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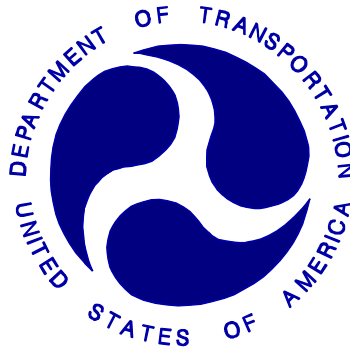
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

**GENERAL MOTORS OF CANADA
2001 CHEVROLET MONTE CARLO
2-DOOR COUPE**

NHTSA NUMBER: M10105

VERIDIAN TEST NUMBER: 8602-11

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
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December 21, 2000

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Performance Standards
Office of Crashworthiness Standards
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NHTSA, Office of Crashworthiness Standards

Date of Report Acceptance

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15. <i>Supplementary Notes</i>					
16. <i>Abstract</i> A frontal load cell barrier test of a 2001 Chevrolet Monte Carlo 2-Door Coupe was performed at Veridian Engineering crash test facility in Buffalo, New York, on December 21, 2000. The impact velocity was 57.1 kph and the temperature at the barrier face was 21 °C. The maximum post-test vehicle crush was 723 mm. The test vehicle was equipped with 3-point restraint systems, knee bolsters, and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger appeared to comply with head, chest, and femur requirements.					
ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (150)	549.2	40.0	27.0	5921.4	6948.3
Passenger (245)	473.7	38.3	29.1	3261.0	1323.4
17. <i>Key Words</i> 56 kph Frontal Barrier Impact test New Car Assessment Program (NCAP)				18. <i>Distribution Statement</i> <u>Copies of this report are available from:</u> NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590	
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SECTION 1

PURPOSE AND SUMMARY OF TEST M10105

PURPOSE

This 57.1 kph frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-96-D-02010. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 57.1 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2001 Chevrolet Monte Carlo 2-Door Coupe at a velocity of 57.1 kph. The test was performed at Veridian Engineering on December 21, 2000. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by 1 real-time camera and 16 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head, chest, and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 150) and the right-front passenger (position 2) ATD (Serial No. 245) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 133 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

The driver's HIC was 549.2. The maximum chest deceleration over 3 milliseconds was 40.0 g's and maximum chest

deflection was 27.0 mm. Compressive femur loads were 5921.4 Newtons on the left and 6948.3 Newtons on the right.

The right front passenger's HIC was 473.7. Maximum chest deceleration over 3 milliseconds was 38.3 g's and maximum chest deflection was 29.1 mm. Compressive femur loads were 3261.0 Newtons on the left and 1323.4 Newtons on the right.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No. : M10105 Test Mode : 56.3 kph Frontal Barrier

Test Date : December 21, 2000 Time: 11:30 Temperature : 7 °C

Vehicle Make/Model/Body Style : 2001 Chevrolet Monte Carlo 2-Door Coupe

Vehicle Test Weight : 1741 kg

Vehicle/Barrier Impact Angle : 0 °

Impact Velocity : 57.1 kph

Maximum Static Crush : 723 mm

Vehicle Rebound : 481 mm

DUMMIES:

DRIVER

PASSENGER

Type :

572E

572E

Restraint System :

3-point belt system

3-point belt system

Number of Data Channels : 133

Number of Cameras : 1 Real Time

16 High Speed

DOOR OPENING DATA :

Closed/Operable - Left Front

Closed/Operable - Right Front

Front Seat(s) Data :

DRIVER

PASSENGER

Seat Track Failure :(mm of shift)

0

0

Seat Back Failure :

none

none

VISIBLE DUMMY CONTACT POINTS :

DRIVER

PASSENGER

Head :

Airbag / Back of head to headrest

Airbag / Back of head to headrest

Abdomen :

-

-

Chest

Airbag

Airbag

Knees

Knee Bolster

Knee Bolster

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION :

Year/Make/Model/Body Style : 2001 Chevrolet Monte Carlo 2-Door Coupe

NHTSA No. : M10105 ; VIN: 2G1WW12E419221320 ; Color : Silver

Engine Data: 6 cylinders; - CID; 3.4 Liters; - cc

Placement : - Longitudinal or In-Line; x Transverse or Lateral

Transmission Data : 6 speeds; - Manual; x Automatic; x Overdrive

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

Major Options : x A/C; x Pwr.Strg.; x Pwr. Brakes

x Pwr. Windows; x Pwr. Door Locks; x Tilt Wheel

Date Received : 12/11/00 ; Odometer Reading 34 km

Selling Dealer : West-Herr Chevrolet

& Address: Eden, N.Y. 14057

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by : General Motors of Canada

Date of Manufacture 11/00

GVWR : 1949 kg; GAWR: 1070 kg FRONT; 879 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load : 300 kpa FRONT

300 kpa REAR

Recommended Tire Size : P225/60R16

* Recommended Cold Tire Pressure : 210 kpa FRONT; 210 kpa REAR

Size of Tires on Test Vehicle: P225/60R16 ; Manufacturer: Goodyear

Vehicle Capacity Data :

Type of Front Seats: - Bench; x Bucket; - Split Bench

Number of Occupants: 2 Front; 3 Rear; 5 Total

Vehicle Capacity Weight (VCW) = 416.0 kg

No. of Occupants x 68 kg = 340.2 kg

Rated Cargo/Luggage Weight (RCLW) = 75.8 kg

*Tire pressure used for test

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

Right Front	=	<u>491.5</u>	kg	Right Rear	=	<u>277.5</u>	kg
Left Front	=	<u>471.0</u>	kg	Left Rear	=	<u>280.0</u>	kg
TOTAL FRONT	=	<u>962.5</u>	kg	TOTAL REAR	=	<u>557.5</u>	kg
TOTAL DELIVERED WEIGHT =		<u>1520.0</u>	kg				
% of Total Front of Vehicle Weight =		<u>63.3</u>	%	% of Total Rear Weight =		<u>36.7</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight (UDW)	=	<u>1520.0</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>75.8</u>	kg
Weight of 2 p.572 Dummies @ 76 each	=	<u>152.0</u>	kg
TARGET TEST WEIGHT	=	<u>1747.8</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 69 KG OF CARGO WEIGHT:

Right Front	=	<u>505</u>	kg	Right Rear	=	<u>364</u>	kg
Left Front	=	<u>515</u>	kg	Left Rear	=	<u>357</u>	kg
TOTAL FRONT	=	<u>1020.0</u>	kg	TOTAL REAR	=	<u>721.0</u>	kg
TOTAL TEST WEIGHT =		<u>1741.0</u>	kg				
% of Total Front Weight =		<u>58.6</u>	%	% of Total Rear Weight =		<u>41.4</u>	%
Weight of Ballast Secured in Vehicle Trunk Area =		<u>0</u>	kg				
Vehicle Components Removed for Weight Reduction:		<u>none</u>					

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED :	RF	<u>743</u>	LF	<u>750</u>	RR	<u>748</u>	LR	<u>747</u>
FULLY LOADED :	RF	<u>730</u>	LF	<u>739</u>	RR	<u>712</u>	LR	<u>709</u>
AS TESTED :	RF	<u>732</u>	LF	<u>741</u>	RR	<u>714</u>	LR	<u>710</u>
Vehicle's Wheel Base :		<u>2810</u> mm						
Location of Vehicle's C.G. :		<u>1163.7</u> mm rearward of front wheel center.						

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual	=	<u>65.1</u>	liters
Usable Capacity Figure Furnished by COTR	=	<u>65.1</u>	liters
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>59.9</u>	to <u>61.2</u> liters
ACTUAL TEST VOLUME=	<u>60.0</u>	liters	(with entire fuel system filled)
Test Fluid Type:	<u>Stoddard Solution</u>	;	Spec. Grav. = <u>0.764</u>
Kinematic Viscosity =	<u>0.96</u>	centistokes;	Color = <u>Orange</u>
Type of Fuel Pump:	Electric- <u>x</u>	;	Mechanical- <u>-</u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF"	Yes- <u>x</u>	No- <u>-</u>	
Details of Fuel System	<u>Fuel tank is centered fore of rear axle with fuel filler being located on left side.</u>		

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test : Frontal Barrier Impact Angle : 0°
Test Date : December 21, 2000 Time: 11:30 Temperature: 7 °C
Vehicle NHTSA No. : M10105
Required Impact Velocity Range : 55.5 to 57.1 kph

BARRIER IMPACT VELOCITY : (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 57.1 kph; Trap No. 2 = 57.1 kph
Distance from vehicle to barrier : (1) entering trap = 813 mm
(2) exiting trap = 305 mm

VEHICLE STATIC CRUSH: (mm) (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test Right = 4892 ; C/L = 5045 ; Left = 4949
Post-Test Right = 4388 ; C/L = 4322 ; Left = 4453
Crush Right = 504.0 ; C/L = 723.0 ; Left = 496.0
AVERAGE = 574.3 mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point :

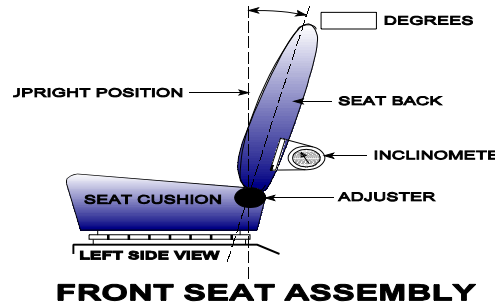
Right = 481 ; C/L = 575 ; Left = 387
AVERAGE = 481.0 mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2001 Vehicle Model: Chevrolet Monte Carlo Body Style : 2-Door Coupe

1. 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.



Seat back angle for driver's seat: 29.5

Measurement instructions: Place inclinometer 10" above pivot point and adjust seat back until correct angle is located.

Seat back angle for passenger's seat: 29.5

Measurement instructions: Place inclinometer 10" above pivot point and adjust seat back until correct angle is located.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: Placed seat in mechanical middle.

Positioning of the passenger's seat: Placed seat in mechanical middle.

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 65.1 liters

B. "Usable Capacity" of the optional equipment fuel tank is - liters

C. "Usable Capacity" of the vehicle(s) used for certification testing to requirements of FMVSS 301 = 61.9 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 61.9 liters

3.3 Is vehicle equipped with electric fuel pump? Yes- x ; No-

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

Fuel pump operates with ignition turned on.

DATA SHEET NO. 4 TEST VEHICLE INFORMATION (cont.)

4. STEERING COLUMN ADJUSTMENTS :

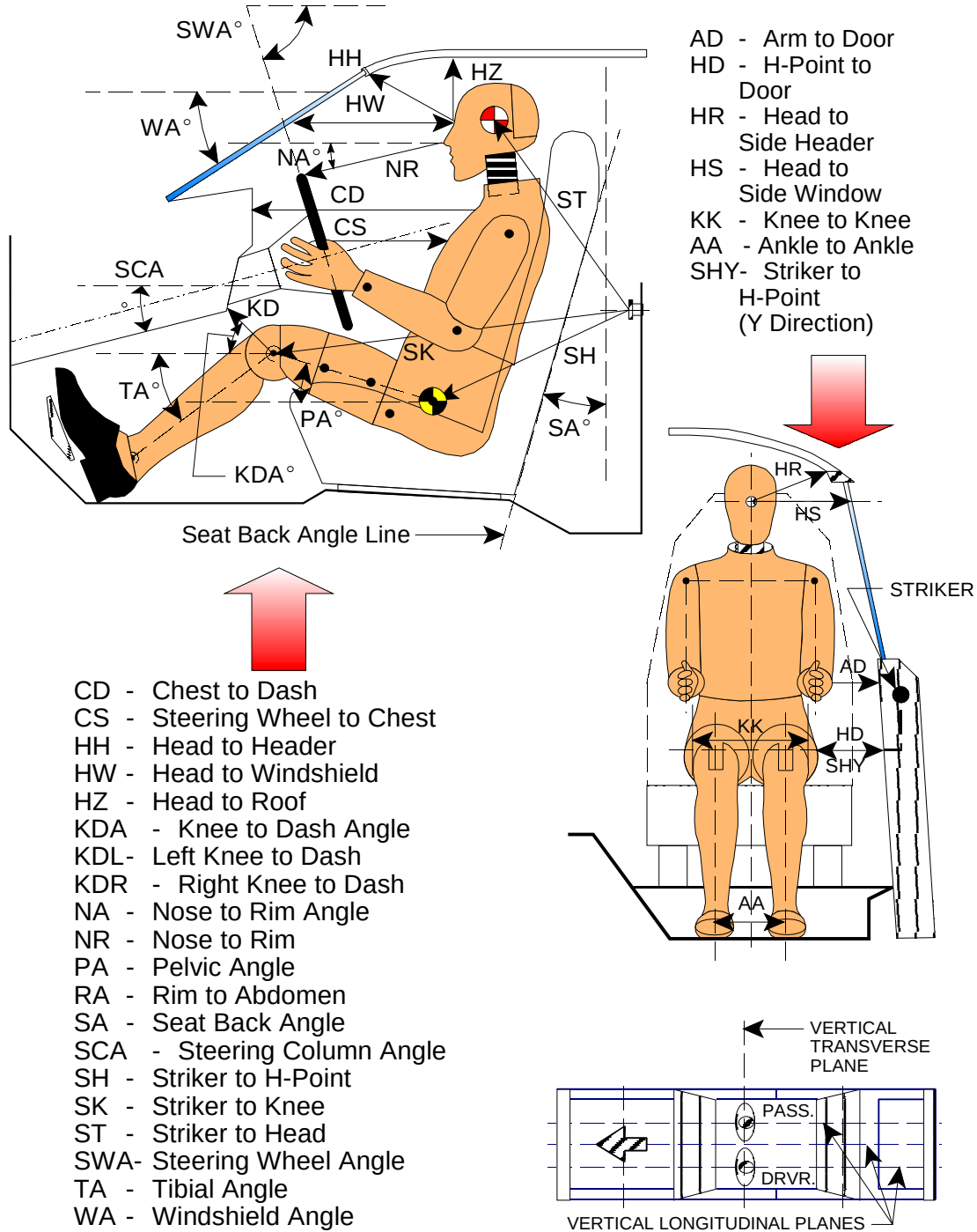
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: Located 6 positions with top position being 1st. Placed in 4th position.

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: D-ring is fixed and non-adjustable.

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

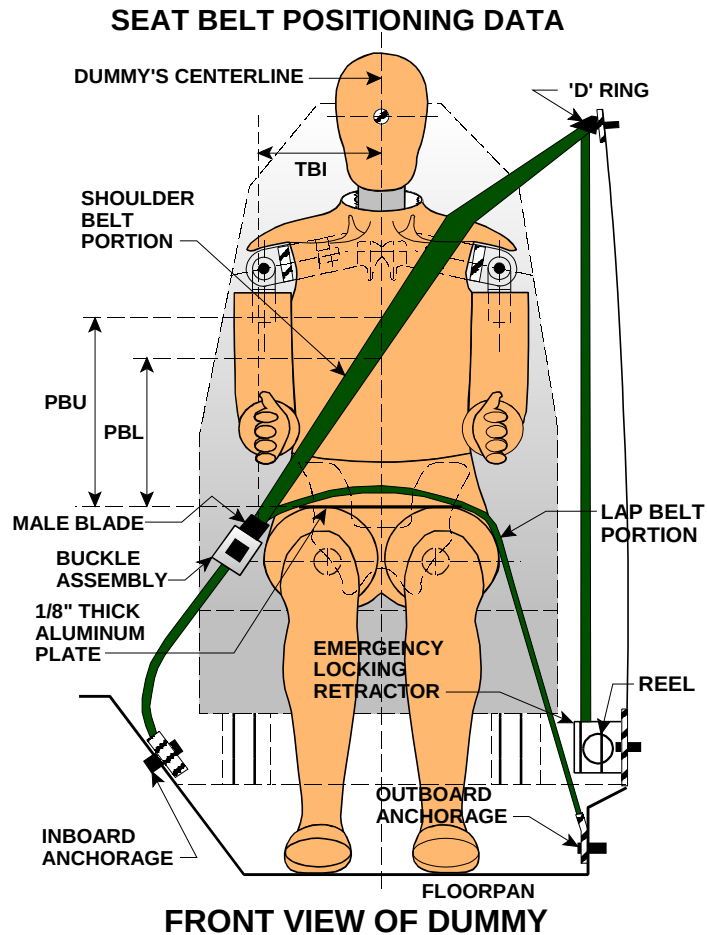


DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #150)			PASS. (Serial # 245)		
WA ^o	24.6 deg.			N/A		
SWA ^o	69 deg.			N/A		
SCA ^o	21 deg.			N/A		
SA ^o	29.5 deg.			29.5 deg.		
HZ	160			160		
HH	321			316		
HW	611			615		
HR	244			264		
NR	393	Angle	8 deg.	N/A		
CD	501			523		
CS	277			N/A		
RA	177			N/A		
KDL	154	Angle (KDA)	41 deg.	134		
KDR	149			169	Angle (KDA)	36 deg.
PA ^o	24.9 deg.			24.7 deg.		
TA ^o	42 deg.			49 deg.		
KK	299			277		
AA	281			261		
ST	637	Angle	52 deg.	627	Angle	54 deg.
SK	874	Angle	92 deg.	861	Angle	90 deg.
SH	504	Angle	109 deg.	492	Angle	107 deg.
SHY	224			224		
HS	352			352		
HD	147			141		
AD	124			128		

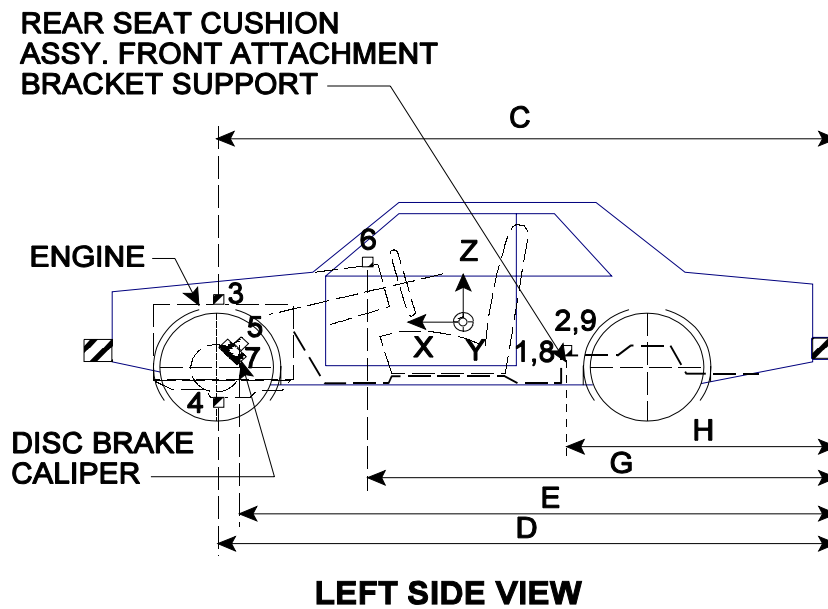
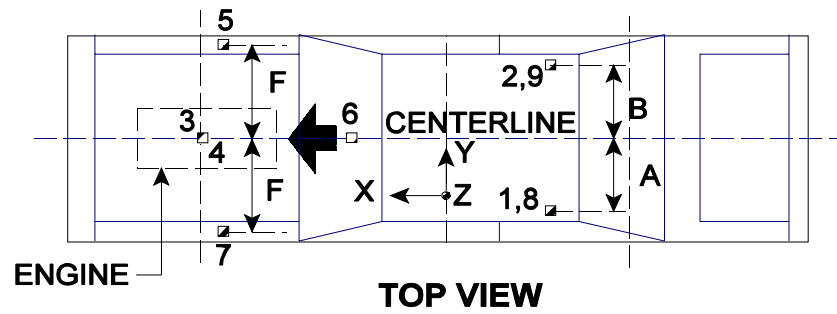
Dimensions in millimeters

DATA SHEET NO. 6 SEAT BELT POSITIONING DATA



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	311	301
PBL-- Top surface of alum. plate to belt lower edge	230	224
<u>LAP BELT TENSION</u>	10 Nwt	10 Nwt
<u>SHOULDER BELT TENSION</u>	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



Note: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 7

DATA SHEET NO. 7 VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY (cont.)

DIMENSION	PRE-TEST LENGTH (mm)
A Left Rear Seat Crossmember Y	-382
B Right Rear Seat Crossmember Y	400
C Top of Engine X	4049
D Bottom of Engine X	3926
E Disc Brake Calipers X	3882
F Disc Brake Calipers Y	606
G Instrument Panel X	3066
H Rear Seat Crossmembers X	1967

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side	33.1	61.1	-2.4	162.1
2	Rear Seat X-Member @ Right Side	33.2	61.5	-2.9	161.8
3	Top of Engine Block	92.4	30.9	-47.8	56.2
4	Bottom of Engine	97.8	38.0	-23.4	56.9
5	Disc Brake Caliper @ Right Side	*	*	*	*
6	Instrument Panel	*	*	*	*
7	Disc Brake Caliper @Left Side	93.1	55.3	-13.9	79.7
8	Rear Seat X-Member @ Left-Redundant	32.3	61.0	-2.4	162.2
9	Rear Seat X-Member @ Right-Redundant	32.0	58.4	-2.7	162.4

* - Accelerometer wires damaged during impact

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2001 Chevrolet Monte Carlo 2-Door Coupe

NHTSA Test No.: M10105 Test Date: December 21, 2000

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	17.8	238.1	-57.2	83.9	12.4	256.8	-48.6	83.9
Head Y	g	3.4	125.4	-9.3	84.6	14.3	82.3	-3.0	120.0
Head Z	g	24.4	65.9	-4.8	106.6	25.0	80.5	-8.3	110.2
Head Resultant	g	60.3	83.9	0.0	-45.7	55.7	80.5	0.0	-41.6
Redundant Head X	g	18.0	238.0	-58.1	84.1	12.5	256.7	-48.9	87.2
Redundant Head Y	g	3.3	126.5	-9.6	84.5	13.8	82.6	-2.3	120.3
Redundant Head Z	g	24.2	65.9	-4.7	107.0	26.4	81.0	-8.5	111.0
Redundant Head Resultant	g	60.9	83.8	0.0	-42.8	56.3	80.8	0.0	-46.9
Upper Neck Fx	N	696.9	76.2	-296.0	161.9	393.7	85.4	-303.0	154.0
Upper Neck Fy	N	165.4	101.0	-73.9	179.3	60.4	35.8	-184.8	106.6
Upper Neck Fz	N	1458.4	70.2	-233.2	272.2	1155.6	70.5	-215.6	114.3
Upper Neck F Resultant	N	1500.7	70.3	0.1	-44.7	1159.6	70.5	0.2	-41.8
Upper Neck Mx	N-m	5.2	129.2	-11.7	65.7	11.6	80.8	-4.5	130.3
Upper Neck My	N-m	57.6	76.1	-24.1	264.8	36.5	84.6	-43.6	110.3
Upper Neck Mz	N-m	12.5	111.2	-7.5	179.9	4.4	137.2	-12.9	86.0
Upper Neck M Resultant	N-m	58.1	76.1	0.1	-45.3	43.9	110.2	0.0	-8.3
Chest X	g	3.4	274.4	-40.8	63.6	3.5	280.9	-36.1	78.3
Chest Y	g	4.2	74.0	-5.7	63.9	3.2	70.4	-2.2	110.2
Chest Z	g	9.1	79.8	-7.0	120.3	14.8	84.5	-7.5	114.9
Chest Resultant	g	41.4	63.9	0.0	-20.6	38.5	81.5	0.0	-49.6
Redundant Chest X	g	3.4	274.4	-40.8	63.8	3.5	280.9	-36.2	78.2
Redundant Chest Y	g	3.7	73.7	-5.5	63.9	3.6	70.0	-2.6	111.2
Redundant Chest Z	g	8.7	79.9	-7.0	120.3	14.6	84.5	-7.7	115.0
Redundant Chest Resultant	g	41.3	64.0	0.0	-22.1	38.4	85.1	0.0	-46.2
Chest Displacement	mm	0.1	-8.6	-27.0	89.2	0.0	11.3	-29.1	91.4

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2001 Chevrolet Monte Carlo 2-Door Coupe

NHTSA Test No.: M10105 Test Date: December 21, 2000

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Pelvic X	g	4.1	140.3	-85.9	62.4	3.4	145.3	-44.8	71.2
Pelvic Y	g	4.4	34.8	-10.6	66.0	9.6	62.9	-2.4	130.1
Pelvic Z	g	3.1	279.0	-18.4	65.3	3.0	284.6	-18.4	76.8
Pelvic Resultant	g	87.1	62.7	0.0	-31.7	47.2	71.2	0.0	-34.3
Left Femur	N	423.2	50.9	-5921.4	62.5	745.8	102.5	-3261.0	62.8
Right Femur	N	1168.8	84.6	-6948.3	62.4	594.6	103.1	-1323.4	77.0
Left Upper Tibia Mx	N-m	33.0	95.2	-22.8	65.6	15.3	89.0	-16.9	68.3
Left Upper Tibia My	N-m	27.3	98.4	-87.9	62.0	7.2	157.5	-193.5	65.0
Left Lower Tibia Fz	N	79.0	75.0	-2819.2	34.7	102.5	183.6	-4315.3	66.1
Left Lower Tibia Mx	N-m	56.8	66.2	-18.0	34.2	42.4	93.0	-11.4	38.6
Left Lower Tibia My	N-m	35.6	38.5	-80.2	65.5	11.9	34.6	-54.5	60.4
Right Upper Tibia Mx	N-m	47.4	84.9	-35.3	96.9	41.8	100.7	-4.7	164.3
Right Upper Tibia My	N-m	24.3	156.1	-203.7	65.4	15.5	163.2	-88.8	69.6
Right Lower Tibia Fz	N	143.0	205.6	-4078.3	69.8	112.2	146.8	-1463.3	38.3
Right Lower Tibia Mx	N-m	9.5	45.4	-37.1	89.6	13.4	36.5	-4.1	77.7
Right Lower Tibia My	N-m	17.1	36.0	-73.5	65.6	5.9	101.5	-46.0	61.2
Left Foot Aft Ax	g	29.4	38.6	-90.5	67.5	15.8	89.4	-121.1	61.4
Left Foot Aft Az	g	46.4	38.0	-85.8	65.0	22.7	88.9	-40.5	64.3
Left Foot Fore Az	g	25.7	80.9	-182.6	64.9	36.0	33.5	-85.2	42.2
Right Foot Aft Ax	g	26.3	85.7	-119.5	63.5	3.7	84.1	-65.2	61.5
Right Foot Aft Az	g	38.0	84.9	-60.4	69.1	10.8	88.2	-32.5	60.3
Right Foot Fore Az	g	31.5	31.2	-146.2	62.8	15.0	95.5	-84.0	60.1
Lap Belt Load	N	5129.8	70.0	-19.6	281.8	6415.7	72.1	-2.7	-50.0
Torso Belt	N	4721.8	87.2	-3.1	-42.8	4407.3	76.3	-10.5	234.0

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2001 Chevrolet Monte Carlo 2-Door Coupe

NHTSA Test No.: M10105 Test Date: December 21, 2000

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	549.2	61.8	97.0	47.6
Position #2 - Passenger	473.7	68.2	104.2	44.4

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	40.0	62.5	65.5	384.7
Position #2 - Passenger	38.3	80.4	83.4	347.0

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
REDUNDANT DATA

Vehicle Year/Make/Model/Body Style: 2001 Chevrolet Monte Carlo 2-Door Coupe

NHTSA Test No.: M10105 Test Date: December 21, 2000

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	562.8	61.7	96.9	48.1
Position #2 - Passenger	472.7	68.1	104.1	44.4

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

CLIP SUMMARY* REDUNDANT				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	39.9	62.5	65.5	383.7
Position #2 - Passenger	38.2	83.0	86.0	353.8

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

DATA SHEET NO. 9 SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

	<u>Driver</u>	<u>Passenger</u>
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	<u>2240</u>	<u>2240</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>1056</u>	<u>1056</u>
Lap belt length as measured on Part 572 Dummy.	<u>855</u>	<u>855</u>

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.	<u>152.4</u>	<u>190.5</u>
As determined mechanically.	<u>155</u>	<u>185</u>
As determined electronically.	<u>149</u>	<u>182</u>

BELT STRETCH DATA:

Measured electronically between shoulder belt load cell and the "D" ring.	<u>xx</u>	<u>1.3</u>
Measured mechanically.	<u>1</u>	<u>1</u>

xx - Channel Failed

Dimensions in millimeters

DATA SHEET NO.10 SUMMARY OF FMVSS 212 DATA

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with a 20 mm molding.

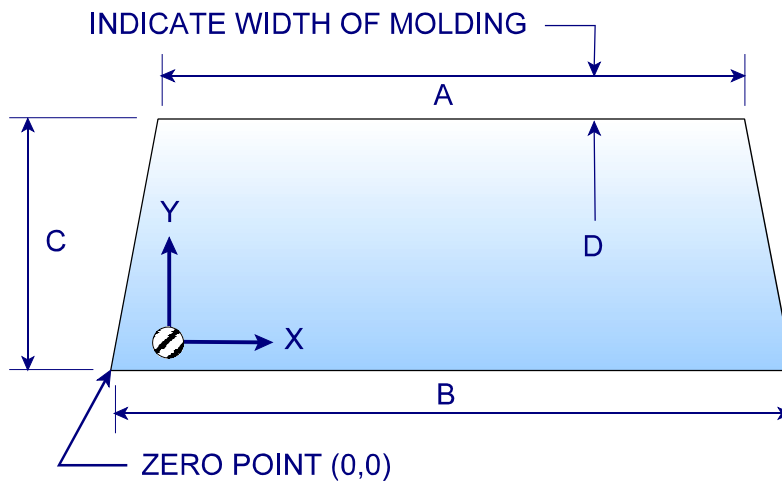
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST(mm)	
RIGHT SIDE	2167.5	2167.5	100
LEFT SIDE	2167.5	2167.5	100
TOTAL	4335	4335	100

AREA OF RETENTION FAILURE:



DIMENSIONS (mm)	
A	1180
B	1695
C	730
D	20

FRONT VIEW OF WINDSHIELD

FAILURE DETAILS:

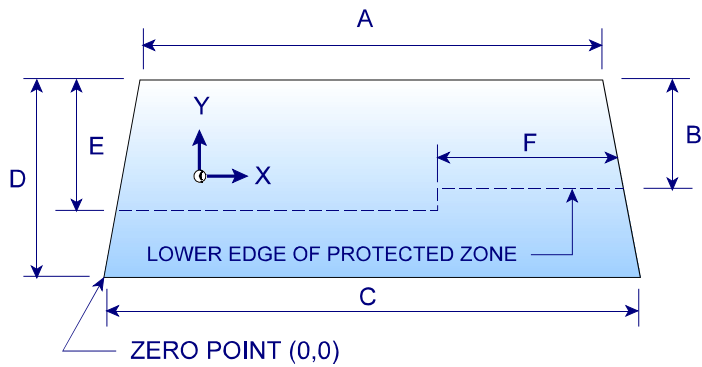
None

DATA SHEET NO. 11 FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield, then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:



DIMENSIONS (mm)	
A	1180
B	440
C	1695
D	730
E	506
F	661

FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm:

none

(Show location of penetration on the above sketch)

	COORDINATES	
	X	Y
1.		
2.		
3.		
4.		

DATA SHEET NO. 12 FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

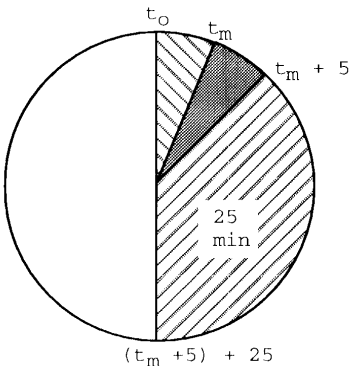
NHTSA TEST No.: M10105 TEST DATE: December 21, 2000
VEHICLE MAKE/MODEL: 2001 Chevrolet Monte Carlo

The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

=====

TEST VEHICLE IMPACT TYPE: X Frontal (56 kph)
- Oblique (48 kph) with _____ deg. barrier face first contacting _____ (driver/passenger) side
- Rear Moving Barrier (48 kph)
- Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS:

None

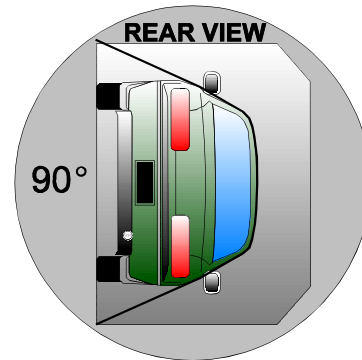
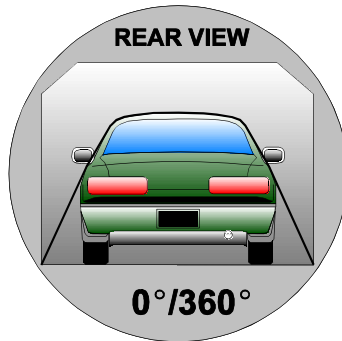
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

Vehicle: 2001 Chevrolet Monte Carlo

NHTSA No. M10105

0 - 90 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>22</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>0</u>	seconds
TOTAL	<u>6</u>	minutes	<u>22</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

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

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

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

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

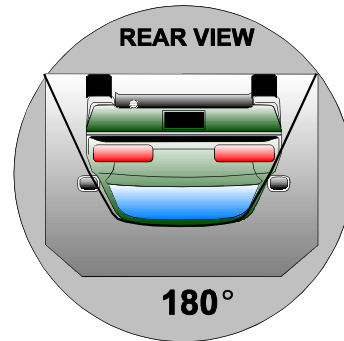
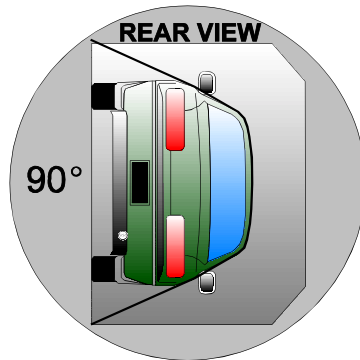
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (CONTINUED)

Vehicle: 2001 Chevrolet Monte Carlo

NHTSA No. M10105

90 - 180 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>25</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>0</u>	seconds
TOTAL	<u>6</u>	minutes	<u>25</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

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

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

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

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

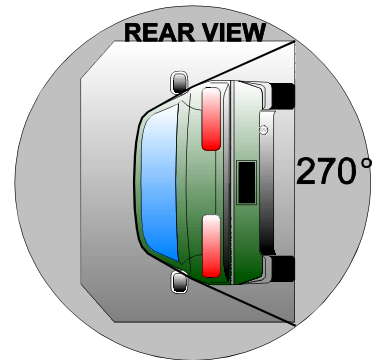
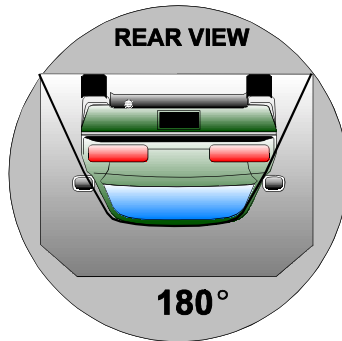
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (CONTINUED)

Vehicle: 2001 Chevrolet Monte Carlo

NHTSA No. M10105

180 - 270 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>14</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>0</u>	seconds
TOTAL	<u>6</u>	minutes	<u>14</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

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

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

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

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

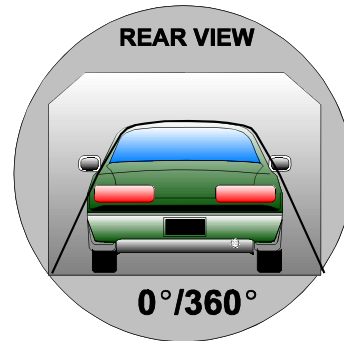
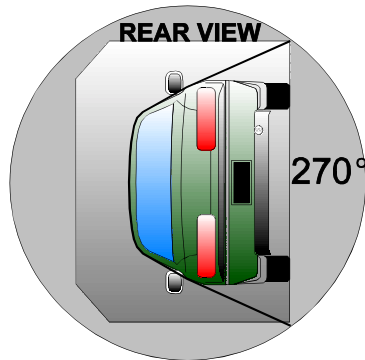
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (CONTINUED)

Vehicle: 2001 Chevrolet Monte Carlo

NHTSA No. M10105

270 - 360 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>23</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>0</u>	seconds
TOTAL	<u>6</u>	minutes	<u>23</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

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

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

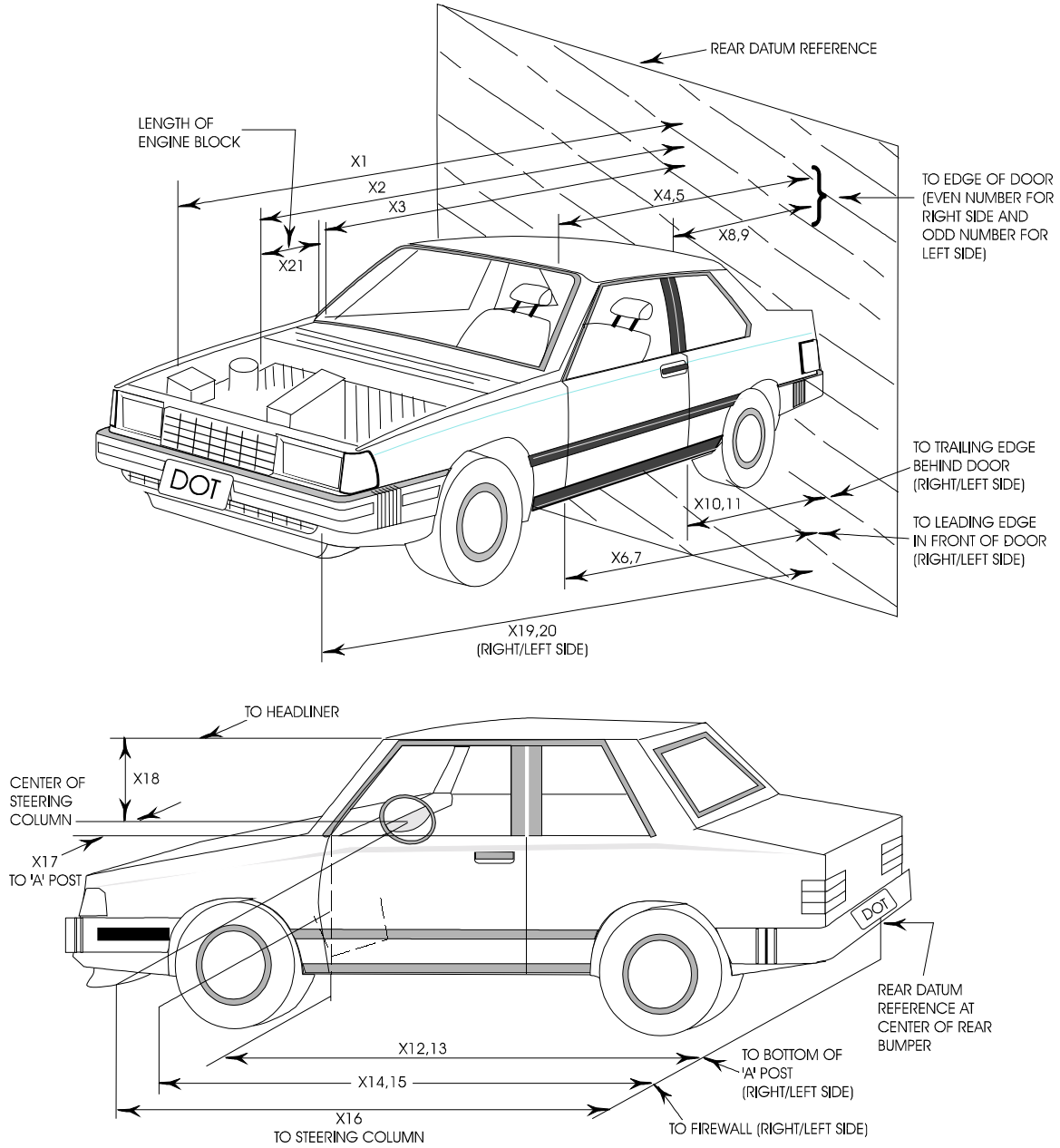
0 g	0 g	0 g	N/A
-----	-----	-----	-----

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS

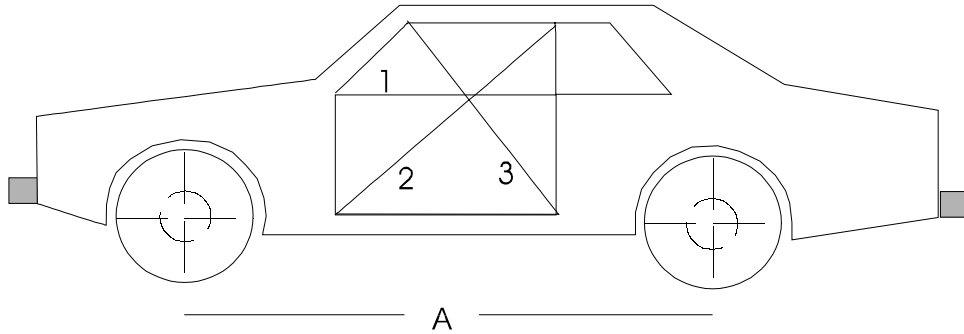


DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5045	4322	723
X2	Rear Surface of Vehicle to Front of Engine	4348	3978	370
X3	Rear Surface of Vehicle to Firewall	3835	3757	78
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3379	3341	38
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3376	3393	-17
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3421	3345	76
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3418	3445	-27
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2063	2040	23
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2064	2086	-22
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2084	2021	63
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2091	2114	-23
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3381	3362	19
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3379	3391	-12
X14	Rear Surface of Vehicle to Firewall, Right Side	3751	3706	45
X15	Rear Surface of Vehicle to Firewall, Left Side	3841	3732	109
X16	Rear Surface of Vehicle to Steering Column	2906	2946	-40
X17	Center of Steering Column to "A" Post	359	350	9
X18	Center of Steering Column to Headliner	406	334	72
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4892	4388	504
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4949	4453	496
X21	Length of Engine Block	434	401	33
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3160	3138	22
CD	Rear Surface of Vehicle to Center of Dash Panel	3102	3131	-29
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3133	3151	-18

All Dimensions in mm

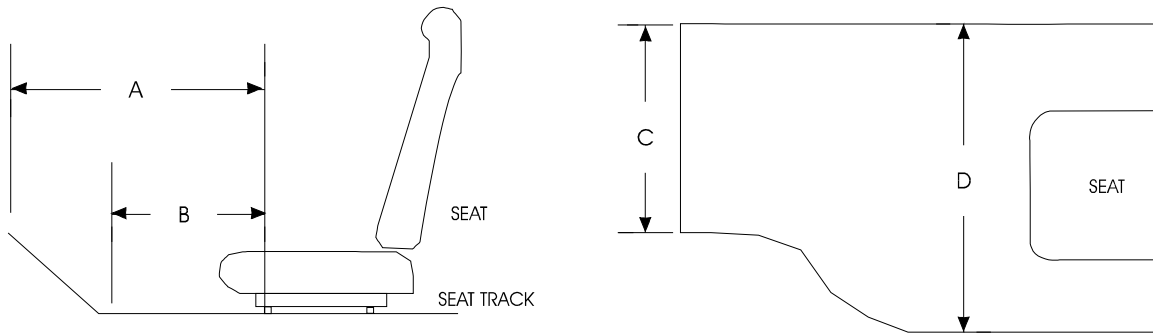
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1290	1645	1117	1265	1644	1105
AFTER TEST	1277	1644	1135	1279	1632	1105
DIFFERENCE	13	1	-18	-14	12	0

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2810	2817
AFTER TEST	2706	2671
DIFFERENCE	104	146

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC FOOTWELL DEFORMATION



DRIVER

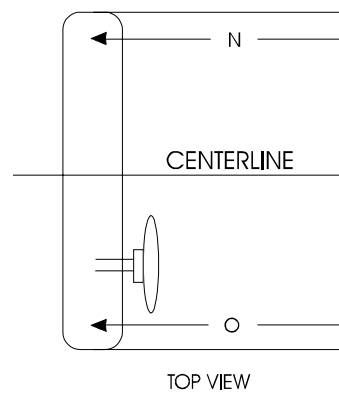
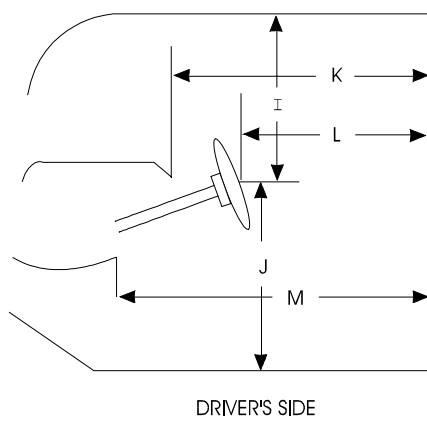
Measurement	Pre-Test	Post-Test	Difference
A	663	618	45
B	586	545	41
C	472	459	13
D	461	472	-11

PASSENGER

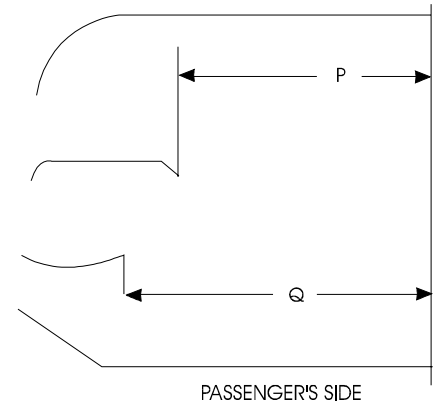
Measurement	Pre-Test	Post-Test	Difference
A	656	597	59
B	580	538	42
C	454	403	51
D	462	494	-32

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
VEHICLE INTRUSION MEASUREMENTS
STATIC PASSENGER COMPARTMENT INTRUSION



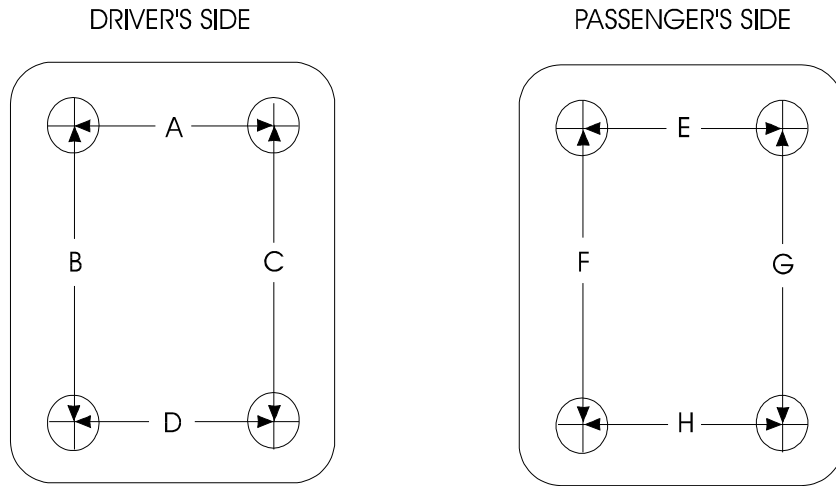
MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



Measurement	Pre-Test	Post-Test	Difference
I	406	334	72
J	663	777	-114
K	1103	1086	17
L	917	916	1
M	1198	1163	35
N	1149	1137	12
O	1144	1121	23
P = K (PASS.)	1117	1115	2
Q = M (PASS.)	1156	1117	39

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
FLOORBOARD DEFORMATION

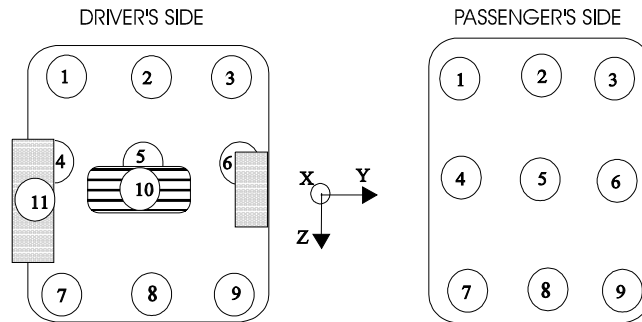


TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	480	475	5
B	725	718	7
C	715	713	2
D	500	500	0
E	480	469	11
F	715	706	9
G	725	718	7
H	500	500	0

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
TOE-PAN INTRUSION



Driver Side Floorpan Measurements

Floorpan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3563	3547	16	-301	-366	65
2	3559	3538	21	-300	-363	63
3	3516	3521	-5	-295	-365	70
4	3538	3529	9	-280	-344	64
5	3527	3496	31	-261	-346	85
6	3527	3477	50	-277	-336	59
7	3489	3483	6	-243	-304	61
8	3482	3466	16	-241	-308	67
9	3478	3439	39	-256	-303	47
10	3431	3384	47	-421	-481	60
11	3465	3464	1	-341	-395	54

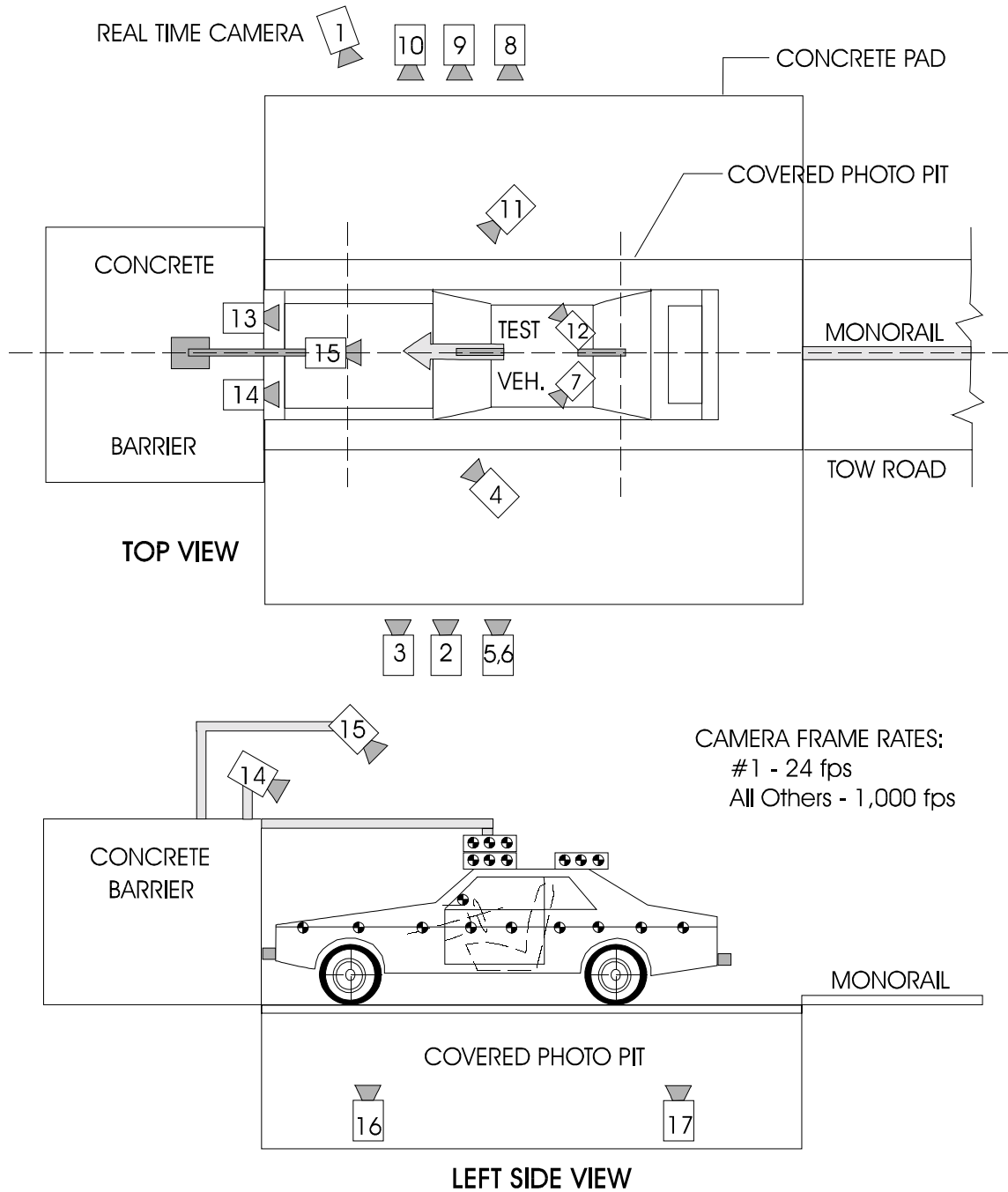
Passenger Side Floorpan Measurements

Floorpan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3509	3444	65	-345	-277	-68
2	3555	3419	136	-351	-272	-79
3	3562	3424	138	-342	-272	-70
4	3479	3360	119	-304	-220	-84
5	3535	3381	154	-317	-234	-83
6	3524	3406	118	-314	-212	-102
7	3389	3351	38	-263	-175	-88
8	3479	3360	119	-259	-170	-89
9	3485	3375	110	-256	-159	-97

Reference: X = Rear Bumper; Z = Ground

DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS (cont.)

NHTSA Test No.: M10105 Vehicle: 2001 Chevrolet Monte Carlo 2-Door Coupe

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	7383	1794	1091	-2.4	6976	12.5	1005
3	Left Side View	9031	1162	1096	-2.5	8624	25	1025
4	Driver and Interior View	8033	2162	1934	-7.6	-	25	1055
5	Steering Column (Bottom)	8006	1976	1169	-2.9	7599	25	1015
6	Steering Column (Top)	8006	1976	1774	-7.8	7599	25	1010
7	Left Belt	-	-	-	-	-	13	1010
8	Overall Right Side	7183	1946	1101	-1.9	6776	12.5	1015
9	Right Side View	8684	1469	1101	-2.2	8277	25	1010
10	Right Passenger View	8481	1857	1364	-2.6	8074	35	1010
11	Passenger and Interior View	8113	2938	1953	-7.6	-	25	1000
12	Right Belt	-	-	-	-	-	13	1020
13	Passenger Front View	620	-92	1987	-37	-	13	1015
14	Driver Front View	620	-92	1987	-35	-	13	1010
15	Windshield View	0	-530	3374	-54	-	13	1015
16	Pit View of Engine	0	615	-3048	90	-	13	1005
17	Pit View of Fuel Tank	3457	0	-3048	90	-	13	1030

*X = film plane to monorail centerline

** = referenced to horizontal plane

Y = film plane to impact location

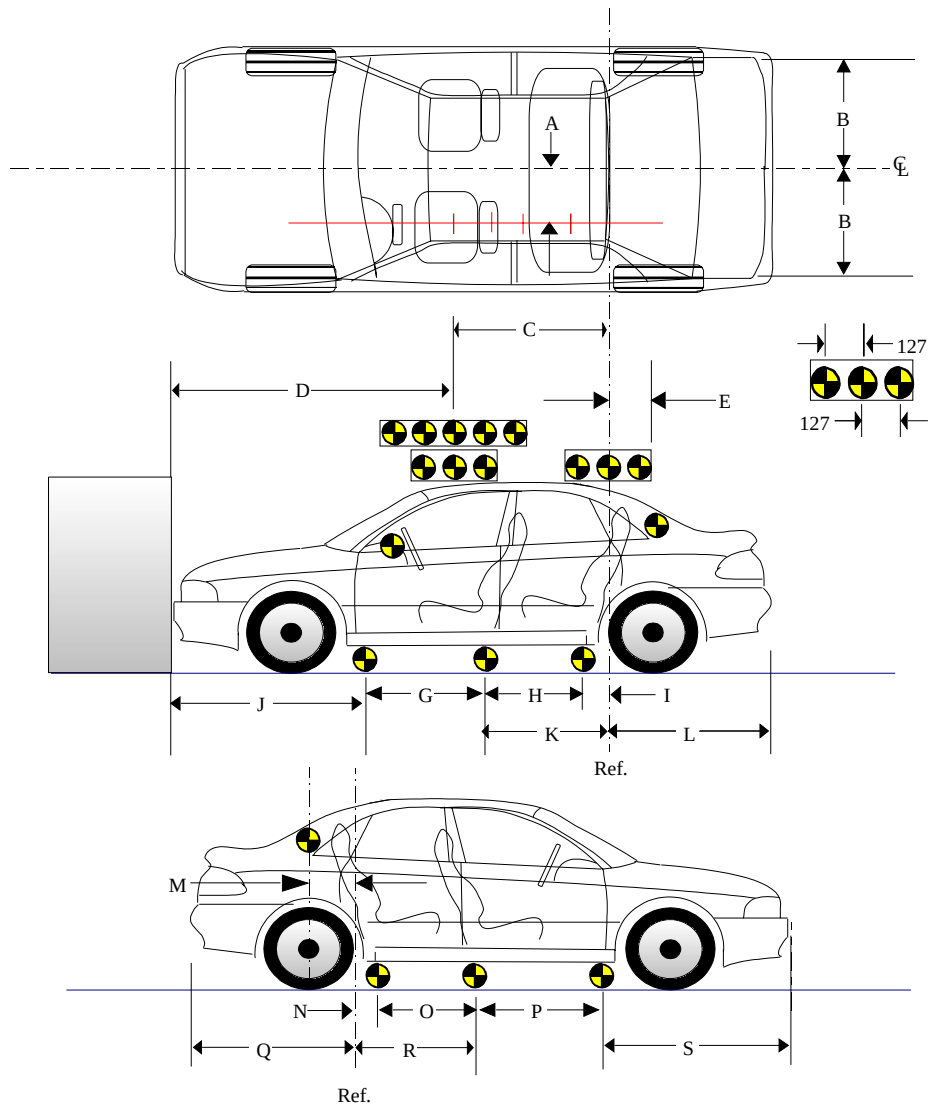
N.T. indicates No Timing

Z = film plane to ground

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

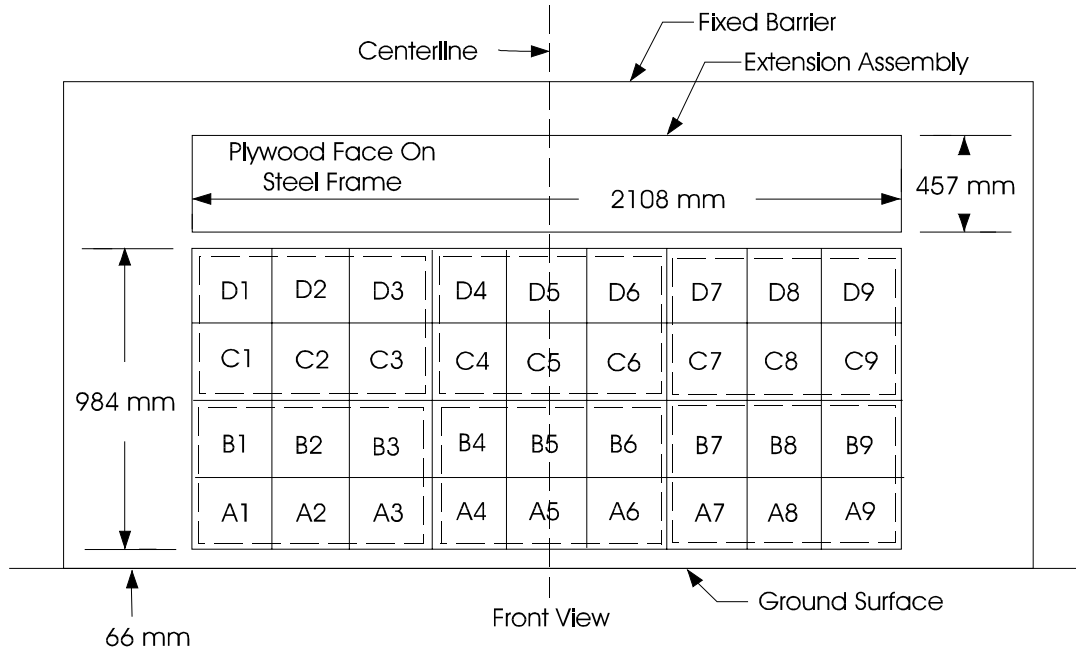
(Dimensions in millimeters)

A	331
B	625
C	1218
D	2384
E	318
F	1654
G	956
H	994
I	62
J	1579
K	1056
L	1454
M	328
N	129
O	938
P	949
Q	1455
R	1067
S	1573



DATA SHEET NO. 17 LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
 4 Rows
 9 Columns
 6 Groupings (6 cells/group)



6 GROUPS OF 6 LOAD CELLS EACH

Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

- (1) Data from 36 individual load cells
- (2) Total or Sum of 36 individual load cells
- (3) Data from 6 Groupings shown above (6 cells/group)

DATA SHEET NO. 18 POST TEST AIR BAG DATA

NHTSA No. : M10105; Test Date: December 21, 2000; Technician: James A. Czarnecki

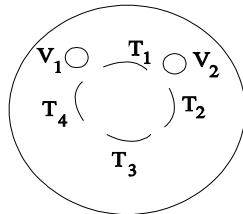
Vehicle Model Year/Make/Model: 2001 Chevrolet Monte Carlo

- A. No. of vent holes: 2 -Driver 2 -Passenger
- B. Size of vent holes: (mm²) 30 -Driver 40 -Passenger
- C. Total vent area: (mm²) 60 -Driver 80 -Passenger
- D. Deflated air bag length and width dimensions or, if round, diameter. (mm)
- Driver: - -Length; - -Width; 630 -Diameter
- Passenger: 550 -Height; 350 -Width; 400 -Depth
- E. Is the air bag tethered?
- Driver: x -Yes; - -No; If yes, record length of tether- 250
- Passenger: x -Yes; - -No; If yes, record length of tether- 400

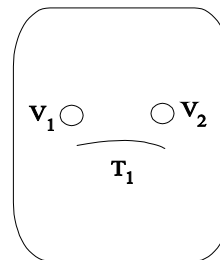
Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.

(Note: Not to scale; V_n = Vent hole_n, T_n = Tether_n).

Driver



Passenger



- F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Air bag: AB6307Q2SVK0JT

Generator: none

Passenger: Air bag: none

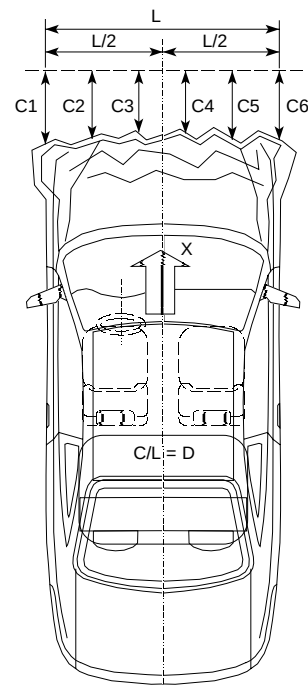
Generator: none

FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style:	Chevrolet Monte Carlo 2-Door Coupe			
NHTSA Test No.:	M10105	VIN:	2G1WW12E419221320	
Model Year:	2001	Build Date:	11/00	Test Date: December 21, 2000
Vehicle Size Category:	Coupe	Test Weight:	1741	kg
Vehicle Wheelbase:	2810	mm; Front Overhang:	1576	mm; Overall Width: 1854 mm
Collision Deformation Classification (CDC) Code:	12FDEW3			

Crush Depth Dimensions;

	PRE	POST	DIFF	
C1 =	4901	4439	462.0	mm
C2 =	4982	4438	544.0	mm
C3 =	5035	4361	674.0	mm
C4 =	5021	4321	700.0	mm
C5 =	4947	4375	572.0	mm
C6 =	4845	4400	445.0	mm



Midpoint of Damage: $D = \frac{\text{Vehicle Centerline (Longitudinal)}}$

Length of Damaged Region:

L1=	<u>1854</u>	mm
L2=	<u>927.0</u>	mm
L3=	618.0	mm

APPENDIX A
PHOTOGRAPHS

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Figure A-1: LOAD CELL LOCATIONS.



Figure A-2: PRE-TEST FRONT VIEW



Figure A-3: POST-TEST FRONT VIEW.



Figure A-4: PRE-TEST LEFT SIDE VIEW



Figure A-5: POST-TEST LEFT SIDE VIEW



Figure A-6: PRE-TEST RIGHT SIDE VIEW



Figure A-7: POST-TEST RIGHT SIDE VIEW



Figure A-8: PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-9: POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-10: PRE-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-11: POST-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-12: PRE-TEST WINDSHIELD VIEW



Figure A-13: POST-TEST WINDSHIELD VIEW



Figure A-14: PRE-TEST ENGINE COMPARTMENT VIEW



Figure A-15: FUEL CAP VIEW



Figure A-16: PRE-TEST FRONT UNDERBODY VIEW

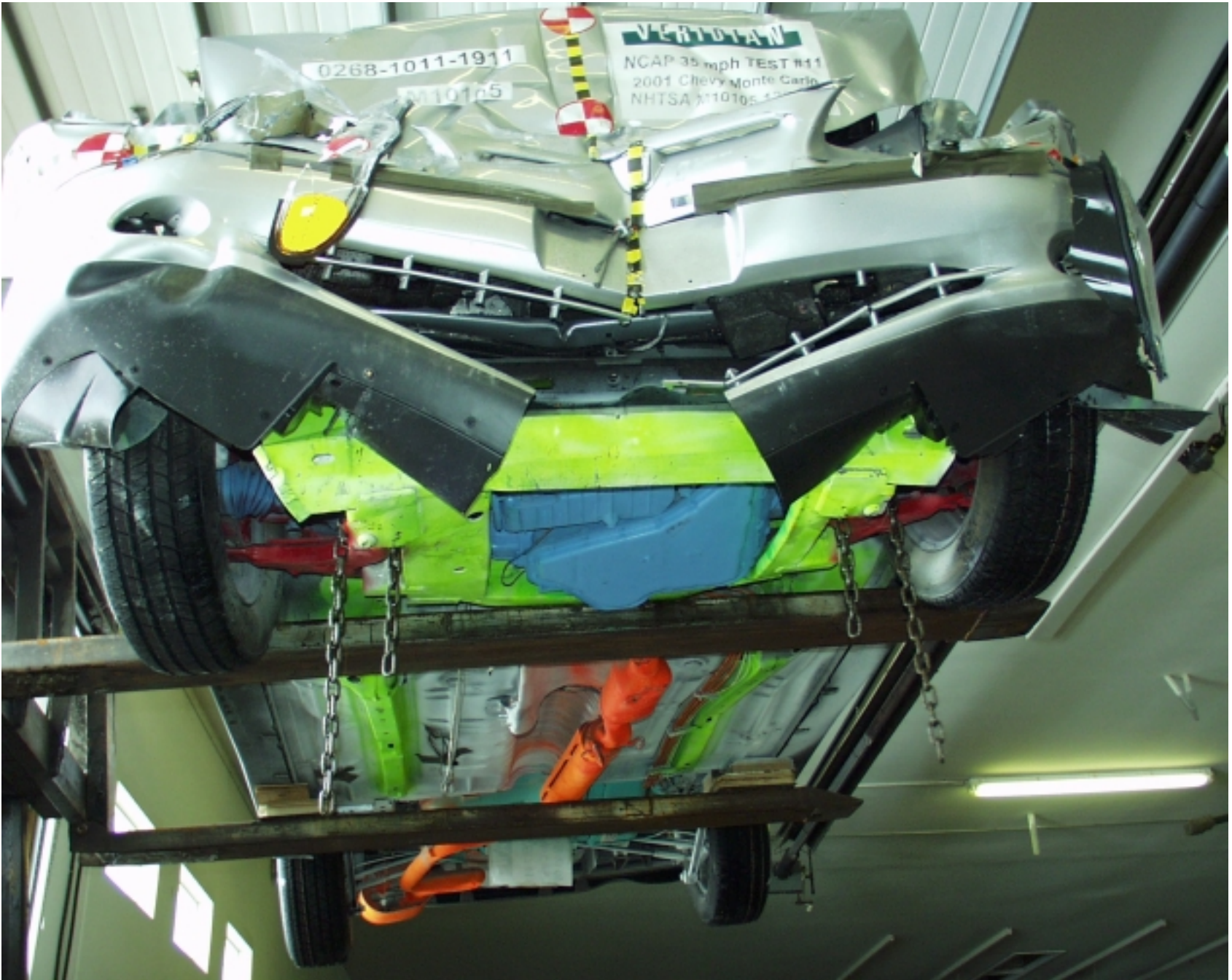


Figure A-17: POST-TEST FRONT UNDERBODY VIEW



Figure A-18: PRE-TEST FRONT SIDE UNDERBODY VIEW



Figure A-19: POST-TEST FRONT SIDE UNDERBODY VIEW



Figure A-20: PRE-TEST REAR UNDERBODY VIEW



Figure A-21: POST-TEST REAR UNDERBODY VIEW



Figure A-22: PRE-TEST DRIVER POSITION VIEW



Figure A-23: POST-TEST DRIVER POSITION VIEW



Figure A-24: PRE-TEST PASSENGER POSITION VIEW



Figure A-25: POST-TEST PASSENGER POSITION VIEW



Figure A-26: PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-27: POST-TEST DRIVER AND INTERIOR VIEW



Figure A-28: PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-29: POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-30: PRE-TEST DRIVER HEAD LOCATION



Figure A-31: POST-TEST DRIVER HEAD LOCATION



Figure A-32: PRE-TEST PASSENGER HEAD LOCATION



Figure A-33: POST-TEST PASSENGER HEAD LOCATION



Figure A-34: PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-35: POST-TEST DRIVER FLOOR PAN VIEW



Figure A-36: PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-37: POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-38: ROLLOVER VIEW



Figure A-39: IMPACT VIEW

APPENDIX B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	SAE Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head rearward Fy Head left Fz Neck in tension Mx Left ear to left shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	Fx Chest rearward Fy Chest left Fz Spine in tension
Femur Load Cell	Compression is negative
Upper Tibia Load Cell (right and left leg)	Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fz Tibia in tension Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO. M10105

DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	60
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle Displacement Integrations	180
Load Cell Barrier Forces	60

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

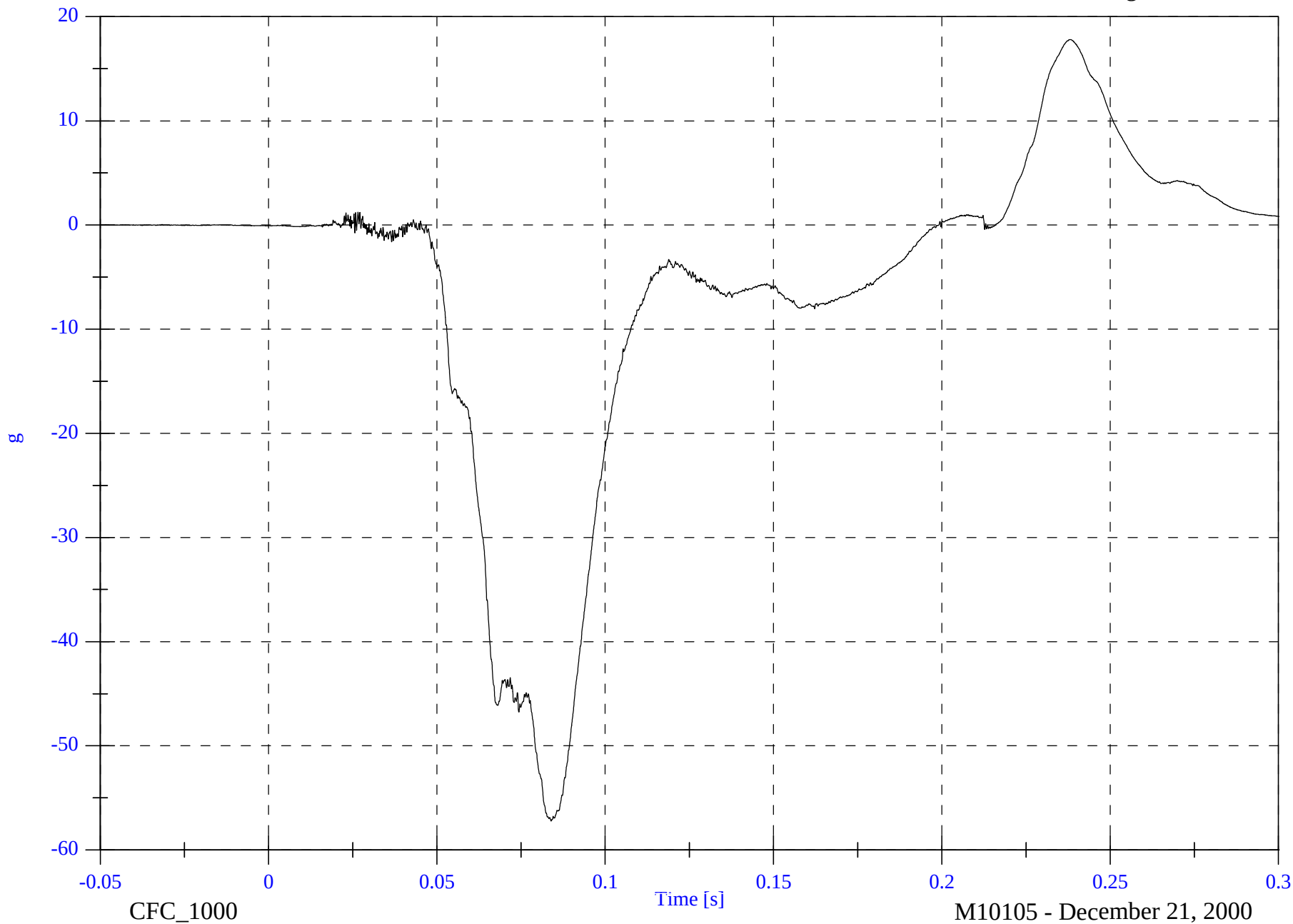
P1 Head x

Max: 17.8 [g] at 0.238 [s]

Min: -57.2 [g] at 0.084 [s]

B-4

8602-11

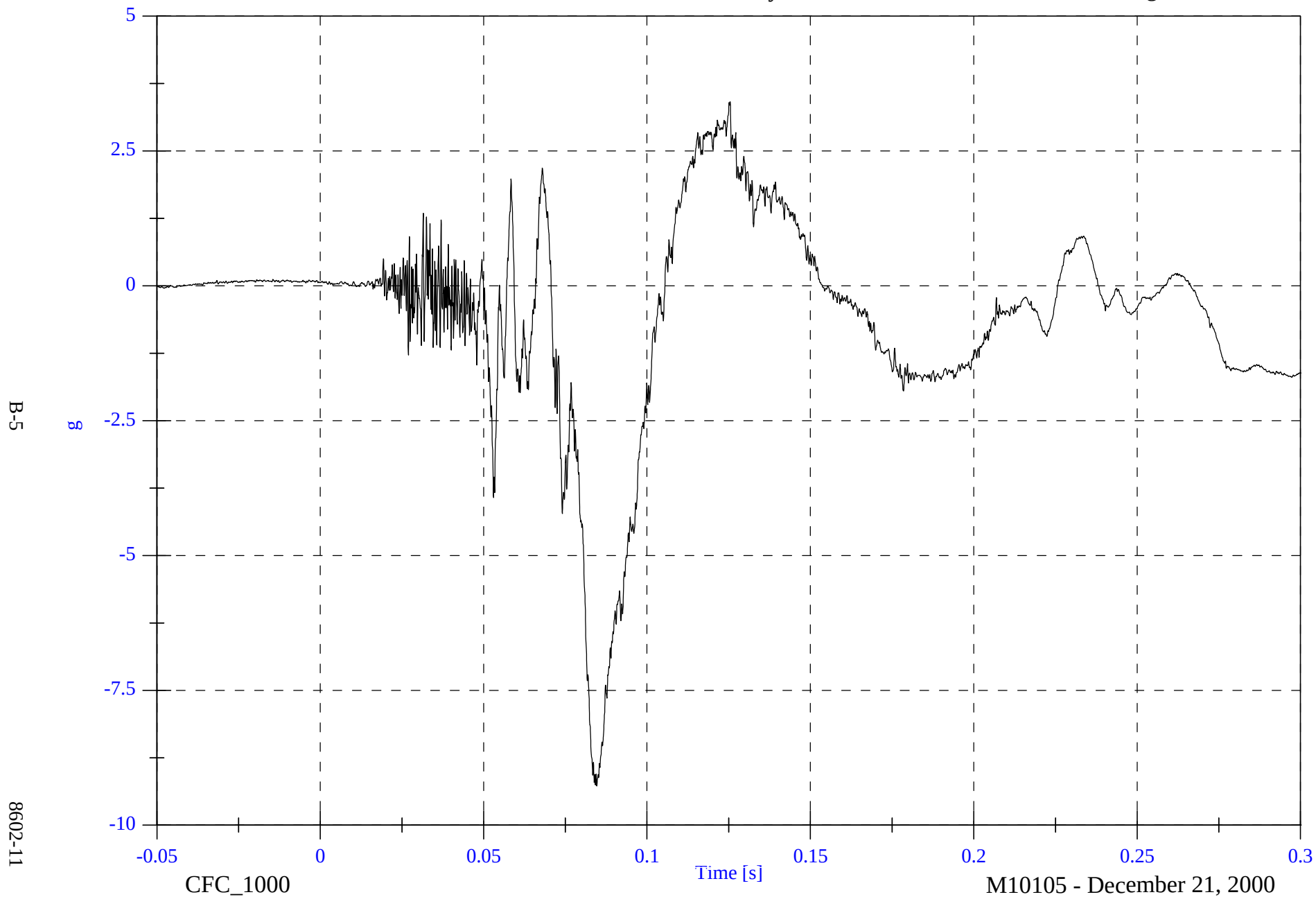


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Head y

Max: 3.4 [g] at 0.125 [s]

Min: -9.3 [g] at 0.085 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Head z

Max: 24.4 [g] at 0.066 [s]

Min: -4.8 [g] at 0.107 [s]

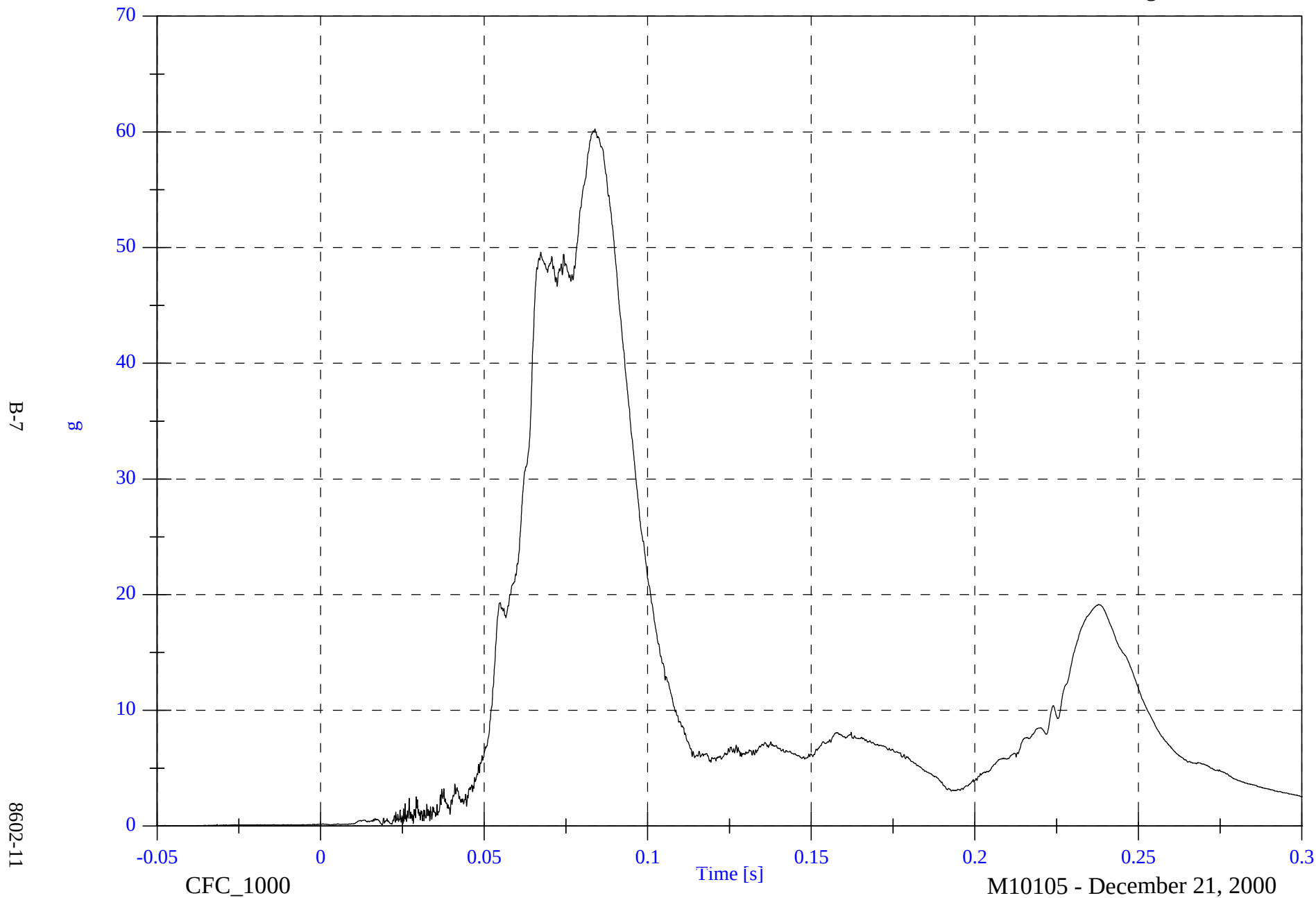


B-6

8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe
P1 Head Resultant

Max: 60.3 [g] at 0.084 [s]
Min: 0.0 [g] at -0.046 [s]

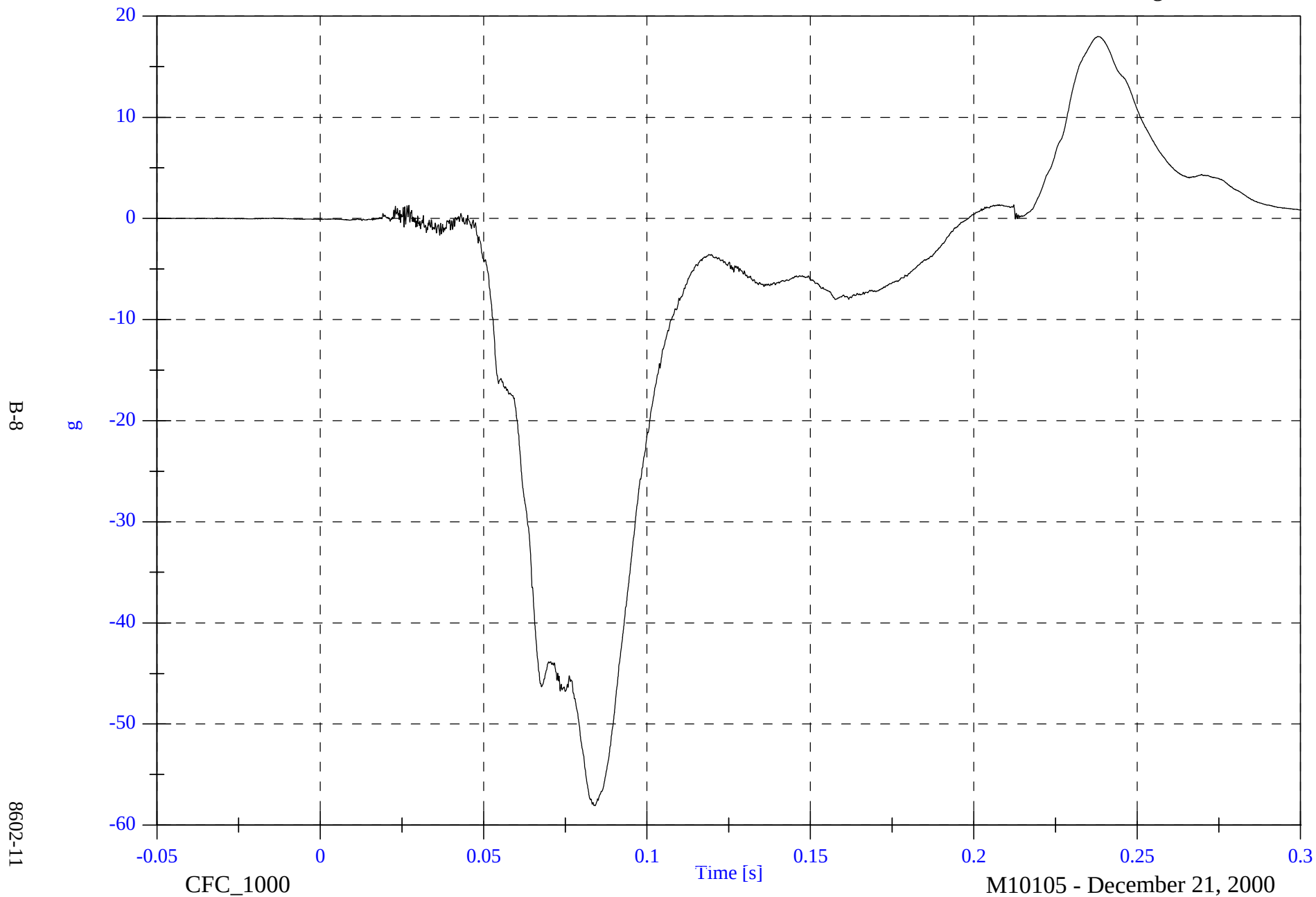


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Head Red x

Max: 18.0 [g] at 0.238 [s]

Min: -58.1 [g] at 0.084 [s]

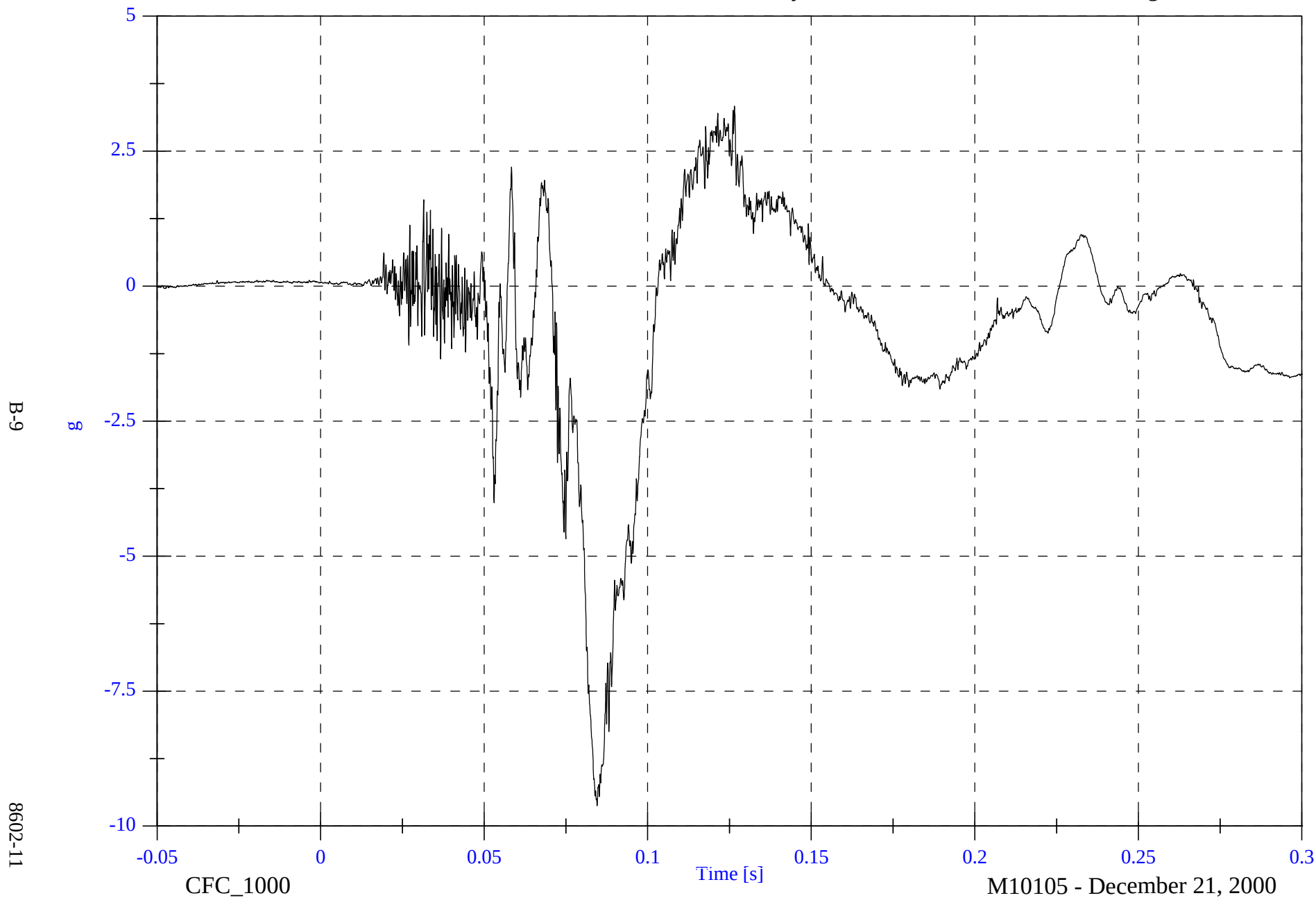


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Head Red y

Max: 3.3 [g] at 0.127 [s]

Min: -9.6 [g] at 0.085 [s]



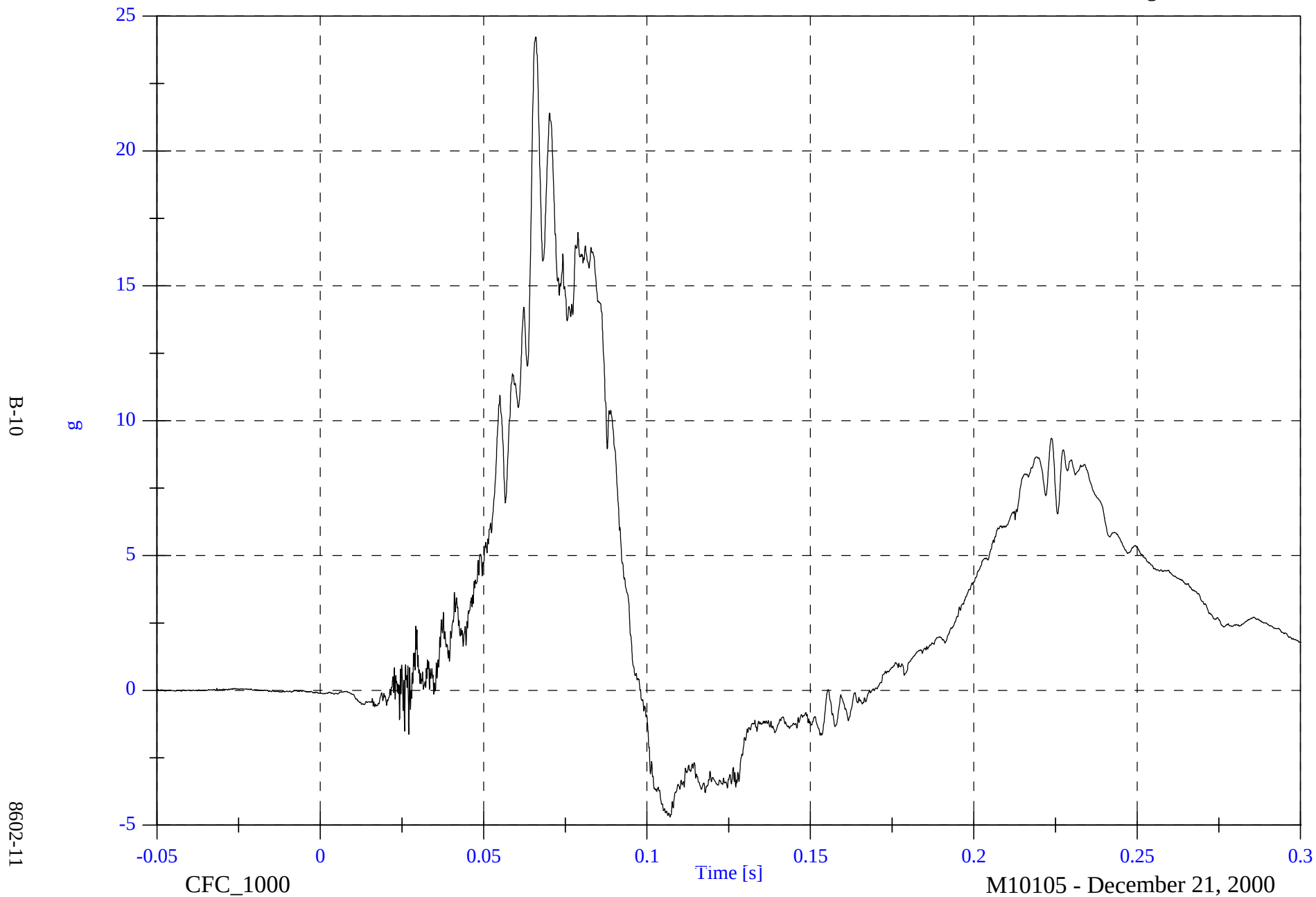
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Head Red z

Max: 24.2 [g] at 0.066 [s]

Min: -4.7 [g] at 0.107 [s]

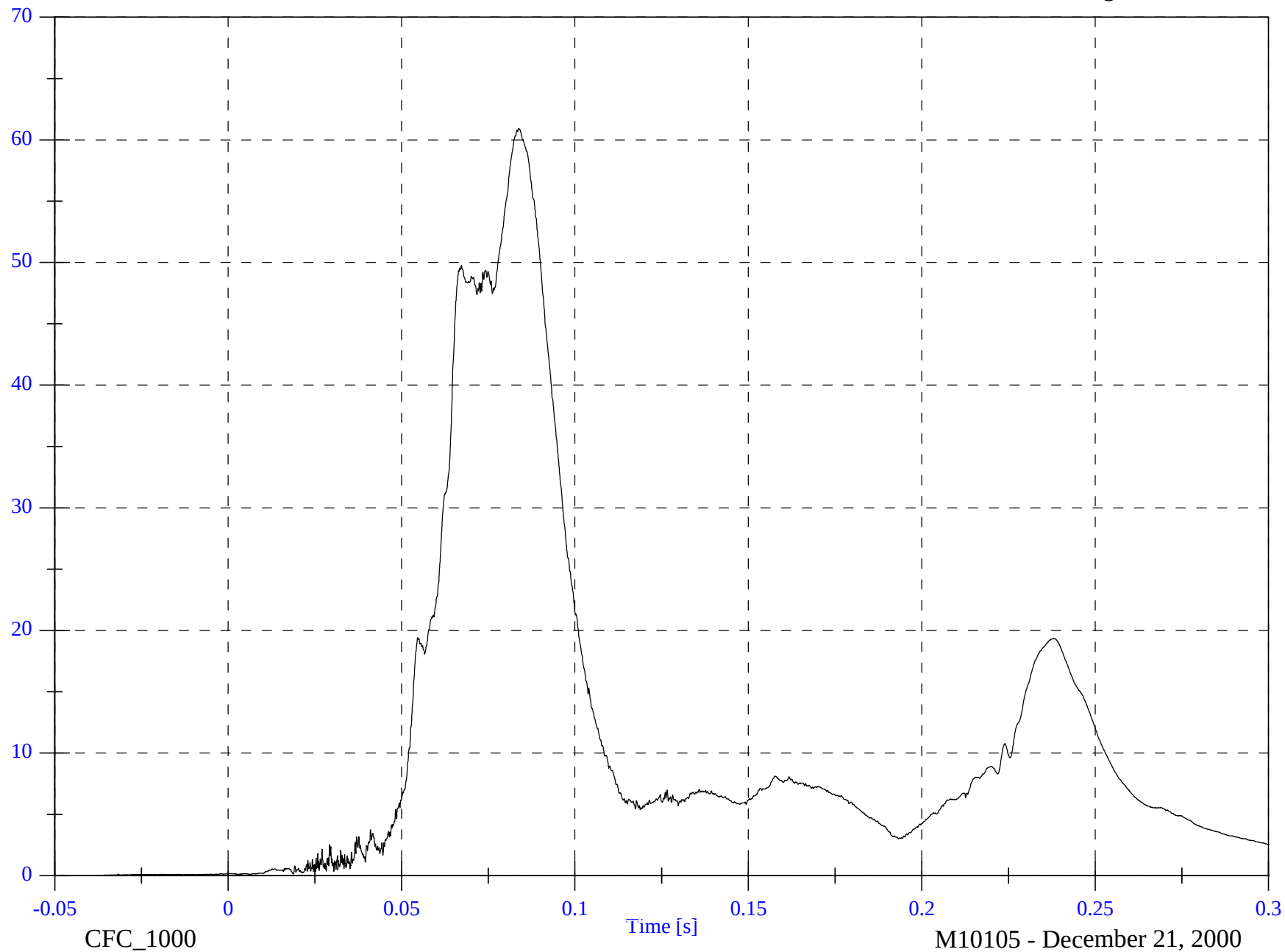


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Head Red Resultant

Max: 60.9 [g] at 0.084 [s]

Min: 0.0 [g] at -0.043 [s]



B-11

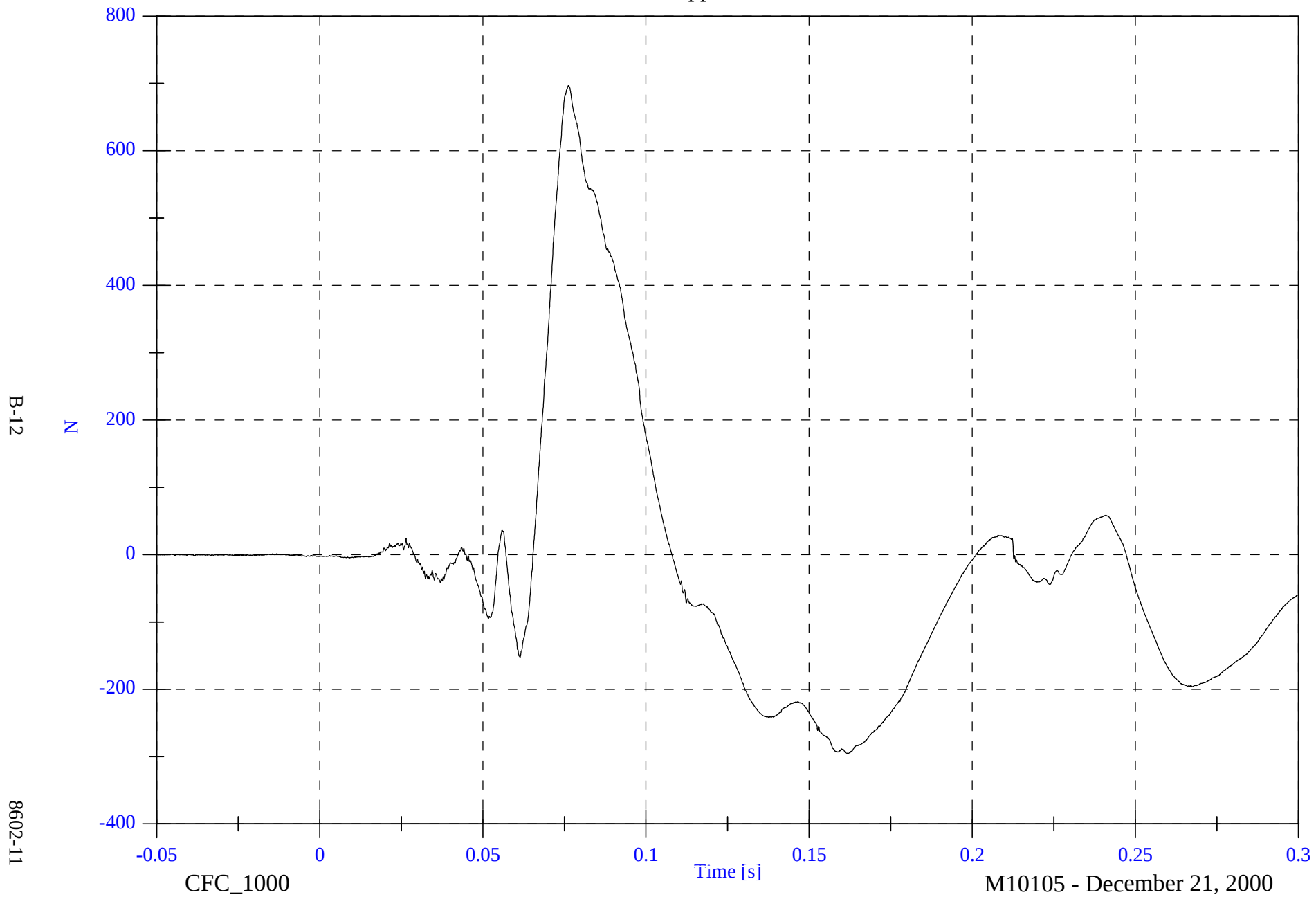
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck Fx

Max: 696.9 [N] at 0.076 [s]

Min: -296.0 [N] at 0.162 [s]



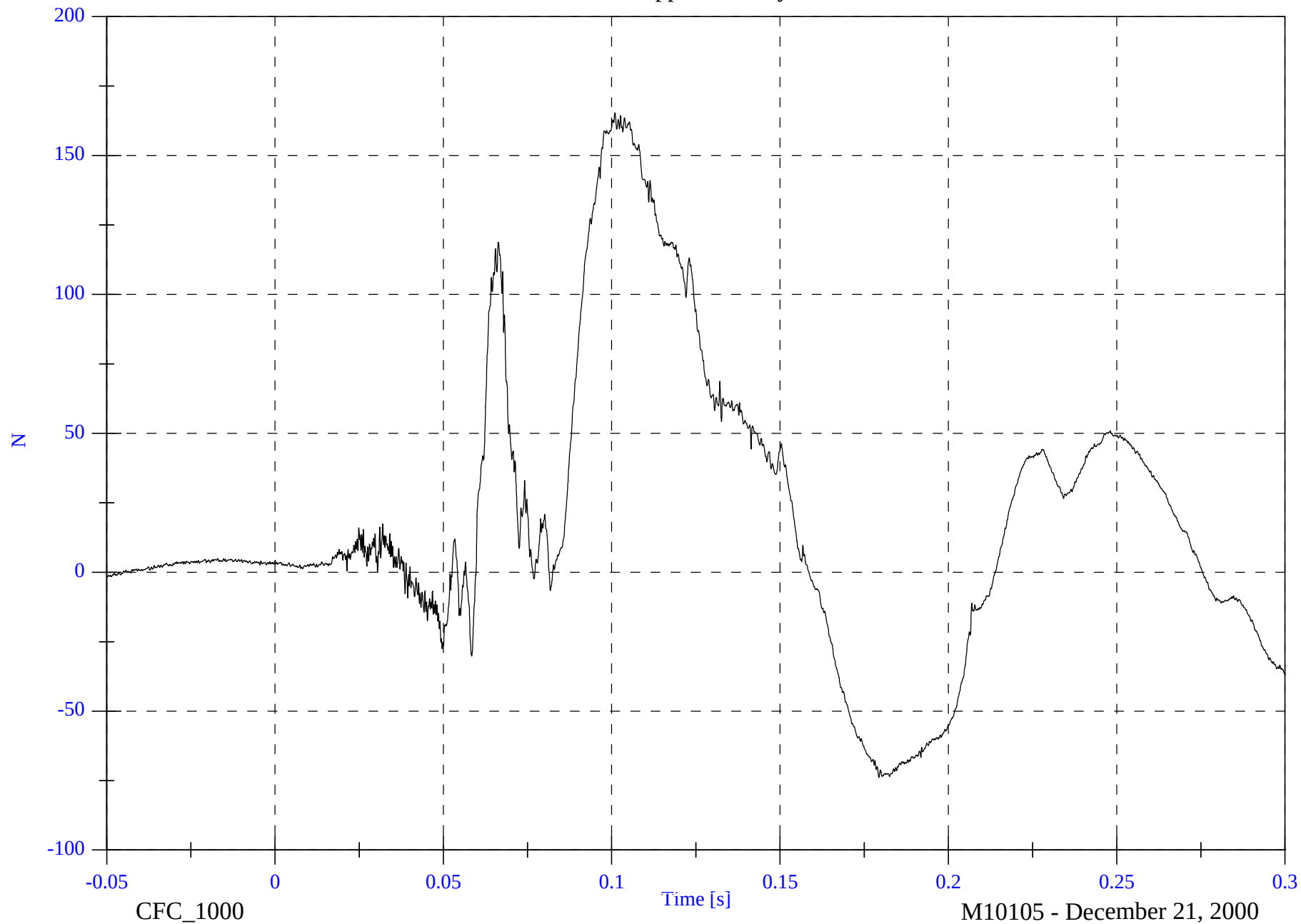
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck Fy

Max: 165.4 [N] at 0.101 [s]

Min: -73.9 [N] at 0.179 [s]



B-13

8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck Fz

Max: 1458.4 [N] at 0.070 [s]

Min: -233.2 [N] at 0.272 [s]



B-14

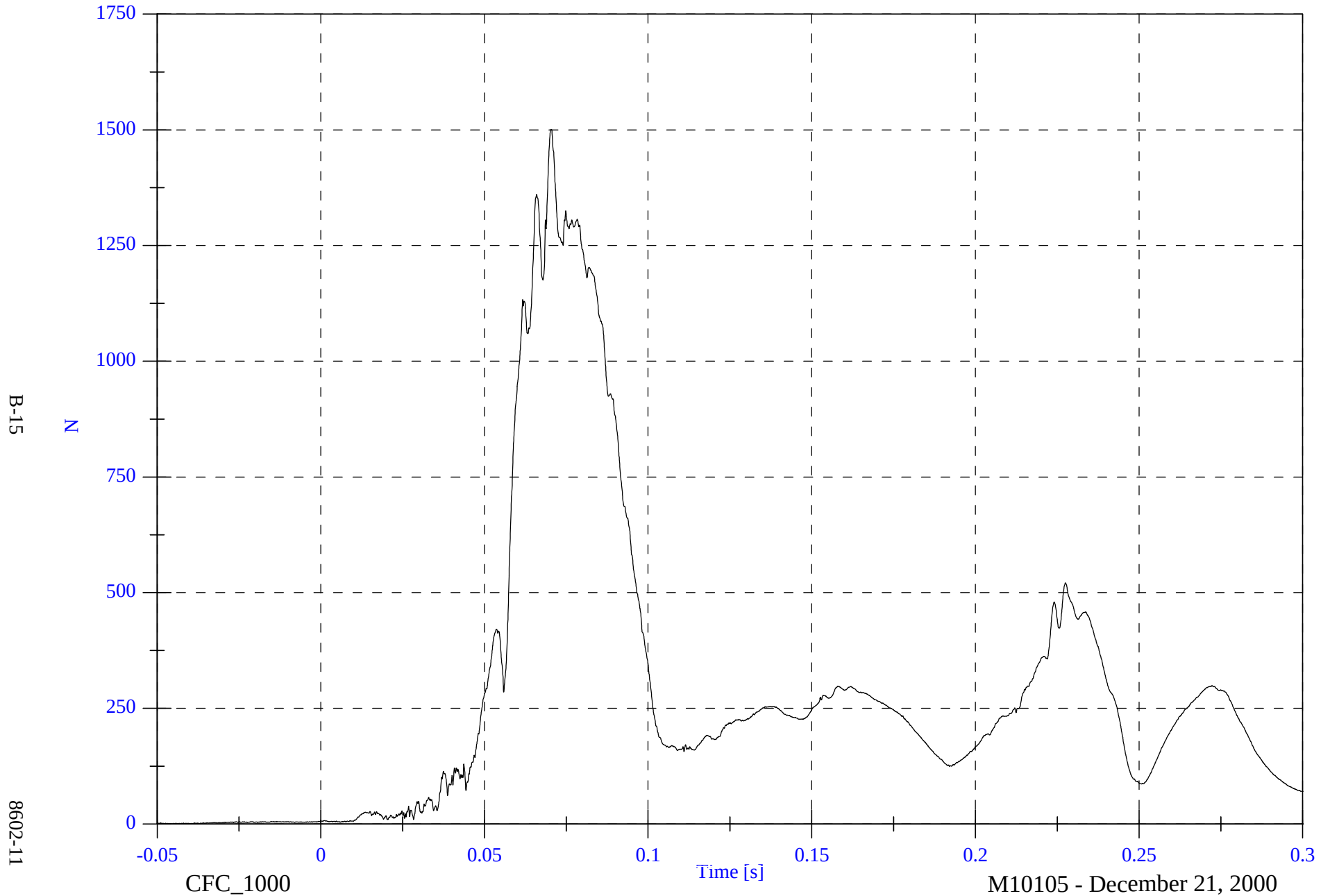
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck F Resultant

Max: 1500.7 [N] at 0.070 [s]

Min: 0.1 [N] at -0.045 [s]

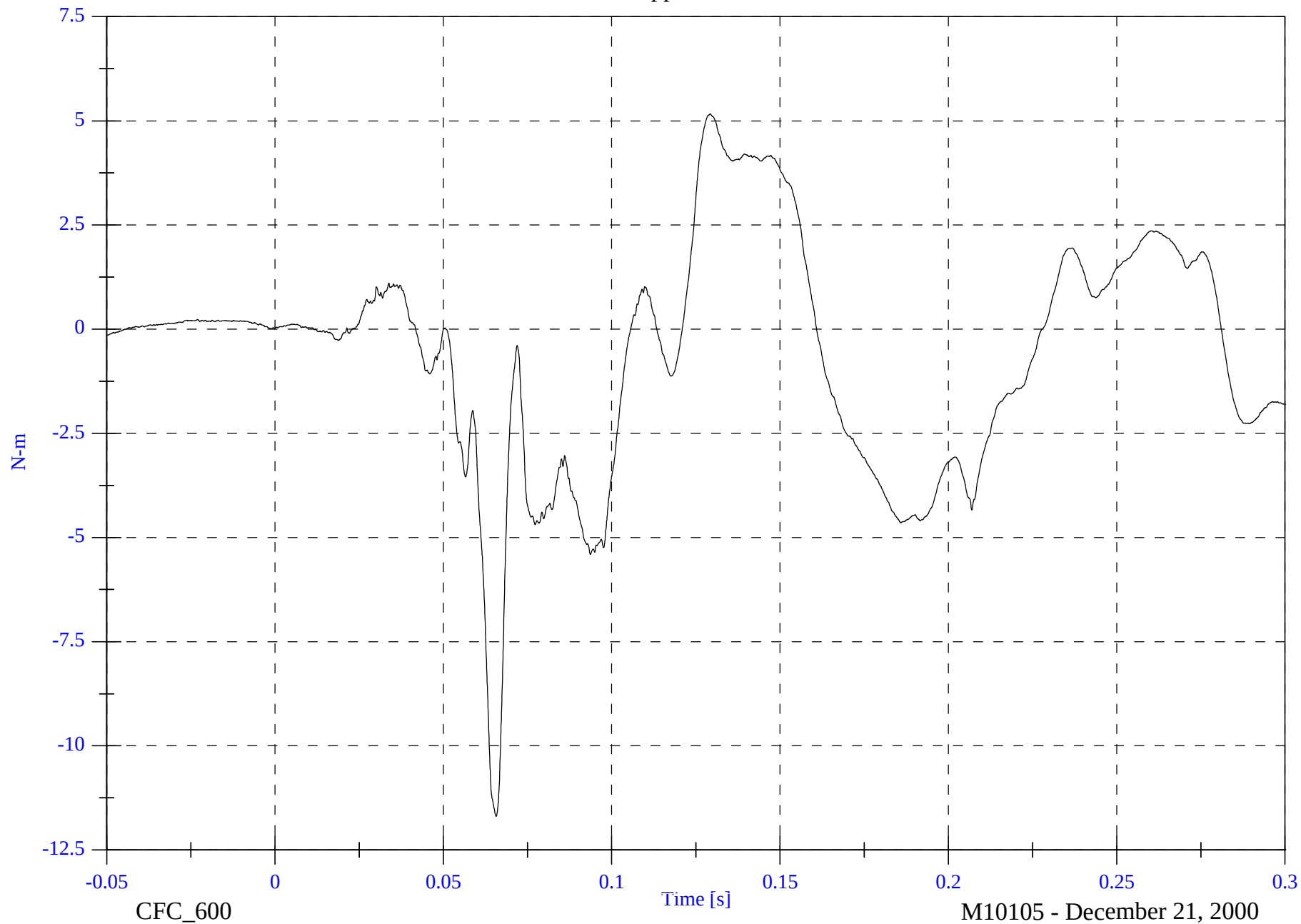


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck Mx

Max: 5.2 [N-m] at 0.129 [s]

Min: -11.7 [N-m] at 0.066 [s]

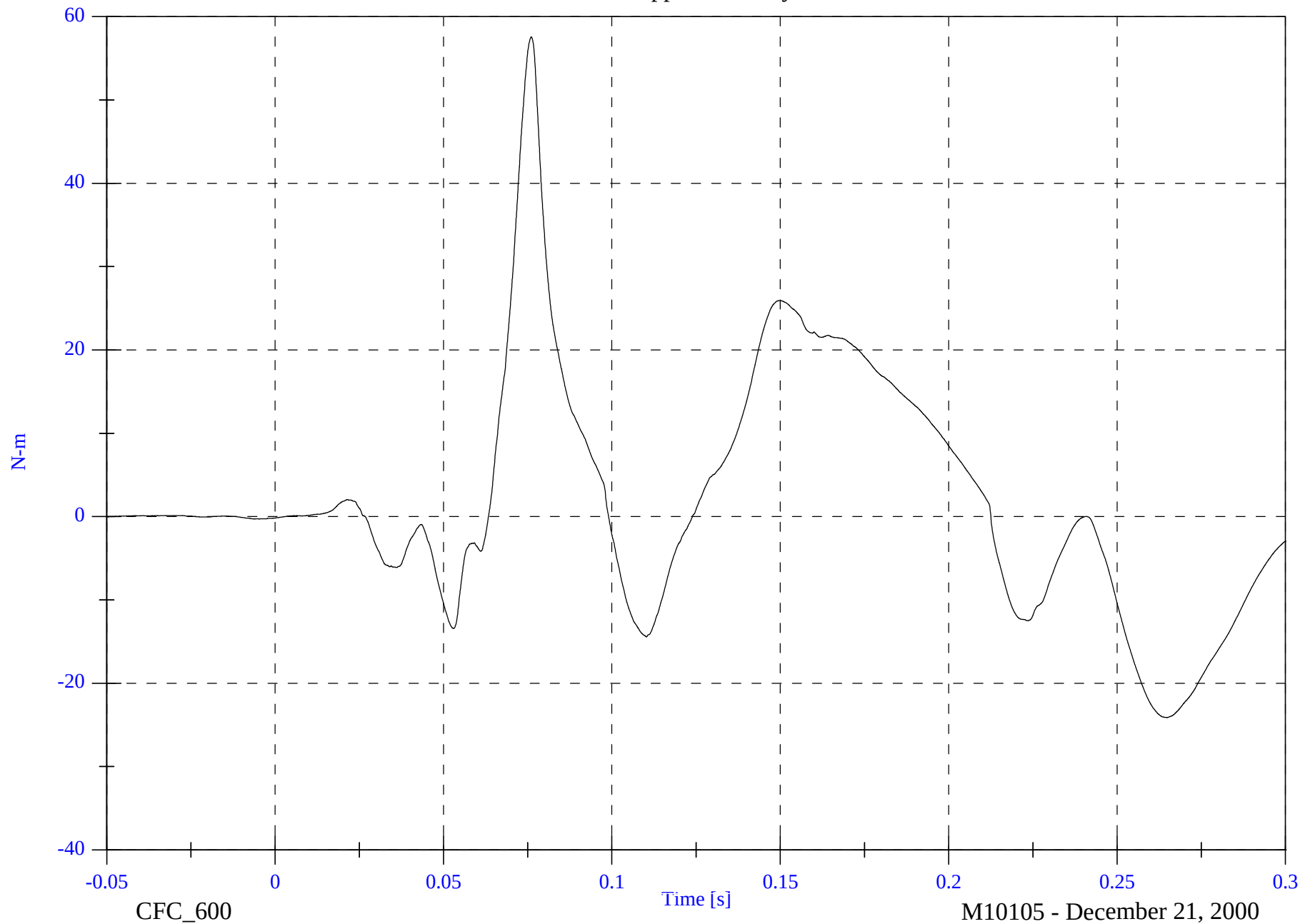


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck My

Max: 57.6 [N-m] at 0.076 [s]

Min: -24.1 [N-m] at 0.265 [s]



B-17

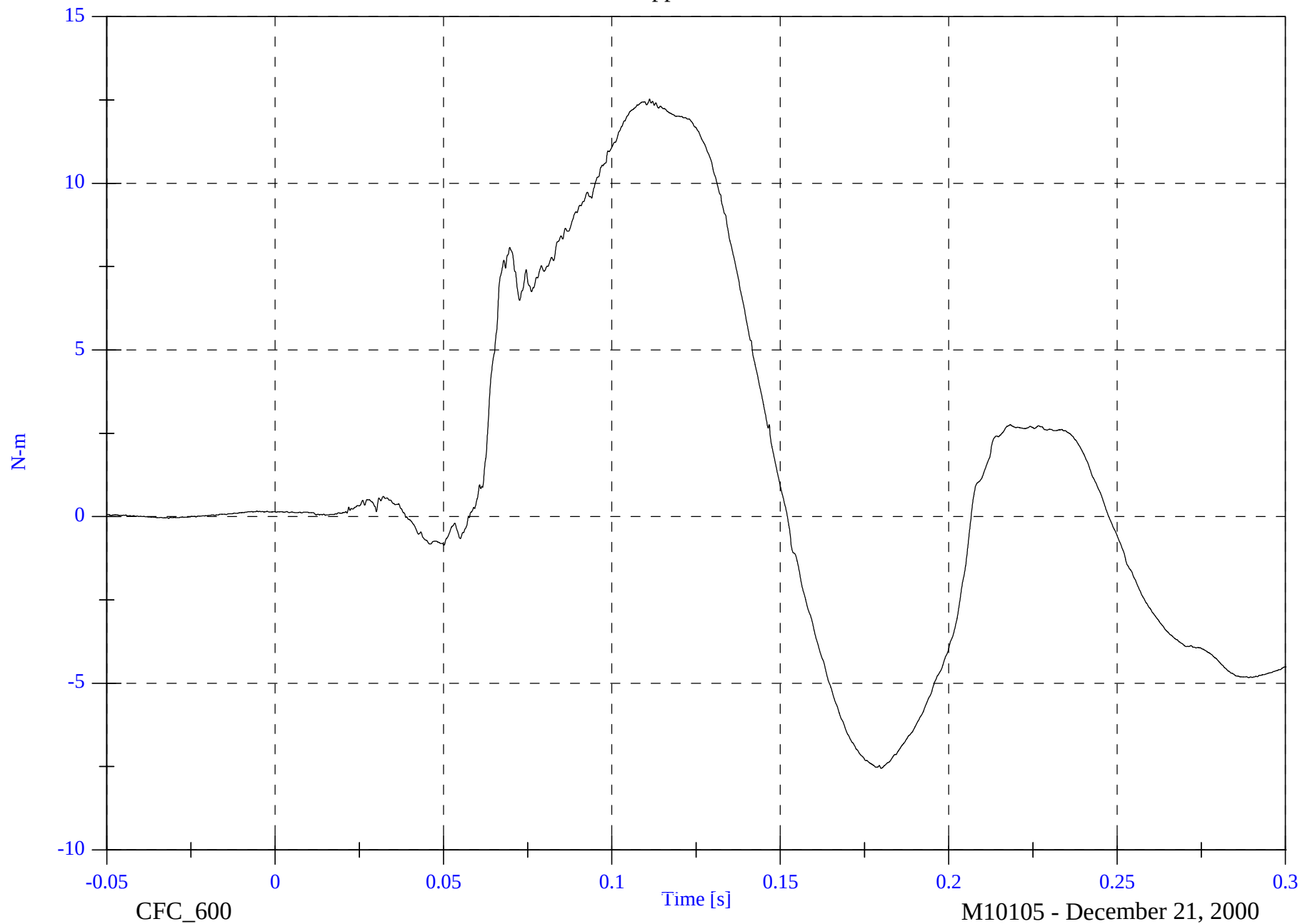
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck Mz

Max: 12.5 [N-m] at 0.111 [s]

Min: -7.5 [N-m] at 0.180 [s]



B-18

8602-11

CFC_600

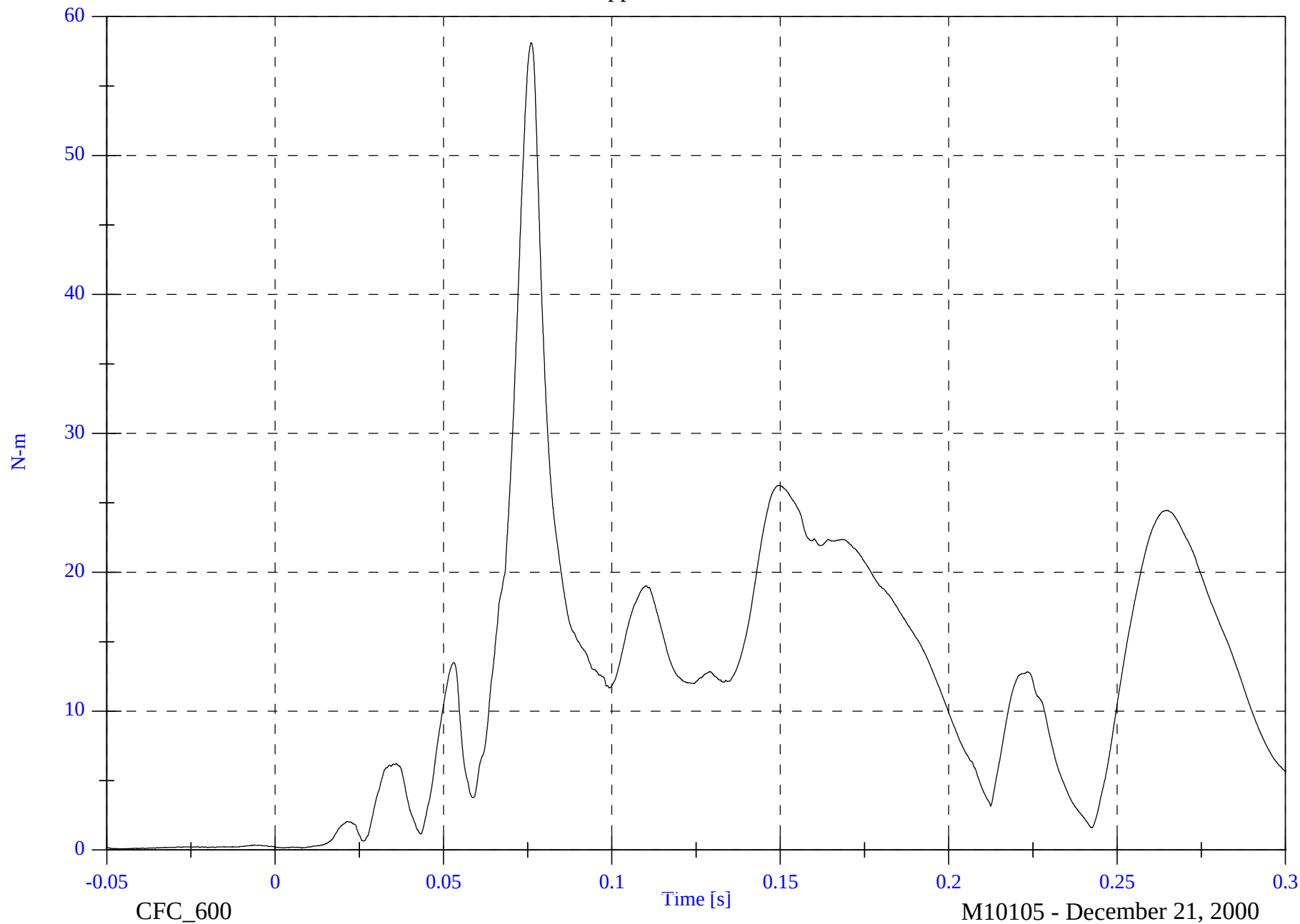
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Upper Neck M Resultant

Max: 58.1 [N-m] at 0.076 [s]

Min: 0.1 [N-m] at -0.045 [s]



B-19

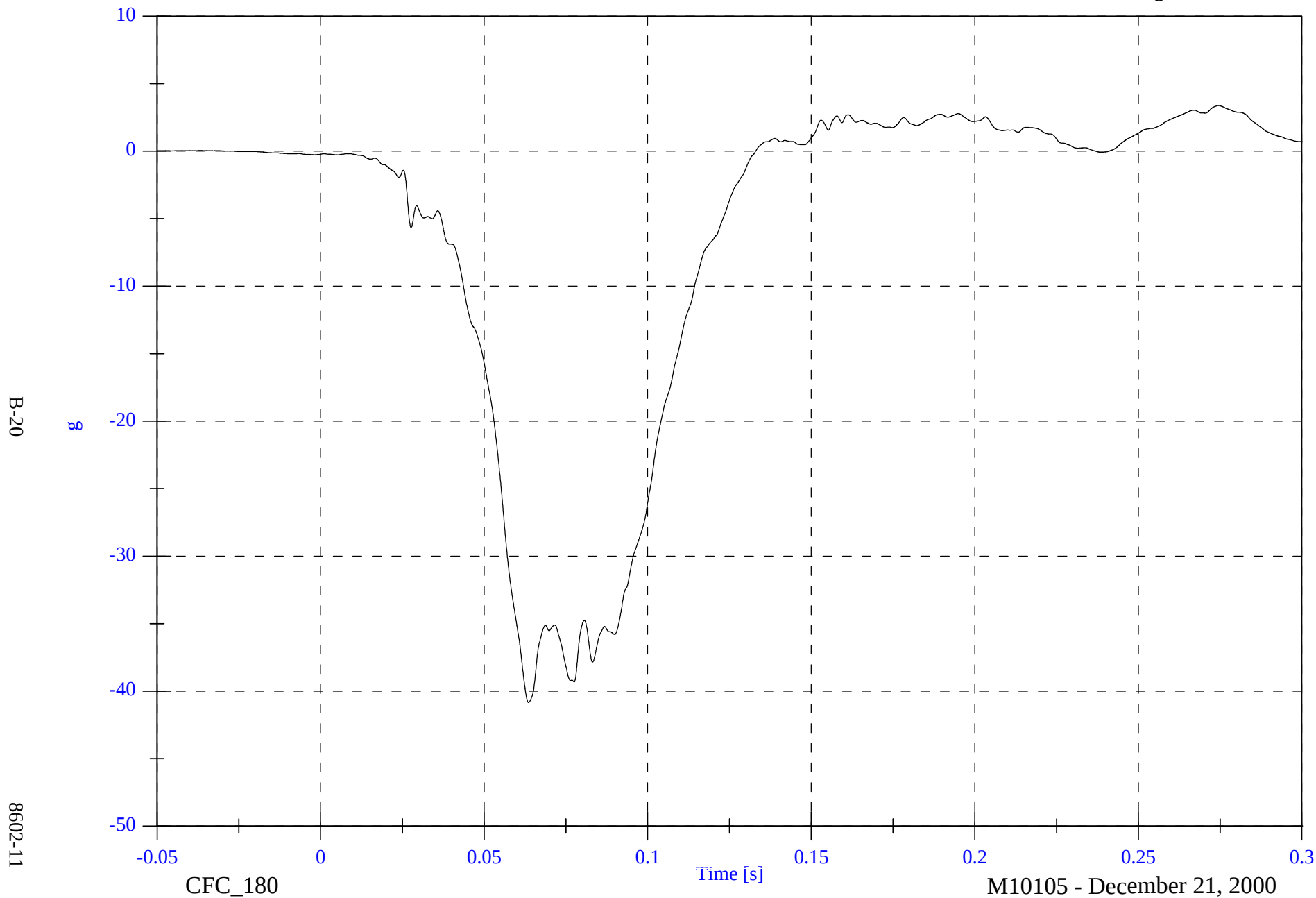
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest x

Max: 3.4 [g] at 0.274 [s]

Min: -40.8 [g] at 0.064 [s]

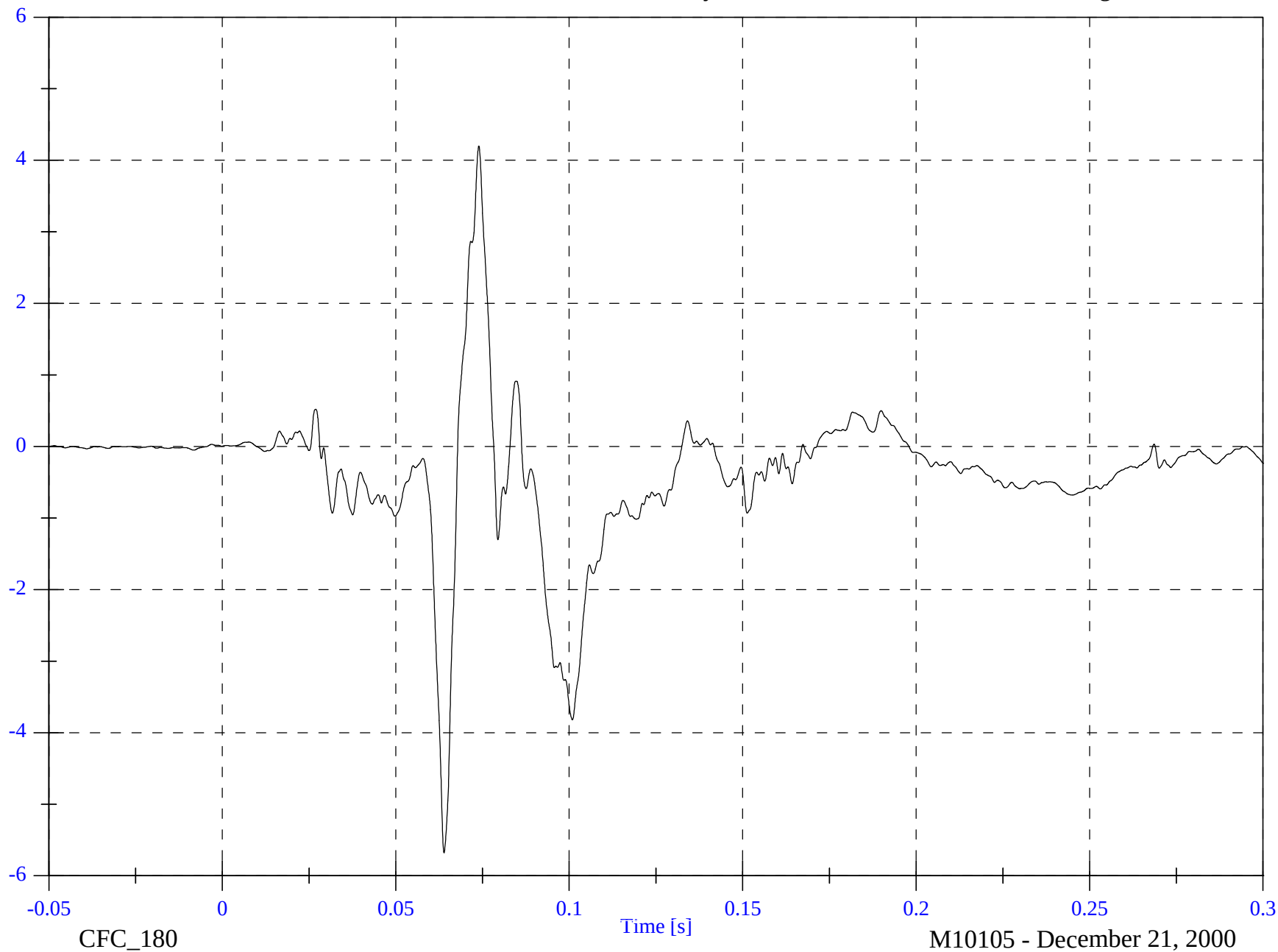


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest y

Max: 4.2 [g] at 0.074 [s]

Min: -5.7 [g] at 0.064 [s]



B-21

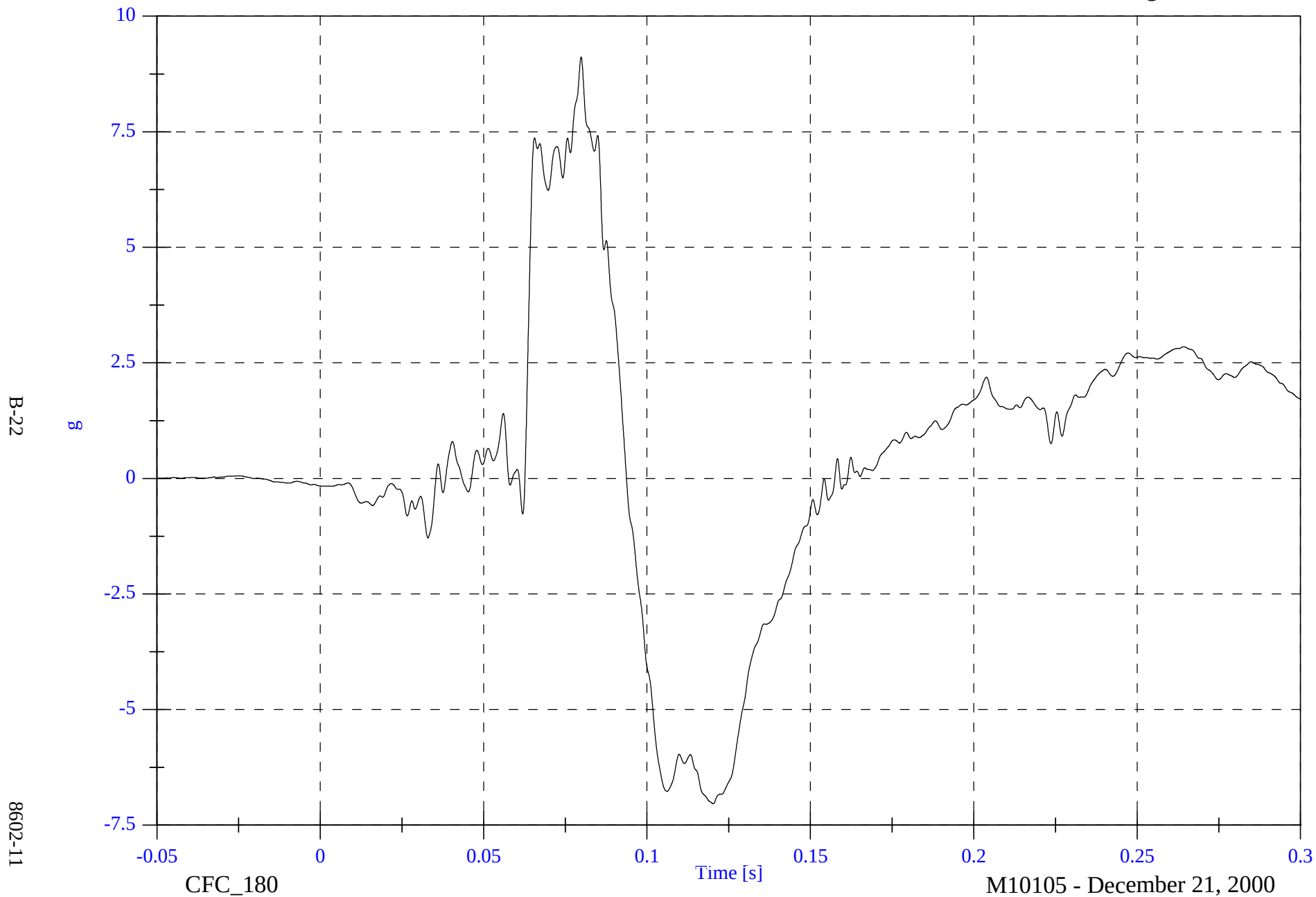
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest z

Max: 9.1 [g] at 0.080 [s]

Min: -7.0 [g] at 0.120 [s]

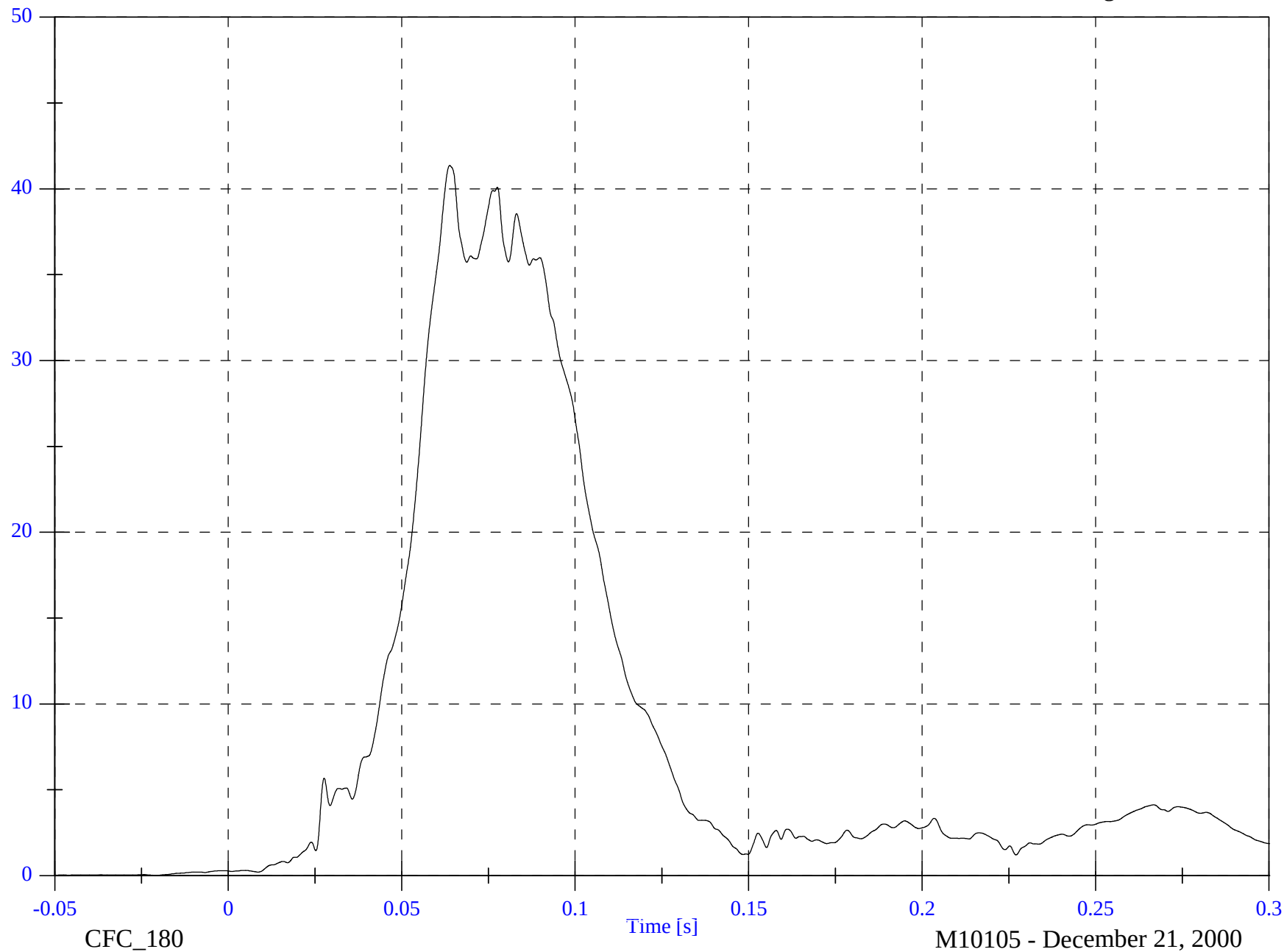


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest Resultant

Max: 41.4 [g] at 0.064 [s]

Min: 0.0 [g] at -0.021 [s]

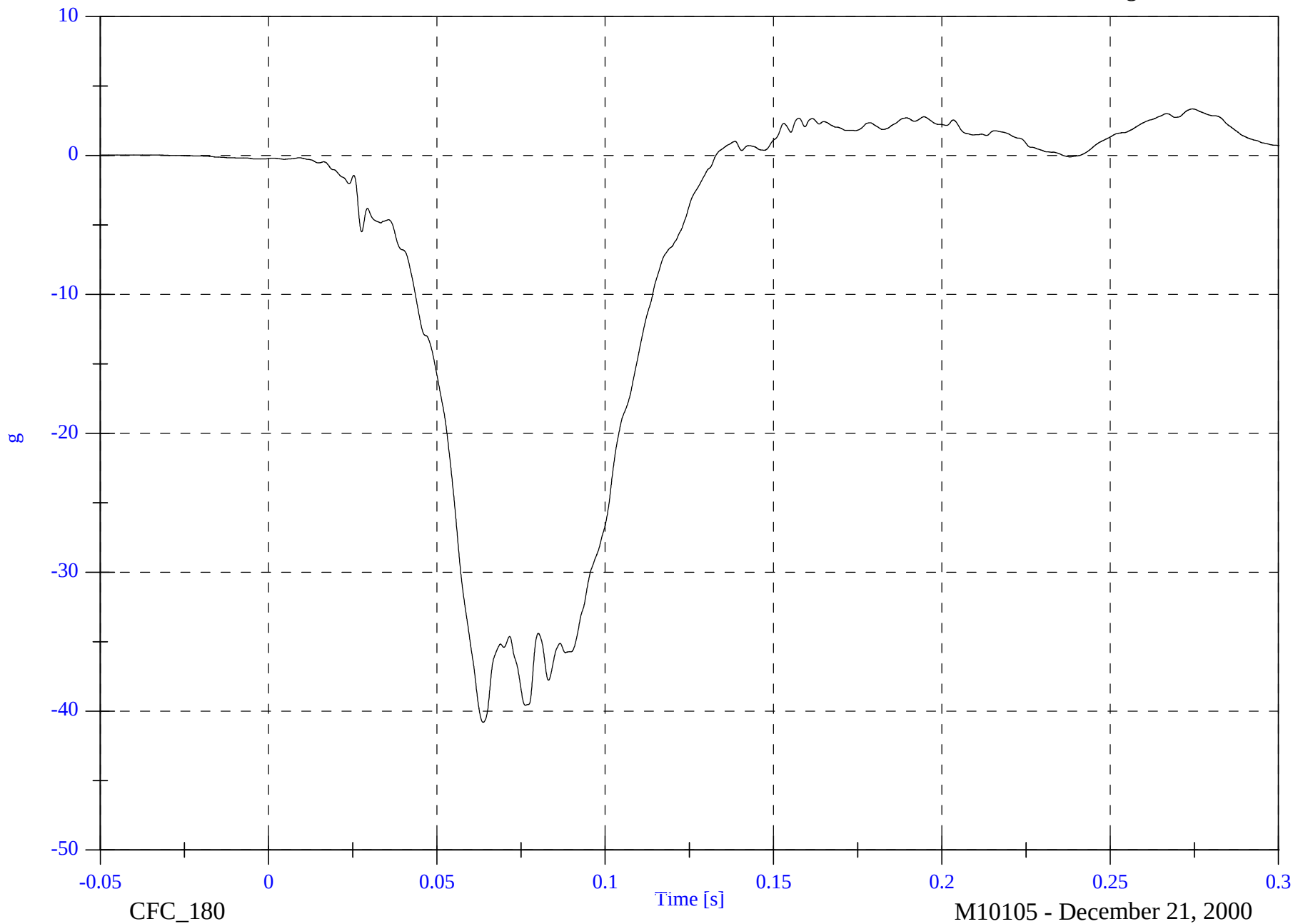


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest Red x

Max: 3.4 [g] at 0.274 [s]

Min: -40.8 [g] at 0.064 [s]



B-24

8602-11

CFC_180

Time [s]

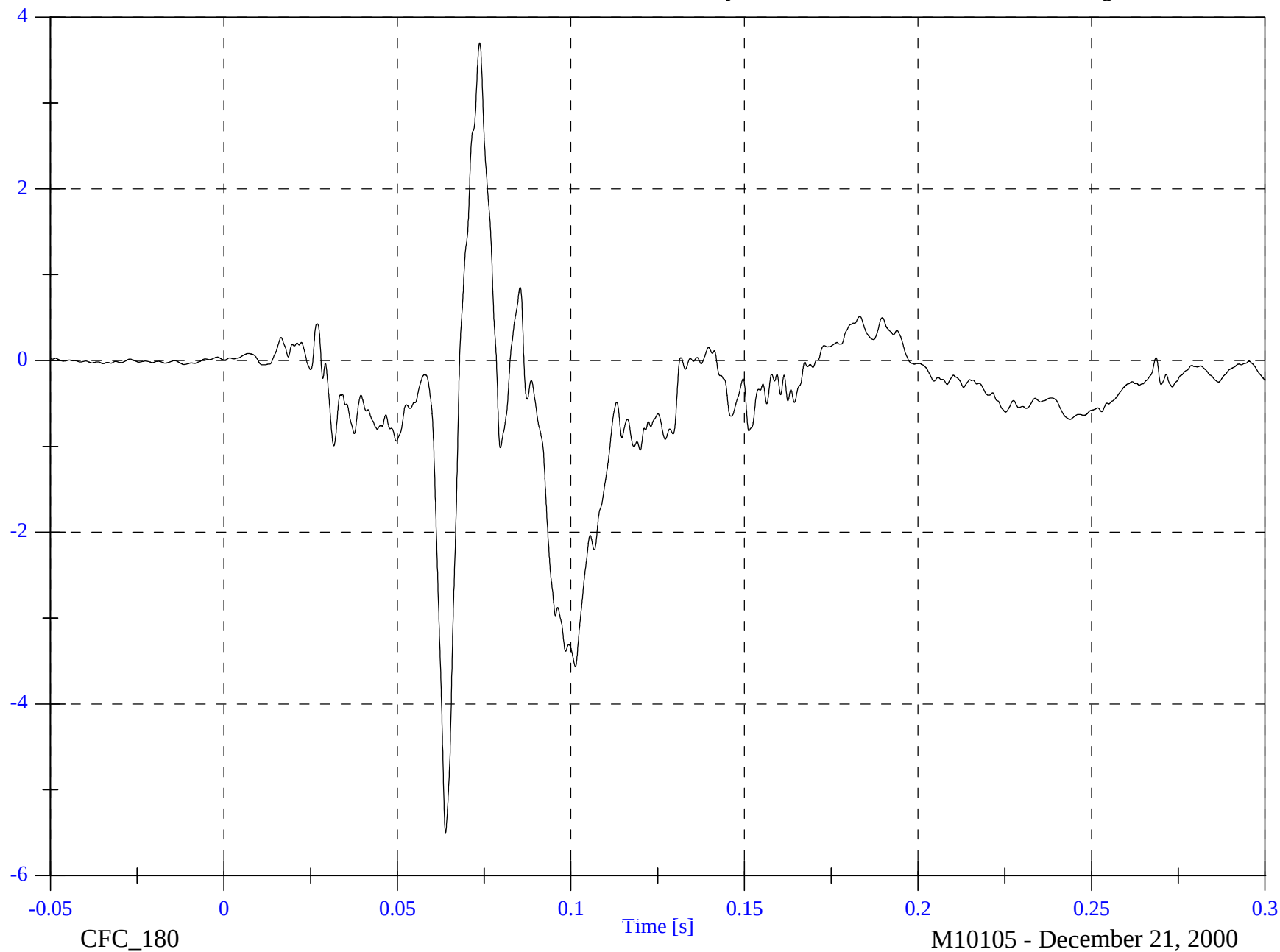
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest Red y

Max: 3.7 [g] at 0.074 [s]

Min: -5.5 [g] at 0.064 [s]



B-25

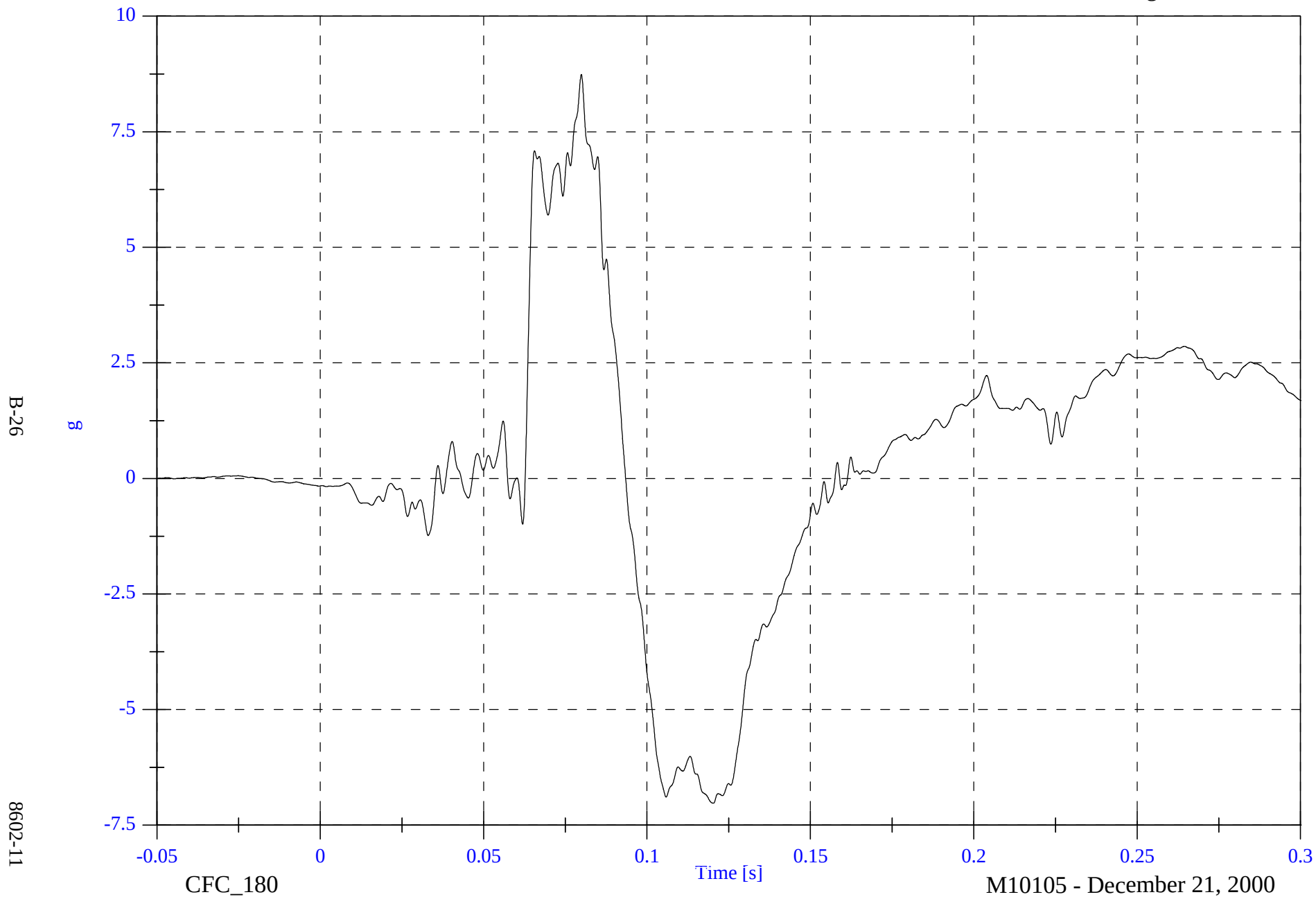
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest Red z

Max: 8.7 [g] at 0.080 [s]

Min: -7.0 [g] at 0.120 [s]

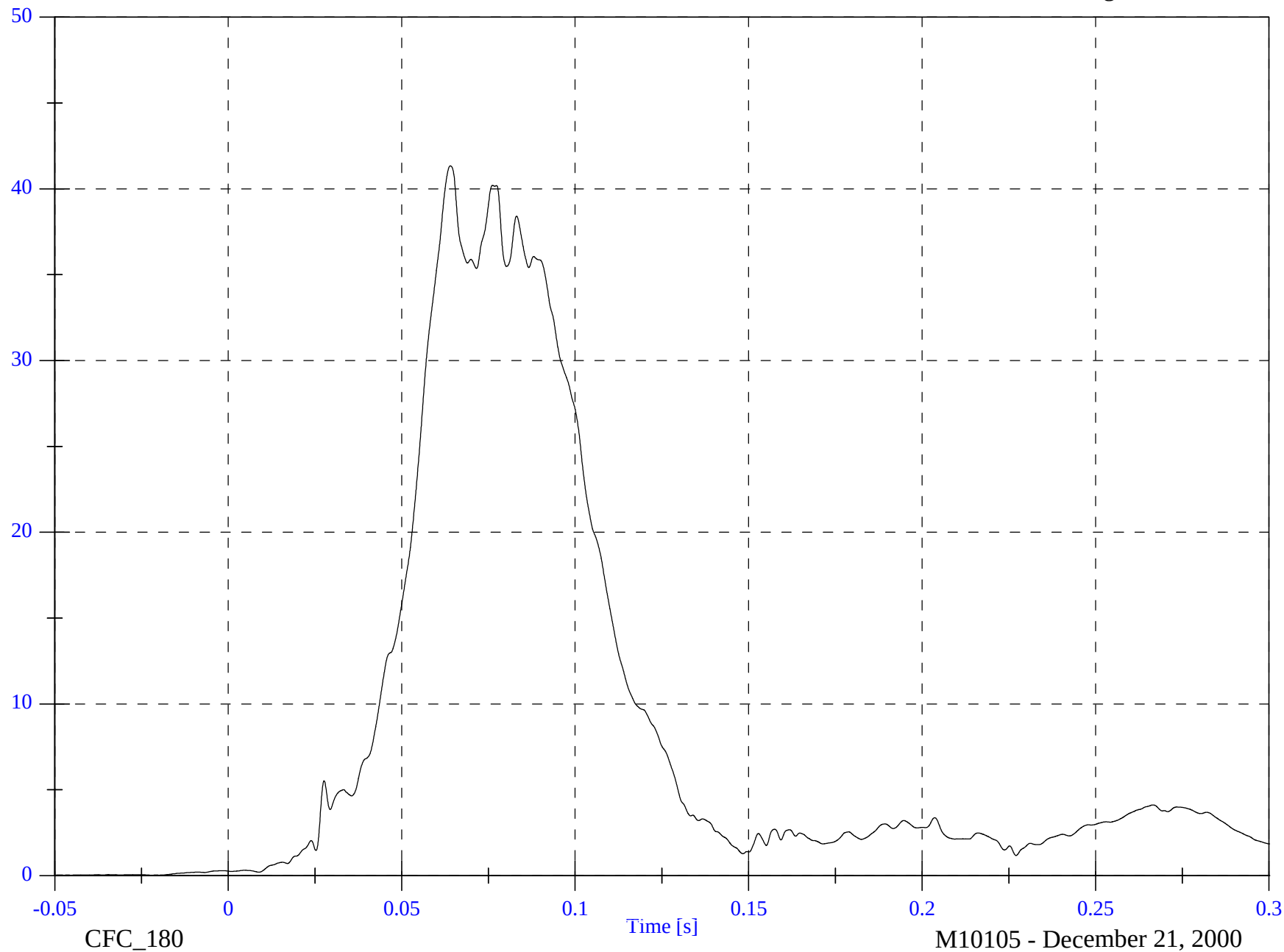


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest Red Resultant

Max: 41.3 [g] at 0.064 [s]

Min: 0.0 [g] at -0.022 [s]



B-27

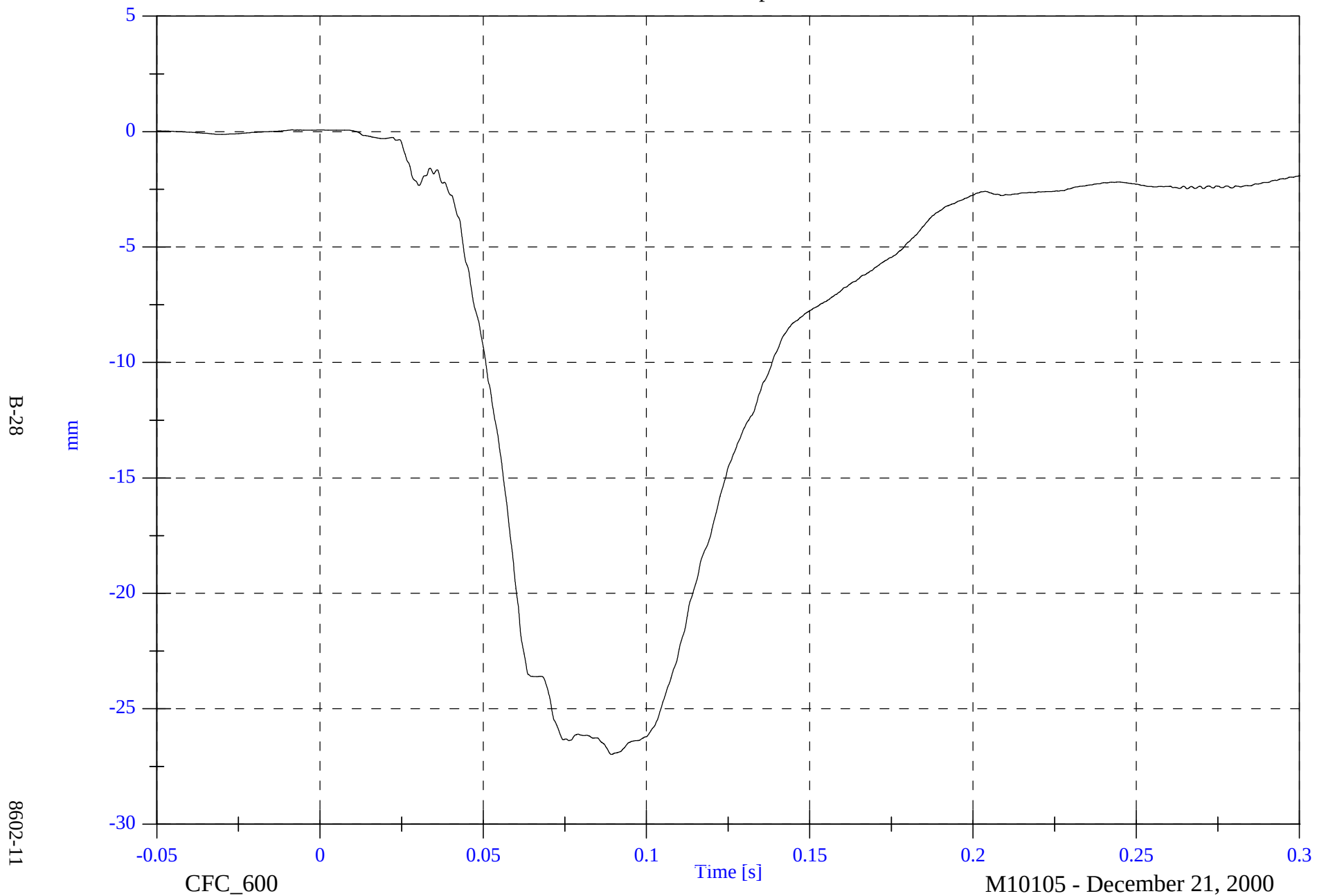
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Chest Compression

Max: 0.1 [mm] at -0.009 [s]

Min: -27.0 [mm] at 0.089 [s]

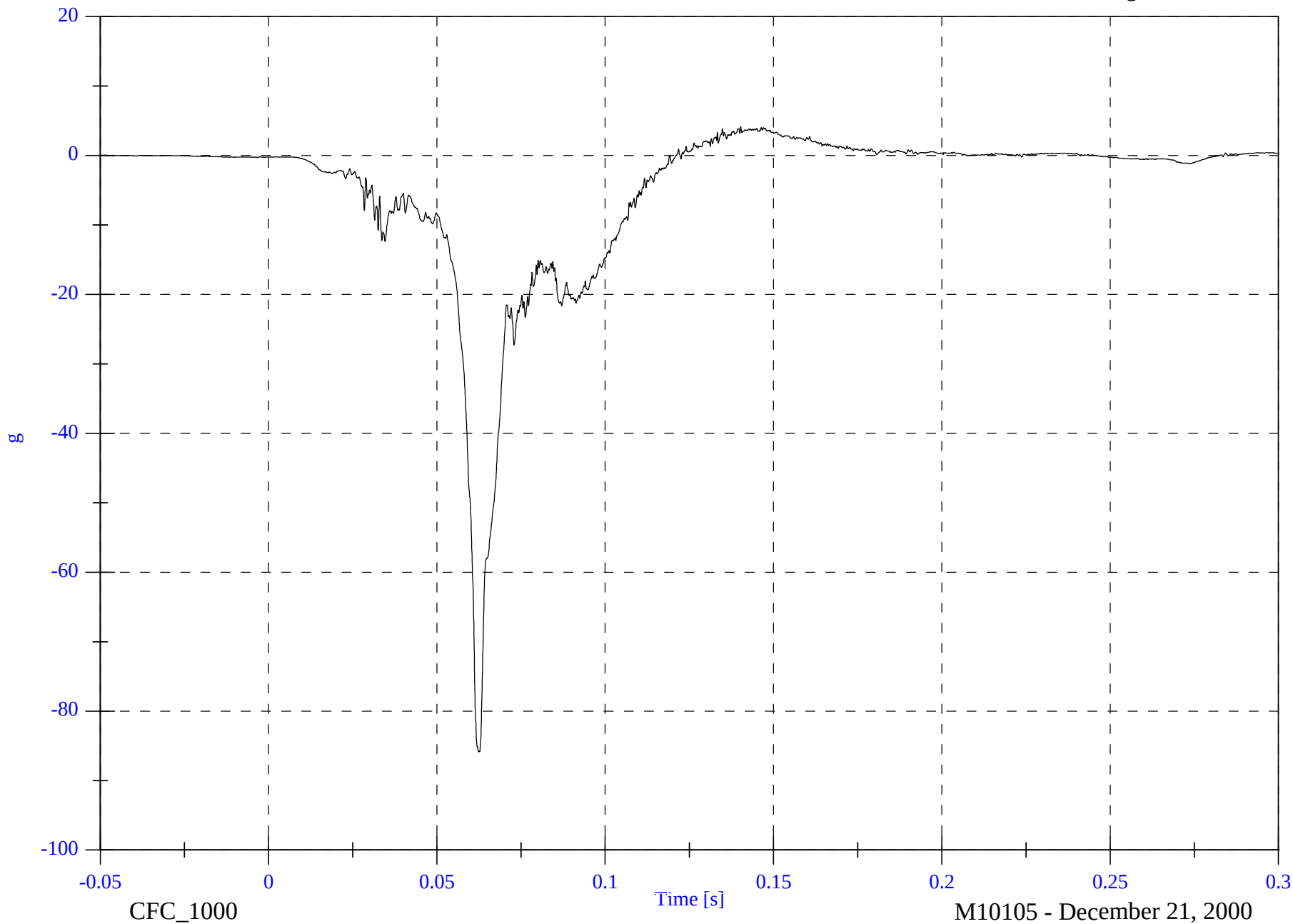


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Pelvic x

Max: 4.1 [g] at 0.140 [s]

Min: -85.9 [g] at 0.062 [s]



B-29

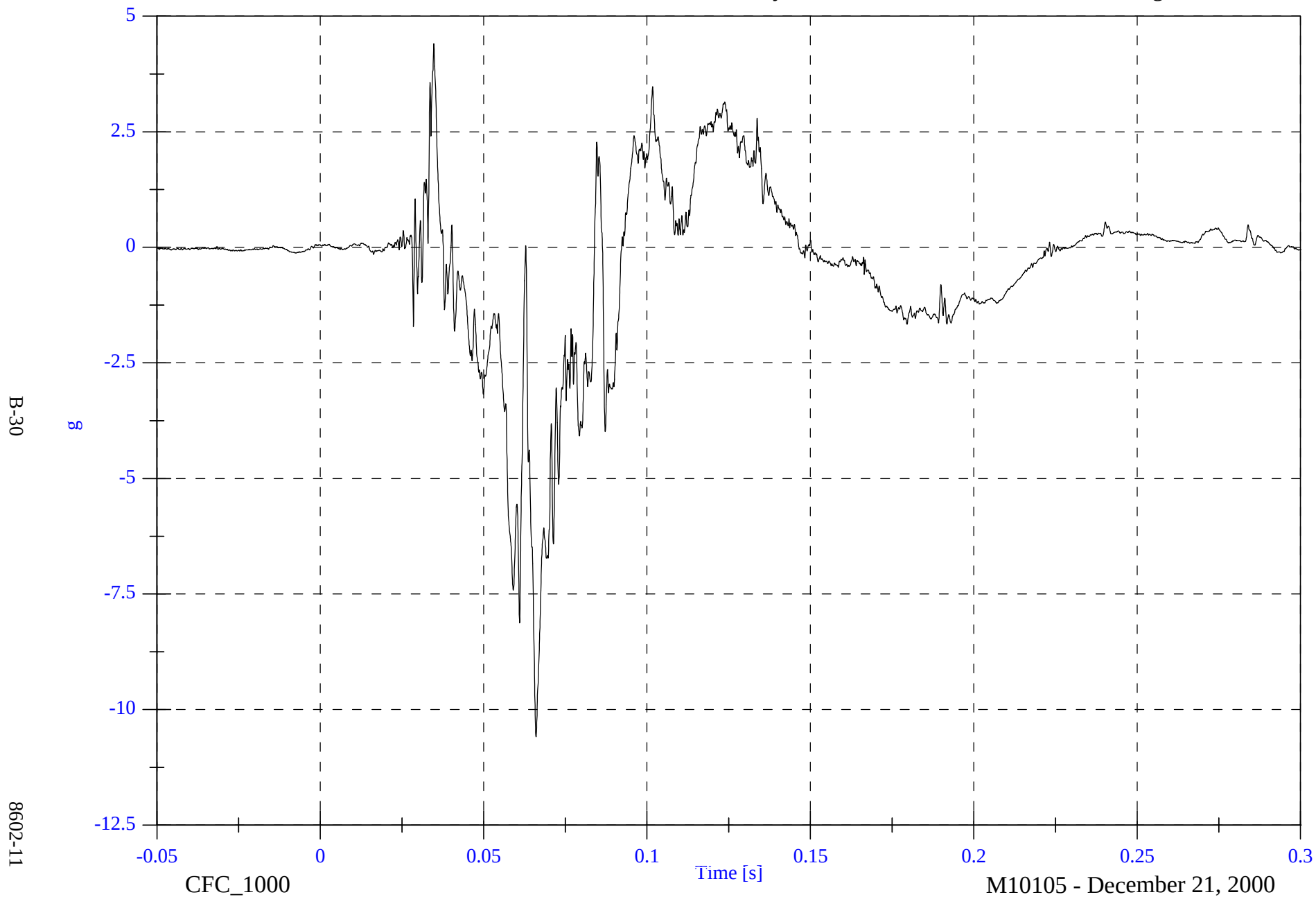
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Pelvic y

Max: 4.4 [g] at 0.035 [s]

Min: -10.6 [g] at 0.066 [s]

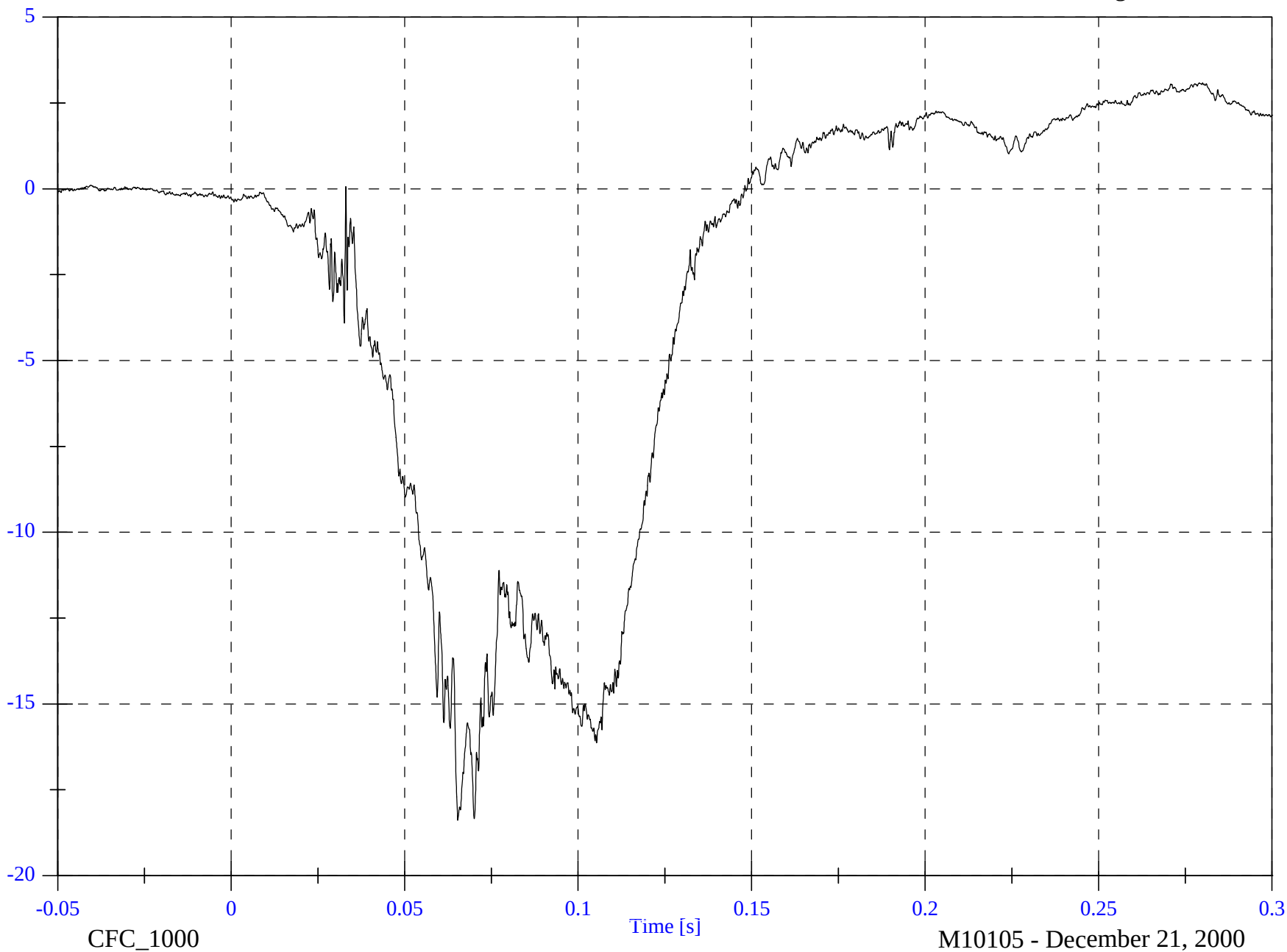


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Pelvic z

Max: 3.1 [g] at 0.279 [s]

Min: -18.4 [g] at 0.065 [s]



B-31

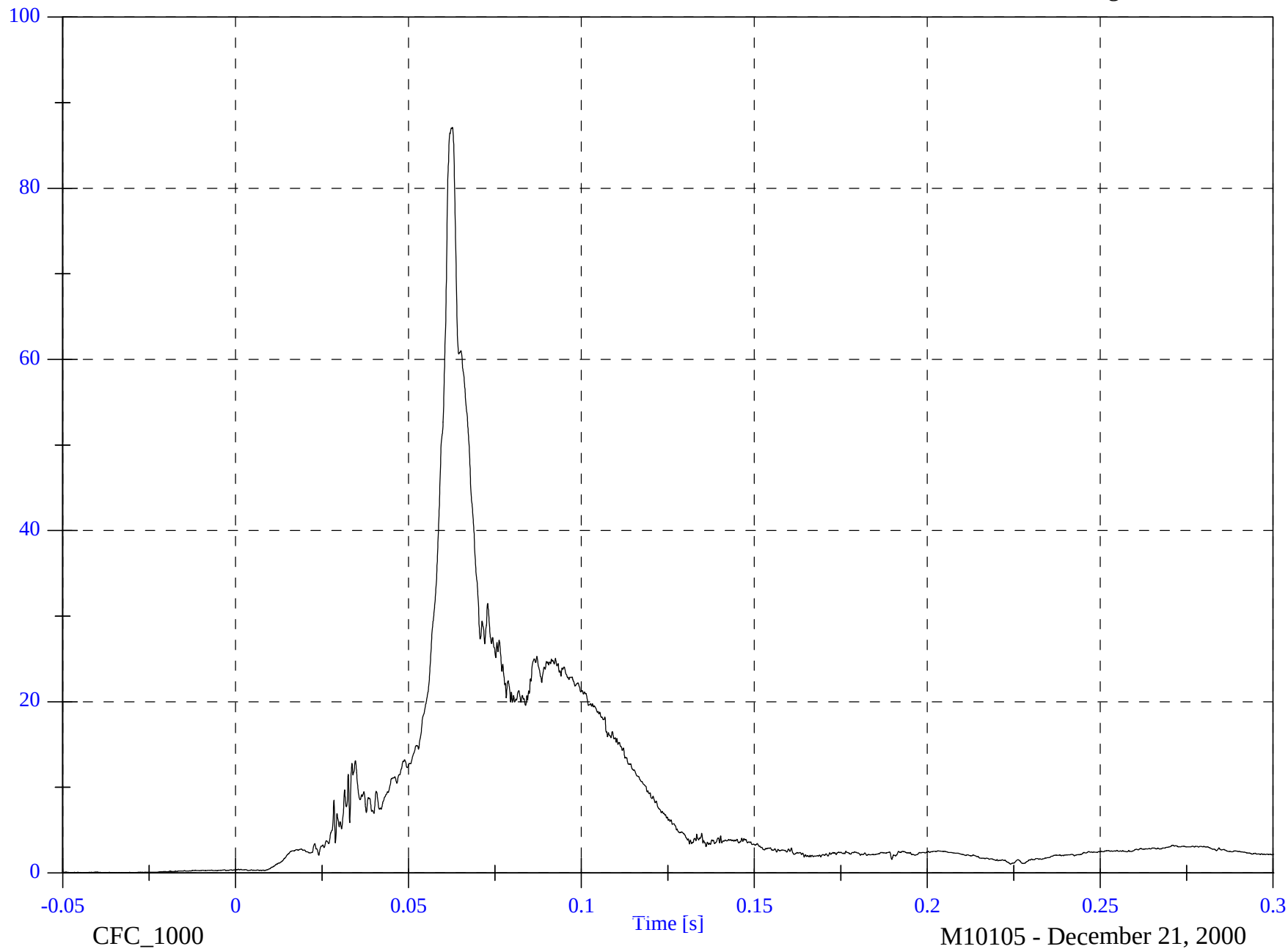
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Pelvic Resultant

Max: 87.1 [g] at 0.063 [s]

Min: 0.0 [g] at -0.032 [s]



B-32

8602-11

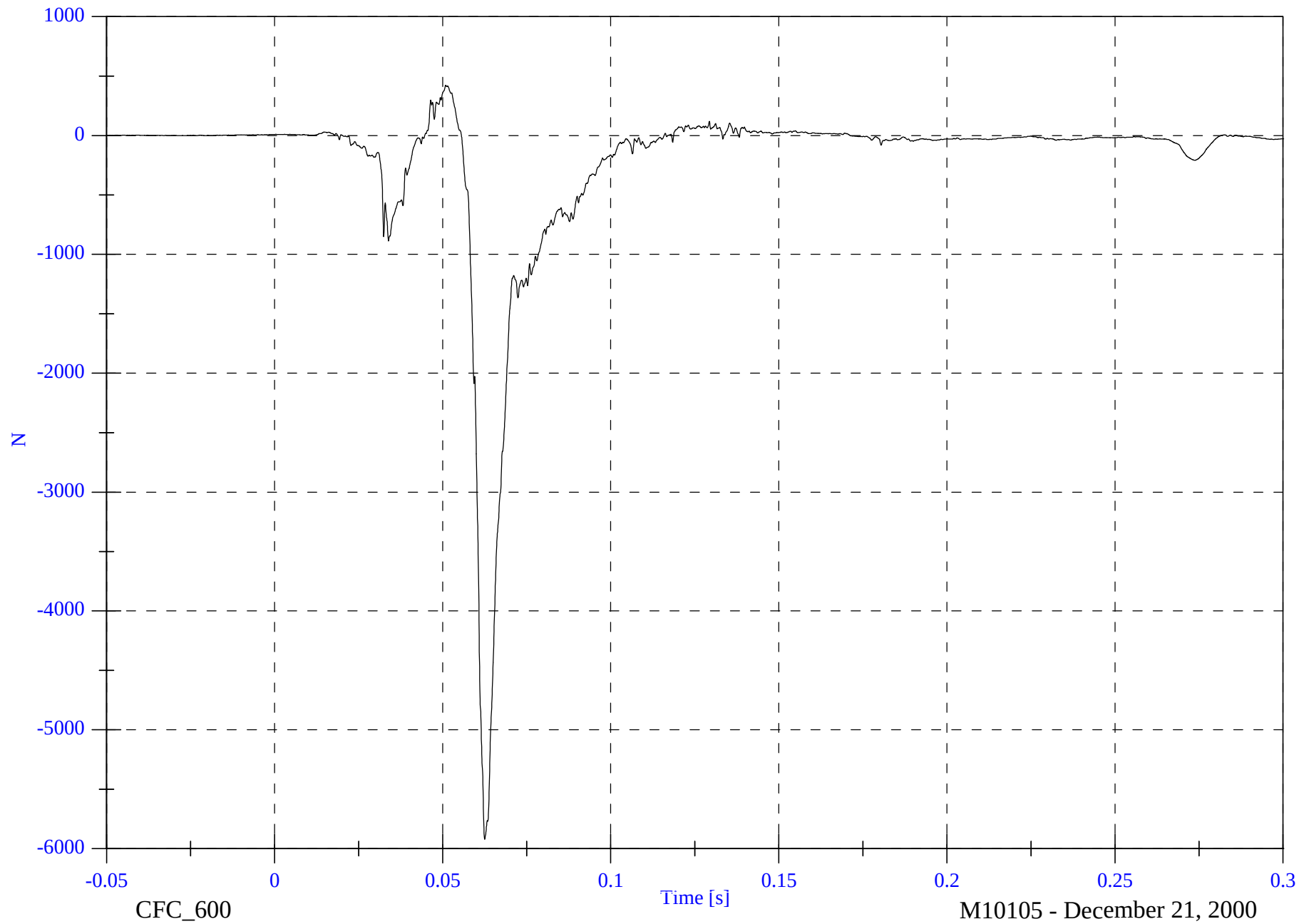
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Femur

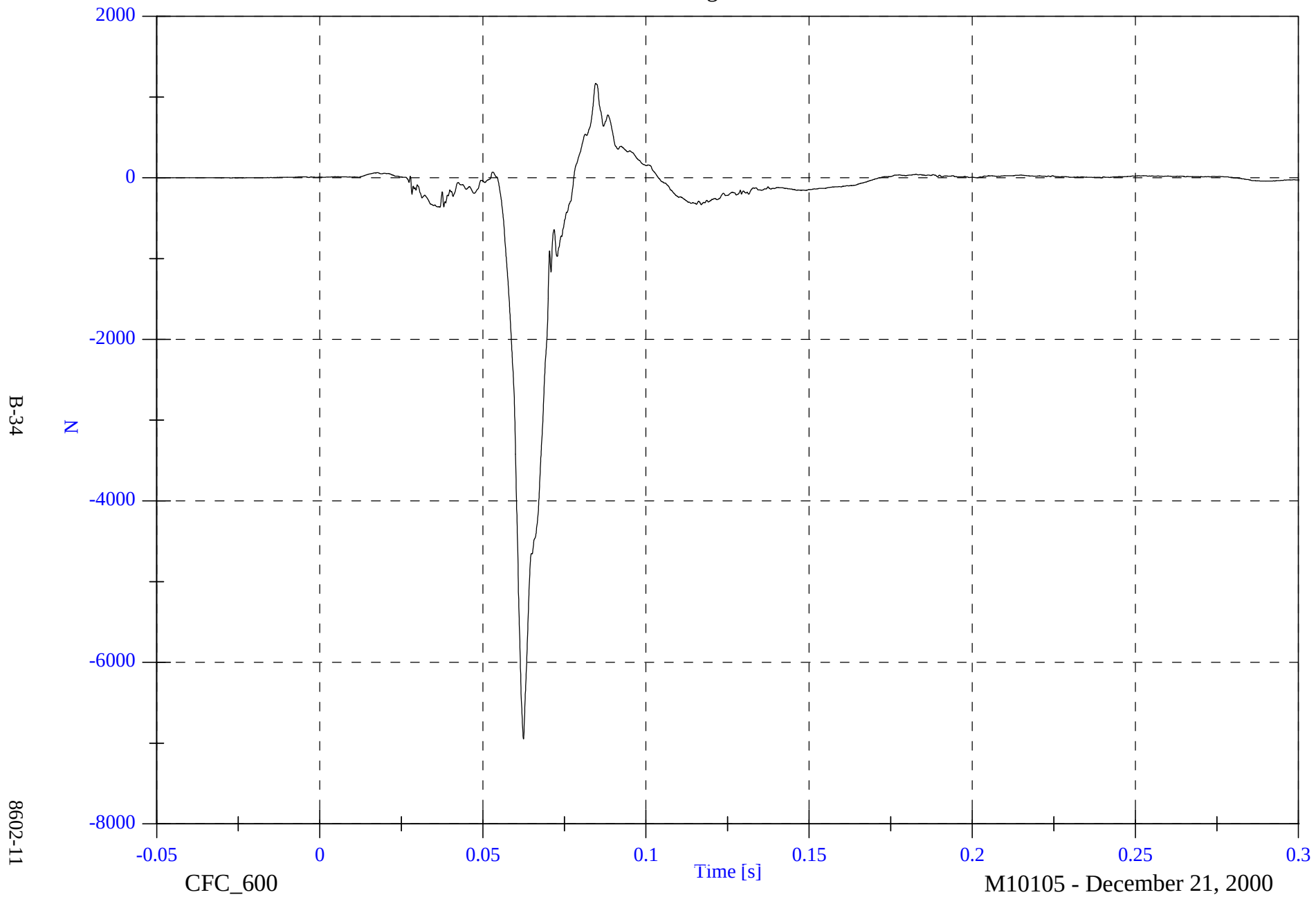
Max: 423.2 [N] at 0.051 [s]

Min: -5921.4 [N] at 0.063 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe
P1 Right Femur

Max: 1168.8 [N] at 0.085 [s]
Min: -6948.3 [N] at 0.062 [s]

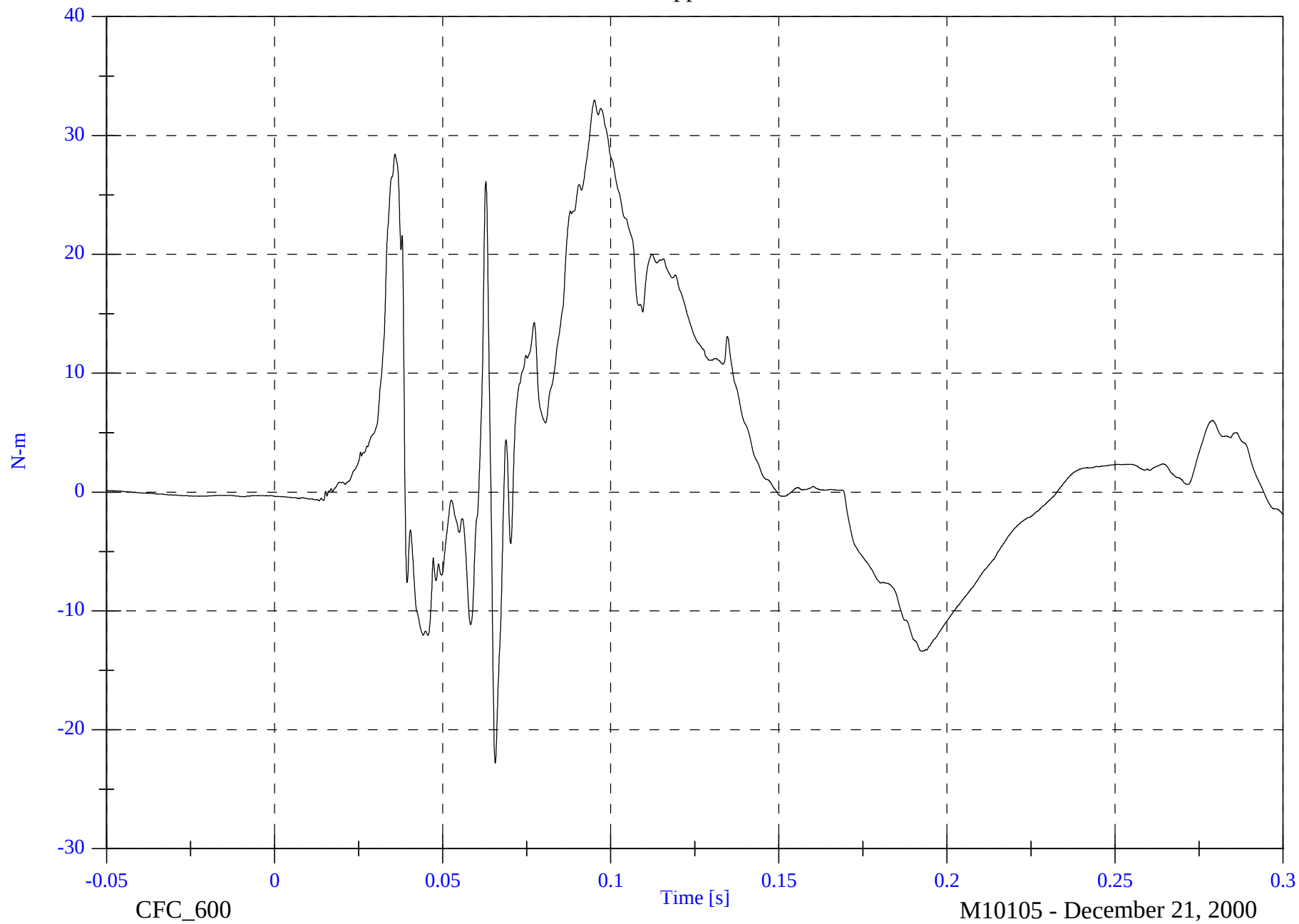


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Upper Tibia Mx

Max: 33.0 [N-m] at 0.095 [s]

Min: -22.8 [N-m] at 0.066 [s]



B-35

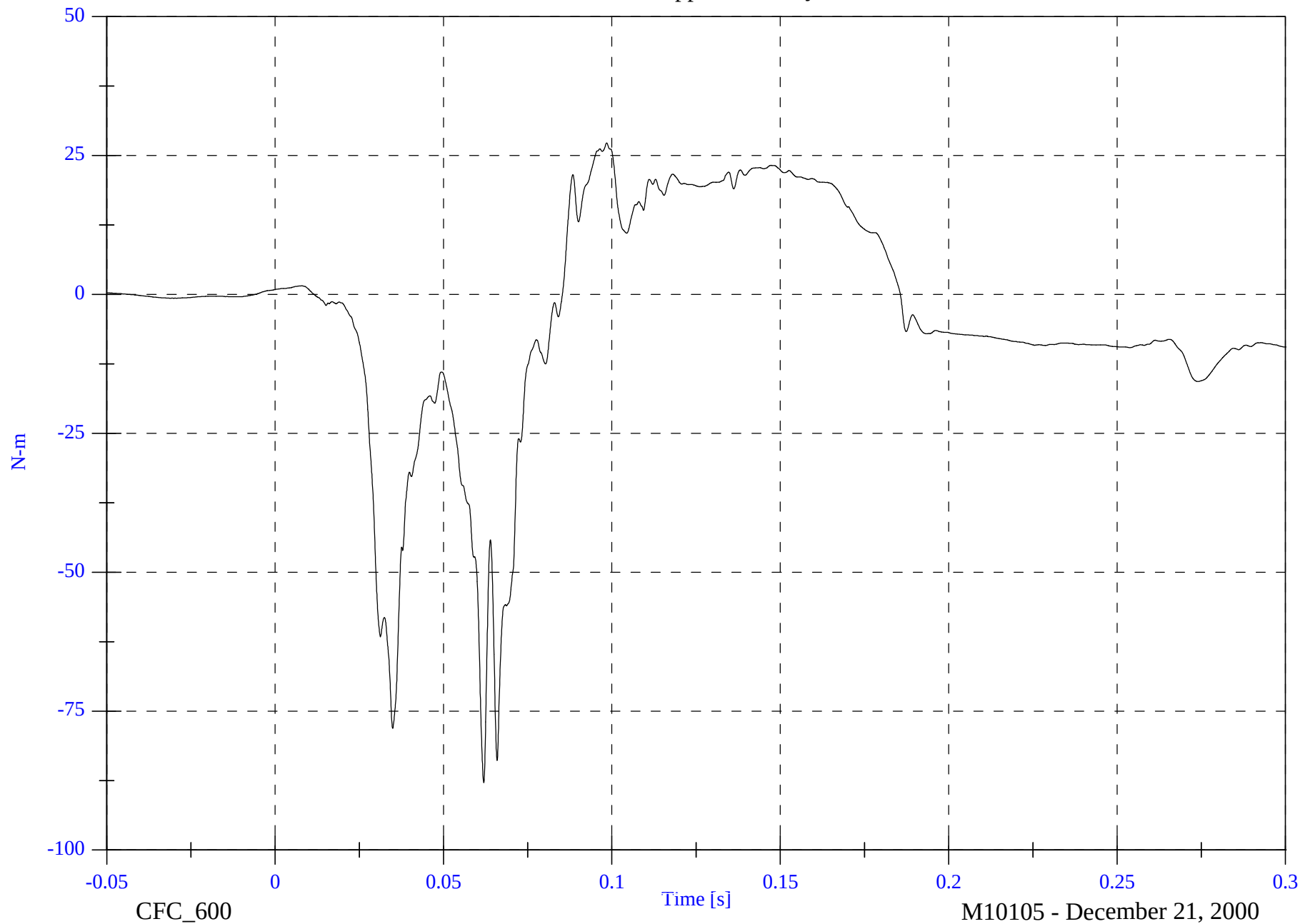
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Upper Tibia My

Max: 27.3 [N-m] at 0.098 [s]

Min: -87.9 [N-m] at 0.062 [s]



B-36

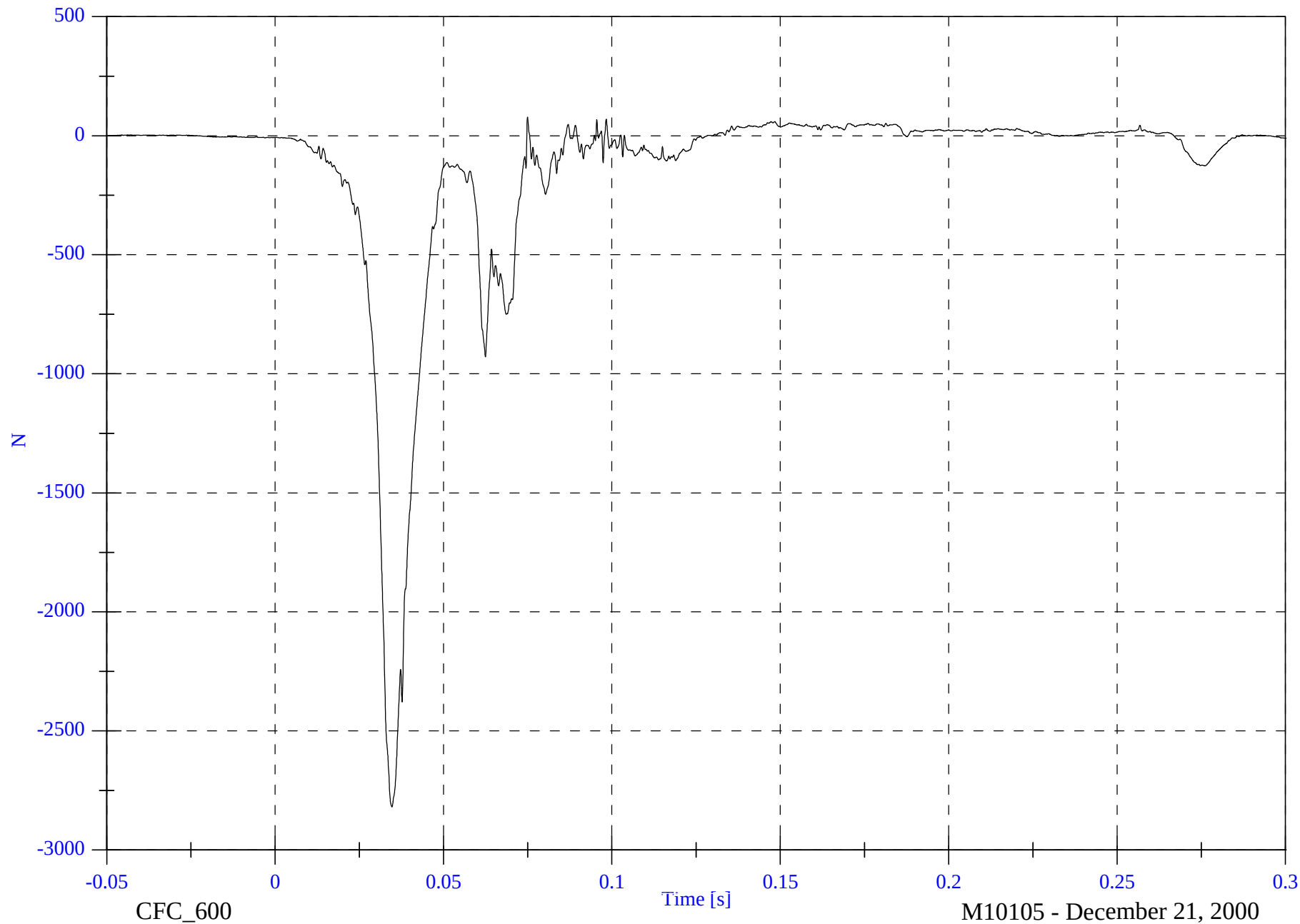
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Lower Tibia Fz

Max: 79.0 [N] at 0.075 [s]

Min: -2819.2 [N] at 0.035 [s]



B-37

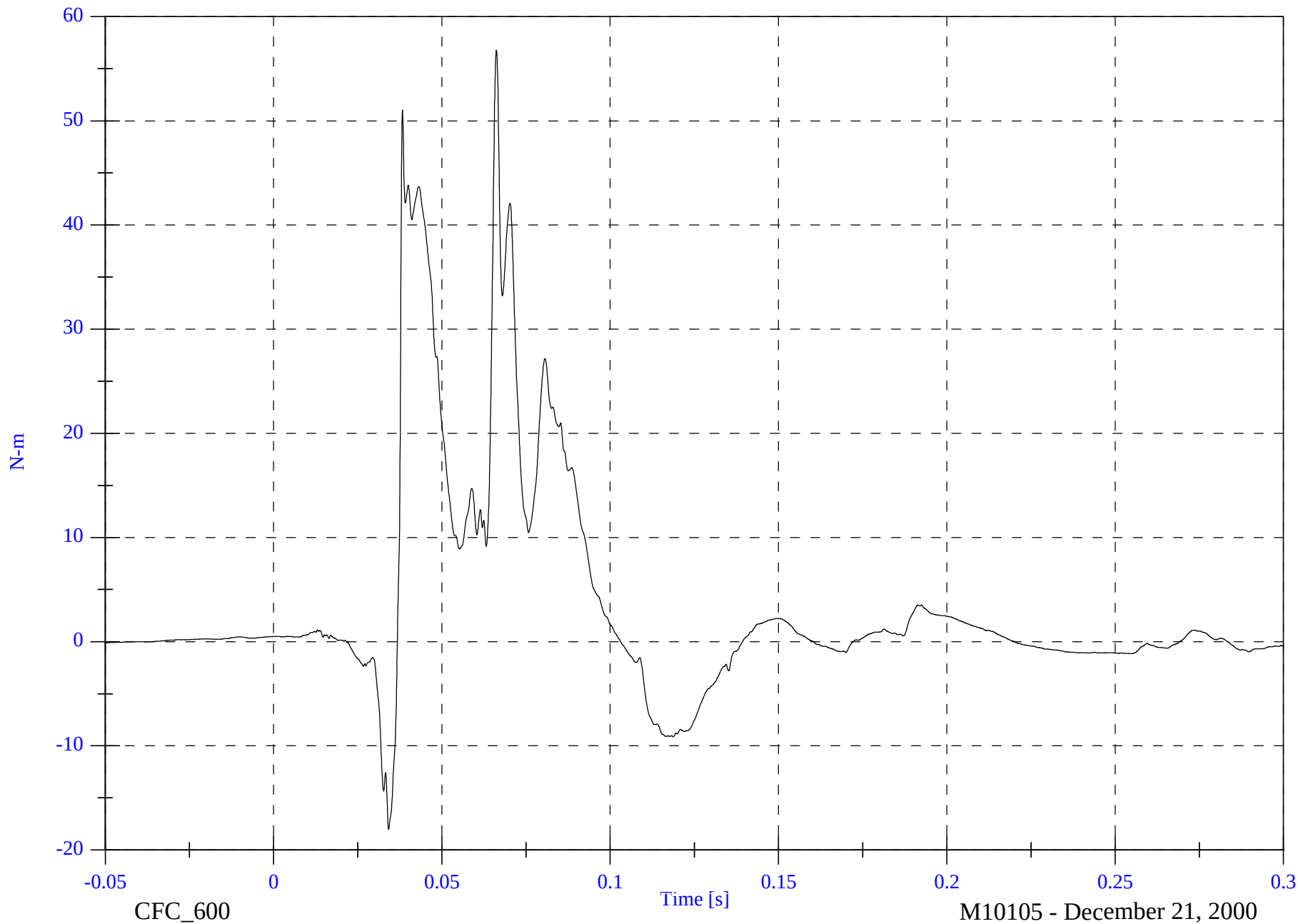
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Lower Tibia Mx

Max: 56.8 [N-m] at 0.066 [s]

Min: -18.0 [N-m] at 0.034 [s]



B-38

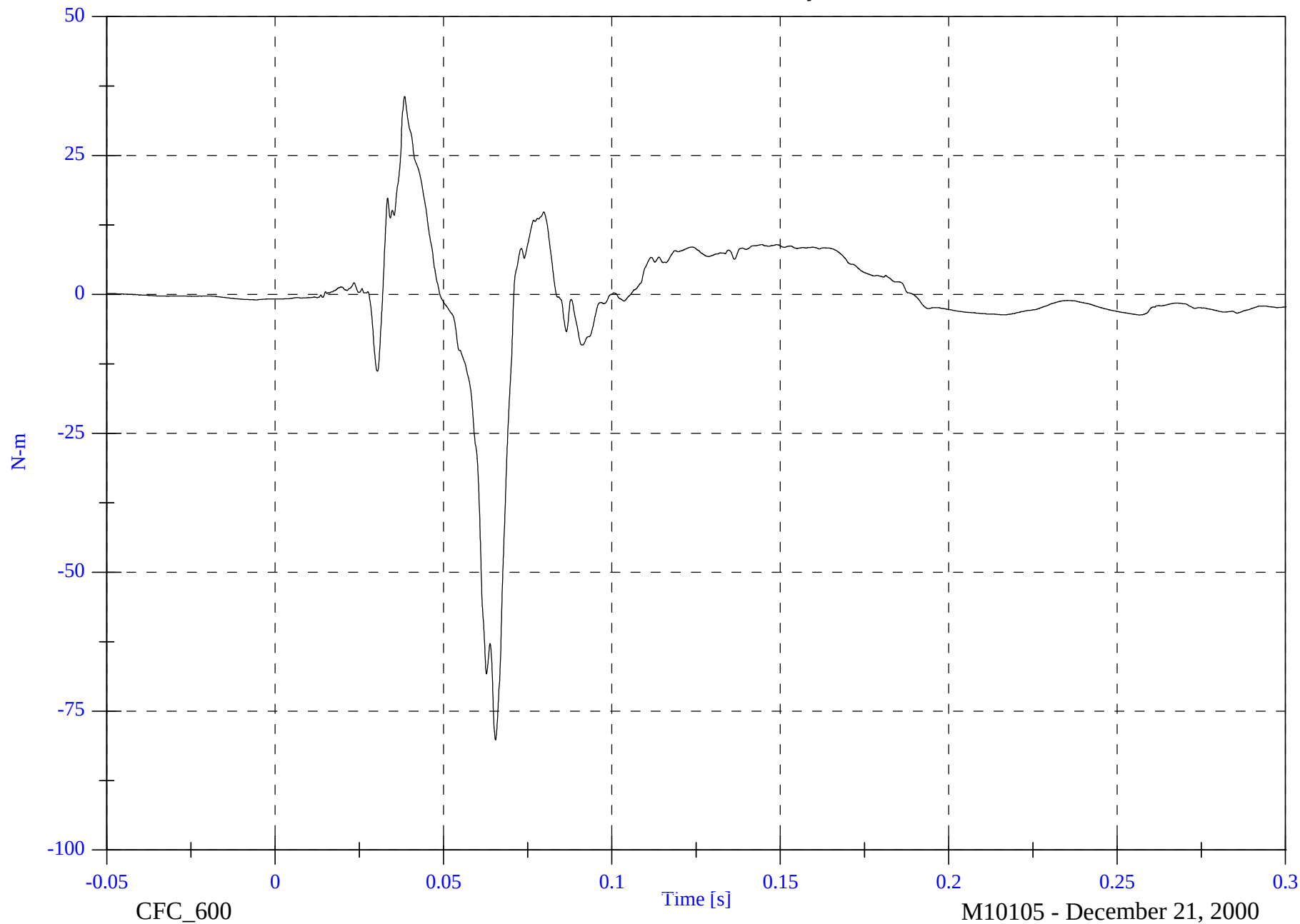
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Lower Tibia My

Max: 35.6 [N-m] at 0.038 [s]

Min: -80.2 [N-m] at 0.065 [s]



B-39

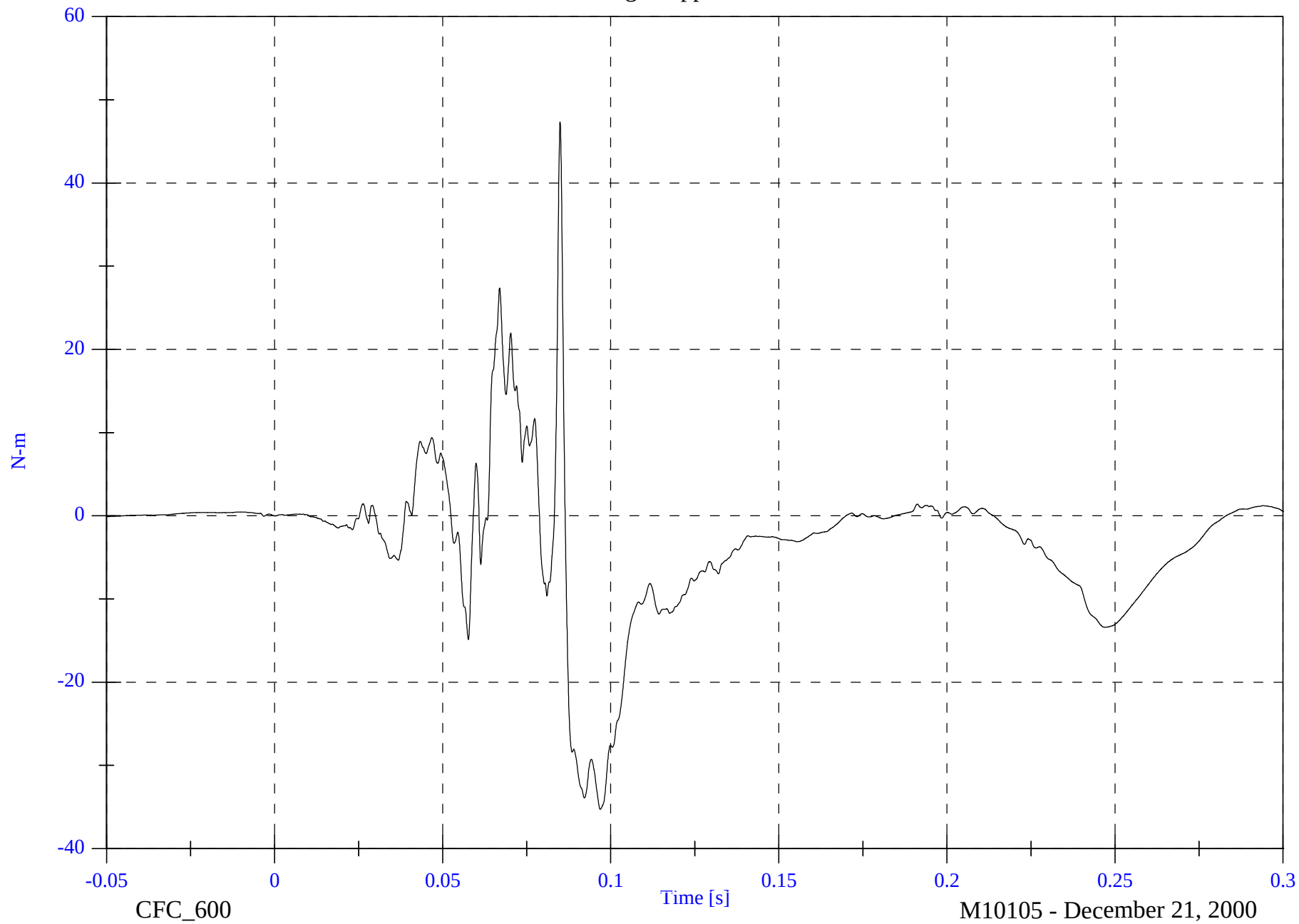
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Upper Tibia Mx

Max: 47.4 [N-m] at 0.085 [s]

Min: -35.3 [N-m] at 0.097 [s]

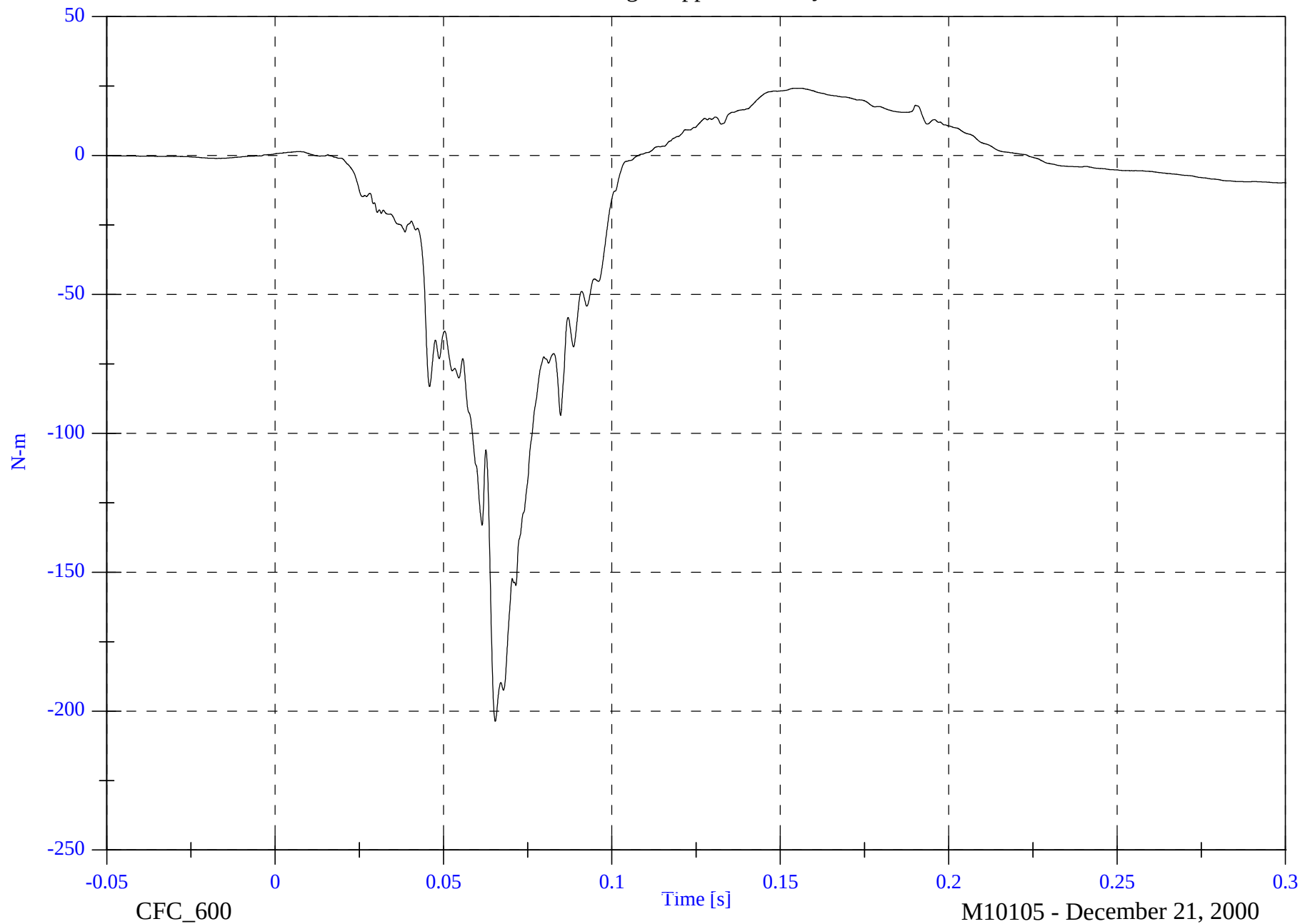


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Upper Tibia My

Max: 24.3 [N-m] at 0.156 [s]

Min: -203.7 [N-m] at 0.065 [s]



B-41

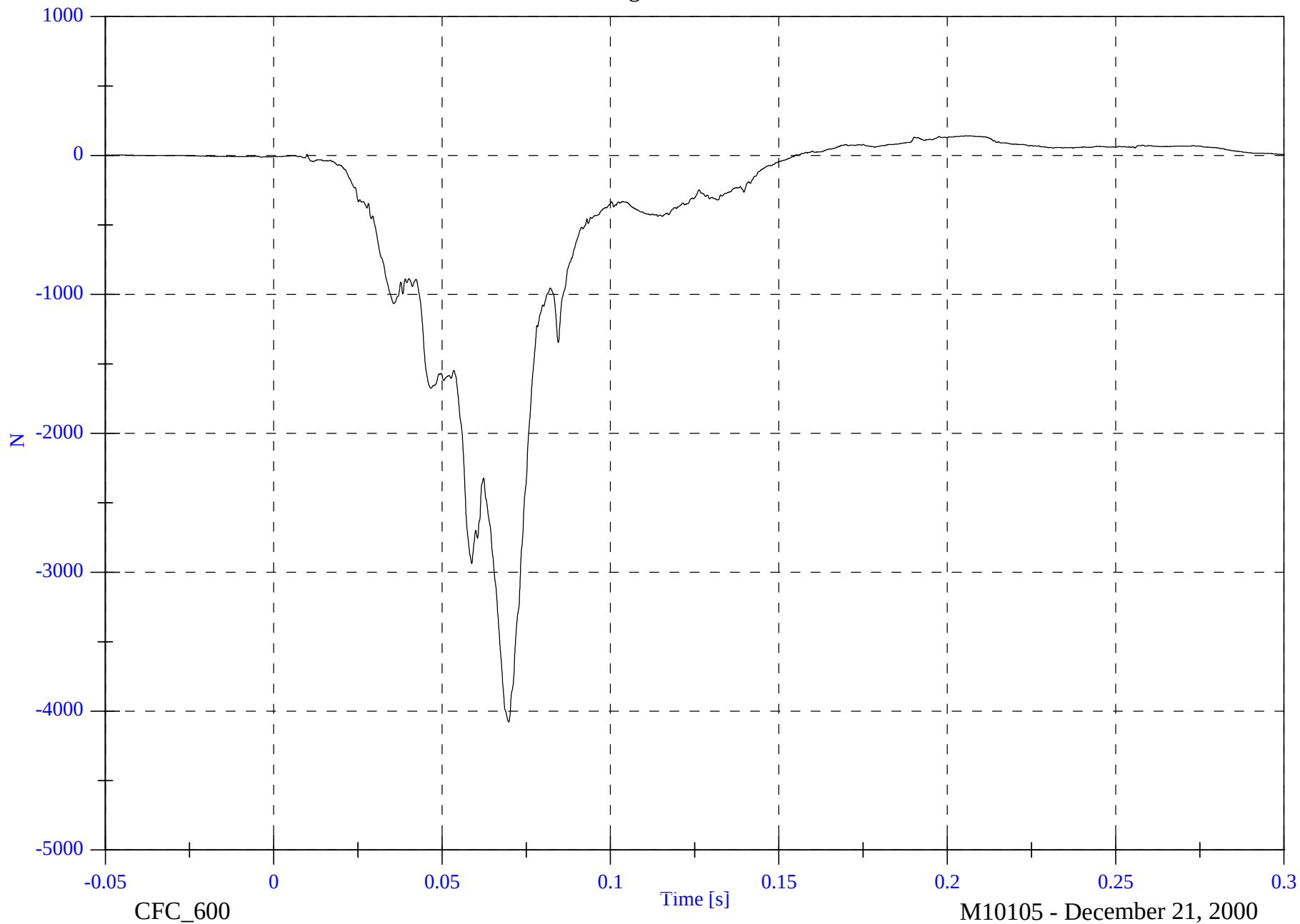
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Lower Tibia Fz

Max: 143.0 [N] at 0.206 [s]

Min: -4078.3 [N] at 0.070 [s]



B-42

8602-11

CFC_600

Time [s]

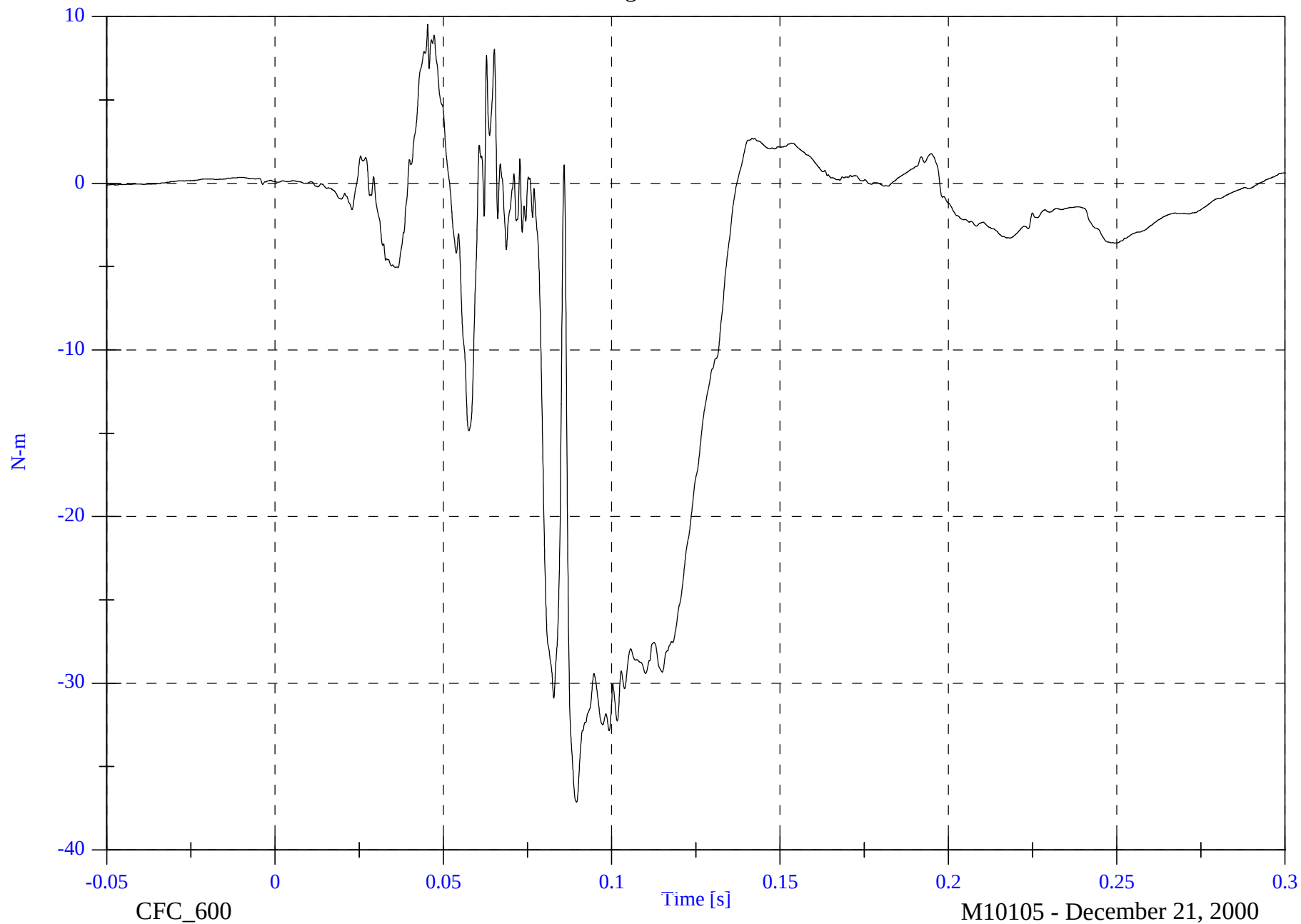
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Lower Tibia Mx

Max: 9.5 [N-m] at 0.045 [s]

Min: -37.1 [N-m] at 0.090 [s]



B-43

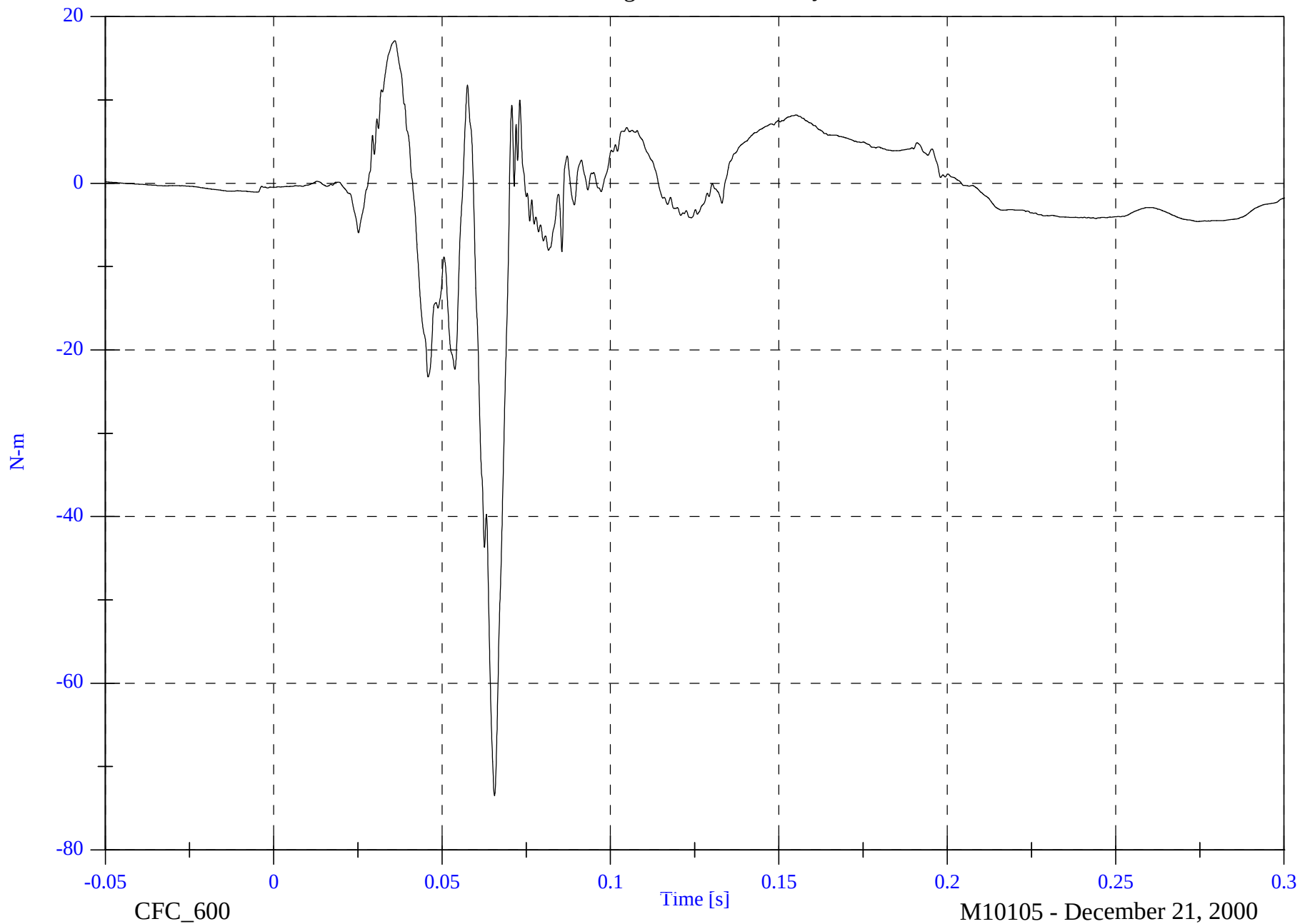
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Lower Tibia My

Max: 17.1 [N-m] at 0.036 [s]

Min: -73.5 [N-m] at 0.066 [s]

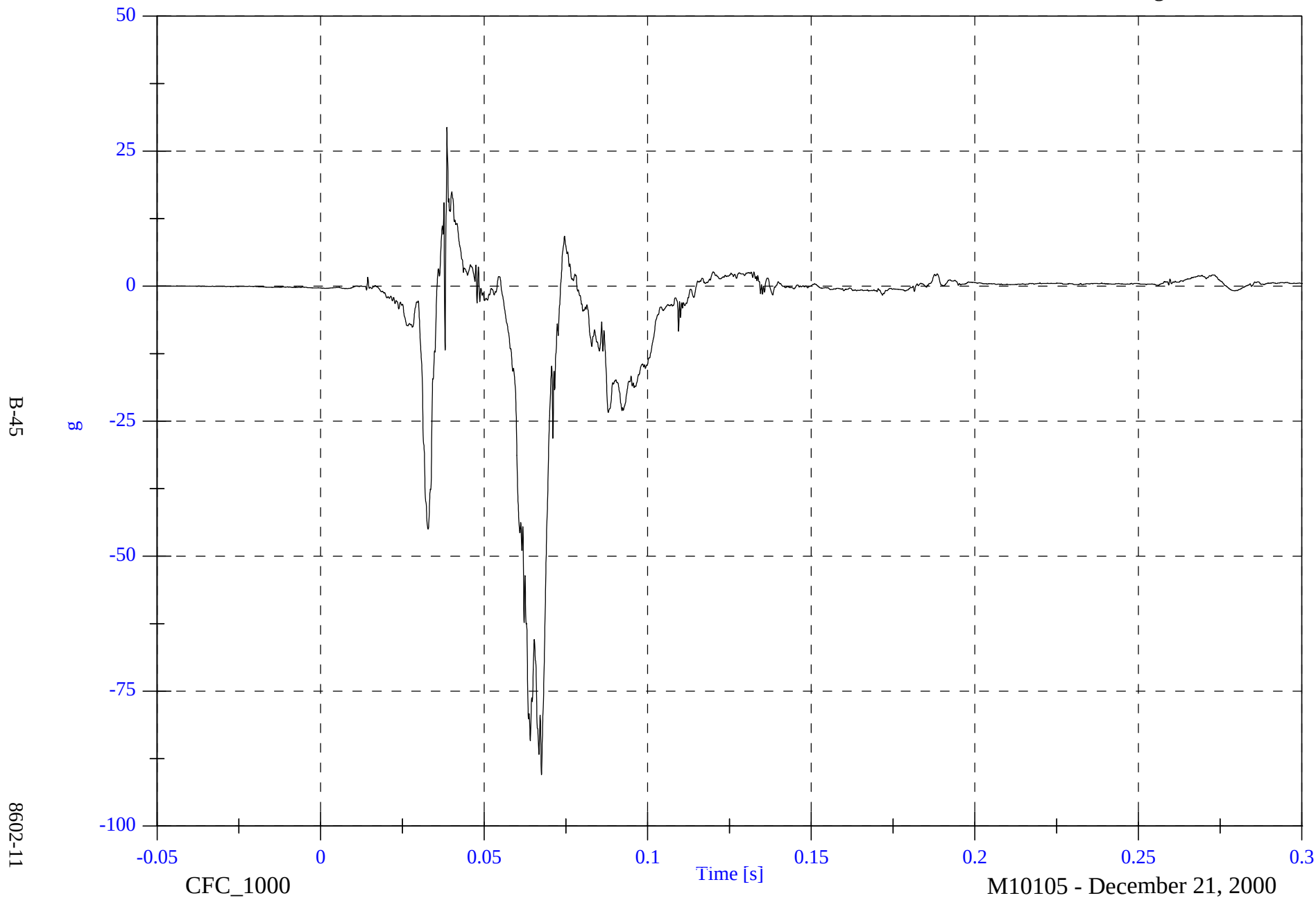


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Foot Aft x

Max: 29.4 [g] at 0.039 [s]

Min: -90.5 [g] at 0.068 [s]

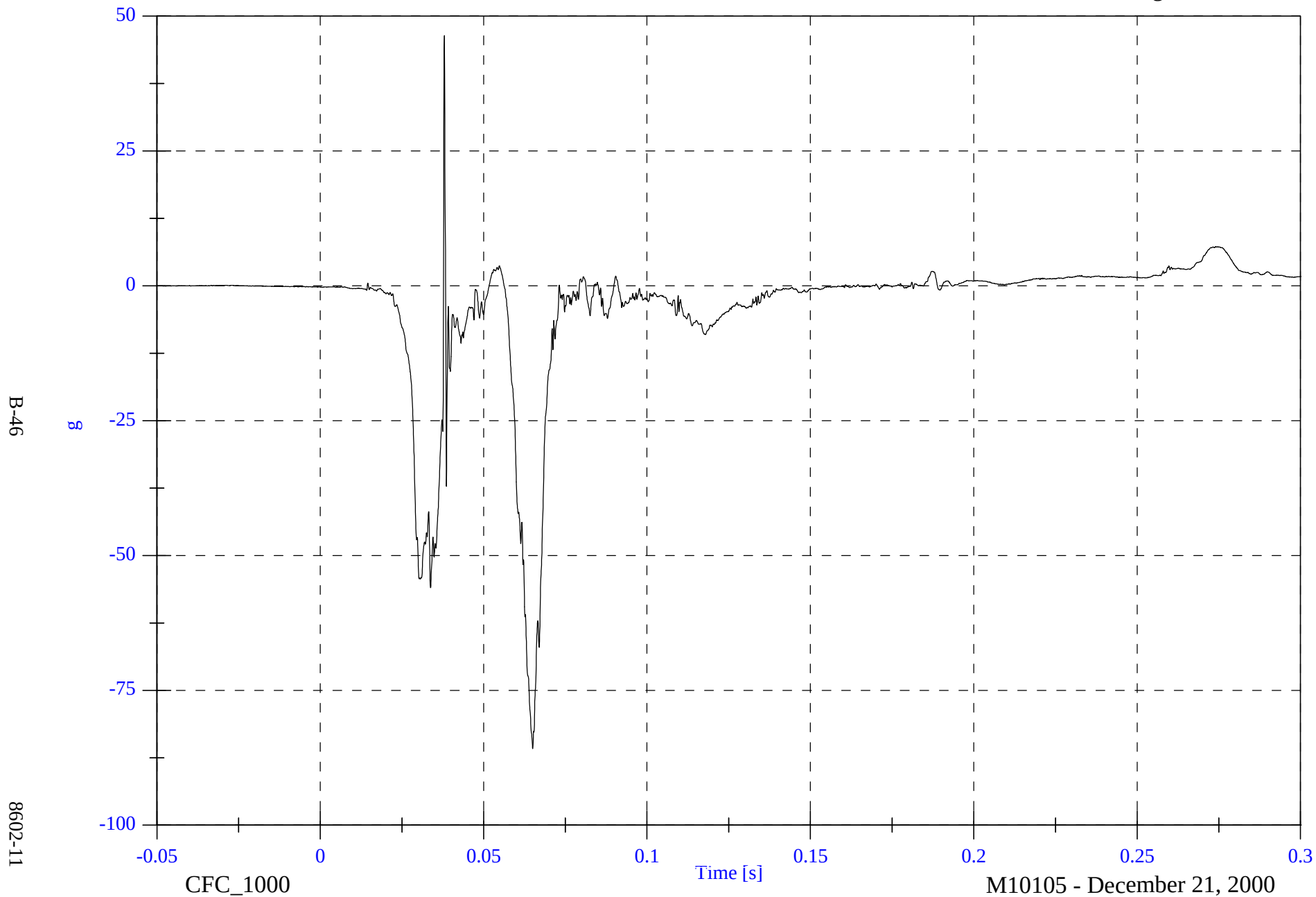


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Foot Aft z

Max: 46.4 [g] at 0.038 [s]

Min: -85.8 [g] at 0.065 [s]

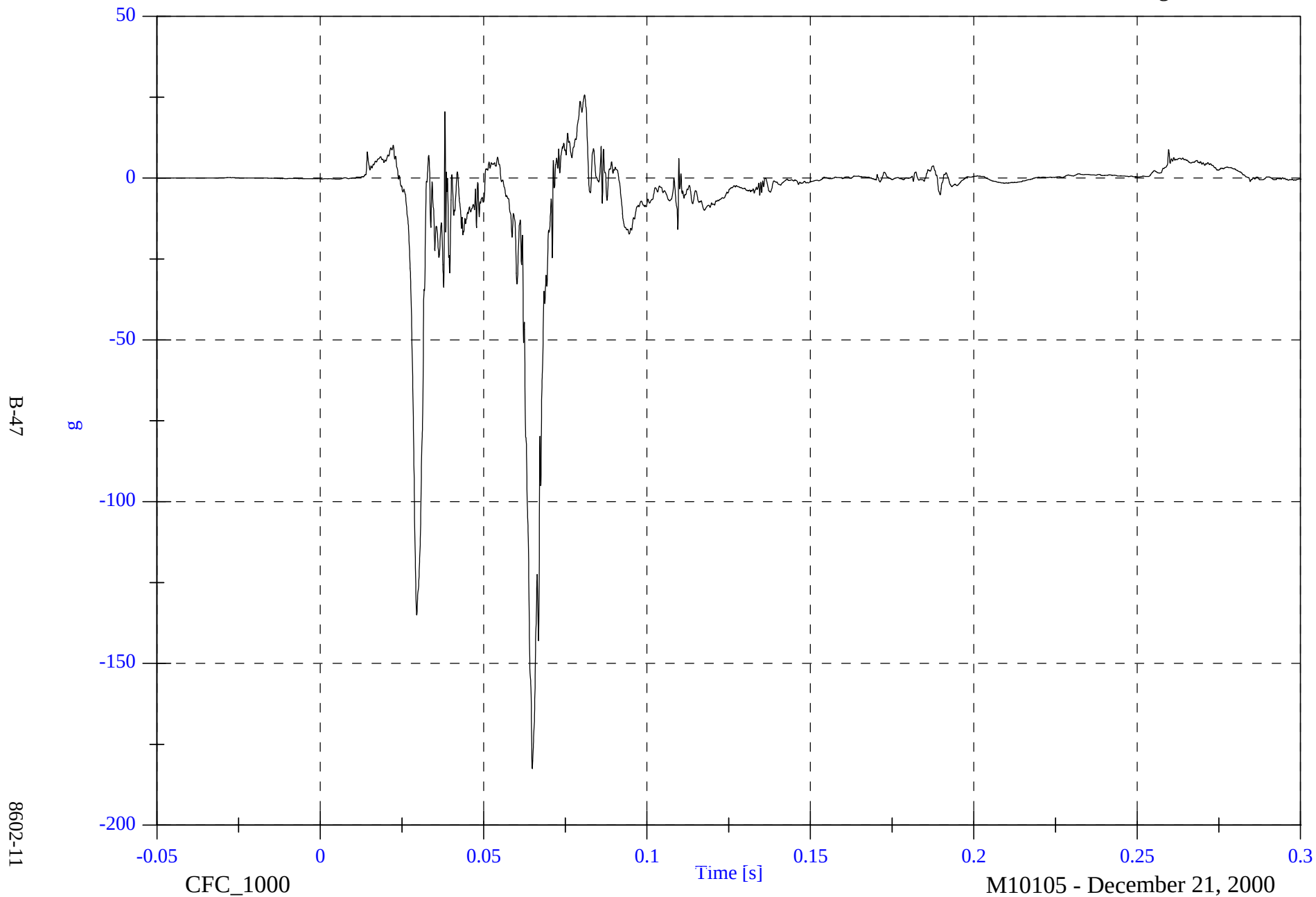


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Left Foot Fore z

Max: 25.7 [g] at 0.081 [s]

Min: -182.6 [g] at 0.065 [s]

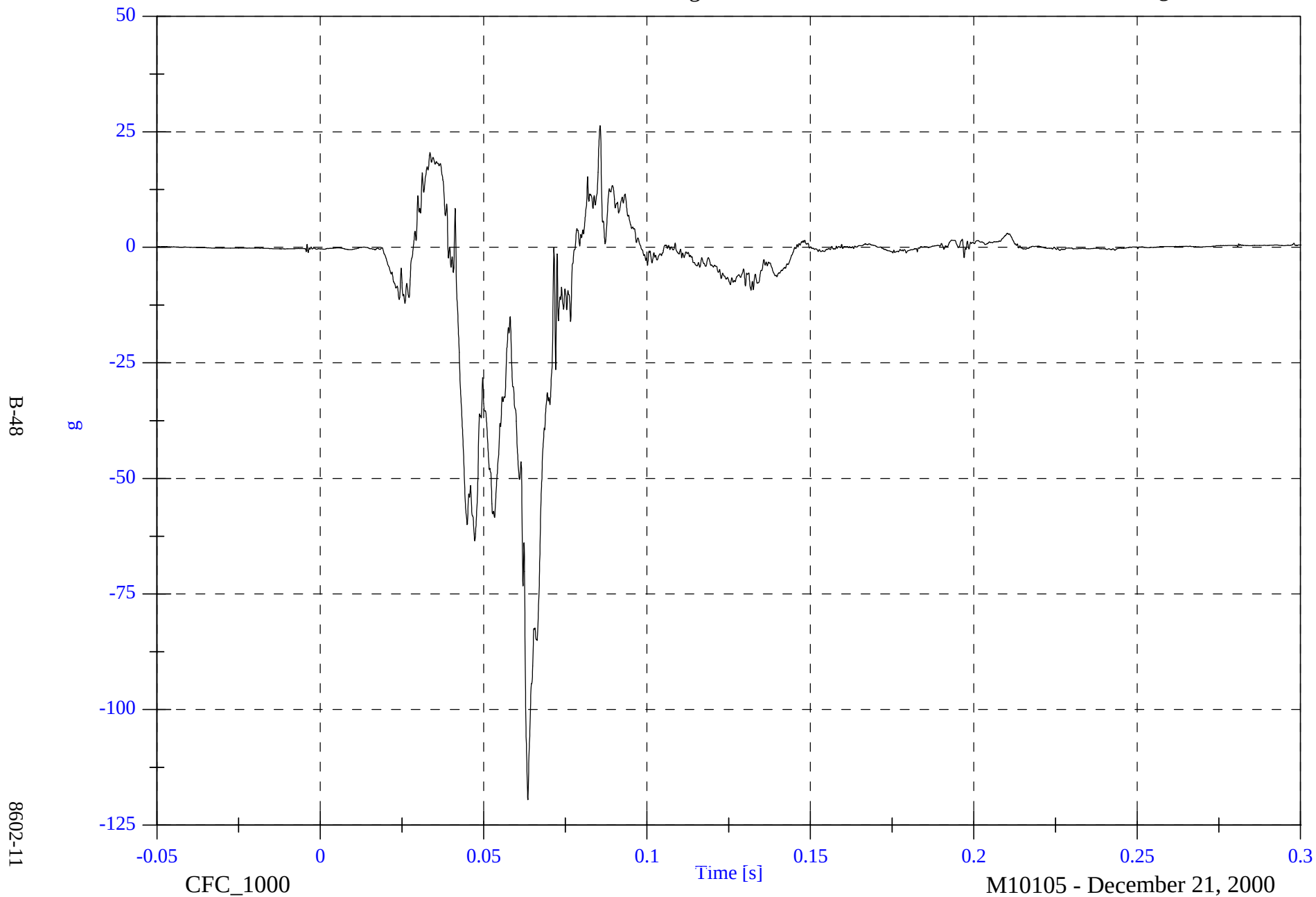


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Foot Aft x

Max: 26.3 [g] at 0.086 [s]

Min: -119.5 [g] at 0.064 [s]

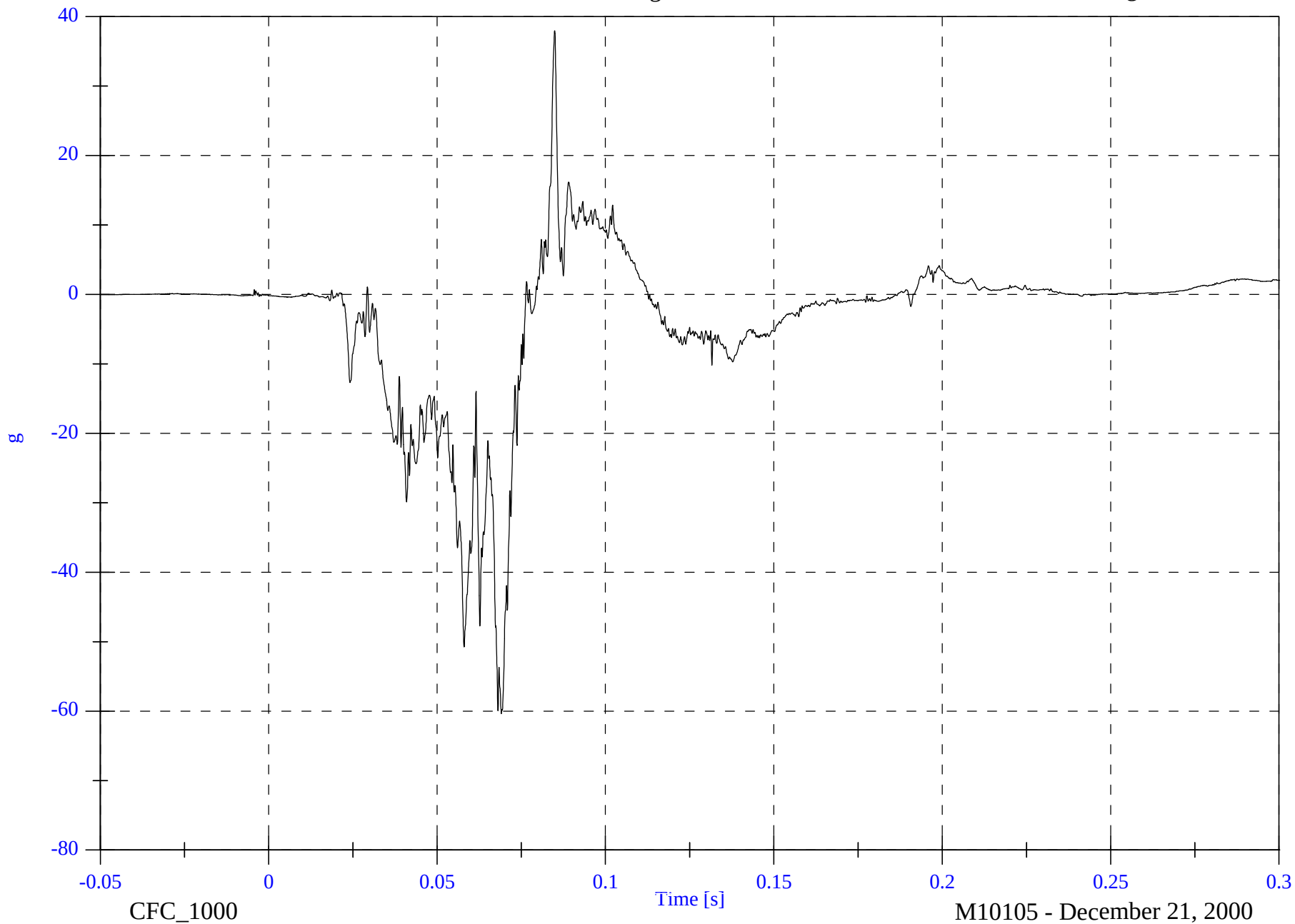


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Foot Aft z

Max: 38.0 [g] at 0.085 [s]

Min: -60.4 [g] at 0.069 [s]

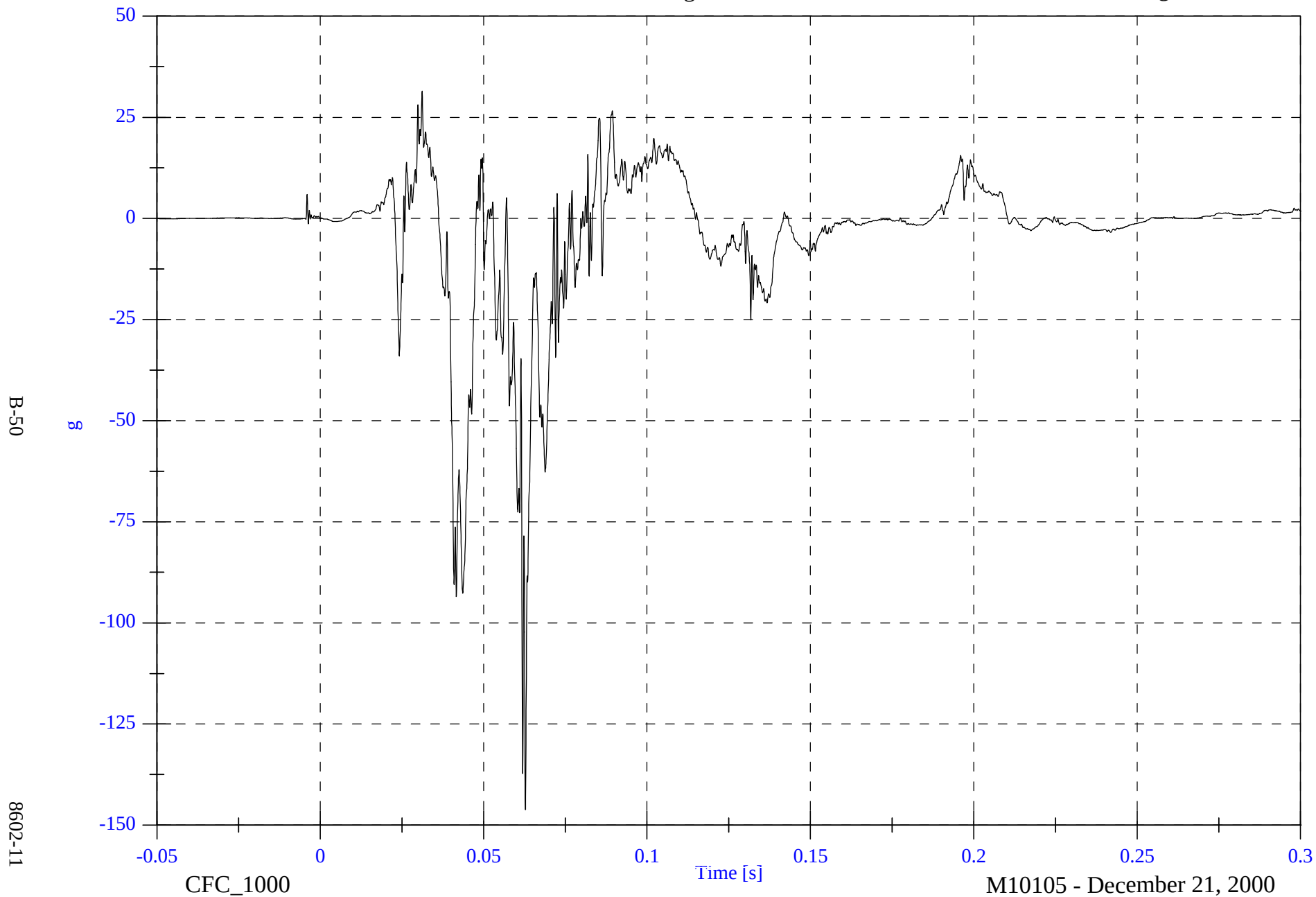


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Right Foot Fore z

Max: 31.5 [g] at 0.031 [s]

Min: -146.2 [g] at 0.063 [s]

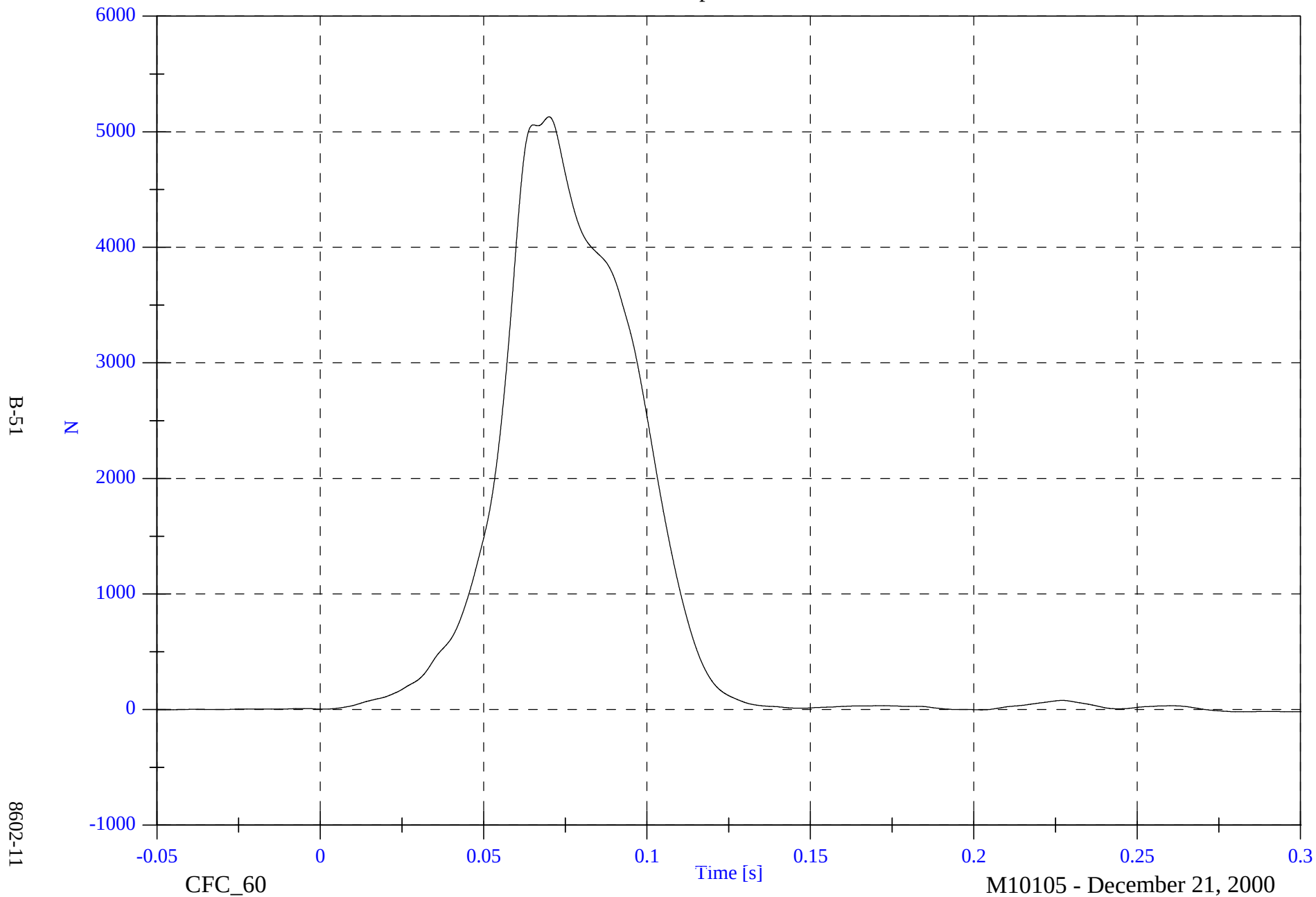


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Lap Belt Force

Max: 5129.8 [N] at 0.070 [s]

Min: -19.6 [N] at 0.282 [s]

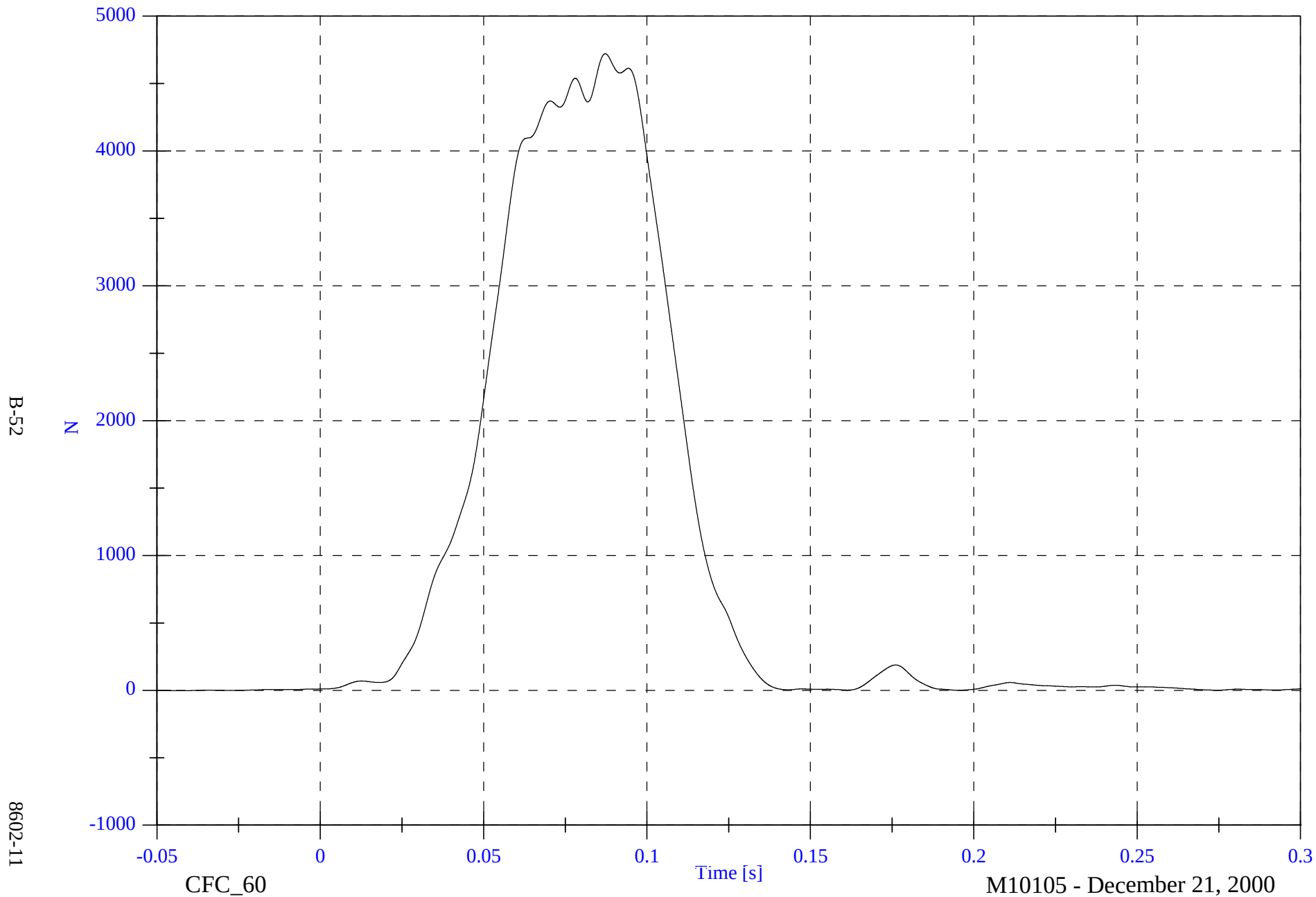


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Shoulder Belt Force

Max: 4721.8 [N] at 0.087 [s]

Min: -3.1 [N] at -0.043 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

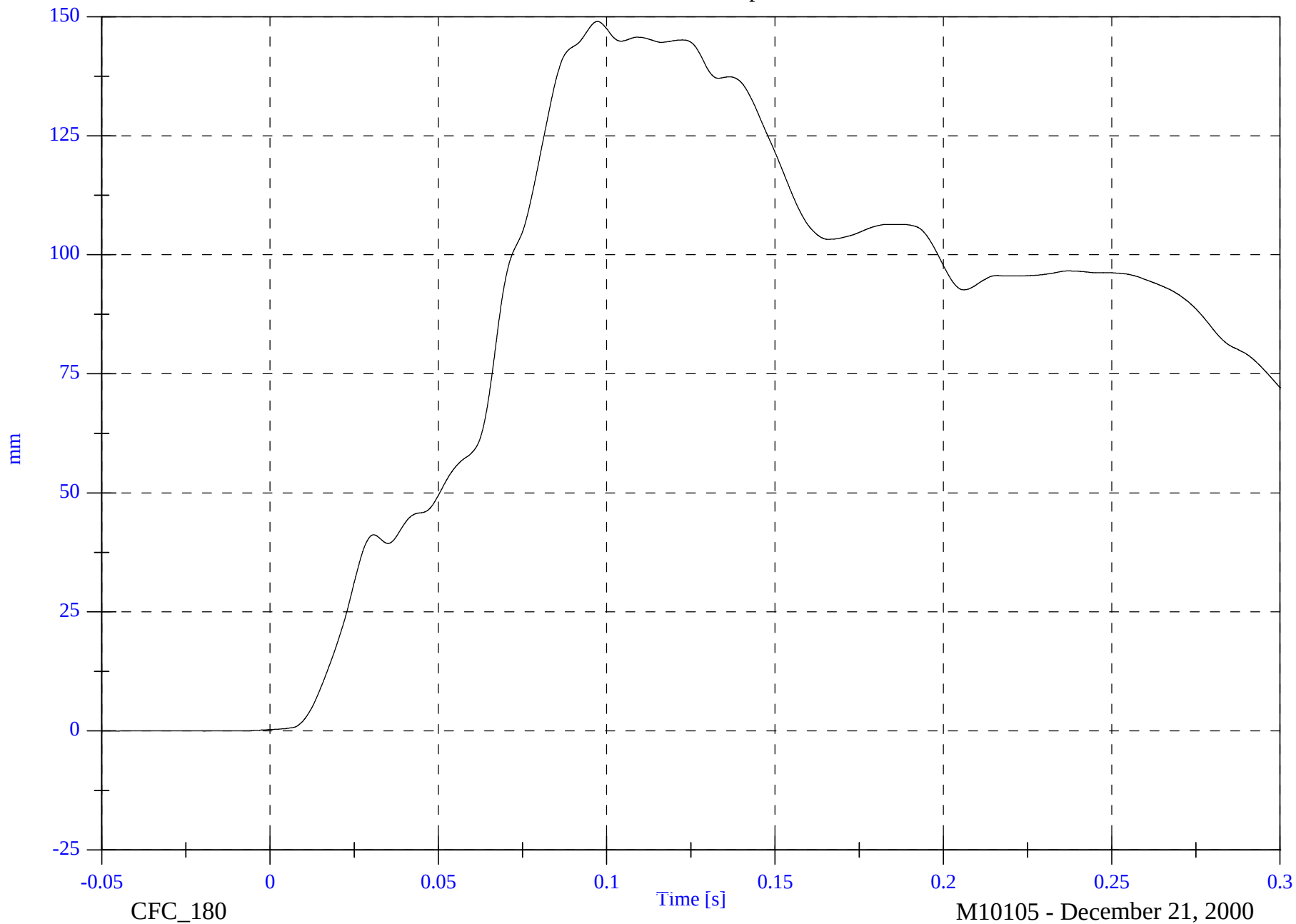
P1 Shoulder Belt Spoolout

Max: 149.0 [mm] at 0.097 [s]

Min: -0.0 [mm] at -0.045 [s]

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8602-11



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P1 Shoulder Belt Elongation

Max: 0.0 [mm] at 0.072 [s]

Min: -0.0 [mm] at 0.069 [s]

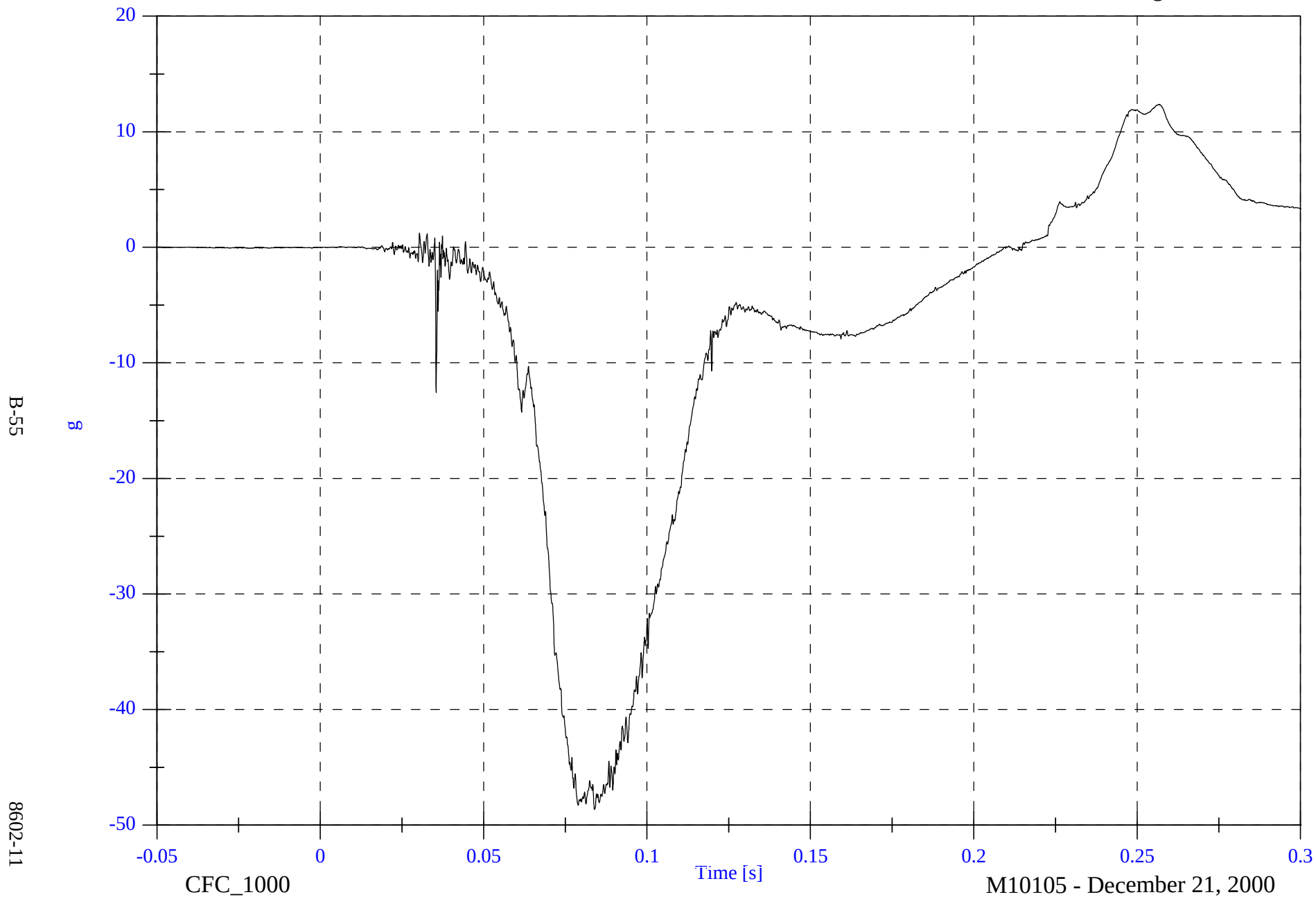


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Head x

Max: 12.4 [g] at 0.257 [s]

Min: -48.6 [g] at 0.084 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

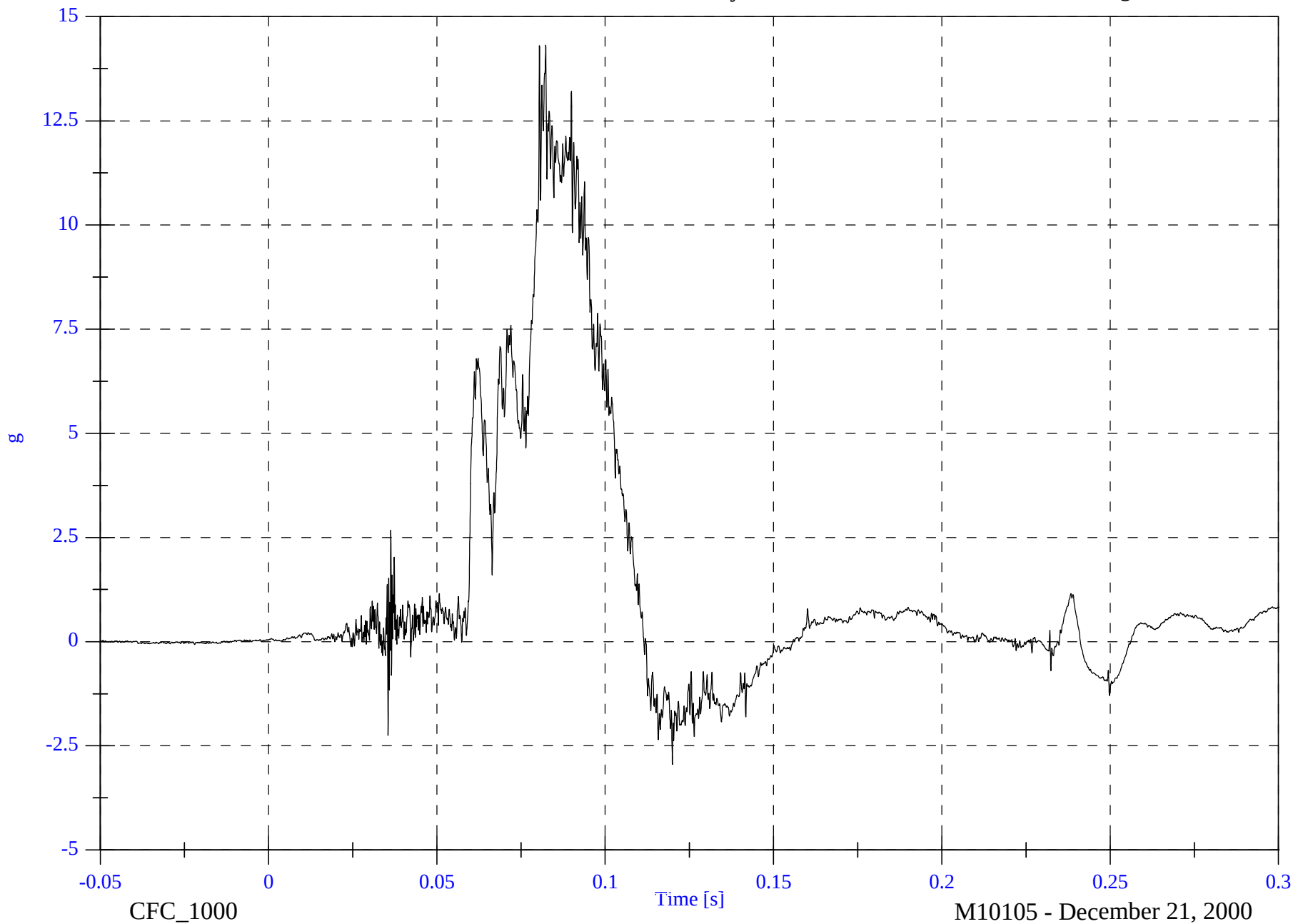
P2 Head y

Max: 14.3 [g] at 0.082 [s]

Min: -3.0 [g] at 0.120 [s]

B-56

8602-11

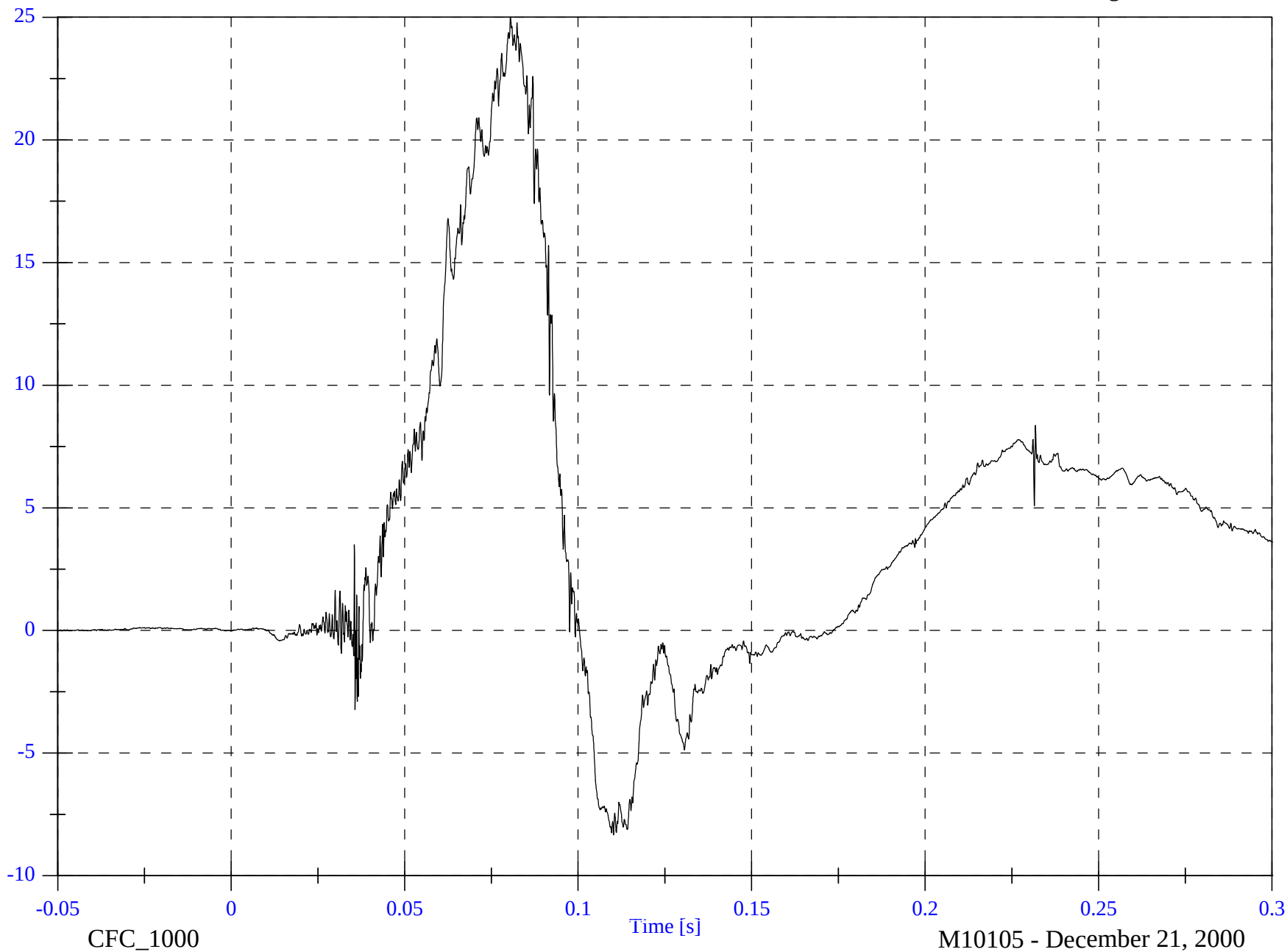


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Head z

Max: 25.0 [g] at 0.081 [s]

Min: -8.3 [g] at 0.110 [s]

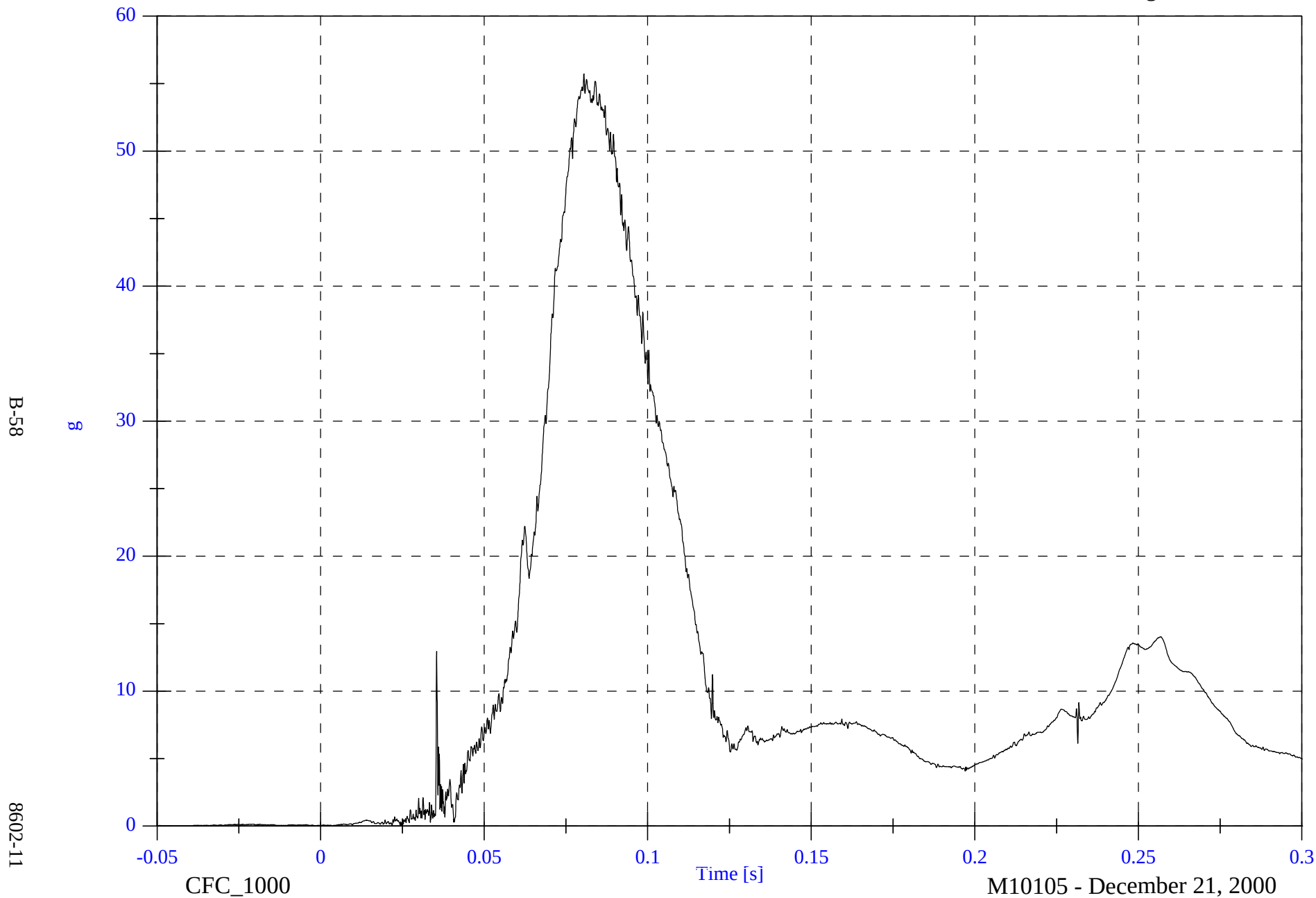


B-57

8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe
P2 Head Resultant

Max: 55.7 [g] at 0.081 [s]
Min: 0.0 [g] at -0.042 [s]

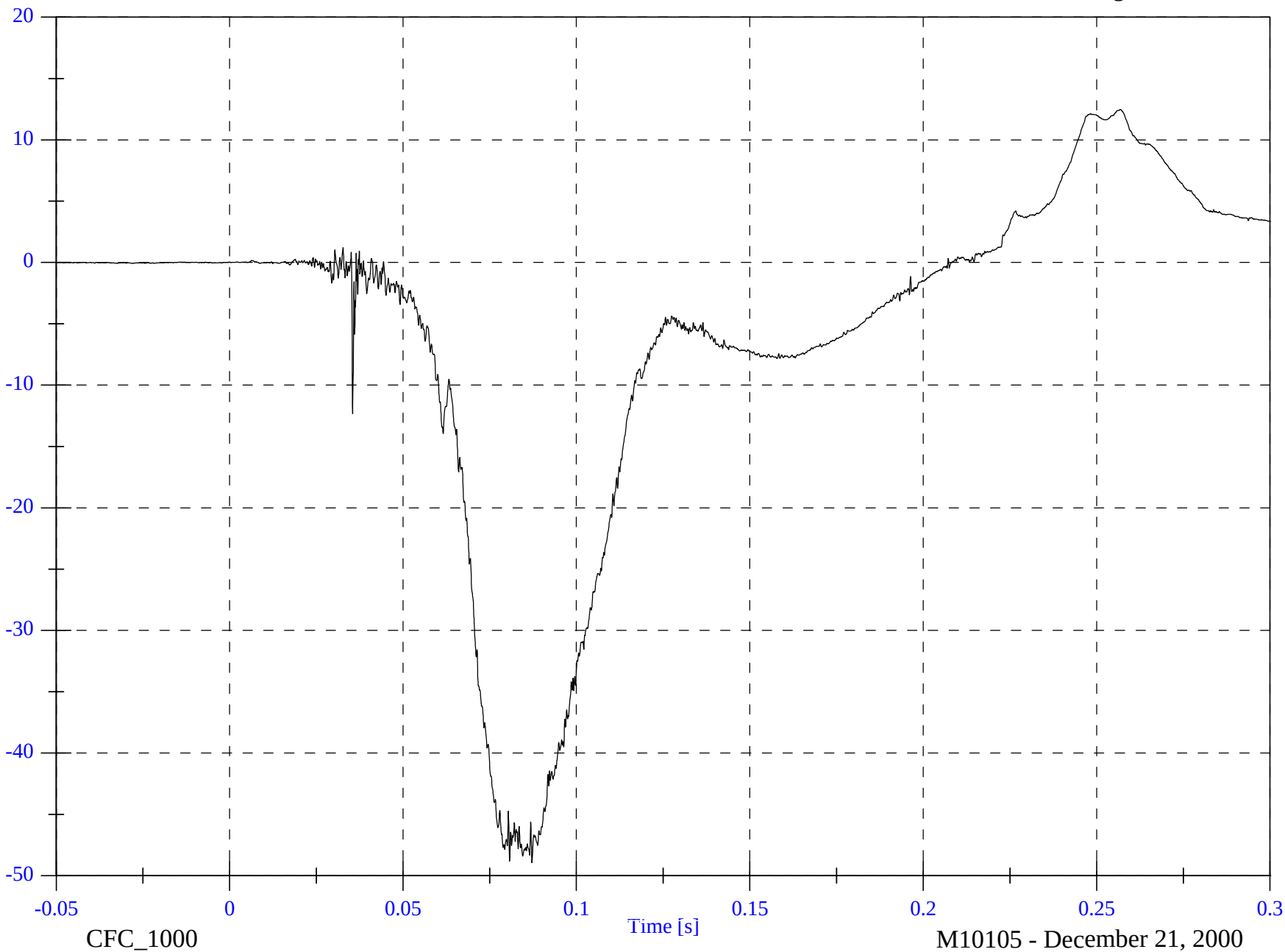


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Head Red x

Max: 12.5 [g] at 0.257 [s]

Min: -48.9 [g] at 0.087 [s]



B-59

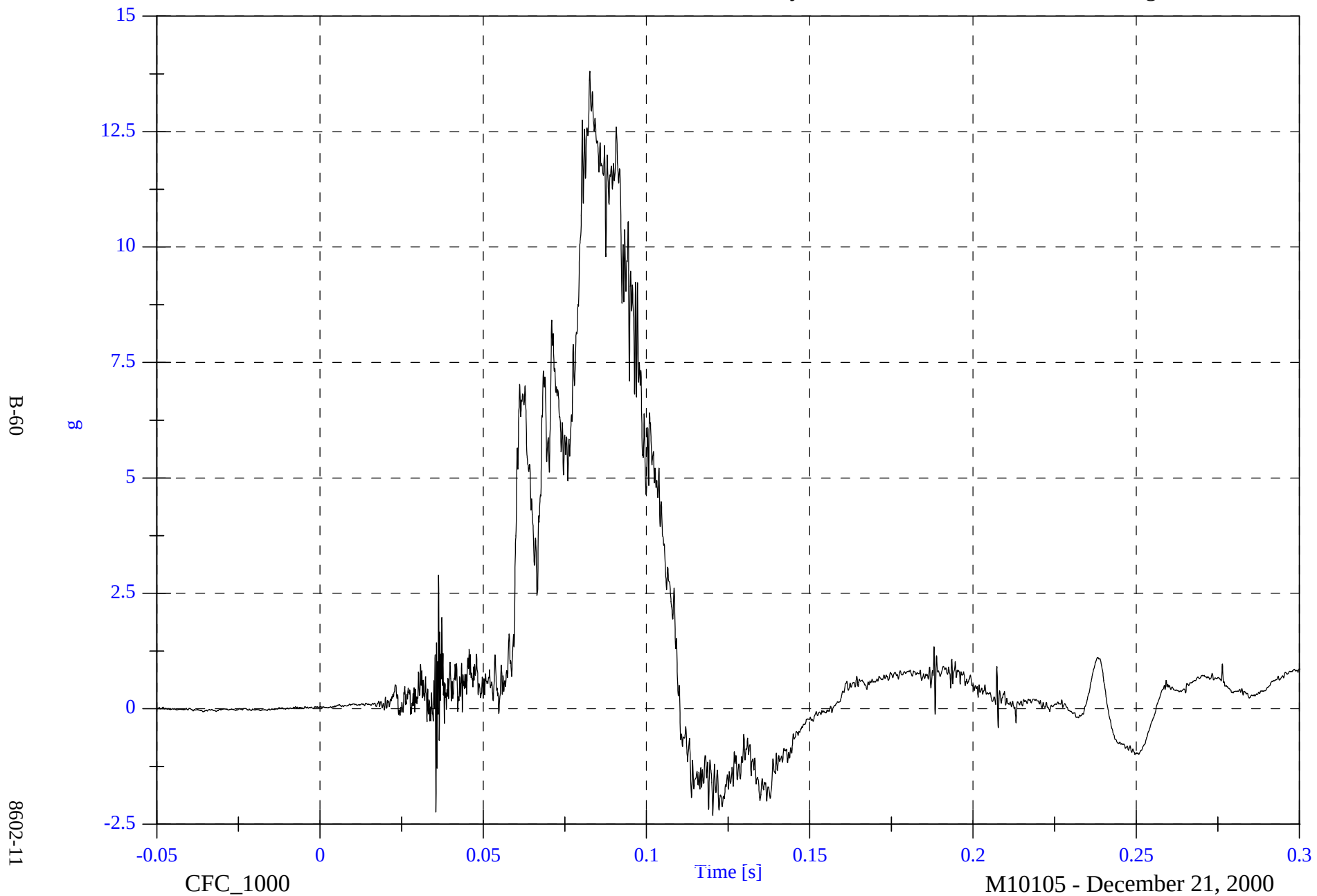
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Head Red y

Max: 13.8 [g] at 0.083 [s]

Min: -2.3 [g] at 0.120 [s]

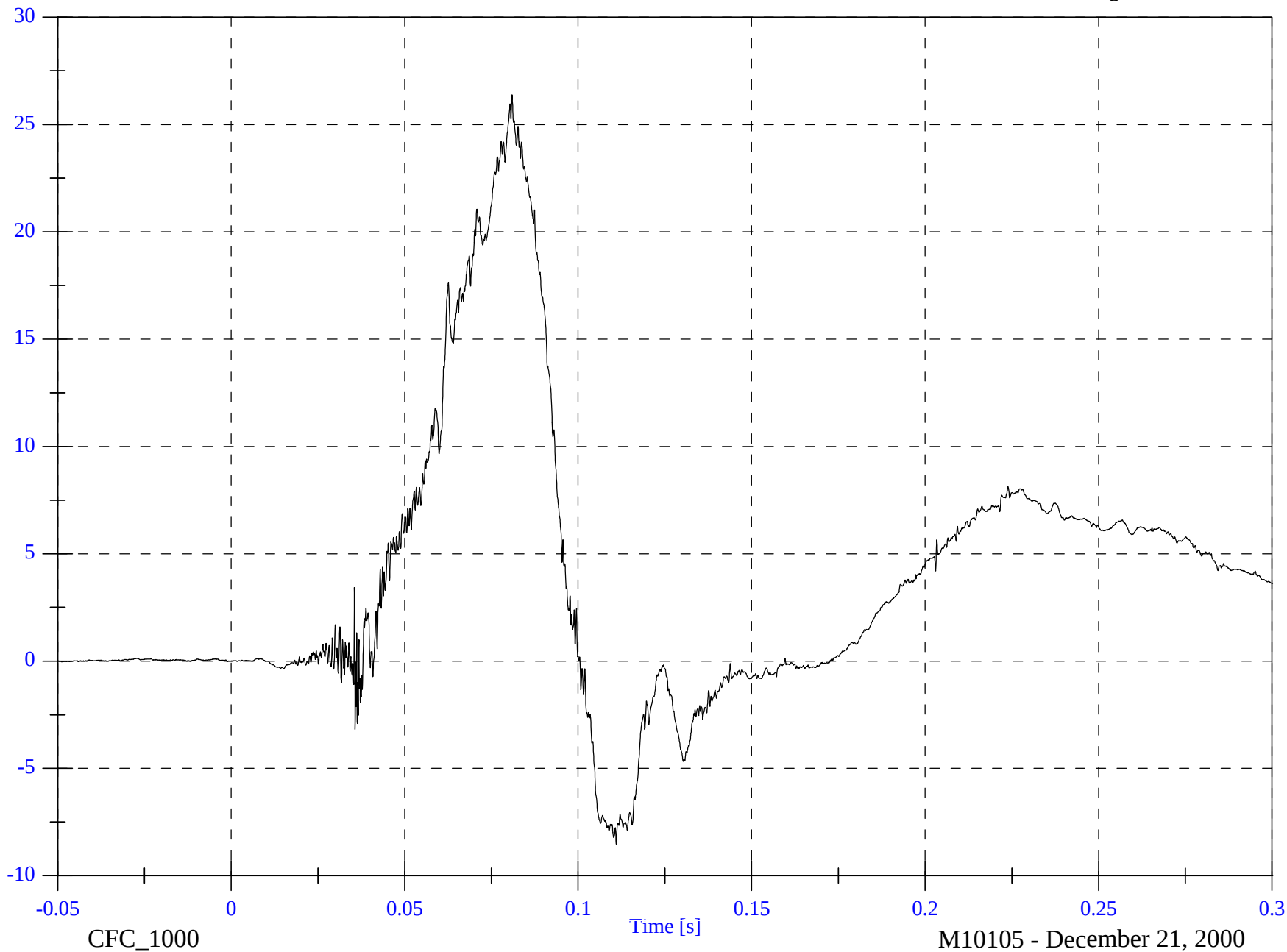


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Head Red z

Max: 26.4 [g] at 0.081 [s]

Min: -8.5 [g] at 0.111 [s]



B-61

8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

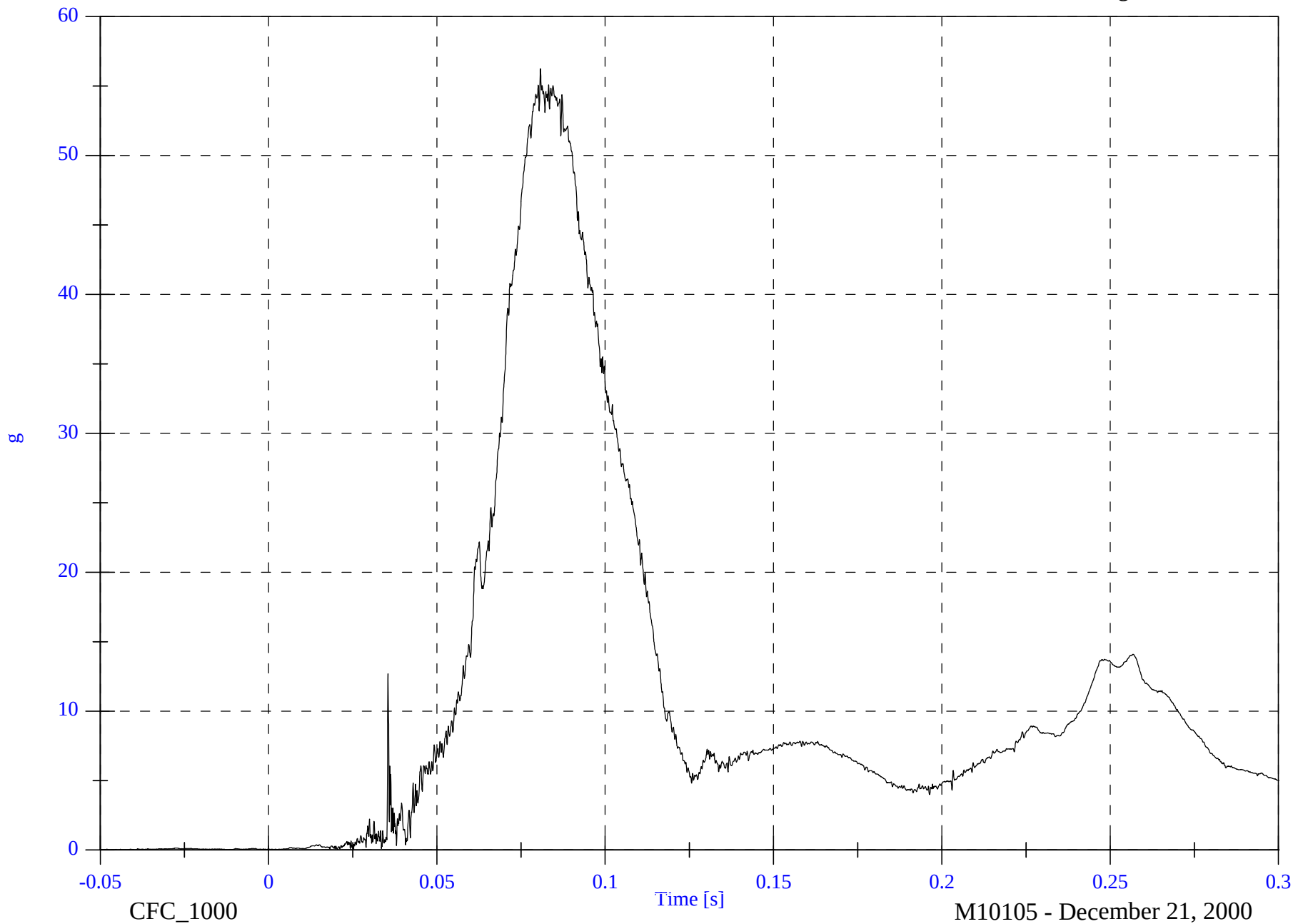
P2 Head Red Resultant

Max: 56.3 [g] at 0.081 [s]

Min: 0.0 [g] at -0.047 [s]

B-62

8602-11

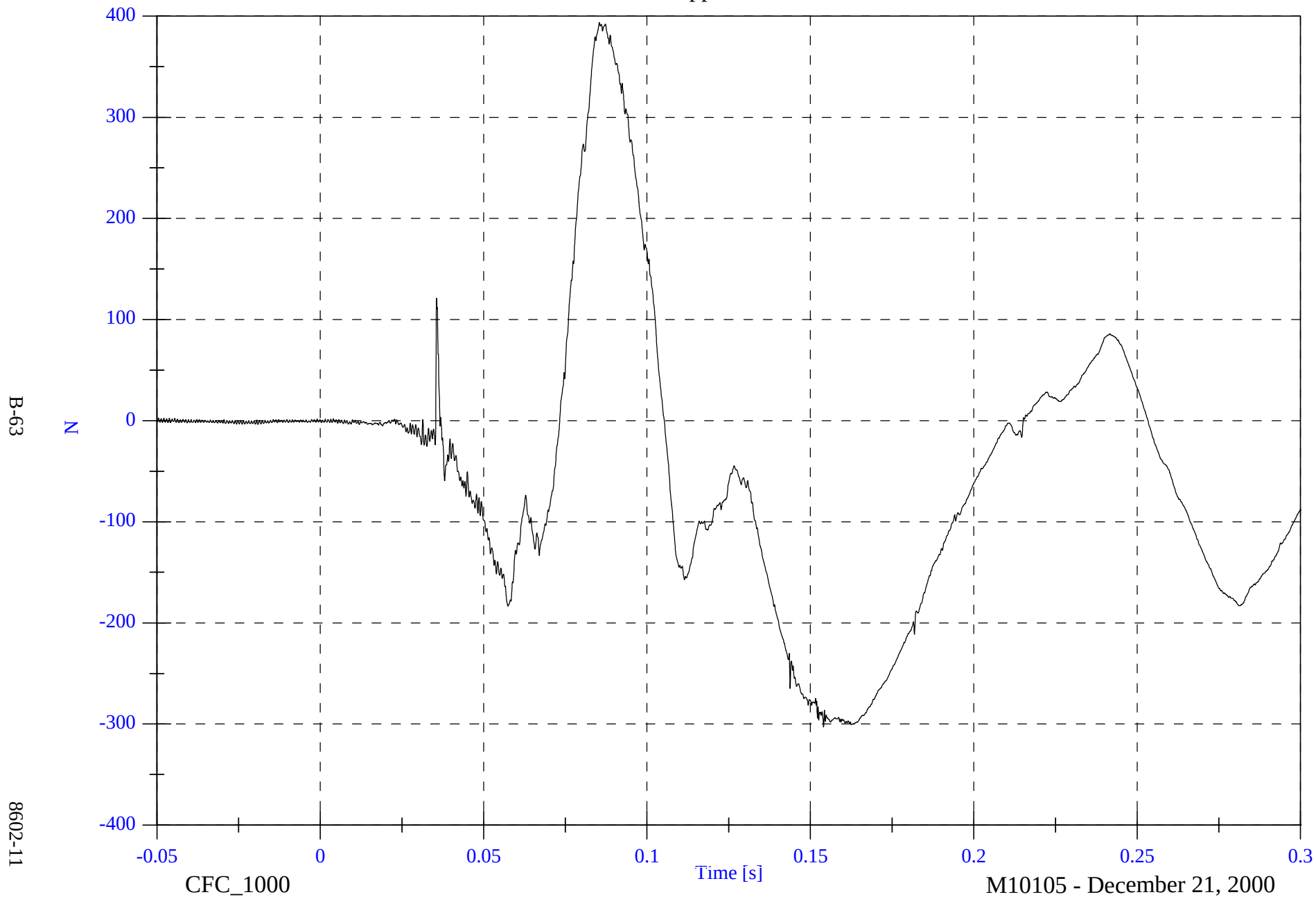


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck Fx

Max: 393.7 [N] at 0.085 [s]

Min: -303.0 [N] at 0.154 [s]

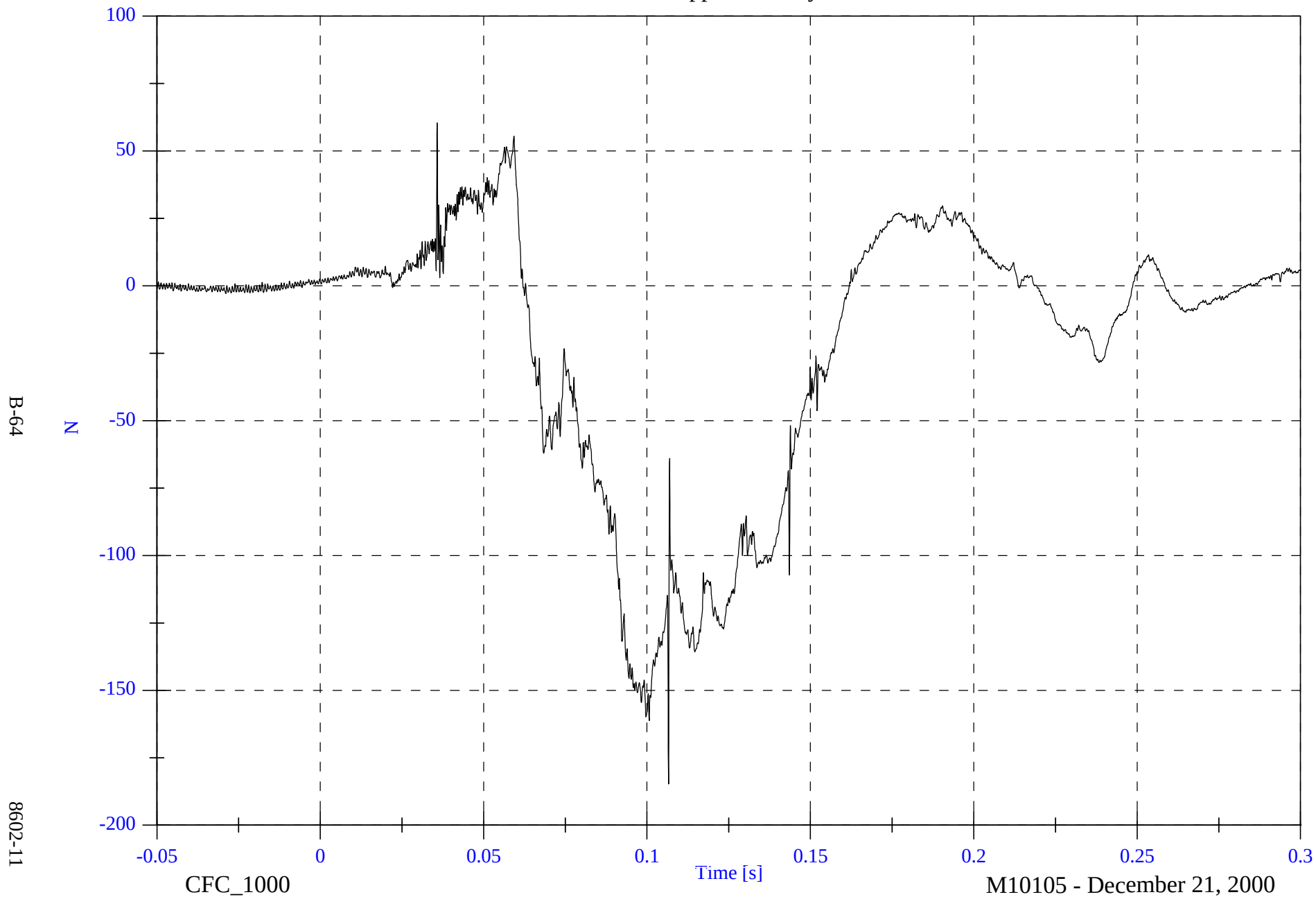


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck Fy

Max: 60.4 [N] at 0.036 [s]

Min: -184.8 [N] at 0.107 [s]

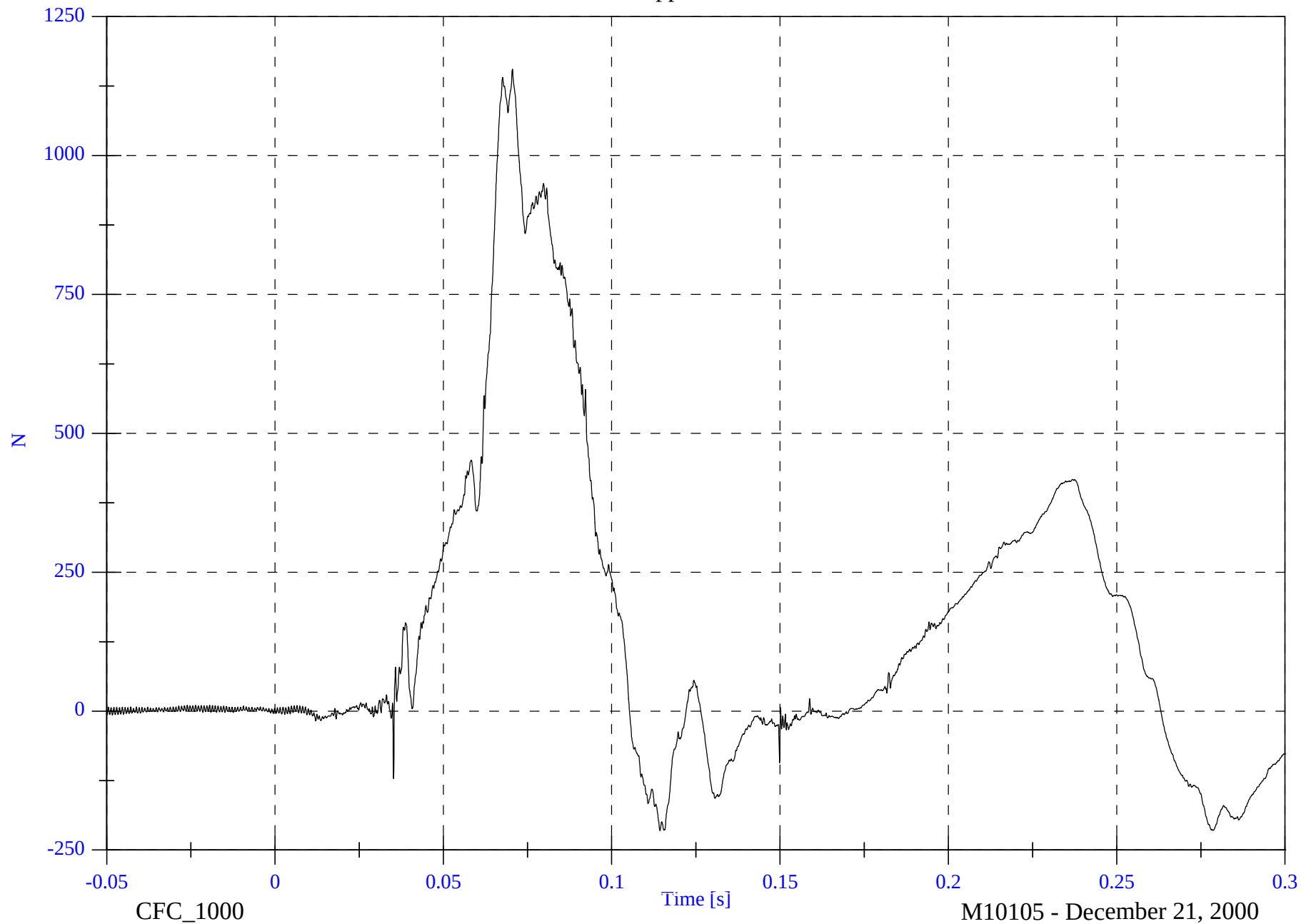


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck Fz

Max: 1155.6 [N] at 0.071 [s]

Min: -215.6 [N] at 0.114 [s]



B-65

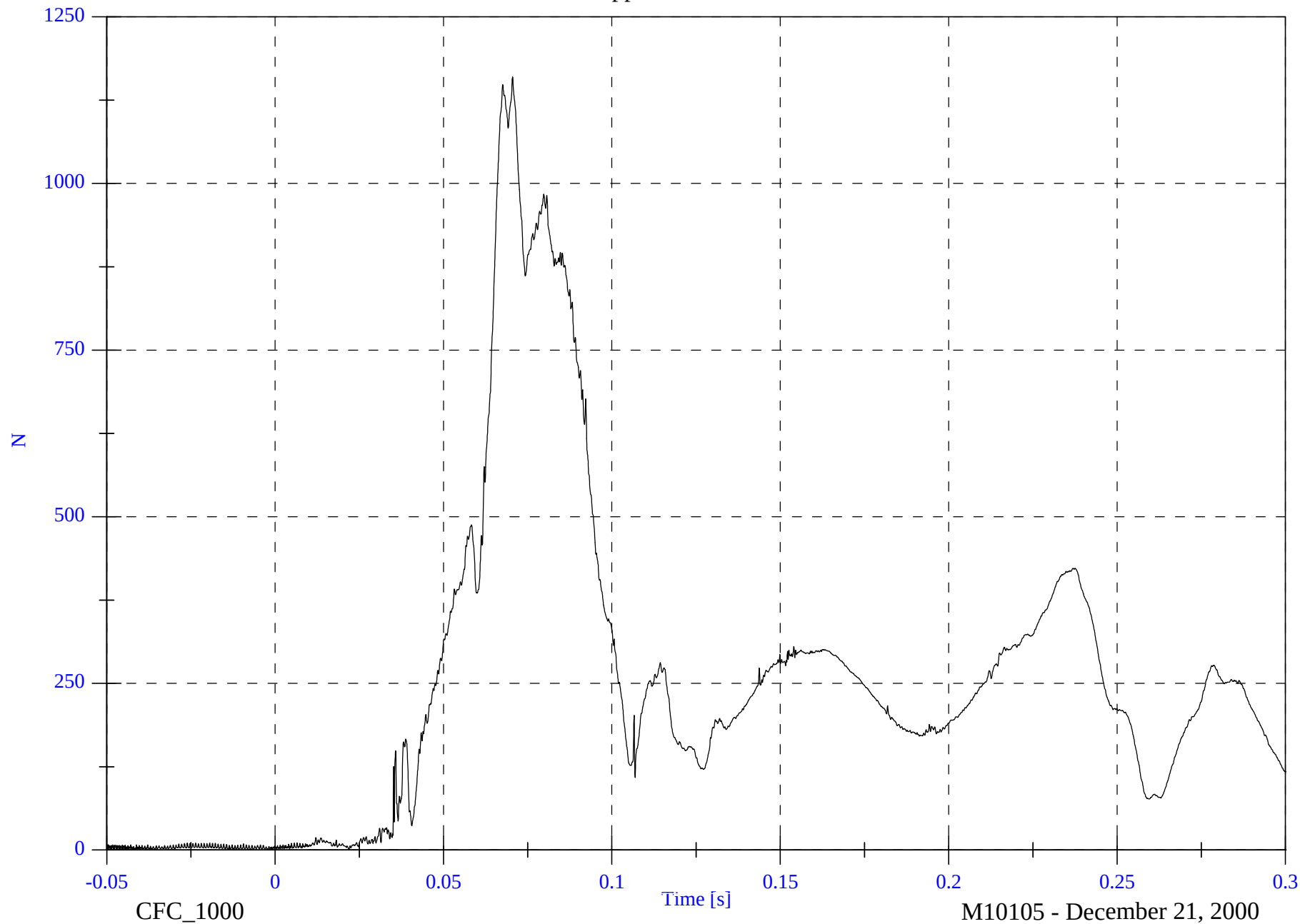
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck F Resultant

Max: 1159.6 [N] at 0.071 [s]

Min: 0.2 [N] at -0.042 [s]



B-66

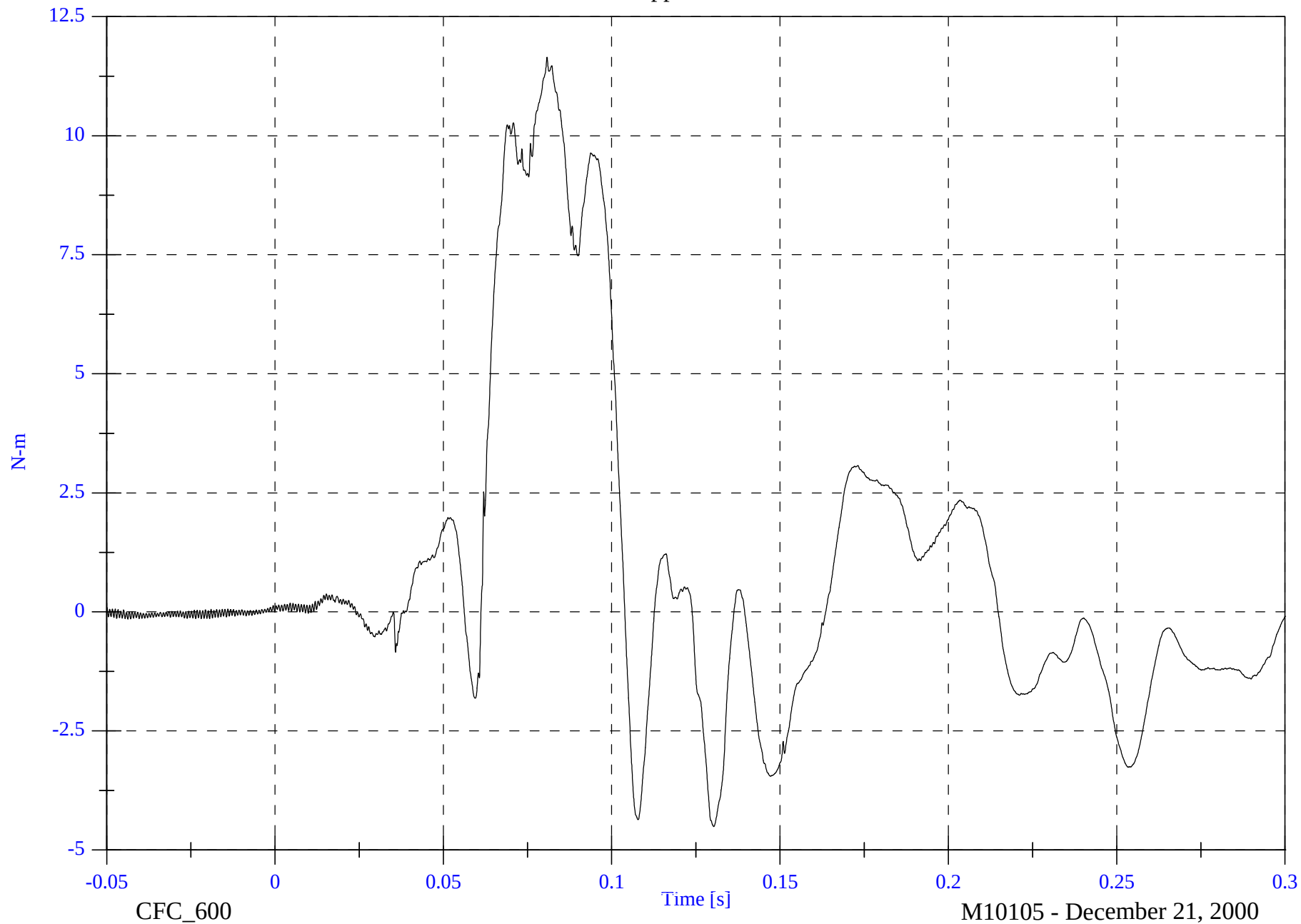
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck Mx

Max: 11.6 [N-m] at 0.081 [s]

Min: -4.5 [N-m] at 0.130 [s]



B-67

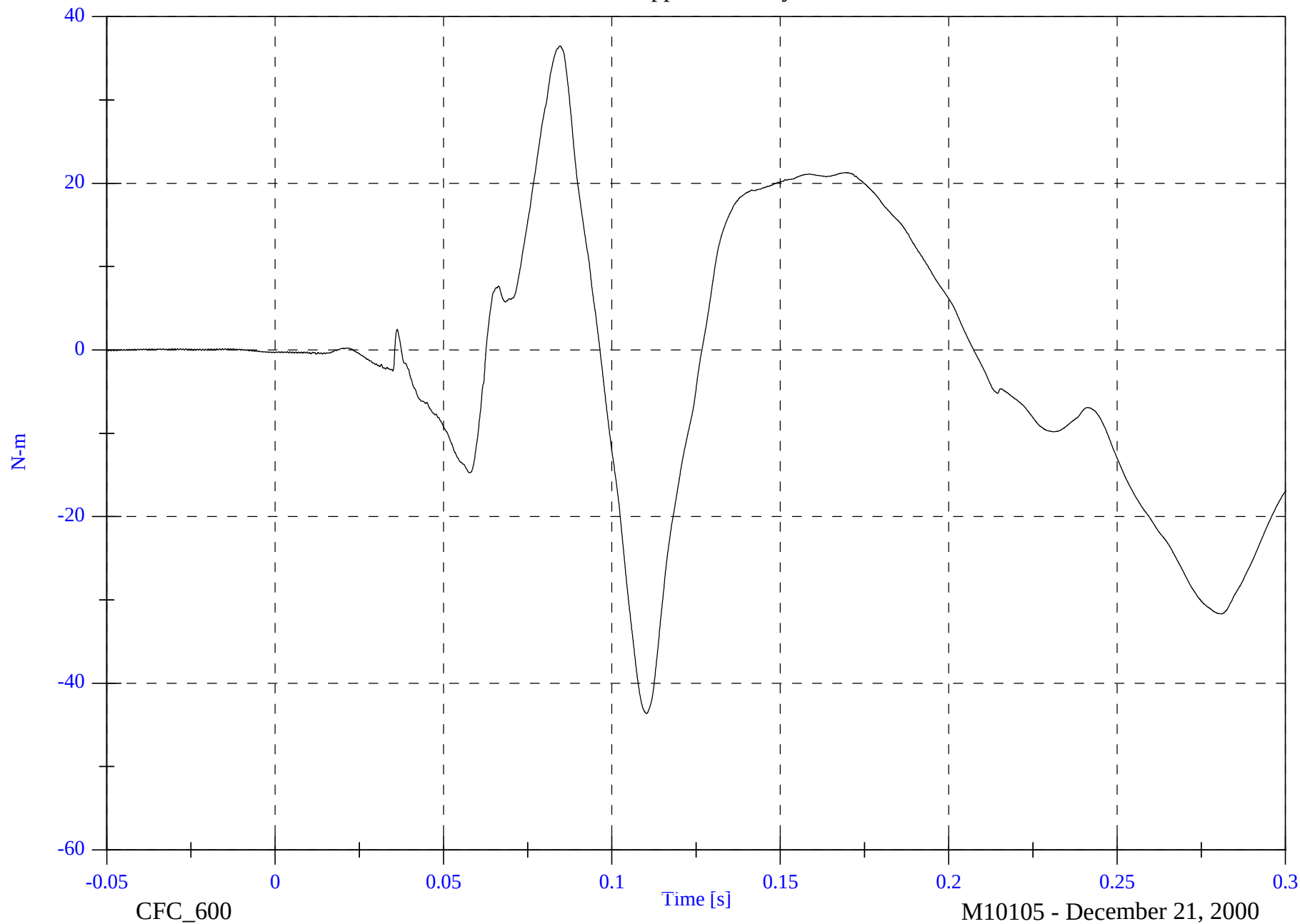
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck My

Max: 36.5 [N-m] at 0.085 [s]

Min: -43.6 [N-m] at 0.110 [s]



B-68

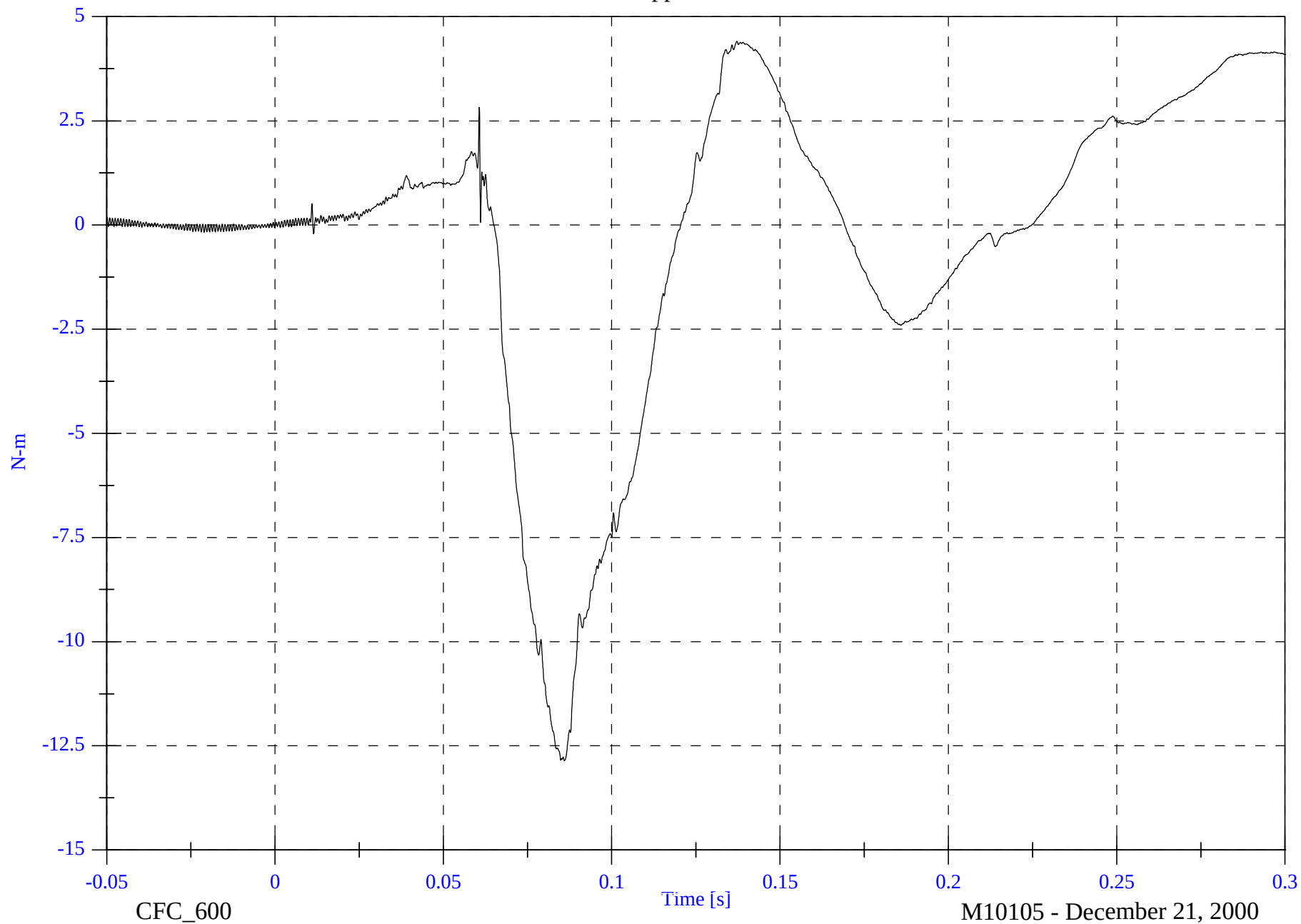
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck Mz

Max: 4.4 [N-m] at 0.137 [s]

Min: -12.9 [N-m] at 0.086 [s]



B-69

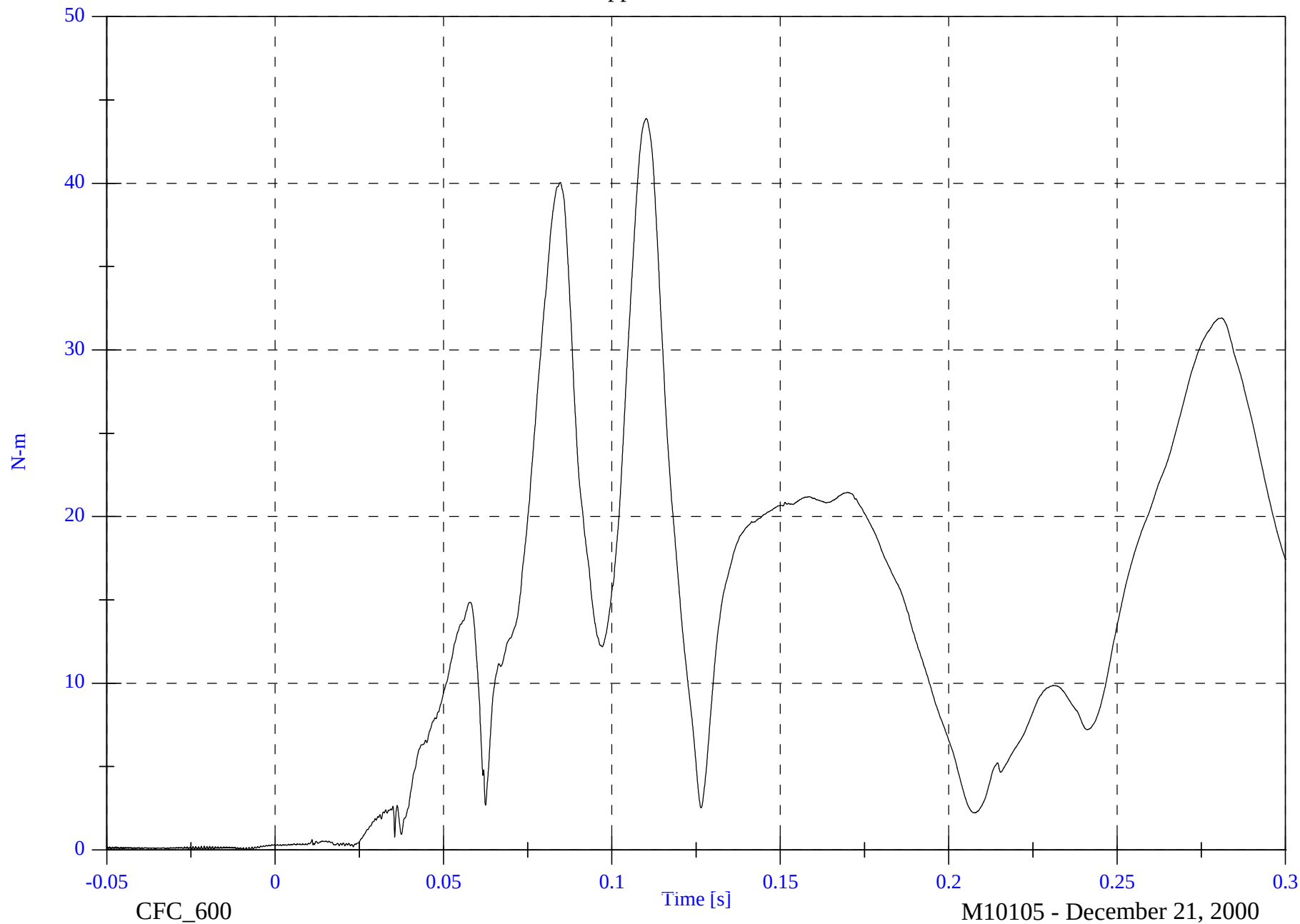
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Upper Neck M Resultant

Max: 43.9 [N-m] at 0.110 [s]

Min: 0.0 [N-m] at -0.008 [s]



B-70

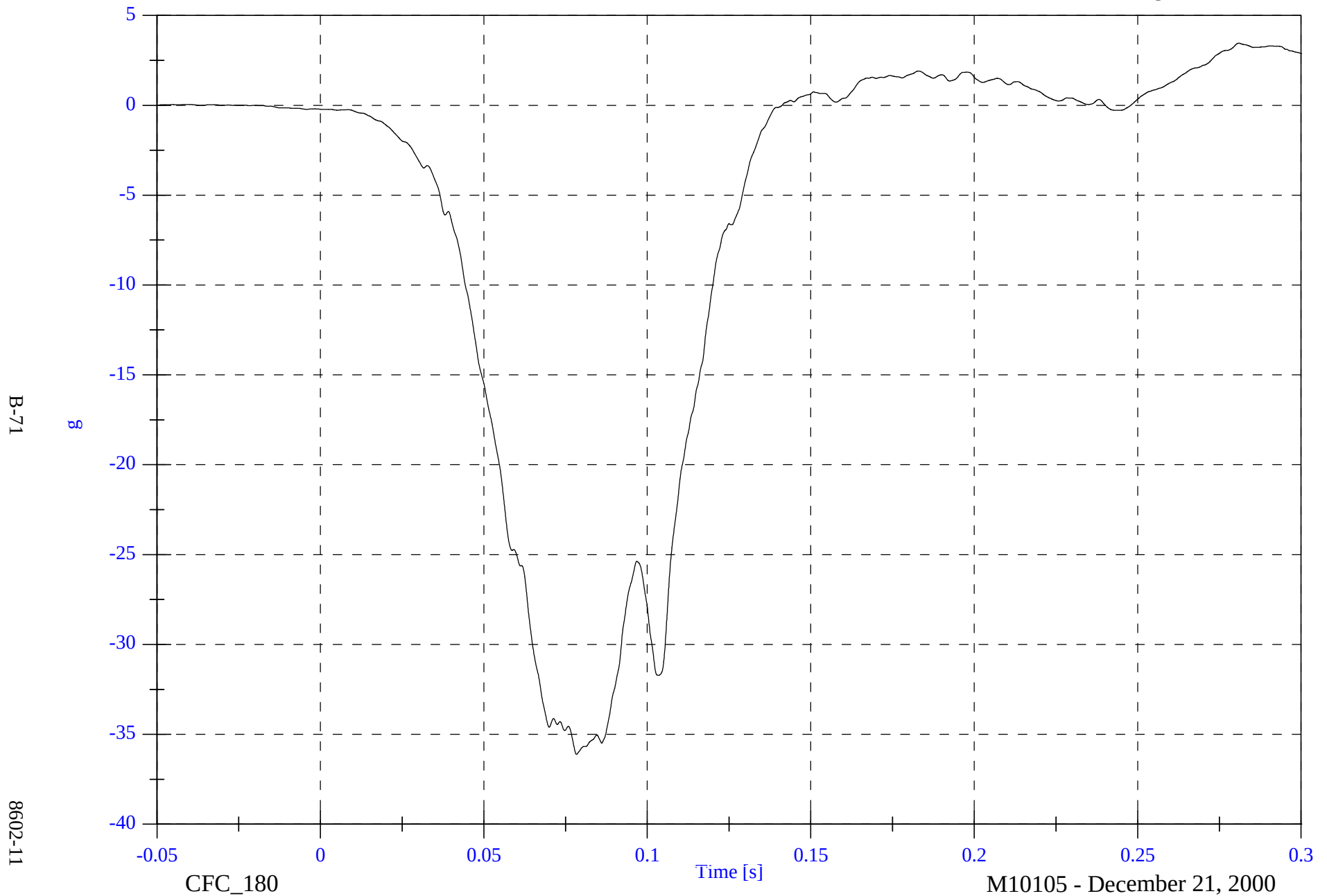
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Chest x

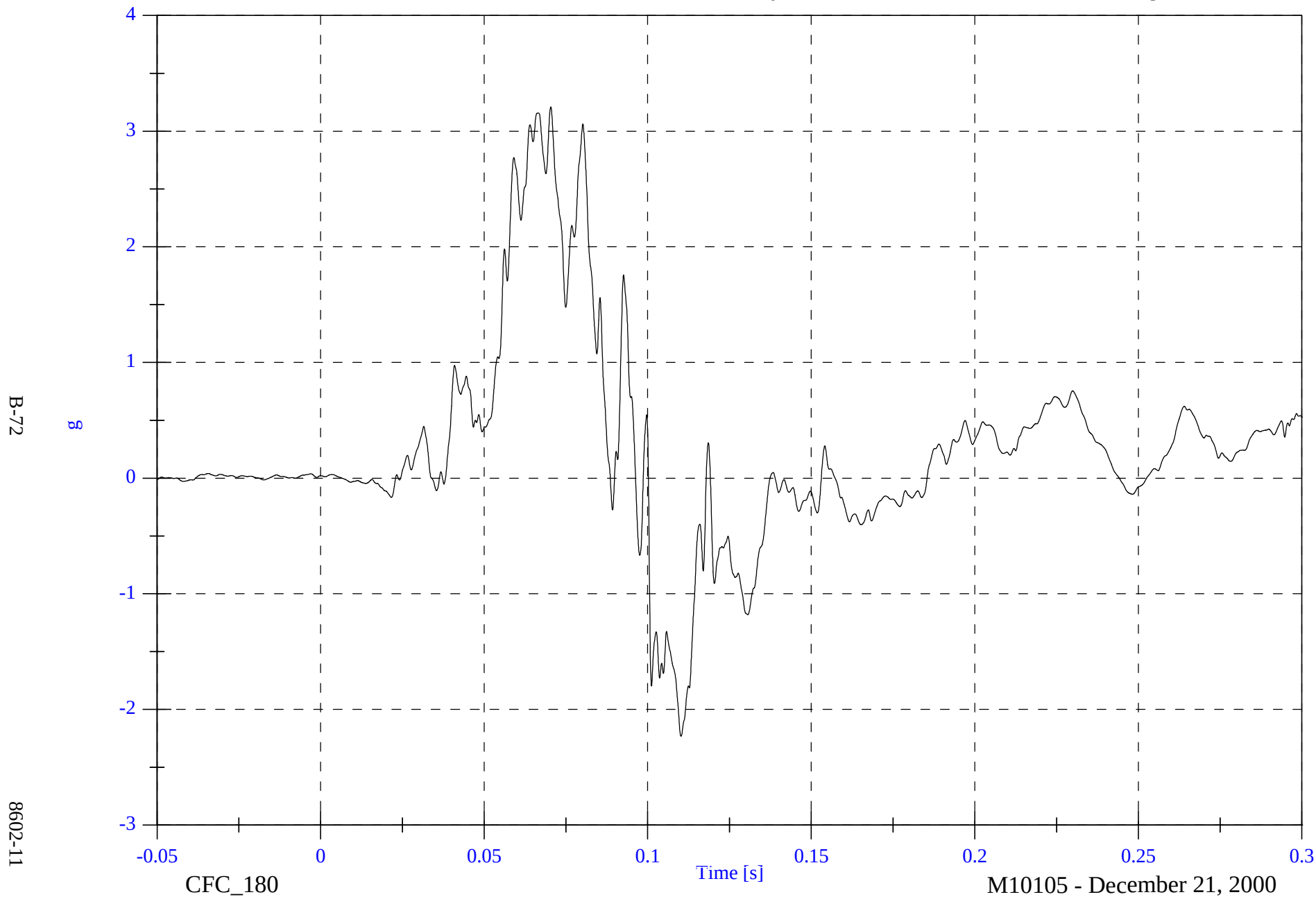
Max: 3.5 [g] at 0.281 [s]

Min: -36.1 [g] at 0.078 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe
P2 Chest y

Max: 3.2 [g] at 0.070 [s]
Min: -2.2 [g] at 0.110 [s]

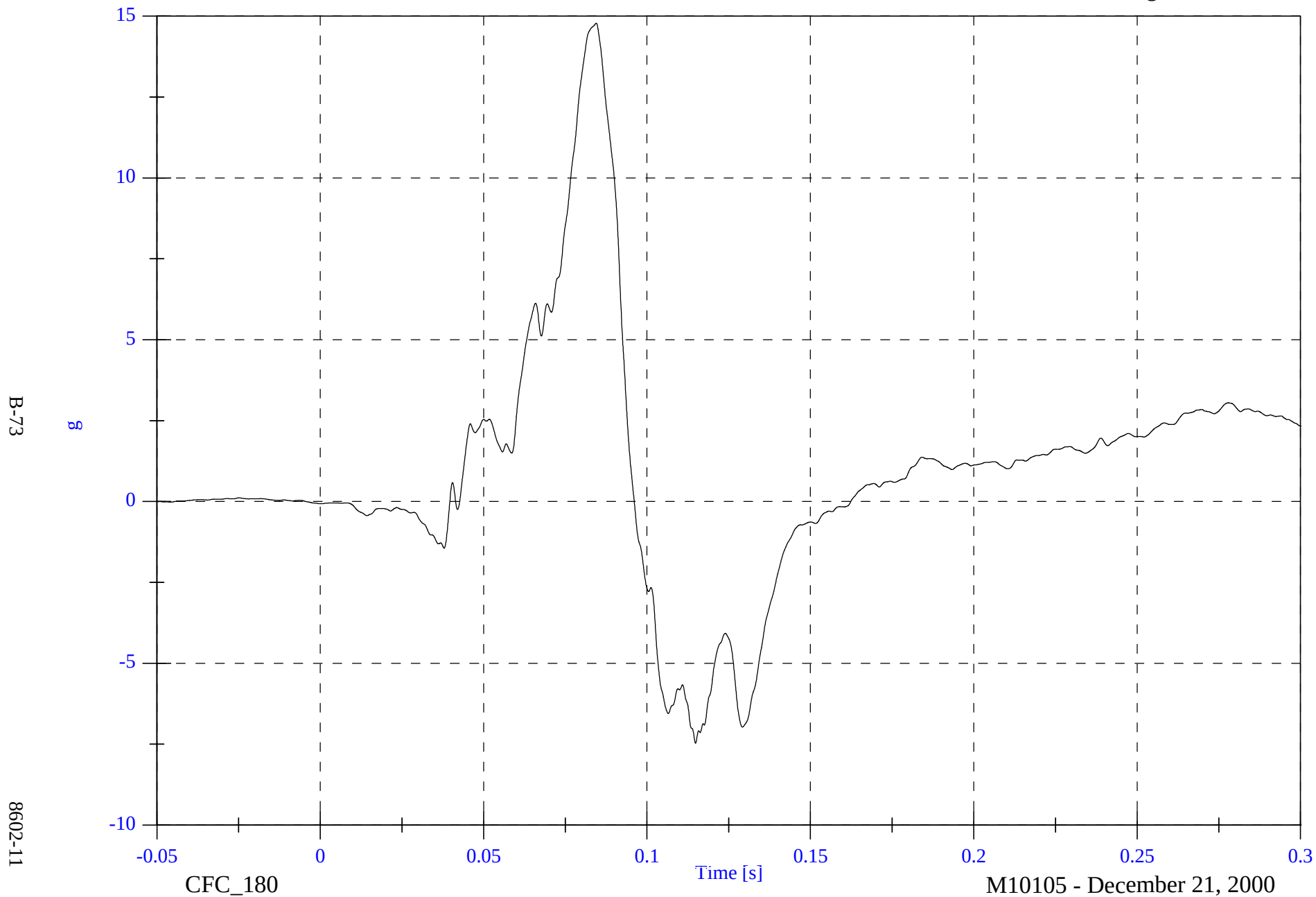


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Chest z

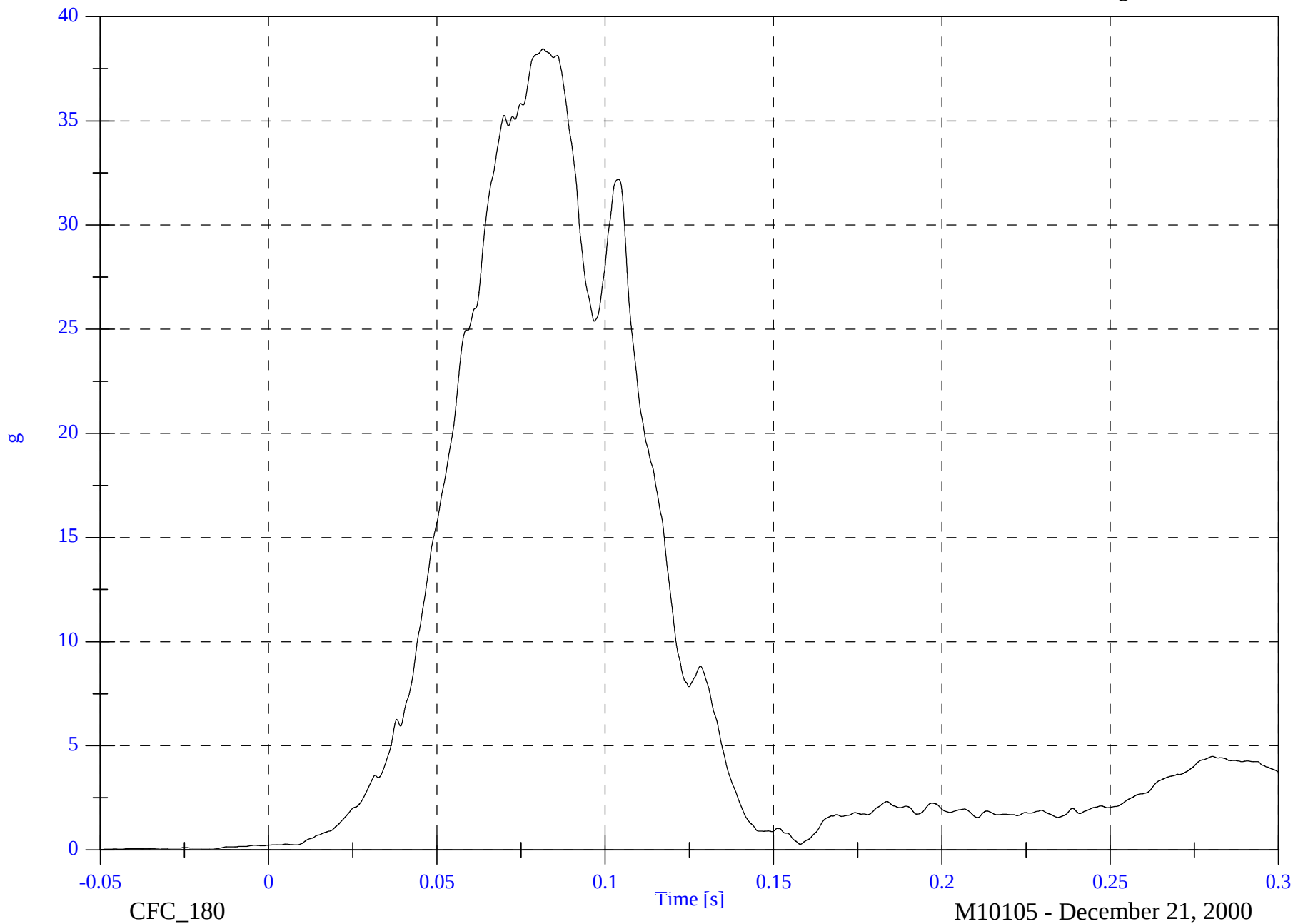
Max: 14.8 [g] at 0.084 [s]

Min: -7.5 [g] at 0.115 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe
P2 Chest Resultant

Max: 38.5 [g] at 0.082 [s]
Min: 0.0 [g] at -0.050 [s]



B-74

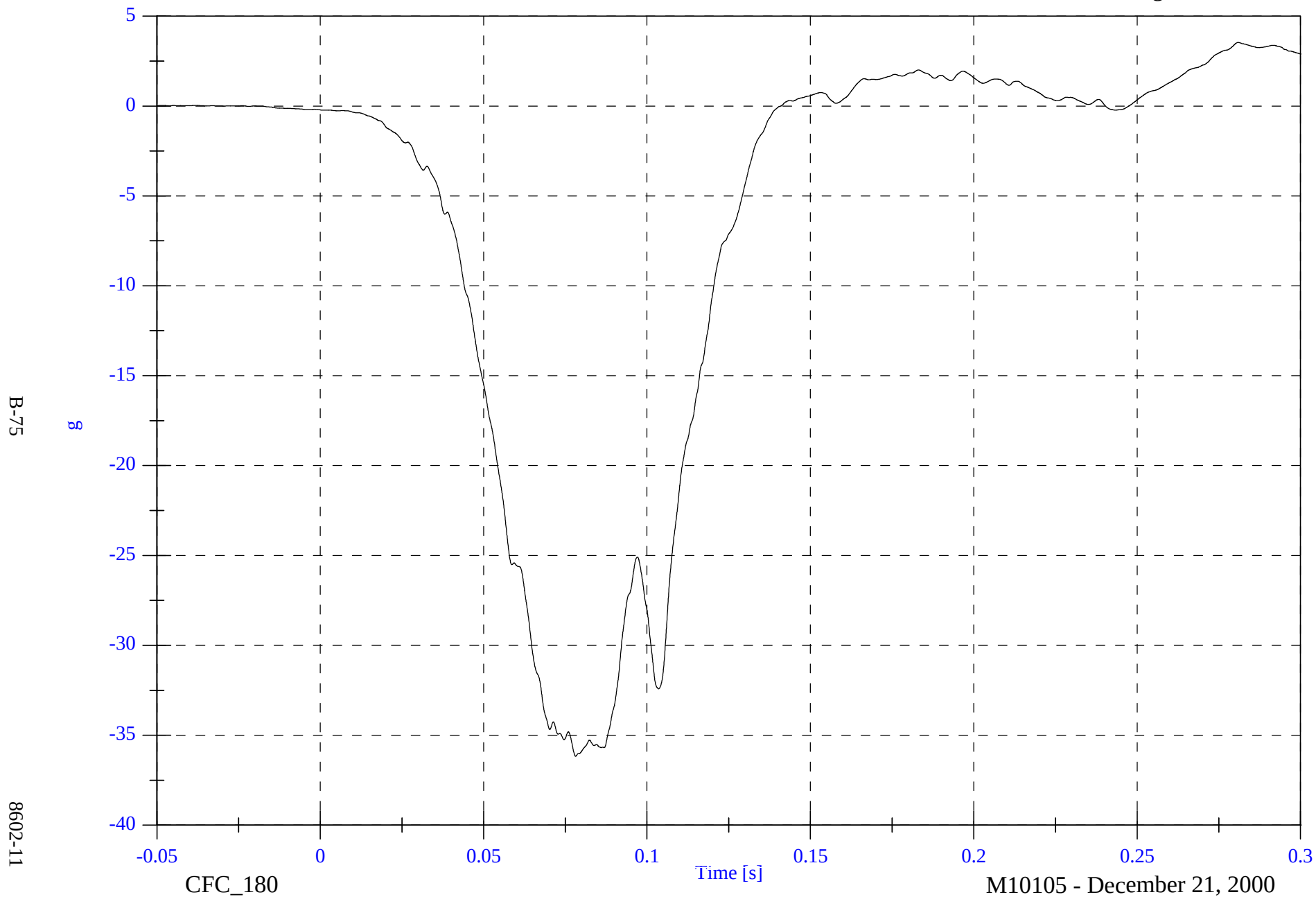
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Chest Red x

Max: 3.5 [g] at 0.281 [s]

Min: -36.2 [g] at 0.078 [s]

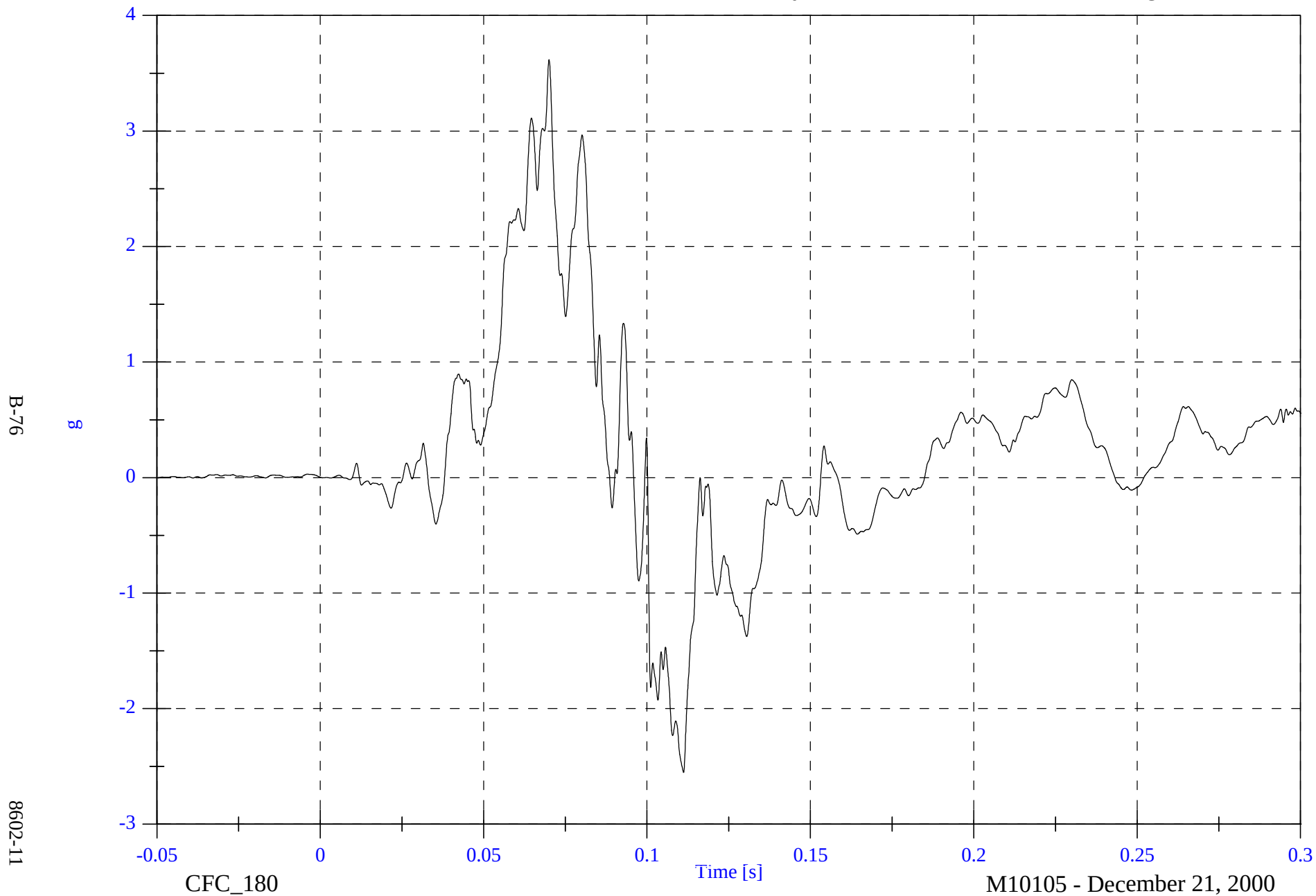


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Chest Red y

Max: 3.6 [g] at 0.070 [s]

Min: -2.6 [g] at 0.111 [s]

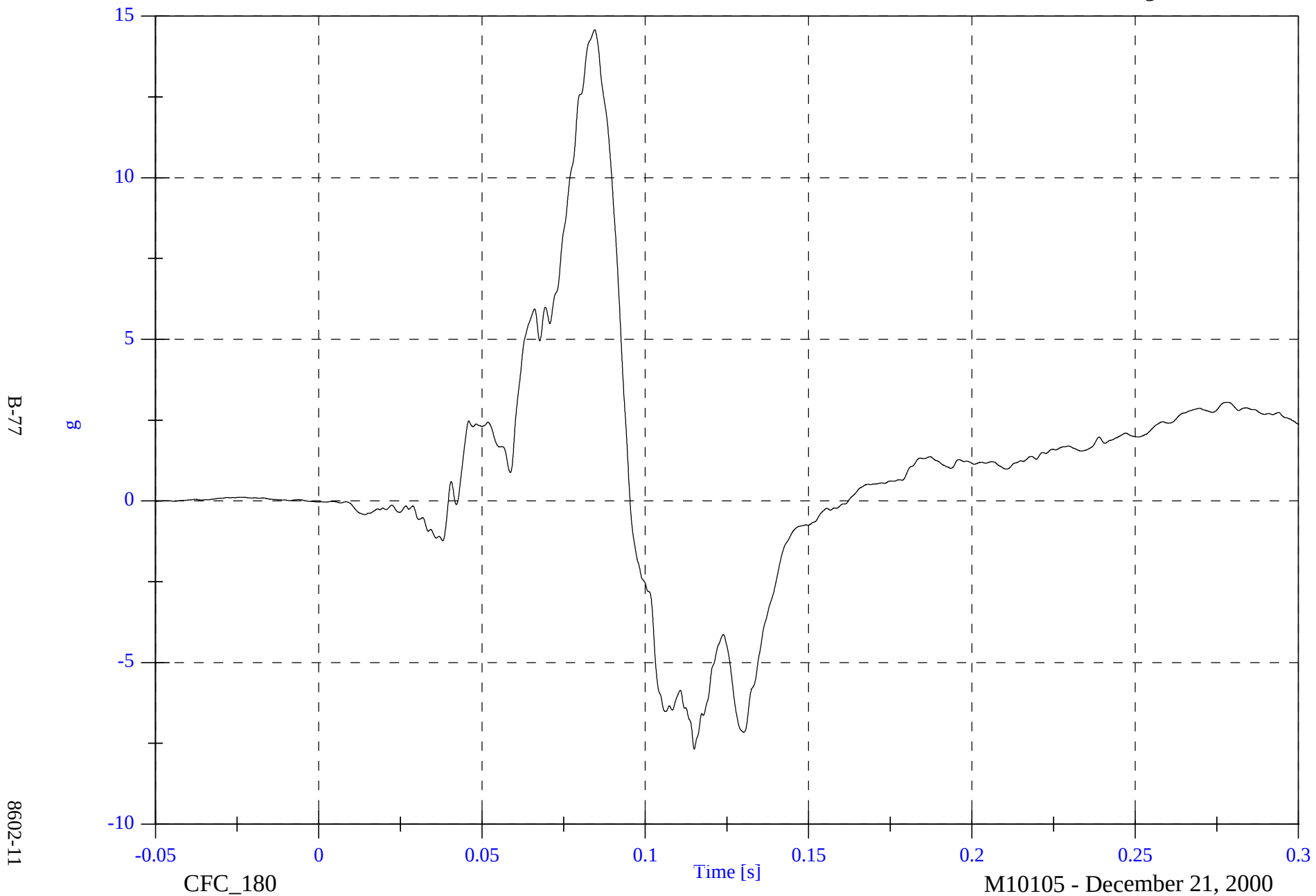


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Chest Red z

Max: 14.6 [g] at 0.085 [s]

Min: -7.7 [g] at 0.115 [s]

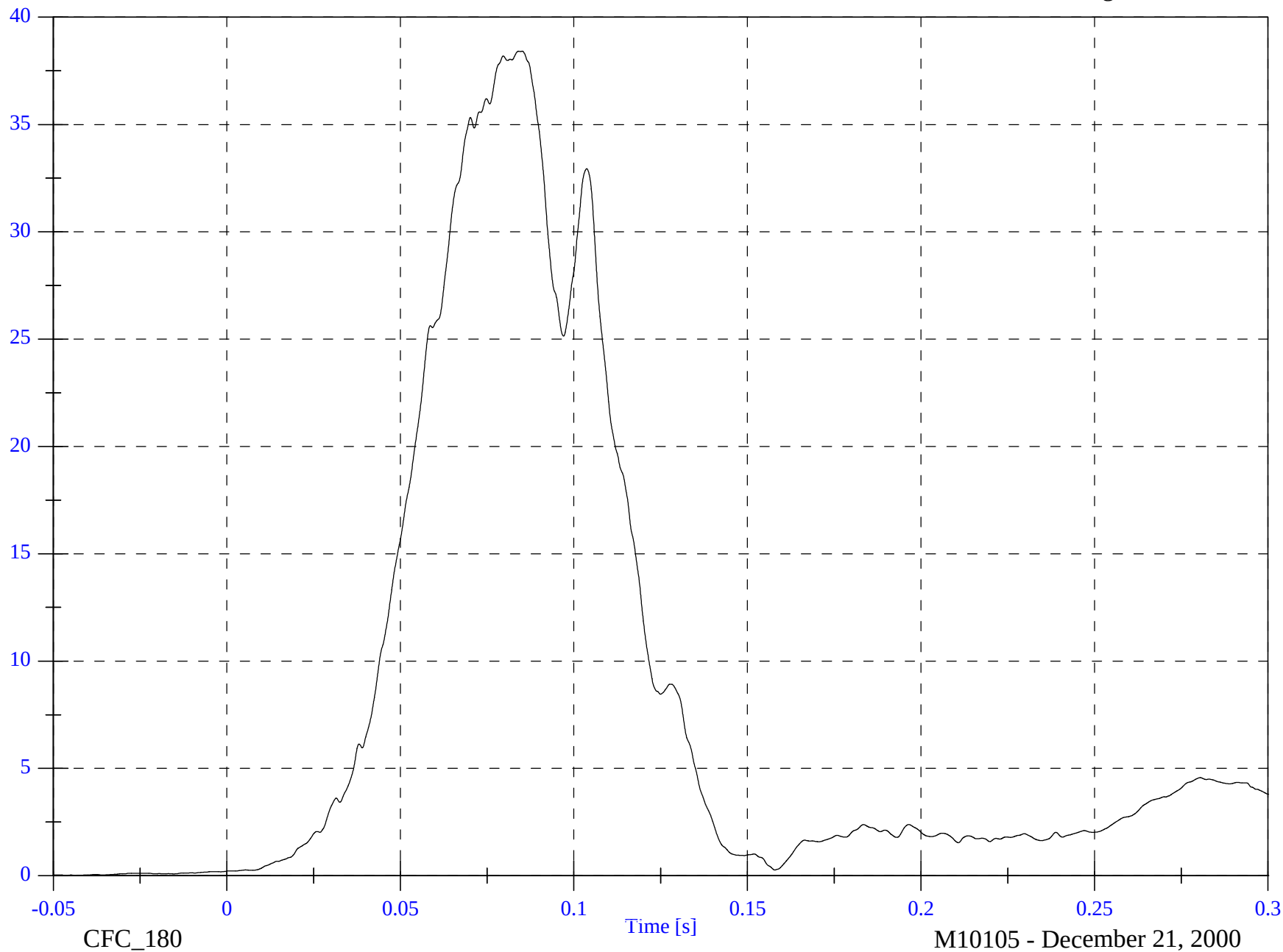


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Chest Red Resultant

Max: 38.4 [g] at 0.085 [s]

Min: 0.0 [g] at -0.046 [s]



B-78

8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

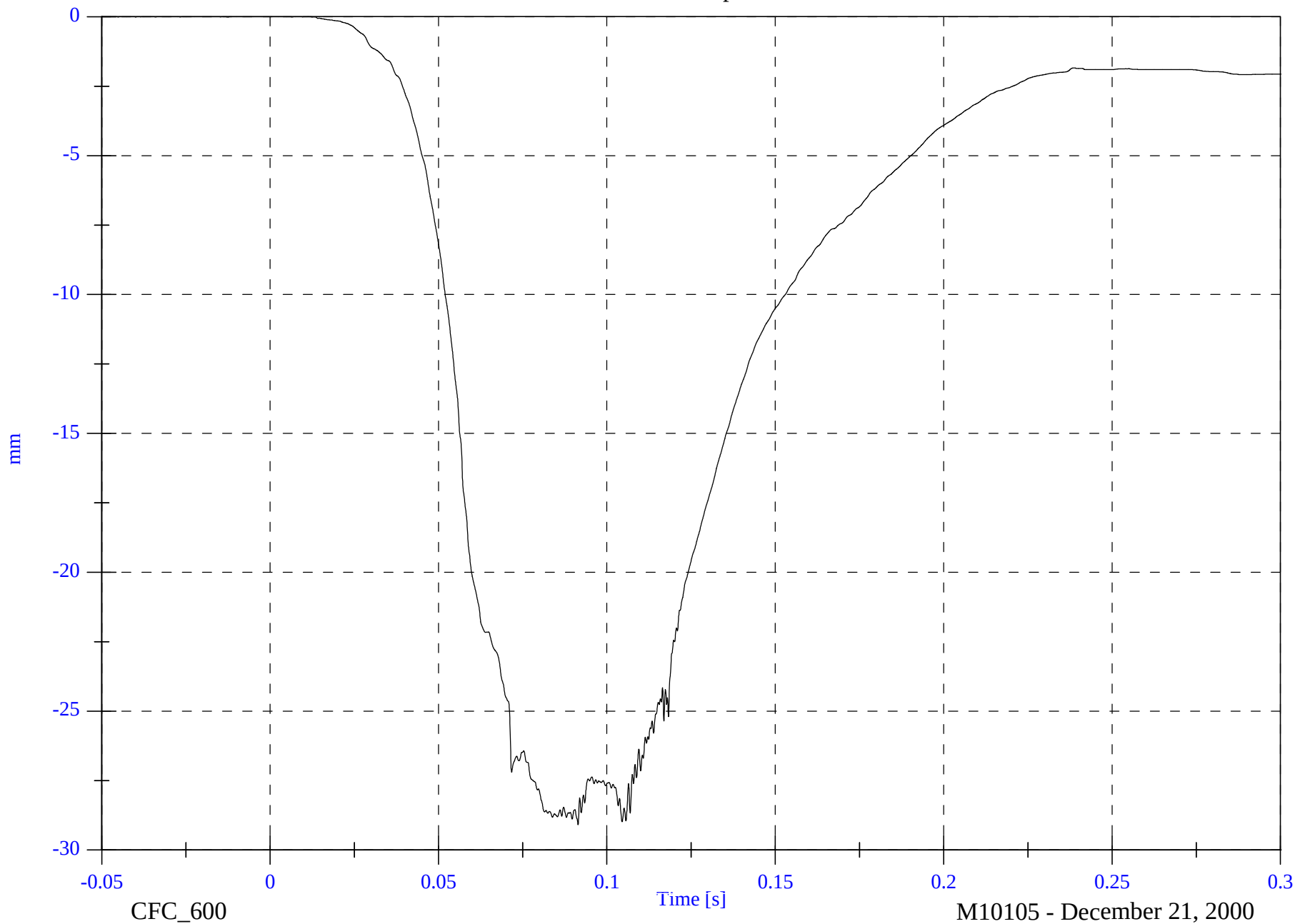
P2 Chest Compression

Max: 0.0 [mm] at 0.011 [s]

Min: -29.1 [mm] at 0.091 [s]

B-79

8602-11

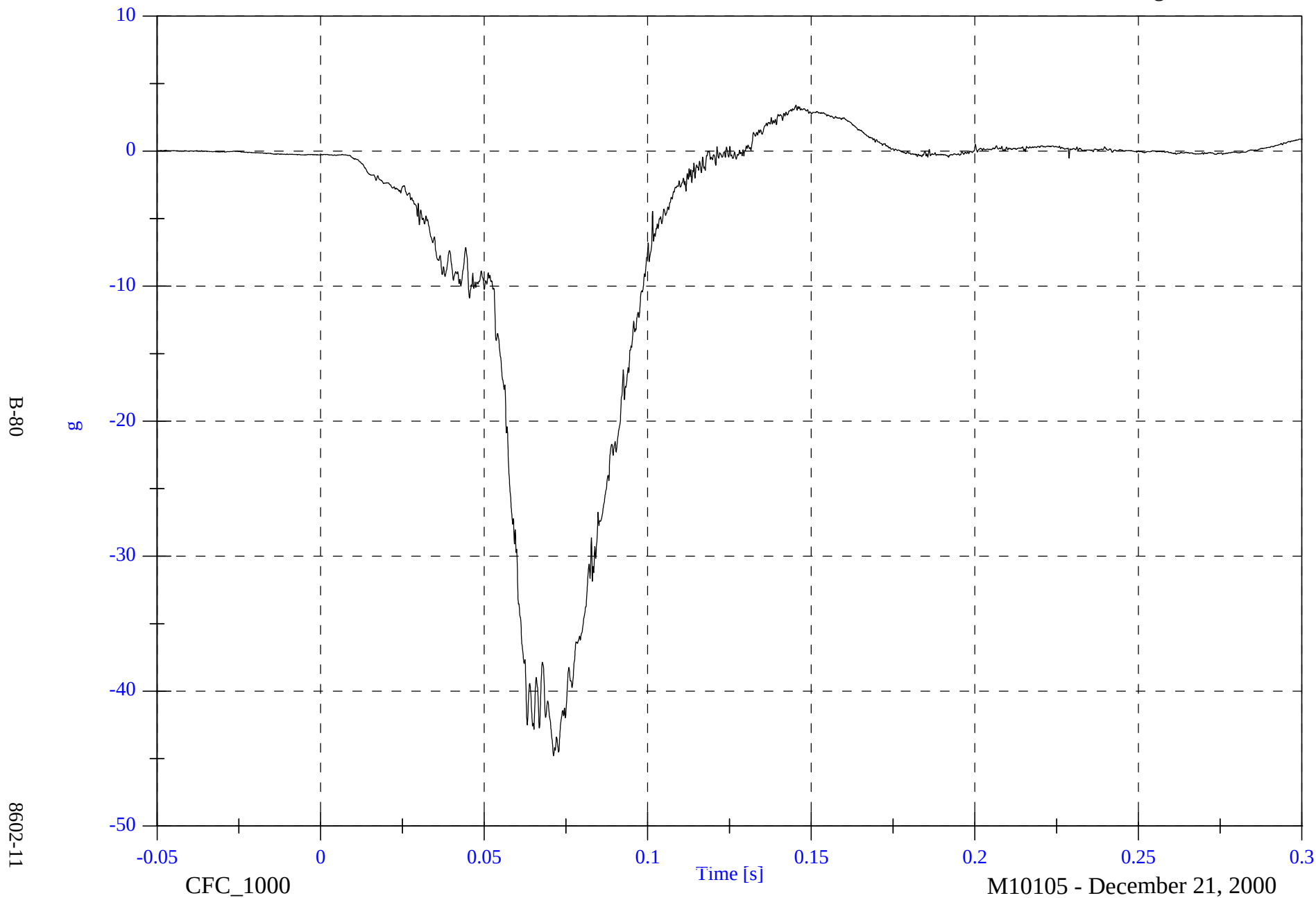


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Pelvic x

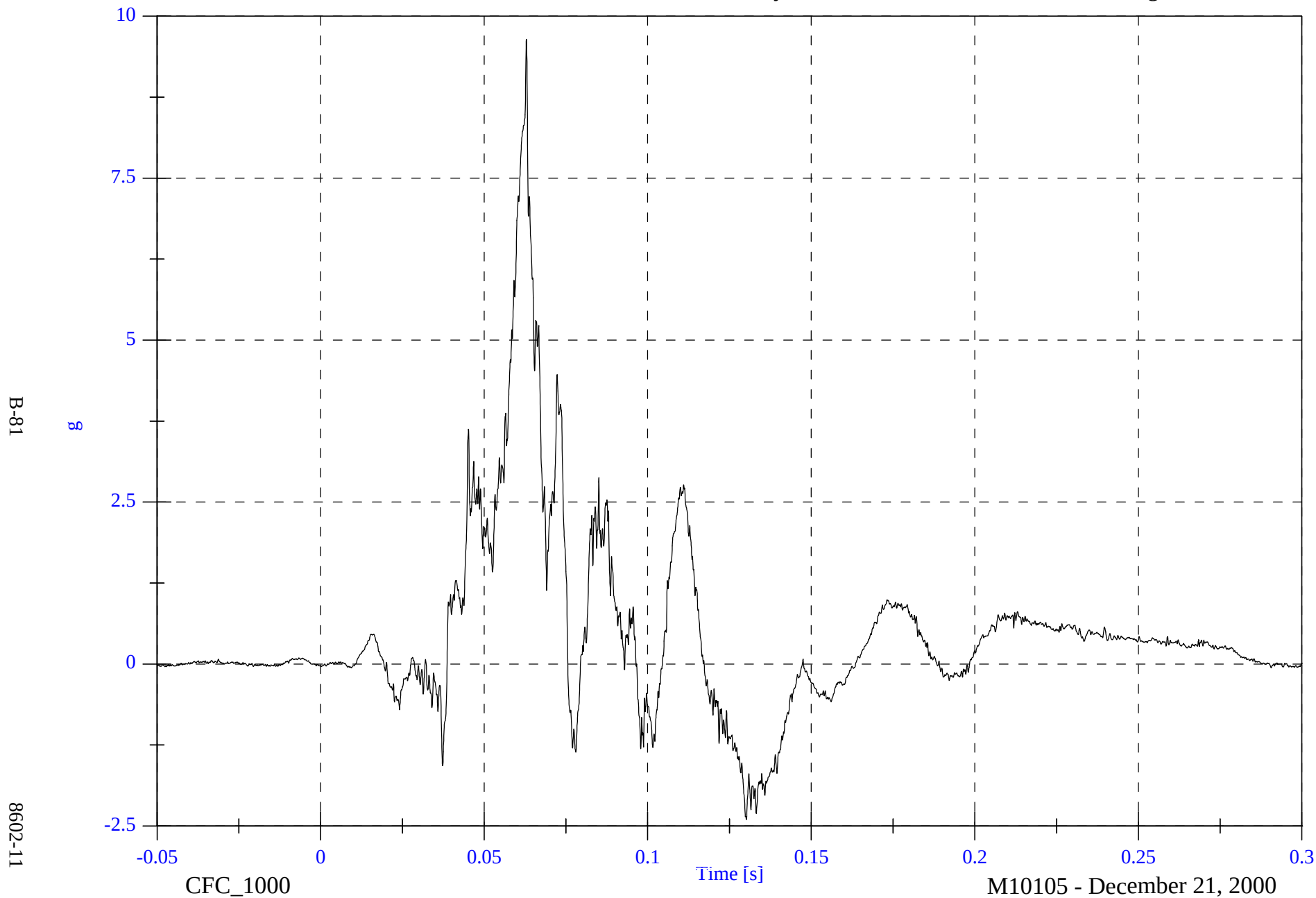
Max: 3.4 [g] at 0.145 [s]

Min: -44.8 [g] at 0.071 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe
P2 Pelvic y

Max: 9.6 [g] at 0.063 [s]
Min: -2.4 [g] at 0.130 [s]

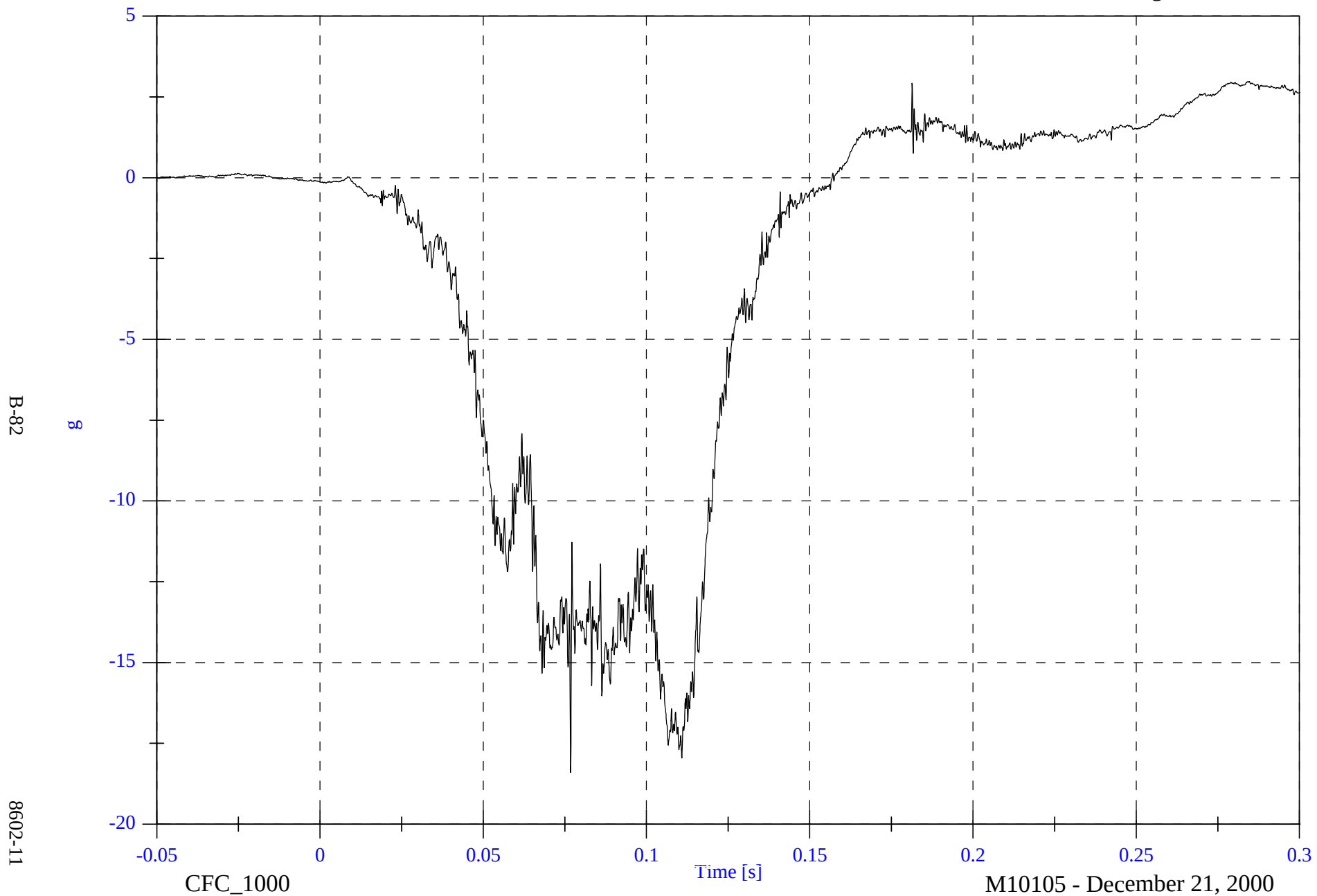


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Pelvic z

Max: 3.0 [g] at 0.285 [s]

Min: -18.4 [g] at 0.077 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Pelvic Resultant

Max: 47.2 [g] at 0.071 [s]

Min: 0.0 [g] at -0.034 [s]



B-83

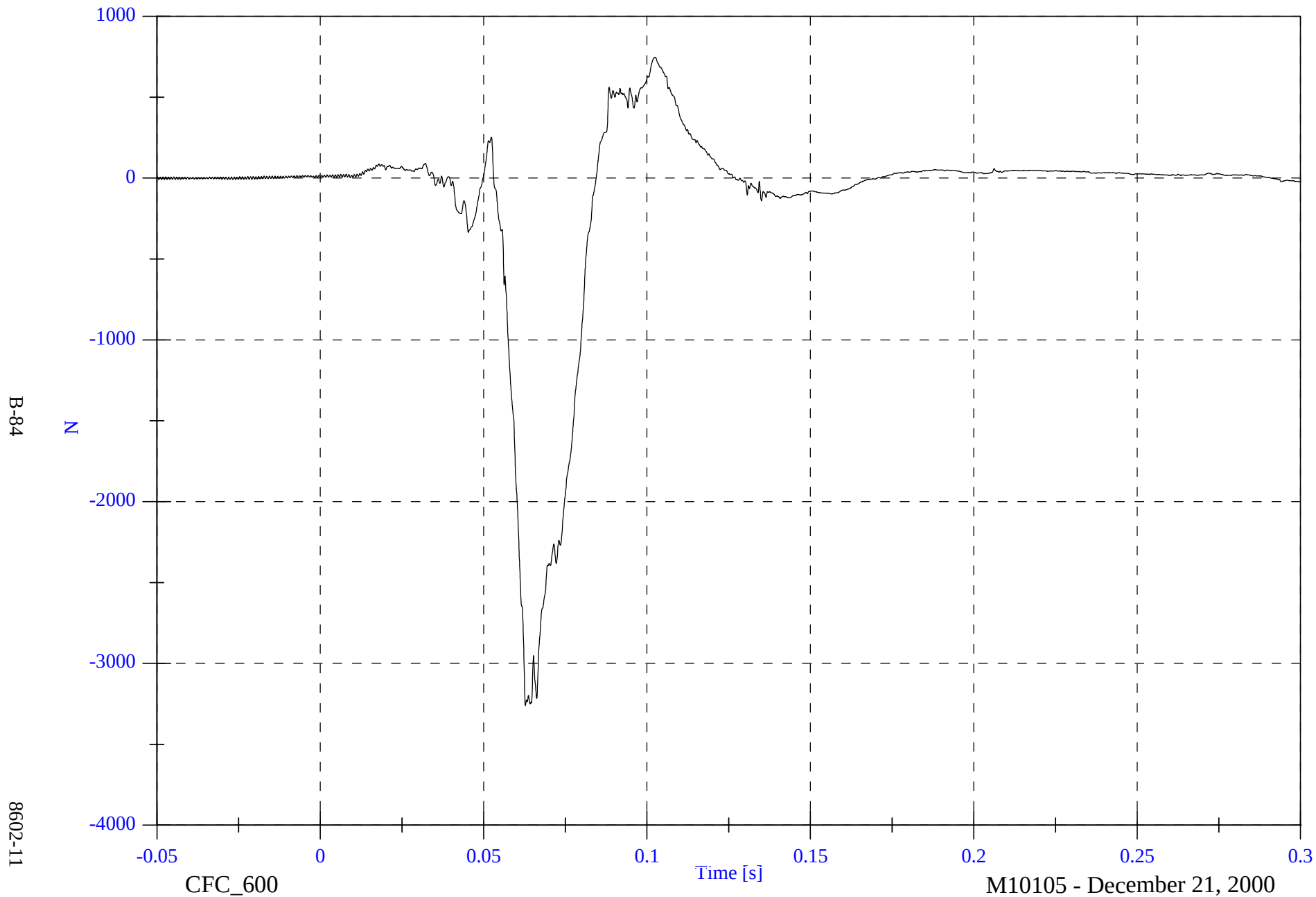
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Femur

Max: 745.8 [N] at 0.102 [s]

Min: -3261.0 [N] at 0.063 [s]

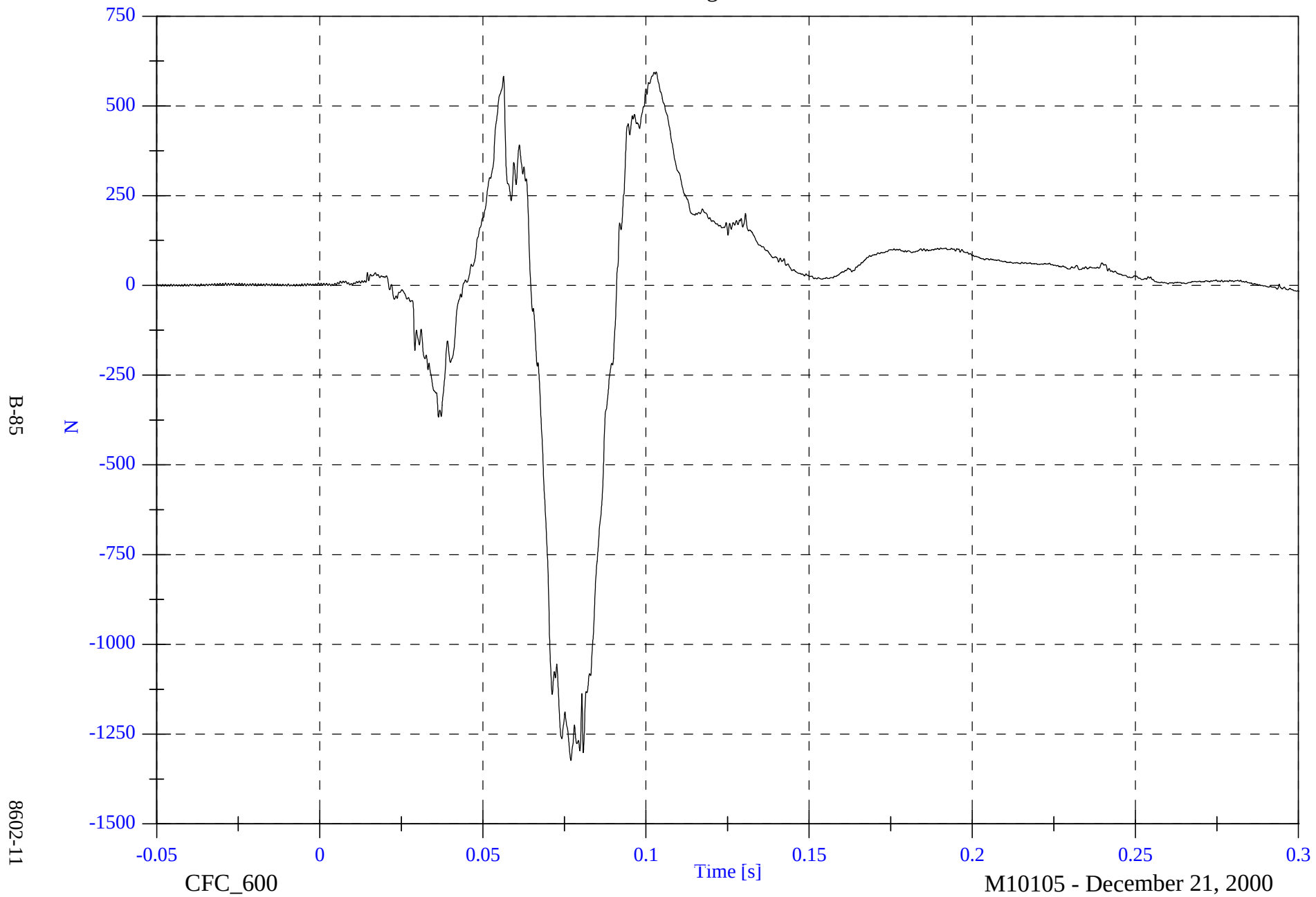


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Femur

Max: 594.6 [N] at 0.103 [s]

Min: -1323.4 [N] at 0.077 [s]

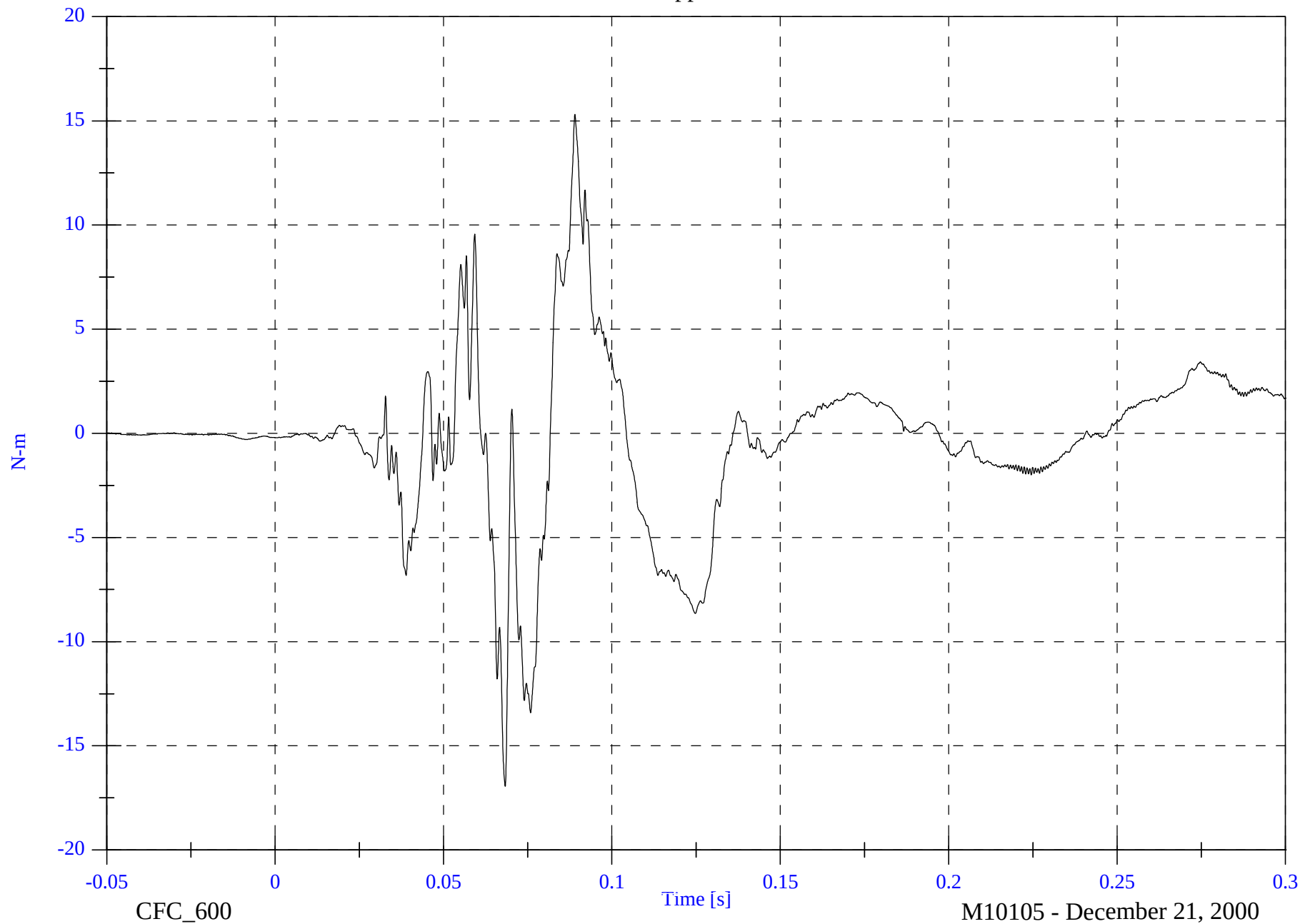


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Upper Tibia Mx

Max: 15.3 [N-m] at 0.089 [s]

Min: -16.9 [N-m] at 0.068 [s]



B-86

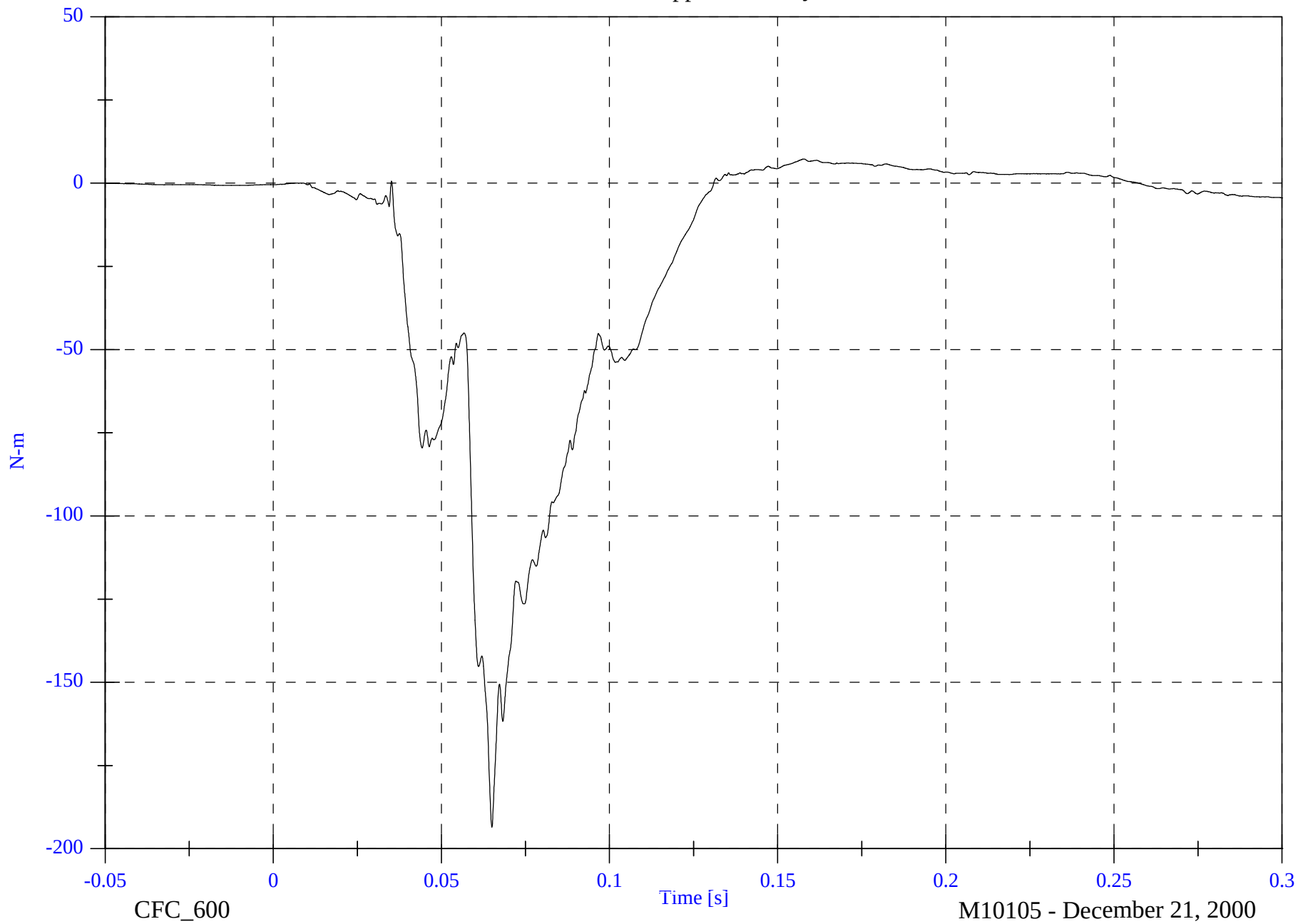
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Upper Tibia My

Max: 7.2 [N-m] at 0.158 [s]

Min: -193.5 [N-m] at 0.065 [s]



B-87

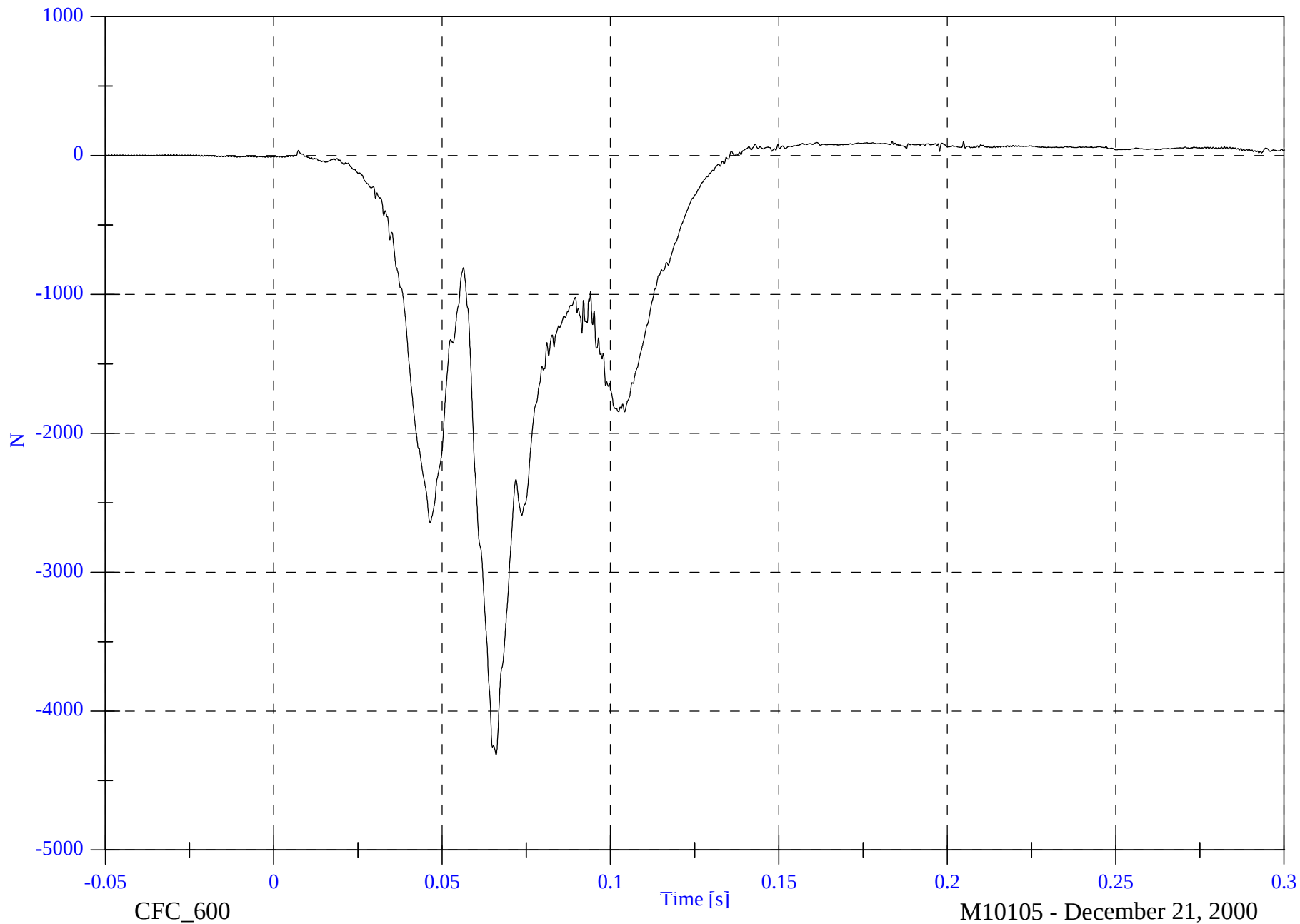
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Lower Tibia Fz

Max: 102.5 [N] at 0.184 [s]

Min: -4315.3 [N] at 0.066 [s]



B-88

8602-11

CFC_600

Time [s]

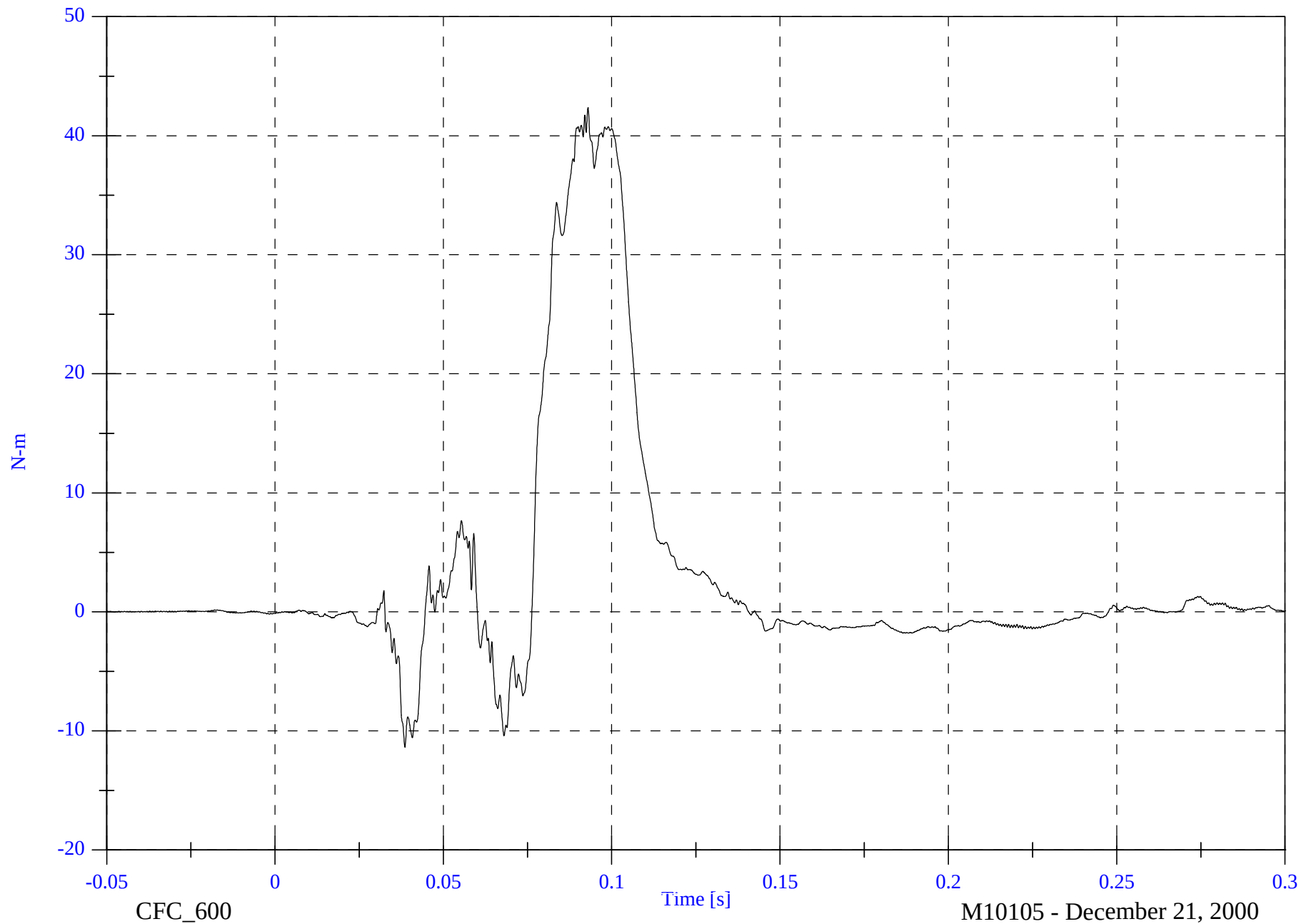
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Lower Tibia Mx

Max: 42.4 [N-m] at 0.093 [s]

Min: -11.4 [N-m] at 0.039 [s]



B-89

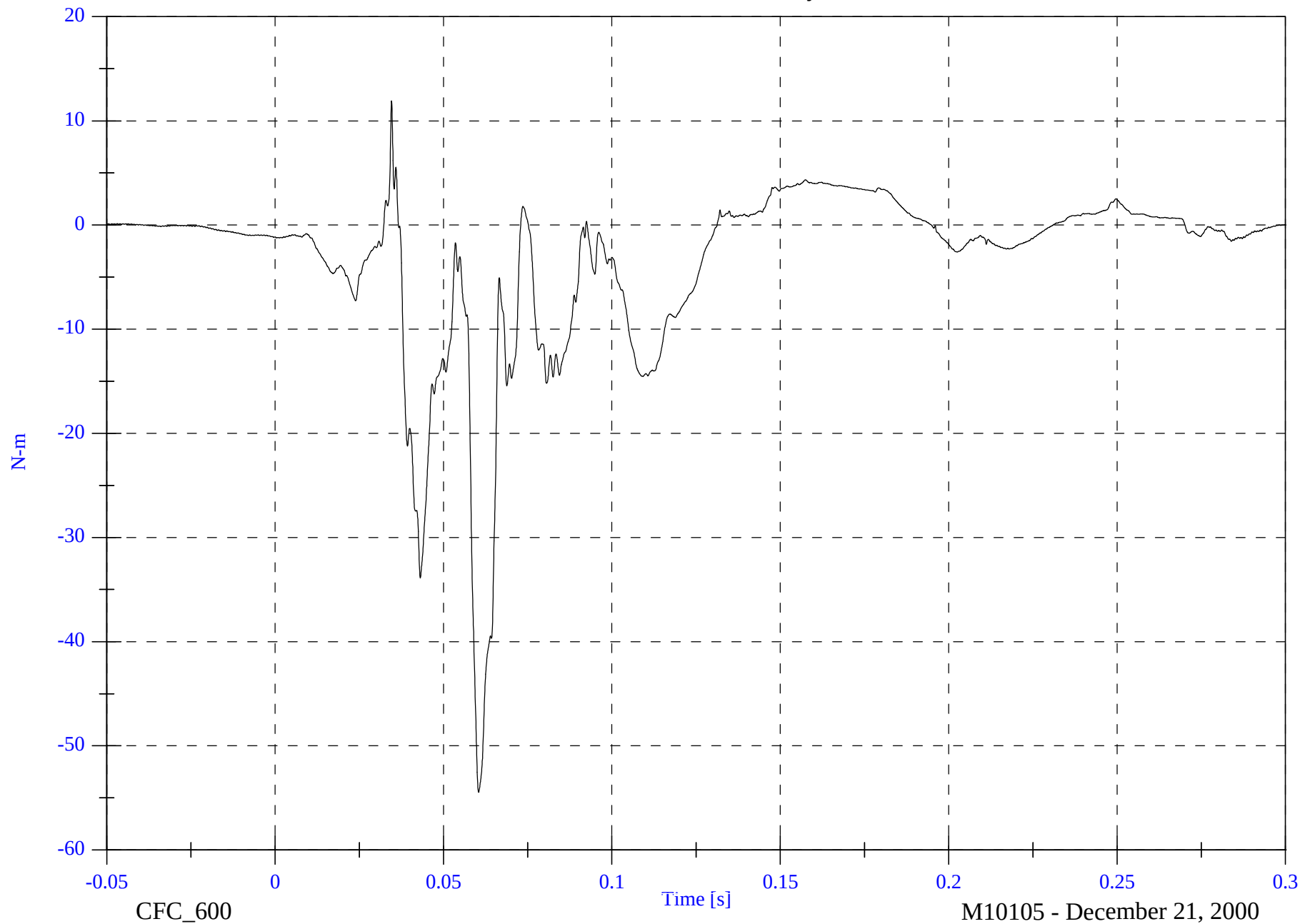
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Lower Tibia My

Max: 11.9 [N-m] at 0.035 [s]

Min: -54.5 [N-m] at 0.060 [s]



B-90

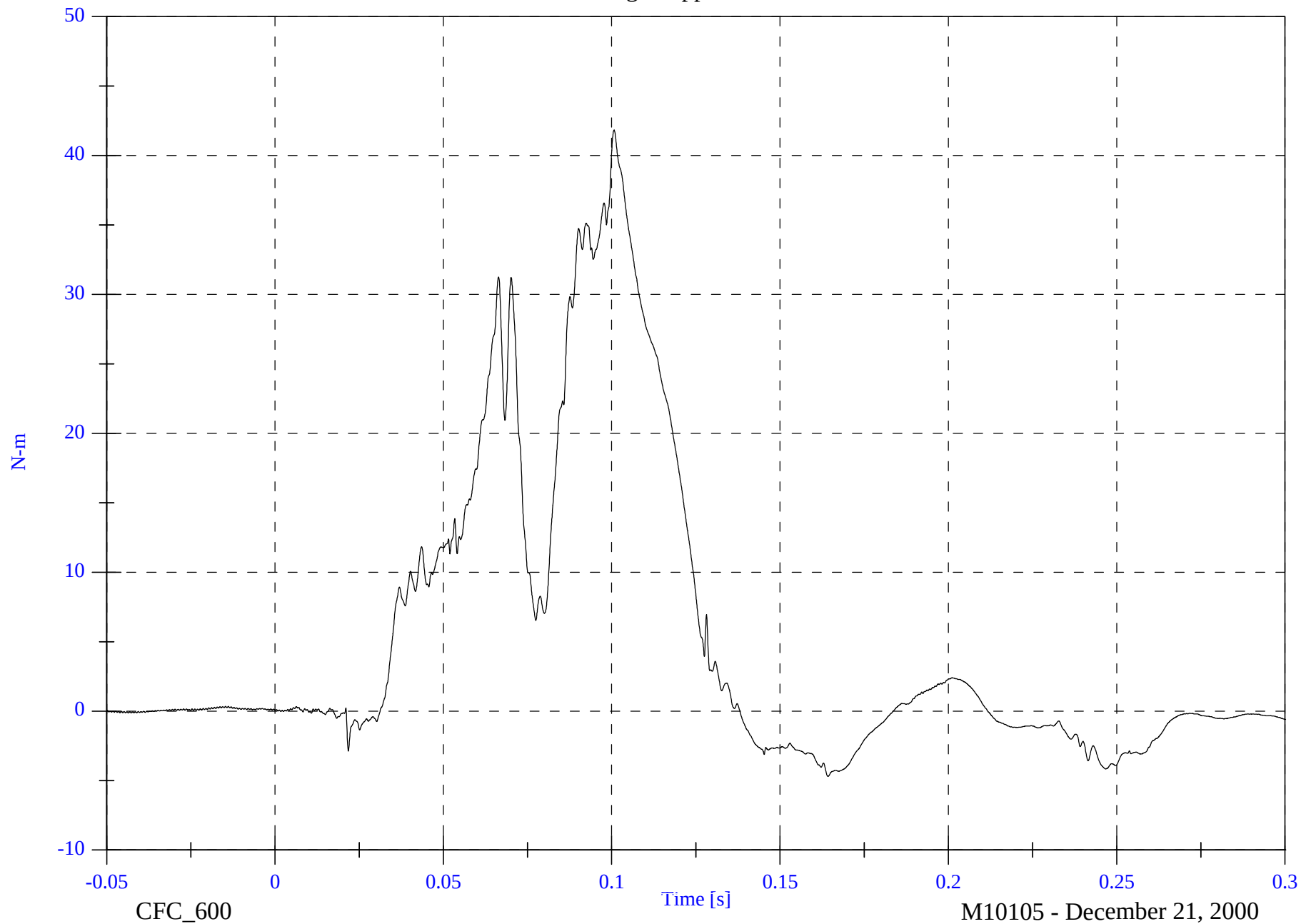
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Upper Tibia Mx

Max: 41.8 [N-m] at 0.101 [s]

Min: -4.7 [N-m] at 0.164 [s]



B-91

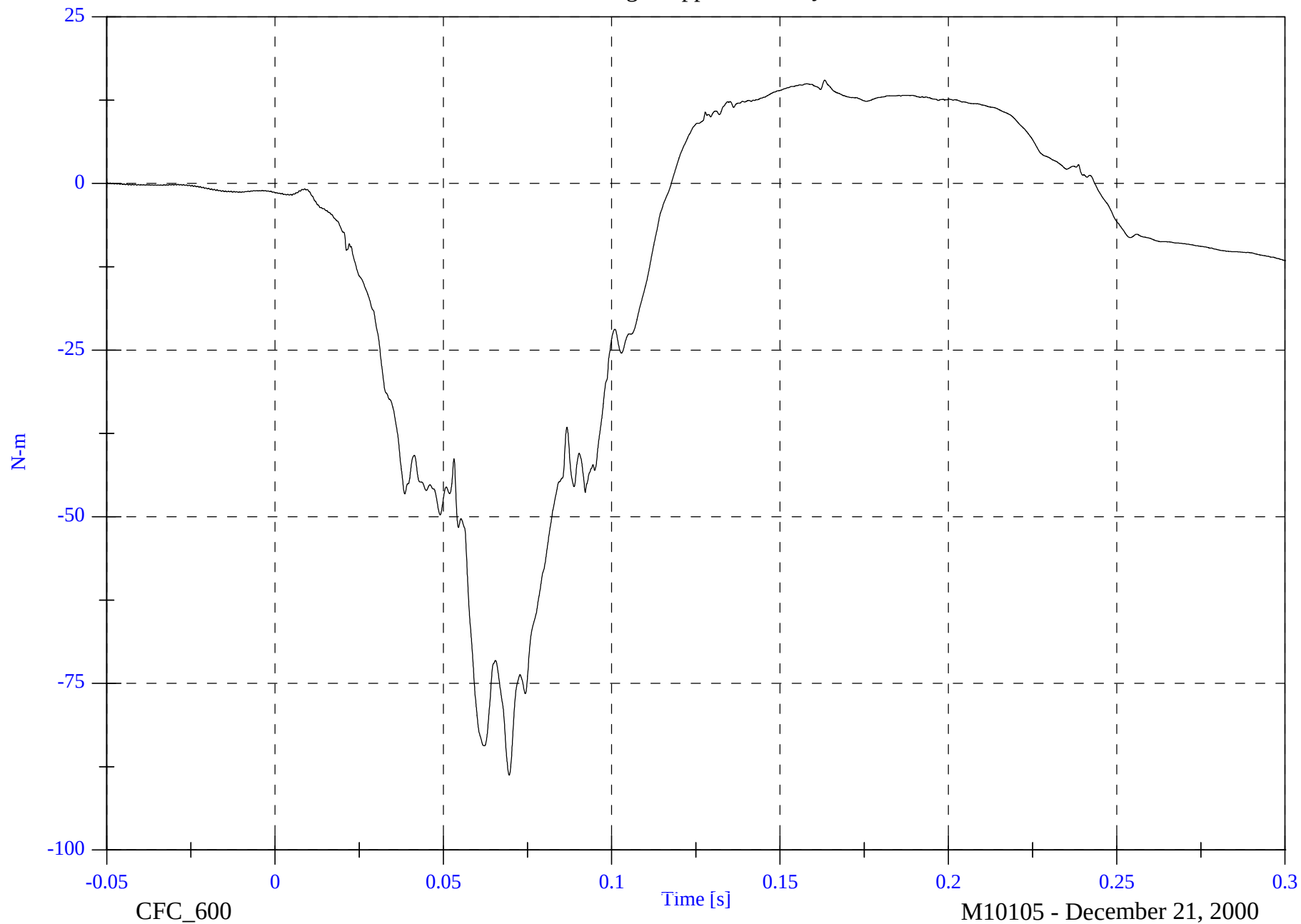
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Upper Tibia My

Max: 15.5 [N-m] at 0.163 [s]

Min: -88.8 [N-m] at 0.070 [s]



B-92

8602-11

CFC_600

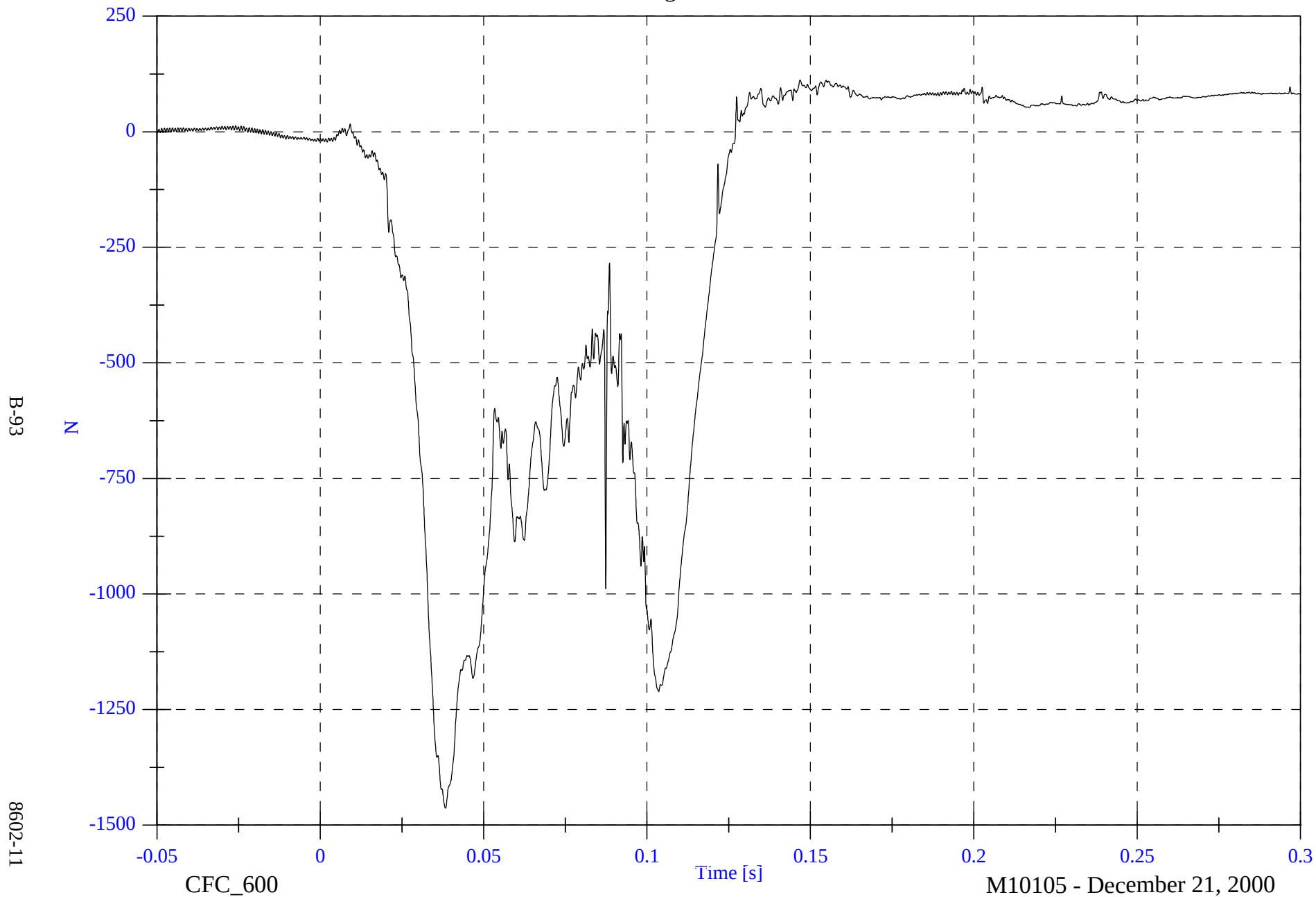
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Lower Tibia Fz

Max: 112.2 [N] at 0.147 [s]

Min: -1463.3 [N] at 0.038 [s]

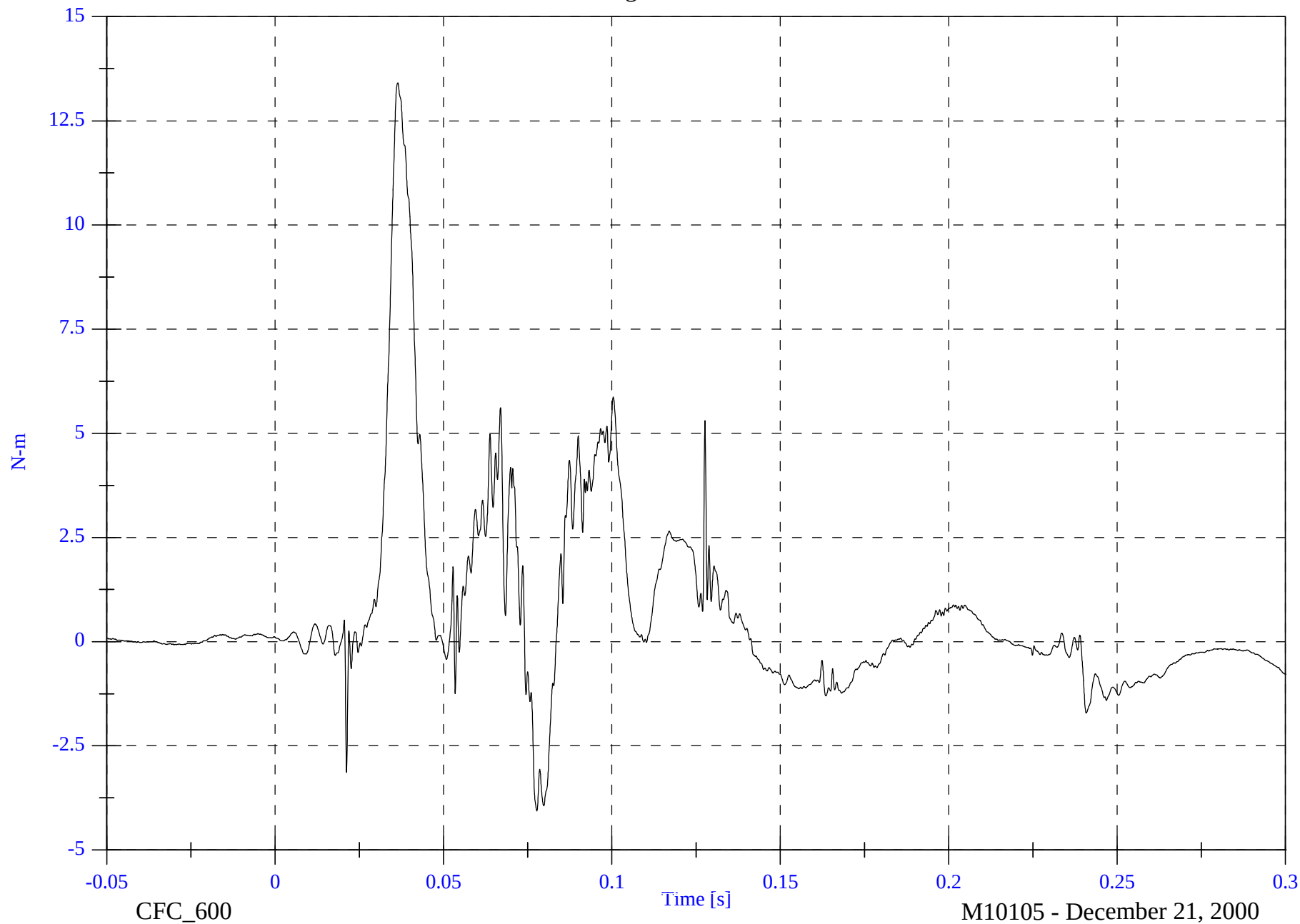


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Lower Tibia Mx

Max: 13.4 [N-m] at 0.036 [s]

Min: -4.1 [N-m] at 0.078 [s]



B-94

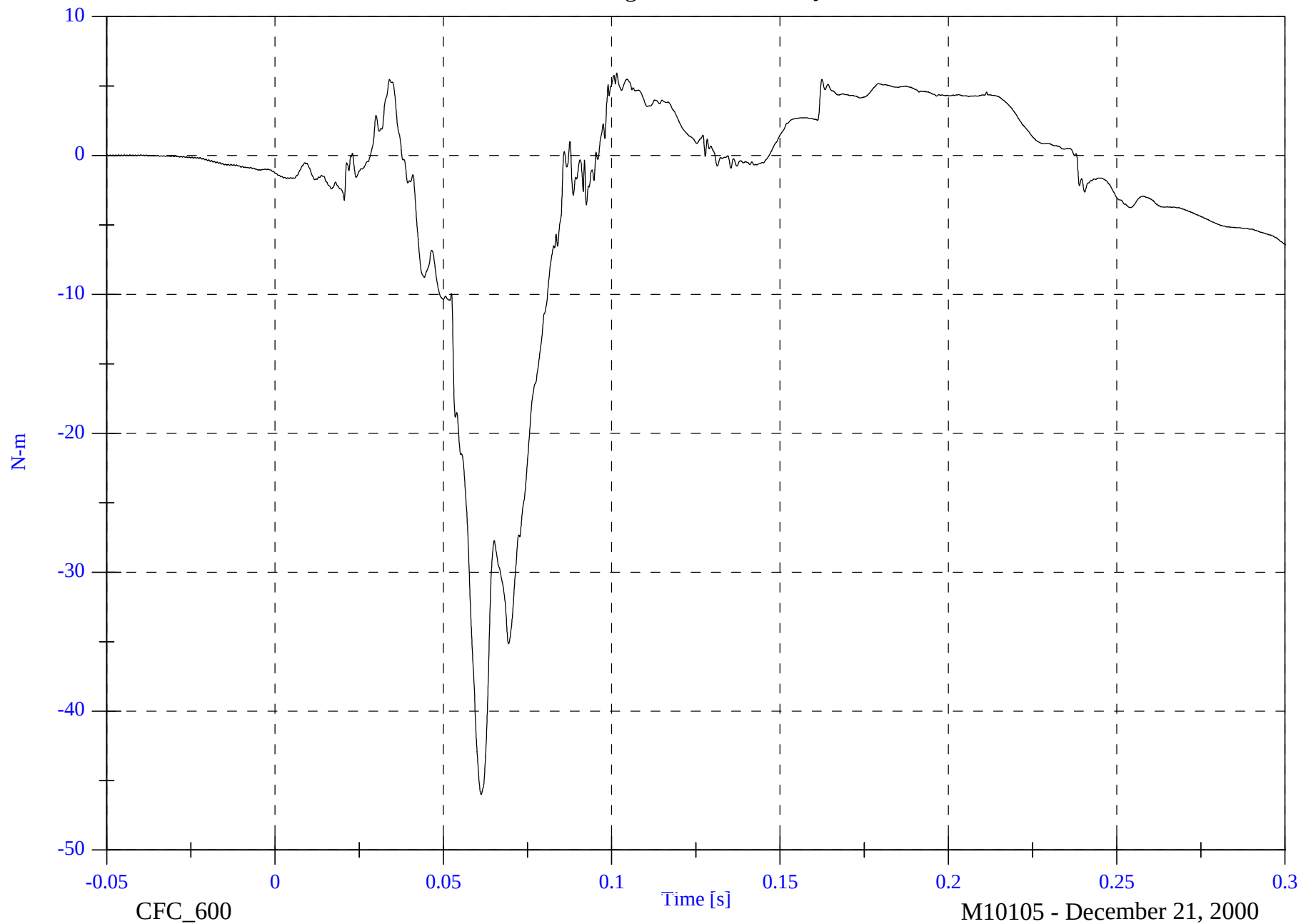
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Lower Tibia My

Max: 5.9 [N-m] at 0.102 [s]

Min: -46.0 [N-m] at 0.061 [s]



B-95

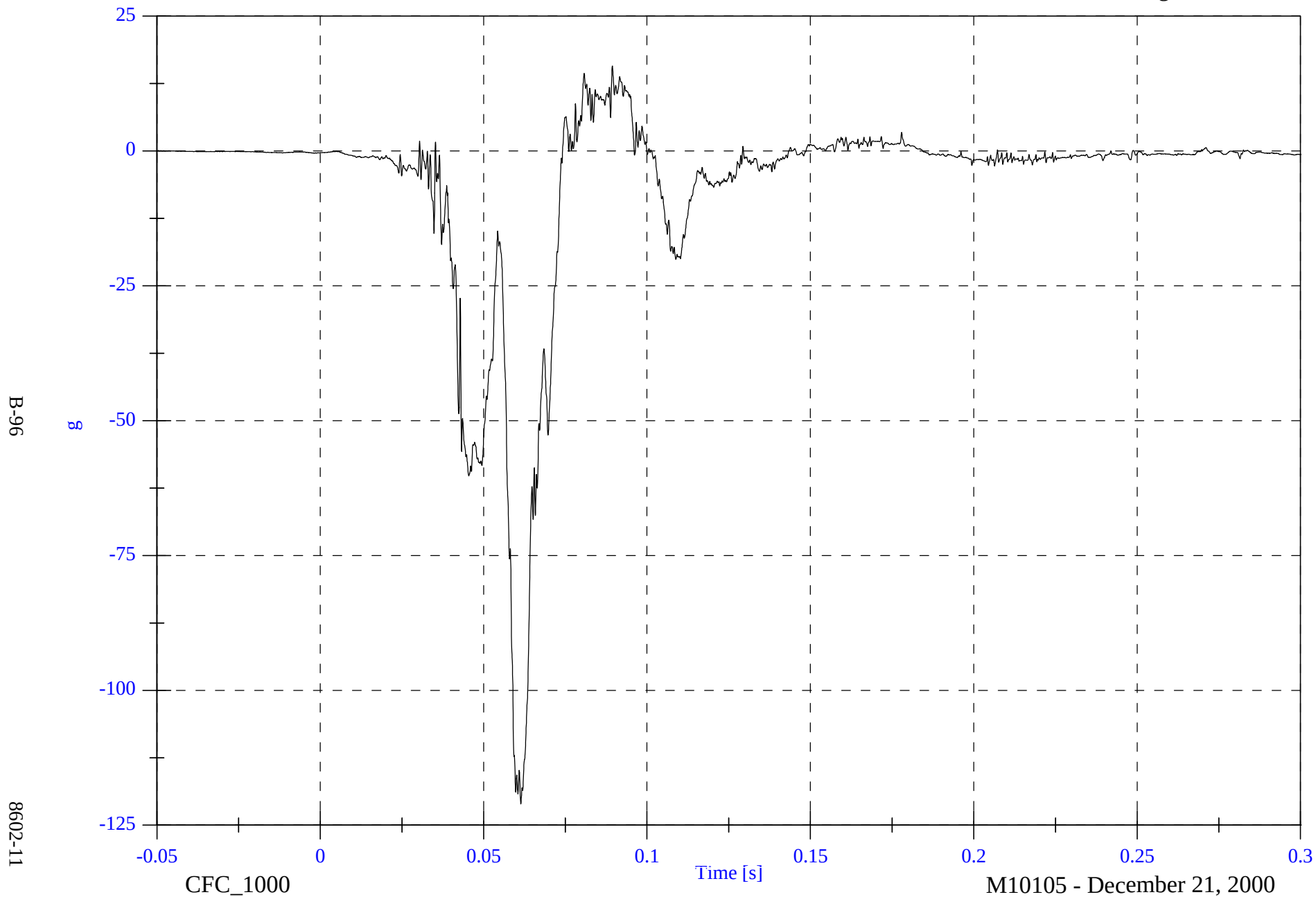
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Foot Aft x

Max: 15.8 [g] at 0.089 [s]

Min: -121.1 [g] at 0.061 [s]

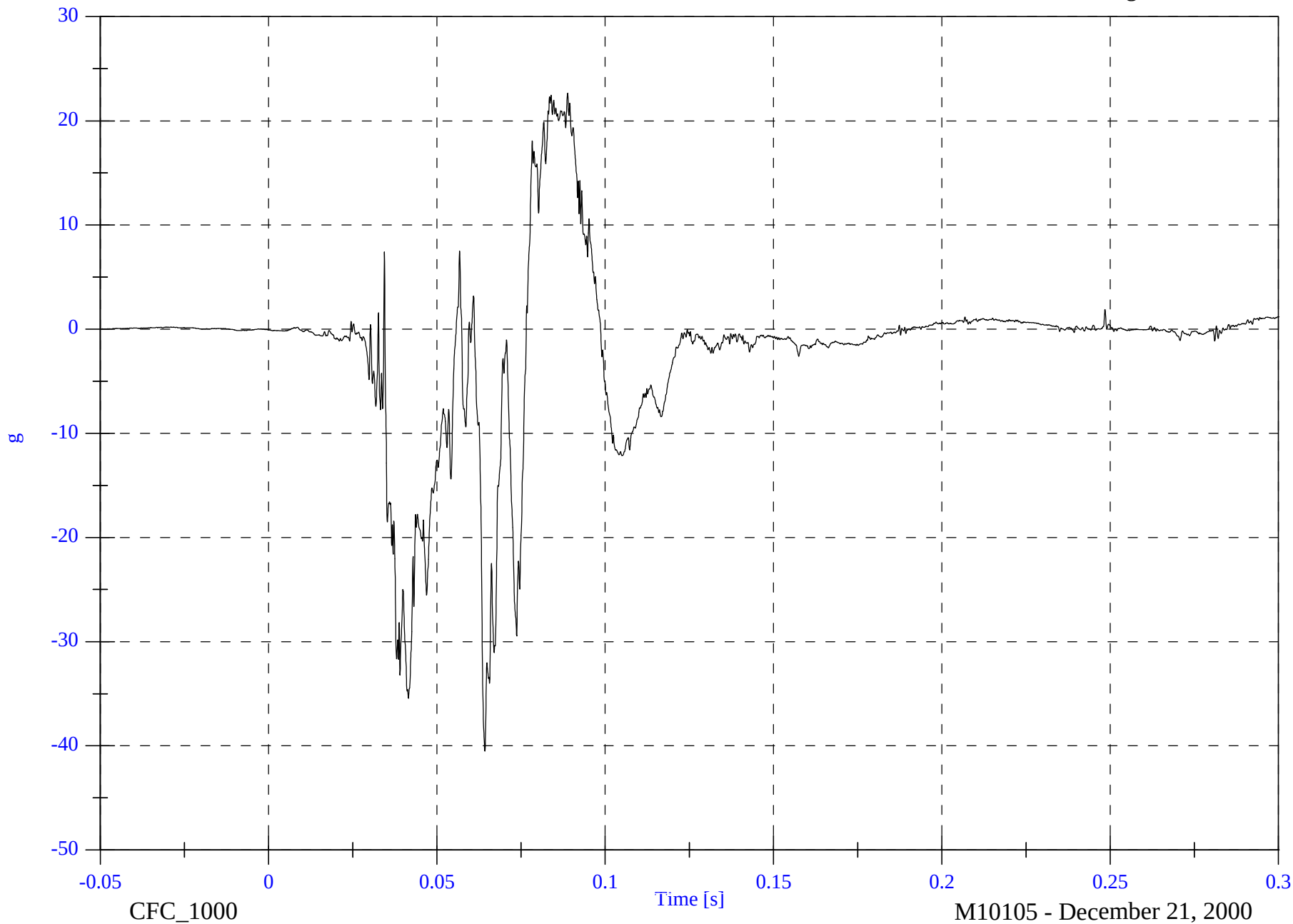


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Foot Aft z

Max: 22.7 [g] at 0.089 [s]

Min: -40.5 [g] at 0.064 [s]



B-97

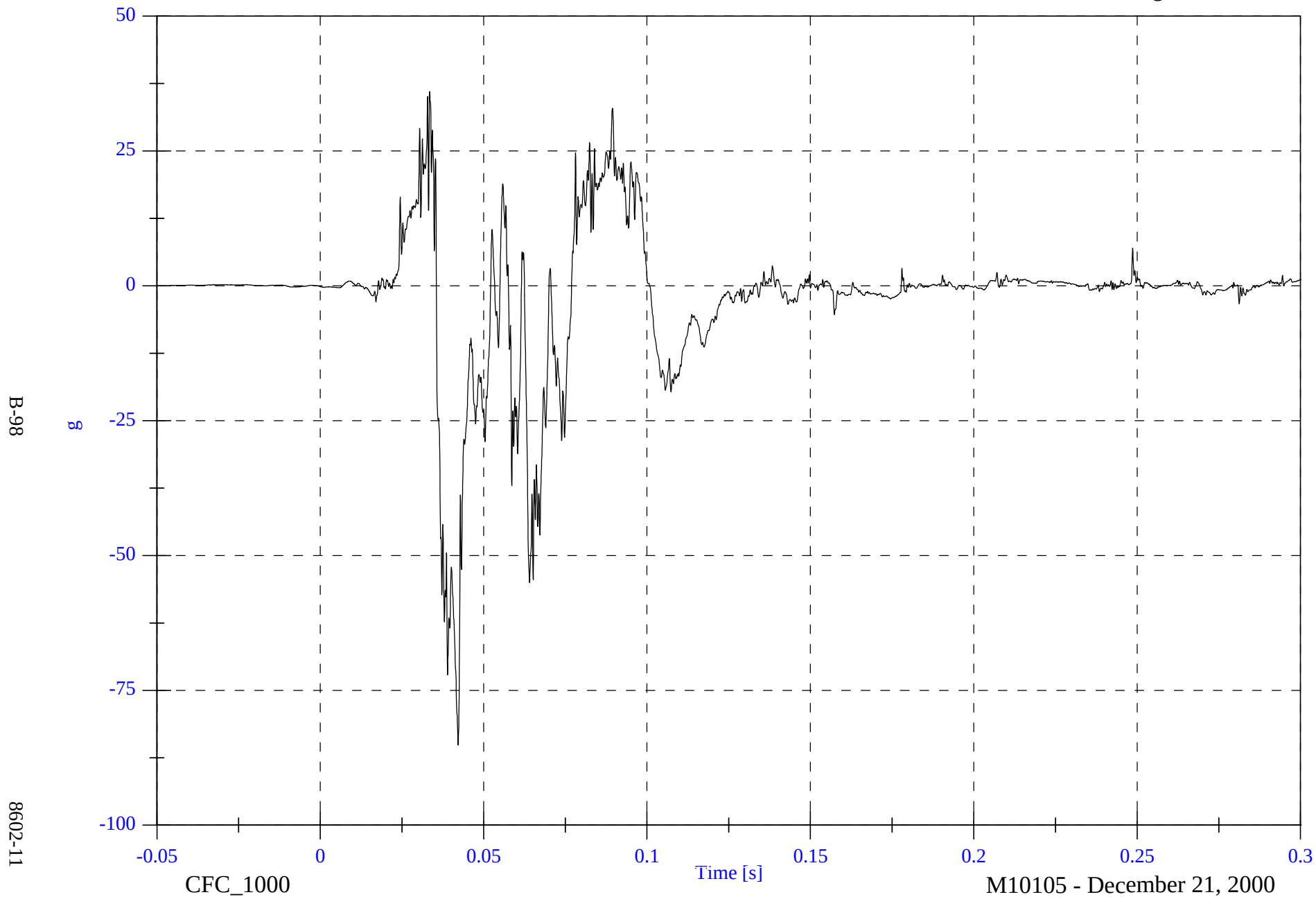
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Left Foot Fore z

Max: 36.0 [g] at 0.033 [s]

Min: -85.2 [g] at 0.042 [s]

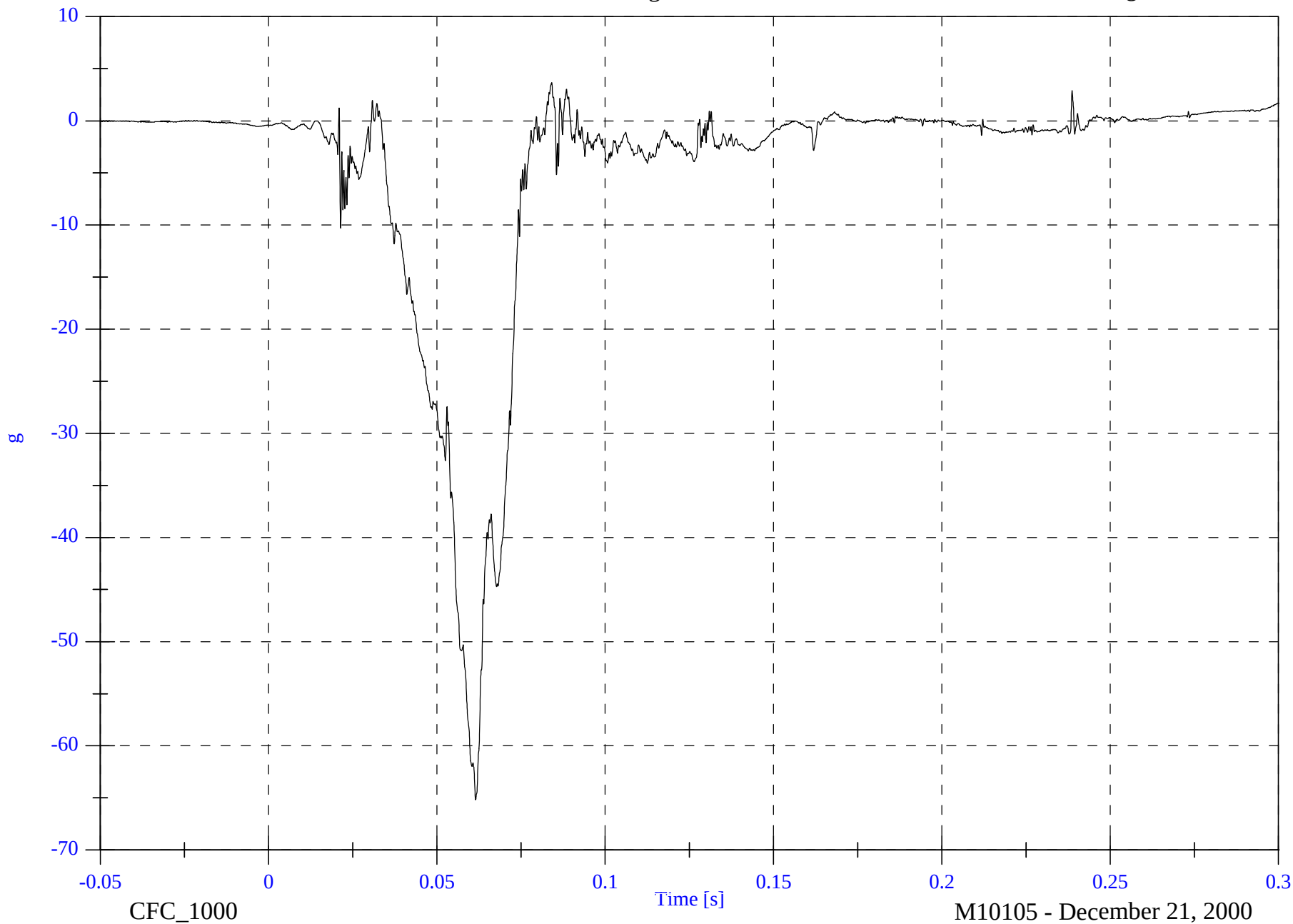


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Foot Aft x

Max: 3.7 [g] at 0.084 [s]

Min: -65.2 [g] at 0.062 [s]



B-99

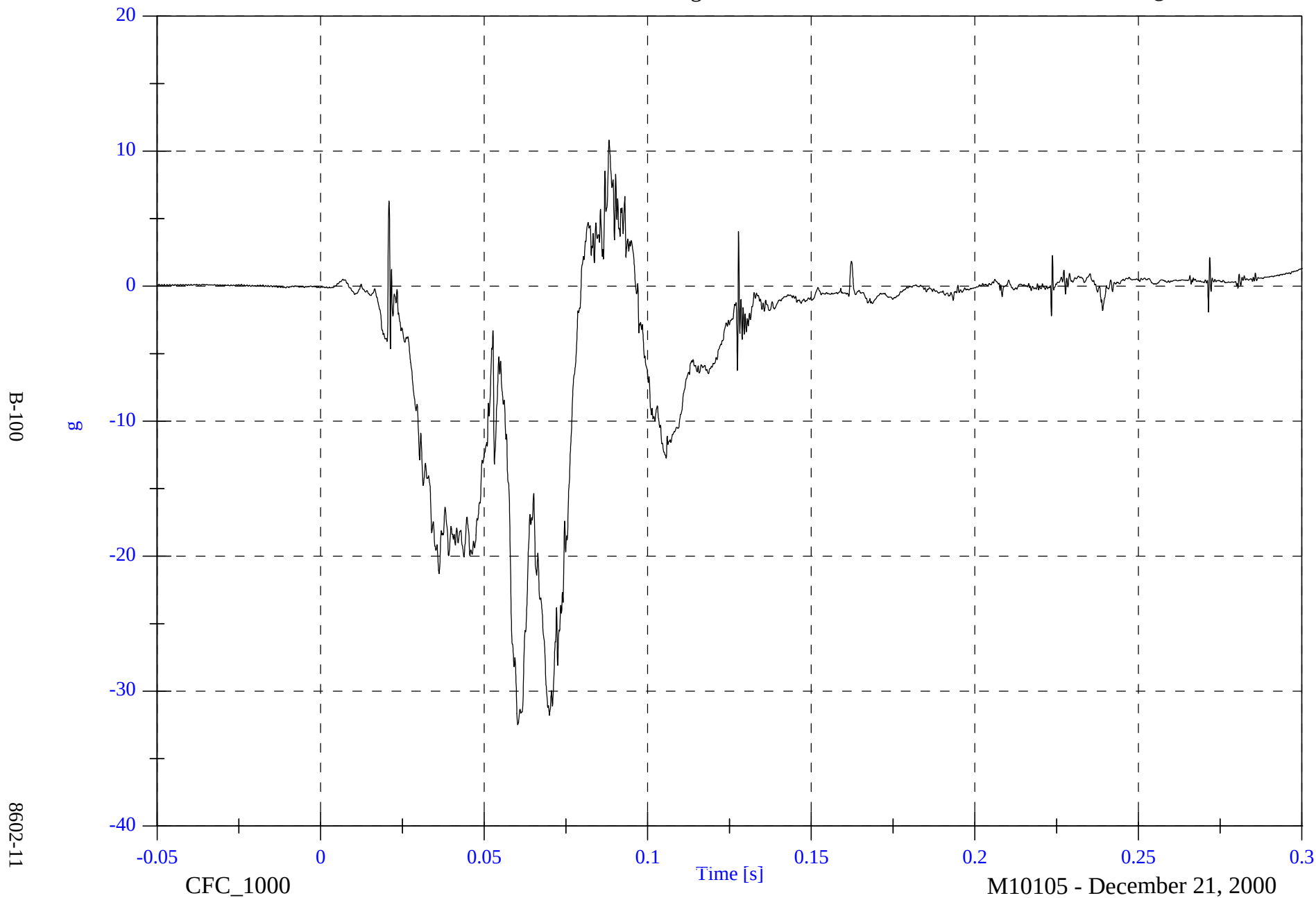
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Foot Aft z

Max: 10.8 [g] at 0.088 [s]

Min: -32.5 [g] at 0.060 [s]

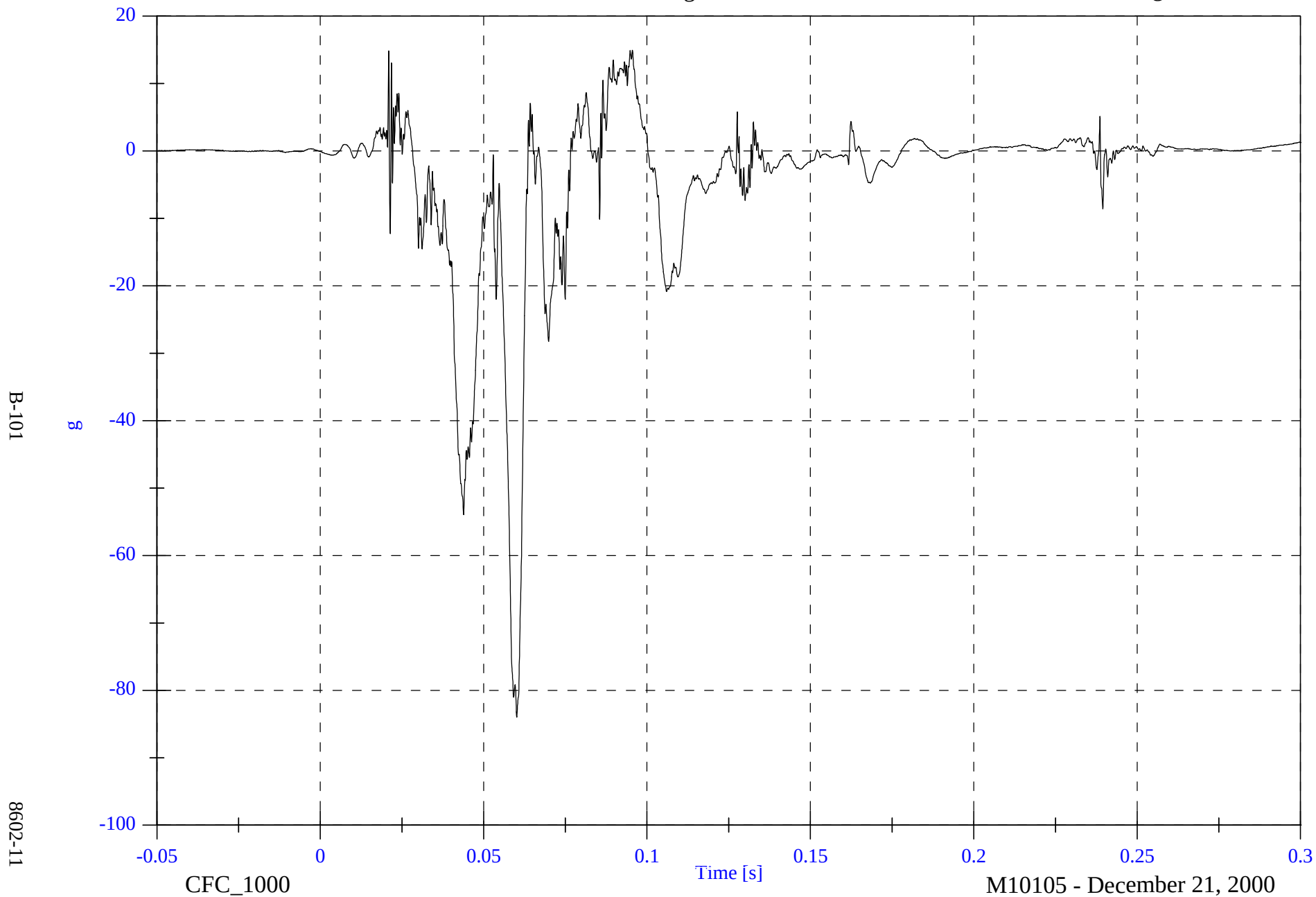


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Right Foot Fore z

Max: 15.0 [g] at 0.096 [s]

Min: -84.0 [g] at 0.060 [s]

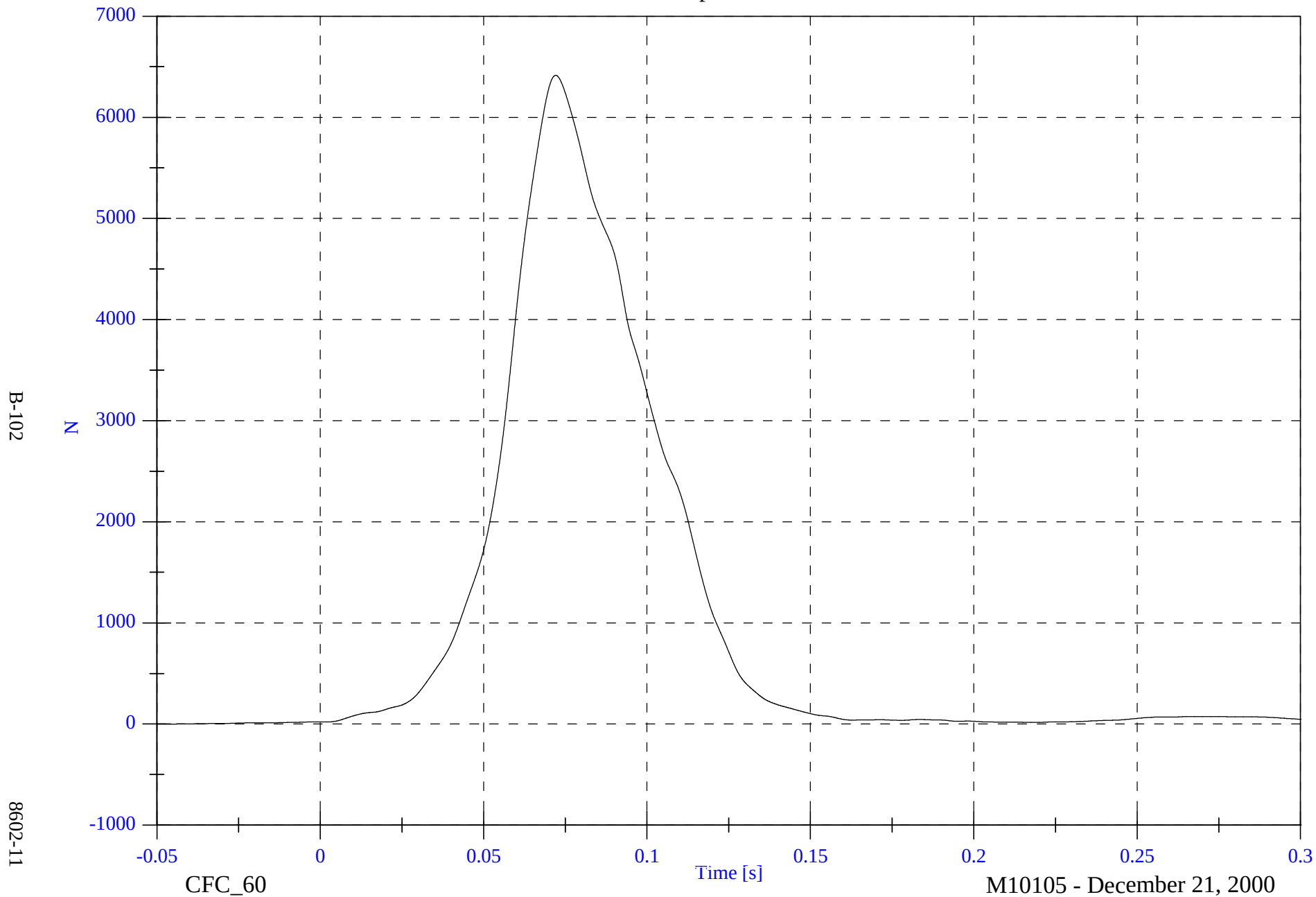


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Lap Belt Force

Max: 6415.7 [N] at 0.072 [s]

Min: -2.7 [N] at -0.050 [s]

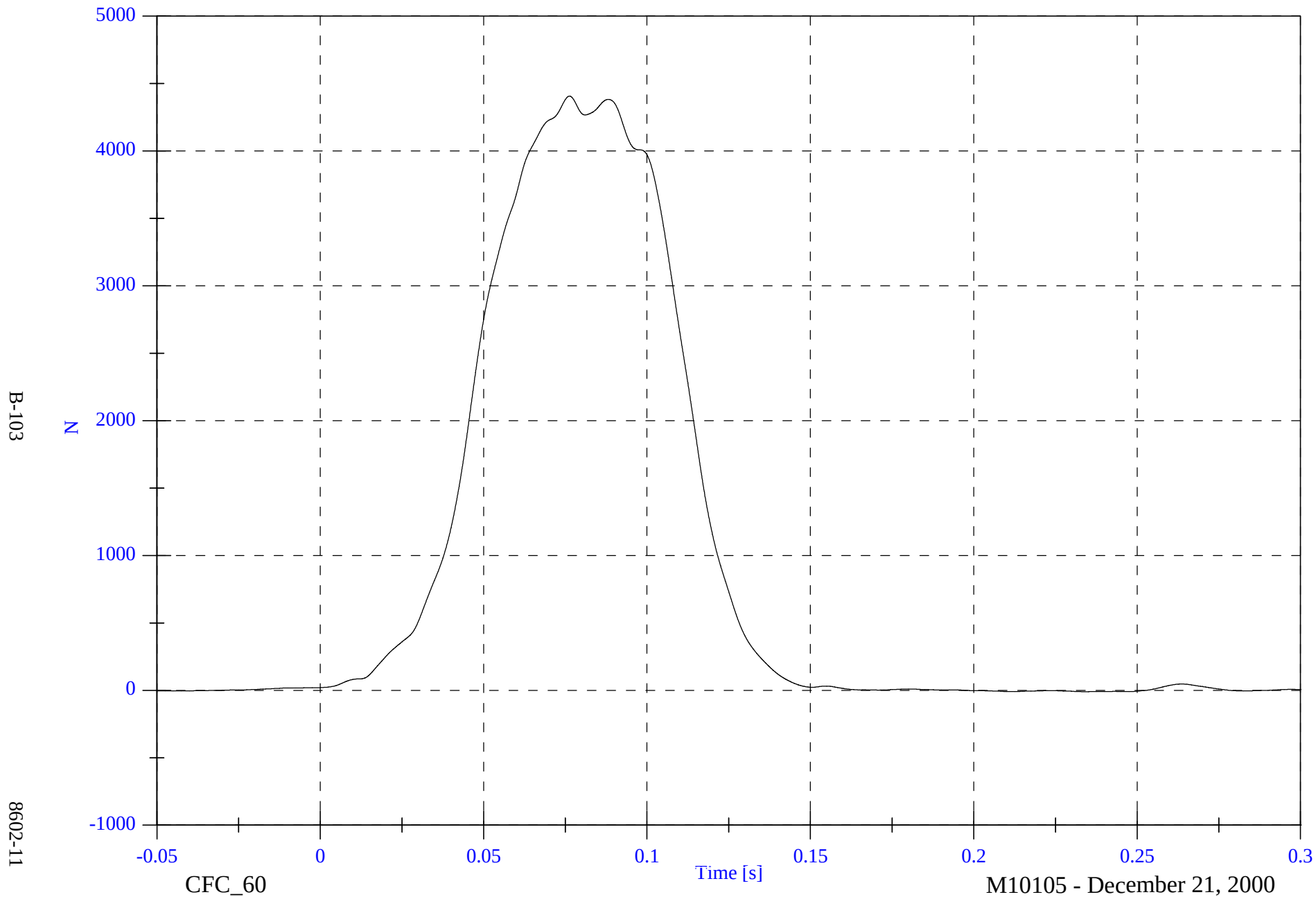


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Shoulder Belt Force

Max: 4407.3 [N] at 0.076 [s]

Min: -10.5 [N] at 0.234 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

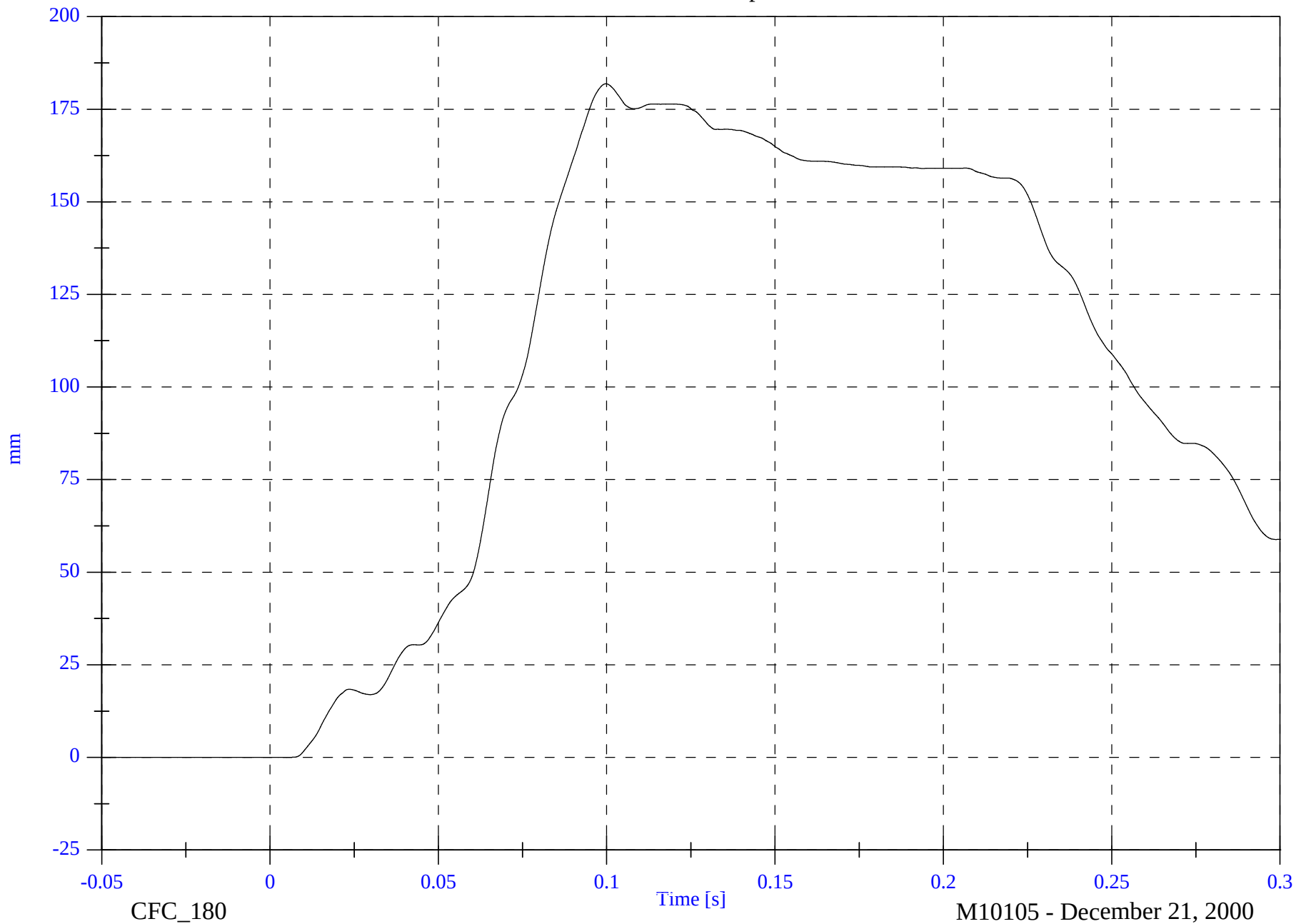
P2 Shoulder Belt Spoolout

Max: 181.9 [mm] at 0.100 [s]

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

B-104

8602-11

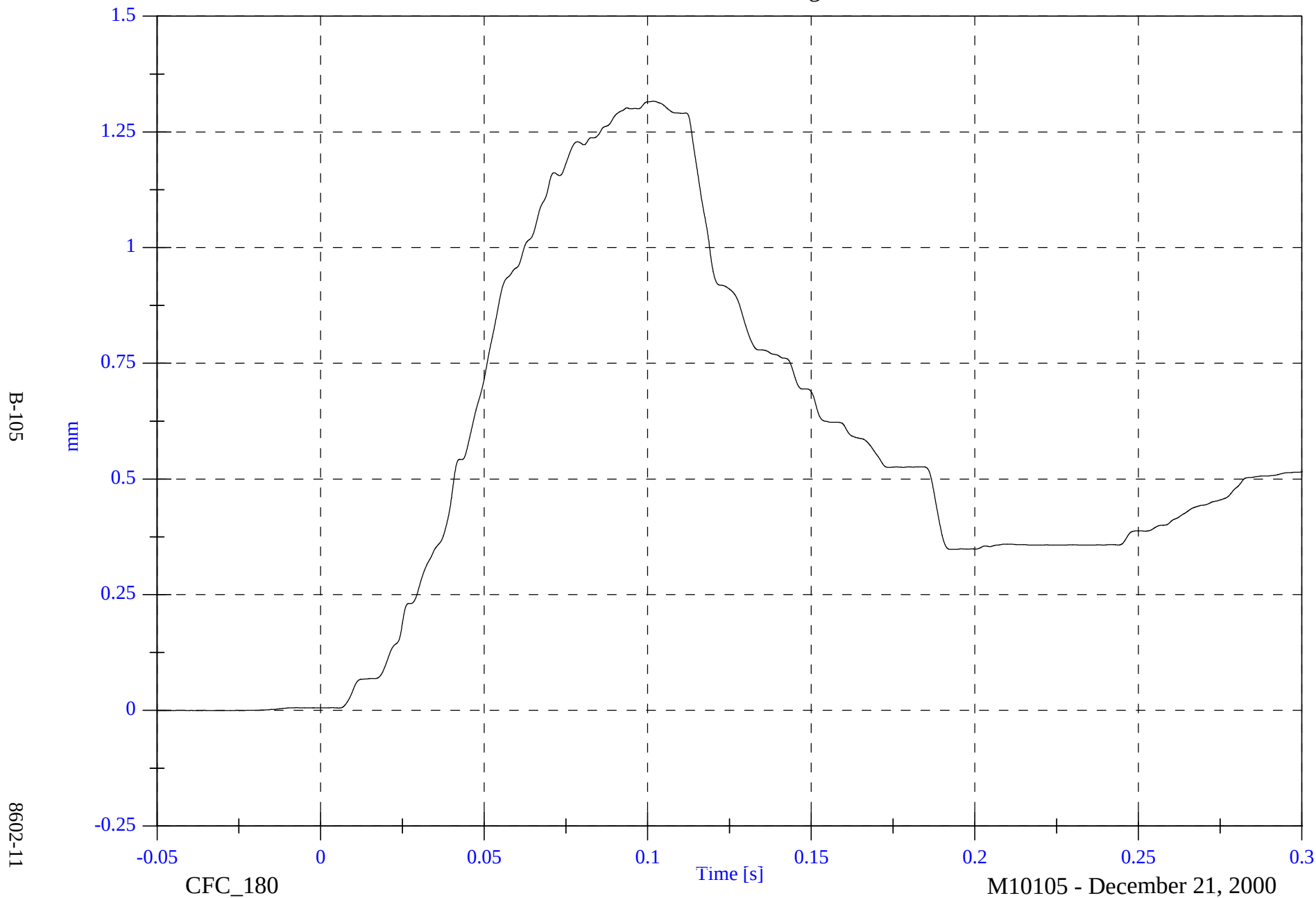


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

P2 Shoulder Belt Elongation

Max: 1.3 [mm] at 0.102 [s]

Min: -0.0 [mm] at -0.038 [s]

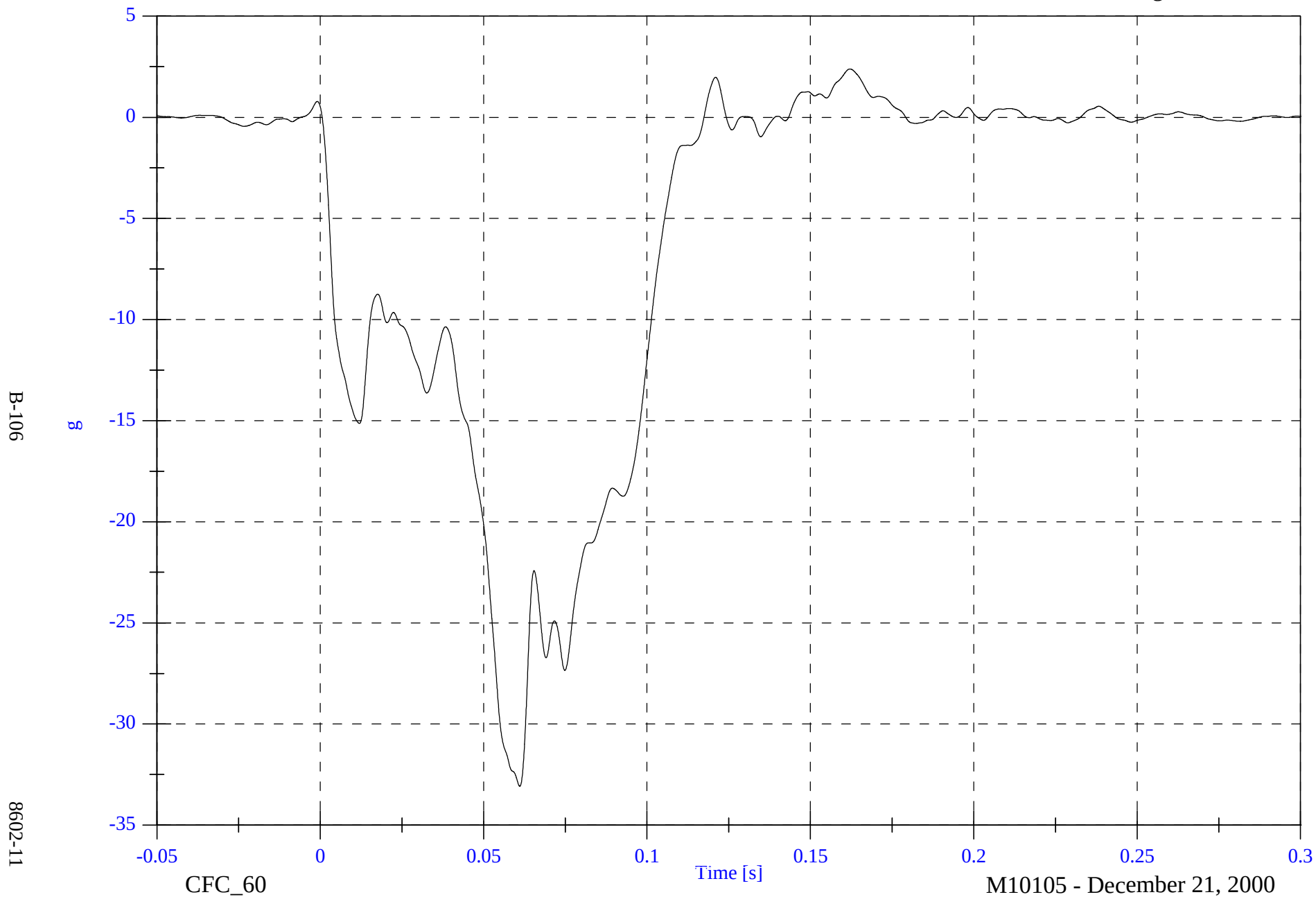


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Rear #1x

Max: 2.4 [g] at 0.162 [s]

Min: -33.1 [g] at 0.061 [s]

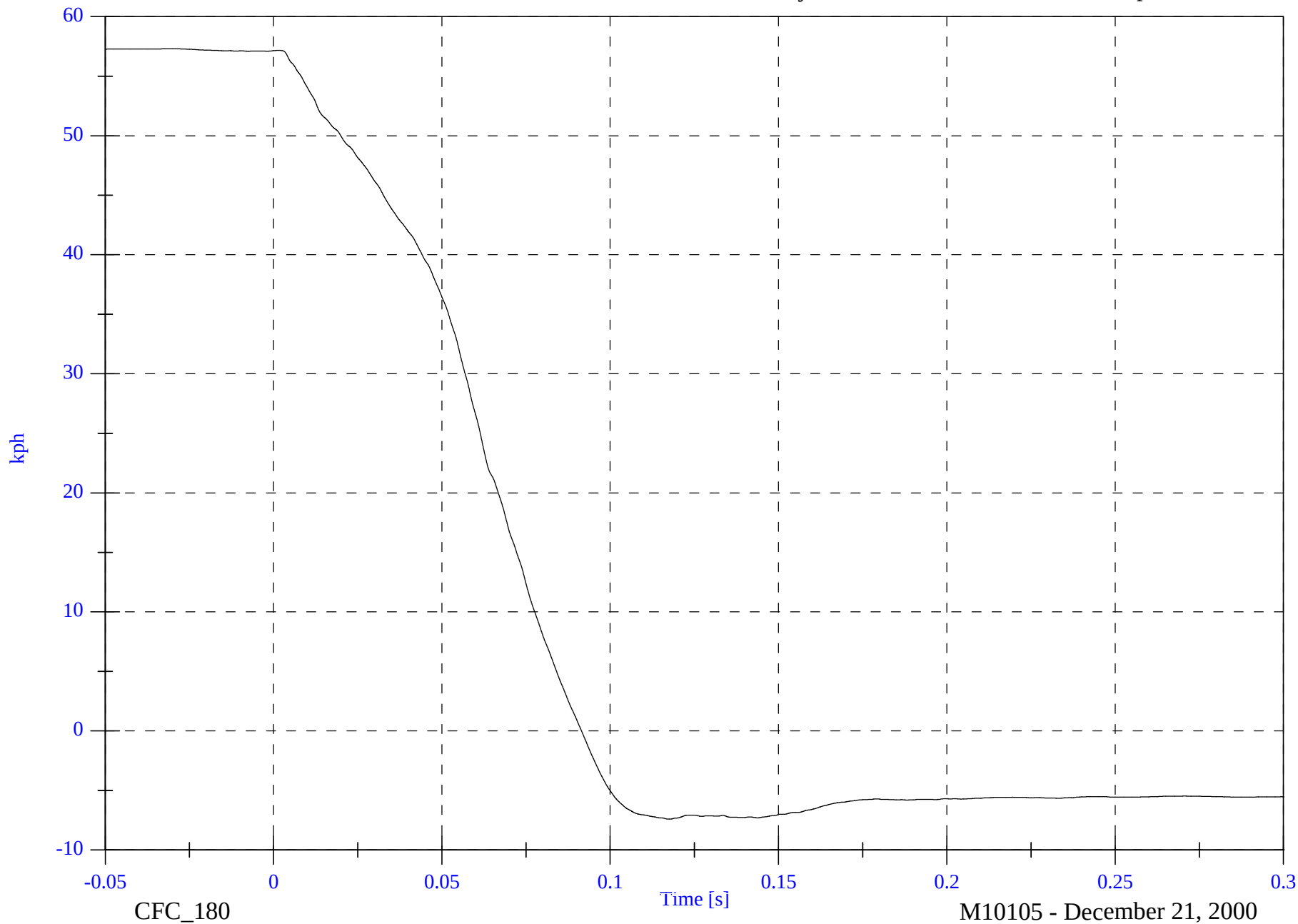


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Rear #1x Velocity

Max: 57.3 [kph] at -0.030 [s]

Min: -7.4 [kph] at 0.117 [s]



B-107

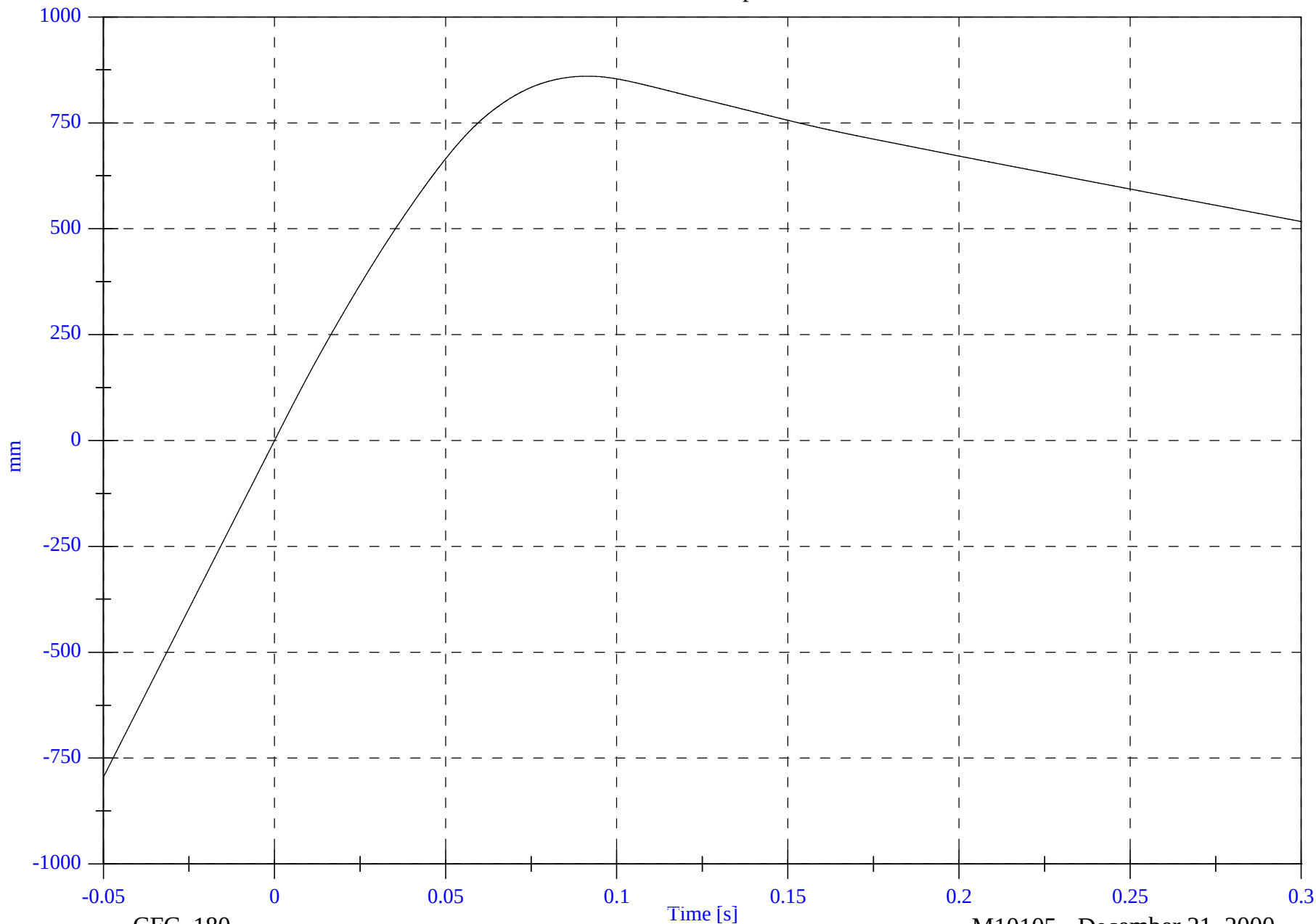
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Rear #1x Displacement

Max: 860.2 [mm] at 0.091 [s]

Min: -794.7 [mm] at -0.050 [s]



B-108

8602-11

CFC_180

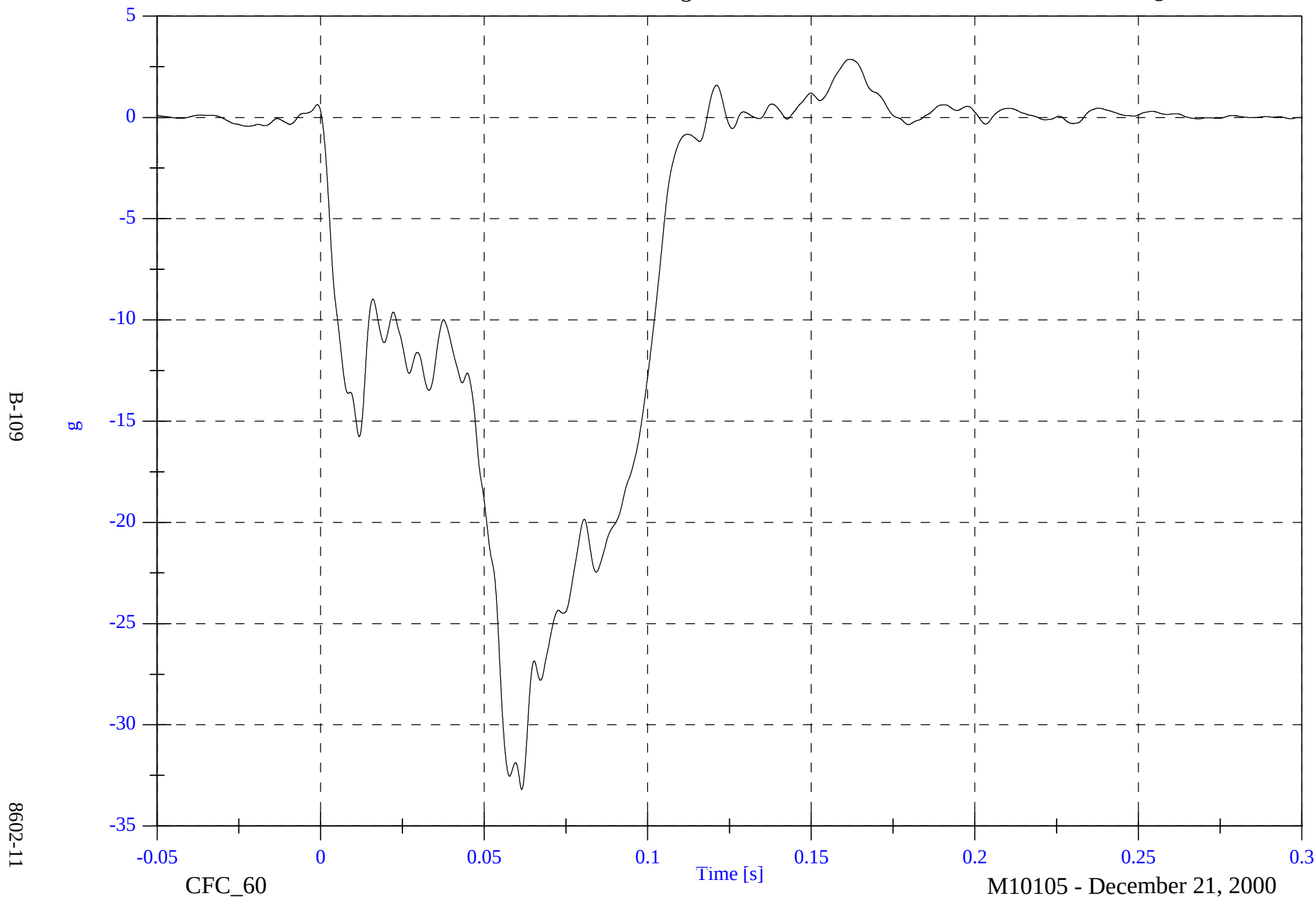
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Rear #2x

Max: 2.9 [g] at 0.162 [s]

Min: -33.2 [g] at 0.062 [s]

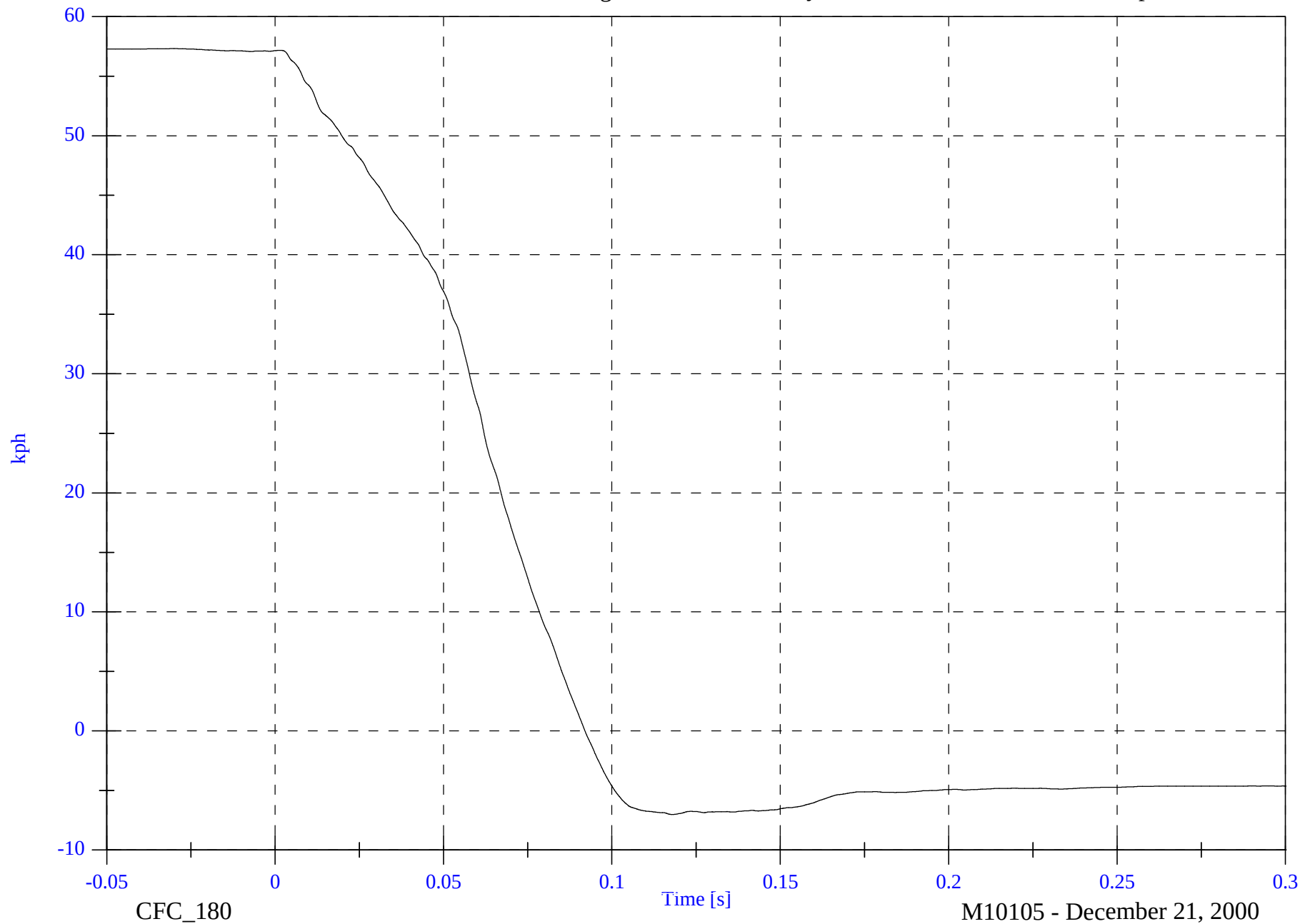


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Rear #2x Velocity

Max: 57.3 [kph] at -0.031 [s]

Min: -7.0 [kph] at 0.118 [s]



B-110

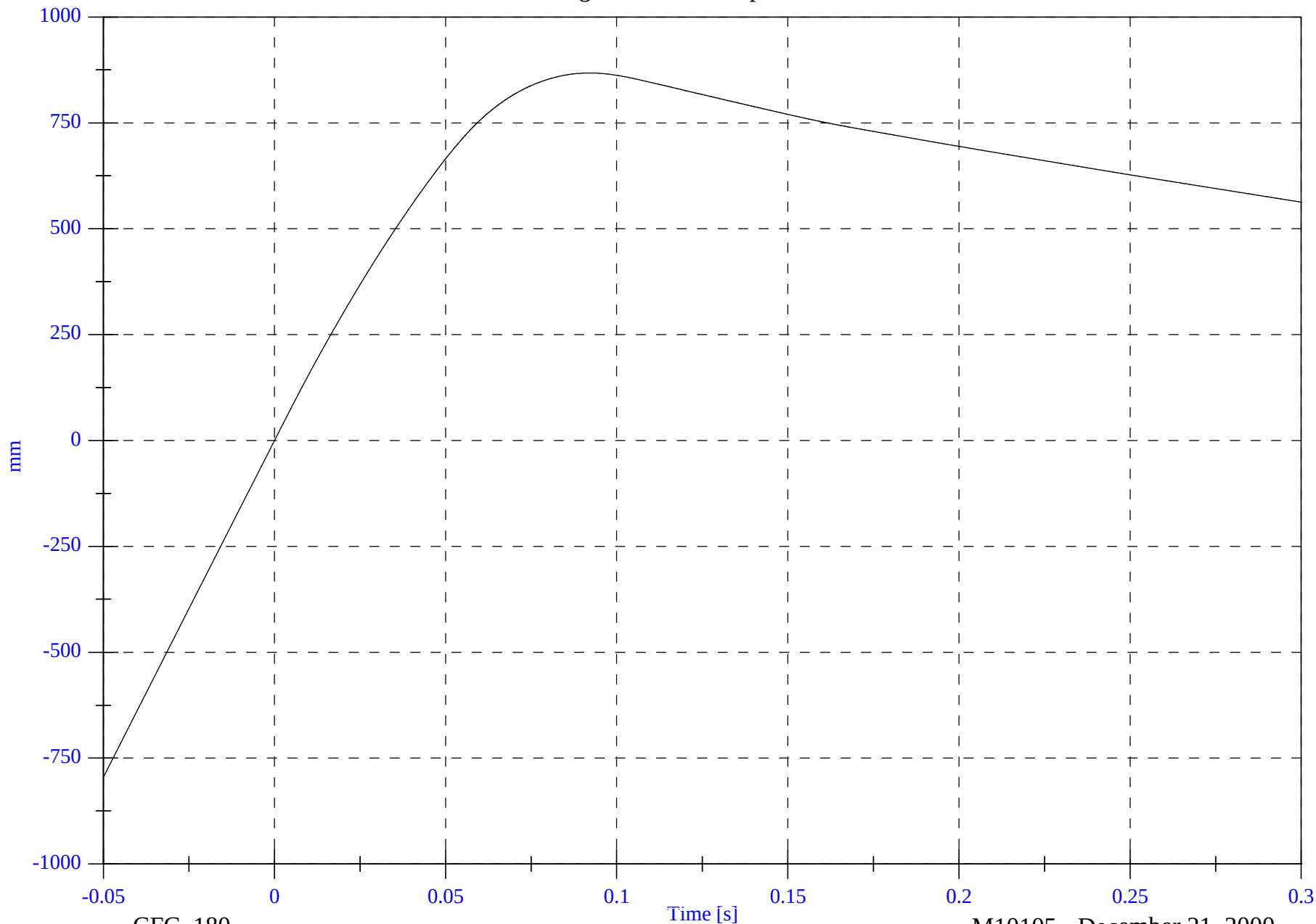
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Rear #2x Displacement

Max: 867.7 [mm] at 0.092 [s]

Min: -794.8 [mm] at -0.050 [s]



B-111

8602-11

CFC_180

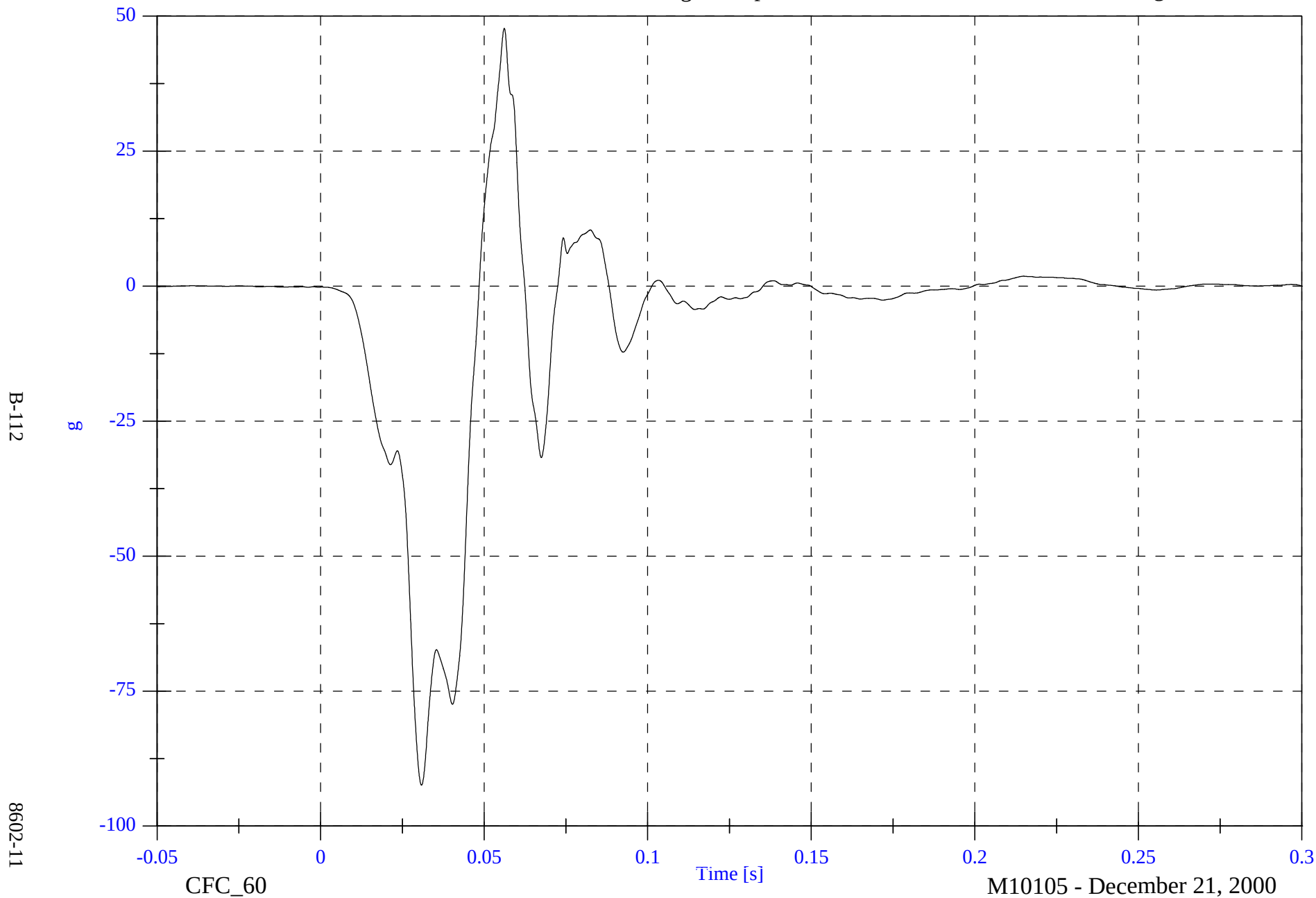
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Engine Top #3x

Max: 47.8 [g] at 0.056 [s]

Min: -92.4 [g] at 0.031 [s]

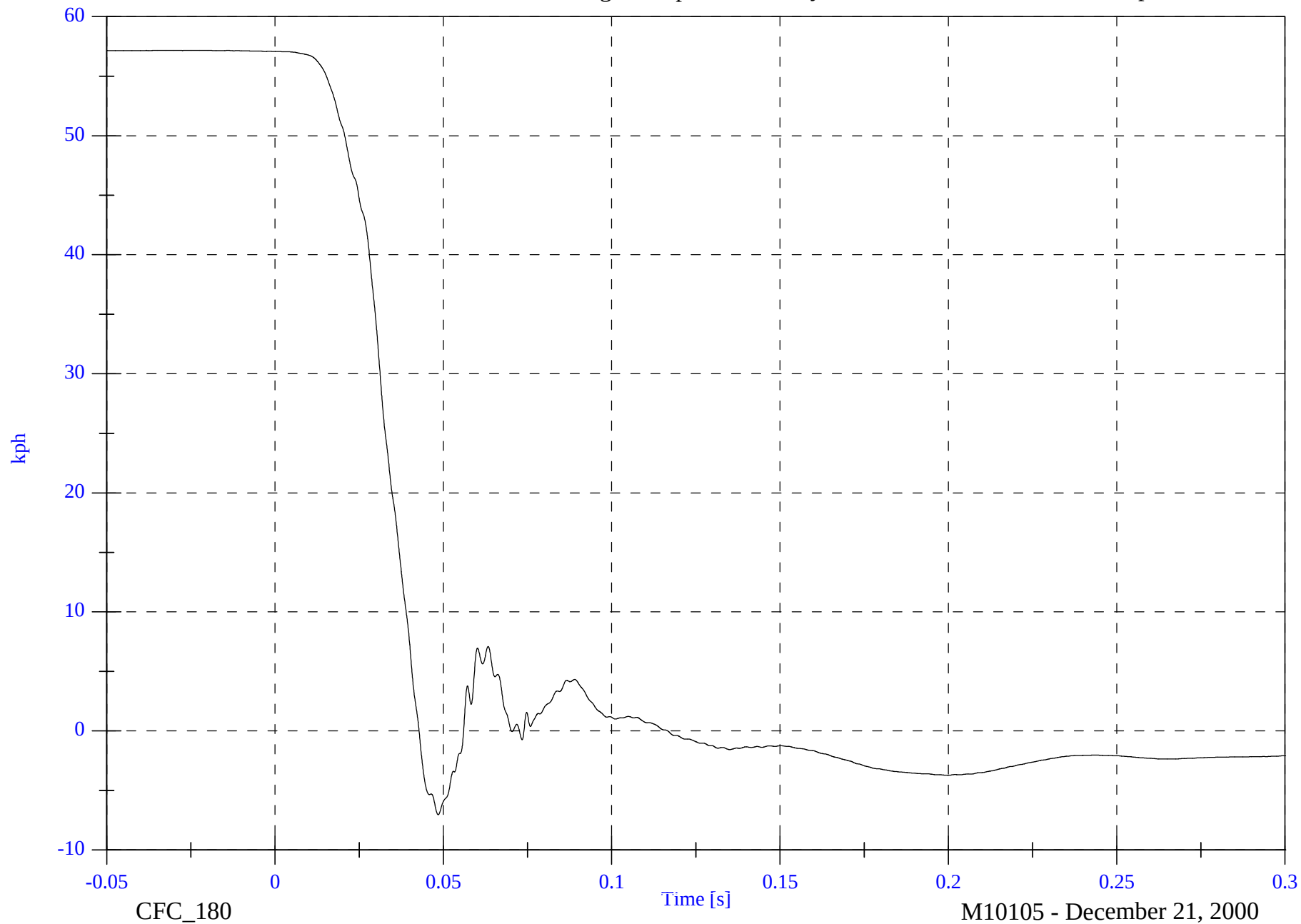


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Engine Top #3x Velocity

Max: 57.2 [kph] at -0.020 [s]

Min: -7.0 [kph] at 0.048 [s]



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8602-11

CFC_180

Time [s]

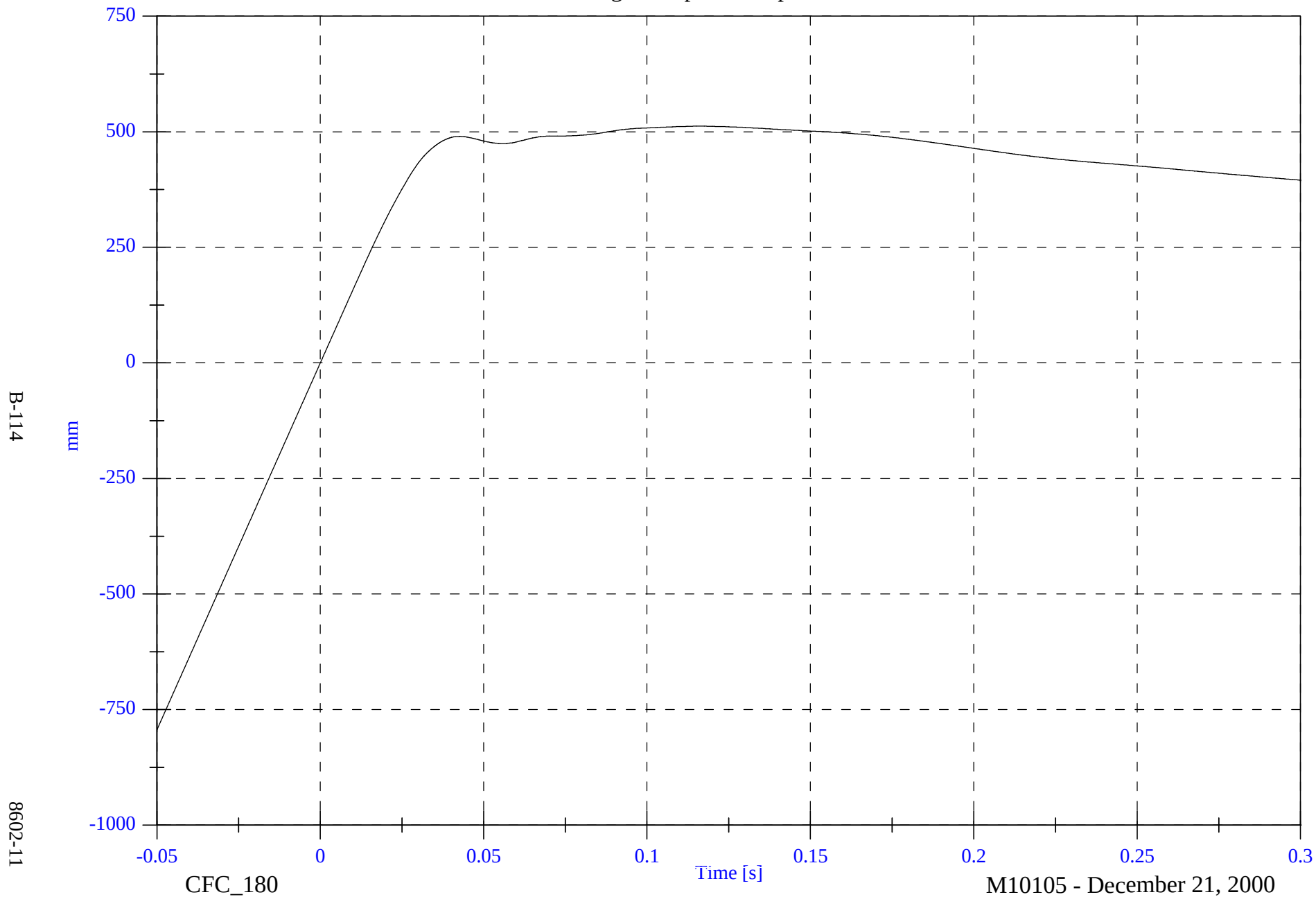
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Engine Top #3x Displacement

Max: 512.0 [mm] at 0.117 [s]

Min: -793.7 [mm] at -0.050 [s]

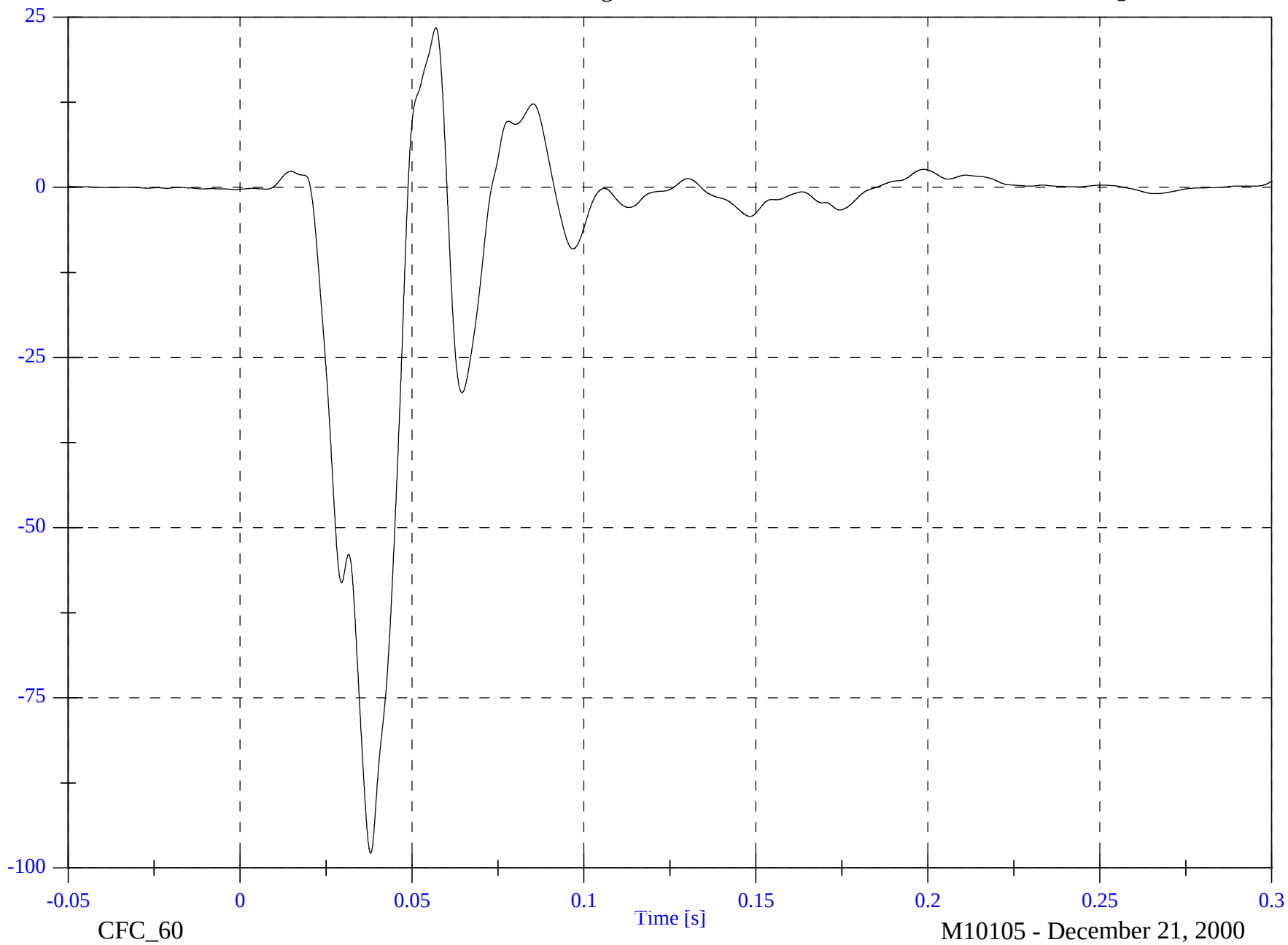


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Engine Bottom #4x

Max: 23.4 [g] at 0.057 [s]

Min: -97.8 [g] at 0.038 [s]



B-115

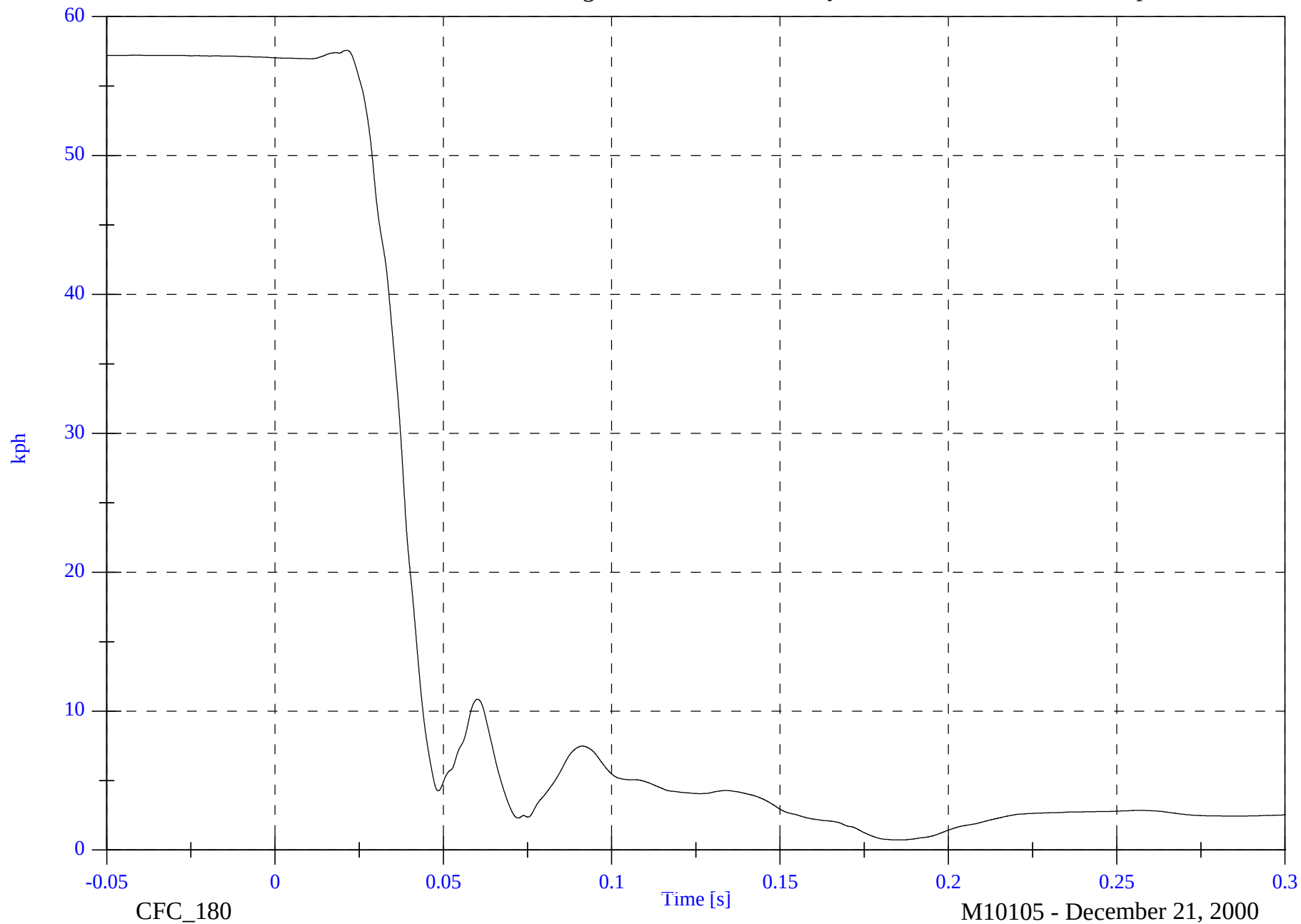
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Engine Bottom #4x Velocity

Max: 57.6 [kph] at 0.021 [s]

Min: 0.7 [kph] at 0.185 [s]



B-116

8602-11

CFC_180

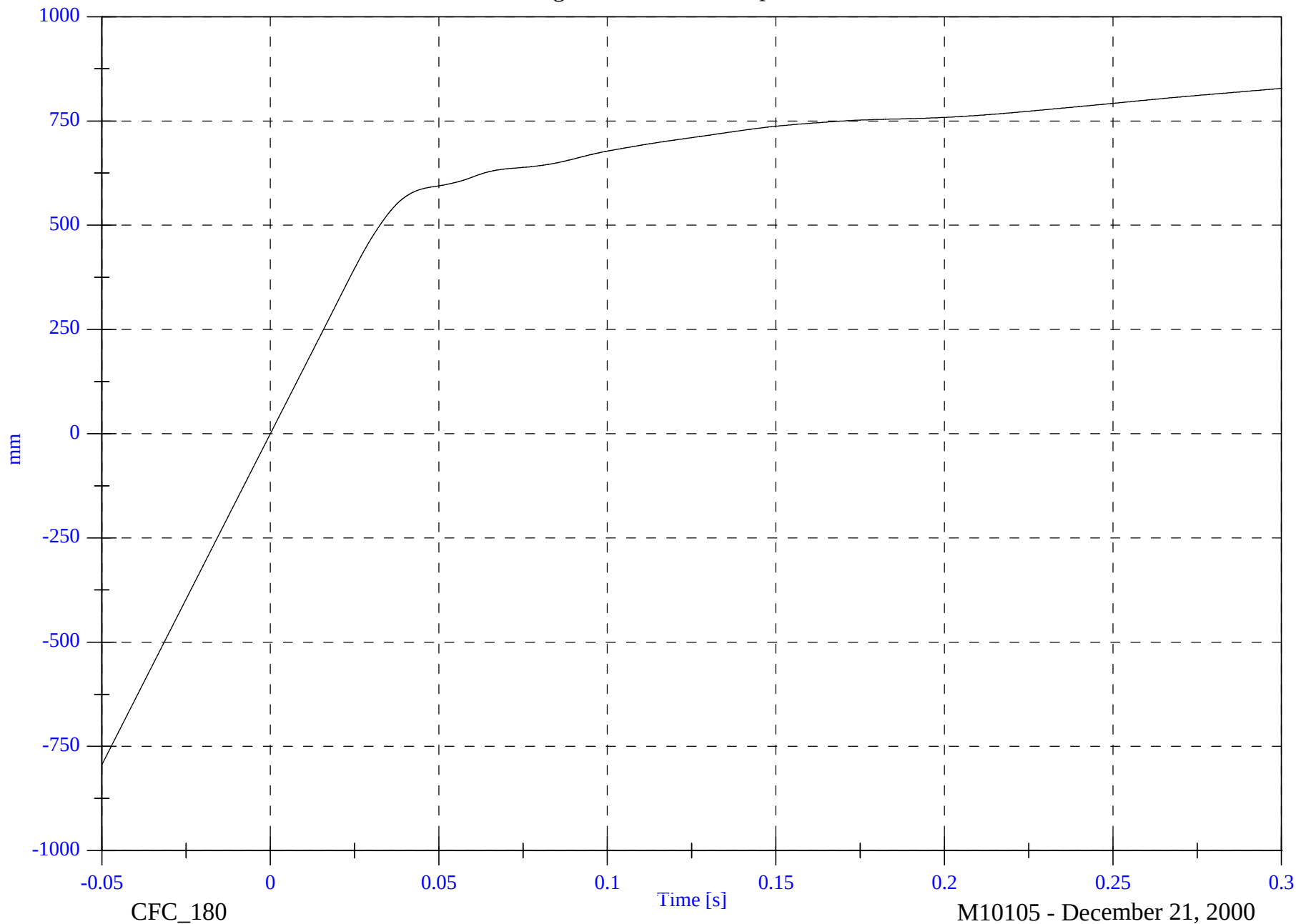
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Engine Bottom #4x Displacement

Max: 828.2 [mm] at 0.300 [s]

Min: -794.1 [mm] at -0.050 [s]



B-117

8602-11

CFC_180

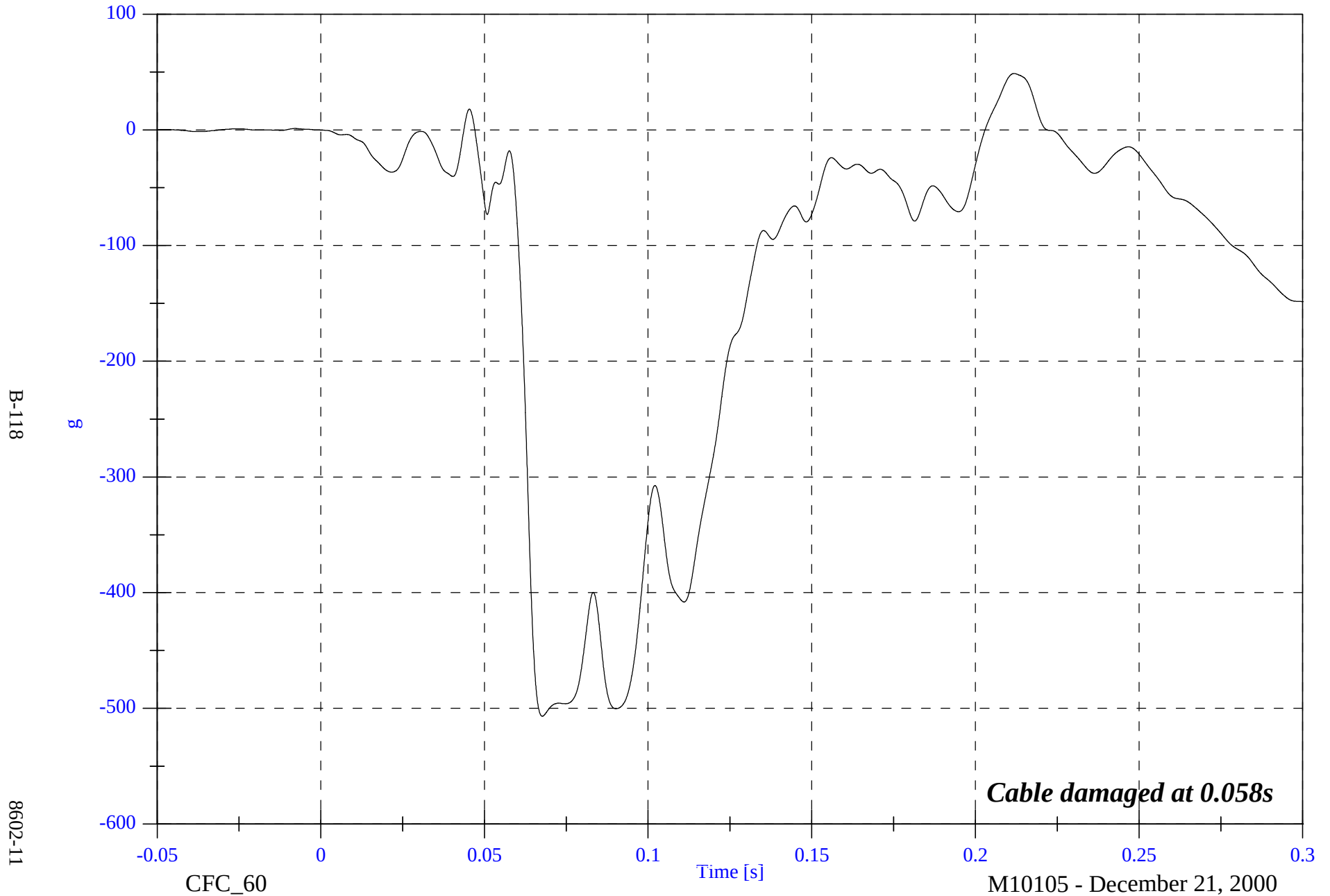
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Caliper #5x

Max: 48.7 [g] at 0.212 [s]

Min: -506.8 [g] at 0.068 [s]

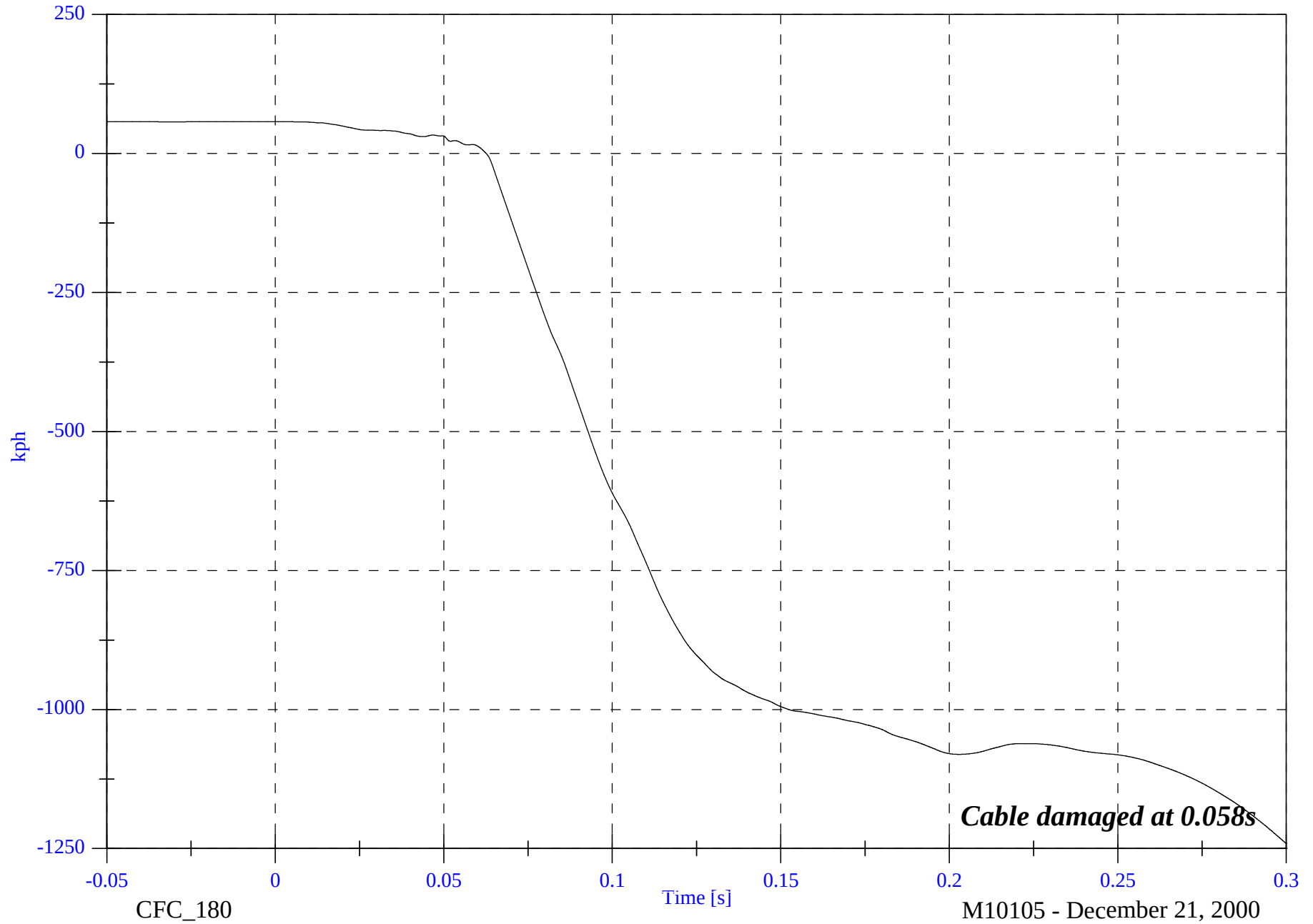


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Caliper #5x Velocity

Max: 57.5 [kph] at -0.043 [s]

Min: -1241.0 [kph] at 0.300 [s]



B-119

8602-11

CFC_180

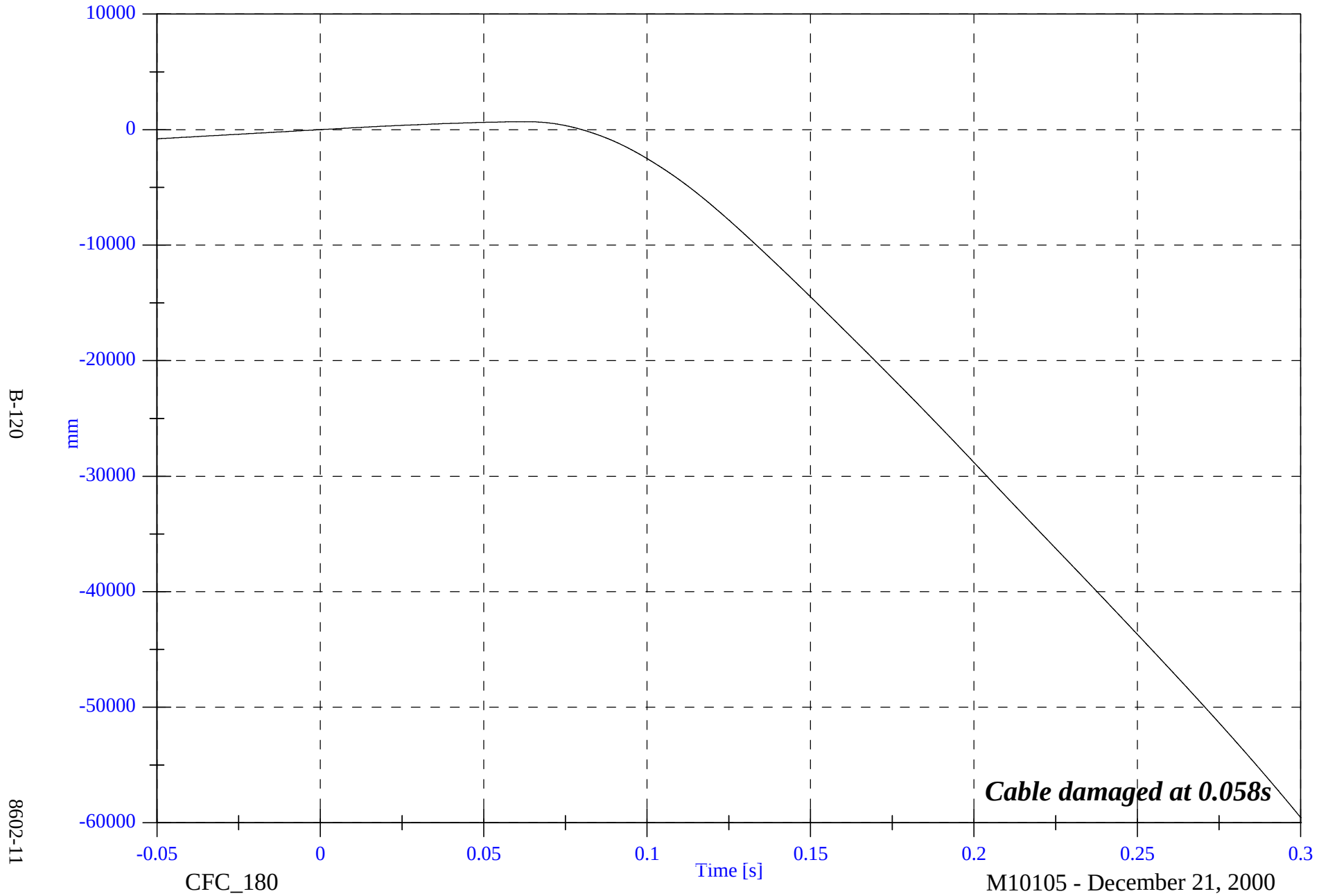
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Caliper #5x Displacement

Max: 690.9 [mm] at 0.063 [s]

Min: -59539.4 [mm] at 0.300 [s]



NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

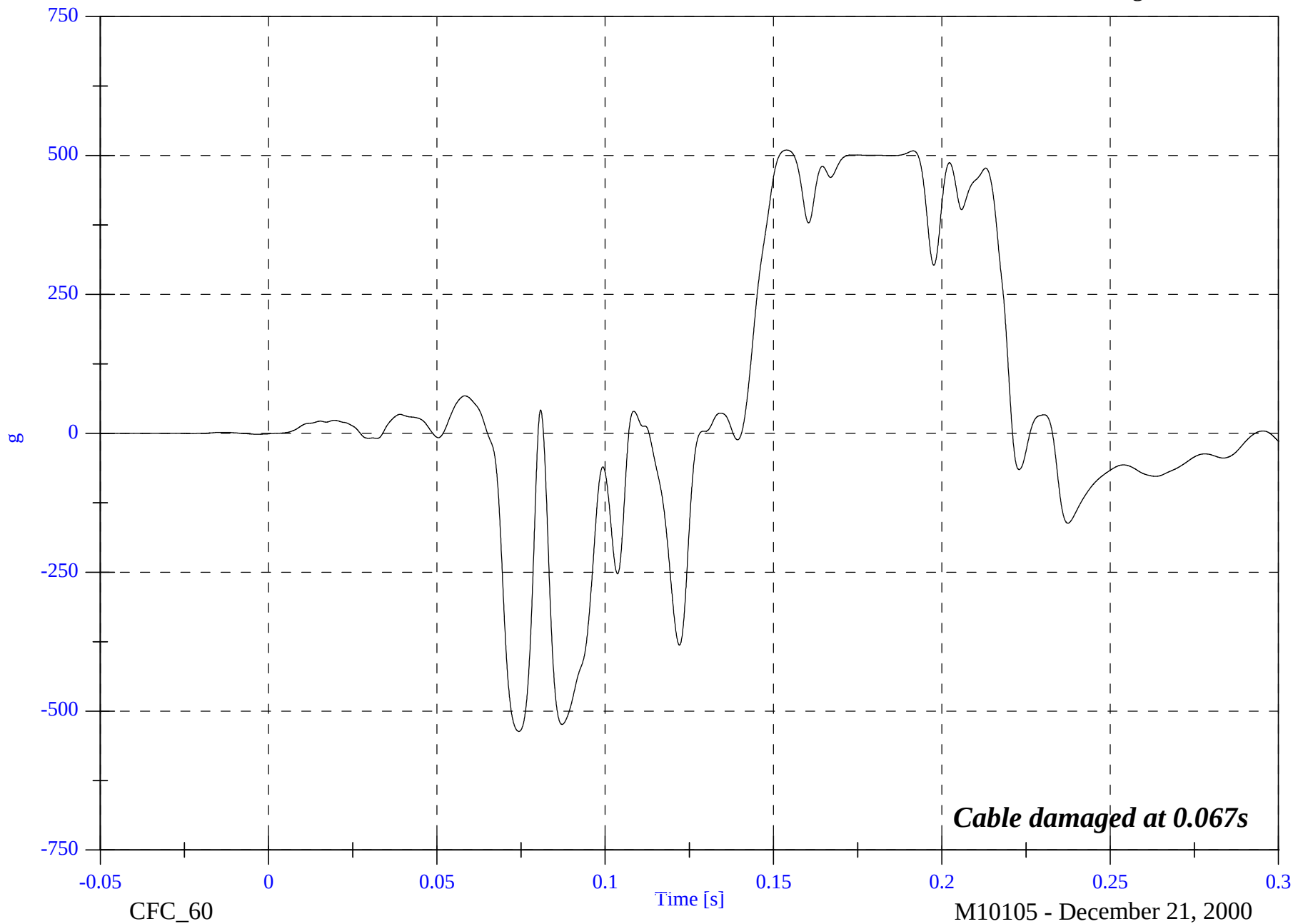
Instrument Panel #6x

Max: 509.8 [g] at 0.154 [s]

Min: -536.7 [g] at 0.074 [s]

B-121

8602-11

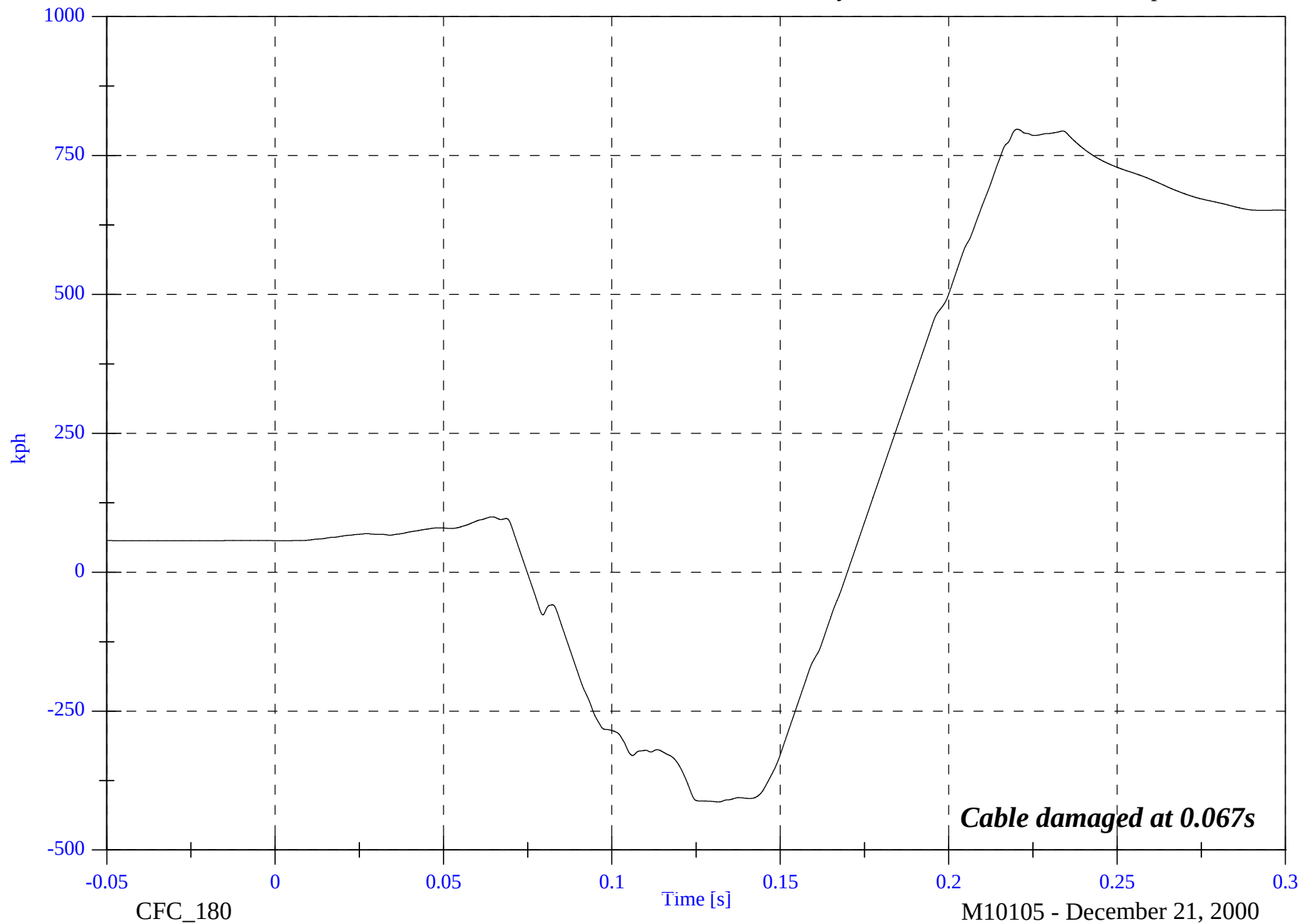


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Instrument Panel #6x Velocity

Max: 797.3 [kph] at 0.220 [s]

Min: -413.7 [kph] at 0.132 [s]



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8602-11

CFC_180

Time [s]

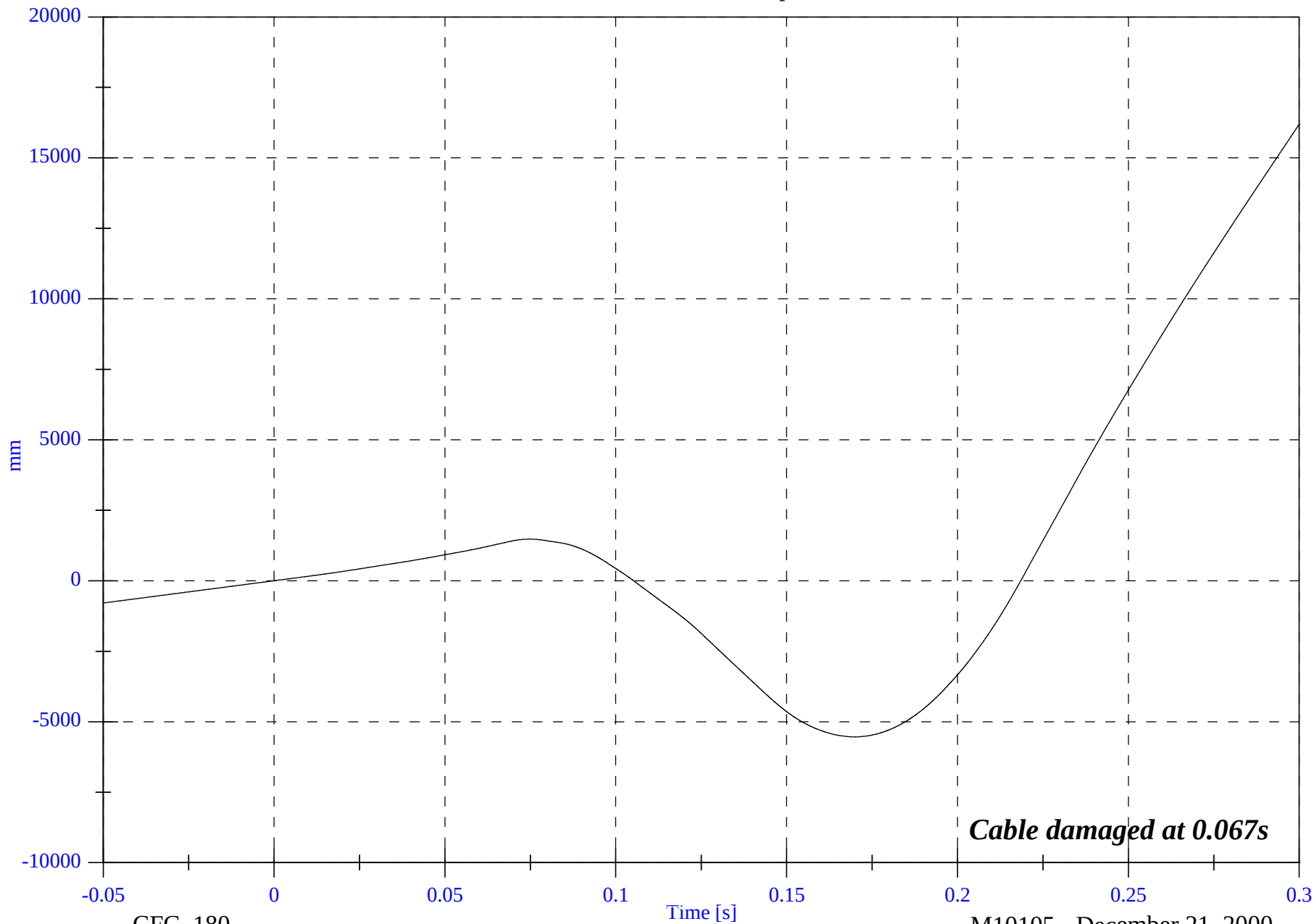
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Instrument Panel #6x Displacement

Max: 16188.2 [mm] at 0.300 [s]

Min: -5538.1 [mm] at 0.170 [s]



Cable damaged at 0.067s

B-123

8602-11

CFC_180

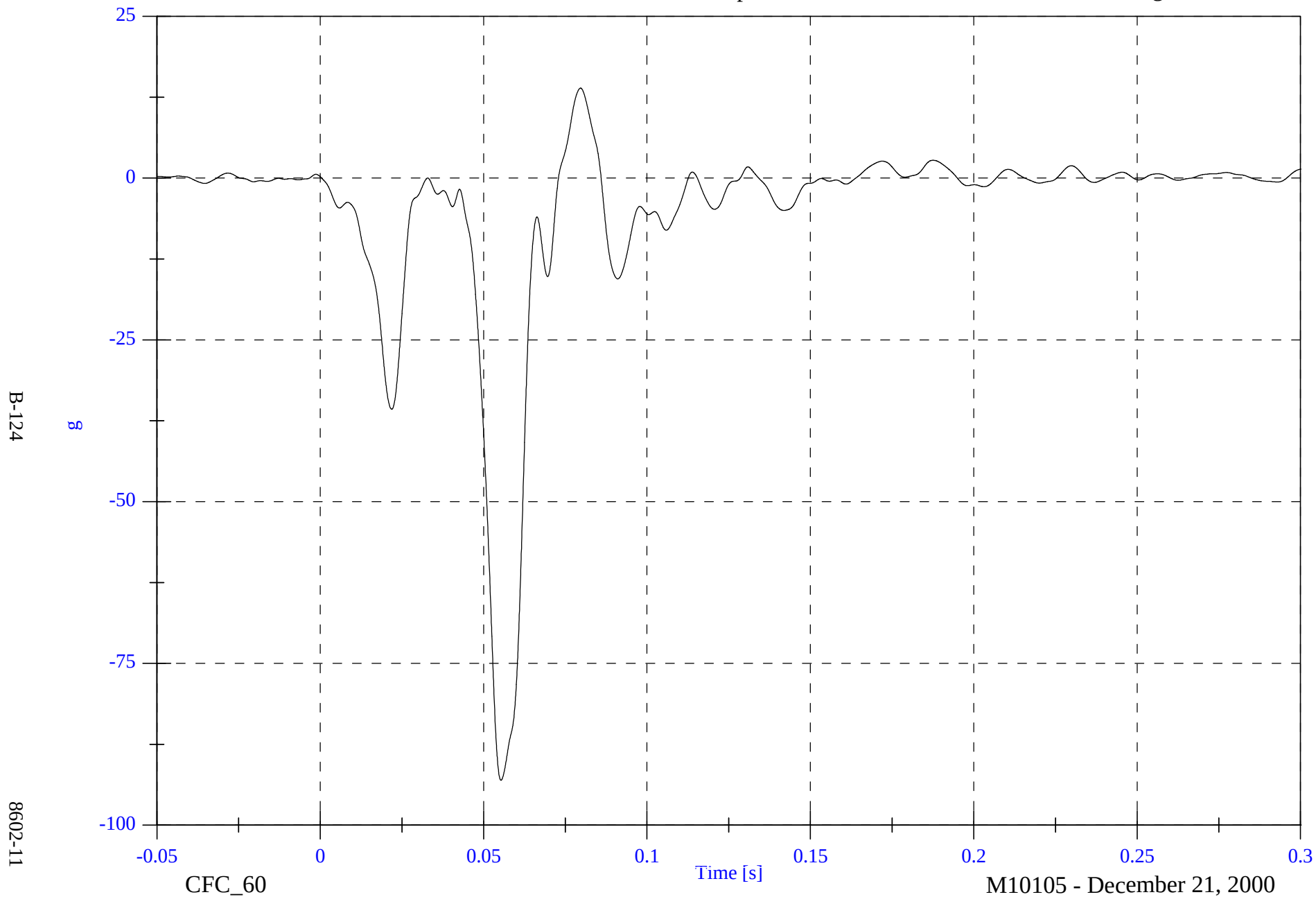
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Caliper #7x

Max: 13.9 [g] at 0.080 [s]

Min: -93.1 [g] at 0.055 [s]

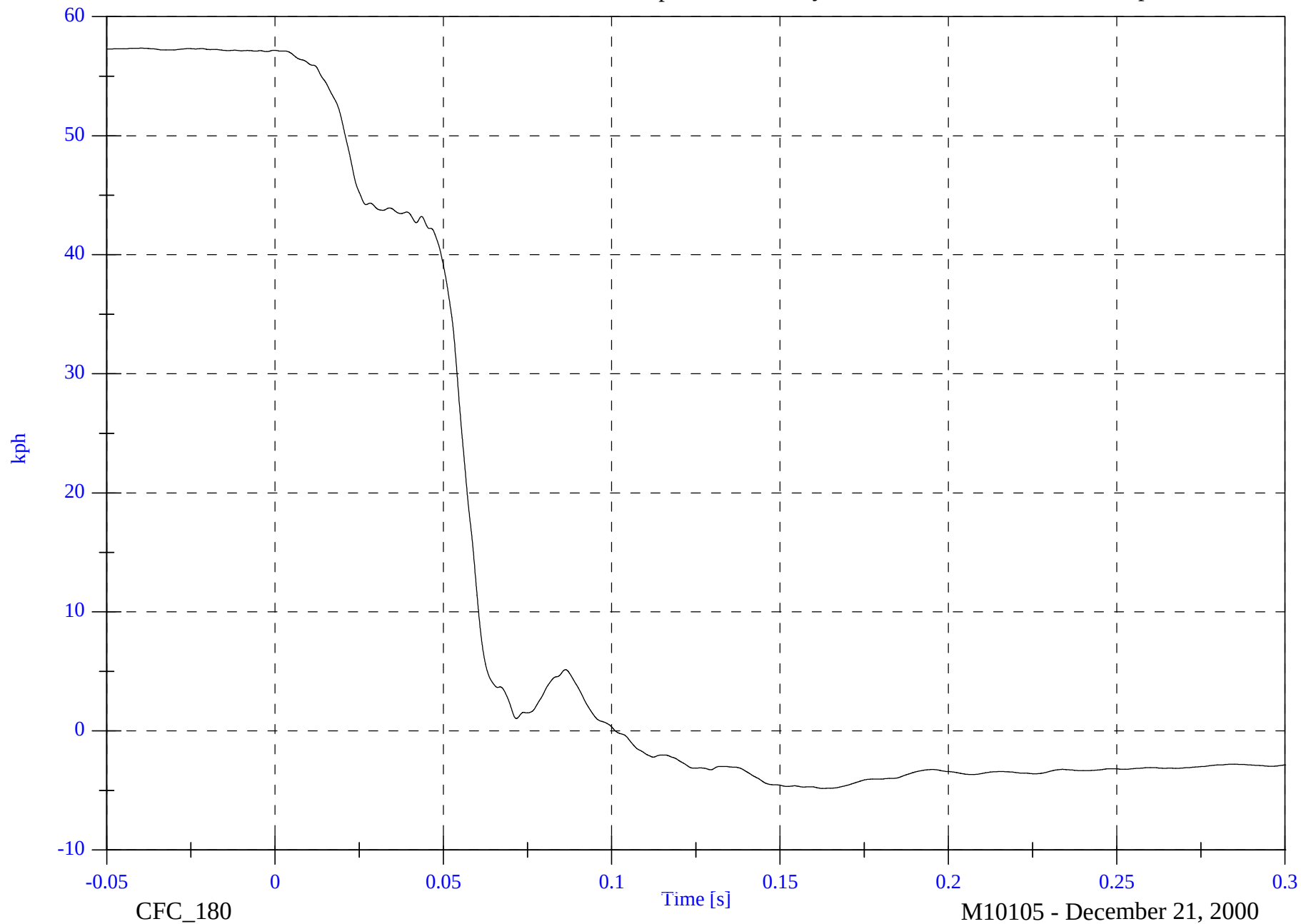


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Caliper #7x Velocity

Max: 57.4 [kph] at -0.040 [s]

Min: -4.8 [kph] at 0.163 [s]



B-125

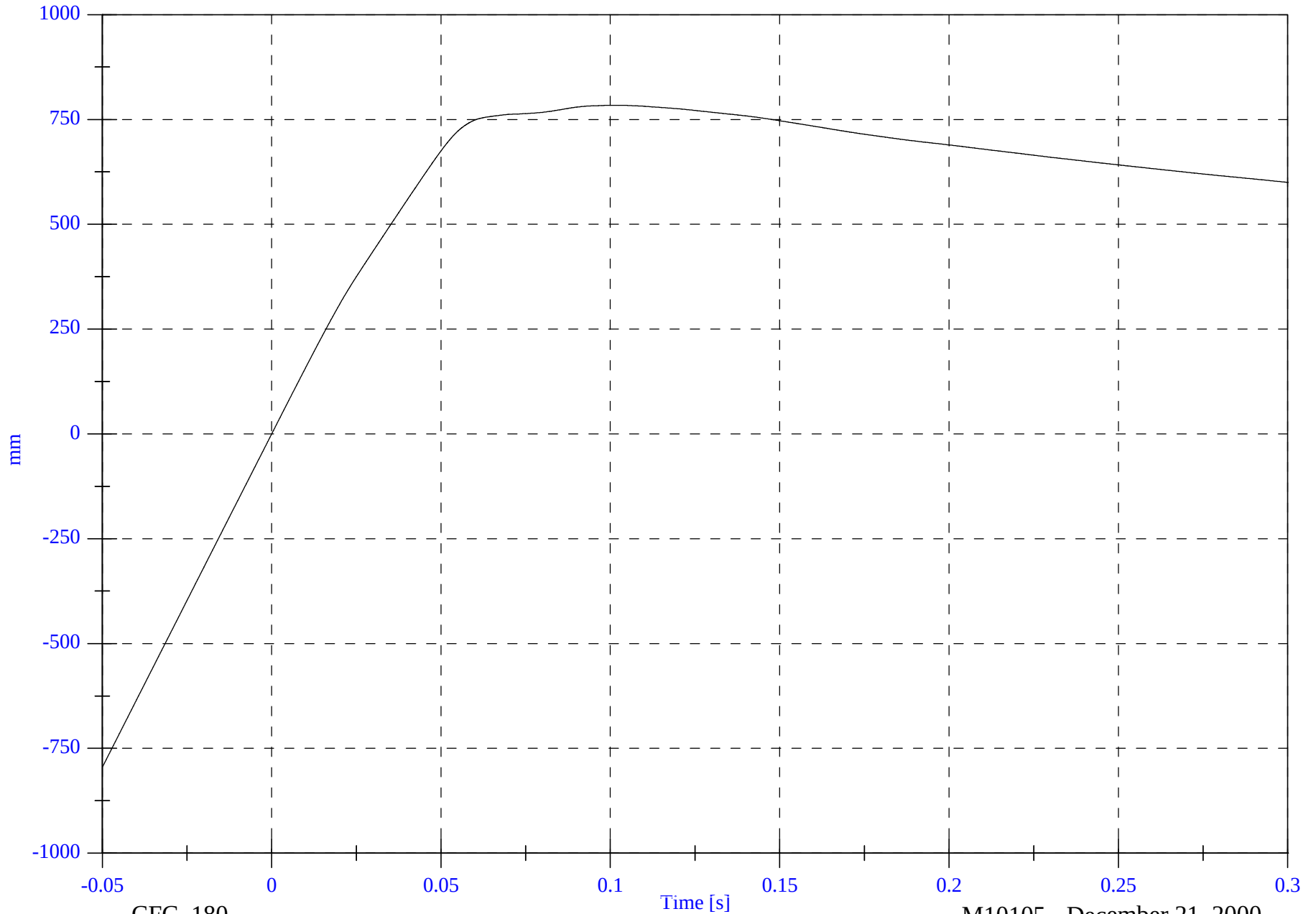
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Caliper #7x Displacement

Max: 783.7 [mm] at 0.101 [s]

Min: -795.0 [mm] at -0.050 [s]



B-126

8602-11

CFC_180

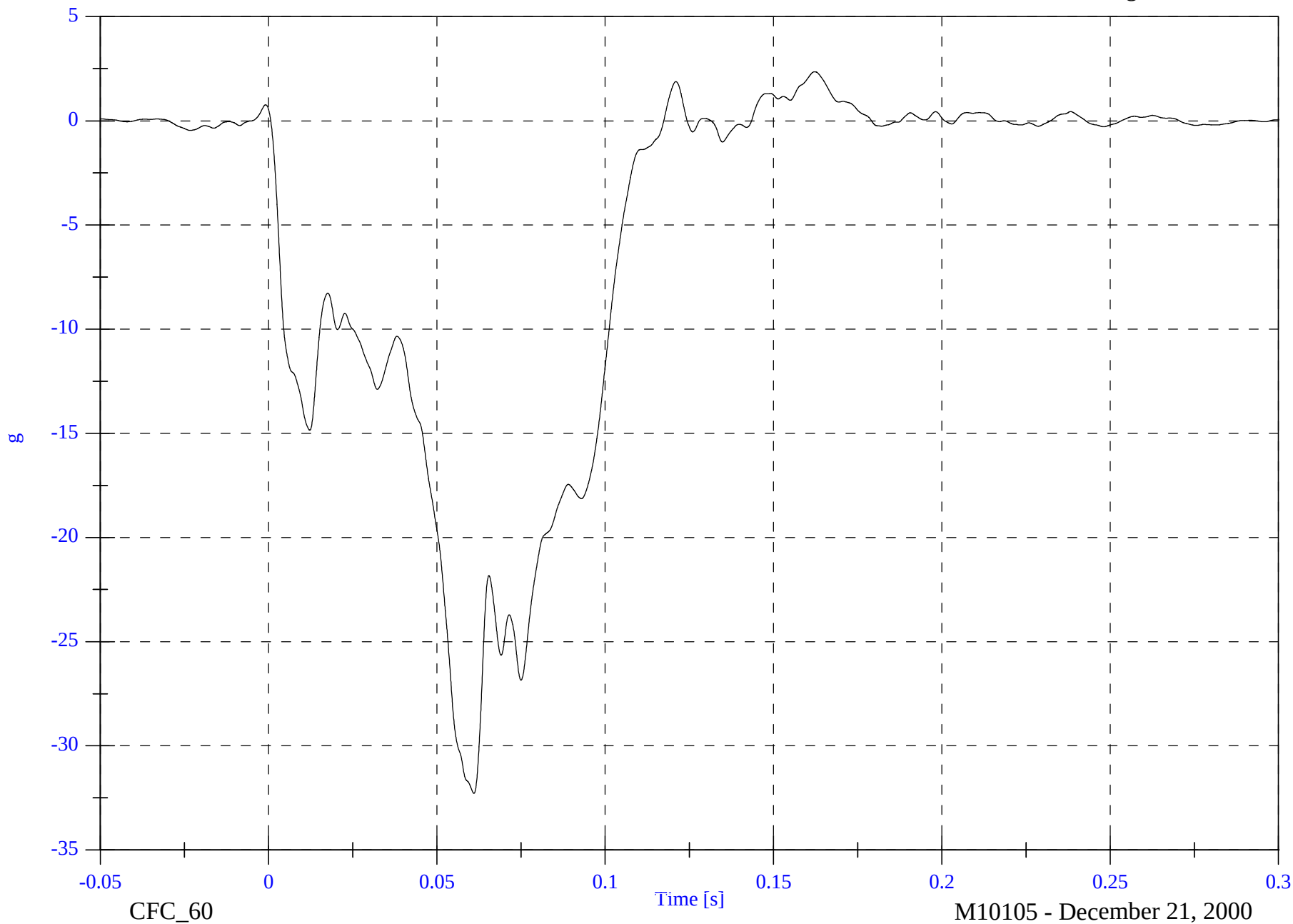
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Rear Red #8x

Max: 2.4 [g] at 0.162 [s]

Min: -32.3 [g] at 0.061 [s]



B-127

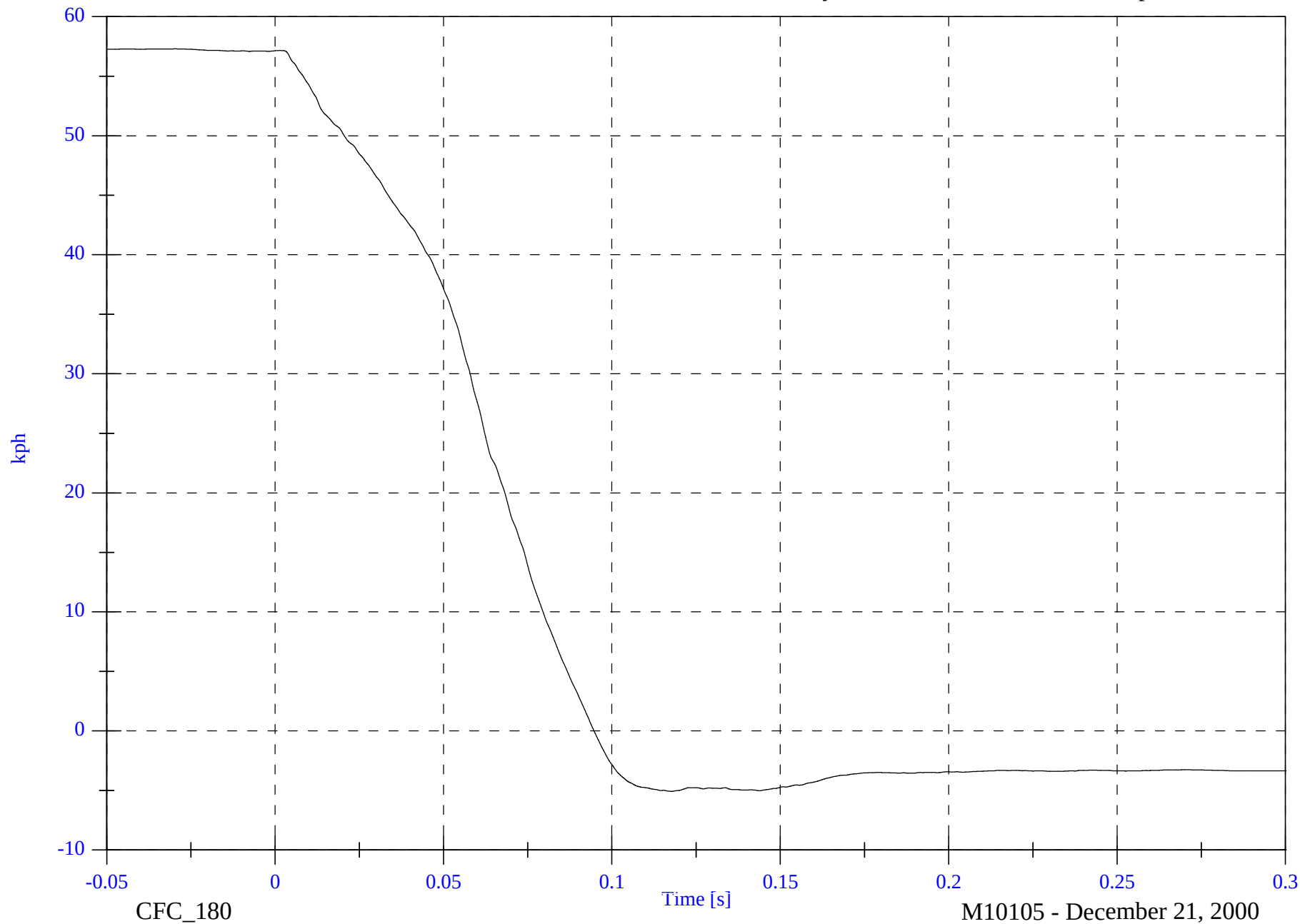
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Rear Red #8x Velocity

Max: 57.3 [kph] at -0.030 [s]

Min: -5.1 [kph] at 0.118 [s]



B-128

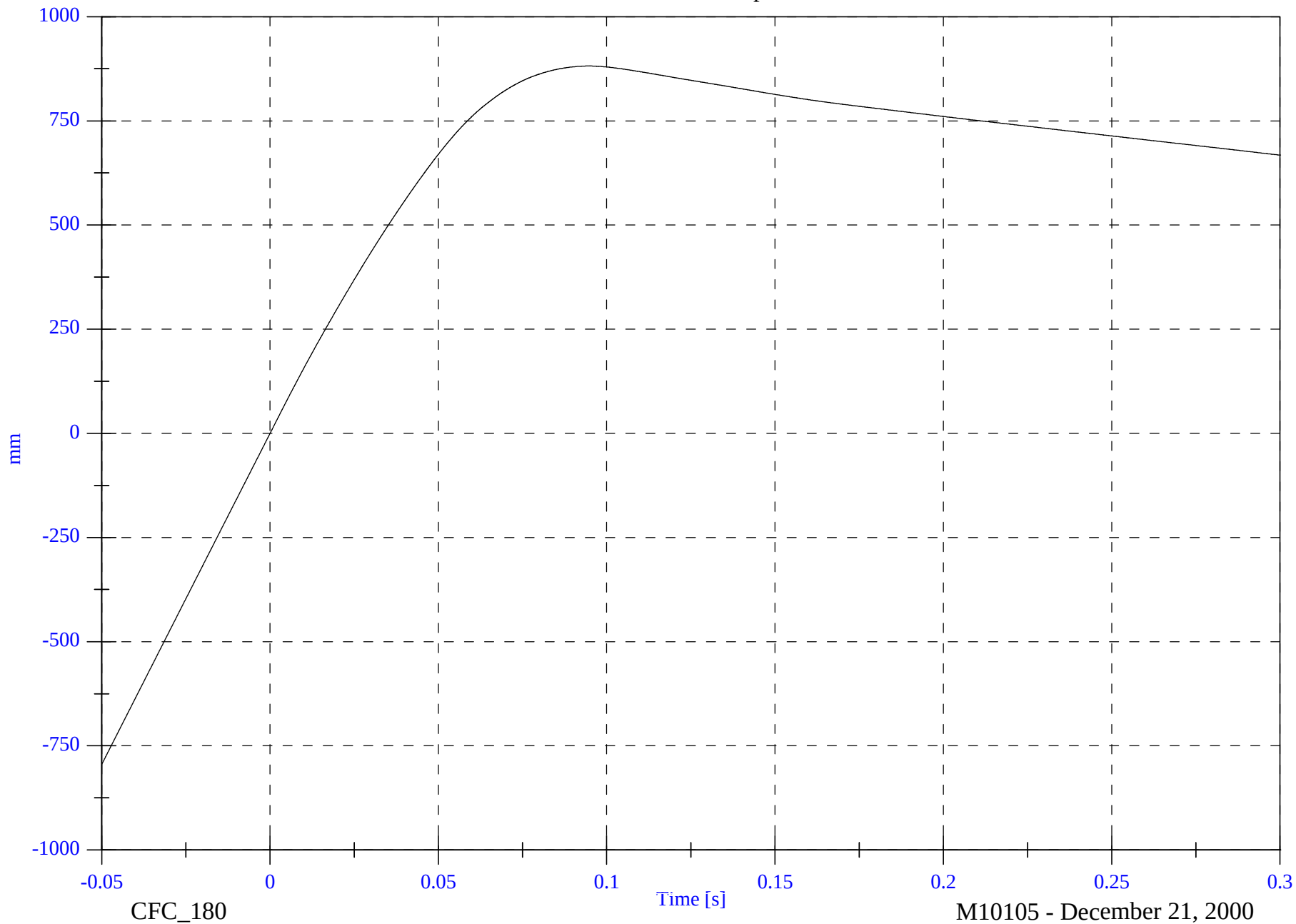
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Left Rear Red #8x Displacement

Max: 881.6 [mm] at 0.095 [s]

Min: -794.6 [mm] at -0.050 [s]



B-129

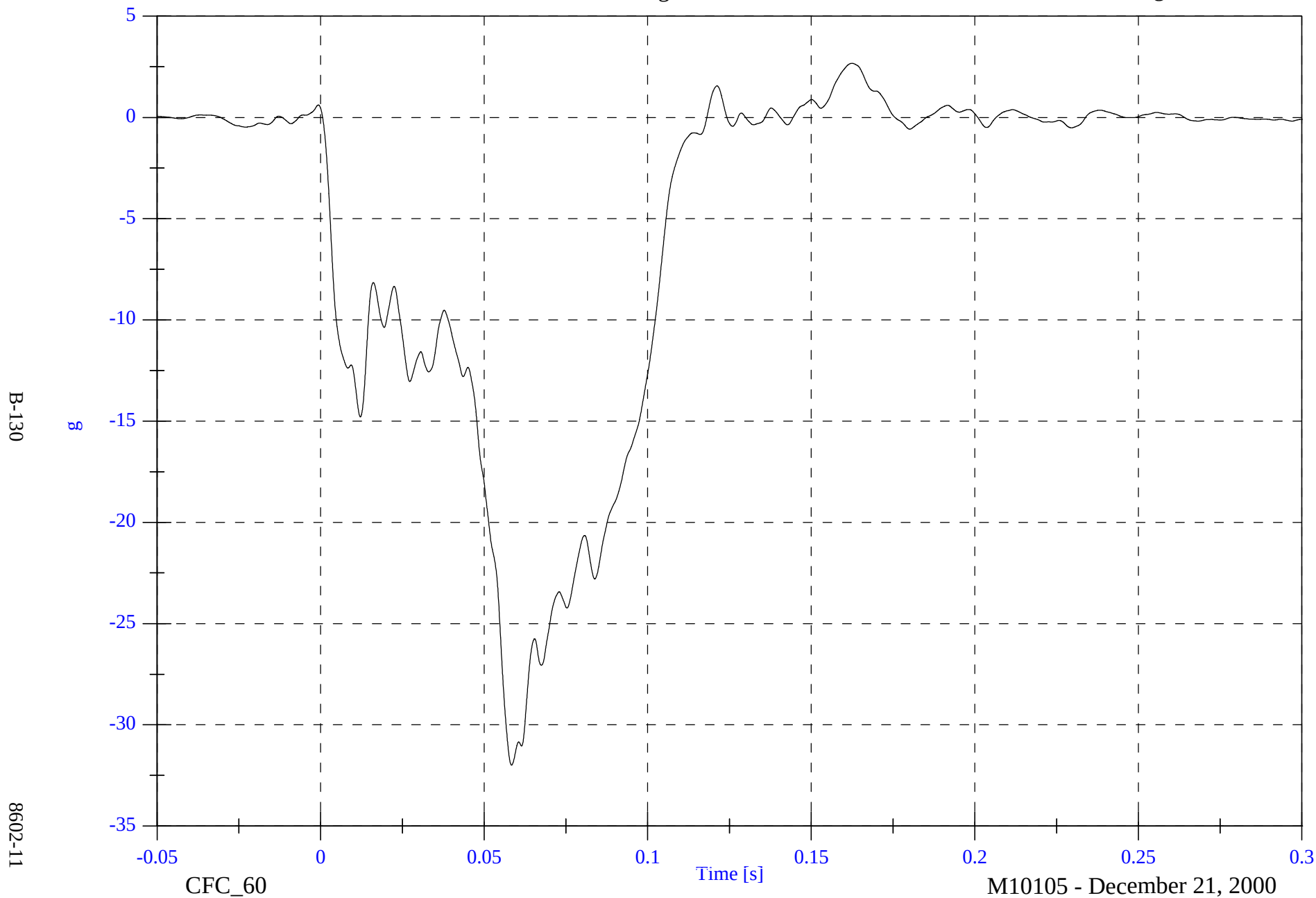
8602-11

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Rear Red #9x

Max: 2.7 [g] at 0.162 [s]

Min: -32.0 [g] at 0.058 [s]

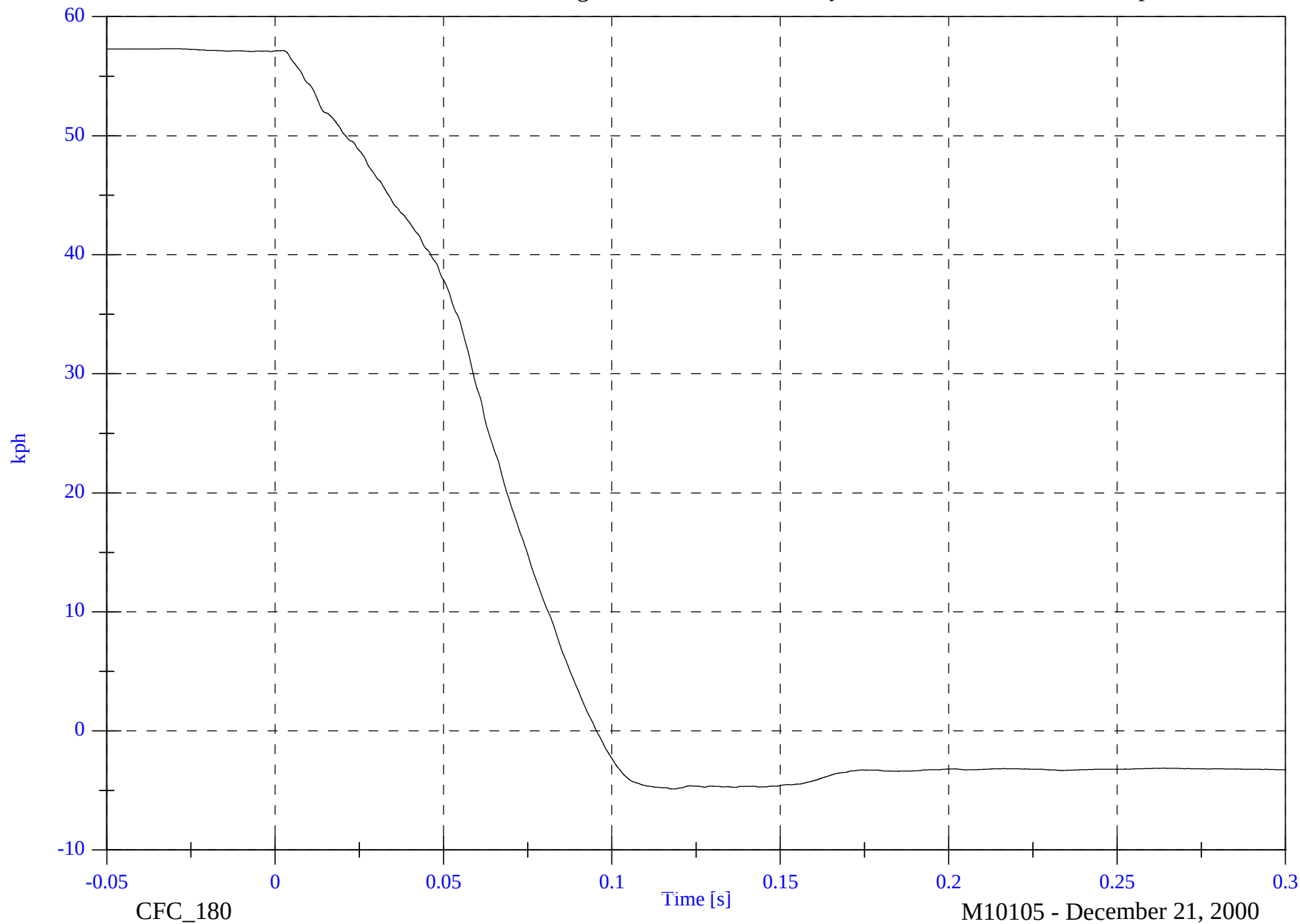


NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Rear Red #9x Velocity

Max: 57.3 [kph] at -0.031 [s]

Min: -4.9 [kph] at 0.118 [s]



B-131

8602-11

CFC_180

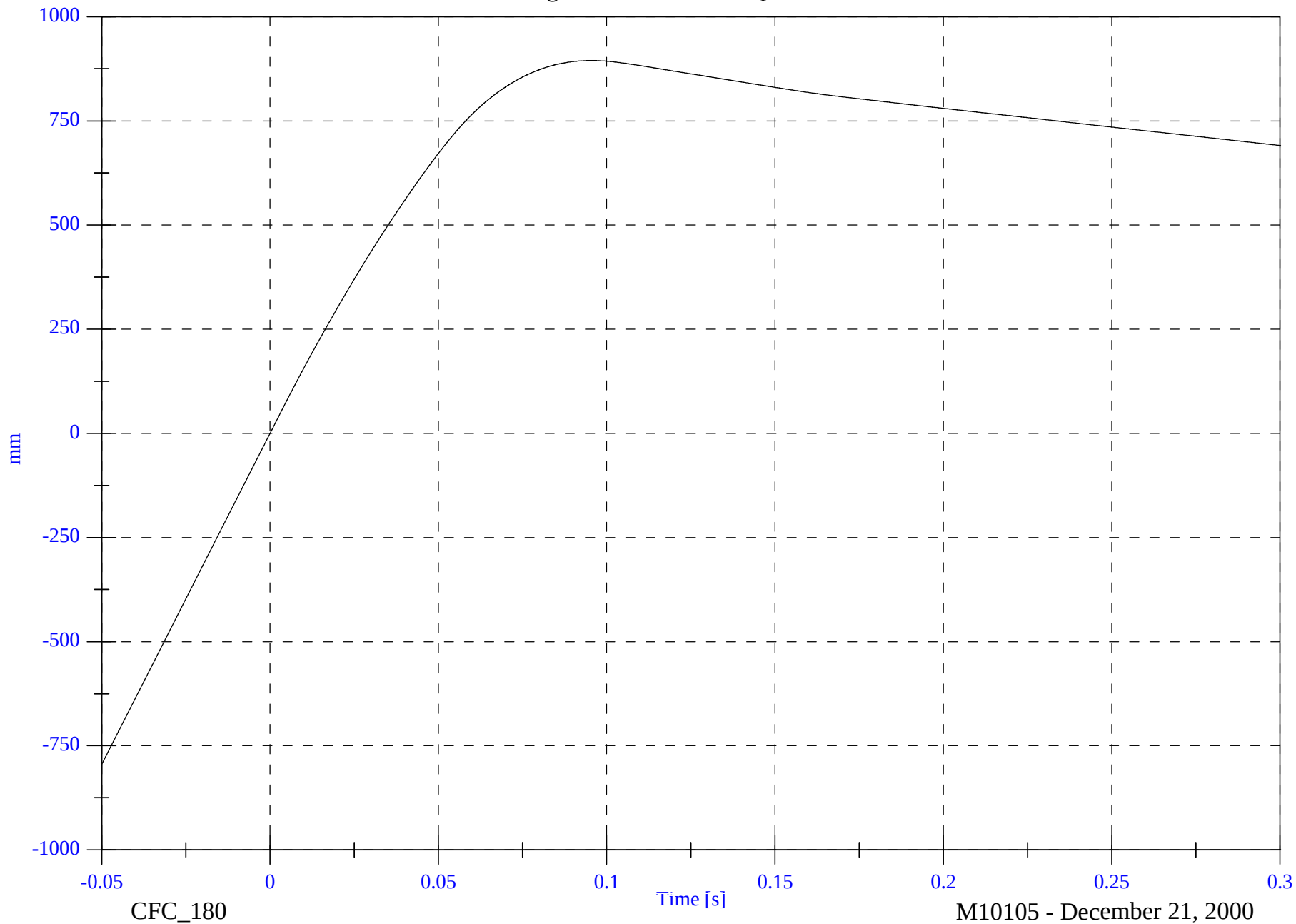
M10105 - December 21, 2000

NCAP 2001 Test 11 - 2001 Chevrolet Monte Carlo LS Coupe

Right Rear Red #9x Displacement

Max: 894.8 [mm] at 0.095 [s]

Min: -794.6 [mm] at -0.050 [s]



B-132

8602-11

CFC_180

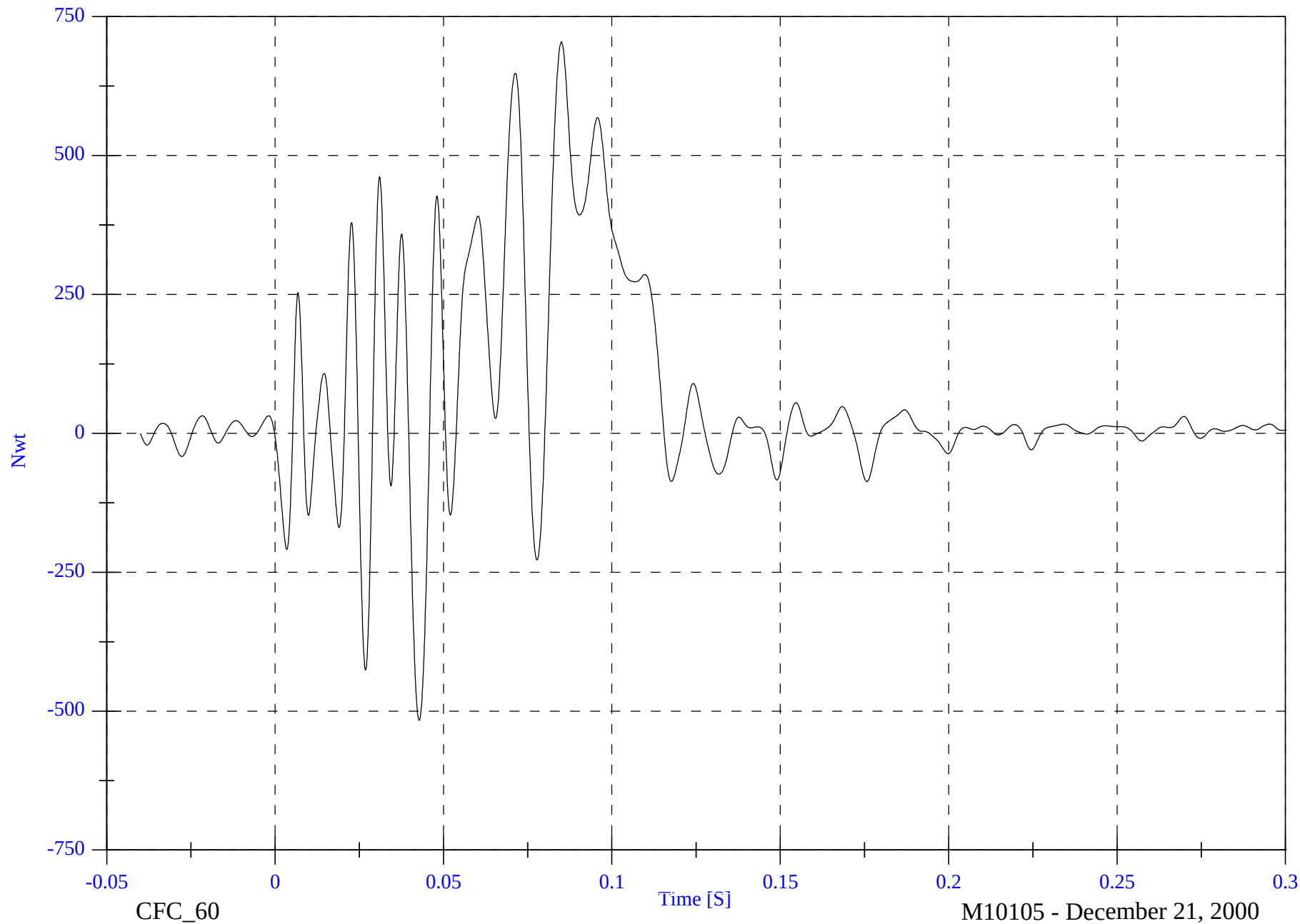
M10105 - December 21, 2000

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A1 Fx

Max: 704.4 [Nwt] at 0.085 [S]

Min: -516.8 [Nwt] at 0.043 [S]

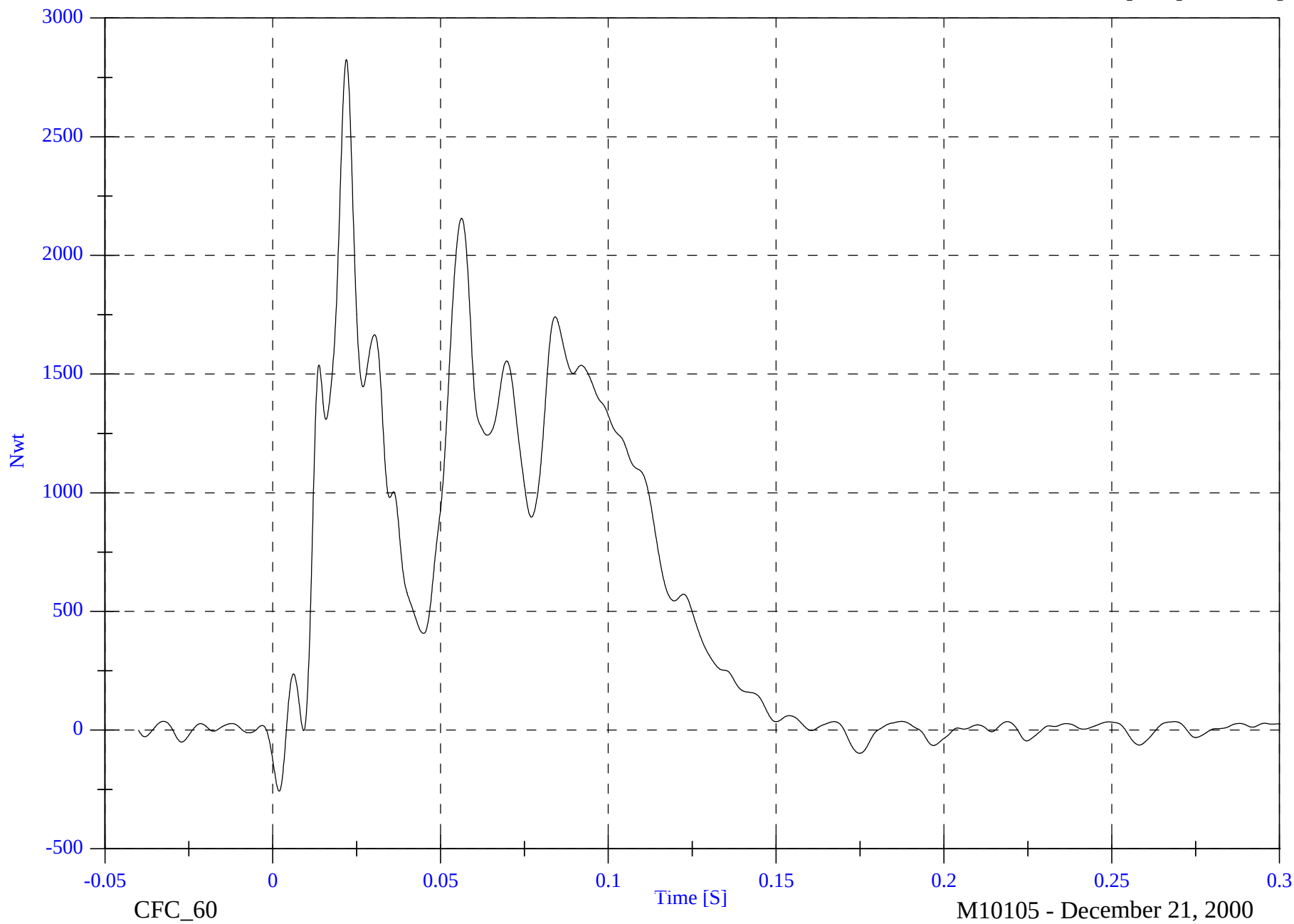


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A2 Fx

Max: 2825.2 [Nwt] at 0.022 [S]

Min: -257.3 [Nwt] at 0.002 [S]



B-134

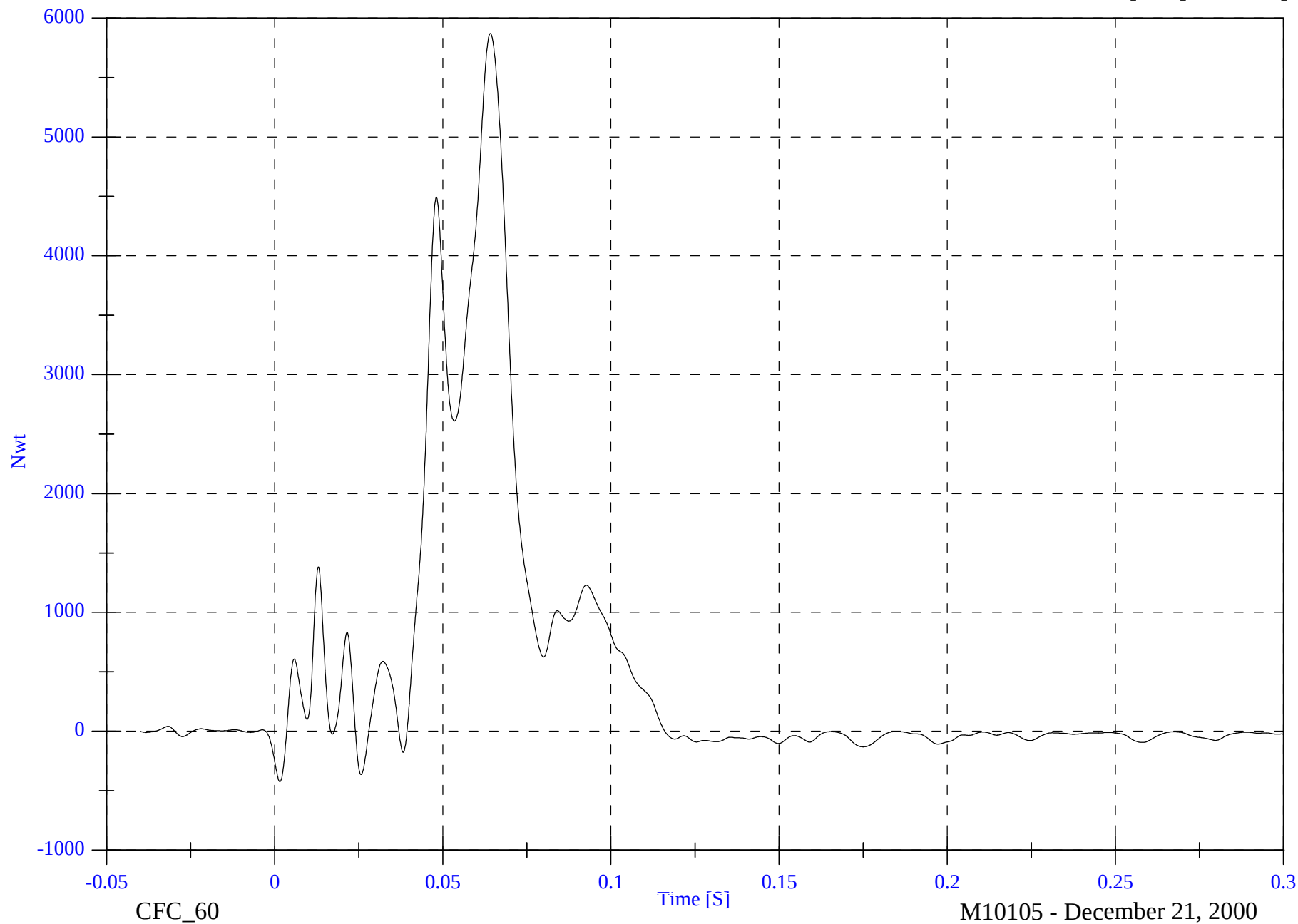
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A3 Fx

Max: 5870.9 [Nwt] at 0.064 [S]

Min: -424.9 [Nwt] at 0.001 [S]



B-135

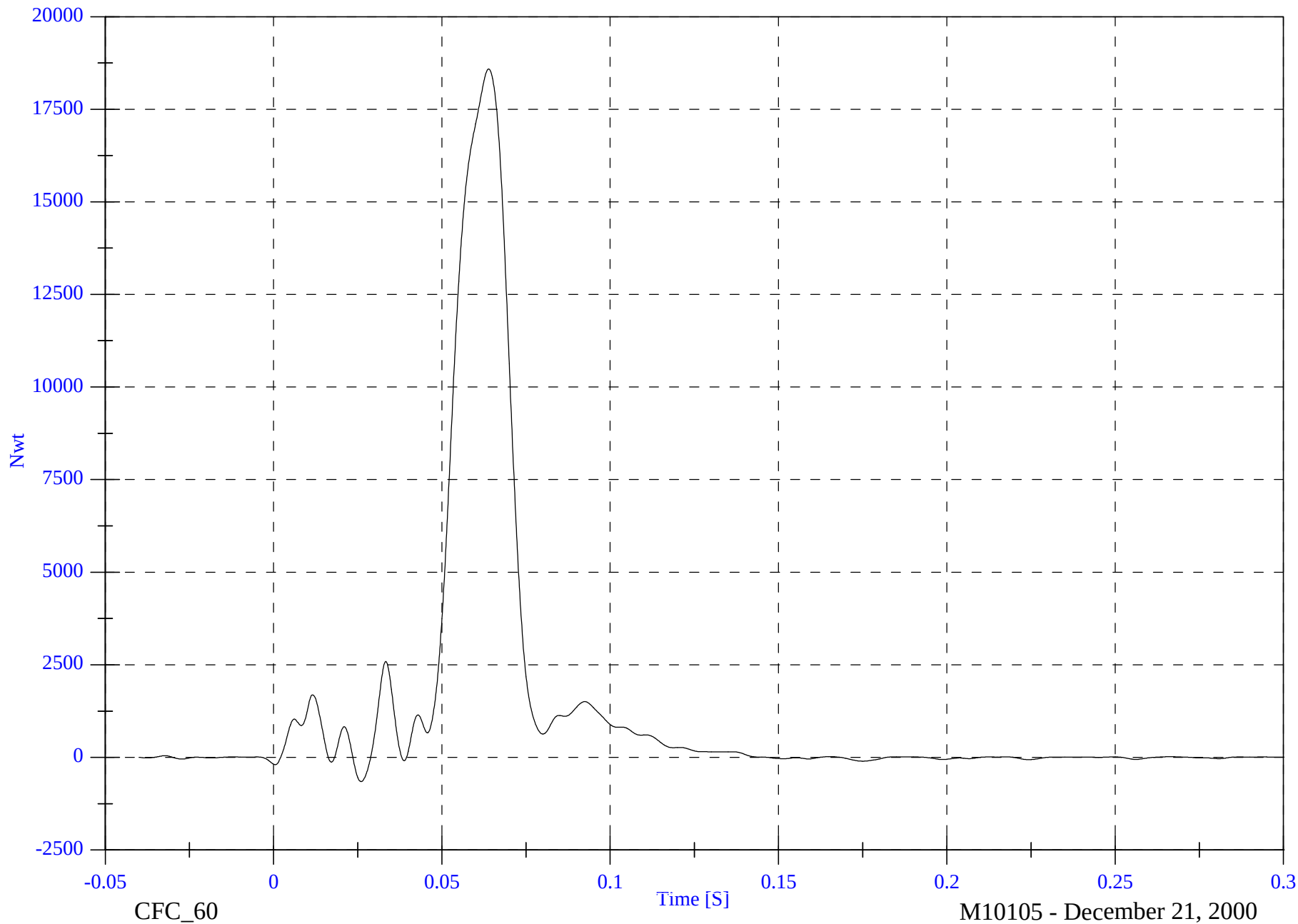
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A4 Fx

Max: 18589.3 [Nwt] at 0.064 [S]

Min: -653.4 [Nwt] at 0.026 [S]



B-136

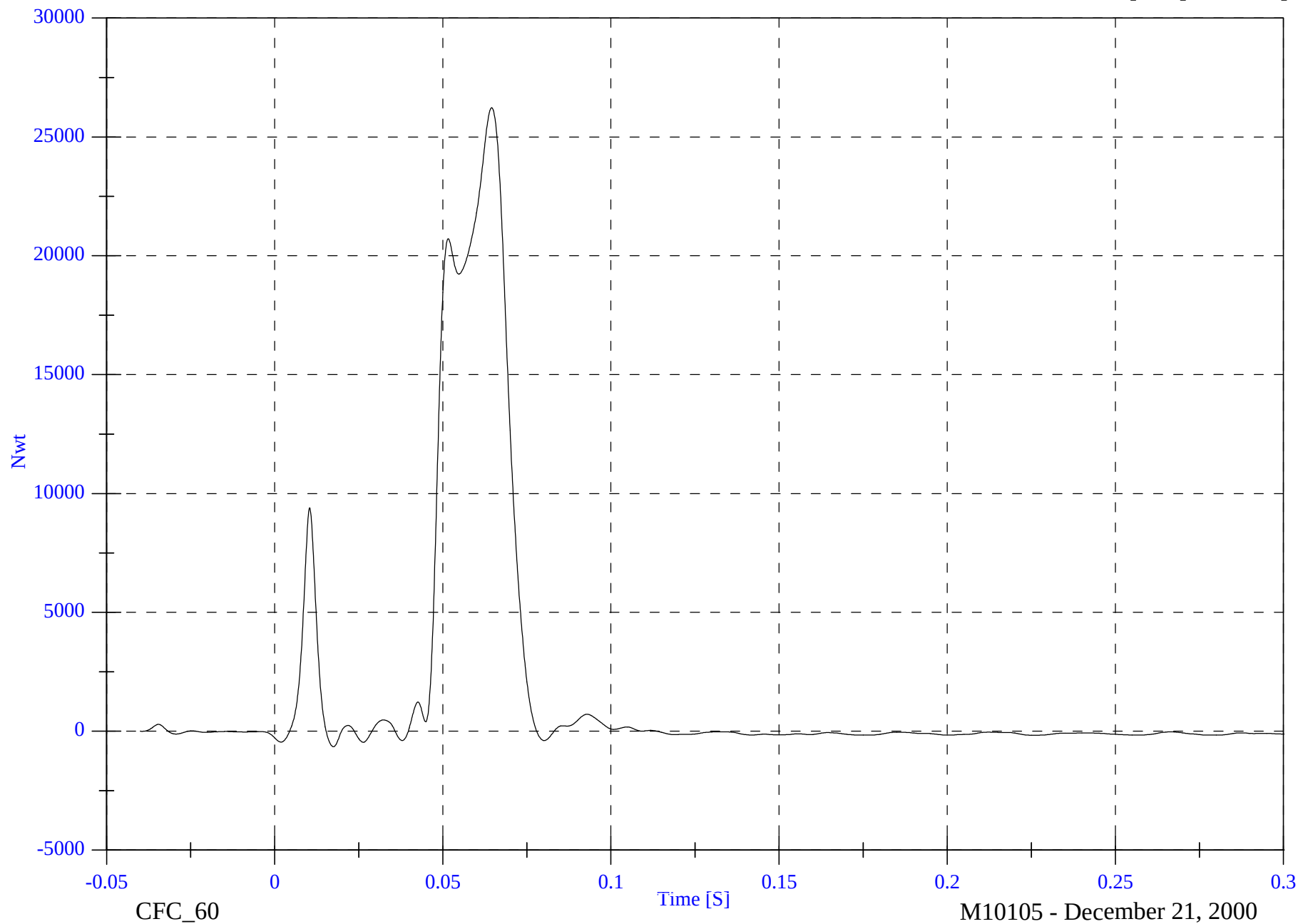
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A5 Fx

Max: 26227.3 [Nwt] at 0.064 [S]

Min: -655.8 [Nwt] at 0.017 [S]



B-137

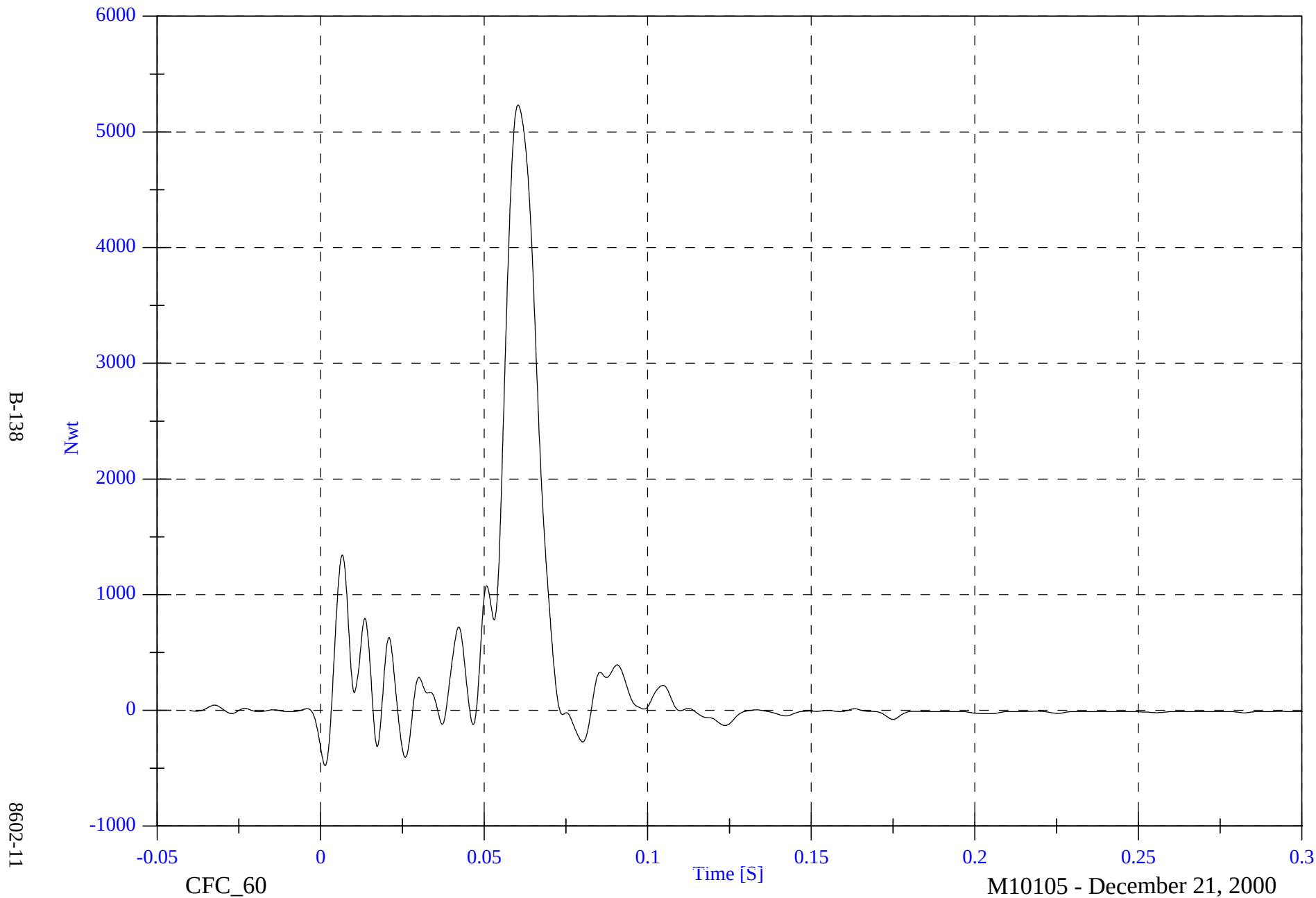
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A6 Fx

Max: 5232.4 [Nwt] at 0.060 [S]

Min: -477.3 [Nwt] at 0.001 [S]

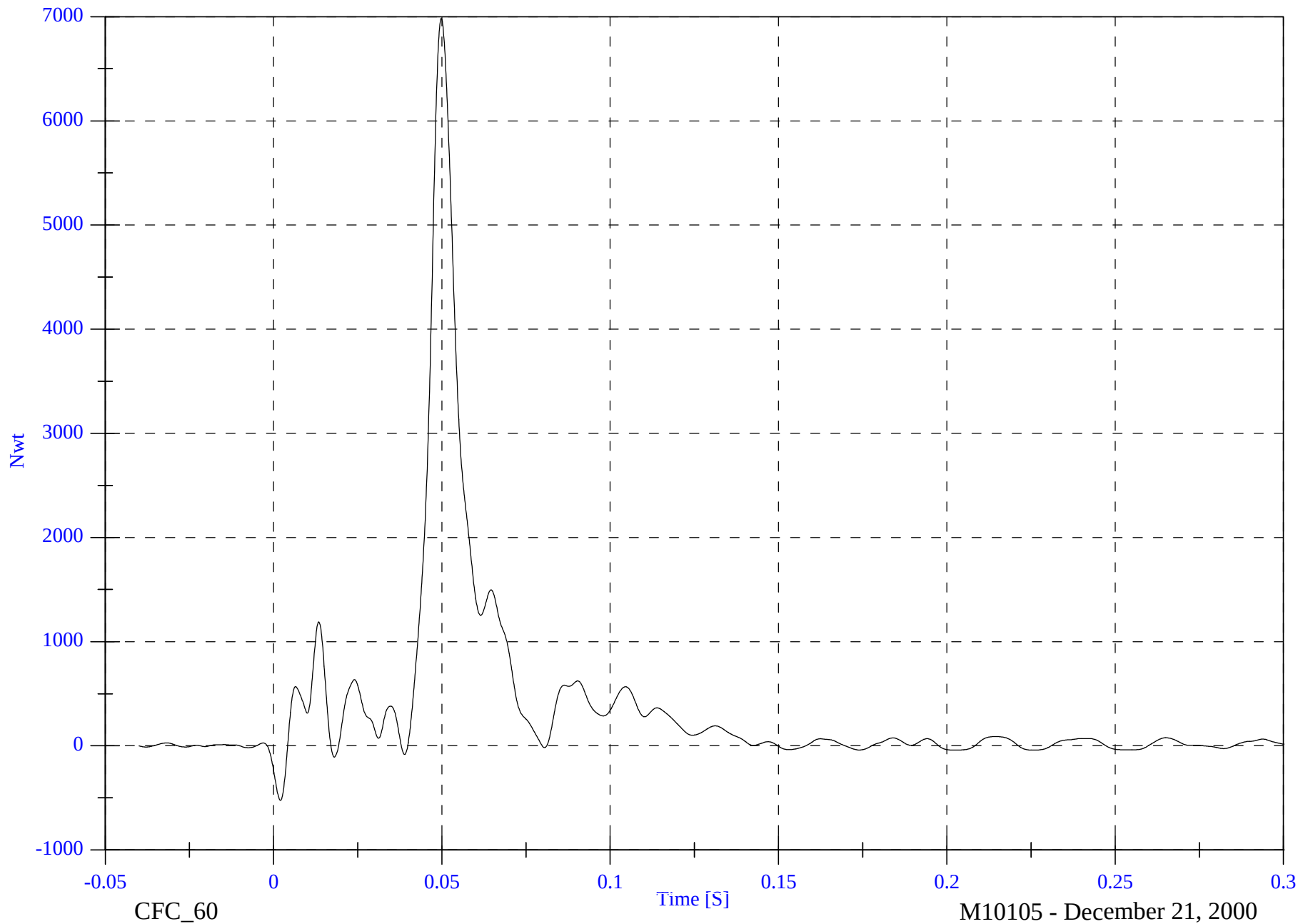


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A7 Fx

Max: 6984.7 [Nwt] at 0.050 [S]

Min: -523.9 [Nwt] at 0.002 [S]



B-139

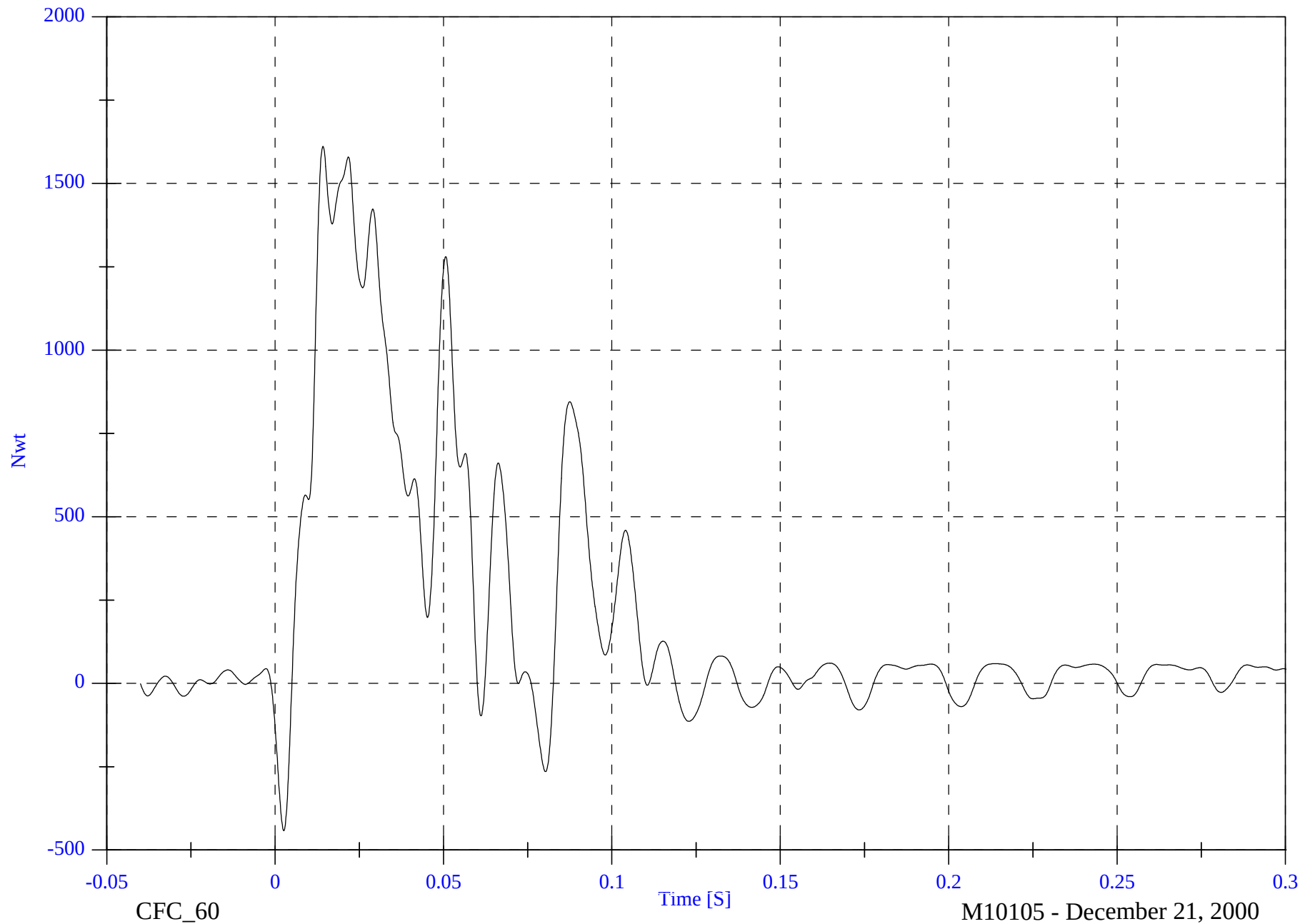
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A8 Fx

Max: 1611.2 [Nwt] at 0.014 [S]

Min: -442.5 [Nwt] at 0.003 [S]



B-140

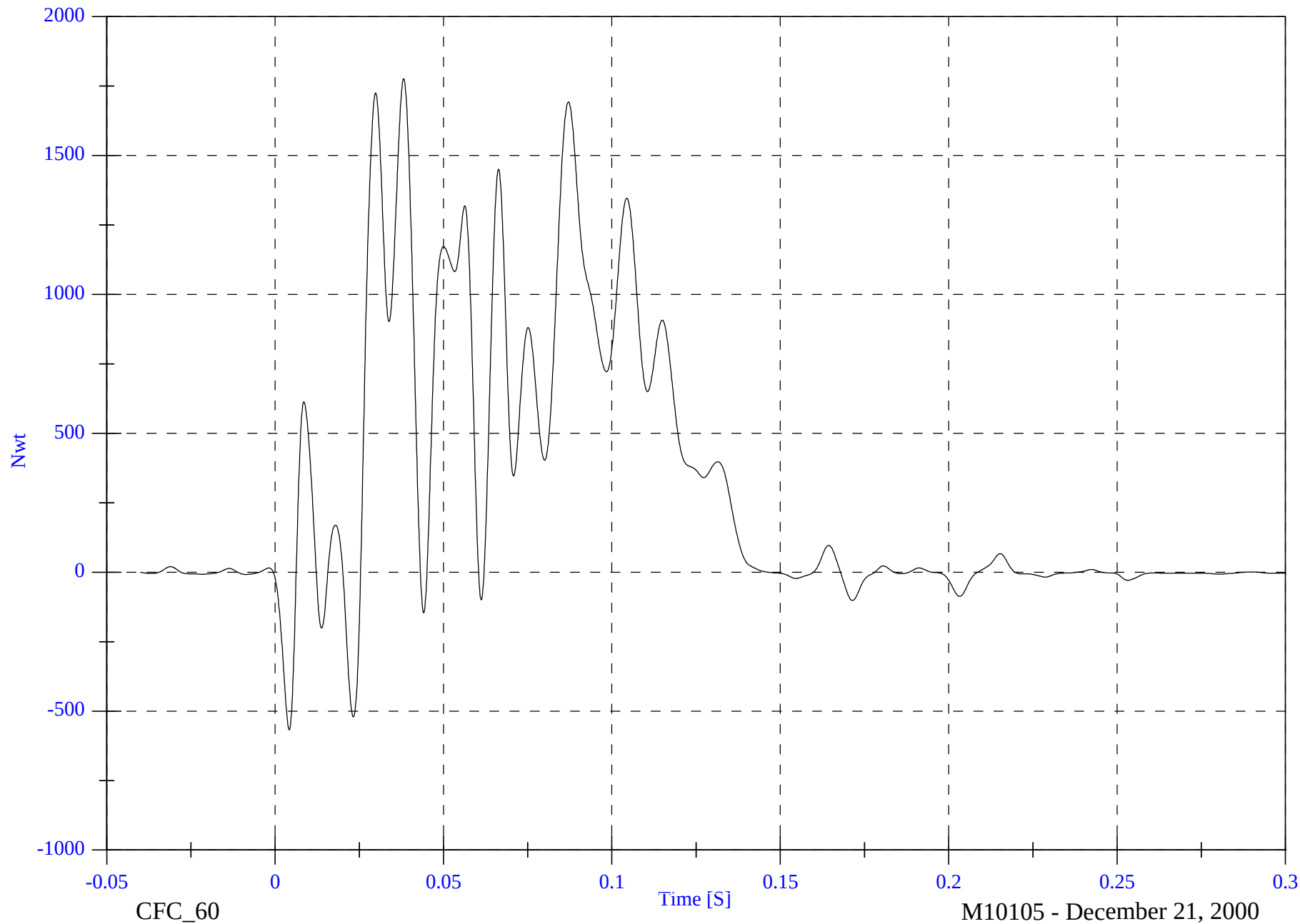
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC A9 Fx

Max: 1776.8 [Nwt] at 0.038 [S]

Min: -567.8 [Nwt] at 0.004 [S]



B-141

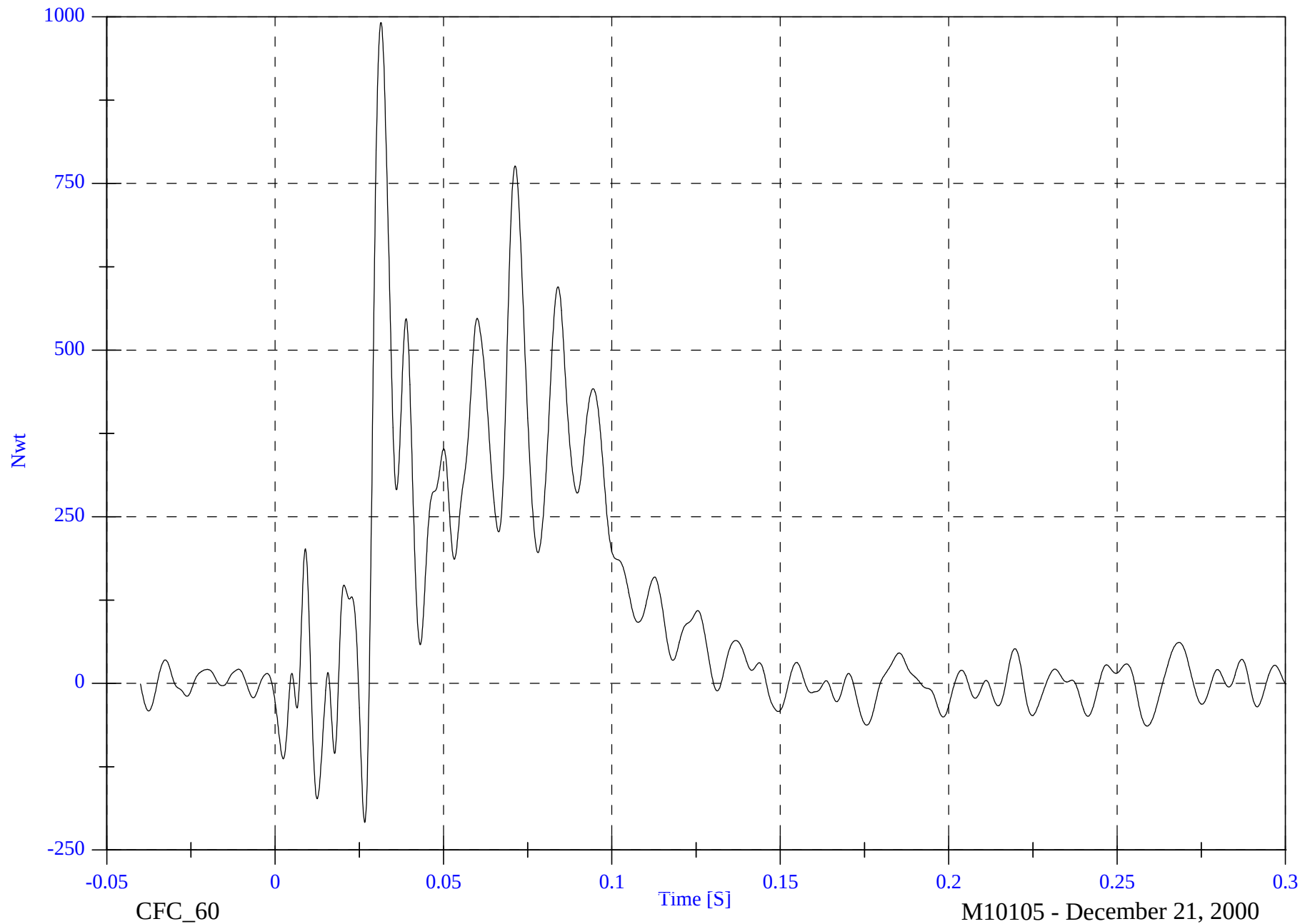
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B1 Fx

Max: 991.4 [Nwt] at 0.031 [S]

Min: -208.8 [Nwt] at 0.027 [S]



B-142

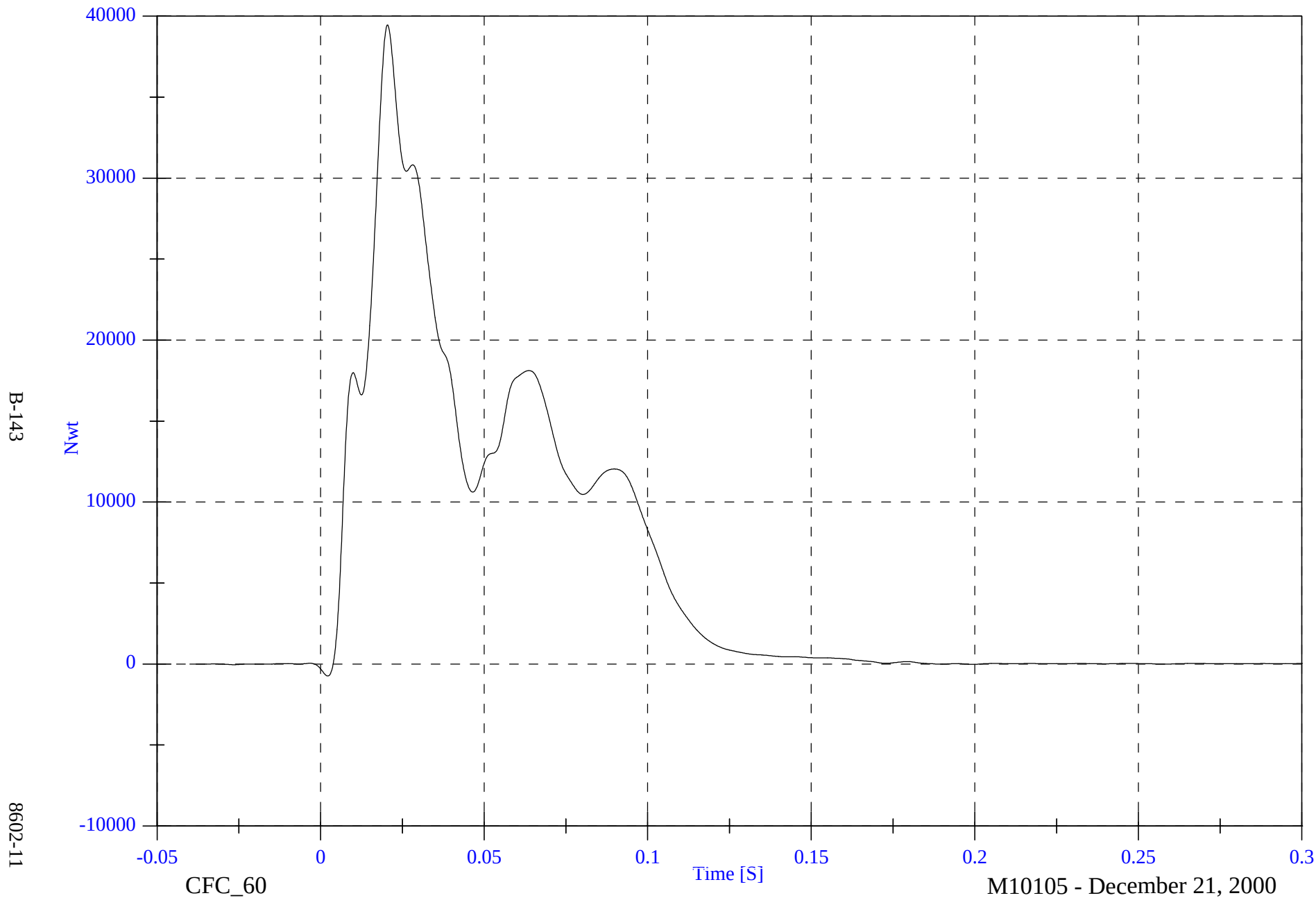
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B2 Fx

Max: 39457.5 [Nwt] at 0.020 [S]

Min: -736.6 [Nwt] at 0.002 [S]

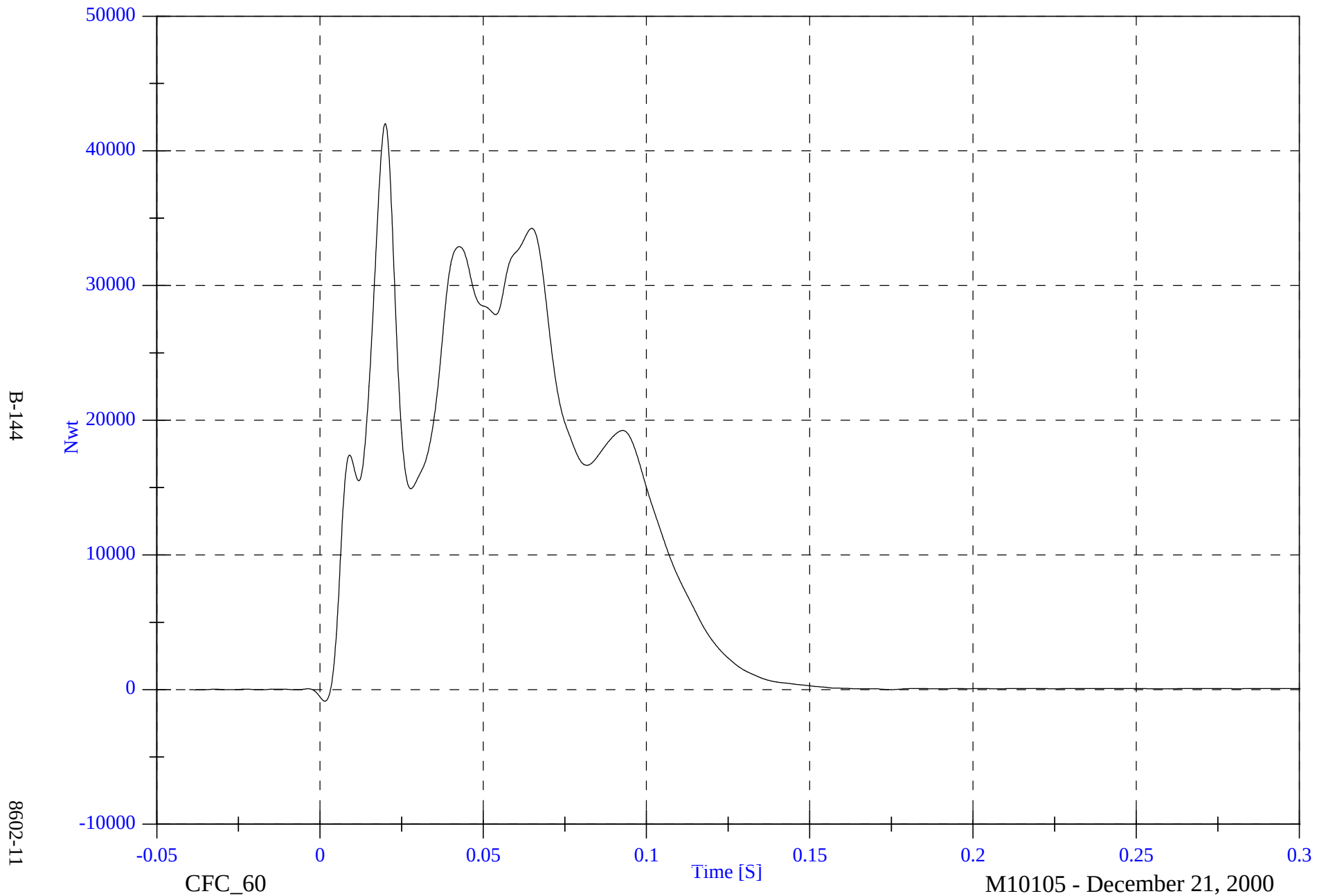


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B3 Fx

Max: 42026.5 [Nwt] at 0.020 [S]

Min: -868.4 [Nwt] at 0.001 [S]

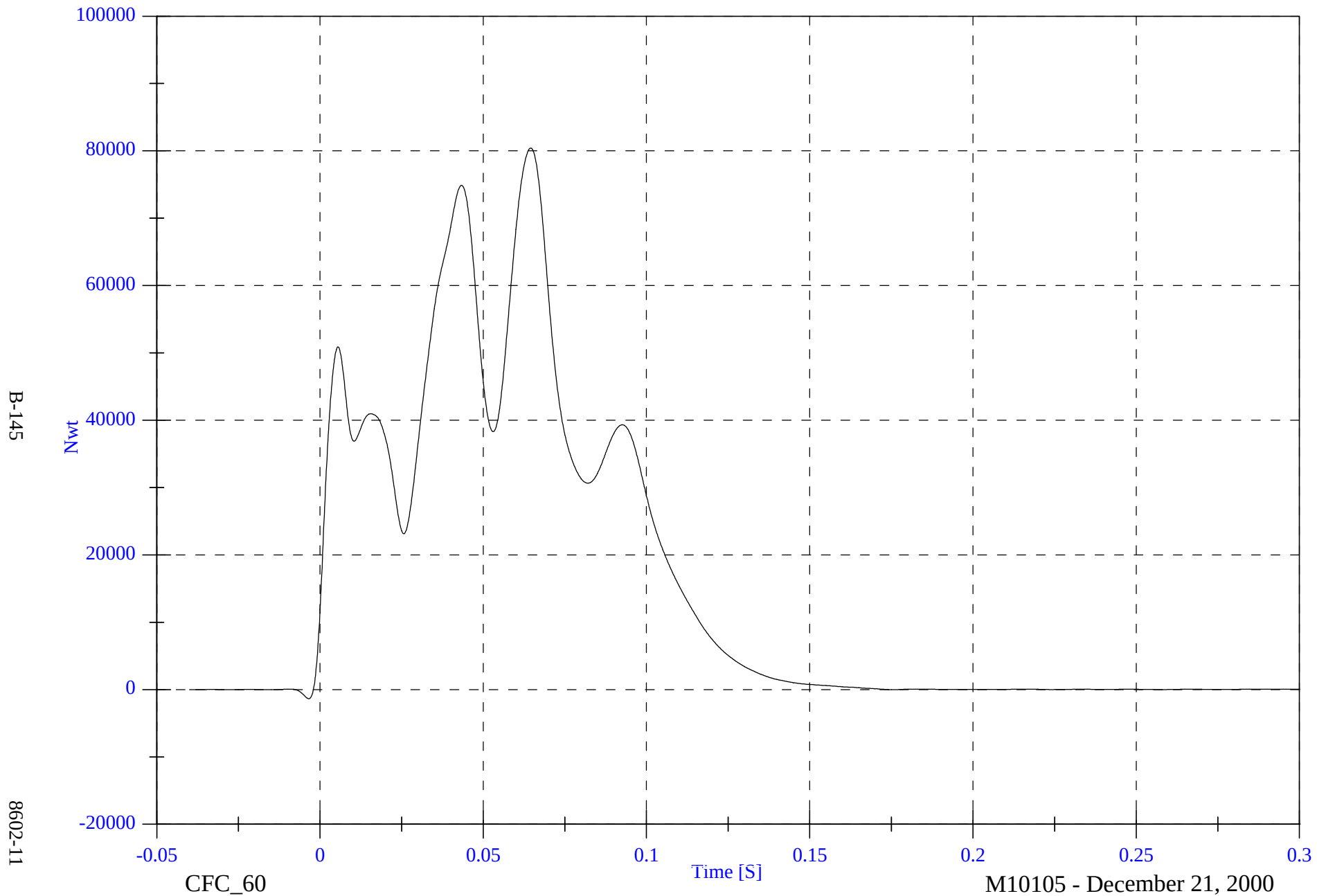


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B4 Fx

Max: 80419.5 [Nwt] at 0.064 [S]

Min: -1357.6 [Nwt] at -0.004 [S]

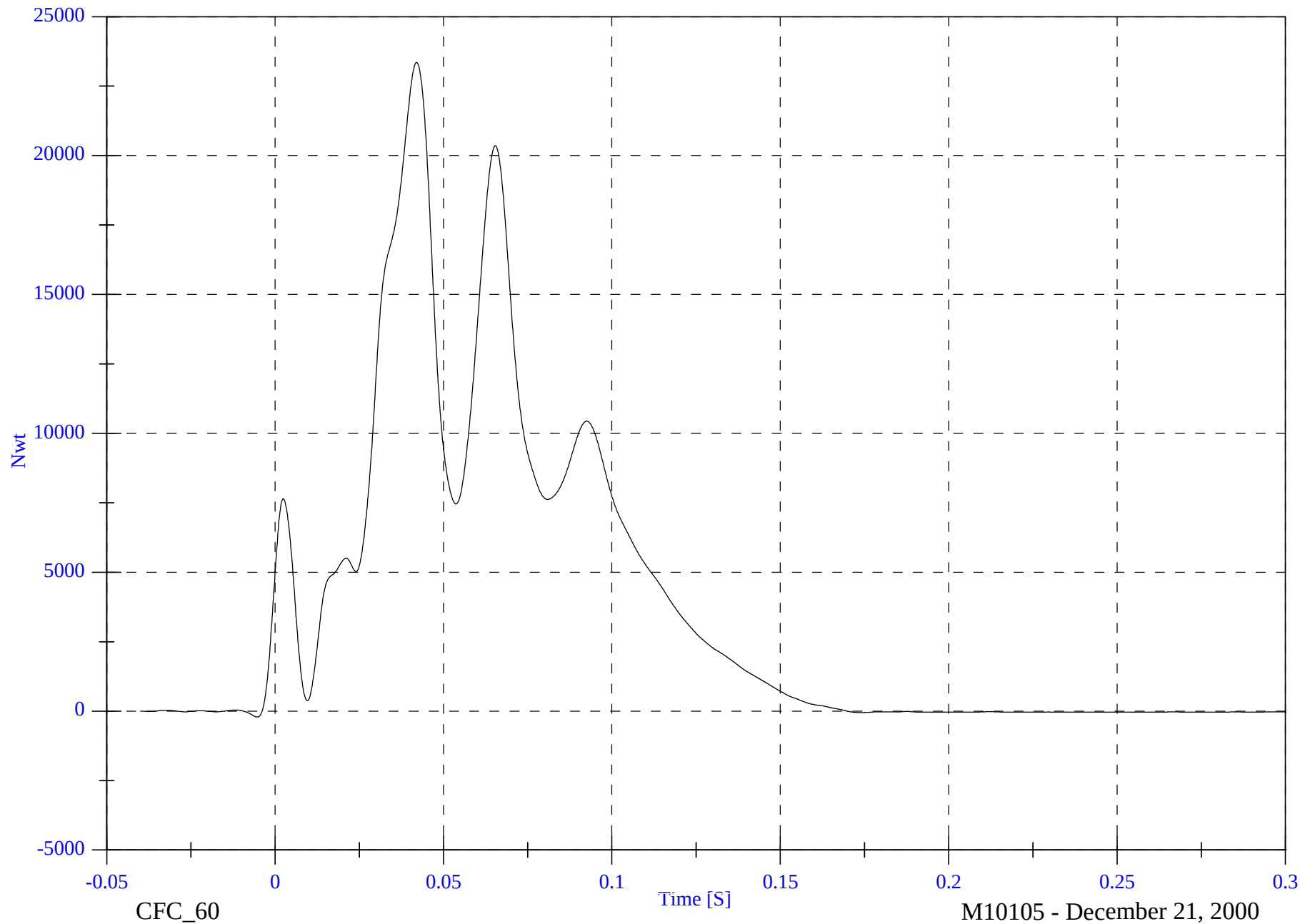


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B5 Fx

Max: 23357.8 [Nwt] at 0.042 [S]

Min: -215.6 [Nwt] at -0.005 [S]



B-146

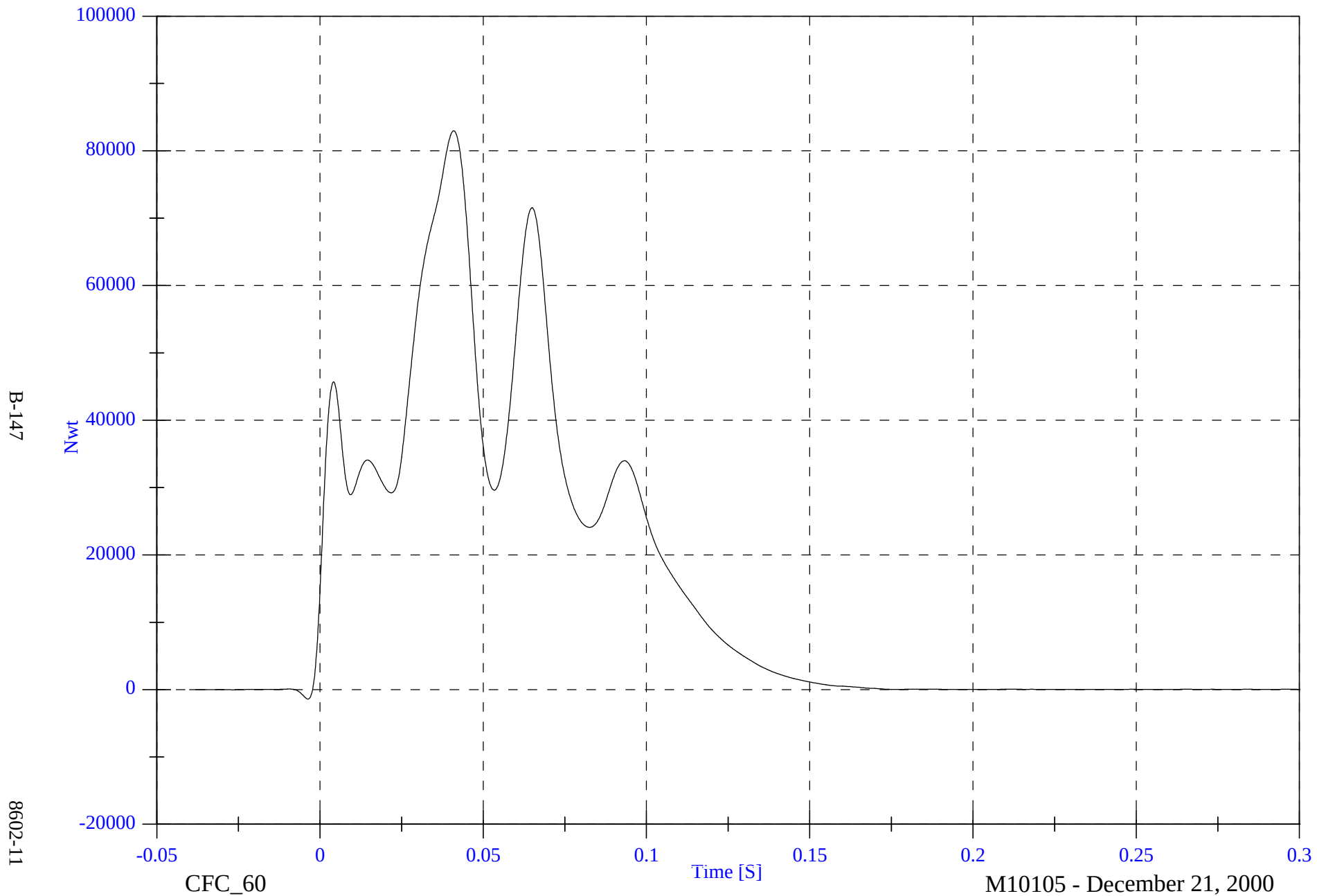
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B6 Fx

Max: 82987.6 [Nwt] at 0.041 [S]

Min: -1411.0 [Nwt] at -0.004 [S]

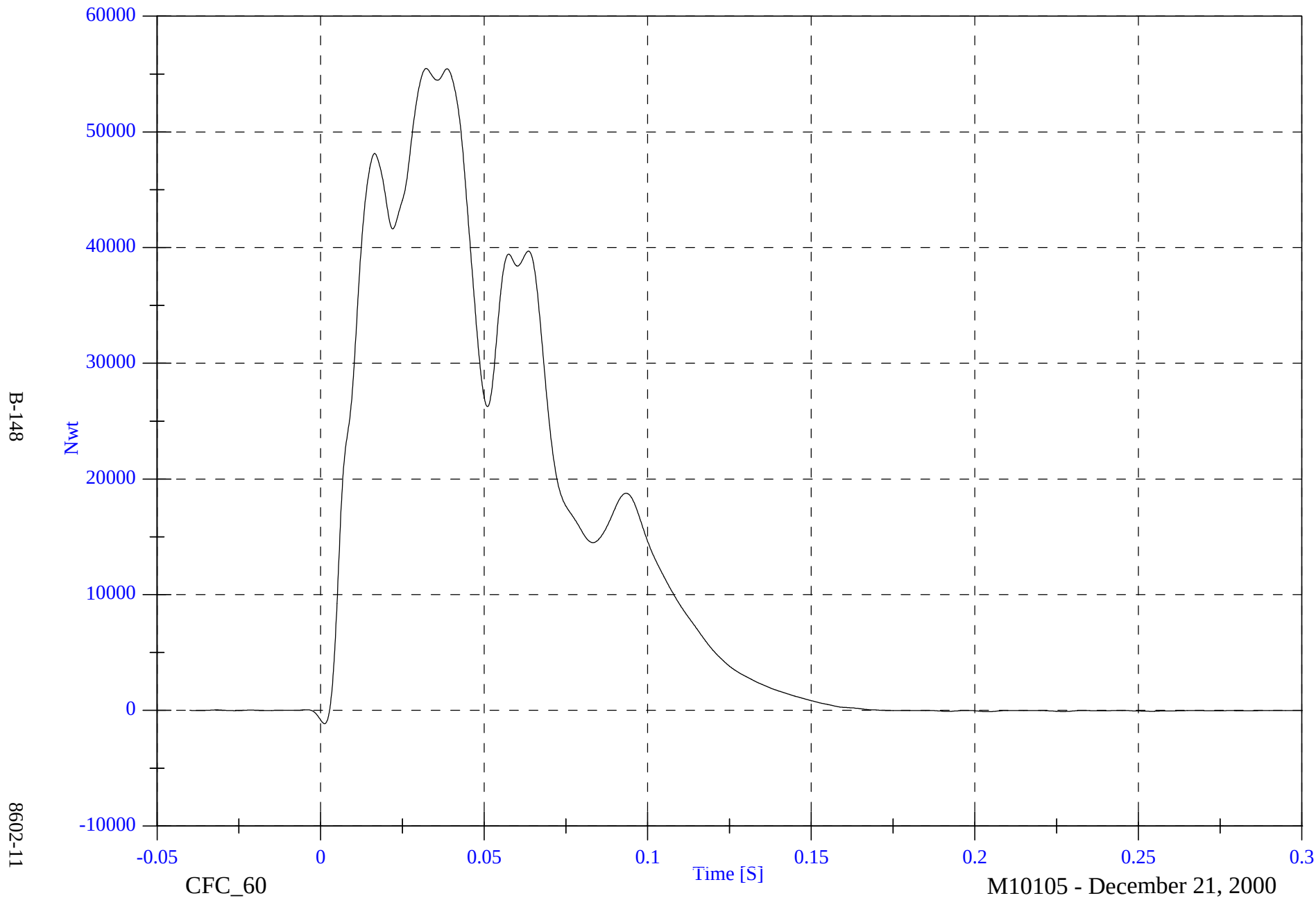


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B7 Fx

Max: 55486.4 [Nwt] at 0.032 [S]

Min: -1150.3 [Nwt] at 0.001 [S]

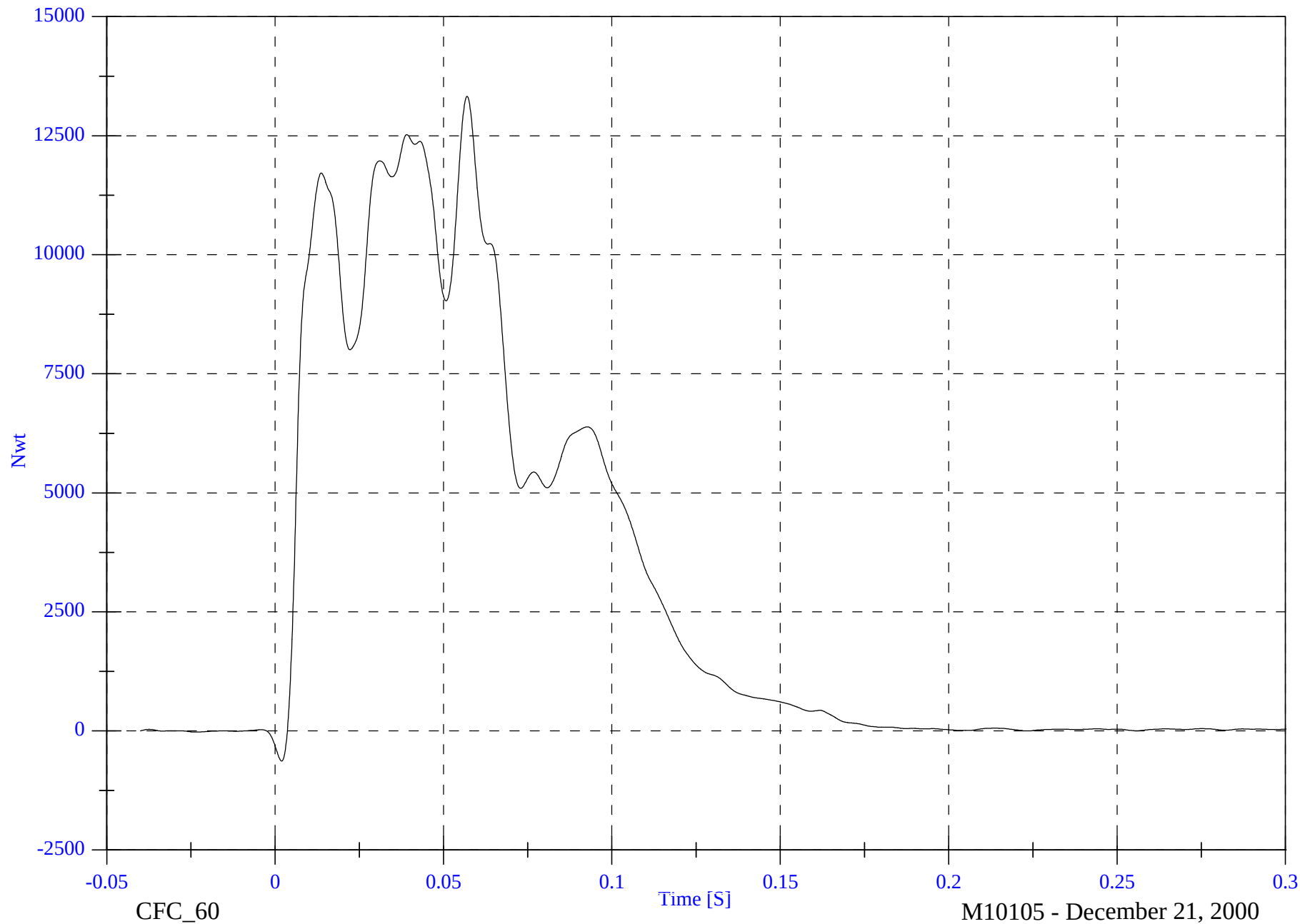


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B8 Fx

Max: 13327.7 [Nwt] at 0.057 [S]

Min: -632.5 [Nwt] at 0.002 [S]



B-149

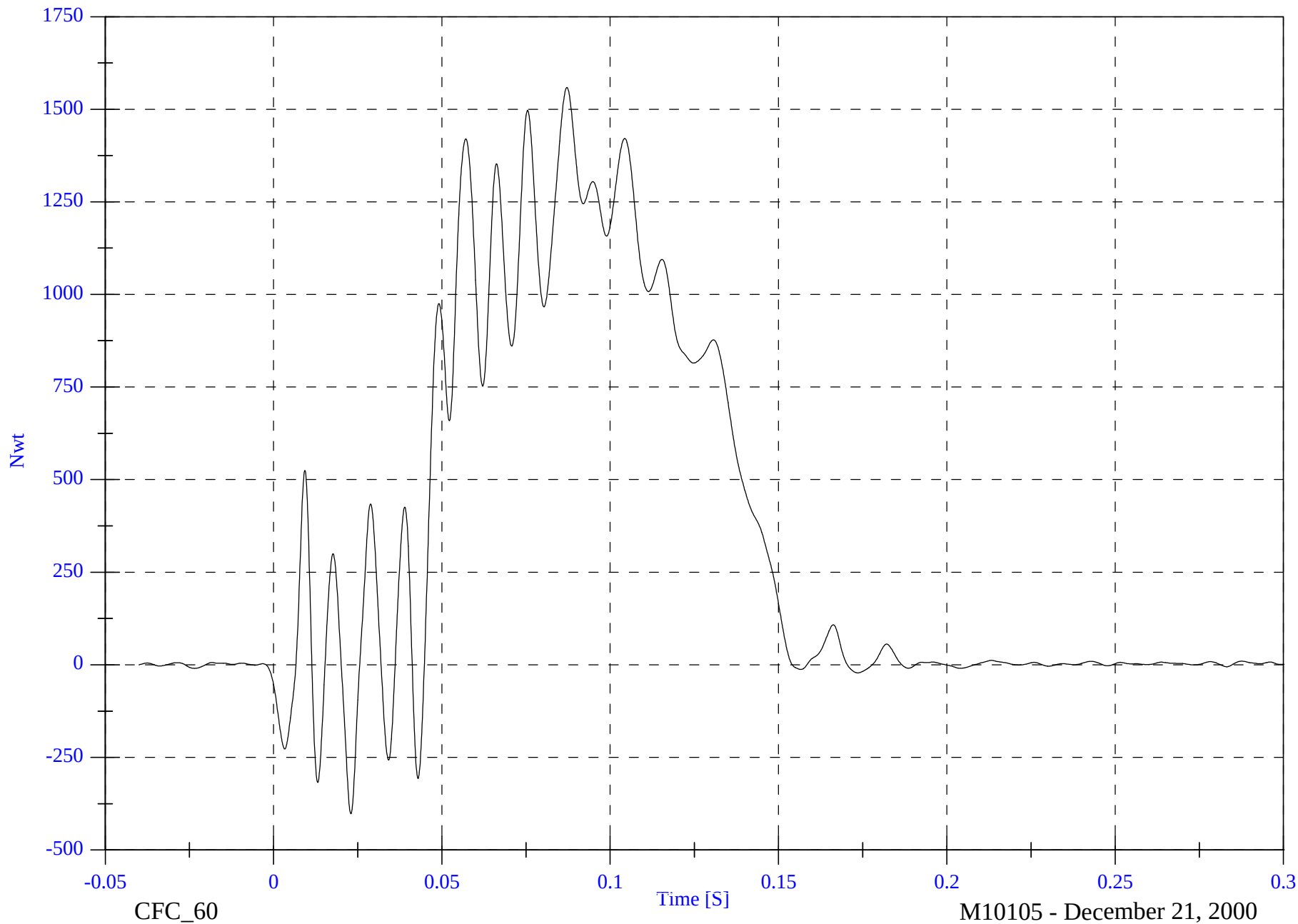
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC B9 Fx

Max: 1559.1 [Nwt] at 0.087 [S]

Min: -402.5 [Nwt] at 0.023 [S]



B-150

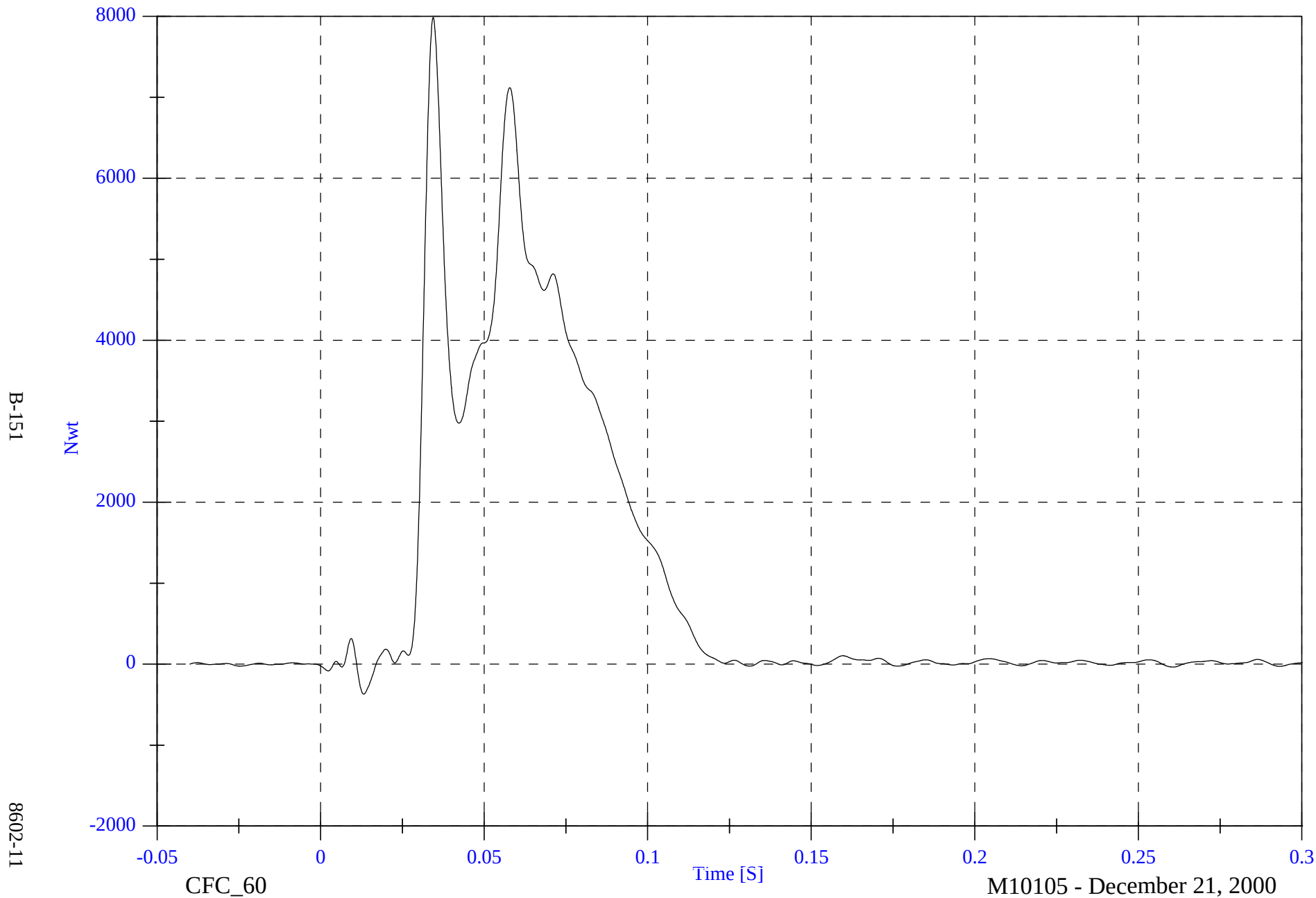
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C1 Fx

Max: 7986.0 [Nwt] at 0.034 [S]

Min: -371.6 [Nwt] at 0.013 [S]

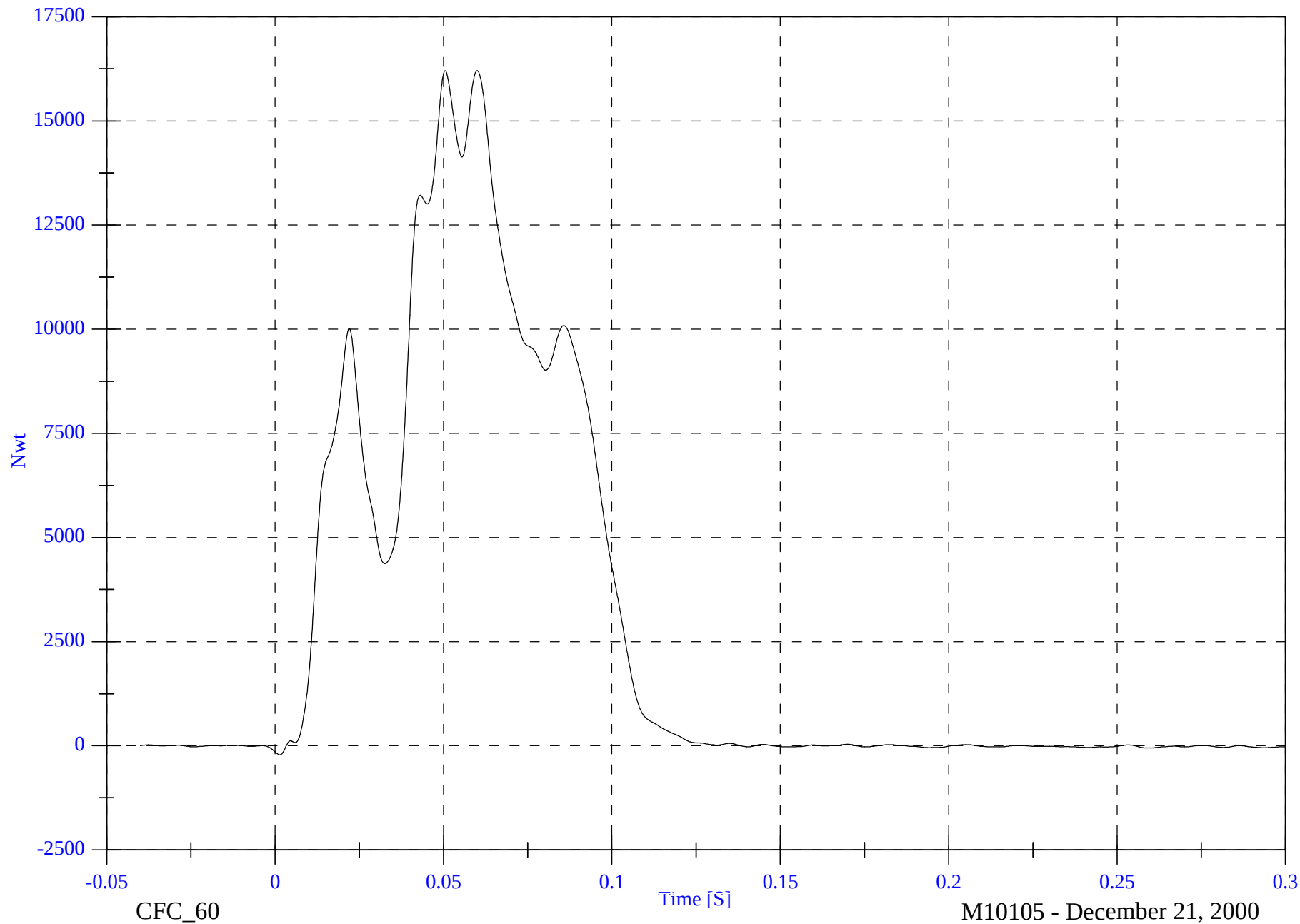


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C2 Fx

Max: 16205.6 [Nwt] at 0.050 [S]

Min: -217.6 [Nwt] at 0.001 [S]



B-152

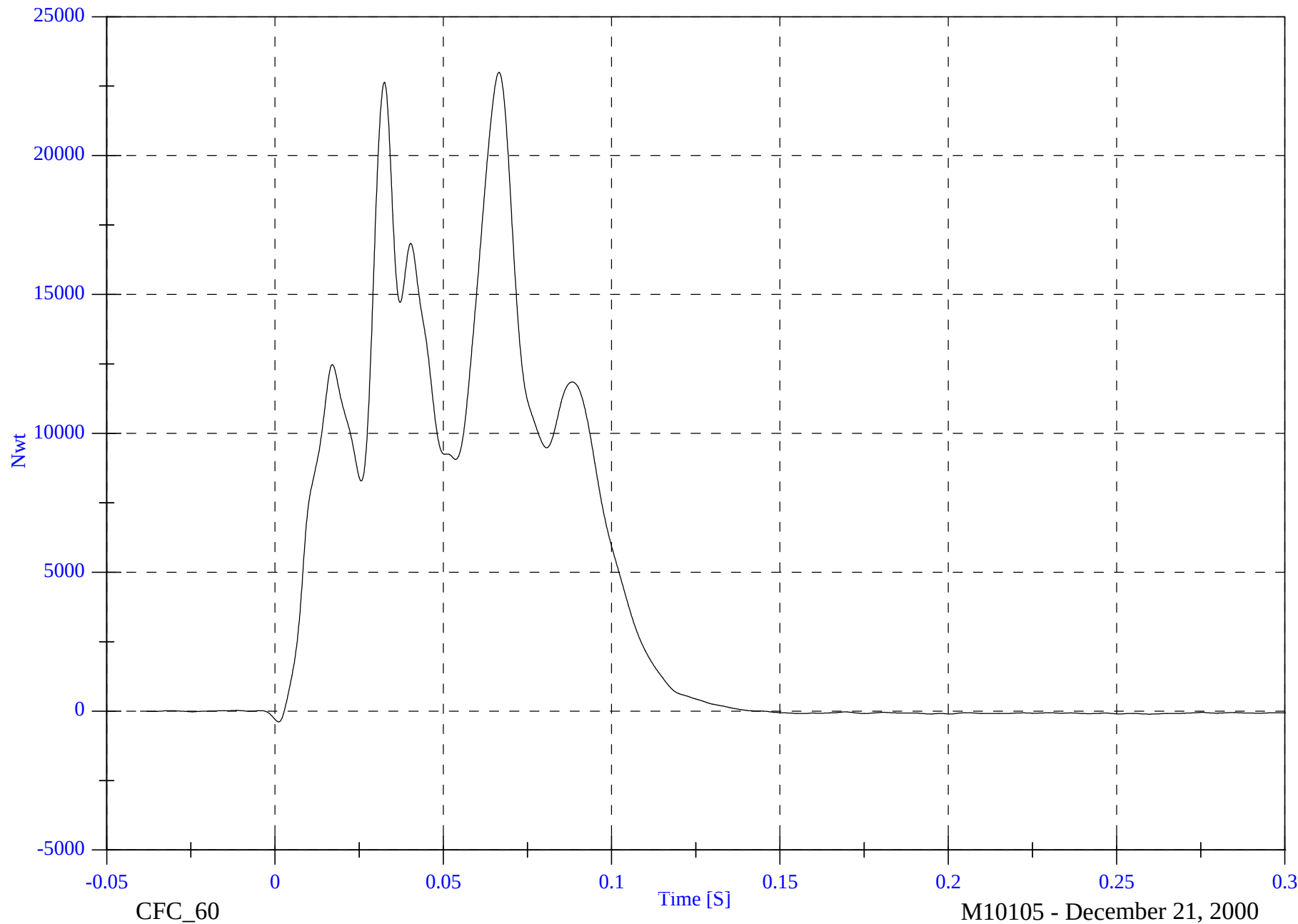
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C3 Fx

Max: 22996.9 [Nwt] at 0.066 [S]

Min: -389.2 [Nwt] at 0.001 [S]



B-153

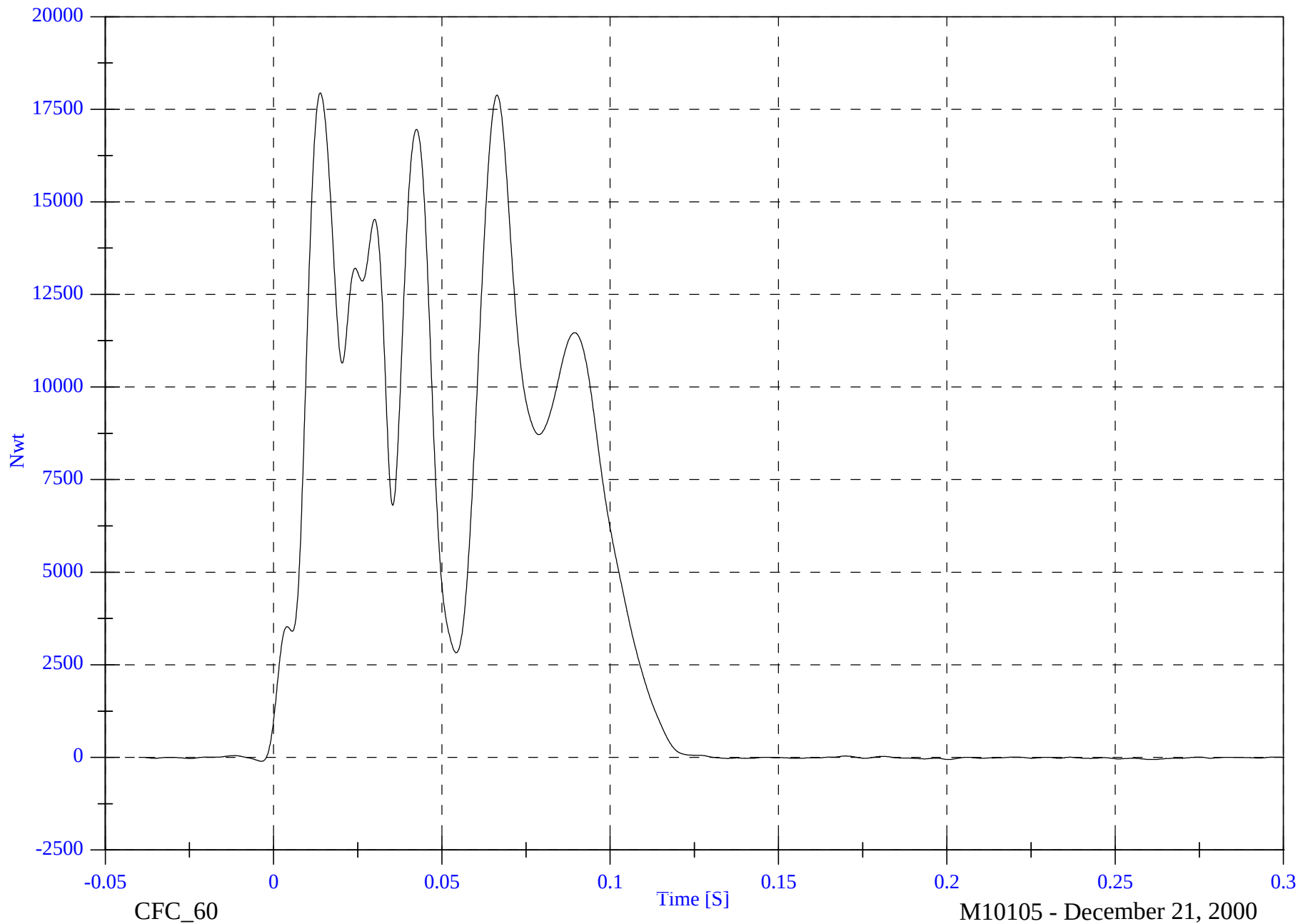
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C4 Fx

Max: 17942.0 [Nwt] at 0.014 [S]

Min: -106.3 [Nwt] at -0.004 [S]



B-154

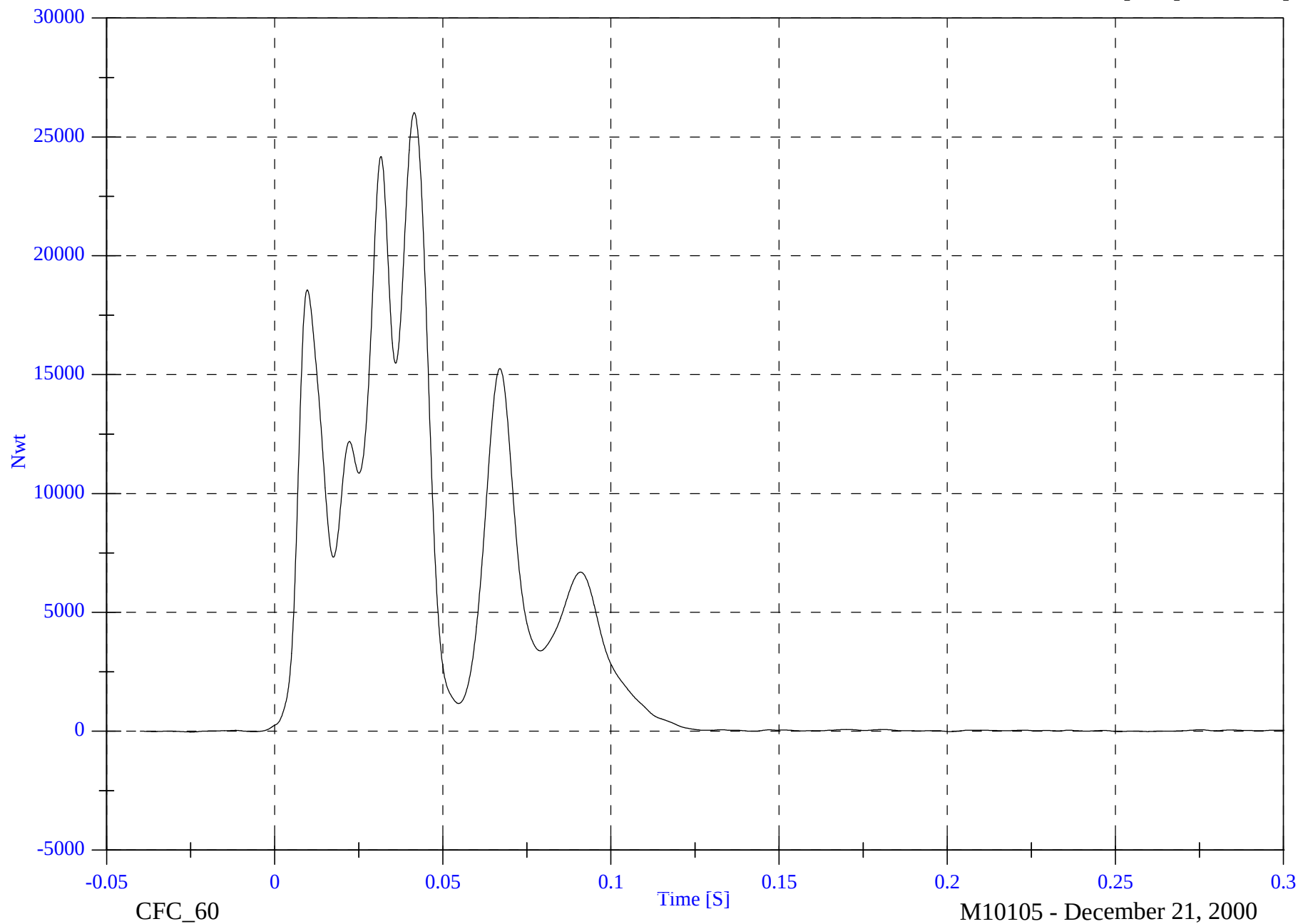
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C5 Fx

Max: 26020.2 [Nwt] at 0.041 [S]

Min: -35.8 [Nwt] at -0.025 [S]



B-155

8602-11

CFC_60

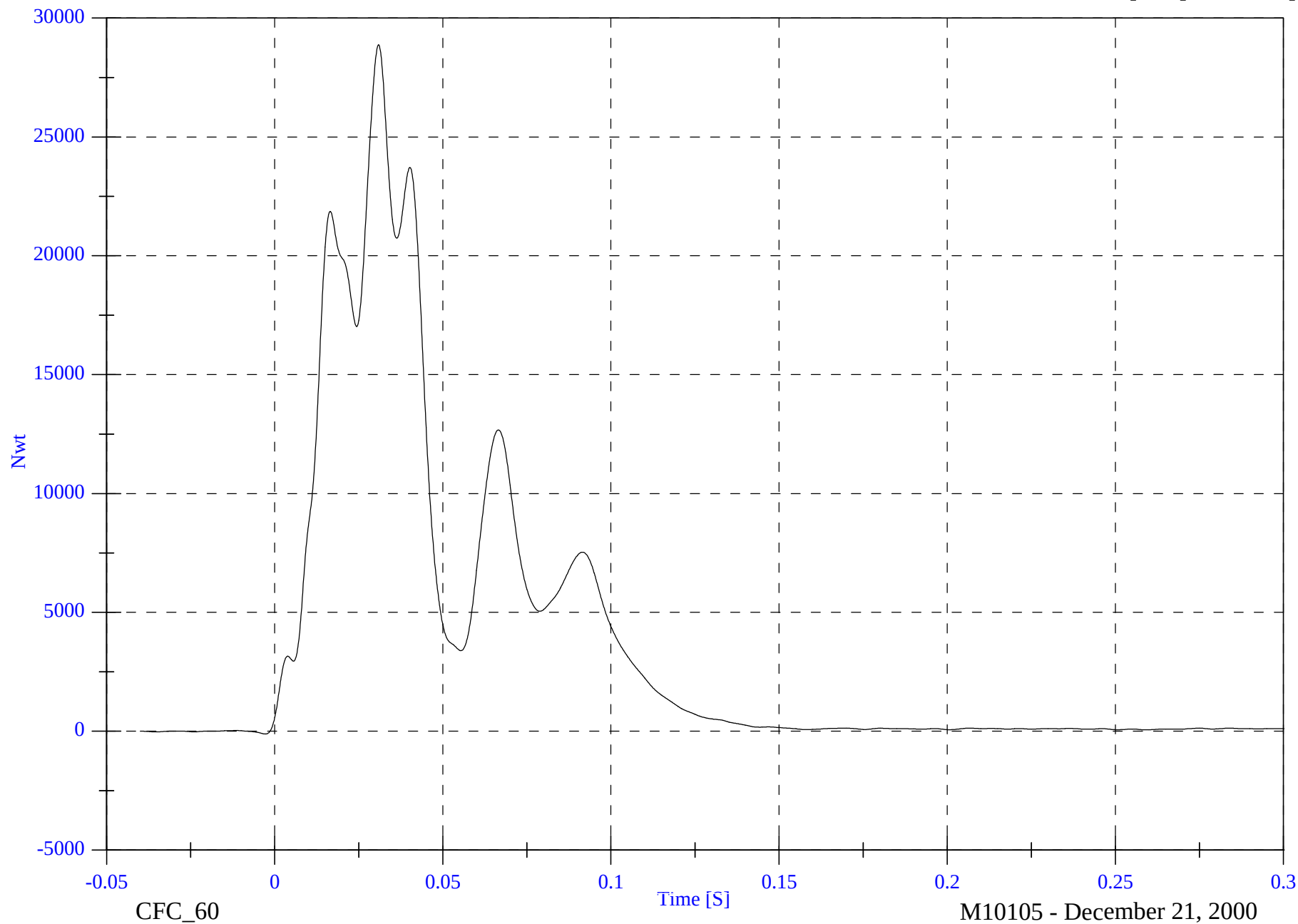
M10105 - December 21, 2000

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C6 Fx

Max: 28878.5 [Nwt] at 0.031 [S]

Min: -117.0 [Nwt] at -0.003 [S]



B-156

8602-11

CFC_60

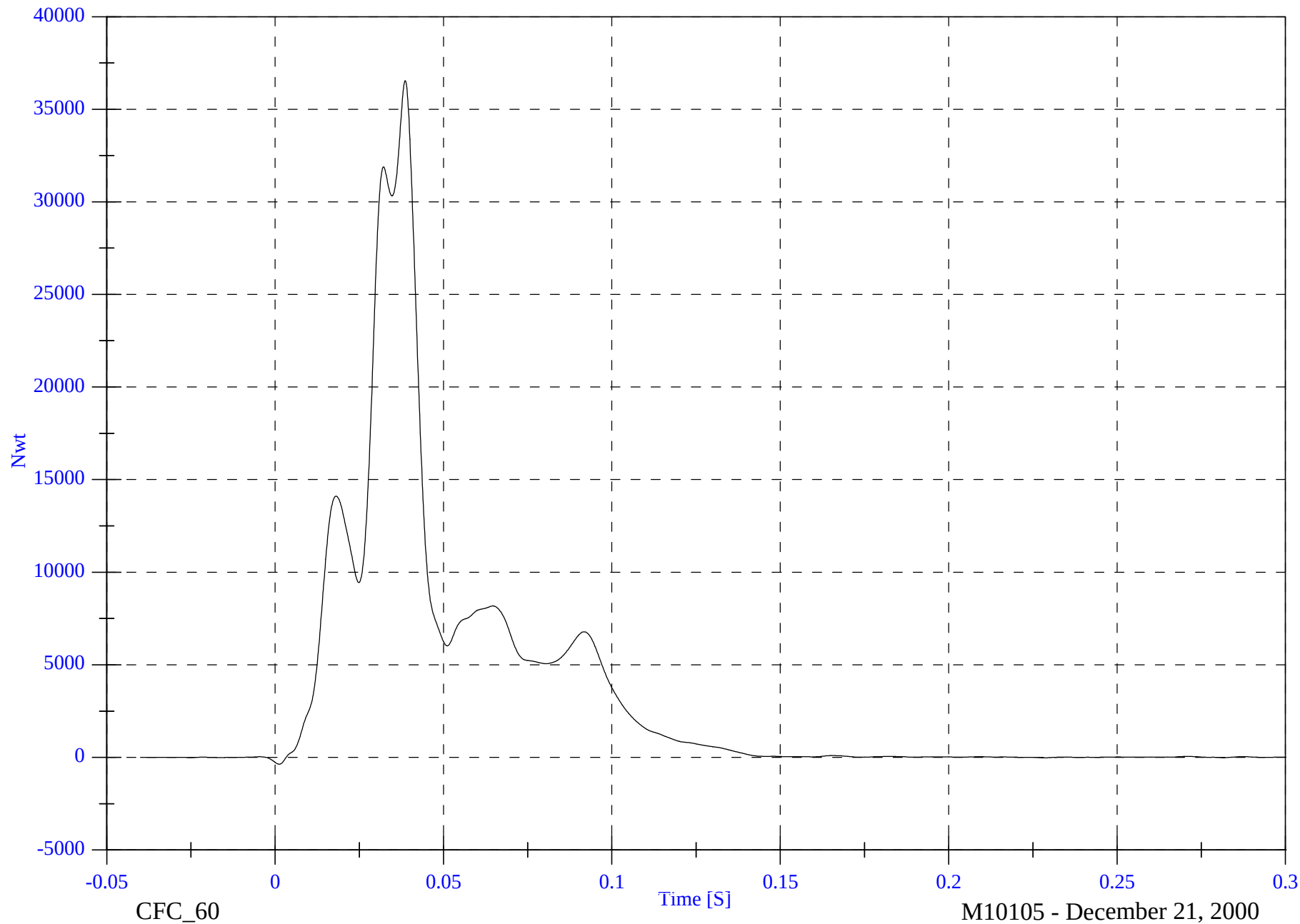
M10105 - December 21, 2000

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C7 Fx

Max: 36550.6 [Nwt] at 0.039 [S]

Min: -371.0 [Nwt] at 0.001 [S]



B-157

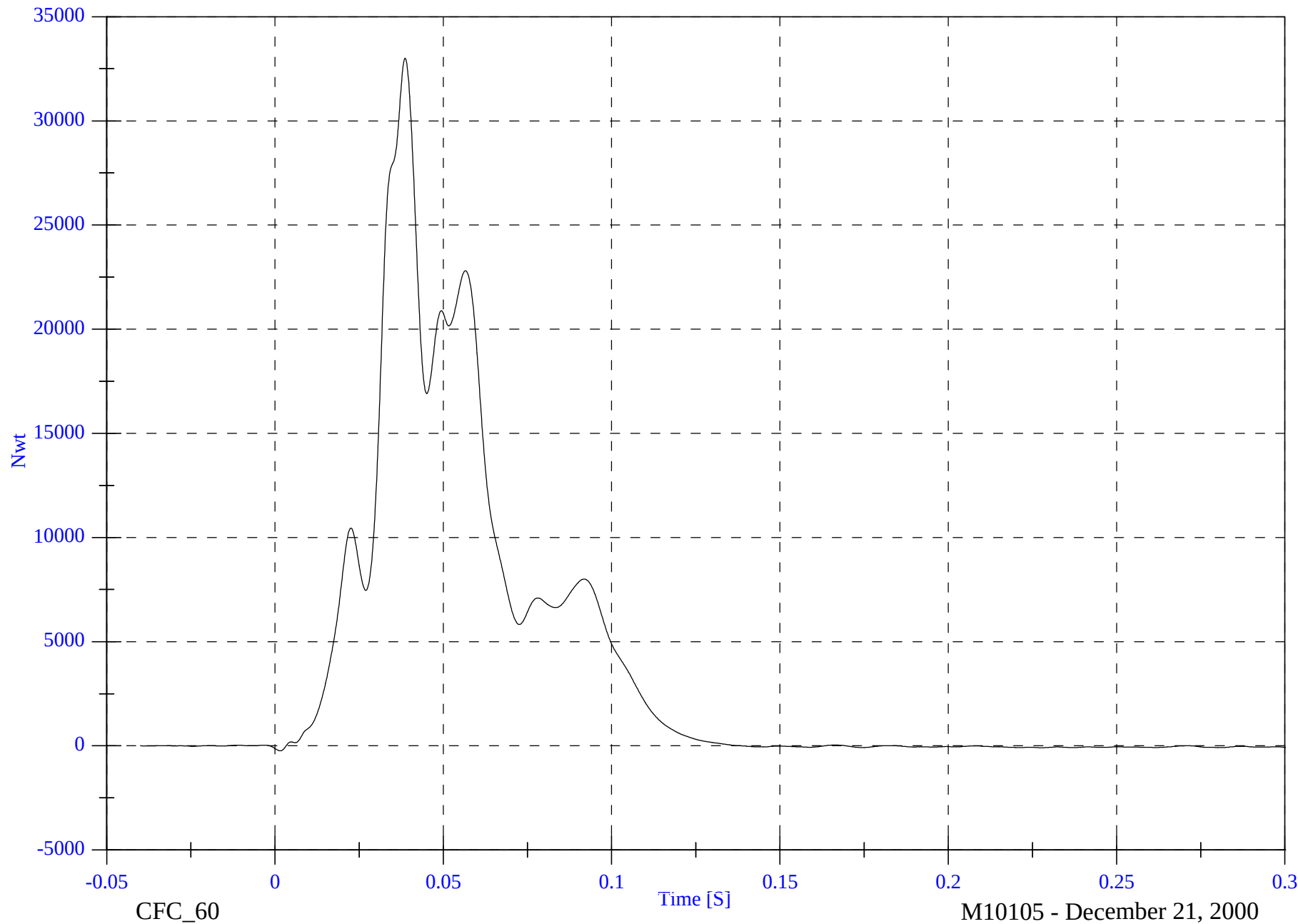
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C8 Fx

Max: 33004.6 [Nwt] at 0.039 [S]

Min: -242.0 [Nwt] at 0.001 [S]



B-158

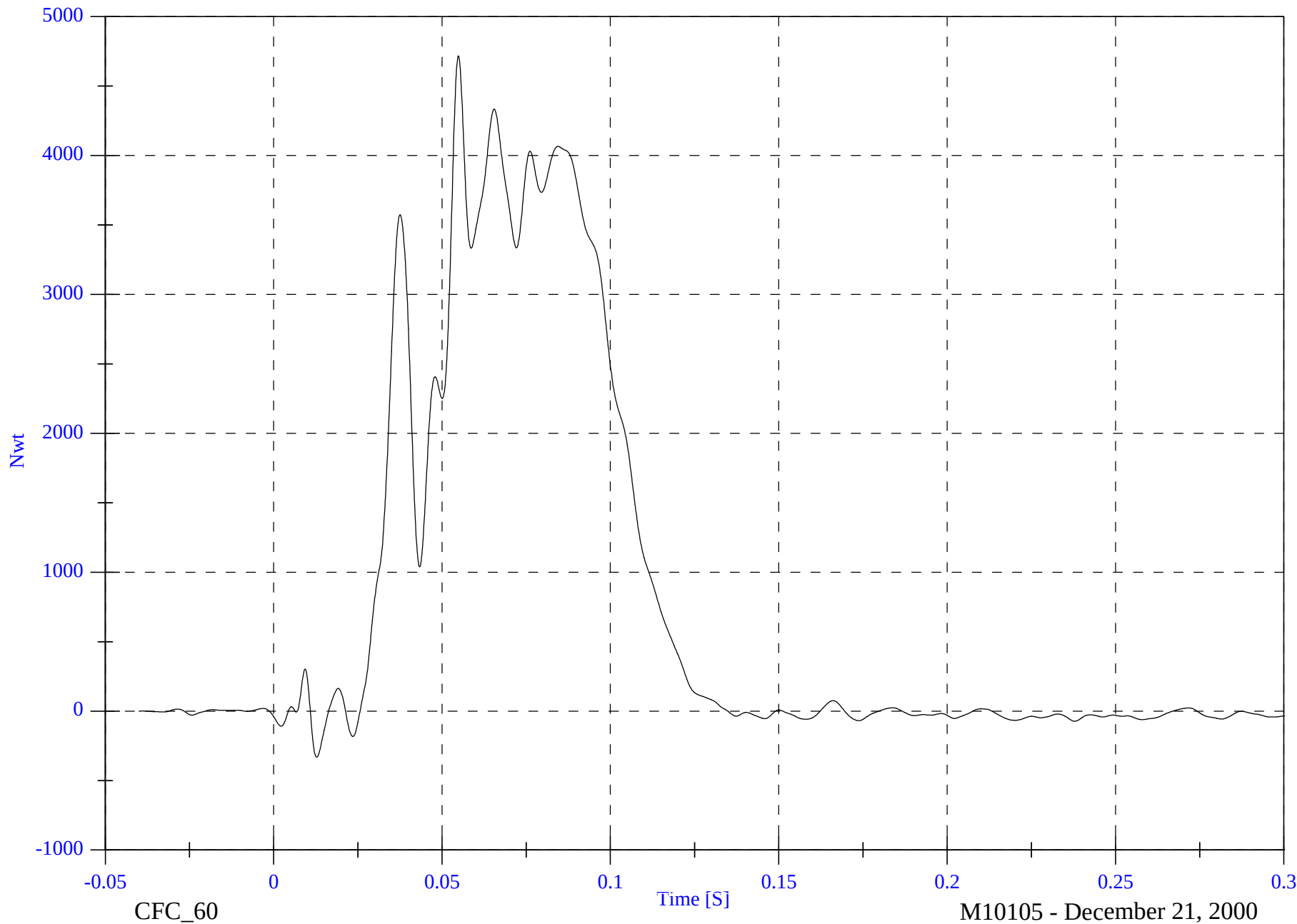
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC C9 Fx

Max: 4718.7 [Nwt] at 0.055 [S]

Min: -332.1 [Nwt] at 0.013 [S]



B-159

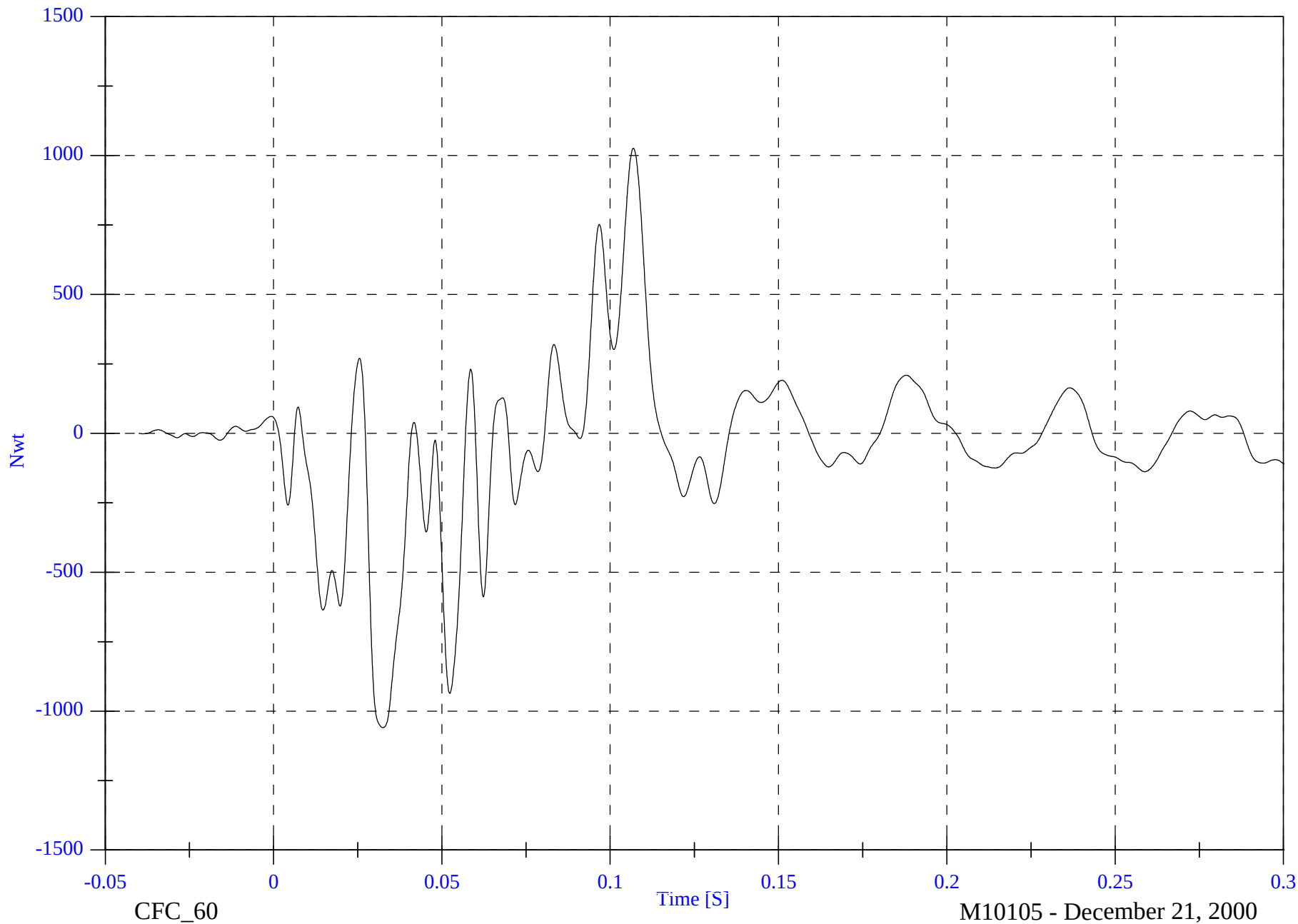
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D1 Fx

Max: 1026.5 [Nwt] at 0.107 [S]

Min: -1059.4 [Nwt] at 0.032 [S]



B-160

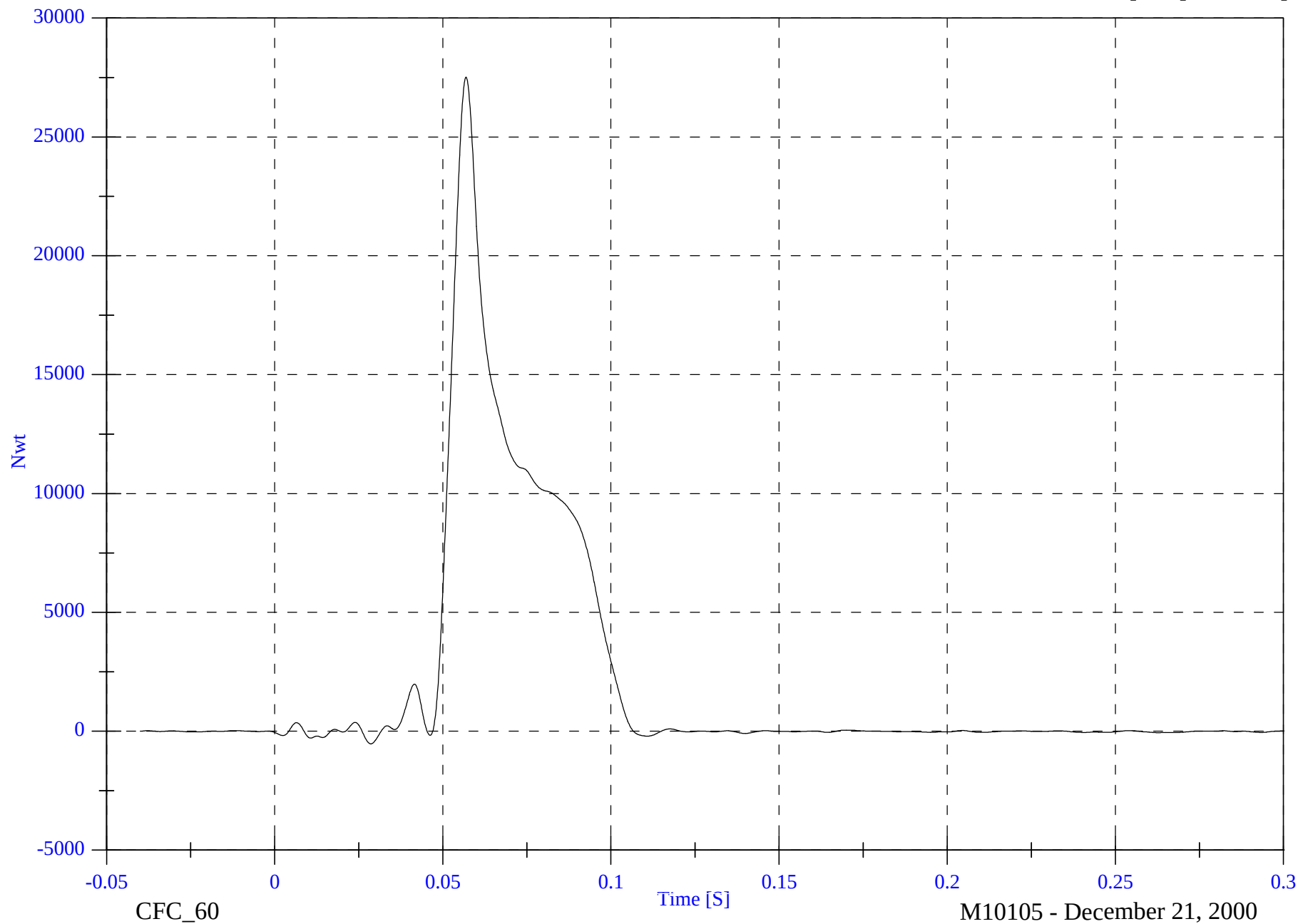
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D2 Fx

Max: 27519.8 [Nwt] at 0.057 [S]

Min: -532.1 [Nwt] at 0.029 [S]



B-161

8602-11

CFC_60

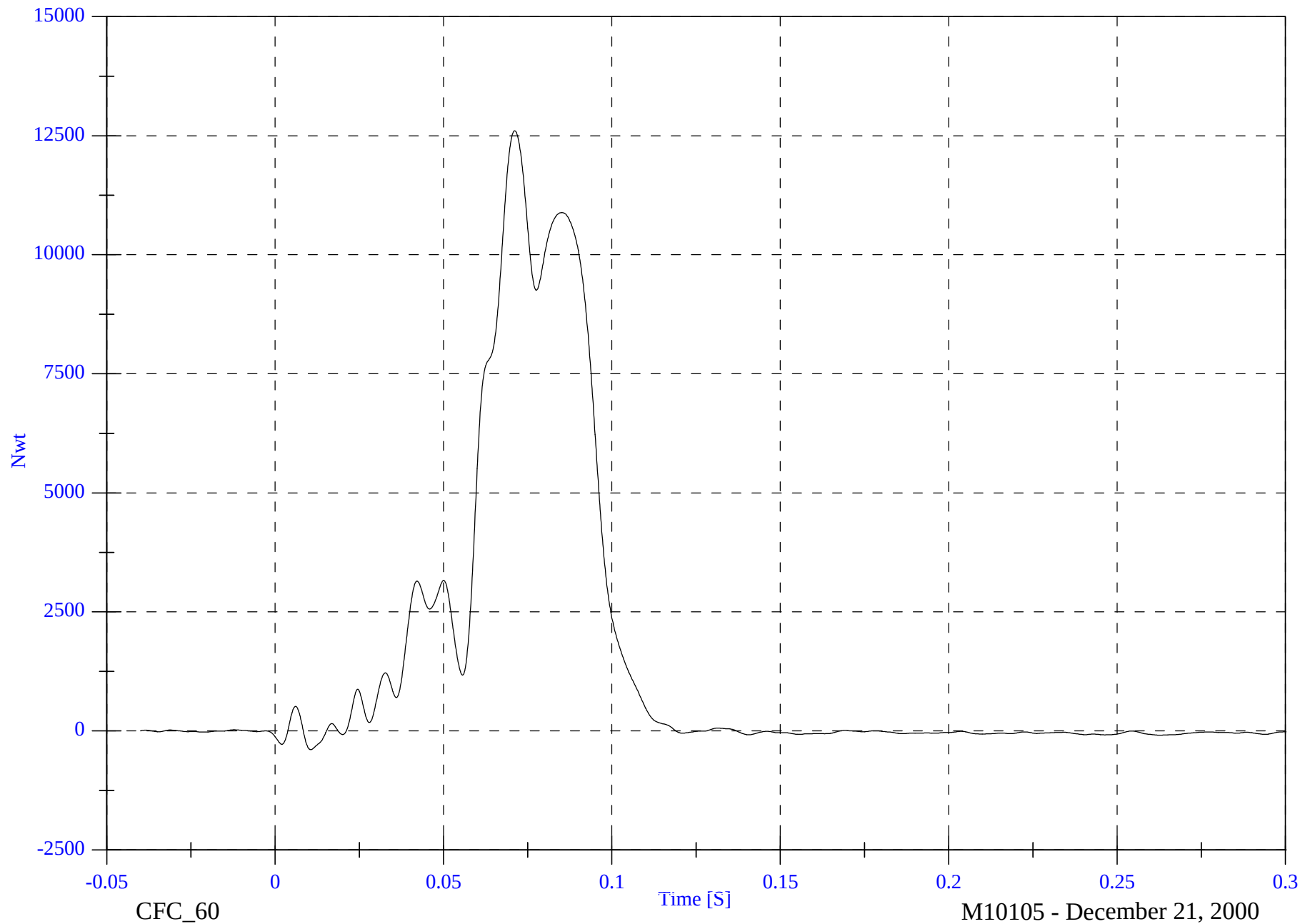
M10105 - December 21, 2000

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D3 Fx

Max: 12604.9 [Nwt] at 0.071 [S]

Min: -394.1 [Nwt] at 0.010 [S]



B-162

8602-11

CFC_60

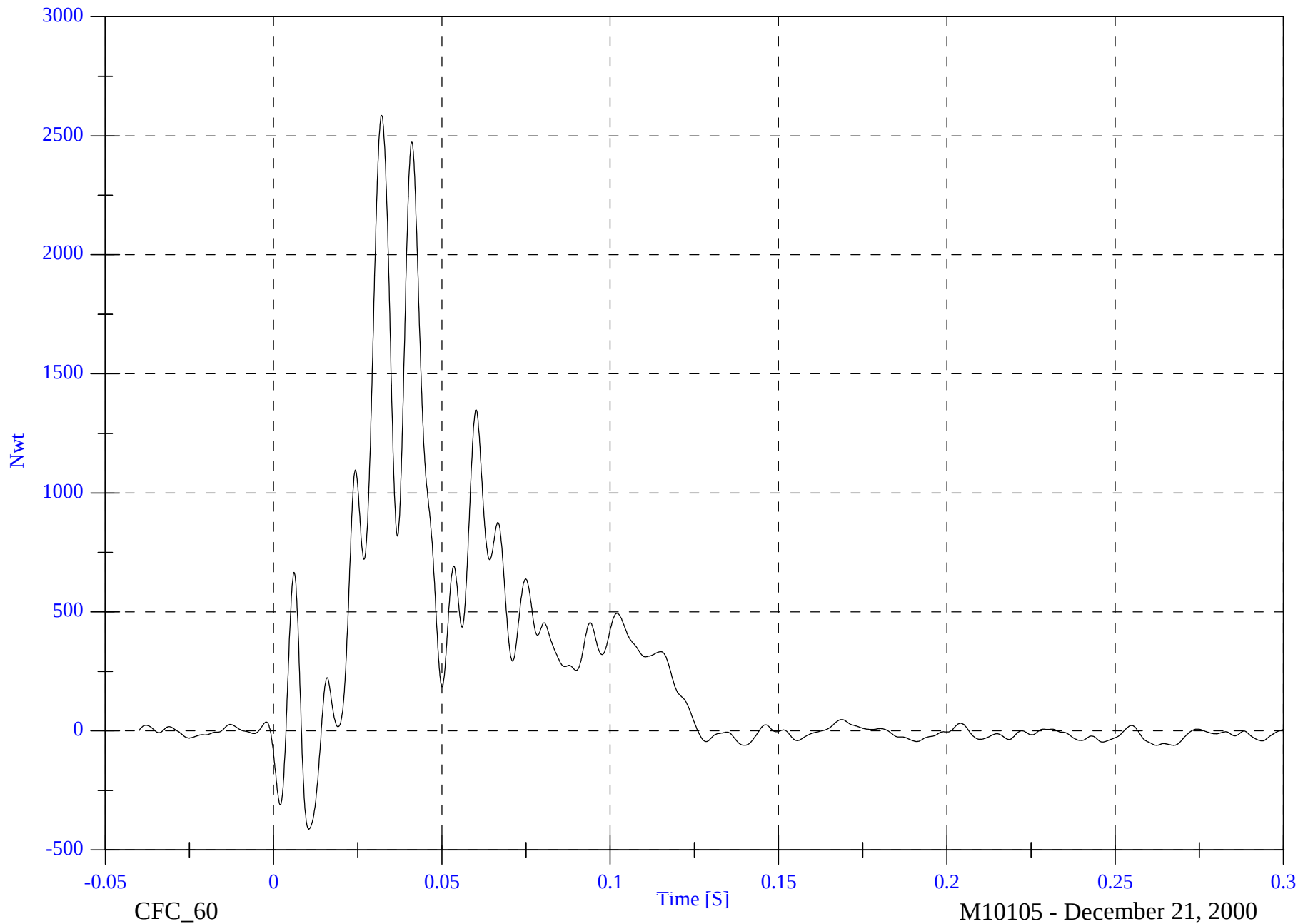
M10105 - December 21, 2000

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D4 Fx

Max: 2586.2 [Nwt] at 0.032 [S]

Min: -412.7 [Nwt] at 0.010 [S]



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8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

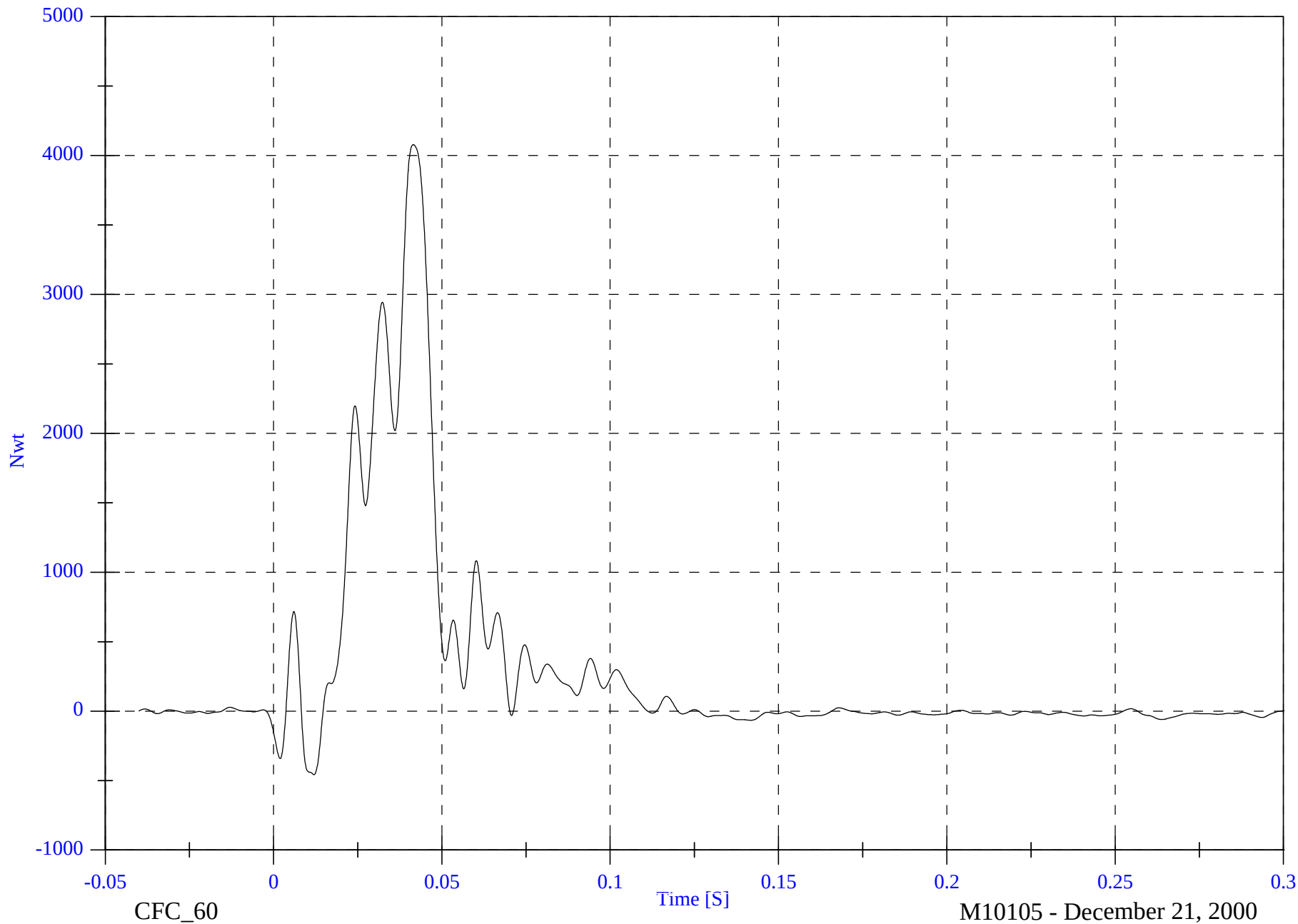
BLC D5 Fx

Max: 4078.8 [Nwt] at 0.041 [S]

Min: -458.2 [Nwt] at 0.012 [S]

B-164

8602-11

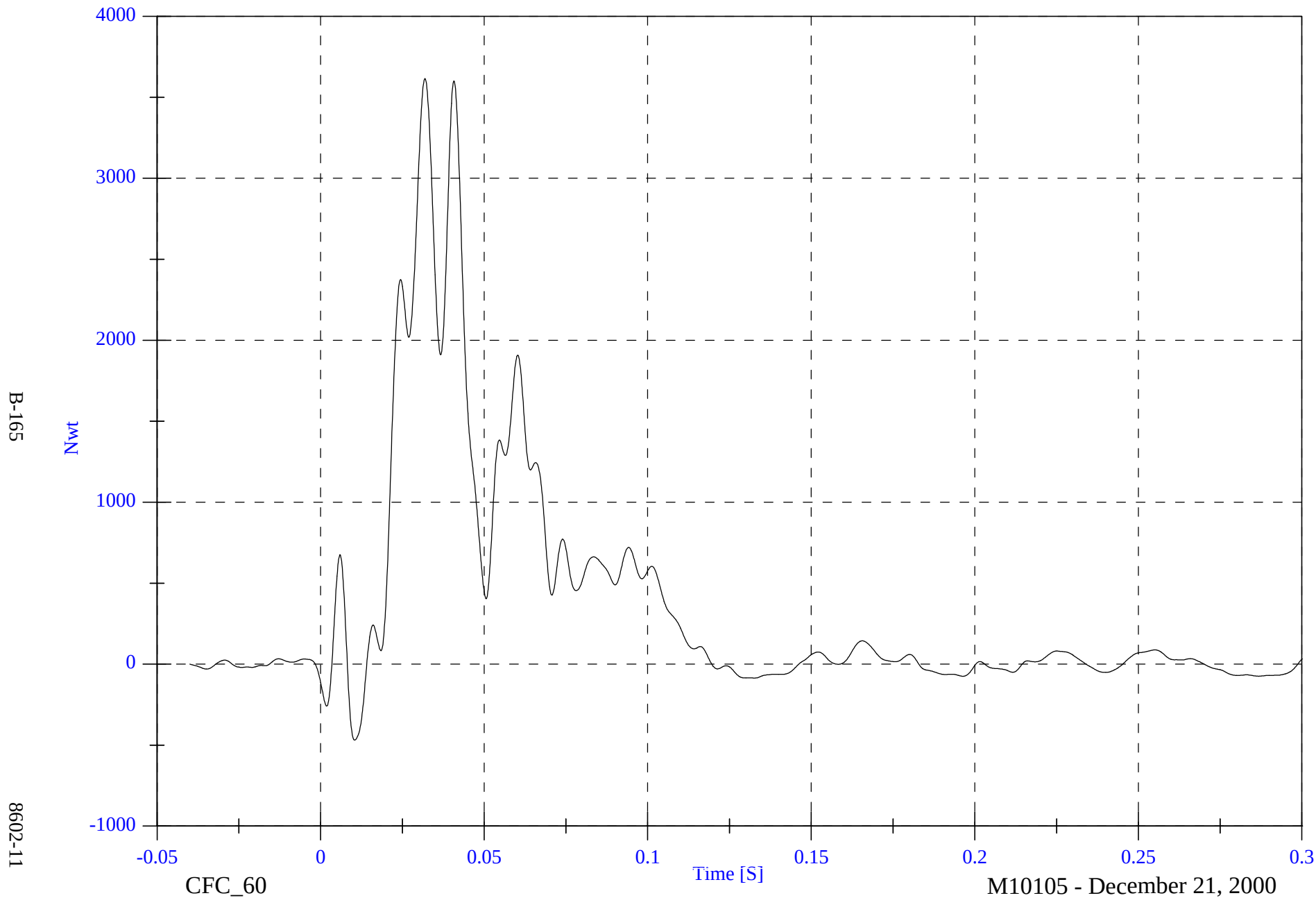


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D6 Fx

Max: 3615.6 [Nwt] at 0.032 [S]

Min: -469.6 [Nwt] at 0.010 [S]

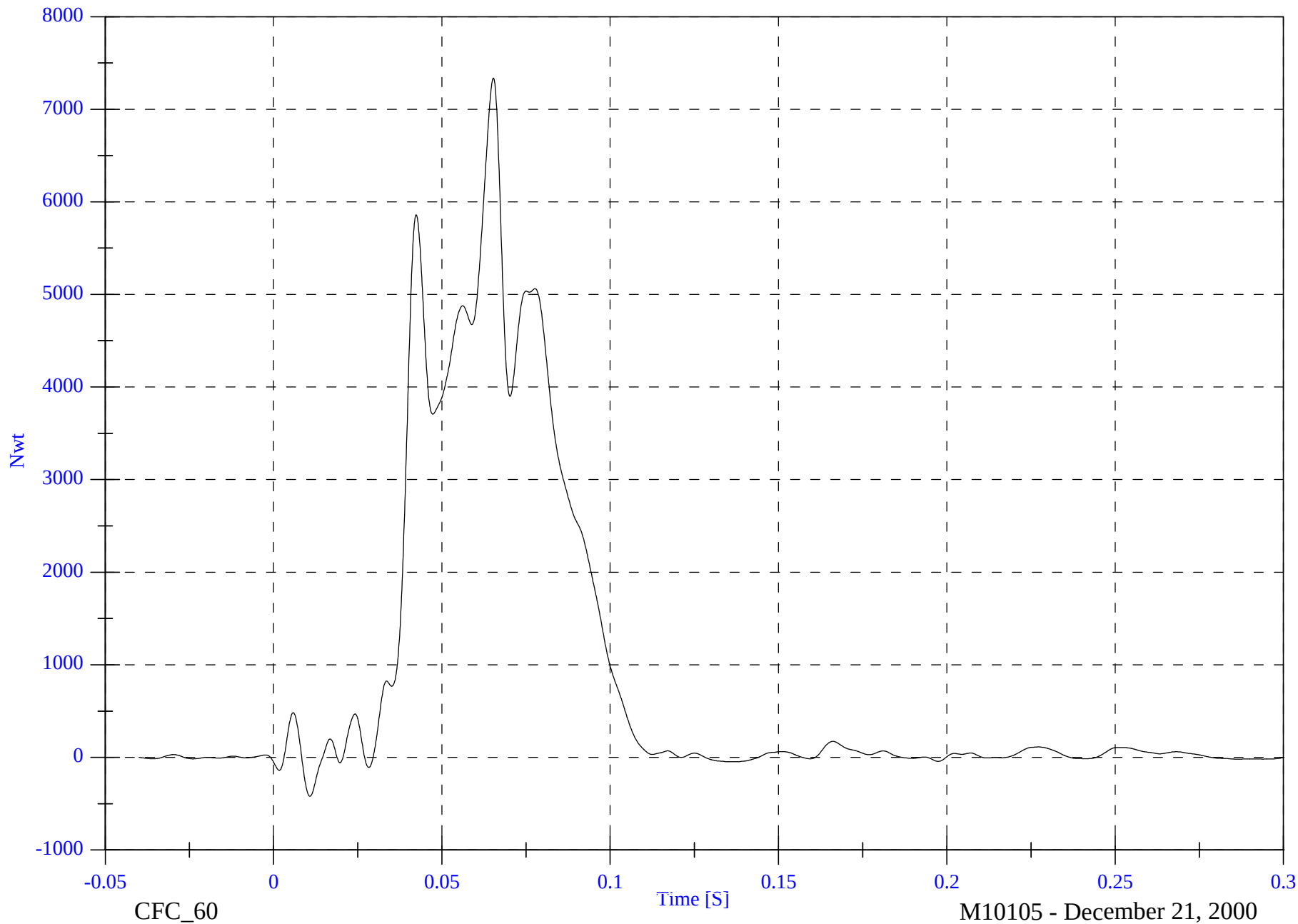


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D7 Fx

Max: 7337.7 [Nwt] at 0.065 [S]

Min: -420.5 [Nwt] at 0.011 [S]



B-166

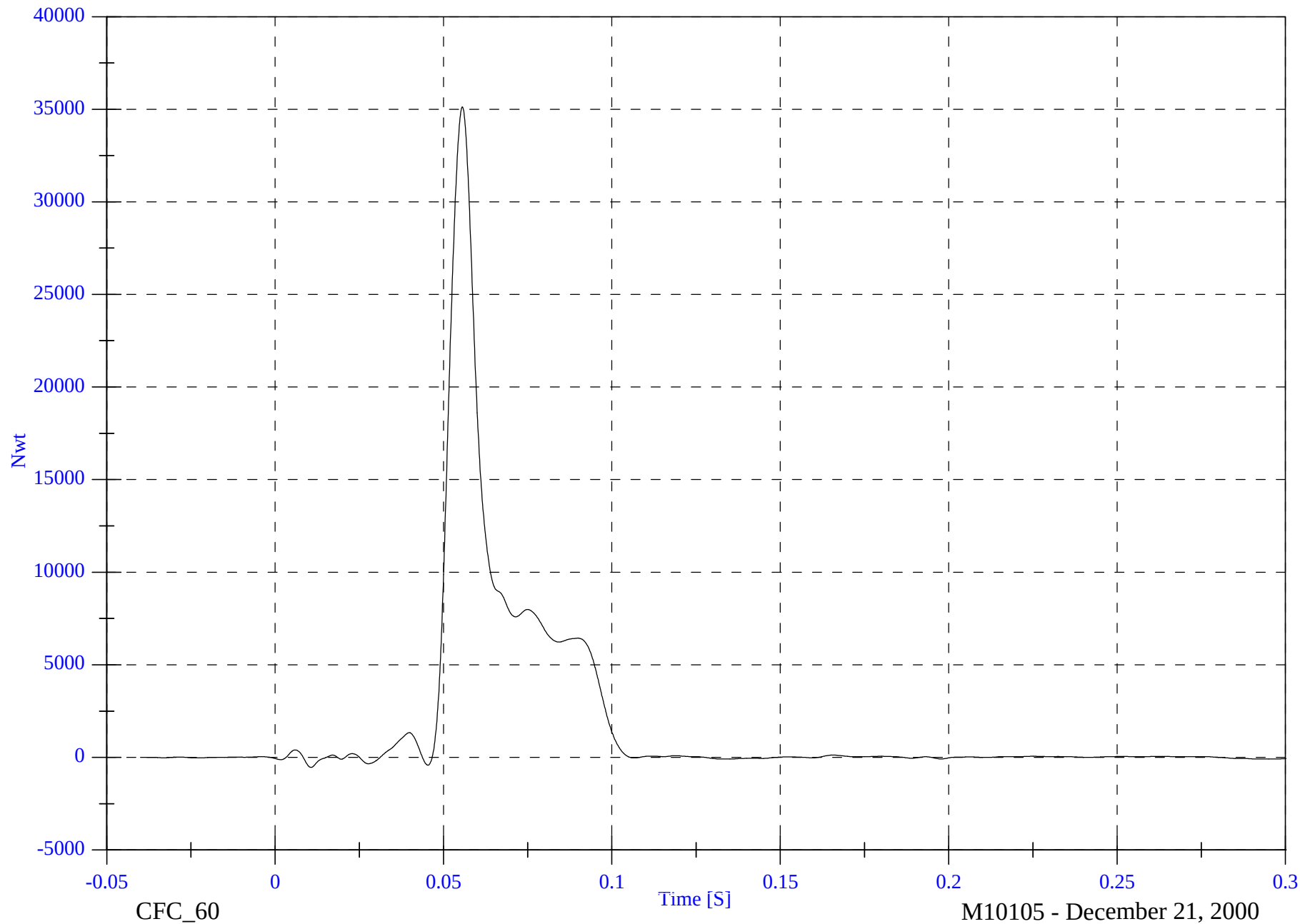
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D8 Fx

Max: 35131.8 [Nwt] at 0.056 [S]

Min: -540.3 [Nwt] at 0.011 [S]



B-167

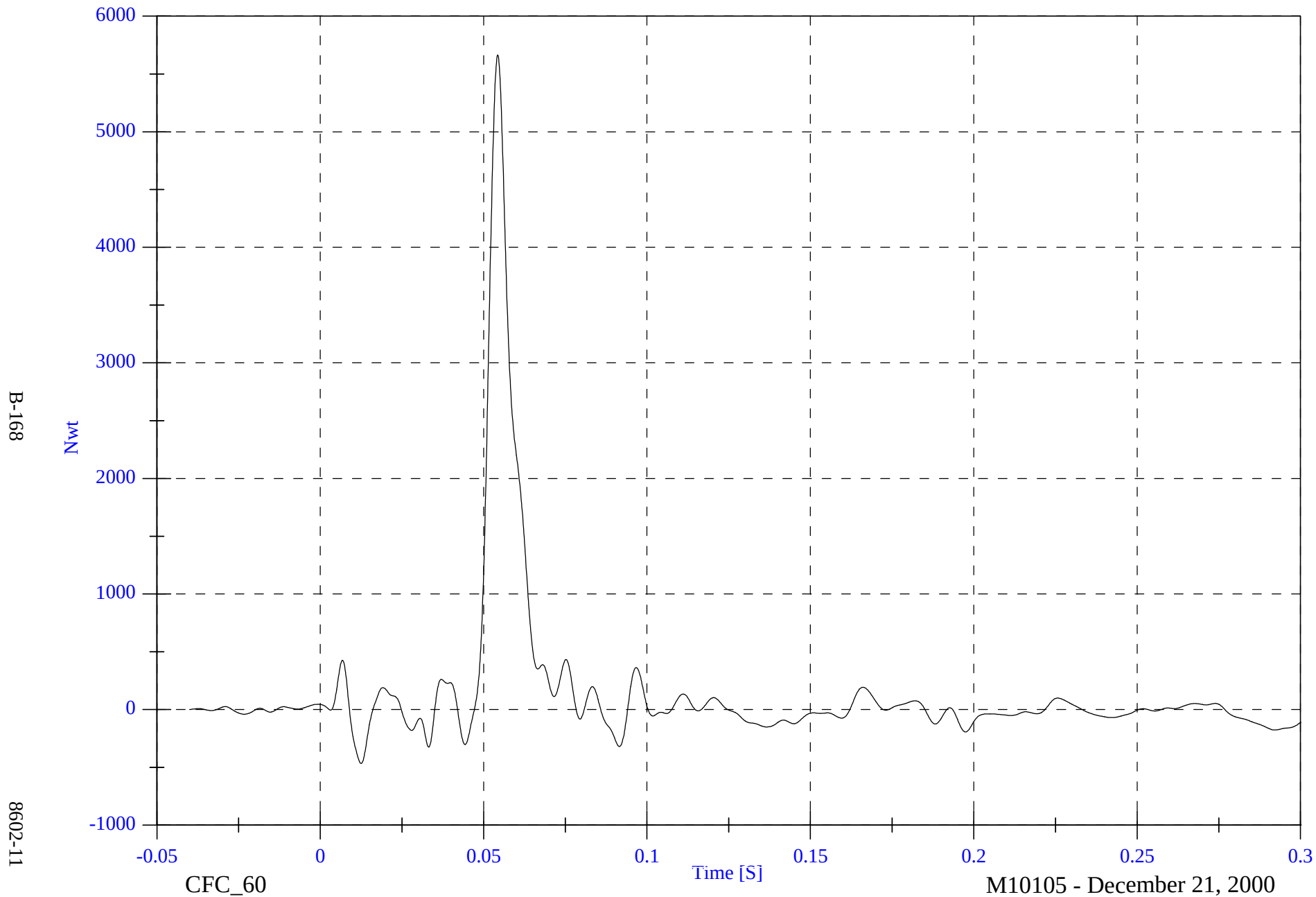
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

BLC D9 Fx

Max: 5664.5 [Nwt] at 0.054 [S]

Min: -467.0 [Nwt] at 0.012 [S]

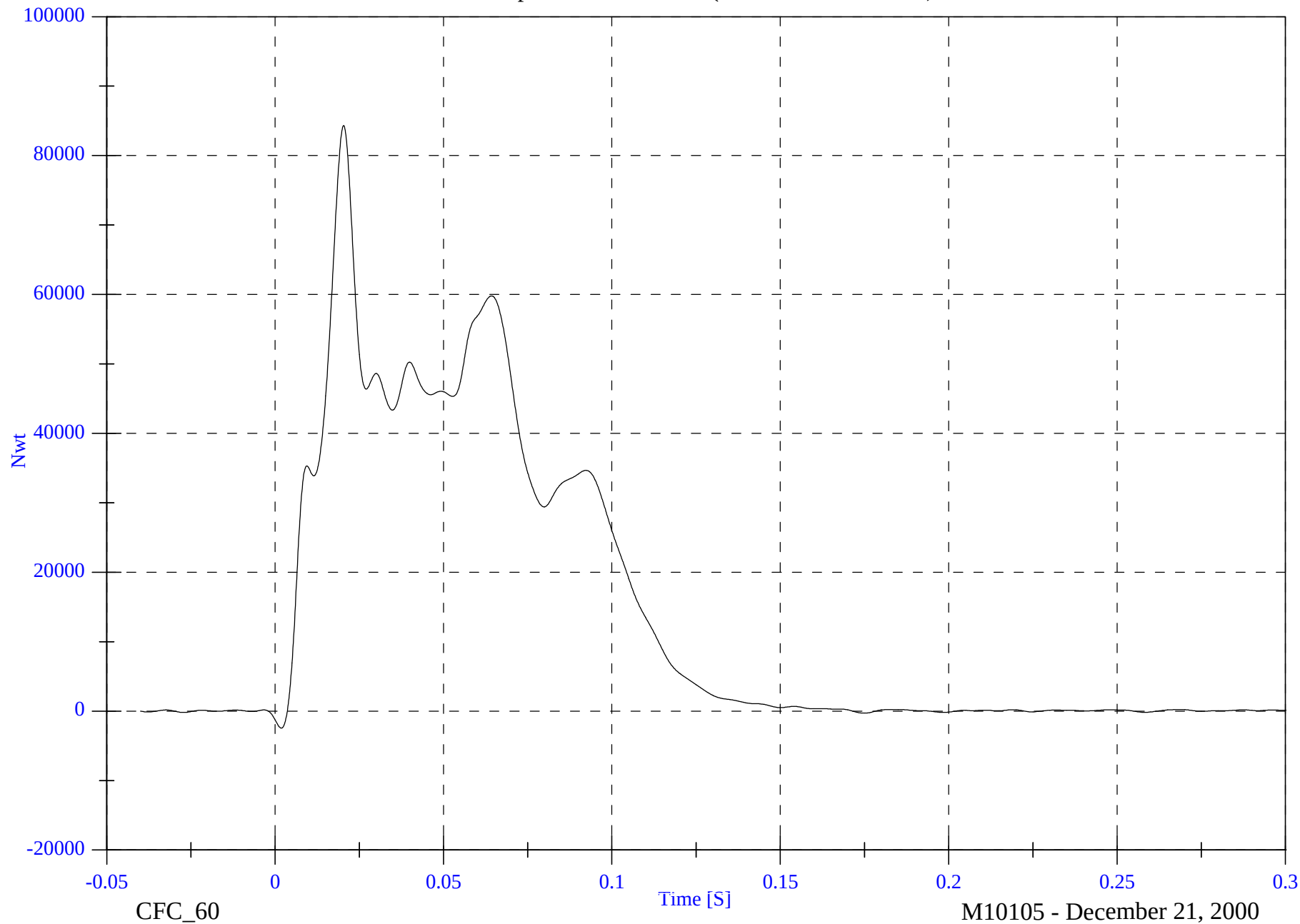


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Group 1 Load Cell Sum (A1,A2,A3,B1,B2,B3)

Max: 84317.9 [Nwt] at 0.020 [S]

Min: -2457.8 [Nwt] at 0.002 [S]



B-169

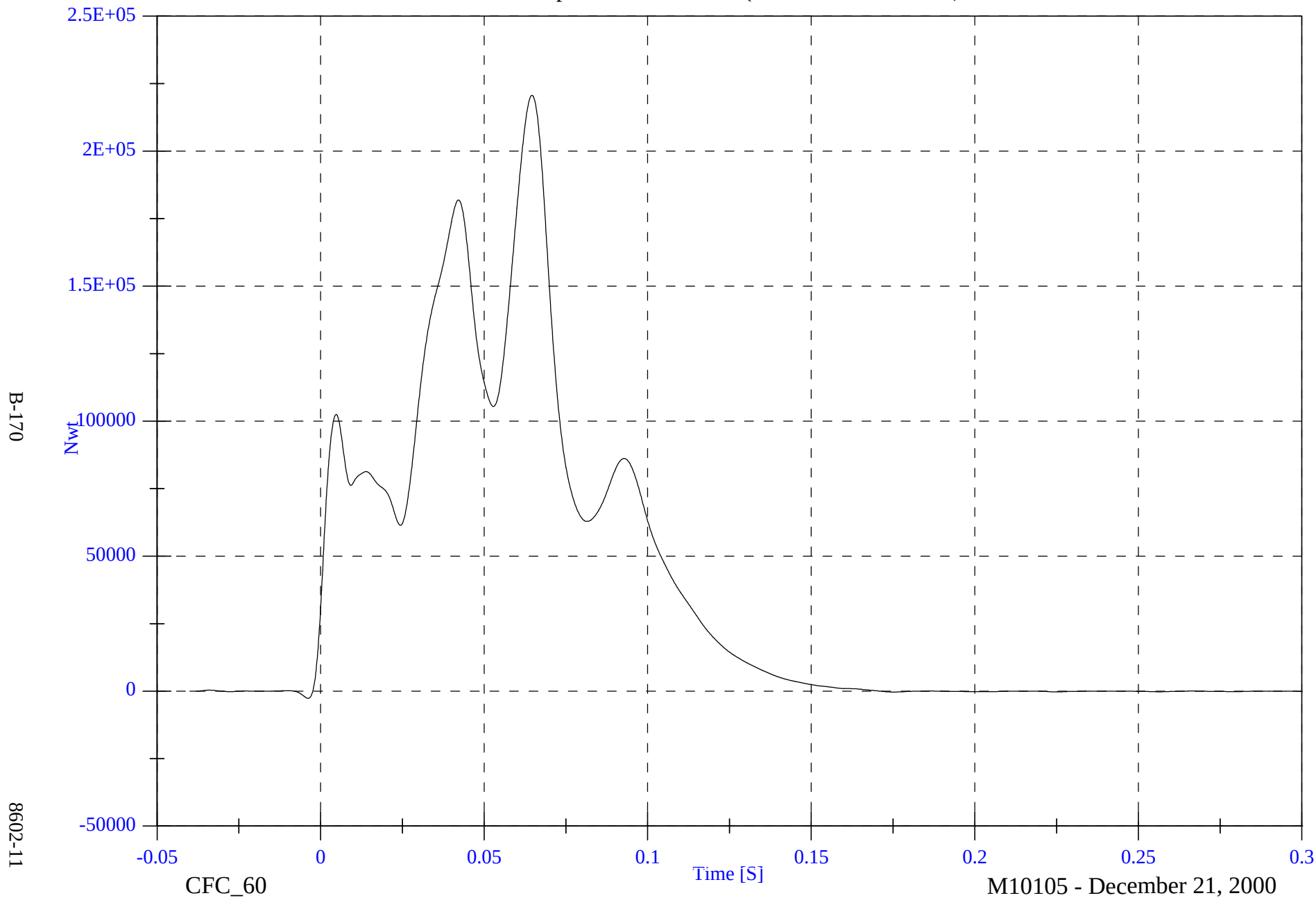
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Group 2 Load Cell Sum (A4,A5,A6,B4,B5,B6)

Max: 220718.4 [Nwt] at 0.065 [S]

Min: -2691.2 [Nwt] at -0.004 [S]

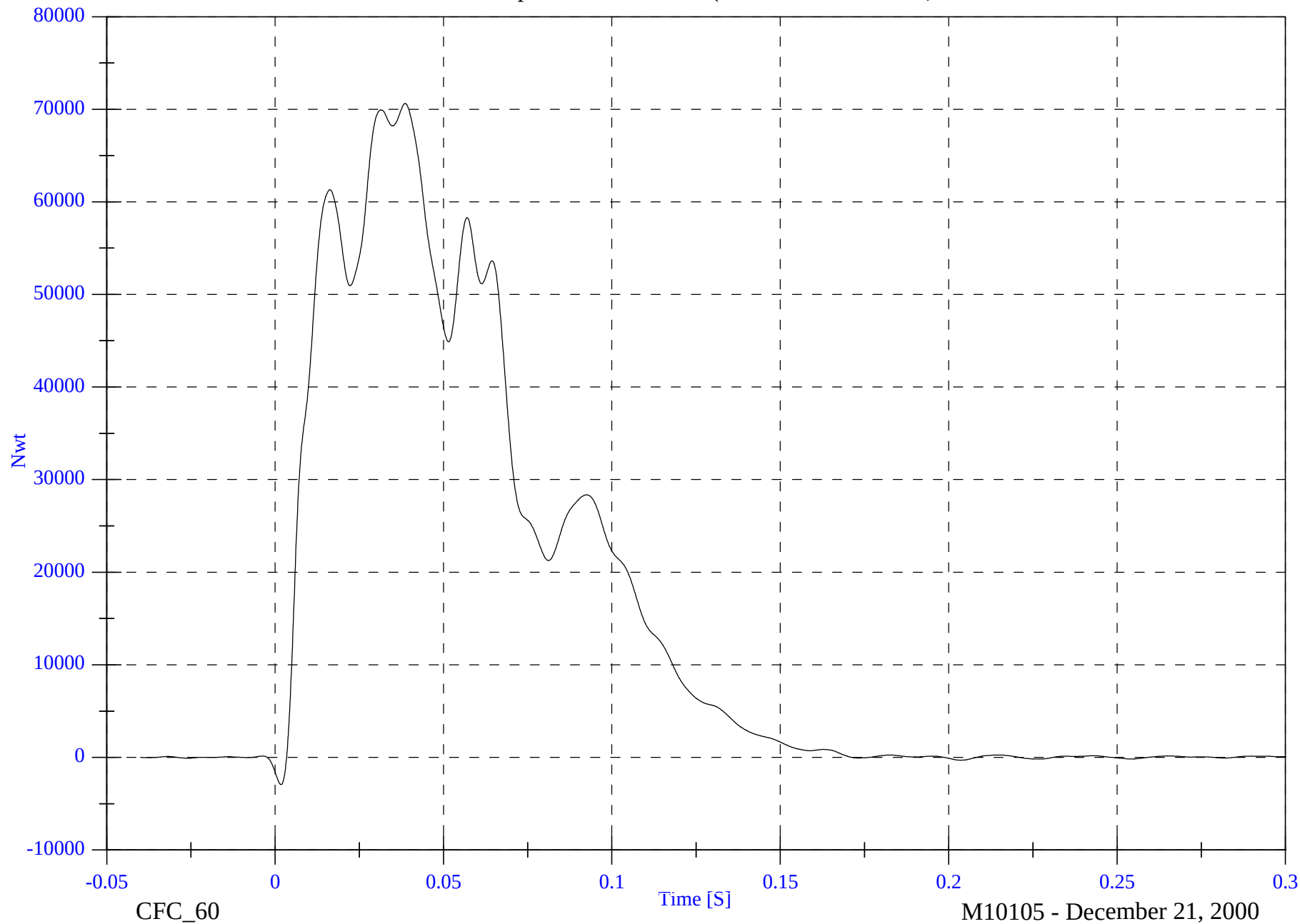


NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Group 3 Load Cell Sum (A7,A8,A9,B7,B8,B9)

Max: 70630.0 [Nwt] at 0.039 [S]

Min: -2941.5 [Nwt] at 0.002 [S]



B-171

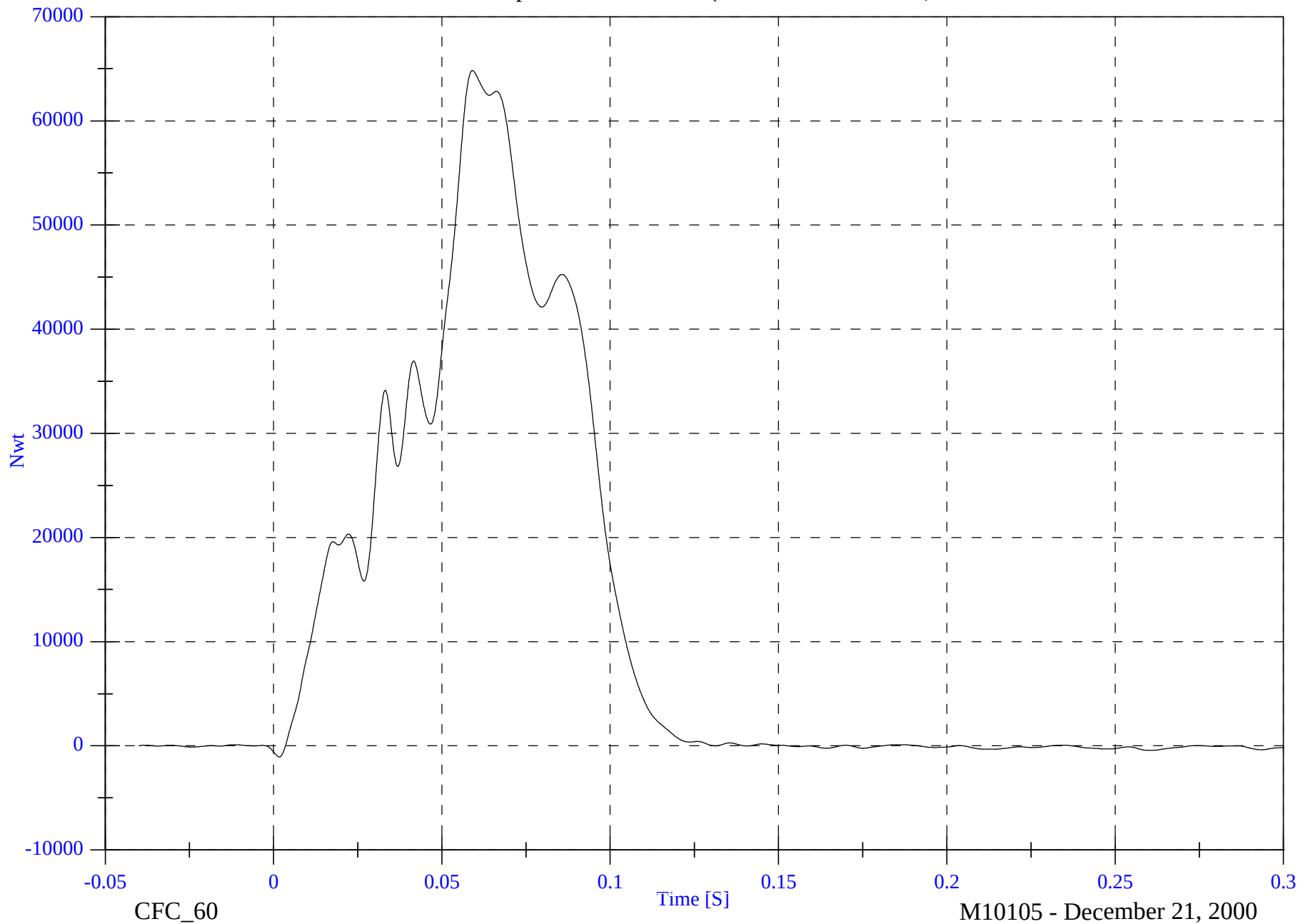
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Group 4 Load Cell Sum (C1,C2,C3,D1,D2,D3)

Max: 64837.4 [Nwt] at 0.059 [S]

Min: -1066.2 [Nwt] at 0.002 [S]



B-172

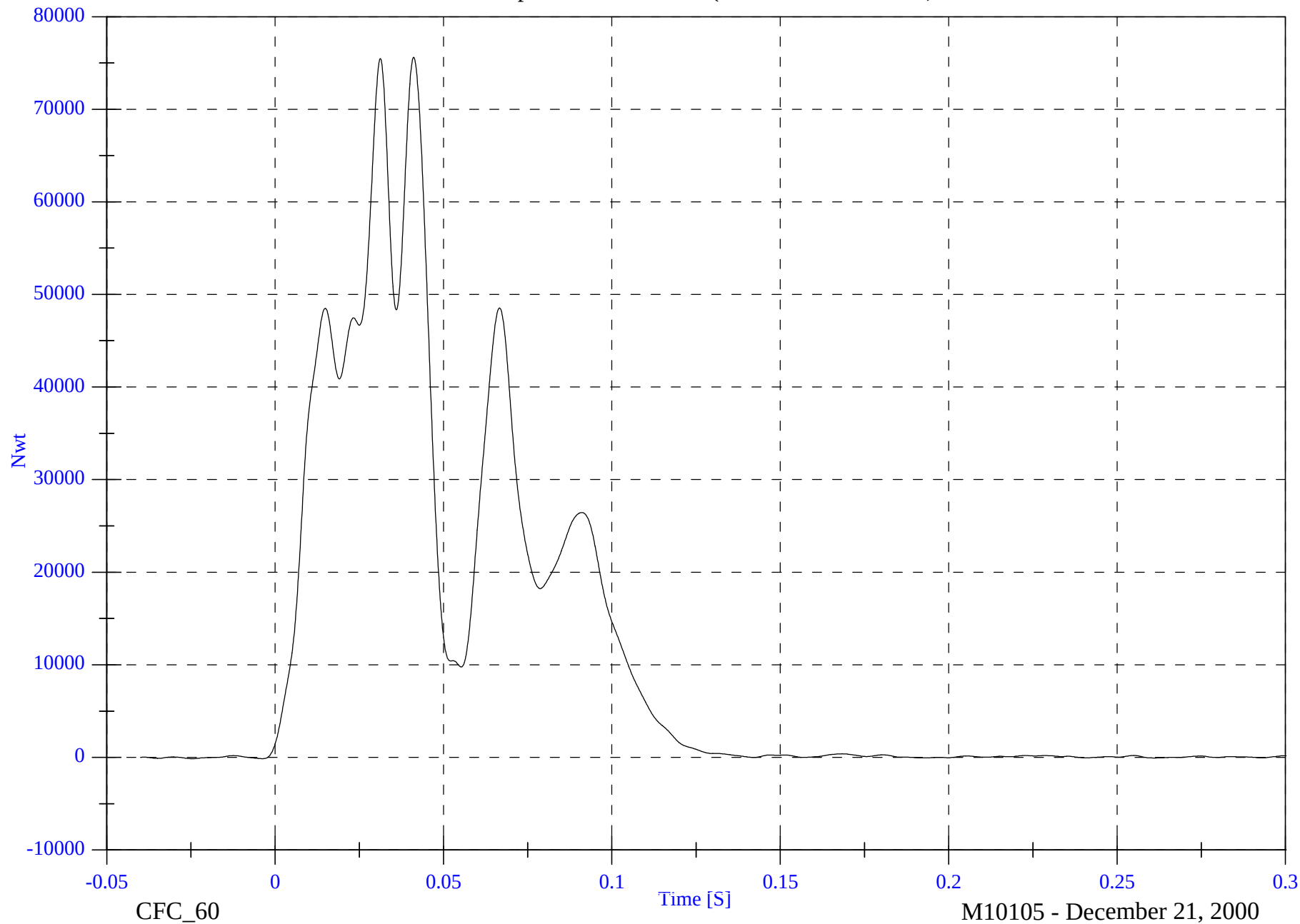
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Group 5 Load Cell Sum (C4,C5,C6,D4,D5,D6)

Max: 75603.6 [Nwt] at 0.041 [S]

Min: -152.1 [Nwt] at -0.025 [S]



B-173

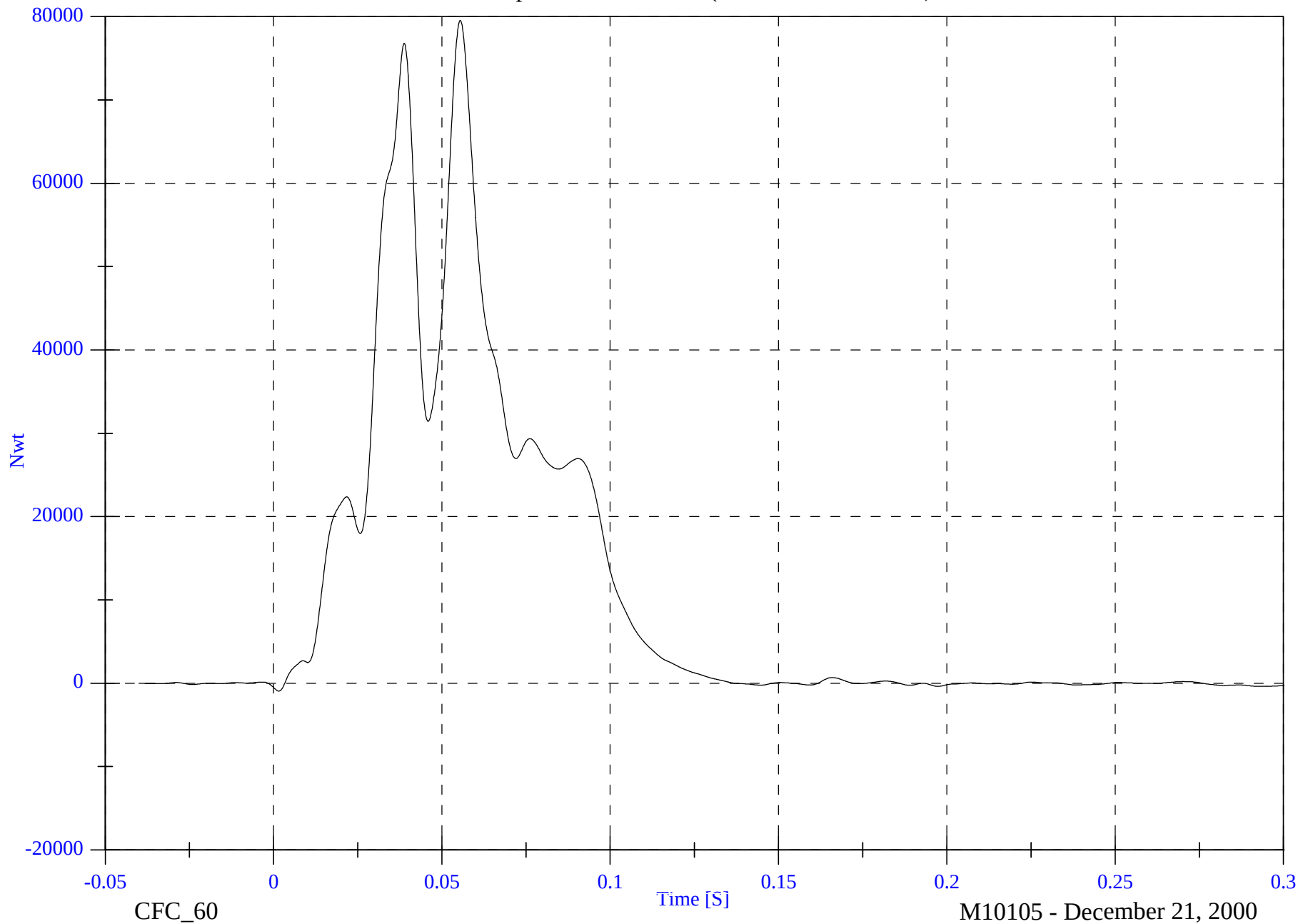
8602-11

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Group 6 Load Cell Sum (C7,C8,C9,D7,D8,D9)

Max: 79565.1 [Nwt] at 0.055 [S]

Min: -934.8 [Nwt] at 0.001 [S]



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8602-11

CFC_60

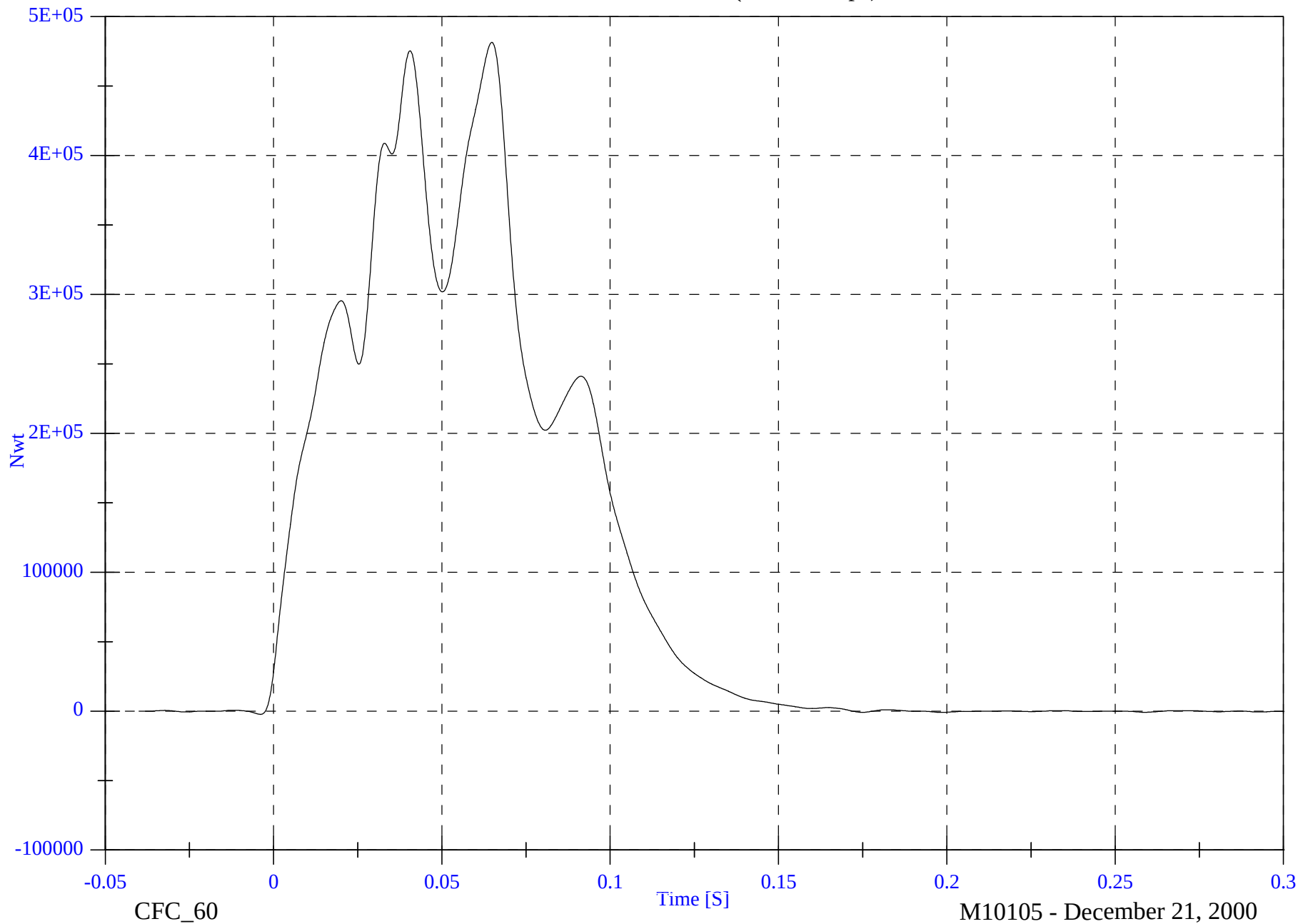
M10105 - December 21, 2000

NCAP TEST #11 - 2001 Chevrolet Monte Carlo Coupe

Total Load Cell Sum (All 6 Groups)

Max: 481483.7 [Nwt] at 0.065 [S]

Min: -2375.2 [Nwt] at -0.004 [S]



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8602-11

CFC_60

M10105 - December 21, 2000

APPENDIX C

PART 572B/E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Veridian Engineering. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

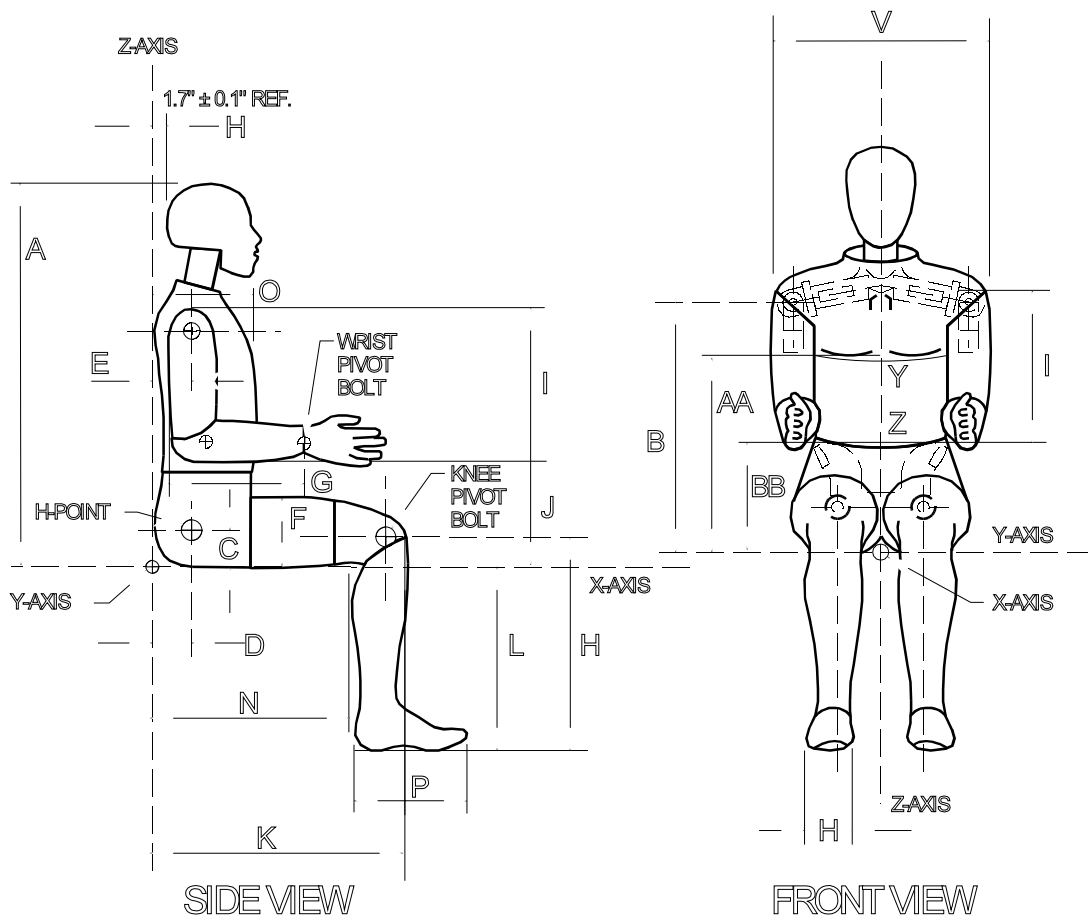
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	150	12/12/00
#2/Right Front Passenger	245	12/13/00

Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Inducant Testing Final Report No. 6525-V-1.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

PART 572E
HEAD DROP TEST

Dummy Serial Number 150
Sequential Test Number 4
Date 12/12/2000
Workfile 150400.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	31.0
Peak Resultant Acceleration	225-275 G's	226.06
Peak Lateral Acceleration	15 G's Max	2.95
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	150	
Sequential Test Number	4	
Date	12/11/2000	6 Axis Neck Transducer
Workfile	150400.nfl	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	32.0
Impact Velocity		22.60 - 23.40 Ft/s	22.70
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.62
	20 ms	17.60 - 22.60 G's	19.14
	30 ms	12.50 - 18.50 G's	14.80
Max Pendulum G's Above 30 ms		29 G's Max	14.80
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	40.00
D Plane Rotation	Max	64 - 78 Deg	76.10
	Time	57 - 64 ms	57.12
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	76.53
	Time	47 - 58 ms	53.62
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	125.50
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	102.00

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	150	
Sequential Test Number	4	
Date	12/11/2000	6 Axis Neck Transducer
Workfile	150400.nex	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	32.0
Impact Velocity		19.50 - 20.30 Ft/s	19.50
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.83
	20 ms	14.00 - 19.00 G's	16.02
	30 ms	11.00 - 16.00 G's	13.03
Max Pendulum G's Above 30 ms		22 G's Max	13.03
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	41.00
D Plane Rotation	Max	81 - 106 Deg	100.06
	Time	72 - 82 ms	76.25
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-51.42
	Time	65 - 79 ms	72.38
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	155.75
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	141.12

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 4
Date 12/13/2000
Workfile 150400.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Pendulum Velocity	21.6 - 22.4 Ft/s	21.7
Maximum Deflection	2.50 - 2.86 in	2.52
Maximum Resistive Force	1160 - 1325 Lbs	1225.25
Internal Hysteresis	69 - 85 %	73.05

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 150
Date 4
Workfile 12/14/2000

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	71.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1206.14
RIGHT KNEE		
Temperature	66 - 78 Deg F	71.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1206.74

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 150
Sequential Test Number 4
Date 12/12/2000

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			71
Relative Humidity			32
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	34.0
Chest Depth	O	8.4 - 9.0 in	8.5
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.8
Thigh Clearance	F	5.5 - 6.1 in	5.7
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.5
Popliteal Height	L	16.9 - 17.9 in	17.8
Knee Pivot Height	M	19.1 - 19.7 in	19.6
Foot Length	P	9.9 - 10.5 in	10.1
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.6
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.1
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.5

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number 245
Sequential Test Number 6
Date 12/12/2000
Workfile 245600.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	31.0
Peak Resultant Acceleration	225-275 G's	243.45
Peak Lateral Acceleration	15 G's Max	10.89
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	245	
Sequential Test Number	6	
Date	12/14/2000	6 Axis Neck Transducer
Workfile	245600.nfl	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	31.0
Impact Velocity		22.60 - 23.40 Ft/s	22.69
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.61
	20 ms	17.60 - 22.60 G's	19.38
	30 ms	12.50 - 18.50 G's	15.68
Max Pendulum G's Above 30 ms		29 G's Max	15.68
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	39.88
D Plane Rotation	Max	64 - 78 Deg	70.47
	Time	57 - 64 ms	58.38
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	73.51
	Time	47 - 58 ms	53.12
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	122.38
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	100.75

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	245	
Sequential Test Number	6	
Date	12/14/00	6 Axis Neck Transducer
Workfile	245600.nex	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	31.0
Impact Velocity		19.50 - 20.30 Ft/s	19.67
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.26
	20 ms	14.00 - 19.00 G's	16.71
	30 ms	11.00 - 16.00 G's	14.43
Max Pendulum G's Above 30 ms		22 G's Max	14.43
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	41.62
D Plane Rotation	Max	81 - 106 Deg	101.48
	Time	72 - 82 ms	77.38
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-49.41
	Time	65 - 79 ms	72.75
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	155.62
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	144.50

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 6
Date 12/13/2000
Workfile 245600.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	31.0
Pendulum Velocity	21.6 - 22.4 Ft/s	21.9
Maximum Deflection	2.50 - 2.86 in	2.55
Maximum Resistive Force	1160 - 1325 Lbs	1256.31
Internal Hysteresis	69 - 85 %	73.01

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 6
Date 12/14/2000
Workfile 245600.lf / 245600.rf

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	71.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1230.02
RIGHT KNEE		
Temperature	66 - 78 Deg F	71.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1278.31

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
Sequential Test Number 6
Date 12/13/2000

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			30
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.1
Waist Circumference	Z	32.9 - 34.1 in	33.7
Chest Depth	O	8.4 - 9.0 in	8.5
H-Point Height	C	3.3 - 3.5 in	3.2
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.8
Thigh Clearance	F	5.5 - 6.1 in	6.0
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.3
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.2
Foot Length	P	9.9 - 10.5 in	10.2
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.6
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.0
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician: B. Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 150)		Manufacturer	Serial #	Calibration	
				Last	Next
Head	X	ENDEVCO	AC-P16832	20-Sep-00	20-Mar-01
	Y	ENDEVCO	AC-P16591	20-Sep-00	20-Mar-01
	Z	ENDEVCO	AC-P17154	21-Sep-00	21-Mar-01
Head	X (R)	ENDEVCO	AC-P17141	20-Sep-00	20-Mar-01
	Y (R)	ENDEVCO	AC-P17242	20-Sep-00	20-Mar-01
	Z (R)	ENDEVCO	AC-P17265	20-Sep-00	20-Mar-01
Neck Load Cell	X	DENTON	LC-269Fx	16-Nov-00	16-May-01
	Y	DENTON	LC-269Fy	16-Nov-00	16-May-01
	Z	DENTON	LC-269Fz	16-Nov-00	16-May-01
Neck Moment	X	DENTON	LC-269Mx	16-Nov-00	16-May-01
	Y	DENTON	LC-269My	16-Nov-00	16-May-01
	Z	DENTON	LC-269Mz	16-Nov-00	16-May-01
Chest	X	ENDEVCO	AC-P17235	15-Sep-00	15-Mar-01
	Y	ENDEVCO	AC-P14393	20-Sep-00	20-Mar-01
	Z	ENDEVCO	AC-P17285	20-Sep-00	20-Mar-01
Chest	X (R)	ENDEVCO	AC-P16863	13-Sep-00	13-Mar-01
	Y (R)	ENDEVCO	AC-P17248	20-Sep-00	20-Mar-01
	Z (R)	ENDEVCO	AC-P17283	20-Sep-00	20-Mar-01
Chest Deflection Gauge Hybrid III Use Only		SERVO	DS-150	16-Nov-00	16-May-01
Pelvic	X	ENDEVCO	AC-J30041	4-Aug-00	4-Feb-01
	Y	ENDEVCO	AC-P13355	16-Nov-00	16-May-01
	Z	ENDEVCO	AC-P13329	16-Nov-00	16-May-01

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 150)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell		GSE	LC-418	20-Nov-00	20-May-01
Right Femur Load Cell		GSE	LC-420	20-Nov-00	20-May-01
Left Upper Tibia	Mx	DENTON	LC-045Mx	4-Nov-00	4-May-01
	My	DENTON	LC-045My	4-Nov-00	4-May-01
Left Lower Tibia	Fz	DENTON	LC-125Fz	4-Nov-00	4-May-01
	Mx	DENTON	LC-125Mx	4-Nov-00	4-May-01
	My	DENTON	LC-125My	4-Nov-00	4-May-01
Right Upper Tibia	Mx	DENTON	LC-038Mx	9-Nov-00	9-May-01
	My	DENTON	LC-038My	9-Nov-00	9-May-01
Right Lower Tibia	Fz	DENTON	LC-124Fz	9-Nov-00	9-May-01
	Mx	DENTON	LC-124Mx	9-Nov-00	9-May-01
	My	DENTON	LC-124My	9-Nov-00	9-May-01
Left Foot Rear	X	ENDEVCO	AC-P16951	2-Oct-00	2-Apr-01
	Z	ENDEVCO	AC-P17152	2-Oct-00	2-Apr-01
Left Foot Front	Z	ENDEVCO	AC-P16975	2-Oct-00	2-Apr-01
Right Foot Rear	X	ENDEVCO	AC-J31042	7-Nov-00	7-May-01
	Z	ENDEVCO	AC-J32176	7-Nov-00	7-May-01
Right Foot Front	Z	ENDEVCO	AC-J31009	8-Nov-00	8-May-01
Lap Belt Load Cells		LEBOW	LC-635	1-Dec-00	1-Jun-01
Shoulder Belt Load Cells		LEBOW	LC-773	1-Dec-00	1-Jun-01
Spool-Out Potentiometer		PATRIOT	DS-M97	17-Jul-00	17-Jan-01
Belt Stretch Transducer		CAL	DS-E3	7-Aug-00	7-Feb-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Head	X	ENDEVCO	AC-J32184	4-Dec-00	4-Jun-01
	Y	ENDEVCO	AC-J32185	4-Dec-00	4-Jun-01
	Z	ENDEVCO	AC-J31011	4-Dec-00	4-Jun-01
Head	X (R)	ENDEVCO	AC-J31020	4-Dec-00	4-Jun-01
	Y (R)	ENDEVCO	AC-J31101	4-Dec-00	4-Jun-01
	Z (R)	ENDEVCO	AC-J31059	4-Dec-00	4-Jun-01
Neck Load Cell	X	DENTON	LC-076Fx	28-Aug-00	28-Apr-01
	Y	DENTON	LC-076Fy	28-Aug-00	28-Apr-01
	Z	DENTON	LC-076Fz	28-Aug-00	28-Apr-01
Neck Moment	X	DENTON	LC-076Mx	28-Aug-00	28-Apr-01
	Y	DENTON	LC-076My	28-Aug-00	28-Apr-01
	Z	DENTON	LC-076Mz	28-Aug-00	28-Apr-01
Chest	X	ENDEVCO	AC-J34019	4-Dec-00	4-Jun-01
	Y	ENDEVCO	AC-J33018	4-Dec-00	4-Jun-01
	Z	ENDEVCO	AC-J32783	4-Dec-00	4-Jun-01
Chest	X (R)	ENDEVCO	AC-J31066	4-Dec-00	4-Jun-01
	Y (R)	ENDEVCO	AC-P16979	15-Sep-00	15-Mar-01
	Z (R)	ENDEVCO	AC-J31022	4-Dec-00	4-Jun-01
Chest Deflection Gauge Hybrid III Use Only		SERVO	DS-245	5-Dec-00	5-Jun-01
Pelvic	X	ENDEVCO	AC-J31034	3-Dec-00	3-Jun-01
	Y	ENDEVCO	AC-P17258	15-Sep-00	15-Mar-01
	Z	ENDEVCO	AC-J31010	3-Dec-00	3-Jun-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell		GSE	LC-551	20-Nov-00	20-May-01
Right Femur Load Cell		GSE	LC-951	20-Nov-00	20-May-01
Left Upper Tibia	Mx	DENTON	LC-016Mx	9-Nov-00	9-May-01
	My	DENTON	LC-016My	9-Nov-00	9-May-01
Left Lower Tibia	Fz	DENTON	LC-123Fz	9-Nov-00	9-May-01
	Mx	DENTON	LC-123Mx	9-Nov-00	9-May-01
	My	DENTON	LC-123My	9-Nov-00	9-May-01
Right Upper Tibia	Mx	DENTON	LC-023Mx	9-Nov-00	9-May-01
	My	DENTON	LC-023My	9-Nov-00	9-May-01
Right Lower Tibia	Fz	DENTON	LC-111Fz	9-Nov-00	9-May-01
	Mx	DENTON	LC-111Mx	9-Nov-00	9-May-01
	My	DENTON	LC-111My	9-Nov-00	9-May-01
Left Foot Rear	X	ENDEVCO	AC-APA30	6-Jul-00	6-Jan-01
	Z	ENDEVCO	AC-J31026	21-Sep-00	21-Mar-01
Left Foot Front	Z	ENDEVCO	AC-J32831	6-Jul-00	6-Jan-01
Right Foot Rear	X	ENDEVCO	AC-J32832	14-Jul-00	14-Jan-01
	Z	ENDEVCO	AC-J33376	6-Jul-00	6-Jan-01
Right Foot Front	Z	ENDEVCO	AC-J18400	28-Sep-00	28-Mar-01
Lap Belt Load Cells		LEBOW	LC-707	1-Dec-00	1-Jun-01
Shoulder Belt Load Cells		LEBOW	LC-712	1-Dec-00	1-Jun-01
Spool-Out Potentiometer		PATRIOT	DS-M98	17-Nov-00	17-May-01
Belt Stretch Transducer		CAL	DS-E6	8-Aug-00	8-Feb-01

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember	ICS	AC-Y05	25-Aug-00	25-Apr-01
Right Rear Seat Crossmember	ICS	AC-X33	25-Aug-00	25-Apr-01
Top of Engine	ICS	AC-X86	14-Aug-00	14-Apr-01
Bottom of Engine	ENDEVCO	AC-AP1A2	10-Dec-00	10-Jun-01
Right Disc Brake Caliper	ENDEVCO	AC-APBB6	10-Dec-00	10-Jun-01
Instrument Panel	ENDEVCO	AC-A14131	27-Nov-00	27-May-01
Left Disc Brake Caliper	ENDEVCO	AC-A14124	7-Aug-00	7-Feb-01
Left Seat Rear Crossmember (R)	ICS	AC-D30	11-Aug-00	5-Feb-01
Right Seat Rear Crossmember(R)	ICS	AC-D77	14-Aug-00	14-Feb-01