Expert VIN DeCoder®

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Version Number 3.1.0

Model:	2008 Ford Focus 2 door Coupe	

1FAHP35NX8W226257

Engine Size: 2.0 L/ 121 cu.in.

Engine Description: Inline 4 cylinder with Dual Overhead Cam

Horse Power: 136 @ 6000 rpm

Torque: 133 lb-ft at 4500 rpm

DeCoded VIN:

Injection System: Sequential Fuel Injection (SFI)

PSI: N/A Ignition: Electronic

Manufacturer: Ford

Assembly Plant: Wayne, MI

Drive Wheels: This is a Front Wheel Drive vehicle w/ Manual Seatbelts +
Driver/Passenger Front/Side Air Bags

The First through Third characters (1FA) indicate a Ford Passenger Car made in the U.S.A.

The Fourth character (H) indicates Manual Seatbelts + Driver/Passenger Front/Side Air Bags

The Fifth through Seventh characters (P35) indicate a Focus and a 2 door Coupe

The Eighth character (N) indicates the OEM engine: 2.0 L/ 121 cu.in., L4, DOHC PZEV

The Ninth character (the check digit) is entered as X.

The VIN appears Valid, the calculated value is 10. (The display Character should be X)

The Tenth character (8) indicates the model year 2008

The Eleventh character (W) indicates the vehicle was made in the assembly plant in Wayne, MI

The Twelfth through Seventeenth characters (226257) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

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JEREMY S DAILY PHD PE TUCRRC 800 TUCKER DRIVE TULSA OK 74104-9700

9/6/2012

2008 FORD FOCUS 2 DOOR COUPE			
Curb Weight: Curb Weight Distribution - Front:	2650 lbs.	Rear: 12	
Gross Vehicle Weight Rating:	3715 lbs.	16	85 kg.
Number of Tires on Vehicle: Drive Wheels:	FRONT		
Horizontal Dimensions Total Length Wheelbase:	Inches 175 103	Feet 14.58 8.58	Meters 4.44 2.62
Front Bumper to Front Axle: Front Bumper to Front of Front Well: Front Bumper to Front of Hood: Front Bumper to Base of Windshield: Front Bumper to Top of Windshield:	34 20 7 42 73	2.83 1.67 0.58 3.50 6.08	0.86 0.51 0.18 1.07 1.85
Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window:	38 23 5 19	3.17 1.92 0.42 1.58	0.97 0.58 0.13 0.48
Width Dimensions Maximum Width: Front Track: Rear Track:	68 59 58	5.67 4.92 4.83	1.73 1.50 1.47
Vertical Dimensions Height: Ground to -	59	4.92	1.50
Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window:	23 28 30 38 29 44 46	1.92 2.33 2.50 3.17 2.42 3.67 3.83	0.58 0.71 0.76 0.97 0.74 1.12 1.17

Expert AutoStats®

2008 FORD FOCUS 2 DOOR COUPE

Interior Dimensions Front Seat Shoulder Width Front Seat to Headliner Front Leg Room - seatback to floor (max)	53 39 42	Feet 4.42 3.25 3.50	1.35 0.99 1.07
Rear Seat Shoulder Width Rear Seat to Headliner Front Leg Room - seatback to floor (min)	54 38 36	4.50 3.17 3.00	1.37 0.97 0.91
Seatbelts: 3pt - front and rear Airbags: FRONT SEAT AIRBAGS + SIDE AI	RBAGS		
Steering Data Turning Circle (Diameter) Steering Ratio: :1 Wheel Radius: Tire Size (OEM): P195/60R15	408	34.00	10.36
Acceleration & Braking Information Brake Type: FRONT DISC - REAR DRUM ABS System: ABS UNKNOWN			
Braking, 60 mph to 0 (Hard pedal, no skid, $d = \boxed{136.0}$ ft $t = \boxed{3.1}$ sec	dry pavement): $a = \boxed{-28.4}$ ft/s	sec² G-fo	rce = -0.88
Acceleration: 0 to 30mph $t = 2.5$ sec 0 to 60mph $t = 8.0$ sec 45 to 65mph $t = 4.7$ sec	a = 17.6 ft/s a = 11.0 ft/s a = 6.2 ft/s	sec² G-fo	rce = 0.55 rce = 0.34 rce = 0.20
Transmission Type: 5spd MANUAL Notes: Federal Bumper Standard Requirements:	2.5 mp	oh	

This vehicles Rated Bumper Strength: 2.5 mph

2008 - 2011 N.S.D.C =

2008 FORD FOCUS 2 DOOR COUPE

Other Information

Tip-Over Stability Ratio =	1.22	Reasonably Stable
NHTSA Star Rating (calculated)		***
Center of Gravity (No Load):		
Inches behind front axle	=	42.23

Inches in front of rear axle	=	60.77
Inches from side of vehicle	=	34.00
Inches from ground	=	24.10
Inches from front corner	=	83.47
Inches from rear corner	=	104.46
Inches from front bumper	=	76.23
Inches from rear bumper	=	98.77

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	1523.50 lb*ft*sec²
Pitch Moment of Inertia	=	1474.50 lb*ft*sec²
Roll Moment of Inertia	=	327.00 lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	45.0 deg
Angle Front of Hood to Windshield Base	=	12.9 deg
Angle Front of Hood to Windshield Top	=	22.2 deg
Angle of Windshield	=	31.5 deg
Angle of Steering Tires at Max Turn	=	28.9 deg

First Approximation Crush Factors:

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #6270

2008 FORD FOCUS

Provided By

4N6XPRT StifCalcs®

Registered to:

TUCRRC 800 TUCKER DRIVE TULSA OK 74104-9700 12R-110829SC03101

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Similar Vehicle database reader

You entered: 2008 FORD FOCUS

The Sister/Clone Vehicle Year/Model Interchange list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2000 - 2012	FORD	FOCUS	2D, 3D, 4D, 5D, SW	103, 133
Remarks:				

The data contained in the database has been provided free of charge as a courtesy to the traffic accident reconstruction community by Gregory C. Anderson of Scalia Safety Engineering. 4N6XPRT Systems® has made no changes to this data, and has only provided for distribution of this data free of charge. 4N6XPRT Systems® makes no warranties, either expressed or implied, with respect to this data, its quality, performance, merchantability, or fitness for any particular purpose. The entire risk as to its quality and performance is with the user. In no event will 4N6XPRT Systems® be liable for direct, indirect, incidental, or consequential damages resulting from any data presented here, even if 4N6XPRT Systems® has been advised of the possibility of such damages. The user must agree to assume full responsibility for any decisions which are based, in whole or in part, upon information obtained by using this data. As previously stated, the data has been provided free of charge as a courtesy to the traffic accident reconstruction community by Gregory C. Anderson of Scalia Safety Engineering. Mr. Anderson does not in any way guarantee the accuracy of the data. Some of the listed similarities are based on his own estimates or memory. Most of the data are pulled from specification tables which may contain inaccuracies of their own. Use common sense - if something seems wrong, check it (and if it is wrong, let him know!).

If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.

Test Information

Test # 6270	NHTSA Test Reference Guide Version	ion # V5
Test Date 2007-12-1 4	Contra	ract # DTNH22-03-D-12005
Contract/Study Title	NCAP SIDE - 2008 FORD FOCUS 2-DOOR COUPE	
Test Objective(s)	VEHICLE CRASHWORTHINESS AND OCCUPANT	RESTRAINT PERFORMANCE DATA
Test Type	NEW CAR ASSESSMENT TEST	Configuration IMPACTOR INTO VEHICLE
Impact Angle	270 Side Impact	Point N/A mm N/A inches
	Offset Dis	stance 0 mm 0.0 inches
	Closing S	Speed 62.3 Km/Hr 38.71 MPH
Test Performer	MGA RESEARCH	
Test Reference #	BT07121401	
Test Track Surface	CONCRETE Cond	dition DRY
Ambient Temperature	21 C 69.8 F Total Number of Cι	Curves 71
Data Recorder Type	OTHER	Data Link OTHER
Test Commentary	DTS TDAS PRO ON BOARD DAS	
	Fixed Barrier Informat	tion
Barrier Type	Pole Barrier Dian	meter mm inches
Barrier Shape		
Barrier Commentary		

2008 FORD FOCUS LEFT FRONT SEAT OCCUPANT

Test # 6270	
Vehicle # 2	Sex MALE
Location LEFT FRONT SEAT	Age 0
Position CENTER POSITION	Height 0 mm 0.0 inches
Type SID WITH HYBRID III HEAD/NECK	Weight 0.0 kg 0 pounds
Size 50 PERCENTILE	
Calibration Method SIDE IMPACT DUMMY	
Occupant Manufacturer FIRST TECHNOLOGY S	/N 904
Occupant Modification	
Occupant Description	
Occupant Commentary HEAD TO CURTAIN AIR	BAG & HEADREST
<u>Head</u>	
Head to -	
Windshielder Header 367 mm 14.4 inche	es Head Injury Criteria (HIC) 160
WindShield 594 mm 23.4 inche	es HIC Lower Time Interval (ms) 41.3
Seatback 0 mm 0.0 inche	es HIC Upper Time Interval (ms) 68.3
Side Header 165 mm 6.5 inche	es
Side Window 296 mm 11.7 inche	es
Neck to Seatback 0 mm 0.0 inches	
First Contact Region (Head) AIR BAG	
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 541 mm 21.3 inches	Arm to Door 99 mm 3.9 inches
Steering Wheel 373 mm 14.7 inches	Hip to Door 140 mm 5.5 inches
Seatback 0 mm 0.0 inches	
Chest Severity Index 0 P	elvic Peak Lateral Acceleration (g's) 75.8
Thoracic Trauma Index 86	Thorax Peak Acceleration (g's) 0
Lap Belt Peak Load 0	Newtons 0.0 pound Force
Shoulder Belt Peak Load 0	Newtons 0.0 pound Force
First Contact Region (Chest/Abdomen) NONE	
Second Contact Region (Chest/Abdomen) NONE	
<u>Legs</u>	
	nees to Seatback mm 0.0 inches
	0.0 pounds Force
	0.0 pounds Force
First Contact Region (Legs) DOOR	
Second Contact Region (Legs)	

2008 FORD FOCUS LEFT FRONT SEAT OCCUPANT

Test #	6270				
Vehicle #	2		Sex	MALE	
Location	LEFT FRONT SE	AT	Age	0	
Position	CENTER POSITION	ON	Height	0 mm 0.0	inches
Type	SID WITH HYBRI	D III HEAD/NECK	Weight	0.0 kg 0	pounds
Size	50 PERCENTILE				
Cali	ibration Method	SIDE IMPACT DUMMY			
Occupa	nt Manufacturer	FIRST TECHNOLOGY S	N 904		
Occupa	ant Modification				
Occu	pant Description				
Occupa	ant Commentary	HEAD TO CURTAIN AIRE	BAG & HEADREST		
		Restraints	<u>s</u>		
Restrai	nt # 1 3 POINT E	BELT			
Mounte	ed BELT - C C	ONVENTIONAL MOUNT			
Deploy	ment NOT APP	LICABLE			
Restrai	nt Commentary	PRIMARY			
Restrai	nt # 2 CURTAIN	AIRBAG			
Mounte	ed HEADER	- SIDE			
Deploy	ment DEPLOYE	D PROPERLY			
Restrai	nt Commentary	SECONDARY			
Restrai	nt # 3 FRONTAL	AIDRAG			
Mounte					
	<u> </u>				
Deploy	ment DEPLOYE	D PROPERLY			

SECONDARY

Restraint Commentary

2008 FORD FOCUS LEFT REAR SEAT OCCUPANT

Test # 6270	
Vehicle # 2 Sex MALE	
Location LEFT REAR SEAT Age 0	
Position NON-ADJUSTABLE SEAT Height 0 mm 0.0 inc	hes
Type SID WITH HYBRID III HEAD/NECK Weight 0.0 kg 0 po	unds
Size 50 PERCENTILE	
Calibration Method SIDE IMPACT DUMMY	
Occupant Manufacturer FIRST TECHNOLOGY S/N 271	
Occupant Modification	
Occupant Description	
Occupant Commentary HEAD TO HEADLINER & CURTAIN AIRBAG	
<u>Head</u>	
Head to -	
Windshielder Header 0 mm 0.0 inches Head Injury Criteria (HIC) 513	
WindShield 0 mm 0.0 inches HIC Lower Time Interval (ms) 43	
Seatback 507 mm 20.0 inches HIC Upper Time Interval (ms) 63	.6
Side Header 155 mm 6.1 inches	
Side Window 294 mm 11.6 inches	
Neck to Seatback 0 mm 0.0 inches	_
First Contact Region (Head) OTHER	=
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 0 mm 0.0 inches Arm to Door 52 mm 2.0 inche	
Steering Wheel 0 mm 0.0 inches Hip to Door 120 mm 4.7 inche)S
Seatback 450 mm 17.7 inches	\neg
Chest Severity Index 0 Pelvic Peak Lateral Acceleration (g's) 78.1	╡
Thoracic Trauma Index 87 Thorax Peak Acceleration (g's) 0 Lap Belt Peak Load 0 Newtons 0.0 pound Force	
Lap Belt Peak Load 0 Newtons 0.0 pound Force Shoulder Belt Peak Load 0 Newtons 0.0 pound Force	
First Contact Region (Chest/Abdomen) NONE	\neg
Second Contact Region (Chest/Abdomen) NONE	╡
Second Contact Region (Chest/Abdomen) NONE	_
<u>Legs</u>	
Knees to Dash 0 mm 0.0 inches Knees to Seatback 150 mm 5.9 inche) S
Left Femur Peak Load 0 Newtons 0.0 pounds Force	
Right Femur Peak Load 0 Newtons 0.0 pounds Force	\neg
First Contact Region (Legs) DOOR	닉
Second Contact Region (Legs)	

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2008 FORD FOCUS LEFT REAR SEAT OCCUPANT

Test #	6270				
Vehicle #	2		Sex	MALE	
Location	LEFT REAR SEA	T	Age	0	
Position	NON-ADJUSTAB	LE SEAT	Height	0 mm 0.0	inches
Туре	SID WITH HYBRI	D III HEAD/NECK	Weight	0.0 kg 0	pounds
Size	50 PERCENTILE				
Cali	bration Method	SIDE IMPACT DUMMY			
Occupar	nt Manufacturer	FIRST TECHNOLOGY S/	N 271		
Occupa	ant Modification				
Occu	pant Description				
Occupa	ant Commentary	HEAD TO HEADLINER &	CURTAIN AIRBAG		
		Restraints	3		
Restrai	nt # 1 3 POINT I	BELT	<u>-</u>		
Mounte	ed BELT - CO	ONVENTIONAL MOUNT			
Deploy	ment NOT APP	LICABLE			
Restrai	nt Commentary	PRIMARY			
Restrai	nt # 2 CURTAIN	AIRBAG			
Mounte					
Deploy		ED PROPERLY			
Restrai	nt Commentary	SECONDARY			_

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	6270												
VIN							NHTSA T	est Vehic	le Numbe	r 1			
Year	0					\	/ehicle Mo	odification	Indicator	RESE	EARCH \	VEHICLE	
Make	NHTSA	\		Post-te	st Steeri	ng Colu	mn Sheai	r Capsule	Seperation	n NOT	APPLIC	ABLE	
Model	DEFOR	RMABL	E IMPA	CTOR	s	teering	Column C	Collapse M	1echanism	NOT	APPLIC	ABLE	
Body	NOT A	PPLICA	ABLE										
Engine	NOT A	PPLICA	ABLE										
Displacement	0	Lite	r Tra	ansmiss	sion N C	T APPL	ICABLE						
Vehicle Modific	cation(s)	Descri	ption [
Vehicle Comm	entary [FMVS	S 214 D	EFORM	//ABLE	BARRIE	R AND IM	PACTOR					
Vehicle Len	ngth [4115	mm	162.0	inches	6	C	G behind	Front Axle	1101] mm	43.3	inches
Vehicle V	Width [1252	mm	49.3	inches	s (Center of	Damage t	to CG Axis	s 0] mm	0.0	inches
Vehicle Whee	elbase [2588	mm	101.9	inches	6	Total Ler	ngth of Ind	dentation	0] mm	0.0	inches
Vehicle Test W	/eight [1361	KG	3000] pound	ds N	Maximum	Static Cru	ish Depth	0] mm	0.0	inches
								Pre-Impa	act Speed	62	kph	38.7	mph
Vel	hicle Dai	mage I	Index 🗌]	Princ	cipal Direc	tion of Fo	rce 0			
Damaga Pr	ofilo Di	ctance	0 1/1000	suromo	onto		ruch fro	m Pre &	Post To	ct Dam	aga Ma	acuron	oonto
Damage Pro						<u></u>	iusii iio						
` _	ured Left	_		_	•	- 4 4 D	0	Pre-Tes	_	Post-To	_	Crush	
DPD 1 (mm	0.0	」inche □ :		ert Bump	oer Corne		inches	0.0	」inches フ		inches
DPD 2		mm	0.0	」inche □ :				0	mm	0	_ mm _	0	_ mm _
DPD 3 [0		mm	0.0	」inche □::		(Centerline	0.0	inches	0.0	inches	0.0	inches
DPD 4		mm	0.0	」inche □::				0	mm	0	mm	0	mm
DPD 5 [0		mm	0.0	」inche □::	Dial	ht Bump	er Cornei	r 0.0	inches	0.0	inches	0.0	inches
DPD 6)	mm	0.0	inche	is o			0	mm	0	Ī mm	0	Īmm
									•		_		_
Bumper E	ngagen	nent			9	Sill Enga	gement				A-pillar E	Engagem	ent
(Inline Im						_	pact Only	·)			•	npact On	
	27.0	Τ̈́		Ī		·	PLICABLE	<u></u>				0.0	Τ̈́
	-												_
Moving	g Test Ca	art			Mov	ing Tes	t Cart/Veh	nicle		Ve	hicle Ori	entation	on Cart
A	ngle				_	Crabbe	ed Angle				Moving	g Test Ca	rt
NOT A	APPLICA	BLE				27	7.0				NOT AP	PLICABL	.E
Magnitude		_			Magi	niture of the	Crabbed An	gle			Magnitud	le of the Angl	е
Measured be							ockwise fron					the Vehicle C	
Pollovor Tost	Cart and th	o Crouna	J	1	anaitudinal	Vactor to V	Alocity Vocto	r of Vahiala		and	Direction	of Toot Cart I	Motion

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Front of Engine 0 0.0 0 0.0 0 0.0 0 0.0 Firewall 0 0.0 0 0.0 0 0.0 0 0.0 Upper Leading Edge of Door 0 0.0 0 0.0 0 0.0 Lower Leading Edge of Door 0 0.0 0 0.0 0 0.0 Bottom of 'A' Post 0 0.0 0 0.0 0 0.0 Upper Trailing Edge of Door 0 0.0 Upper Trailing Edge of Door 0 0.0 Steering Column 0 0.0 0 0.0 Center of Seering Column to 'A' Post (Horizontal) 0 0.0 0 0.0 Center of Steering Column to Headliner (Vertical)	т	2072			. •		
Vehicle Model DeFORMABLE IMPACTOR Steering Column Shear Capsule Seperation NOT APPLICABLE	=	6270	7	TO A Tart Valation No.			1
Make	<u> </u>		_				
Mode DEFORMABLE IMPACTOR Steering Column Collapse Mechanism NOT APPLICABLE	7						<u> </u>
Body NOT APPLICABLE Engine NOT APPLICABLE	=						
Engine NOT APPLICABLE Displacement 0	7		STOR Steering Col	umn Collapse Mecha	anism <u>[NOT A</u>	APPLICABLE	
Displacement 0	´						
Vehicle Modification(s) Description			NOT APPLIA				
Vehicle Length Vehicle Length Vehicle Length Vehicle Length Vehicle Length Vehicle Length Vehicle Width Vehicle Width Vehicle Width Vehicle Width Vehicle Wheelbase Vehicle Wheelbase Vehicle Test Weight Vehicle Test Weight Vehicle Test Weight Vehicle Damage Index Vehicle Test Weight Vehicle Damage Index Vehicle Test Weight Vehicle Damage Index Veh	· · · · -		ismission [NOT APPLIC.	ABLE			
Vehicle Length		` '		ND IMPAGED			
Vehicle Webicle Wheelbase 2588 mm 101.9 inches Total Length of Indentation 0 mm 0.0 inches Vehicle Test Weight 1361 KG 3000 pounds Maximum Static Crush Depth 0 mm 0.0 inches Naximum Static Crush Depth 0		· 			A 1 4404	1 [42.2	1
Vehicle Wheelbase 2588 mm 101.9 inches Notal Length of Indentation 0 mm 0.0 inches Notal Length 0 0 0 0 0 0 0 0 0	`					; ===	=
Vehicle Test Weight 1361 KG 3000 pounds Maximum Static Crush Depth 0 mm 0.0 inches Pre & Post Test Damage Measurements Pre & Post Test Damage Measurements (Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.) Left Side Centerline Right Side Pre-Test Post-Test Pre-Test Pr		=======================================		-		; ===	=
Pre-Impact Speed 62 kph 38.7 mph				•		; ===	
Vehicle Damage Index	Vehicle Test We	eight [<u>1361</u>] KG [3	gounds Max			i ====	=
Pre & Post Test Damage Measurements Pre & Post Test Damage Measurements Pre				•		kph	_ mph
New Surements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.) Left Side	Veh	icle Damage Index [Principal Direction	of Force [0		
New Surements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.) Left Side		_					
Left Side		<u>Pre</u>	e & Post Test Dama	age Measurem	<u>ents</u>		
Pre-Test mm inches Post-Test mm inches Pre-Test mm inches mm in	(Measuremer	nts are taken in a longitudinaldire	ection. Except for Engine Block, all	measurements are take from	the Rear Vehicle	Surface forward.)	
Pre-Test mm inches Post-Test mm inches Pre-Test mm inches mm in	Le	ft Side	Cente	erline		Right Side	
Length of Vehicle at Centerline 0	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Tes	_	st-Test
O O O O O O O O O O	mm inches	s mm inches	mm inches	mm inches	mm in	iches mm	inches
Engine Block 0 0.0 0 0.0 Front Bumper Corner Front of Engine 0 0.0 0 0.0 Firewall 0 0.0 0 0.0 Upper Leading Edge of Door 0 0.0 0 0.0 Double Trailing Edge of Door 0 0.0 0 0.0 Edge of Door			Length of Veh	icle at Centerline			
Engine Block 0 0.0 0 0.0 Front Bumper Comer Front of Engine 0 0.0 0 0.0 Firewall 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 Upper Leading Edge of Door 0 0.0 0 0.0 Double Company of A' Post 0 0.0 0 0.0 Center of Seering Column to 'A' Post (Horizontal) 0 0.0 0 0.0 Center of Steering Column to Headliner (Vertical)			0 0.0	0.0			
O O.O O O.O O.				e Block			
Front of Engine 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 Firewall 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 Upper Leading Edge of Door 0 0.0 0 0.0 0 0.0 0 0.0 Edwer Leading Edge of Door 0 0.0 0 0.0 0 0.0 0 0.0 Edwer Leading Edge of Door 0 0.0 0 0.0 0 0.0 0 0.0 Edwer Trailing Edge of Door 0 0.0 0 0.0 Steering Column 0 0.0 0 0.0 Center of Seering Column to 'A' Post (Horizontal) 0 0.0 0 0.0 Center of Steering Column to Headliner (Vertical)			0 0.0	0.0			
Front of Engine 0 0.0 0 0.0 0 0.0 0 0.0 Firewall 0 0.0 0 0.0 0 0.0 0 0.0 Upper Leading Edge of Door 0 0.0 0 0.0 0 0.0 Lower Leading Edge of Door 0 0.0 0 0.0 0 0.0 Bottom of 'A' Post 0 0.0 0 0.0 0 0.0 Upper Trailing Edge of Door 0 0.0 Upper Trailing Edge of Door 0 0.0 Steering Column 0 0.0 0 0.0 Center of Seering Column to 'A' Post (Horizontal) 0 0.0 0 0.0 Center of Steering Column to Headliner (Vertical)	0.0	0.0	Front Bu	mper Corner	0 0.	0 0	0.0
O O.O O O.O O O.O O O.O O							
O 0.0 0.0 Firewall 0 0.0 0.0 O 0.0							
0 0.0	0.0	0.0		ewall	0 0.	0 0	0.0
0 0.0 0.0 Upper Leading Edge of Door 0 0.0 0 0 0.0 0 0 0.0 0 0 0<			0 0.0	0 0.0			
0 0.0 0.0 Lower Leading Edge of Door 0 0.0 0 0 0.0 0 0 0.0 0	0.0	0.0		g Edge of Door	0 0.	0 0	0.0
0 0.0 0.0 Bottom of 'A' Post 0 0.0 0 0.0 0.0 0 0 0 0 0.0 <			• •	•			
0 0.0 0.0 Upper Trailing Edge of Door 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 <		0 0.0					===
Double Lower Trailing Edge of Door Double Door Steering Column Double Door Double Double Double Double Door Double Doubl			Upper Trailin	g Edge of Door			
Steering Column O O.O O O.O Center of Seering Column to 'A' Post (Horizontal) O O.O O O.O Center of Steering Column to Headliner (Vertical)			• • •	-			
O O.O O.O Center of Seering Column to 'A' Post (Horizontal) O O.O O O.O Center of Steering Column to Headliner (Vertical)							
Center of Seering Column to 'A' Post (Horizontal) 0 0.0 0.0 Center of Steering Column to Headliner (Vertical)				·———			
O O.O O.O O.O Center of Steering Column to Headliner (Vertical)					ontal)		
Center of Steering Column to Headliner (Vertical)					,		
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Vehicle 2 2008 FORD FOCUS

Test #	6270											
VIN	1FAHP32N7	8W13233	9		NHTS	SA Tes	st Vehic	le Numbe	r 2			
Year	2008				Vehicle	e Mod	lification	Indicator	PROD	UCTION	VEHICL	E
Make	FORD		Post-tes	st Steering	g Column Sł	near C	Capsule	Seperation	n UNKN	OWN		
Model	FOCUS			Ste	ering Colum	nn Col	llapse M	lechanism	UNKN	OWN		
Body	TWO DOOR	COUPE										
Engine	4 CYLINDER	TRANS	/ERSE	FRONT								
Displacement	2 Lite	er Tra	ınsmiss	ion MAI	NUAL - FRO	NT W	HEEL DI	RIVE				
Vehicle Modific	cation(s) Desc	ription [
Vehicle Comm	entary			_								
Vehicle Len	ngth 4437	mm	174.7	inches		CG I	behind I	Front Axle	1118] mm	44.0	inches
Vehicle V	Width 1681	mm	66.2	inches	Cente	r of Da	amage t	o CG Axis	-380] mm	-15.0	inches
Vehicle Whee	elbase 2614	mm	102.9	inches	Total	Lengt	th of Inc	dentation	3450] mm	135.8	inches
Vehicle Test W	/eight 1381	KG	3044] pounds	Maxim	um St	tatic Cru	sh Depth	331] mm	13.0	inches
						Р	re-Impa	ct Speed	0	kph	0.0	mph
Vel	hicle Damage	Index 0	3LPAW	2	F	rincip	al Direc	tion of Fo	rce 297	7		
Damage Pro	ofila Dietano	ra Maas	uromo	nte	Cruch	from	Dro &	Post Tes	et Dama	age Me	acuram	nante
					Clusii					_		
· <u> </u>	ured Left-to-Ri	·		•	· Dumnar Ca	_	Pre-Tes		Post-Te	-	Crush [
DPD 1 5		0.2	inche		t Bumper Co	=		inches	143.0	inches		inches
DPD 2		2.4	inche			L	3710	mm	3633] mm -	77] mm -
DPD 3 3		12.1	inche		Cente	rline [174.8	inches	172.3	inches	2.5	inches
DPD 4 3		13.1	inche				4439	mm	4376	mm	63	mm
DPD 5 1		7.4	inche	Diaht	Bumper Co	mer [146.1	inches	146.5	inches	-0.5	inches
DPD 6 1	13 mm	0.5	inche	S		=	3710	mm	3722	mm	-12] mm
						_				_		
Bumper E	ngagement			Sil	l Engageme	nt			A	۹-pillar E	ngagem	ent
•	pact Only)				ide Impact (•	npact On	
	7.0		Γ	•	ECT ENGA	• •	NT				0.0	Ί
			_						,			_
Moving	g Test Cart			Movir	ng Test Cart	/Vehic	ele		Veh	nicle Orie	entation o	on Cart
Α	ngle			(Crabbed And	gle				Moving	Test Car	rt
NOT A	PPLICABLE				0.0				NO D	IRECT E	ENGAGE	MENT
Magnitude	of the Tilt Angle			Magnit	ure of the Crabbe	ed Angle	!			Magnitude	e of the Angle)
Measured be	etween surface of a	1		Ме	asure Clockwise	e from			Measured	l between ti	he Vehicle O	rientation
Rollover Test	Cart and the Groun	nd	Lo	ongitudinal Ve	ector to Velocity	ector of	f Vehicle		and l	Direction o	f Test Cart N	∆otion

Vehicle 2 2008 FORD FOCUS

Test # 6270				
VIN 1FAHP32N78V	/ 132339	NHTSA Test Vehicle Nui	mber 2	
Year 2008		Vehicle Modification Indic	ator PRODUCTIO	N VEHICLE
Make FORD	Post-test Steering Co	lumn Shear Capsule Sepe	ration UNKNOWN	
Model FOCUS	Steerin	g Column Collapse Mecha	nism UNKNOWN	
Body TWO DOOR CO	OUPE			
Engine 4 CYLINDER T	RANSVERSE FRONT			
Displacement 2 Liter	Transmission MANUA	L - FRONT WHEEL DRIVE		
Vehicle Modification(s) Descrip	tion			
Vehicle Commentary				
Vehicle Length 4437	mm <u>174.7</u> inches	CG behind Front	Axle 1118 mm	44.0 inches
Vehicle Width 1681	mm 66.2 inches	Center of Damage to CG	Axis <u>-380</u> mm	<u>-15.0</u> inches
Vehicle Wheelbase 2614	mm <u>102.9</u> inches	Total Length of Indentat	tion 3450 mm	135.8 inches
Vehicle Test Weight 1381	KG 3044 pounds	Maximum Static Crush De	· ===	inches
		Pre-Impact Sp		<u>0.0</u> mph
Vehicle Damage In	dex 03LPAW2	Principal Direction o	f Force 297	
	Pre & Post Test D	<u>amage Measureme</u>	<u>ents</u>	
(Measurements are taken in a long	gitudinaldirection. Except for Engine Bl	ock, all measurements are take from	the Rear Vehicle Surface for	orward.)
Left Side		Centerline	Right	t Side
Pre-Test Post-Te	est Pre-Tes	Post-Test	Pre-Test	Post-Test
mm inches mm in	ches mm ind	ches mm inches	mm inches	mm inches
	Length of	of Vehicle at Centerline		
	4439 17	4.8 4376 172.3		
		Engine Block		
	0 0.0	0.0		
3710 146.1 3633 14	3.0 Fro	nt Bumper Corner	3710 146.1	3722 146.5
	F	ront of Engine		
	0 0.0	0.0		
0 0.0 0 0.0	<u> </u>	Firewall	0.0	0.0
	0.0	0.0		
0 0.0 0 0.0	D Upper L	eading Edge of Door	0.0	0.0
0 0.0 0 0.0	<u>D</u> Lower L	eading Edge of Door	0.0	0.0
0 0.0 0 0.0		tom of 'A' Post	0.0	0.0
0 0.0 0 0.0		Trailing Edge of Door	0.0	0.0
0 0.0 0 0.0		Trailing Edge of Door	0.0	0.0
		teering Column		
	0 0.0			
		Column to 'A' Post (Horizo	ontal)	
	0 0.0			
	Center of Steering	Column to Headliner (Ver	tical)	

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

0

0.0

Registered Owner: TUCRRC Serial Number: 12R-110829SC03101

0.0

0

2008 FORD FOCUS

NHTSA Crash Test - #6270 - Side Impact

Damage Profile Distances - Indention Length - KE Equivalent Speed - Trapezoidal Average

Test Vehicle Weight = 3044 pounds

Impactor Weight = 3000

SMAC Stiffness

KE Equivalent Speed = 27.3 MPH

Impactor Test Speed = 38.7

CRASH 3 Stiffness Coefficents

Test Crush Length = 135.8 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	(Ct)
(Rear)	0.2	2.4	12.1	13.1	7.4	0.5	(Front)

Α В G Κv Minimum Crush = 0.2 inches 334078.1 Using a Rated No Damage Speed of 2360.0 310028.4 9.0 1.0mph Using a Rated No Damage Speed of 2.0mph 4540.4 286877.1 35.9 Using a Rated No Damage Speed of 3.0mph 6541.2 80.8 264624.0 Using a Rated No Damage Speed of 10003.7 224.6 5.0mph 222812.7 Average Crush = 7.1 265.1 inches Using a Rated No Damage Speed of 1.0mph 66.5 246.0 9.0 Using a Rated No Damage Speed of 2.0mph 127.9 227.6 35.9 Using a Rated No Damage Speed of 184.3 210.0 8.08 3.0mph Using a Rated No Damage Speed of 5.0mph 281.8 176.8 174.4 77.9 Maximum Crush = 13.1 inches Using a Rated No Damage Speed of 36.0 72.3 1.0mph 9.0 Using a Rated No Damage Speed of 2.0mph 69.3 66.9 35.9 Using a Rated No Damage Speed of 3.0mph 99.9 61.7 80.8

Using a Rated No Damage Speed of

224.6

51.9

4N6XPRT System's First Approximation Crush Factor (CF)

152.7

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	13.1	26.2	-1.0	-4.0

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 22.7

5.0mph

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2012

Make: FORD Model: FOCUS

Test	Vehicle	No							
Numbe	r Info	Damage	Average		I n	dention	Leng	g t h	
		Speed	Crush	KEES	S t	iffness	Valu	ı e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Κv	Factor
6245	2008 FORD FOCUS TWO DOOR COUPE	2.0	7.3	26.9	124.2	210.9	36.6	246.1	39.5
6270	2008 FORD FOCUS TWO DOOR COUPE	2.0	7.1	27.3	128.3	229.0	35.9	266.7	42.0
3341	2000 FORD FOCUS THREE DOOR HATCHBACK	2.0	6.8	23.3	138.0	217.5	43.8	260.2	32.2
3280	2000 FORD FOCUS THREE DOOR HATCHBACK	2.0	8.3	26.8	140.6	209.3	47.2	244.5	34.5
5115	2005 FORD FOCUS THREE DOOR HATCHBACK	2.0	7.4	27.0	141.6	238.2	42.1	277.8	39.3
		Average	(AVG)		134.5	221.0	41.1	259.1	37.5
		Minimum	(MIN)		124.2	209.3	35.9	244.5	32.2
		Maximum	(MAX)		141.6	238.2	47.2	277.8	42.0
	Standard Deviation	on (STDev-sa	ample)		7.8	12.4	4.8	14.1	4.0
	Nu	ımber of Te	sts (n)	5					

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2012

Make: FORD Model: FOCUS

Test	Vehicle	No							
Numbe	r Info	Damage	Max		I n c	lention	Leng	t h	
		Speed	Crush	KEES	S t	iffness	Valu	e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Κv	Factor
6245	2008 FORD FOCUS TWO DOOR COUPE	2.0	14.1	26.9	64.9	57.6	36.6	67.2	20.6
6270	2008 FORD FOCUS TWO DOOR COUPE	2.0	13.1	27.3	69.3	66.8	35.9	77.7	22.7
5115	2005 FORD FOCUS THREE DOOR HATCHBACK	2.0	13.7	27.0	77.1	70.6	42.1	82.3	21.4
3341	2000 FORD FOCUS THREE DOOR HATCHBACK	2.0	11.5	23.3	81.3	75.5	43.8	90.3	19.0
3280	2000 FORD FOCUS THREE DOOR HATCHBACK	2.0	13.4	26.8	87.4	80.9	47.2	94.5	21.4
		Average ((AVG)		76.0	70.3	41.1	82.4	21.0
		Minimum	(MIN)		64.9	57.6	35.9	67.2	19.0
		Maximum	(MAX)		87.4	80.9	47.2	94.5	22.7
	Standard Deviation	n (STDev-sa	ample)		9.1	8.9	4.8	10.8	1.4
	Nu	ımber of Te	sts (n)	5					

Expert VIN DeCoder®

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Version Number 3.1.0

DeCoded VIN: 2G1wC583x89229146

Model: 2008 Chevrolet Impala 2LT 4 Door Sedan

Engine Size: 2.3 L/ 231 cu.in.

Engine Description: Inline 4 Cylinder

Horse Power: 115@ 5200rpm

Torque: 140 lb-ft at 3200 rpm

Injection System: Multi-Port Fuel Injection (MFI)

PSI: 41-47 psi Ignition: Electronic

Manufacturer: Pontiac, GM Canada

Assembly Plant: Oshawa #1, ON

Drive Wheels: This is a Front Wheel Drive vehicle w/ Manual Blts w/Driver & Passenger Front Air Bags

The First through Third characters (2G1) indicate a Chevrolet Car made in Canada

The Fourth and Fifth characters (WC) indicate an Impala 2LT

The Sixth character (5) indicates a 4 Door Sedan

The Seventh character (8) indicates Manual Blts w/Driver & Passenger Front Air Bags

The Eighth character (3) indicates the OEM engine: 2.3 L/ 231 cu.in., L4

The Ninth character (the check digit) is entered as X.

The VIN appears Valid, the calculated value is 10. (The display Character should be X)

The Tenth character (8) indicates the model year 2008

The Eleventh character (9) indicates the vehicle was made in the assembly plant in Oshawa #1, ON

The Twelfth through Seventeenth characters (229146) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

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JEREMY S DAILY PHD PE TUCRRC 800 TUCKER DRIVE TULSA OK 74104-9700

9/6/2012

2008 CHEVROLET IMPALA 4 DOOR SEDAN

Curb Weight: Curb Weight Distribution - Front:	3632 lbs.		647 kg. 88 %
Gross Vehicle Weight Rating:	4678 1bs.	2:	L22 kg.
Number of Tires on Vehicle: Drive Wheels:	FRONT		
Horizontal Dimensions	Inches	Feet	Meters
Total Length	200	16.67	5.08
Wheelbase:	111	9.25	2.82
Front Bumper to Front Axle:	42	3.50	1.07
Front Bumper to Front of Front Well:	26	2.17	0.66
Front Bumper to Front of Hood:	7	0.58	0.18
Front Bumper to Base of Windshield:	50	4.17	1.27
Front Bumper to Top of Windshield:	83	6.92	2.11
Rear Bumper to Rear Axle:	47	3.92	1.19
Rear Bumper to Rear of Rear Well:	33	2.75	0.84
Rear Bumper to Rear of Trunk:	9	0.75	0.23
Rear Bumper to Base of Rear Window:	26	2.17	0.66
Width Dimensions	72		1.05
Maximum Width:	73 62	5.17	1.85 1.57
Front Track:	62	5.17	1.57
Rear Track:	<u> </u>	<u> </u>	
Vertical Dimensions			
Height:	59_	4.92	1.50
Ground to -	23	1.92	0.58
Front Bumper (Top) Headlight - center	28	2.33	0.71
Hood - top front:	30	2.50	0.71
Base of Windshield	38	3.17	0.97
Rear Bumper - top:	28	2.33	0.71
Trunk - top rear:	44	3.67	1.12
Base of Rear Window:	45	3.75	1.14

Expert AutoStats®

2008 CHEVROLET IMPALA 4 DOOR SEDAN

Interior Dimensions Front Seat Shoulder Width Front Seat to Headliner	Inches 58 39	Feet 4.83 3.25	Meters 1.47 0.99
Front Leg Room - seatback to floor (max)	41	3.42	1.04
Rear Seat Shoulder Width Rear Seat to Headliner Front Leg Room - seatback to floor (min)	58 38 26	4.83 3.17 2.17	1.47 0.97 0.66
Seatbelts: 3pt - front and rear Airbags: FRONT SEAT AIRBAGS			
Steering Data Turning Circle (Diameter) Steering Ratio: :1 Wheel Radius: Tire Size (OEM): P225/60R16	492 12	1.00	0.30
Acceleration & Braking Information Brake Type: ALL DISC ABS System: ALL WHEEL ABS - OPTIONAL			
Braking, 60 mph to 0 (Hard pedal, no skid, $d = \boxed{134.0}$ ft $t = \boxed{3.1}$ sec	dry pavement): $a = \boxed{-28.8}$ ft/	sec² G-fo	rce = -0.90
Acceleration: 0 to 30mph	a = ft/ a = ft/ a = ft/	sec² G-fo	rce = rce = rce =
Notes: Federal Bumper Standard Requirements: This vehicles Rated Bumper Strength:	2.5 mg		

N.S.D.C = 2006 - 2012

2008 CHEVROLET IMPALA 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.34	Stable
NHTSA Star Rating (calculated)		****

Center of Gravity (No Load):

Inches behind front axle	=	42.18
Inches in front of rear axle	=	68.82
Inches from side of vehicle	=	36.50
Inches from ground	=	23.16
Inches from front corner	=	91.75
Inches from rear corner	=	121.44
Inches from front bumper	=	84.18
Inches from rear bumper	=	115.82

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2534.96 lb*ft*sec²
Pitch Moment of Inertia	=	2446.68 lb*ft*sec²
Roll Moment of Inertia	=	503.76 lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	45.0 deg
Angle Front of Hood to Windshield Base	=	10.5 deg
Angle Front of Hood to Windshield Top	=	19.6 deg
Angle of Windshield	=	29.9 deg
Angle of Steering Tires at Max Turn	=	25.9 deg

First Approximation Crush Factors:

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$
KE Equivalent Speed (Front/Rear/Side) = 21 CF
Bullet vehicle IMPACT SPEED estimation
based on TARGET VEHICLE damage ONLY = 27 CF
(Tested for Rear/Side Impact only)

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #7488

2012 CHEVROLET IMPALA

Provided By

4N6XPRT StifCalcs®

Registered to:

TUCRRC 800 TUCKER DRIVE TULSA OK 74104-9700 12R-110829SC03101

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Similar Vehicle database reader

You entered: 2008 CHEVROLET IMPALA

The Sister/Clone Vehicle Year/Model Interchange list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2005 - 2009 Remarks:	BUICK	LACROSSE	4D	111.7
2006 - 2008 Remarks:	PONTIAC	GRAND PRIX	2D, 4D	110.5
2006 - 2007 Remarks:	CHEVROLET	MONTE CARLO	2D	108
2006 - 2012 Remarks:	CHEVROLET	IMPALA	2D, 4D, SW	110.5, 125

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If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering, 521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.

Test Information

	_												
Test # 7488		NHT	SA Test R	Reference	Guide Vers	ion #	V5						
Test Date 2011-10-22	2				Cont	ract#	# DTNH22-06-D-00024						
Contract/Study Title	NEW CAR	ASSESSME	NT PRO	GRAM FF	RONTAL BA	ARRIE	R IMPACT TEST	Γ					
Test Objective(s)	TO OBTAI	N VEHICLE	CRASH	WORTHI	NESS AND	occi	JPANT RESTRA	AINT INF	ORMATION				
Test Type	NEW CAR	ASSESSME	NT TEST	Γ			Configuration	VEHICL	E INTO BARR	IER			
Impact Angle	0			5	Side Impact	Point	0	mm	0.0	inches			
,					Offset Di	stance	0	mm	0.0	inches			
					Closing	Speed	56.2	Km/Hr	34.89	Т МРН			
Test Performer	CALSPAN					•							
Test Reference #													
Test Track Surface					Con	dition	DRY						
Ambient Temperature			□ F	Total N	umber of C								
Data Recorder Type			JISITION				Data Link	UMBILI	CAL CABLE				
Test Commentary					ΤΜΡΔΙΔΙ	ΝζΔΡ							
rest commentary	1112377 1	VICOLOG A	LUIL CII	LVICEL	IIIII ALA I	TOAL	(INOITIAL)	ANGLIS					
						_							
			Fix	ked Barri	er Informa	tion							
Barrier Type				Pole	Barrier Dia	meter	0	mm	0	inches			
Barrier Shape	LOAD CELL	BARRIER											
Barrier Commentary	FRONTAL	FLAT BARF	RIER WIT	H 36 LO	ADCELLS								

2012 CHEVROLET IMPALA LEFT FRONT SEAT OCCUPANT

Test # 7488	
Vehicle # 1	Sex MALE
Location LEFT FRONT SEAT	Age 0
Position CENTER POSITION	Height 0 mm 0.0 inches
Type HYBRID III DUMMY	Weight 0.0 kg 0 pounds
Size 50 PERCENTILE	
Calibration Method HYBRID III	
Occupant Manufacturer MFG: FIRST TECHNOLOG	GY SAFETY SYSTEMS: 064
Occupant Modification NO COMMENTS	
Occupant Description NO COMMENTS	
Occupant Commentary CNTRH2 =HEADREST	
<u>Head</u>	
Head to -	
Windshielder Header 358 mm 14.1 inches	s Head Injury Criteria (HIC) 223
WindShield 683 mm 26.9 inches	s HIC Lower Time Interval (ms) 66.7
Seatback 0 mm 0.0 inches	s HIC Upper Time Interval (ms) 81.7
Side Header 223 mm 8.8 inches	3
Side Window 380 mm 15.0 inches	3
Neck to Seatback 0 mm 0.0 inches	
First Contact Region (Head) AIR BAG	
Second Contact Region (Head)	
<u>Chest</u>	
Chest to -	
Dash 558 mm 22.0 inches	Arm to Door 128 mm 5.0 inches
Steering Wheel 311 mm 12.2 inches	Hip to Door 149 mm 5.9 inches
Seatback 0 mm 0.0 inches	
Chest Severity Index 380 Pe	lvic Peak Lateral Acceleration (g's) 0
Thoracic Trauma Index 0	Thorax Peak Acceleration (g's) 45.6
Lap Belt Peak Load 7885 N	lewtons 1772.6 pound Force
Shoulder Belt Peak Load 3563 N	lewtons 801.0 pound Force
First Contact Region (Chest/Abdomen) AIR BAG	
Second Contact Region (Chest/Abdomen) NONE	
Legs	
	ees to Seatback mm 0.0 inches
	16.8 pounds Force
	216.5 pounds Force
First Contact Region (Legs) DASHPANEI	
Second Contact Region (Legs)	

2012 CHEVROLET IMPALA LEFT FRONT SEAT OCCUPANT

Test #	7488	
Vehicle #	1	Sex MALE
Location	LEFT FRON	r SEAT Age 0
Position	CENTER PO	SITION Height 0 mm 0.0 inches
Type	HYBRID III D	Weight 0.0 kg 0 pounds
Size	50 PERCEN	ΠLE
Cali	ibration Metho	d HYBRID III
Occupai	nt Manufactur	er MFG: FIRST TECHNOLOGY SAFETY SYSTEMS: 064
Occupa	ant Modificatio	n NO COMMENTS
Occu	pant Descripti	on NO COMMENTS
Occupa	ant Comment	ary CNTRH2 =HEADREST
		Restraints
Restrai	nt # 1 3 PO	INT BELT
Mounte	ed BELT	- CONVENTIONAL MOUNT
Deploy	ment NOT	APPLICABLE
Restrai	nt Commenta	ry BELT PRETENSIONER & LOAD LIMITER
Restrai	nt # 2 FROM	NTAL AIRBAG
Mounte	ed STEE	RING WHEEL
Deploy	ment DEPL	OYED PROPERLY

Restraint Commentary

FRONTAL AIRBAG

2012 CHEVROLET IMPALA RIGHT FRONT SEAT OCCUPANT

Test #	7488							
Vehicle #	1			Sex	FEMALE	.		
Location	RIGHT FRONT S	EAT		Age	0]		
Position	FORWARD OF C	ENTER POSIT	ION] Height	0	mm 0.0	inche	S
Type	HYBRID III DUMI	VIΥ] Weigh	0.0	kg 0	pound	ds
Size	5 PERCENTILE]				
Cal	ibration Method	HYBRID III						
Occupa	nt Manufacturer	MFG: FIRST	TECHNOLO	OGY SAFETY SYS	TEMS S/N	:273		
Occup	ant Modification	NO COMME	NTS					
Occu	pant Description	NO COMME	NTS					
Occupa	ant Commentary	CNTRH2 =HE	ADREST					
Head to -			<u>Head</u>					
Windshie	elder Header 290	mm 11	.4 inche	es Head Injury	Criteria (HI	C) 236	6	
	WindShield 602	mm 23	inche	es HIC Lo	wer Time I	nterval (r	ns) 69	
	Seatback 0	mm 0. 0	o inche	es HIC Up	per Time I	nterval (r	ns) 84	
	Side Header 238	mm <u>9.</u>	inche	es				
	Side Window 370		.6 inche	es				
Neck to Se	atback 0 r		inches					
	First Contact Ro	egion (Head)	AIR BAG					
5	Second Contact Re	egion (Head)						
			011					
Chaat ta			<u>Chest</u>					
Chest to -	Doob 454 n	am 47.0	inahaa	Arm to Door	, <u>a</u>	m 20	inches	
Steering \	===	nm 17.9	inches inches	=	73 mi 222 mi		inches	
_	===	nm 0.0	inches	Hip to Door	!22 mi	III [0. 7	inches	
	Severity Index 28		•	elvic Peak Lateral .	Nocoloratio	n (a'e) [0	
	rauma Index 0		,	Thorax Peak		, , ,	36.5	
THOTAGIC TI		Belt Peak Load	3503	Newtons 787.5	pound Fo		30.3	
	•	Belt Peak Load	===	Newtons 779.9	pound Fo			
First Co	ontact Region (Ch							
	ontact Region (Ch	· ·						
	5 (,,						
Knees to	Dash 115 n	nm 4.5	<u>Legs</u> inches K	nees to Seatback) mi	m 0.0	inches	
	 -		_		ds Force	<u>[U.U</u>		
			7		ds Force			
ragint i Gilli	First Contact F		DASHPANI		43 I UIU U			
	Second Contact R		PACITI ANI	<u> </u>				
	_ ,	- 3 (3 - /						

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2012 CHEVROLET IMPALA RIGHT FRONT SEAT OCCUPANT

Test #	7488	
Vehicle #	1	Sex FEMALE
Location	RIGHT FRONT	SEAT Age 0
Position	FORWARD OF	CENTER POSITION Height 0 mm 0.0 inches
Type	HYBRID III DUM	Meight 0.0 kg 0 pounds
Size	5 PERCENTILE	
Cali	bration Method	HYBRID III
Occupar	nt Manufacturer	MFG: FIRST TECHNOLOGY SAFETY SYSTEMS S/N:273
Occupa	ant Modification	NO COMMENTS
Occuj	pant Description	NO COMMENTS
Occupa	ant Commentary	CNTRH2 =HEADREST
		<u>Restraints</u>
Restraii	nt # 1 3 POIN	BELT
Mounte	ed BELT - 0	CONVENTIONAL MOUNT
Deploy	ment NOT AP	PLICABLE
Restrai	nt Commentary	BELT PRETENSIONER & LOAD LIMITER
Restrai	nt # 2 FRONT	AL AIRBAG
Mounte	ed DASH P	ANEL - TOP
Deployi	ment DEPLO	YED PROPERLY

Restraint Commentary

FRONTAL AIRBAG

Vehicle 1 2012 CHEVROLET IMPALA

	VOINGIG I ZOIZ OIIZVIKOZZI IIIII /ZZ/K	
Test # 7488		
VIN 2G1WA5E37C11174 3	NHTSA Test Vehicle Number	er 1
Year 2012	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make CHEVROLET	Post-test Steering Column Shear Capsule Seperation	n NO SEPARATION
Model IMPALA	Steering Column Collapse Mechanism	n NONE
Body FOUR DOOR SEDAN		
Engine V6 TRANSVERSE FR	ONT	
Displacement 3.6 Liter Tra	ansmission AUTOMATIC - FRONT WHEEL DRIVE	
Vehicle Modification(s) Description	NONE	
Vehicle Commentary TR2544 - MC0	100 - 2012 CHEVROLET IMPALA NCAP (FRONTA	L) - TARGET 35.0
Vehicle Length 5094 mm	200.6 inches CG behind Front Axle	1195 mm 47.0 inches
Vehicle Width 1843 mm	72.6 inches Center of Damage to CG Axi	s 153 mm 6.0 inches
Vehicle Wheelbase 2808 mm	110.6 inches Total Length of Indentation	1399 mm 55.1 inches
Vehicle Test Weight 1851 KG	4080 pounds Maximum Static Crush Depth	674 mm 26.5 inches
	Pre-Impact Speed	1 <mark>56 kph 34.9 mph</mark>
Vehicle Damage Index 1:	2FDEW3 Principal Direction of Fo	rce 0
Domago Brofilo Diotonoo Mooo	Orugh from Dro & Doot To	ot Domogo Mossuromonto
Damage Profile Distance Meas		st Damage Measurements
(Measured Left-to-Right, Rear		Post-Test Crush Depth
DPD 1 479 mm 18.9	inches Left Bumper Corner 197.4 inches	173.0 inches 24.4 inches
DPD 2 629 mm 24.8	inches <u>5014</u> mm	4394 mm 620 mm
DPD 3 666 mm 26.2	inches Centerline 200.6 inches	174.1 inches 26.5 inches
DPD 4 651 mm 25.6	inches 5094 mm	4421 mm 673 mm
DPD 5 599 mm 23.6	inches Right Bumper Corner 197.6 inches	174.5 inches 23.0 inches
DPD 6 492 mm 19.4	inches Tight Bumper Comer 197.6 Inches	4433 mm 585 mm
	<u></u>	
Bumper Engagement	Sill Engagement	A-pillar Engagement
(Inline Impact Only)	(Side Impact Only)	(Side Impact Only)
0.0	NOT APPLICABLE	0.0
Moving Test Cart	Moving Test Cart/Vehicle	Vehicle Orientation on Cart
Angle	Crabbed Angle	Moving Test Cart
DIRECT ENGAGEMENT	0.0	NOT APPLICABLE
Magnitude of the Tilt Angle	Magniture of the Crabbed Angle	Magnitude of the Angle
Measured between surface of a	Measure Clockwise from	Measured between the Vehicle Orientation
Rollover Test Cart and the Ground	Longitudinal Vector to Velocity Vector of Vehicle	and Direction of Test Cart Motion

Vehicle 1 2012 CHEVROLET IMPALA

Test #	7488											
VIN	2G1W	A5E37C	11174	37		NHTSA	A Test Vehicle Nur	mber 1				
Year	2012					Vehicle	cle Modification Indicator PRODUCTION VEHICLE					
Make	CHEV	ROLET		Post-tes	t Steering	Column She	ear Capsule Sepe	ration NO SI	EPARA	TION		
Model	IMPAL	-A			Ste	ering Columr	n Collapse Mechai	nism NONE				
Body	FOUR	DOOR S	EDAN	I								
Engine	V6 TR	ANSVEF	RSE FF	RONT								
Displacement	3.6	Liter	Tr	ansmissio	on AUT	OMATIC - FR	ONT WHEEL DRI	VE				
Vehicle Modific	cation(s) Descrip	tion	NONE								
Vehicle Comm	entary	TR2544	- MC	0100 - 20	12 CHEV	ROLET IMP	ALA NCAP (FRON	ITAL) - TAR	GET 35	5.0		
Vehicle Ler	ngth	5094	mm	200.6	inches		CG behind Front	Axle 1195] mm	47.0	inches	
Vehicle \	Width	1843	mm	72.6	inches	Center	of Damage to CG	Axis 153] mm	6.0	inches	
Vehicle Whee	elbase	2808	mm	110.6	inches	Total L	ength of Indentat	ion 1399	mm	55.1	inches	
Vehicle Test W	Veight	1851	KG	4080	pounds	Maximu	m Static Crush De	epth 674] mm	26.5	inches	
							Pre-Impact Sp	eed 56	kph	34.9	mph	
Vehicle Damage Index 12FDEW3 Principal Direction of Force 0												

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinal direction. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

	Left	Side			Centerline					Right Side			
Pr	e-Test	Pos	st-Test	Pre	-Test	Post	-Test	Pre-Test		Post	-Test		
mm	inches	mm	inches	mm	mm inches		inches	mm	inches	mm	inches		
				Len	gth of Veh	icle at Ce	nterline						
				5094	200.6	4421	174.1						
					Engin	e Block							
				401	15.8	392	15.4						
5014	197.4	4394	173.0		Front Bui	mper Corı	ner	5018	197.6	4433	174.5		
					Front of	of Engine							
				4430	174.4	4136	162.8						
3902	153.6	3844	151.3		Fire	ewall		3876	152.6	3826	150.6		
				3905	153.7	0	0.0						
3501	137.8	3503	137.9	Upp	oer Leadin	g Edge o	f Door	3504	138.0	3500	137.8		
3492	137.5	3493	137.5	Lov	ver Leadin	g Edge o	f Door	3494	137.6	3488	137.3		
3491	137.4	3489	137.4		Bottom o	f 'A' Post		3491	137.4	3488	137.3		
2408	94.8	2407	94.8	Up	per Trailin	g Edge o	f Door	2409	94.8	2406	94.7		
2414	95.0	2415	95.1	Lo	wer Trailin	g Edge o	f Door	2419	95.2	2411	94.9		
					Steerin	g Column	1						
				3000	118.1	2981	117.4						
				Center of Se	ering Colu	mn to 'A'	Post (Horiz	ontal)					
				281	11.1	249	9.8						
				Center of Ste	ering Colu	ımn to He	adliner (Ve	rtical)					
				437	17.2	401	15.8						

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

NHTSA Crash Test - #7488 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4080 pounds Vehicle Closing Speed = 34.9 mph Test Crush Length = 72.6 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Driver Side) 24.4 26.5 23.0 (Pass. Side)

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G Κv Minimum Crush = 23.0 inches 103.7 Using a Rated No Damage Speed of 158.7 89.4 140.9 2.5mph Using a Rated No Damage Speed of 5.0mph 292.9 76.1 563.5 Using a Rated No Damage Speed of 7.5mph 402.6 63.9 1267.8 Using a Rated No Damage Speed of 487.8 52.8 10.0mph 2253.8 Average Crush = 25.1 87.1 inches Using a Rated No Damage Speed of 2.5mph 145.4 75.1 140.9 Using a Rated No Damage Speed of 5.0mph 268.4 63.9 563.5 Using a Rated No Damage Speed of 368.9 53.7 1267.8 7.5mph Using a Rated No Damage Speed of 10.0mph 447.0 44.3 2253.8 78.1 Maximum Crush = 26.5 inches Using a Rated No Damage Speed of 2.5mph 137.7 67.3 140.9 Using a Rated No Damage Speed of 5.0mph 254.2 57.3 563.5 Using a Rated No Damage Speed of 7.5mph 349.4 48.2 1267.8 Using a Rated No Damage Speed of 10.0mph 423.4 39.8 2253.8

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	26.5	37.3	2.4	6.5

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.4

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

NHTSA Crash Test - #7488 - Front Impact

Pre/Post Depths - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4080 pounds Vehicle Closing Speed = 34.9 mph Test Crush Length = 55.1 inches

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 24.4 26.5 23.0

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G Κv Minimum Crush = 23.0 inches 136.6 Using a Rated No Damage Speed of 209.1 117.8 185.6 2.5mph Using a Rated No Damage Speed of 5.0mph 385.9 100.3 742.3 Using a Rated No Damage Speed of 7.5mph 530.4 84.2 1670.1 Using a Rated No Damage Speed of 642.6 69.5 2969.1 10.0mph Average Crush = 25.1 114.7 inches Using a Rated No Damage Speed of 2.5mph 191.6 98.9 185.6 Using a Rated No Damage Speed of 5.0mph 353.6 84.2 742.3 Using a Rated No Damage Speed of 486.0 70.7 1670.1 7.5mph Using a Rated No Damage Speed of 10.0mph 588.9 58.4 2969.1 Maximum Crush = 26.5 inches 102.9 Using a Rated No Damage Speed of 2.5mph 181.5 88.7 185.6 Using a Rated No Damage Speed of 5.0mph 334.9 75.5 742.3 Using a Rated No Damage Speed of 7.5mph 460.3 63.4 1670.1 Using a Rated No Damage Speed of 10.0mph 557.7 52.4 2969.1

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	26.5	37.3	2.4	6.5

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.4

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

A = Maximum force per inch of damage without permanent damage, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

NHTSA Crash Test - #7488 - Front Impact

Damage Profile Distances - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4080 pounds Vehicle Closing Speed = 34.9 MPH Test Crush Length = 72.6 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	(Dana Cida)
(Driver Side)	18.9	24.8	26.2	25.6	23.6	19.4	(Pass Side)

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = 18.9 inches 153.6 Using a Rated No Damage Speed of 193.1 132.4 140.9 2.5mph Using a Rated No Damage Speed of 5.0mph 356.4 112.7 563.5 Using a Rated No Damage Speed of 7.5mph 489.9 94.7 1267.8 Using a Rated No Damage Speed of 78.2 10.0mph 593.6 2253.8 Average Crush = 23.9 96.1 inches Using a Rated No Damage Speed of 2.5mph 152.7 82.8 140.9 Using a Rated No Damage Speed of 5.0mph 281.9 70.5 563.5 Using a Rated No Damage Speed of 387.4 59.2 1267.8 7.5mph Using a Rated No Damage Speed of 10.0mph 469.4 48.9 1562.8 79.9 Maximum Crush = 26.2 inches Using a Rated No Damage Speed of 2.5mph 139.3 68.9 140.9 Using a Rated No Damage Speed of 5.0mph 257.1 58.7 563.5 Using a Rated No Damage Speed of 353.4 7.5mph 49.3 1267.8 Using a Rated No Damage Speed of 10.0mph 428.2 40.7 2253.8

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	26.2	37.1	2.2	5.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.6

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

A = Maximum force per inch of damage without permanent damage, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

NHTSA Crash Test - #7488 - Front Impact

Damage Profile Distances - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4080 pounds Vehicle Closing Speed = 34.9 MPH Test Crush Length = 55.1 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	(Dana Cida)
(Driver Side)	18.9	24.8	26.2	25.6	23.6	19.4	(Pass Side)

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G Κv Minimum Crush = 18.9 inches 202.4 Using a Rated No Damage Speed of 254.4 174.4 185.6 2.5mph Using a Rated No Damage Speed of 5.0mph 469.6 148.5 742.3 Using a Rated No Damage Speed of 7.5mph 645.4 1670.1 124.7 Using a Rated No Damage Speed of 782.0 10.0mph 103.0 2969.1 Average Crush = 23.9 126.5 inches Using a Rated No Damage Speed of 2.5mph 201.2 109.1 185.6 Using a Rated No Damage Speed of 5.0mph 371.3 92.9 742.3 Using a Rated No Damage Speed of 510.4 78.0 1670.1 7.5mph Using a Rated No Damage Speed of 10.0mph 618.4 64.4 2058.8 Maximum Crush = 26.2 inches 105.3 90.8 Using a Rated No Damage Speed of 2.5mph 183.5 185.6 Using a Rated No Damage Speed of 5.0mph 338.7 77.3 742.3 Using a Rated No Damage Speed of 1670.1 7.5mph 465.6 64.9 Using a Rated No Damage Speed of 10.0mph 564.1 53.6 2969.1

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush	Maximum Crush	Calculated KE Speed	Calculated Error	Calculated Error
Factor	(inches)	(mph)	(mph)	(%)
21	26.2	37.1	2.2	5.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.6

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

A = Maximum force per inch of damage without permanent damage, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2006 - 2012 Make: CHEVROLET Model: IMPALA

Test Number	Vehicle Info	No Damage	Average	Closing	V	ehicle	Widt	า	
		Speed	Crush	Speed	 S t	iffness	Valu	ı e s	Crush
		(mph)	(inch)	(mph)	Α	В	G	Kv	Factor
5578	2006 CHEVROLET MONTE CARLO TWO DOOR C	5.0	26.3	35.0	250.4	57.1	549.0	77.7	18.6
7488	2012 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	23.9	34.9	282.3	70.7	563.5	96.4	20.4
5468	2006 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	23.5	35.1	283.3	72.5	553.6	98.6	20.9
5547	2006 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	23.8	35.2	286.3	72.4	565.9	98.5	20.7
5274	2005 BUICK LACROSSE FOUR DOOR SEDAN	5.0	23.4	35.1	287.8	74.2	558.3	100.9	21.1
6052	2007 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	12.4	24.7	382.5	121.6	601.5	191.1	19.7
7496	2012 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	6.5	20.0	494.8	229.5	533.3	407.7	24.8
Avera		Average	(AVG)		323.9	99.7	560.7	153.0	20.9
N			(MIN)		250.4	57.1	533.3	77.7	18.6
Maximum (MAX					494.8	229.5	601.5	407.7	24.8
Standard Deviation (STDev-sample			ample)		85.8	60.7	21.0	118.2	1.9
Number of Tests (n)									

4N6XPRT StifCalcs®

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2006 - 2012 Make: CHEVROLET Model: IMPALA

Test Numbei	Vehicle Info	No Damage	Max	Closing	V	ehicle	Width	า	
		Speed	Crush		•	iffness		•	Crush
		(mph)	(inch)	(mph)	Α	В	G	Kv	Factor
7496	2012 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	15.4	20.0	207.6	40.4	533.3	71.8	10.4
5578	2006 CHEVROLET MONTE CARLO TWO DOOR C	5.0	28.0	35.0	235.7	50.6	549.0	68.9	17.5
5547	2006 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	28.3	35.2	240.8	51.2	565.9	69.6	17.4
5468	2006 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	26.7	35.1	249.3	56.1	553.6	76.3	18.4
7488	2012 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	26.5	34.9	253.9	57.2	563.5	77.9	18.4
5274	2005 BUICK LACROSSE FOUR DOOR SEDAN	5.0	24.9	35.1	269.7	65.2	558.3	88.6	19.8
6052	2007 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	13.9	24.7	340.6	96.4	601.5	151.5	17.6
		Average ((AVG)		256.8	59.6	560.7	86.4	17.1
		Minimum	(MIN)		207.6	40.4	533.3	68.9	10.4
	N	laximum ((MAX)		340.6	96.4	601.5	151.5	19.8
	Standard Deviation	(STDev-sa	imple)		41.6	17.9	21.0	29.5	3.1
	Num	ber of Tes	sts (n)	7					

Registrered Owner: TUCRRC Serial Number: 12R-110829SC03101

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942

Phone: (619) 464-3478 Fax: (619) 464-2206

Toll Free: 1-800-266-9778

Web Site: http://www.4n6xprt.com E-Mail: 4n6@4n6xprt.com

Dear Conference Attendee,

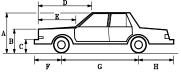
We at 4N6XPRT Systems in conjunction with the Tulsa University Crash Reconstruction Research Consortium (TUCRRC) were pleased to be able to provide you with the preceding data for the crash test vehicles.

Information regarding the Services available to you through 4N6XPRT Systems, as well as the Programs used to create the data report follows this page.

We look forward to providing you similar information in the near future.

Sincerely,

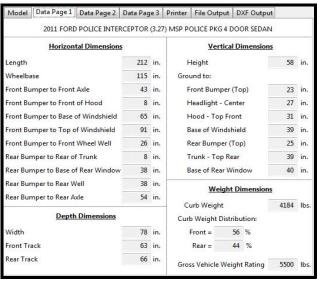
Daniel W. Vomhof III Daniel W. Vomhof, Ph.D.



Expert AutoStats®

program that has over 42,000 cars, pick-ups, vans, and utility vehicles that range in years from the 1940's to the present. Expert AutoStats® has specifications that can assist in reconstructing accidents when the data for the vehicle is unavailable or the vehicle is too severely damaged to get correct measurements.

For many vehicles mid-1960's to present, data such as bumper height, front and rear overhang, hood height, etc., are also included.



4N6XPRT BioMeknx®



Collecting the Biomechanical data of importance to the Accident Investigator into one easily accessible reference location

Biomechanics is the application of physics to describe, evaluate, or model living tissue and biological materials. Originally it was the application of the part of physics known as Mechanics to living systems. This is the same portion of physics which is used as the basis for much of accident reconstruction.

Biomechanics is important in many aspects of forensic work from vehicle accident reconstruction to slip-trip-stumble-fall cases. This particular program contains modules containing information on a variety of biomechanics and injury modalities, physical data found in the literature for failure of bone and tissue, calculation modules to evaluate individual specific parameters, and definitions and terminology used in the literature and found in medical reports.

4N6XPRT BioMeknx® is a program designed for the accident investigator. The BioMeknx program incorporates information from a number of different sources, as well as over 30 years of reconstruction experience. 4N6XPRT BioMeknx™ compiles into one source a number of items of information to assist in reconstructing accidents by tying in the human component more tightly without the need to be a BioMechanics expert. Identification of body location, body part illustrations, failure threshold limits, definitions of terms, calculation modules for body link lengths, weights, stride lengths, and formulas for other types of calculations are only some of the material included in the program.

To gather into your library the material included in the 4N6XPRT BioMeknxTM, you would need a minimum of 10-15 Anatomy and Physiology, Human Factors, and Biomechanics books, as well as conduct over 50 hours of internet research.

3FAPP1280MR117253

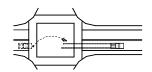
Expert VIN DeCoder®



Expert VIN DeCoder® is a program that "DeCodes" the 17 character VIN number for Cars, Vans, Pickups, and Utility vehicles manufactured from 1981 to the present.

Cars/Vans/Utility/Lt. Trucks Modules: 1981 to Present

Ford Mercury/Lincoln Chrysler/AMC/Jeep European Import Chevrolet/Geo Pontiac / Buick / Oldsmobile Cadillac/Saturn Asian Import



4N6XPRT Ped & Bike Calcs®

The 4N6XPRT

Ped & Bike Calcs®) program is a program that provides FIRST ESTIMATE calculations to evaluate the speed of a vehicle involved in striking a pedestrian or bicyclist, IF Vehicle, scene, and pedestrian {or pedestrian and bicycle in a vehicle-bike accident} measurements are available. This program may also be used when skateboards or roller skates are involved.

Expert Qwic Calcs®



>>>Calculate Time given D & V<<< Enter Distance (in feet): 45 Enter Velocity (in mph): 6 Expert Qwic Calcs® quickly provides answers to questions important in vehicle collision litigation. The user inputs data in response to relevant questions, Expert

Qwic Clacs® performs the mathematical calculations required. Both the input data and the calculated result are then displayed, and may be "dumped" to a printer.

When the law enforcement accident report gives insufficient information to do a full - blown accident reconstruction, Expert Qwic Calcs® may be used to "scope out" the parameters of speeds, times, and distances to determine these relationships in a vehicle accident.

Expert TireStuf®



The Expert
TireStuf® program is a
Menu Driven program
which has 19 modules
explaining the various tire
size designation systems,
the information which
MAY be in the DOT tire

MAY be in the DOT tire

number, the DOT mandated Tire Grading system, Lug Nut Tightening and Tire Rotation schemes, Mix and Match precautions, a glossary of Tire Terms, and Addresses of a few of the sources of additional information on tires and rims.

Also included is a calculation of the number of revolutions in one mile given the tire dimensions.

A=? B=? CF=? 4N6XPRT StifCalcs®

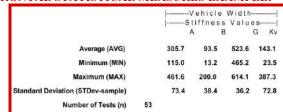
4N6XPRT StifCalcs®. Is a program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

In addition to the NHTSA Crash Test data, the program includes a "Similar Vehicle List Reader" which allows quick retrieval of the data for the desired and "similar" vehicle(s). This will drive the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module which allows the creation of "Class" vehicles.

WITHOUT THE INTERNET the user can:

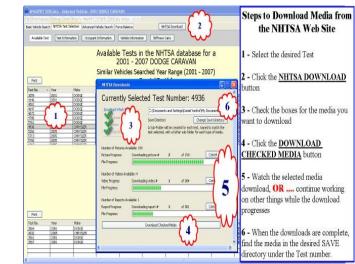
- ★ Lookup individual tests and get basic front, side, and rear STIFFNESS VALUES from these tests. The values are based on the reported crush depths and lengths within each test.
- ★ Obtain Similar Vehicle group summary STIFFNESS data with Statistical measures.
- ★ Create "CLASS" vehicles and get summary STIFFNESS data with Statistical measures.

FRONTAL STATISTICAL MEASURES EXAMPLE:



WITH THE INTERNET the user can:

★ RESEARCH and easily download the PICTURES, VIDEOS, and REPORTS available for individual tests



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Contact Name:			
Title:			
Company/Organization	l:		
Street:			
City:			State: Zip:
			FAX: ()
E-Mail:			
			ler Govt. Purchase Order
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Card Number:			Expiration Date (MM/YY): /
Security co	de (card ID) on back of	f Visa/MasterC	ard card or front of American Express Card:
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1234 5678 9012 345 123 Liana Spann Johns Spann Sharen Spann Johns Sharen Sharen Spann Sharen	← Visa/MasterCard	Security	American Express →
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(This i	s the zip code that the credit o	ard bill would go to,	not where we would send the data or product to)
	M ORDER FORM: - prices subject to change without	notice)	Individual Vehicle Data FAX/Order Form
	Process and grant and gran		
Expert AutoStats®:	\$ 625.00 *	\$	□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results
N6XPRT BioMeknx®:	\$ 495.00 *	\$	□ BOTH
N6XPRT Ped & Bike Calcs®: Expert Qwic Calcs®:	\$ 375.00 * \$ 275.00 *	\$	Please circle ALL OPTIONS that apply
Expert TireStuf®:	\$ 273.00 \$ 85.00*	\$ \$	YEAR & MAKE:
N6XPRT StifCalcs®:	\$ 650.00 *	\$	
Expert VIN DeCoder®:	\$ 550.00 *	\$ \$	MODEL:
impere vii v Becouer .	φ 220.00	=====	If you are requesting VIN DeCoder & AutoStats please also provide:
	SUB-TOTAL	\$	· · · · · · · · · · · · · · · · · · ·
Handling **:		\$	Vehicle Type:Car - Pickup - Utility - Van No. of Doors:2/3/4/5
(Cash or Check with order	r = \$5.00, Credit Card =	\$10.00,	Car Body Style:Coupe/Conv./Sedan/Wagon
	se Order = \$15.00)		DRIVE WHEELS: 4x2 / 4x4 PICKUPS:Dual Rear Wheel - Std. / Extra / Super / Crew Cab - Short Bed / Long Bed
Notarized Affidavit Filing Requir	ement red Notarized Signature)	\$	VANS:Cargo / Passenger - Short / Long Wheelbase
(\$25.00 per requi	rea Notartzea Signature)		VIN Information
Normal delivery is	s via electronic download		
- Deliver via electronic download lin	nk (e-mail address required)	\$ 0.00	
- Deliver on USB - additional cost	of \$35.00 / disk / program	\$	1 2 3 4 5 6 7 8 9
	SUB-TOTAL	\$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
			NHTSA Crash Test Information
California shipping addresses add		\$	Impact location - Front / Side / Rear
California orders delivered electronic	· — ·	Φ	Impact Speed - Lower / Higher
	TOTAL	\$	Case Reference/Number:
Authorized signatur	e:		

Individual Vehicle Data Search Service®

Charges & Services

Individual Vehicle Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

\$40.00-First cycle*, \$35.00/Additional cycles*, \$20.00/Additional Similar Model*

NHTSA Crash Test Results

\$40.00 per test - Includes A, B, & G values Calculations are based on the test results

Individual Vehicle Specifications

Now you can get the Expert AutoStats® data for the vehicles in your case *QUICKLY*, *EASILY*, and *ECONOMICALLY*, instead of guessing, or begging a printout from a friend.

Our vehicle database includes dimensions on over 42,000 Cars, Vans, Lt. Pickups, and Utility Vehicles covering 1945 to the present.

Minimum Vehicle specifications include:

Overall Length
Overall Width
Overall Height
Wheelbase

Curb Weight
Weight Distribution
Front/Rear Track
CG Location

Model years with No Significant Dimensional Changes VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (when available)
Front/Rear Overhang
Bumper Heights

Hood height Turning Circle
Bumper-to-hood Ground-to-hood

Dimensions are given in both Imperial and metric (SI) units. Motorcycle specifications will be similar to the Vehicle specifications with appropriate changes where applicable.

NHTSA Crash Test Results

Test results include: General Test information, Barrier Data when provided, Vehicle Data as reported by the testing organization, Occupant (Dummy) data when provided, and A-B-G Stiffness calculations based on the test results.

4N6XPRT Systems[®]

Providing Vehicle dimensional data, VIN DeCoding, and NHTSA Crash Test Results as a service to the Litigation community, in the form of:

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4N6XPRT StifCalcs®
4N6XPRT BioMeknx®
4N6XPRT Ped & Bike Calcs®
Expert Qwic Calcs®
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<u>Vehicle Data Service</u>

Individual Vehicle Data Search Service®

8387 University Avenue, Suite P La Mesa, CA 91942-9342

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Expert VIN DeCoder®

Expert VIN DeCoder® is a program that "DeCodes" the 17 character VIN number for vehicles manufactured from 1981 to the present.

Modules: 1981 to Present

Control Module - One Required per Set

Ford Cars (includes Festiva & Merkur) Mercury/Lincoln Cars Ford vans/Utility/Lt. Trucks

Chevrolet/Geo Cars
Pontiac/GM of Canada Cars
Oldsmobile Cars
Buick Cars
Cadillac/Saturn Cars
General Motors Vans/Utility/Lt. Trucks

Chrysler/AMC/Jeep Cars Chrysler/Jeep Vans/Utility/Lt. Trucks

European Import Cars/Vans/Utility/Lt. Trucks Asian Import Cars/Vans/Utility/Lt. Trucks

SYSTEM REQUIREMENTS

Expert VIN DeCoder® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math coprocessor chip is NOT required. Expert VIN DeCoder® has also been tested under the various versions of MSDOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as a DOS program under Windows 3.x, Windows, 95, Windows 98, Windows NT, OS/2 2.x, OS/2 Warp, and various versions of LINUX.

A variety of dot matrix printers emulating the EPSON series have been used with no difficulty. The output is also compatible with the Hewlett-Packard II, IIP, III and IIIP Laser printers. Expert VIN DeCoder® works with monochrome and color monitors.

As of April 1995 the 4N6XPRT Systems® programs Expert AutoStats®, Expert Qwic Calcs®, Expert TireStuf®, 4N6XPRT Ped & Bike Calcs®, and Expert VIN DeCoder® are accessible from within RECTEC.

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Expert VIN DeCoder®



User Friendly Software to provide interpretation of the 17 character VIN Number on Cars, Lt. Pickups, Utility Vehicles, and Vans.

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com

E-Mail: VIN@4n6xprt.com

1-800-266-9778

Expert VIN DeCoder® example

INPUT:

Enter VIN Numbers to be DeCoded: 3FAPP1280MR117253 1)

3FA PP128 0 MR 117253

2) Is this the VIN Number to be DeCoded (Y/N)? Y

OUTPUT:

EXPERT VIN DeCoder

The VIN Number is 3FA PP128 0 MR 117253

The vehicle should be a 1991 Ford

The model: Escort 2/3-door Hatchback GT
The assembly plant: Hermosillo, Mexico
The 4 passenger vehicle had: Passive (Automatic) Front Belts

The OEM engine was: In-line 4 cylinder with Double Overhead Cam
Engine Displacement/Type = 1.8 L/ 112 cu.in. L4, DOHC
Brake Horsepower (SAE) = 127 @ 6500 rpm
Torque (SAE) = 114 lb-ft at 4500 rpm
Engine manufacturer = Mazda

The fuel distribution system: Electronic Fuel Injection (EFI)
Fuel pump/line pressure = 35-45 psi
The ignition system = electronic

This is a Front Wheel Drive vehicle.

The first three characters {3, F, A} indicates that the vehicle was a Ford made in Mexico

The fourth character {P} indicates the vehicle had Passive (Automatic) Front Belts

The fifth character {P} indicates it was a Passenger Car

The sixth with the seventh character {12} indicates a Escort 2/3-door Hatchback GT

The eighth character {8} indicates the OEM engine : 1.8 L/ 112 cu.in. L4, DOHC

The 9th Character { the Check Digit } is 0 The calculated Check Digit value is

The tenth character {M} indicates the Model Year was 1991

The eleventh character {R} indicates it was made at the assembly plant in Hermosillo, Mexico

The twelveth through the seventeenth characters { 117253 } is the Serial Number unique to this vehicle.

S/N:930114VD01201 01-01-2001 Reg. User: 4N6XPRT SYSTEMS

Expert AutoStats®

The Expert AutoStats® program contains data on more than 42,000 cars, pick-ups, vans, and utility vehicles that range in years from the 1940's to the present. The Expert AutoStats® base information can assist in reconstructing accidents when the data for the vehicle is unavailable or the vehicle is too severely damaged to get correct measurements. The program is currently relied upon by over 700 private and 300 Government entities within the United States for this very purpose. Additionally, for many vehicles mid-1960's to present, data such as bumper height, front and rear overhang, hood height, etc., are also included.

As of April 1995 the 4N6XPRT Systems® programs Expert AutoStats®, Expert Qwic Calcs®, Expert TireStuf®, and Expert VIN DeCoder® are accessible from within RECTEC.

SYSTEM REQUIREMENTS

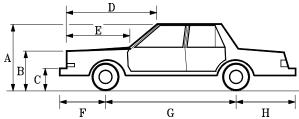
Expert AutoStats® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math coprocessor chip is NOT required. Expert AutoStats® has also been tested under the various versions of MS-DOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as a DOS program under Windows 3.x, Windows, 95, Windows 98, Windows NT, Windows Me, Windows 2000, Windows XP, Windows Vista, OS/2 2.x, OS/2 Warp, and various versions of LINUX.

A variety of dot matrix printers emulating the EPSON series have been used with no difficulty. The output is also compatible with the Hewlett-Packard II, IIP, III and IIIP Laser printers and Hewlett-Packard Desk Jet inkjet printers. Expert AutoStats® works with monochrome and color monitors.

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Expert AutoStats®



Over 42,000 cars, pick-ups, vans, and utility vehicles 1940's to the present are represented.

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com E-Mail: <u>autostats@4n6xprt.com</u>

1-800-266-9778

Orders will be shipped Priority Mail within 10 working days of receipt of order.

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* Checks MUST be drawn from a bank in the U.S.A.

Select Your Vehicle

Expert AutoStats®	Model Data Page 1 Data	Page 2 Data Page 3	Printer Fi	e Output DX	F Output	
Version 5.2.0.2 Serial Number:	Make of Vehicle: FOR)	- 1	Select the Mar	ufacture	from the
12R-930512AQ03201	Year of Vehicle: 20	11		list below.		
Copyright © 1991-2012	Model of Vehicle:			Once a Manual	ecturer he	a been
Expert Witness Services, Inc All Rights Reserved				Selected the li		olole
All highes heserved	Number of Doors:			Models will be	below.	
Introduction	Bodystyle of Vehicle:		- 77	Fill in the emp	ty bases t	o the left
Examine Vehicle Specs	Car Pickup	ther	Clear	to narrow the	search.	
	Wan Utility		7.00			
Print Blank Vehicle Spec Form	Manufact:	51	ert Year	End \	ear	
fanufacturers & Years Available	FRAZER	19	42	1951	_	
AASHTO Design Vehicle Specs	FRAZER NASH	15		1957		
Data Definitions	FUNKE & WILL	.20		2004		1
About Expert Autostats 8	GENERIC GEO	15		1989		
	GLAS	19	63	1966		
<< <exit autostate®="">>></exit>	GMC	19	47	2011		
PROVIDED BY:	Model		Body Style		WB (in)	OAL (in)
4N6XPRT Systems	FUSION HYBRED		4 DOOR SE		108	191
8387 University Avenue	MUSTANG		2 DOOR O	OUPE	107	188
La Mesa CA 91941	MUSTANG GT		2 DOOR O		107	188
12R-930512AQ03201	MUSTANG GT			ONVERTIBLE	107	188
	MUSTANG SHELBY GTS00		2 DOOR O		107	188
4NEXPRT Systems(8) Forensic Expert Software	MUSTANG SHELBY GT500			ONVERTIBLE	107	198
La Mesa. CA 91942-9342	POLICE INTERCEPTOR B.Z.		4 DOOR 5		115	212
(619) 464-3478 / (800) 266-9778	POLICE INTERCEPTOR (3.5)	5) MSP POLICE PKG	4 DOOR SE		115	212
Fax: (619) 464-2205	RANGER 112WB		2 DOOR 43		112	188
www.4N6XPRT.com	RANGER 112W8 RANGER 118WB		2 DOOR 4) 2 DOOR 4)		112	188

After typing in the Make, Year, and Type of vehicle, you are presented with the vehicles which are available for that year.

Screen 1

Model	Data Page 1	Data Page 2	Data Pag	e3	Printer	File Out	out	DXF (Output		
	2011 FORE	POLICE INTE	RCEPTOR	(3.27	7) MSP P	OLICE PKO	4 DC	OR S	EDAN		
	Horizon	tal Dimension	<u>s</u>			Ver	tical [ime	nsions		
Length			212	in.	H	leight				58	in.
Wheelba	ese		115	in.	Grou	und to:					
Front Bu	imper to Front	Axle	43	in.	F	ront Bum	per (T	op)		23	in.
Front Bu	imper to Front	of Hood	8	in.	F	leadlight !	Cent	er		27	in.
Front Bu	imper to Base	of Windshield	65	in.	F	lood - To	p Fron	nt		31	in.
Front Bu	imper to Top o	of Windshield	91	in.	В	Base of Windshield			39	in.	
Front Bu	imper to Front	Wheel Well	26	in.	R	Rear Bumper (Top)			25	in.	
Rear Bur	mper to Rear o	f Trunk	8	in.	Т	Trunk - Top Rear			39	in.	
Rear Bur	mper to Base o	f Rear Window	38	in.	В	Base of Rear Window			40	in.	
Rear Bur	mper to Rear W	/ell	38	in.		Wo	iaht f)imo	nsions	10	
Rear Bur	mper to Rear A	xle	54	in.		37		MILE	IISIOIIS		
	Depth	Dimensions			Curb Weight 41 Curb Weight Distribution:				4184	lbs.	
Width			78	in.	100	Front =	50		-		
Front Tr	ack		63	in.		Rear =	4	1 %			
Rear Tra	ck		66	in.	Gros	ss Vehicle	Weig	nt Ra	ting	5500	lbs.

The first screen of data contains exterior dimensions and weight data. Length, Height, Wheelbase, Width, and Weight Distribution are published dimensions. Curb Weight is an average of published curb weights for the given vehicle. Detail dimensions such as the bumper heights and Front Bumper to Front of

Hood are measurements obtained by our staff from actual vehicles

Screen 2

Model	Data Page 1	Data Page 2	Data	Page 3	Printer	File Output DXF Output	ut	
	2011 FORD	POLICE INT	ERCEPT	TOR (3.2	7) MSP P	DLICE PKG 4 DOOR SEDA	N	
	Acceleration/E	Braking						
Accelera	tion 0-30 mph	13.8	ft/sec	2		Bumper Strength	2.5	mpl
Accelera	tion 0-60 mph	9.8	ft/sec	2°		Steering Ratio	:1	
Accelera	tion 45-65 mpl	6.5	ft/sec	2		Interior Dimension		
Braking	king 60-0 mph 138 feet				Front Shoulder Room	61	in.	
Drive Wi	neels		REAR			Front Head Room	40	in.
Turn Cir	cle (Diameter)		40	feet		Front Leg Room	42	in.
Number	of Wheels		4			Rear Shoulder Room	60	in.
Wheel R	adius		12	in.		Rear Head Room	38	in.
Tire Size		P235/	55R17			Rear Leg Room	38	in.
ALL DIS	C - ALL WHEE	L ABS						
3pt - fr	ont and rear - F	RONT SEAT	AIRBA	GS				
4spd Al	UTOMATIC							
N.S.D.C.	= 2011 - 201	11						
	= Not in D	atabase						

The second screen of data contains interior dimensions and various performance data. The data contained in the second screen comes from various published sources.

Screen 3

Model Data Page 1 Data	Page 2	Data Page 3 P	rinter	File O	utput	DXF Ou	tput	
2011 FORD POLIC	CE INTER	RCEPTOR (3.27)	MSP PC	DLICE P	KG 4	DOOR SE	DAN	
		Angle Measure	ements	5				
Angle Front Bumper to Hood	Front	=		45.0	degi	rees		
Angle Front of Hood to Wind	dshield B	ase =		8.0	degi	rees		
Angle Front of Hood to Wind	dshield T	ор =		16.8	degi	rees		
Angle of Windshield	=		33.2	degi	rees			
Angle of Steering Tires at Ma	x Turn	=		27.5	degi	rees		
		Center of Gr	avity					
Inches from ground :	= 22	2.77	Inche	es from	side	of vehicle	=	39.00
Inches behind front axle	= 50	0.60	Inche	s in fro	nt of	rear axle	=	64.40
Inches from front bumper	= 93	3.60	Inche	es from	rear	bumper	=	118.40
Inches from front corner :	= 101	1.40	Inche	es from	rear	corner	=	124.66
Tip-Over Stability Ratio			$i=i_{1}$	1.4	11	Stable		
NHTSA Static Stability Factor	(calcula	ted) Star Rating		=		****		
		Moments of I	nertia					
Yaw Moment of Inertia		1=1				31	03.52	lb*ft*sec²
Pitch Moment of Inertia		0=0				29	93.16	lb*ft*sec²
Roll Moment of Inertia		=				6	03.12	lb*ft*sec²

The third and last screen contains a number of calculated items of information which may be of use depending upon the type of case, the

other software that you use, and the questions which need to be answered.

DXF Output Screen

Model	Data Page 1	Data Page 2	Data Page 3	Prin	ter	File Out	put [DXF Output
	2011 FOR	POLICE INTER	CEPTOR (3.2	7) MS	PPO	LICE PK	G 4 DC	OR SEDAN
used as manufa an exem provisio	first approxin cturing variat aplar vehicle s	nations. Some r ions from vehc hould be meas output is provid	neasurement le to vehicle. ured TO VERI	When	deper lever t	ndant or feasible MPORT	the ve	sions are meant to be factors as ehicle in question or O YOUR CASE. The not meant to be the
DXF File	Name 2011	L_FORD_POLICE	INTERCEPT	OR_(3	.27)_[MSP_PC	LICE_F	PKG_4_DOOR_SEDAN_
Length	i .			212	Inch	es		- Drawing Notation
Wheell	base			115	Inch	es		⊚ On
Width				78	Inch	les		Off
Front 1	Frack			63	Inch	ies		Units
Rear Tr	rack			66	Inch	es		Inches
Front C	Overang			43	Inch	ies		© Feet
Bumpe	er to Base of w	/indshield		65	Inch	es		Meters
Bumpe	er to Top of w	indshield		91	Inch	es		
Rear Br	umper to Base	of Rear windo	w	38	Inch	es		
Rear Br	Rear Bumper to Top of Rear window Front Tire Diameter		v	64	Inch	es		
Front T				24	Inch	es		
Rear Ti	ire Diameter			24	Inch	ies		
CG bel	nind Front axl	e		50.6	Inch	ies		DXF Output

From within the Expert AutoStats program you have the ability to output the data to a 2-D DXF file for importation into your CAD Scene Drawings. The screen below shows an import of the DXF file with Text into the CAD Zone program.

CADZONE Import

9 The Crash Zone 8.1 [51		
The File Edit Draw View Snap	ps Text(Uniension Utilities Recon 30 Window Help	- 6 ×
0 = 0 1 0 0 0	5 n ~ □ □ = #% n 5 5 m ⊞ 6 Q Q Q Q Q Q Q Q Q	
Line Types	FRONT of 2001 FORD CROWN VICTORIA 4.6L MSP POLICE PACKAGE 4DR SEDAN	
51555 EFACT	8	
		9
Quick Pidi	DXF Output Data	
Oran / Snaps / Hotch	Length:	
 Une Types Edit 	Width: 6.50 Feet	
A Text / Dimensions	Front bumper to Front Axie: 3.67 Feet	
Ø View	Wheelbase: 9.58 Feet	
30 3D Tools		
Aecon	Front Track:	
(B) Symbols	Rear Track: 5.33 Feet	
(III) Templates	CG behind Front Axle: 4.31 Feet	
Forms P Learning Center		×
Select Objects : Selection Top	A 202.06" D.8.50" X1.70" Y-8.30"	-
District Corporation Sections 100	A.COC.00 D.R.03 R.1.10 1.70.00	

4N6XPRT StifCalcs®

Introducing 4N6XPRT StifCalcs[®]. A program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

In addition to the NHTSA Crash Test data, the program includes a "Similar Vehicle Reader". Initially developed in cooperation with Greg Anderson and maintained by 4N6XPRT Systems starting with the 2013 version, the reader allows quick retrieval of vehicles similar to the desired vehicle. The Reader drives the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module which allows the creation of "CLASS" vehicles.

STIFFNESS DATA, based on the selected test or test grouping is automatically calculated based on the reported crush depths and widths for front, side, and rear tests.

The User can - <u>WITHOUT</u> the need for the internet:

★ Lookup individual tests and get basic front, side, or rear (as appropriate to the test)

STIFFNESS VALUES from the selected test.

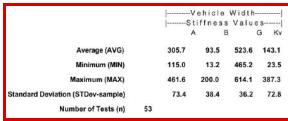
The values are based on the reported crush depths and lengths within each test.

SYSTEM REQUIREMENTS

4N6XPRT StifCalcs® is a MS-Windows program designed to work under a 32 or 64-bit (2000/XP/Vista/7) Windows System.

- ★ Obtain Similar Vehicle group summary STIFFNESS VALUES with Statistical measures.
- ★ Create "CLASS" vehicles and get summary **STIFFNESS VALUES** with Statistical measures.

FRONTAL STATISTICAL MEASURES EXAMPLE:



WITH an internet connection the User will also be able to -

★ RESEARCH and easily download the

<u>PICTURES</u>, <u>VIDEOS</u>, and

REPORTS

that are available for the individual tests

Fire Professions	NPTSA Test Selection Adva	2001 FOOT CLASSINGS SEED TOOL SEED T	Steps to Download Media from the NHTSA Web Site
		Available Tests in the NHTSA database for a 2001 - 2007 DODGE CARAVAN Similar Vehicles Searched Year Range (2001 - 2007)	1 - Select the desired Test
3027	Year Malos 2001 CODGZ 2001 CODGZ	NITS Dominost Currently Selected Test Number: 4936	2 - Click the NHTSA DOWNLOAD button
4931 4947 4972 4780 5761 4936 5266	1 2003 2003 2003 2003 2003 2003 2003 2003	Disorded whether and Sattregic and Transfell Processing Special Control Pro	want to download
5760	2005 CHYSER 2005 CHRYSER 2006 CHRYSER	Namber of Pitturus Avallable 150 Pitture Propose: Conelaudrigisture 4 2 df 250 Conel	4 - Click the <u>DOWNLOAD</u> CHECKED MEDIA button
		Harter of Vibers Singleties 1 Moth Progress	5 - Watch the selected media download, OR continue working on other things while the download
Print		Ni Pognic IIIIIIIII	progresses
361	Year Make 2001 CCOSE 2005 CHRYSER 2001 COOSE 2001 COOSE 2001 COOSE	Donnikosi Cherkedi Media	6 - When the downloads are complete, find the media in the desired SAVE

PLEASE PRINT

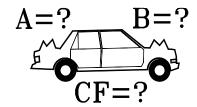
Contact Name:
Company/Dept:
Mailing Address:
City:State:Zip:
Phone:
Fax:
E-Mail:
(E-mail address required for electronic delivery)
(E-mail address required for electronic delivery) StifCalcs® (copies) x \$650.00 = \$ Handling **:
Handling **: \$
(Check with order = \$5.00, Credit Card = \$10.00, Govt. P.O. = \$15.00) Notarized Affidavit Filing Requirement \$
(\$25.00 per required Notarized Signature)
(*)
Normal delivery is via electronic download □ - Deliver via electronic download link (e-mail address required) \$ 0.00 □ Please deliver on USB at an
additional cost of \$35.00 per disk \$
SUB-TOTAL = \$
CA Addresses add 8.50% sales tax = \$
(California orders delivered by e-mail attachment DO NOT owe sales tax)
TOTAL = \$
Enclosed is:
Check/M. O.: Credit Card: P.O.:
Please make check/M.O./P.O. payable to:
4N6XPRT Systems®
Credit Card Orders:
MasterCard: Visa: Am.Ex.:
Card #:
Evniros
Name on Card:
C:
Billing Add. #: Billing Zip:
Diffing Zip.
Moil to: 4NICVDDT Cristome®
Mail to: 4N6XPRT Systems®
8387 University Avenue
La Mesa, CA 91942-9342
Telephone Orders:
Monday-Friday - 9:30am-5:00pm PST
Phone: (619) 464-3478 Fax: (619) 464-2206

Orders within the U.S. will be shipped Priority Mail or via E-mail attachment within 10 working days of receipt of order.

All prices are in U.S. Dollars, and subject to change WITHOUT NOTICE.

Orders outside of U.S.A. shipped via E-Mail attachment ONLY.

4N6XPRT StifCalcs[®]



Quick, Convenient, Easy access to the NHTSA Crash Test data on your own MS-Windows computer without the need for an internet connection.

4N6XPRT Systems®

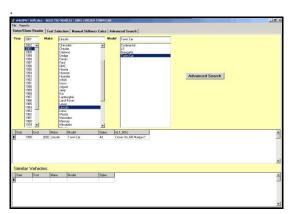
Forensic Expert Software 8387 University Avenue La Mesa, CA 91942-9342

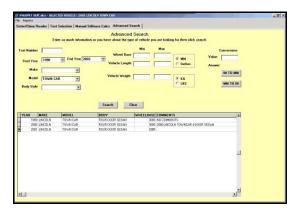
Web: http://www.4n6xprt.com E-Mail: stifcalcs@4n6xprt.com

1-800-266-9778

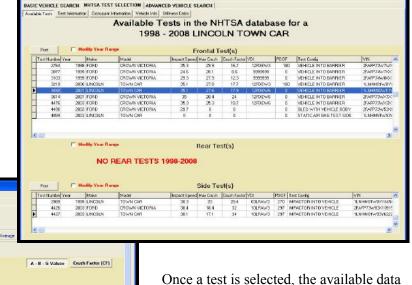
BASIC VEHICLE CRASH TEST SEARCH

Select the desired vehicle through our SIMILAR VEHICLE READER





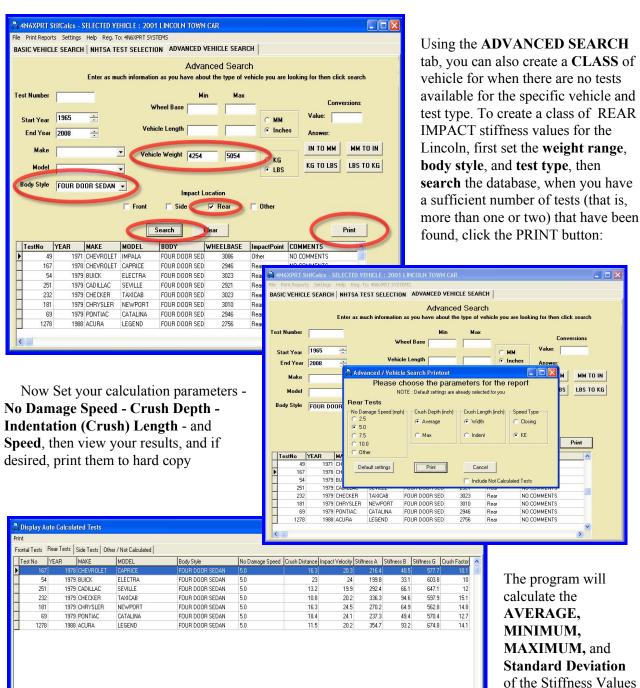
Once the desired vehicle is found/selected, click on the Test Selection tab. From here, select the test to be viewed



salable Tests | Test Information | Decupant Information | Vehicle Info | Shiftness Calo 2001 LINCOLN TOWN CAR G Joing a Rated No Damage Speed of lsing a Rated No Damage Speed of eximum Crush = 26.7 Inches A - Maximum force per inch of damage without permenant damage, lb/in B = Drush resistance per inch of damage width, lb/in*. 6 = Energy distincted without correspond damage. It Normal "Rated No Damage Speed" is 2.5 or 5 right. Some opeoing

for the Test, Occupant(s), Vehicle(s), and Stiffness data can be viewed. The stiffness values are automatically generated from the available test data.

"CLASS" VEHICLE CRASH TEST SEARCH



To select multiple records hold the ctrl key down and click on the records you wish to select

Print All Pages

The program will calculate the AVERAGE, MINIMUM, MAXIMUM, and **Standard Deviation** of the Stiffness Values calculated based upon the parameters you set in the preceding step.

MM TO IN

LBS TO KG

Print

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

FED Tax ID No.: 95-3121248

E-Mail: 4n6@4n6xprt.com

Phone: 1-800-266-9778

Fax: (619) 464-2206

2012 ORDER FORM

Expert AutoStats® - Expert VIN DeCoder® - 4N6XPRT StifCalcs® - 4N6XPRT BioMeknx™

Expert Qwic Calcs® - Expert TireStuf® - 4N6XPRT Ped & Bike Calcs®

Please use this order form when ordering your programs. Due to conditions and rising costs beyond our control, Shipping & Handling must be paid per the included schedule.

Contact Name:			
Title:			
Company/Organization:			
Street:			
City:	State:	Zip:	
Phone: ()	FAX:	()	
E-Mail:			
Expert AutoStats®:	\$ 595.00 *		\$
4N6XPRT BioMeknx™:	\$ 495.00 *		\$
4N6XPRT Ped & Bike Calcs®:	\$ 375.00 *		\$
Expert Qwic Calcs®:	\$ 275.00 *		\$
Expert TireStuf®:	\$ 85.00 *		\$
4N6XPRT StifCalcs®:	\$ 600.00 *		\$
Expert VIN DeCoder®:	\$ 525.00 *		\$
			======
		SUB-TOTAL	\$
California shipping addresses add 8.50% (California orders del. Handling **: (Cash or Check with order = \$5.0) Notarized Affidavit filing requirement - §	livered by e-mail attachment DO NO 00, Credit Card = \$10.00 , Govt. Purcha	se Order = \$15.00)	\$ \$ \$
Normal delivery will be via □ - Deliver via electronic download link □ - Please deliver on USB at an addition			\$ 0.00 \$
		TOTAL	\$
Enclosed is:			•
Check Money Order Purchase Order	Credit Card: Visa	Master Card Ame	erican Express
Card #		Expires S	ecCode
Billing Add.:		Billing Zir):
Billing Add. :Name on Card:	Signature:		
	PLEASE NOTE		

- -- Orders cannot be shipped without correct Shipping & Handling included.
- -- California orders cannot be shipped without sales tax included.
- -- Written Purchase Orders must be received in office before shipping.

Please make checks, money orders or Purchase Orders Payable to: 4N6XPRT Systems®

You may call or fax your order to us if paying by credit card.

^{*} Prices are subject to change without notice. Call for Multi-program and package purchase discounts.

^{**} Orders will be shipped within 10 working days. Other shipping methods may cost extra. The Handling charge listed is for the first program, add \$5.00 per additional program ordered at the same time and shipped to the same address.

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

FED Tax ID No.: 95-3121248

Phone: 1-800-266-9778 Fax: (619) 464-2206

E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

Card type: Am. Express Card Number:	/ Visa / MasterCard		
Expiration Date (MM/YY):	/		
1234 5678 9012 345 123 Lonard graum binard graum binard passes binard passes binard passes binard passes binard passes binard passes Card ID	← Visa/MasterCard	American Express →	3712 3 9500b
Security code (card ID) Address for where the credi		Card card or front of Ame	erican Express Card:
($\overline{\it This}$ is the address number -	for instance, ours would be 838 not where we would send	7 University Avenue - that the cre the data or product to)	edit card bill would go to,
City/State/Zip for where the	credit card bill is sent:		
(- for instance	e, ours would be La Mesa, CA 9 not where we would send	1941 - that the credit card bill wo the data or product to)	ould go to,
Authorized signature:			
We appreciate your of is being required of us to obtain		us with this information	and understanding that

it

Sincerely,

Daniel W. Vomhof III

SERVICE

You may make your request by phone or fax. Our fax machine is on 24 hours, 7 days a week, and can be reached at (619) 464-2206. A request may also be made by e-mail, which reaches us when we are "on the road" as well as in the office..

Upon receiving your request, we will research you request and fax the information to you at NO ADDITIONAL CHARGE! Normal response time is one working day or less. Your hard copy will follow in the mail.

Please include the vehicle information on the sample order form when requesting your Individual Vehicle Data Search. Please also be sure to provide a Visa, MasterCard, or American Express number, name as it appears on the card, Expiration date, and the billing address # and Zip.

*Pricing is for multiple vehicles on same Order/Request. Similar Vehicles may be required when it is not possible to determine the exact model of vehicle requested, based upon the information provided.

FAX/Order Form

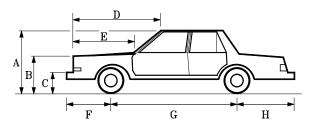
□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

VEAR & MAKE.

That was made.
MODEL:
If you are requesting VIN DeCoder & AutoStats please also provide the following information:
No. of Doors: 2/3/4/5 Body Style: Coupe/Conv./Sedan/Wagon SUV & P/U: 4x2 / 4x4 / Dual Rear Wheel PICKUPS: Std. / Extra / Super / Crew Cab Short Bed / Long Bed VANS: Cargo / Passenger Short / Long Wheelbase
VIN Information
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17
NHTSA Crash Test Information Impact location - Front / Side / Rear Impact Speed - Lower / Higher PAYMENT INFORMATION
Visa/MasterCard / American Express:
Expires: /
Name & Address:
Case Reference Name/Number:

Individual Vehicle Data Search Service®



Providing Vehicle dimensional data, VIN DeCoding, and NHTSA Crash Test Results as a service to the Litigation community.

E-Mail: **ivdss@4n6xprt.com**

FAX: (619) 464-2206 Phone: (619) 464-3478 / 1-800-266-9778

4N6XPRT Systems®

Forensic Expert Software 8387 University Avenue, Suite P La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com

How often have you been confronted with the

following on a Traffic Collision Report - "87 Ford, 4 door, Blue"? We have the answer to the problem of determining WHICH Ford 4 door model this was!

We will DeCode the VIN number and provide you with the information contained within that VIN number

Information generally includes:

Year OEM Engine
Make Displacement/Type
Model Rated Horsepower
Drive Wheels Rated Torque
Rated Pass. Load Iginition System
Plant of Manufacture Fuel Line Pressure

Also (when provided by VIN)

Gross Vehicle Weight Safety Equipment

Transmission

A DMV search for a vehicle identification from the registration will typically cost less than \$10.00 and will give the VIN number, Make, and Year of vehicle. However, to also obtain the vehicle Model requires a "Manual Search" which will typically cost \$30.00/vehicle/year searched.

With our service, you will be able to find out the model of vehicle as well as all of the other information mentioned above. This information will be faxed to you, typically in less than one working day, and the hard copy will follow in the mail.

Allow us to help you have all the information you require in your next Accident, Personal Injury, Criminal, Domestic, or Product Liability case.

Individual Vehicle Specifications

Now you can get the Expert AutoStats® data for the vehicles in your case *QUICKLY*, *EASILY*, and *ECONOMICALLY*, instead of guessing, or begging a printout from a friend.

Our vehicle database includes dimensions on over 35,000 Cars, Vans, Lt. Pickups, and Utility Vehicles covering 1945 to the present.

Minimum Vehicle specifications include:

Overall Length Curb Weight
Overall Width Weight Distribution
Overall Height Front/Rear Track
Wheelbase CG Location

Model yeasr with No Significant Dimensional Changes VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (when available)

Fron/Reart Overhang Bumper Heights
Hood height Turning Circle
Bumper-to-hood Ground-to-hood

Dimensions are given in both Imperial and metric (SI) units. Motorcycle specifications will be similar to the Vehicle specifications with appropriate changes where applicable.

While the VIN number contains much information, it does not contain everything needed to identify a particular vehicle in every situation. Therefore, we would appreciate you providing as much of the information on the order form as possible.

If you are not sure of the specific model, we will provide dimensions on the similar model vehicles matching the provided data for a small additional cost per model*.

Individual Vehicle Data Search Service[®] Charges & Services

Individual Vehicle Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

\$40.00-First cycle*, \$35.00/Additional cycles*, \$20.00/Additional Similar Model*

NHTSA Crash Test Results

\$40.00 per test - Includes A, B, & G values Calculations are based on the test results

NHTSA Crash Test Results

Test results include: General Test information, Barrier Data when provided, Vehicle Data as reported by the testing organization, Occupant (Dummy) data when provided, and A-B-G Stiffness calculations based on the test results.

You may make your request by phone or fax. Our fax machine is on 24 hours/day and can be reached at:

(619) 464-2206

Individual Vehicle Data Search Service® Charges & Services

You may make your request by phone or fax. Our fax machine is on 24 hours/day and can be reached at

(619) 464-2206

Individual Vehicle Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

\$40.00-First vehicle*, \$35.00/Additional Vehicles*, \$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

\$40.00-First cycle*, \$35.00/Additional cycles*, \$20.00/Additional Similar Model*

NHTSA Crash Test Results

\$40.00 per test - Includes A, B, & G values Calculations are based on the test results

Contact Name	&	Address:
--------------	---	----------

hone	:()
ax:	
	PAYMENT INFORMATION
	Visa/MasterCard / American Express:
_	Evniros: /
madit (Expires:/
	Card billing address and Zip:
ddress	S:
ip:	
ecuri	ty Code #

FAX/Order Form

□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

YEAR & MAKE:

MODEL:			
If you are reque	Č .		
VIN DeCoder			
please also prov	vide:		
No. of Doors:	2/3/4/5		
Body Style:	Coupe/Conv./Sedan/Wagon		
SUV - P/U:	4x2 / 4x4 / Dual Rear Wheel		
PICKUPS:	Std. / Extra / Super / Crew Cab		
WANG.	Short Bed / Long Bed		
VANS:	Cargo / Passenger Short / Long Wheelbase		
	Short / Long wheelbase		
	VIN Information		
1 2 3	4 5 6 7 8 9		
10 11	12 13 14 15 16 17		
	A Crash Test Information		
YEAR & MAK	E:		
MODEL:			
MODEL			
Impact location	- Front / Side / Rear		
Impact Speed -			
_			
Case Reference	/Number:		

FAX/Order Form

□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

If you are reque VIN DeCoder of please also prov	& AutoStats
No. of Doors:	2/3/4/5
Body Style:	Coupe/Conv./Sedan/Wagon
SUV - P/U:	4x2 / 4x4 / Dual Rear Wheel
PICKUPS:	Std. / Extra / Super / Crew Cab
	Short Bed / Long Bed
VANS:	Cargo / Passenger
	Short / Long Wheelbase
	VIN Information
1 2 3	4 5 6 7 8 9
10 11	12 13 14 15 16 17
<u>NHTS</u> YEAR & MAK	A Crash Test Information E:
MODEL:	
Impact location	- Front / Side / Rear Lower / Higher

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778 Fax: (619) 464-2206

E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

Card type: Am. Express / Visa / MasterCard Card Number:
Expiration Date (MM/YY):/
←Visa/MasterCard American Express →
Security code (card ID) on back of Visa/MasterCard card or front of American Express Card: Address for where the credit card bill is sent :
(This is the address number - for instance, ours would be 8387 University Avenue - that the credit card bill would go to, not where we would send the data or product to)
City/State/Zip for where the credit card bill is sent :
(-for instance, ours would be La Mesa, CA 91941 - that the credit card bill would go to, not where we would send the data or product to)
Authorized signature:
We appreciate your cooperation in supplying us with this information and understanding that it is being required of us to obtain the information.

Sincerely,

Daniel W. Vomhof III

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778 Fax: (619) 464-2206

E-Mail: 4n6@4n6xprt.com

The 2011 version of 4N6XPRT StifCalcs® contains a Force Balance module -

The Force Balance approach to Stiffness values is based on the concept of "Equal and Opposite Forces" in combination with the assumption that one of the vehicles involved has a good set of Stiffness values based on testing.

There are essentially only TWO requirements in order to use a Force Balance approach, and they are:

You must have A-B values for one of the vehicles for the surface that was hit Both vehicles must have SOME damage

Beyond these two requirements, the QUALITY of your calculation results will be impacted by:

- The quality of the information you have on each vehicle (weight, pass/cargo load, etc.)
- ☐ The quality/accuracy of your crush measurements
- ☐ The quality of your A-B stiffness values

while the Force Balance analysis CAN be run with degraded information in the above three areas, the quality of the results will also be degraded, sometimes significantly so.

As an extension of our Individual Vehicle Data Search Service, we have now added Force Balance Analysis runs to our services. An order form with pricing follows on the next page.

With respect to the Order Form -

- A) Please be SPECIFIC on the vehicle make and model, including drive wheels, bed length, etc.
- B) The Curb Weight used will come from Expert AutoStats unless you specify some other weight
- C) The PDOF Lever Arm default length is 0 inches
- D) The Angle of Collision Force to Normal Force default value is 0 degrees
- E) If no Crush Spacing is indicated, equal spacing will be used.

If you have any specific questions, please be sure to call.

Sincerely,

Daniel W. Vomhof III

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

Web Site: http://www.4n6xprt.com

FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778 Fax: (619) 464-2206

E-Mail: 4n6@4n6xprt.com

FORCE BALANCE ORDER FORM

Vehicle 2 - Year/Make/Model
Curb Weight (pounds) = Occupant + Cargo Weight (pounds) = Total Weight (pounds) =
Angle of Collision Force to Force Normal to Collision Face (degrees) = PDOF Lever Arm Distance (inches) =
Damage Length (inches) =
not If Crush Depth measurements are equally spaced, you do not need to fill in the distance between Crush measurements.
Eing Crush Depth Crush Spacing EQUAL?? Yes / No C1 (inches) = Distance C1 to C2 (inches) =
Visa/MasterCard/American Express
Card Number
Expiration/ Security Code
~ 1 ~ 1111
Card Billing Address City/State/Zip
o ont

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342 FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778 Fax: (619) 464-2206

Web Site: http://www.4n6xprt.com E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

• 1	m. Express /	Visa / MasterCard		
Card Number: _				
Expiration Date	(MM/YY):	/		
1234 5678 901 Lorent (peant forms) (plant loren) (peant form) (plant loren) (plant loren) (plant loren) Card		← Visa/MasterCard	American Express →	AMERICAN EXPRESS
Security coo	de (card ID)	on back of Visa/Master	Card card or front of Ame	rican Express Card:
Address for when	re the credit	card bill is sent:		
(This is the ad	ldress number - j	for instance, ours would be 838 % not where we would send t	University Avenue - that the creathe data or product to)	dit card bill would go to,
City/State/Zip fo	r where the	credit card bill is sent:		
	(- for instance,	ours would be La Mesa, CA 9 not where we would send t	1941 - that the credit card bill wow he data or product to)	ıld go to,
Authorized signa	iture:			
	-	ooperation in supplying ain the information.	us with this information a	and understanding that it
is being required	or as to obt	am me miorinauon.		

Sincerely,

Daniel W. Vomhof III