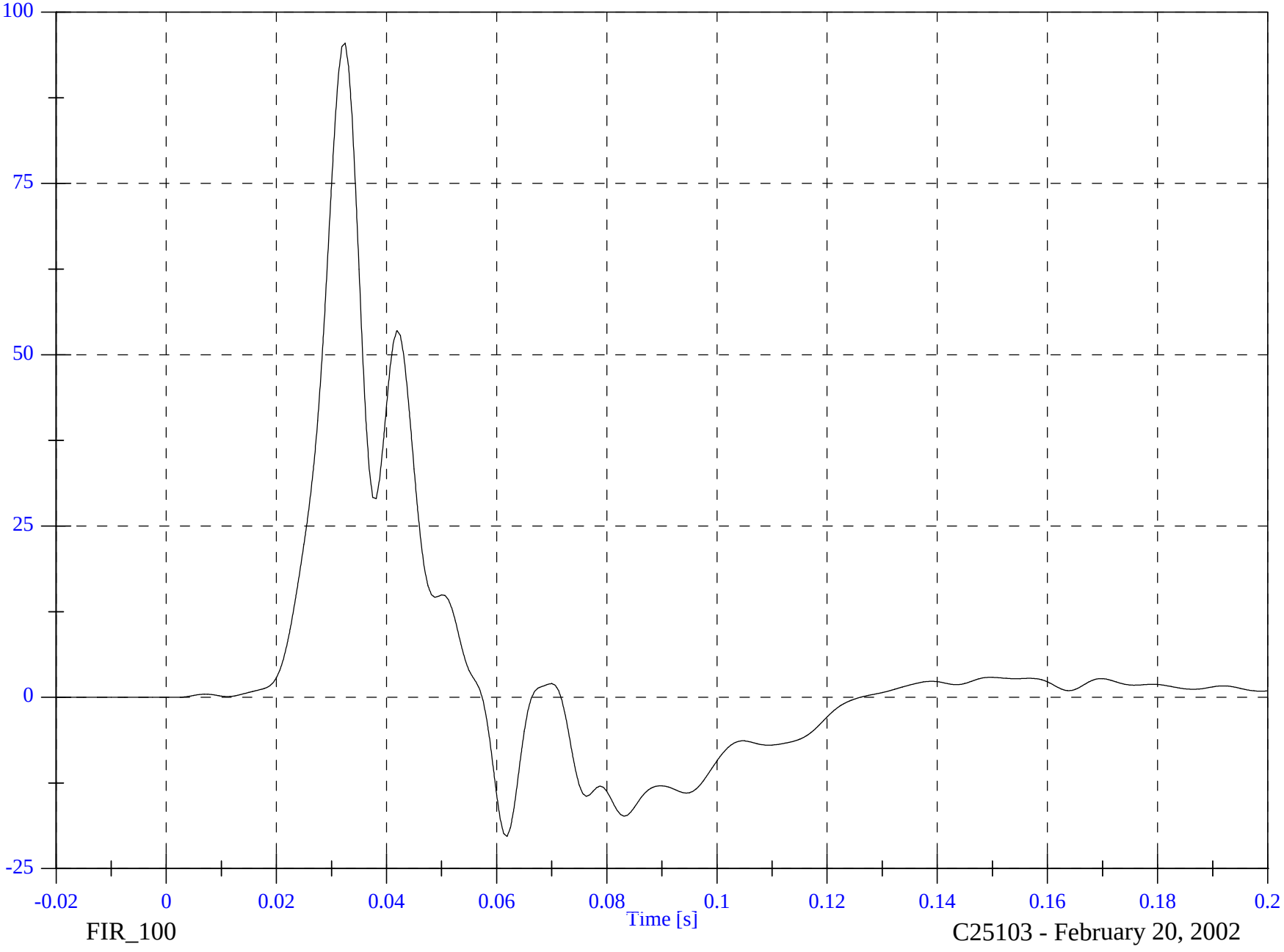
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Lower Spine Ry

Max: 95.5 [g] at 0.032 [s]

Min: -20.3 [g] at 0.062 [s]



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8502-32

FIR_100

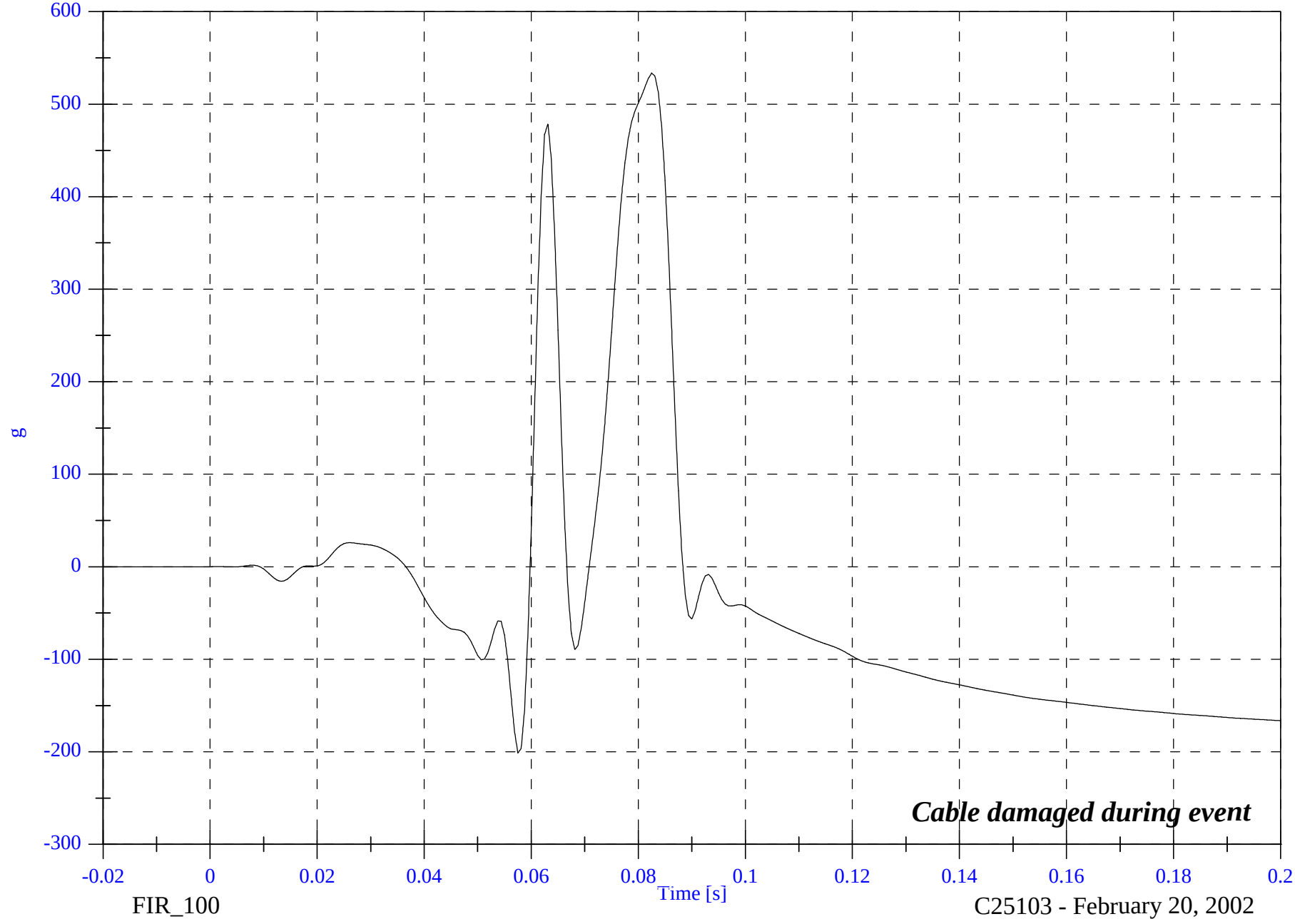
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P1 Pelvic Ry

Max: 533.6 [g] at 0.083 [s]

Min: -201.4 [g] at 0.057 [s]



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8502-32

FIR_100

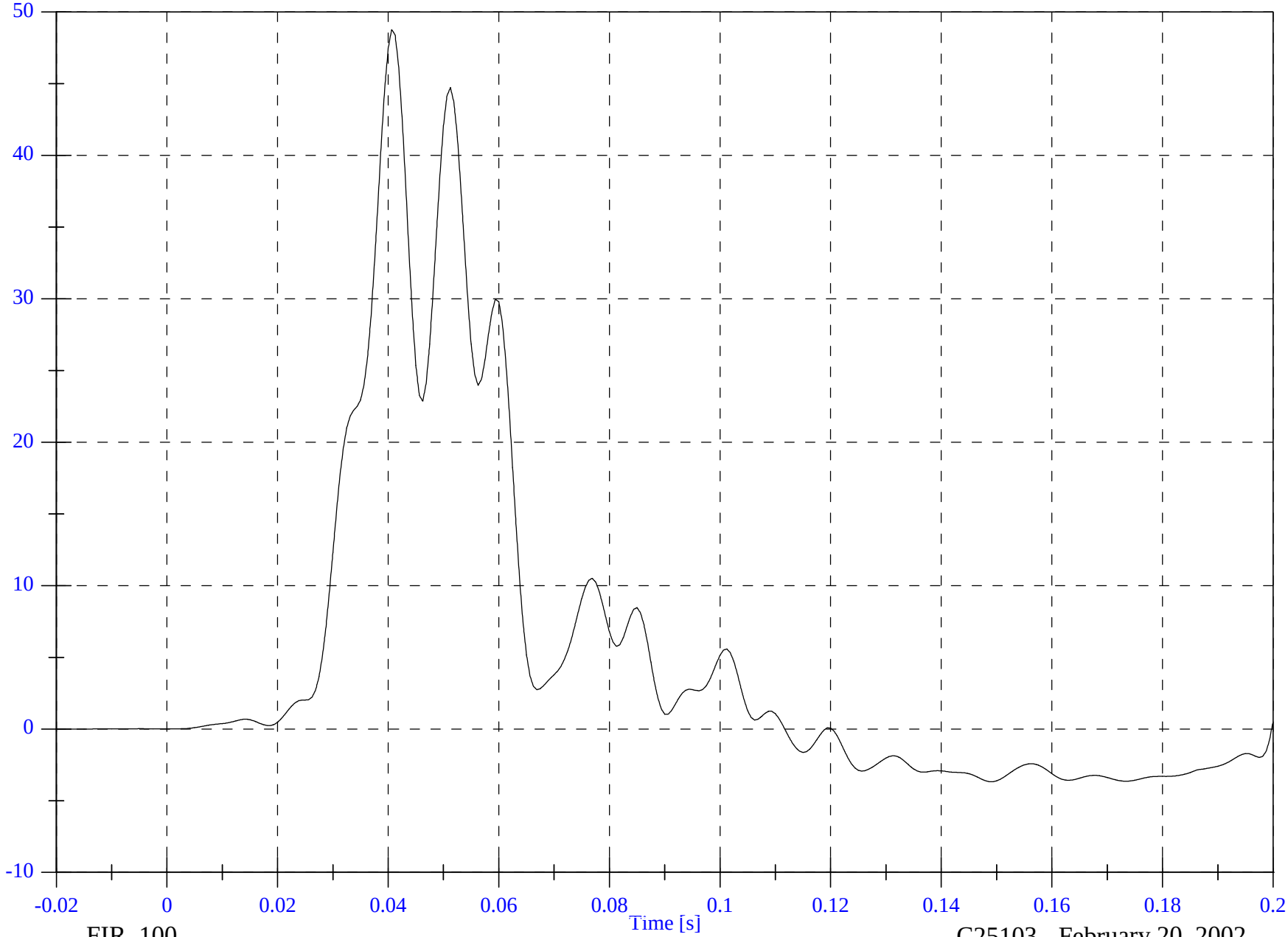
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Upper Rib Ry

Max: 48.8 [g] at 0.041 [s]

Min: -3.7 [g] at 0.149 [s]



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8502-32

FIR_100

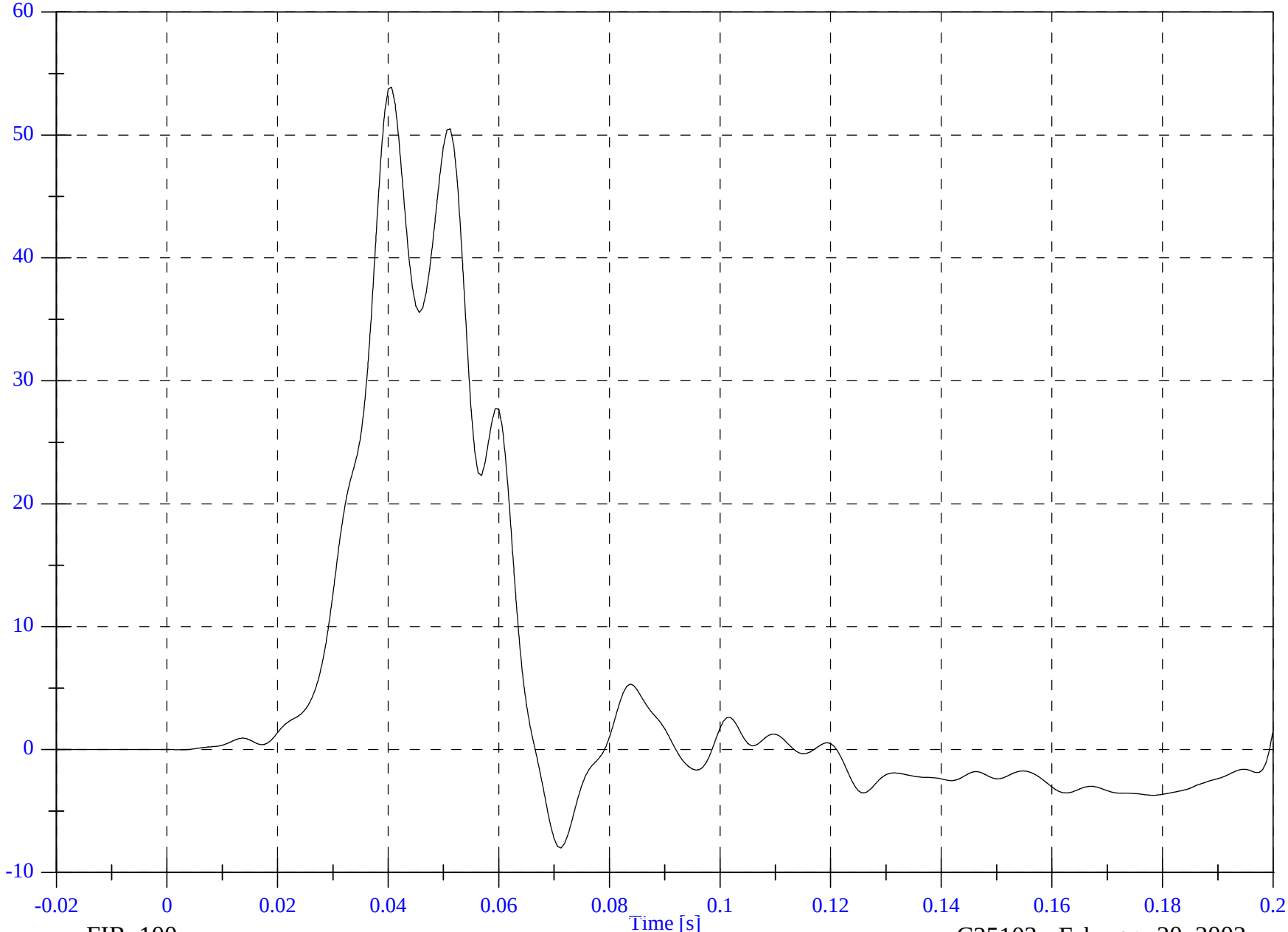
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Rib Ry

Max: 53.9 [g] at 0.041 [s]

Min: -8.0 [g] at 0.071 [s]



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8502-32

FIR_100

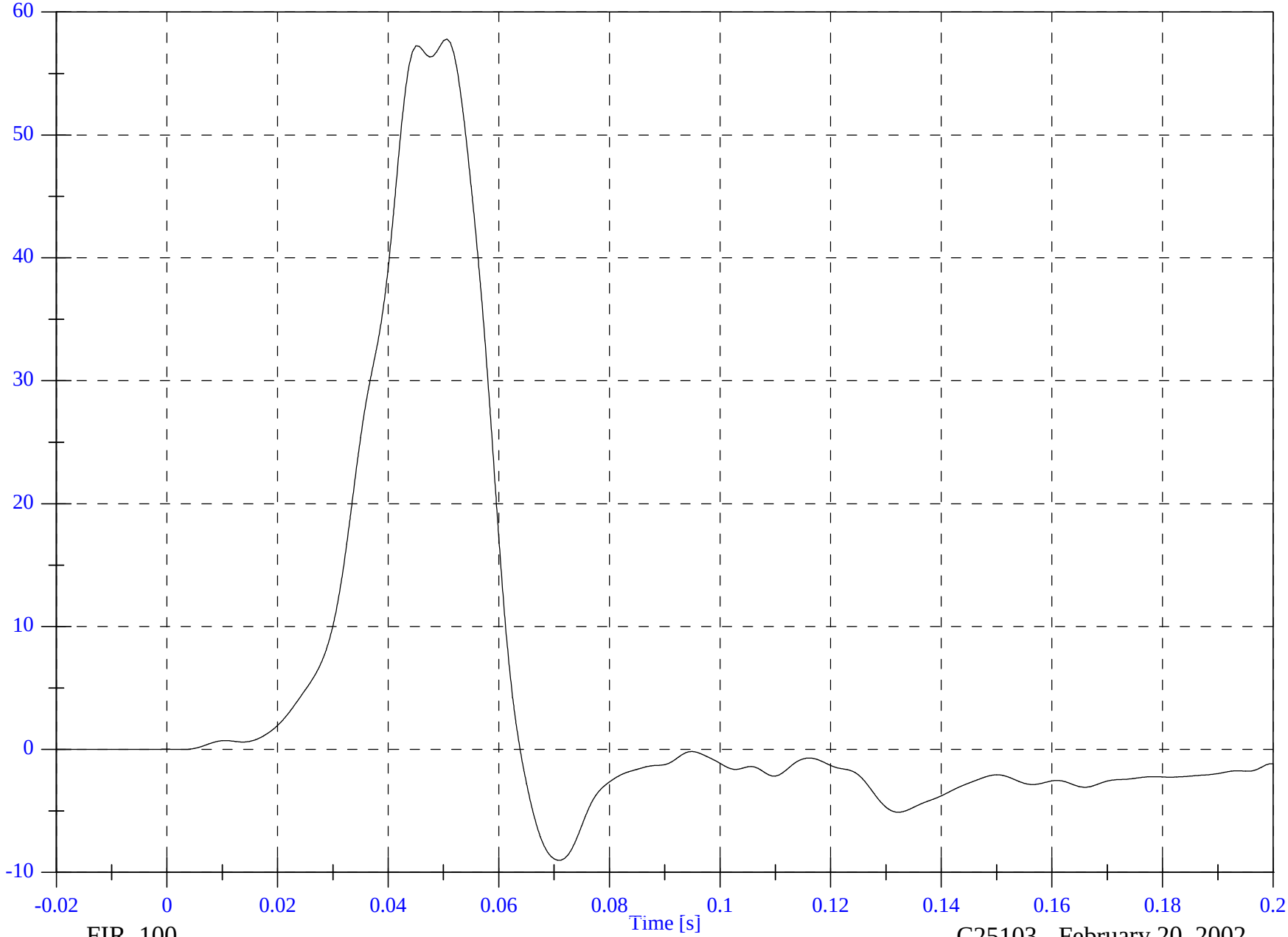
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Lower Spine Ry

Max: 57.8 [g] at 0.051 [s]

Min: -9.0 [g] at 0.071 [s]



B-123

8502-32

FIR_100

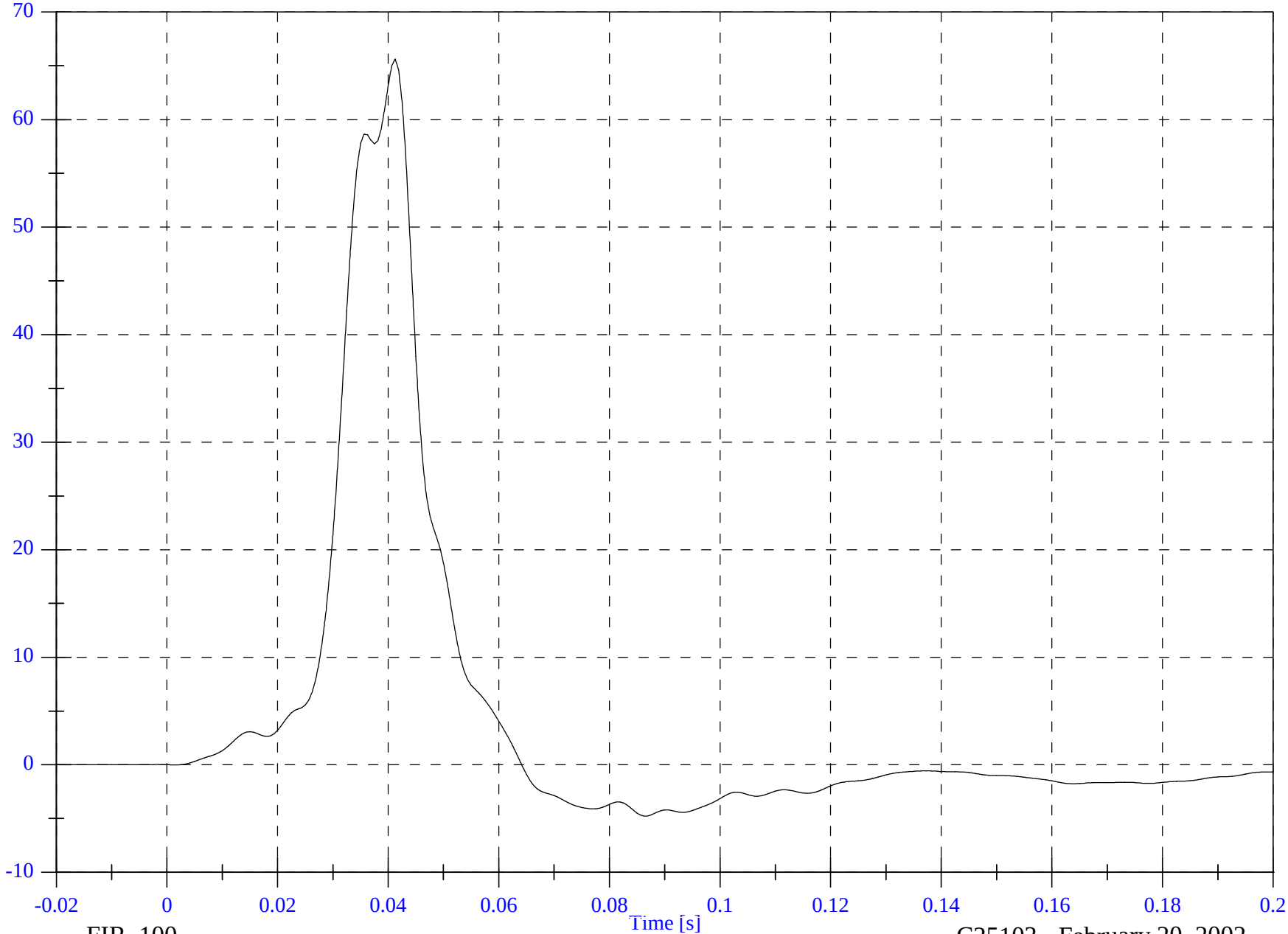
C25103 - February 20, 2002

FMVSS 214D Indicant Test - 2002 Toyota Camry

P4 Pelvic Ry

Max: 65.6 [g] at 0.041 [s]

Min: -4.8 [g] at 0.086 [s]



B-124

8502-32

FIR_100

C25103 - February 20, 2002

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: 2/13/02; 2/12/02 Sequential Test Number: 013; 026
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.: 013		SID NO.: 026	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	899	899
RH- Rib Height (mm)	501 - 521	513	511	517	518
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	236	236	236	236
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518	518	518
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	493	493
HW- Hip Width (mm)	356 - 391	379	378	373	371
THORAX IMPACTS					
TEMPERATURE (EC)	18.9 - 25.5	21.7	21.1	20.6	21.1
RELATIVE. HUMIDITY (%)	10 -70	30	29	29	33
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.28	4.3	4.29
UPPER RIB (g's)	37 - 46	42.15	43.25	39.4	39.07
LOWER RIB (g's)	37 - 46	44.54	43.25	39.7	38.57
LOWER SPINE (g's)	15 -22	19.07	18.33	20	20.10
PELVIS IMPACT					
TEMPERATURE (EC)	18.9 - 25.5	21.7	21.7	20.6	21.1
RELATIVE HUMIDITY (%)	10 - 70	30	31	29	34.0
PROBE SPEED (m/s)	4.27 - 4.33	4.3	4.30	4.29	4.32
PELVIS (g's)	40 -60	48.26	47.56	45.4	48.33

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID NO.: 013

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	902
RH- Rib Height (mm)	502 – 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	236
KH- Knee Pivot from Back Line (mm)	511 – 526	518
KV- Knee Pivot to Floor (mm)	490 – 505	493
HW- Hip Width (mm)	356 - 391	379

REMARKS: None

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 1.4
Date: 8/29/01 Laboratory Technician: B. Swiecicki

DAMPER IDENTIFICATION: 013

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)		18.9 - 25.5	20.1
RELATIVE HUMIDITY (%)		10 - 70	30
VELOCITY	FORCE (N)	836 - 1125	1111.4
3.05 m/s	DISPLACEMENT (mm)	30 - 35	32.5
VELOCITY	FORCE (N)	1730 - 2099	2047.4
4.27 m/s	DISPLACEMENT (mm)	32 - 37	35.0
VELOCITY	FORCE (N)	3741 - 4448	4100.5
6.10 m/s	DISPLACEMENT (mm)	33 - 40	36.5

DAMPER SETTING: 5

REMARKS: None

LATERAL THORAX IMPACT TEST
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	42.15
LOWER RIB (g's)	37 - 46	44.54
LOWER SPINE (g's)	15 - 22	19.07

REMARKS: None

LATERAL PELVIS IMPACT TEST
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	48.26

REMARKS: None

HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	29
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	219.21
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	6.40
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

REMARKS: None

ABDOMINAL COMPRESSION TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 13 mm (N)	104 - 162	122.3
FORCE @ 19 mm (N)	163 - 221	182.4
FORCE @ 25 mm (N)	222 - 280	252.2
FORCE @ 33 mm (N)	325 - 391	368.8

REMARKS: None

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	29
FORCE @ 0E (N)	0 - 26.7	0
FORCE @ 20E (N)	97.8 - 151.2	114
FORCE @ 30E (N)	151.2 - 204.6	166
FORCE @ 40E (N)	204.6 - 258	229
RETURN ANGLE	12E max.	3.8

REMARKS: None

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 4
Date: 2/13/02 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID NO.: 026

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	517
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	373

REMARKS: None

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1.2
Date: September 20, 2001 Laboratory Technician: B. Swiecicki

DAMPER IDENTIFICATION: 026

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	32
VELOCITY	FORCE (N)	836 - 1125	926
3.05 m/s	DISPLACEMENT (mm)	30 - 35	34
VELOCITY	FORCE (N)	1730 - 2099	1773
4.27 m/s	DISPLACEMENT (mm)	32 - 37	36
VELOCITY	FORCE (N)	3741 - 4448	4155
6.10 m/s	DISPLACEMENT (mm)	33 - 40	40

DAMPER SETTING: 5

REMARKS: None

LATERAL THORAX IMPACT TEST
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	20.6
RELATIVE. HUMIDITY (%)	10 - 70	29
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	39.4
LOWER RIB (g's)	37 - 46	39.7
LOWER SPINE (g's)	15 - 22	20.0

REMARKS: None

LATERAL PELVIS IMPACT TEST
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	20.6
RELATIVE. HUMIDITY (%)	10 - 70	29
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	45.4

REMARKS: None

HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	20.6
RELATIVE HUMIDITY (%)	10 - 70	29
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	221.01
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	0.81
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.27

REMARKS: None

ABDOMINAL COMPRESSION TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	29
FORCE @ 13 mm (N)	104 - 162	120.1
FORCE @ 19 mm (N)	163 - 221	174.4
FORCE @ 25 mm (N)	222 - 280	244.7
FORCE @ 33 mm (N)	325 - 391	355.9

REMARKS: None

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 0E (N)	0 - 26.7	0
FORCE @ 20E (N)	97.8 - 151.2	112.3
FORCE @ 30E (N)	151.2 - 204.6	164.6
FORCE @ 40E (N)	204.6 - 258	222.4
RETURN ANGLE	12E max.	5º

REMARKS: None

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 3
Date: February 12, 2002 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID NO.: 013

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	013	Sequential Test Number:	5
Date:	3/8/02	Laboratory Technician:	B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	013	Sequential Test Number:	5
Date:	3/6/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	378

REMARKS: None

LATERAL THORAX IMPACT TEST
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 5
Date: 3/6/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE. HUMIDITY (%)	10 - 70	29
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	43.25
LOWER RIB (g's)	37 - 46	43.25
LOWER SPINE (g's)	15 - 22	18.33

REMARKS: None

LATERAL PELVIS IMPACT TEST
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	013	Sequential Test Number:	5
Date:	3/6/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	47.56

REMARKS: None

HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	013	Sequential Test Number:	5
Date:	2/27/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	20.6
RELATIVE HUMIDITY (%)	10 - 70	32
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	216.98
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	9.83
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.42

REMARKS: None

ABDOMINAL COMPRESSION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	013	Sequential Test Number:	5
Date:	3/7/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	111.2
FORCE @ 19 mm (N)	163 - 221	182.4
FORCE @ 25 mm (N)	222 - 280	252.7
FORCE @ 33 mm (N)	325 - 391	353.6

REMARKS: None

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 5
Date: 3/8/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	20.6
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0E (N)	0 - 26.7	0.0
FORCE @ 20E (N)	97.8 - 151.2	126.8
FORCE @ 30E (N)	151.2 - 204.6	169.5
FORCE @ 40E (N)	204.6 - 258	222.4
RETURN ANGLE	12E max.	4E

REMARKS: None

POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 013 Sequential Test Number: 5
Date: 3/8/02 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID NO.: 026

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	026	Sequential Test Number:	4
Date:	3/19/02	Laboratory Technician:	B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	026	Sequential Test Number:	4
Date:	3/19/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	518
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	371

REMARKS: None

LATERAL THORAX IMPACT TEST
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	026	Sequential Test Number:	4
Date:	3/19/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE. HUMIDITY (%)	10 - 70	33
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	39.07
LOWER RIB (g's)	37 - 46	38.57
LOWER SPINE (g's)	15 - 22	20.10

REMARKS: None

LATERAL PELVIS IMPACT TEST
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	026	Sequential Test Number:	4
Date:	3/19/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE. HUMIDITY (%)	10 - 70	34.0
PROBE SPEED (m/s)	4.27 - 4.33	4.32
PELVIS ACCELERATION (g's)	40 - 60	48.33

REMARKS: None

HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	026	Sequential Test Number:	4
Date:	3/18/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	20.6
RELATIVE HUMIDITY (%)	10 - 70	29
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	251.8
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	4.66
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.18

REMARKS: None

ABDOMINAL COMPRESSION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.:	026	Sequential Test Number:	4
Date:	3/19/02	Laboratory Technician:	B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 13 mm (N)	104 - 162	107.2
FORCE @ 19 mm (N)	163 - 221	159.2
FORCE @ 25 mm (N)	222 - 280	235.8
FORCE @ 33 mm (N)	325 - 391	348.3

REMARKS: None

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 4
Date: 3/19/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (EC)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	29
FORCE @ 0E (N)	0 - 26.7	0.0
FORCE @ 20E (N)	97.8 - 151.2	122.3
FORCE @ 30E (N)	151.2 - 204.6	198.8
FORCE @ 40E (N)	204.6 - 258	253.5
RETURN ANGLE	12E max.	4E

REMARKS: None

POST TEST DUMMY INSPECTION LIST

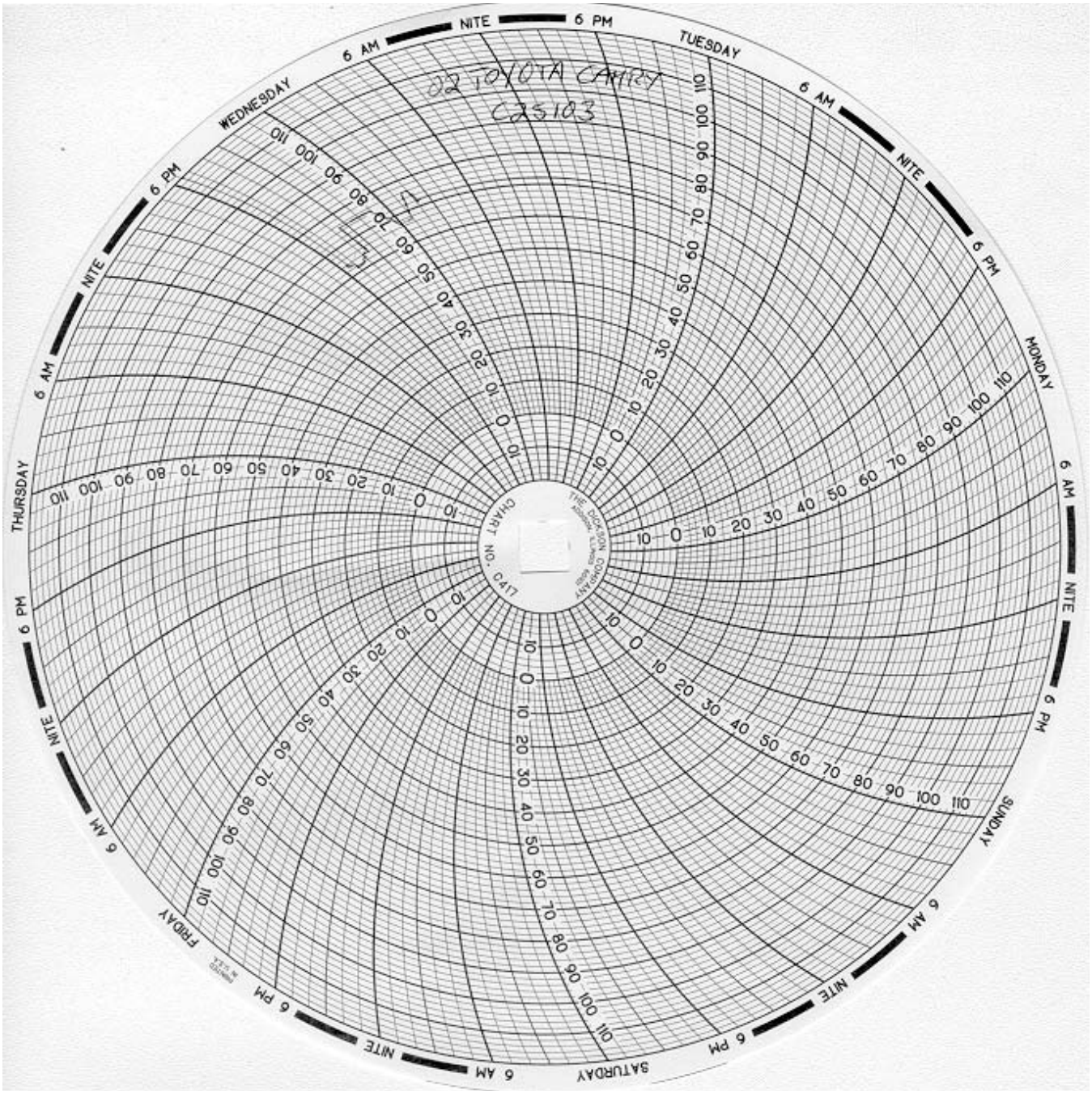
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 4
Date: 3/19/02 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

	FRONT SID NO.: 013		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P16813	ENDEVCO	08/30/01
HEAD AY	AC-P17255	ENDEVCO	08/30/01
HEAD AZ	AC-P17145	ENDEVCO	08/30/01
UPPER RIB	AC-P16761	ENDEVCO	08/30/01
LOWER RIB	AC-P17131	ENDEVCO	08/30/01
LOWER SPINE	AC-P15736	ENDEVCO	08/30/01
PELVIS	AC-P16628	ENDEVCO	08/30/01
UPPER RIB REDUNDANT	AC-P17247	ENDEVCO	08/30/01
LOWER RIB REDUNDANT	AC-P16616	ENDEVCO	08/30/01
LOWER SPINE REDUNDANT	AC-P16289	ENDEVCO	09/04/01
PELVIS REDUNDANT	AC-P16575	ENDEVCO	08/30/01

	REAR SID NO.: 026		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P18663	ENDEVCO	09/04/01
HEAD AY	AC-P18639	ENDEVCO	09/04/01
HEAD AZ	AC-P19222	ENDEVCO	09/04/01
UPPER RIB	AC-P19255	ENDEVCO	09/24/01
LOWER RIB	AC-P17535	ENDEVCO	09/04/01
LOWER SPINE	AC-P15534	ENDEVCO	08/31/01
PELVIS	AC-P16585	ENDEVCO	08/31/01
UPPER RIB REDUNDANT	AC-P19216	ENDEVCO	09/04/01
LOWER RIB REDUNDANT	AC-P23303	ENDEVCO	10/05/01
LOWER SPINE REDUNDANT	AC-P15526	ENDEVCO	08/31/01
PELVIS REDUNDANT	AC-P16576	ENDEVCO	08/31/01

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
	AC-J32143	ENDEVCO	01/07/02
RIGHT FRONT SILL (Y)		ENDEVCO	
RIGHT FRONT SILL (Z)	AC-J32174	ENDEVCO	01/07/02
RIGHT REAR SILL (X)	AC-B10827	ENDEVCO	02/14/02
RIGHT REAR SILL (Y)	AC-A13513	ENDEVCO	02/14/02
RIGHT REAR SILL (Z)	AC-B11408	ENDEVCO	02/14/02
REAR FLOORPAN ABOVE AXLE (X)	AC-P18948	ENDEVCO	10/01/01
REAR FLOORPAN ABOVE AXLE (Y)	AC-P23471	ENDEVCO	10/01/01
REAR FLOORPAN ABOVE AXLE (Z)	AC-P22943	ENDEVCO	10/01/01
LEFT REAR SILL (Y)	AC-J26604	ENDEVCO	10/05/01
LEFT FRONT SILL (Y)	AC-B10951		01/15/02
LEFT FRONT DOOR CENTERLINE (Y)	-	-	-
	AC-J32383	ENDEVCO	02/14/02
MID REAR OF LEFT FRONT DOOR (Y)		-	-
LEFT FRONT DOOR UPPER C\L (Y)	-	-	-
MID REAR OF LEFT REAR DOOR (Y)	-	-	-
LEFT REAR DOOR UPPER C\L (Y)	-	-	-
LOWER LEFT B- PILLAR (Y)	AC-J24754	ENDEVCO	09/25/01
	AC-A14433	ENDEVCO	09/25/01
LOWER LEFT A-PILLAR (Y)	AC-B11073	ENDEVCO	01/07/02
UPPER LEFT A-PILLAR (Y)	AC-J33156	ENDEVCO	02/14/02
FRONT SEAT TRACK (Y)	AC-B10955	ENDEVCO	02/11/02
REAR SEAT TRACK (Y)	AC-J33032	ENDEVCO	02/11/02
VEHICLE CG (X)	AC-J32782	ENDEVCO	08/28/01
VEHICLE CG (Y)	AC-J33019	ENDEVCO	02/14/02
VEHICLE CG (Z)	AC-J33127	ENDEVCO	02/14/02
MDB CG (X)	AC-C16682	ENDEVCO	
MDB CG (Y)	AC-CJ54	ENDEVCO	09/06/01
MDB CG (Z)	AC-GK12	ENDEVCO	09/06/01
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	
MDB REAR FRAME MEMBER (Y)		ENDEVCO	09/06/01

REMARKS: None