
*Rollover Stability Measurements For
2023 New Car Assessment Program
(NCAP)*

Final Report

Contract:
693JJ919D000013

For:
National Highway Traffic Safety Administration

January 2024



7001 Buffalo Parkway
Columbus, Ohio 43229

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Hank Jebode
Scott B. Zagorski, Ph.D., P.E.
Gary J. Heydinger, Ph.D., P.E.

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16. Abstract This report contains results from NCAP Static Stability Factor (SSF) measurements (including track width, center-of-gravity height, and SSF) made on 37 light duty vehicles. Twenty-one vehicles tested were specified in contract Delivery Order 693JJ923F000070. An additional 16 vehicles were optional tests requested by manufacturers and approved by NHTSA. Tests were conducted by SEA, Ltd. in Columbus, Ohio between 12/15/2022 and 10/11/2023, and included measurements made on 37 MY 2023 vehicles.			
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ROLLOVER STABILITY MEASUREMENTS FOR 2023 NEW CAR ASSESSMENT PROGRAM (NCAP)

Introduction

This report contains results from the measurements including track width and center-of-gravity (C.G.) height for 37 light duty vehicles under one loading condition: Driver Only. The relationship between the track width and C.G. height of a vehicle is a static metric that has been used for vehicle-to-vehicle comparison. The most common form, “ $T/2h$,” is computed as one-half the average track width ($T/2$) divided by the vehicle center-of-gravity height (h). In this report, the Static Stability Factor (SSF) is defined as $T/(2h)$ for the Driver Only loading condition. These measurements were performed for the National Highway Traffic Safety Administration under contract 693JJ919D000013 (hereinafter referred to as “the Contract”). The particular make/models represent a subset of the vehicles in the 2023 National Highway Traffic Safety Administration (NHTSA) frontal and side impact New Car Assessment Program.

Discussion

Each of the MY2023 vehicle models listed in Table I was secured in new or as-new condition. Prior to testing, each test vehicle's fuel tank was filled with fuel (if applicable), and its tires inflated to the vehicle manufacturer's recommended pressure. All tests are conducted with the Driver Only load: each test vehicle had an anthropomorphic test dummy placed in the driver seating position of the vehicle. In all tests, the driver was an un-instrumented "Hybrid II" anthropomorphic test dummy (weighing 163.0 lbs) which is representative in size, overall weight, and weight distribution of a 50th percentile human male.

Table II lists the information recorded, measured, and computed for each vehicle. All of the information listed in Table II is provided in Appendix A. The information related to vehicle mass and center-of-gravity locations was obtained using SEA, Ltd.'s (S-E-A) Vehicle Inertia Measurement Facility (VIMF). The NHTSA document titled “Laboratory Test Procedure for Rollover Stability Measurement for New Car Assessment Program (NCAP) – Static Stability Factor (SSF) Measurement,” details the procedure for making the measurements [1]. Descriptions of the design and operation of the VIMF are provided in the papers listed in the references [2-3]. The VIMF method for measurement of C.G. height is consistent with ISO 10392 [4].

The track width measurements were made using the procedure detailed in the laboratory test procedure [1]. In summary, this is:

- Measure the track width with the vehicle in its driver only configuration.
- Make two Tire Edge Determination Tools as shown in Figure 1. These are modified 4-inch beams which, when placed on the floor and pushed against the tire, will define a longitudinal line on the inside or outside lower sidewall of the tire approximately 4 inches above the floor. Figure 2 shows the beams as used at S-E-A's VIMF.
- Place the beams on the right sides of both front tires and measure the separation of the beams below the front and rear edges of the tires. Repeat this with the beams on the left sides of the front tires for four measurements - the average of which is the front track width. An identical procedure is used for measuring the rear track width. Thus, a total of eight measurements are taken, the average of which is reported as the vehicle track width.

Figure 3 contains a sample results page from one of the vehicle tests, the 2023 Acura MDX AWD, in the "Driver Only" condition. The results pages contain all of the information in Table II, as well as additional information. The individual wheel weights, the four front track width measurements, the four rear track width measurements, and the left and right side wheelbase measurements are recorded on the test pages. Additionally, details specific to the VIMF measurements of C.G. Height are included. These are the Applied Weights (calibrated hanging weights used to tilt the VIMF platform in pitch during a VIMF C.G. Height test), the Platform Angle (resulting VIMF pitch angle), Relative Motion (relative longitudinal motion between the vehicle body and VIMF platform), and the resulting individual C.G. Height measurements.

The critical calculations listed on the pages are Average Track, Average C.G. Height, and T/2h. As mentioned, the Average Track is calculated from eight individual track width measurements, four for the front track and four for the rear track. Each of the eight measurements is made using a tape measure divided into tenths of an inch. The measurements are recorded to the nearest half division, which is 0.05 inches. The four front measurements are averaged using Microsoft Excel to compute the Front Track listed on the results sheets. Similarly, the four rear measurements are averaged to compute the Rear Track listed. The Average Track is the average of Front Track and Rear Track. Since no rounding takes place in the calculations of Front Track and Rear Track, the value computed for Average Track is the same as if all eight individual measurements were averaged. The individual measurements are listed on the results sheets using two decimal places. This is because the measurements are made to the nearest 0.05 inches. The Front Track, Rear Track, and Average Track calculations are listed using one decimal place. However, decimal places beyond the first are retained in Excel and used in the calculations for SSF. The Front Track, Rear Track, and Average Track width measurements are thought to be accurate to the nearest 0.1 inches. Based on a 60 inch Average Track and 0.1 inches measurement accuracy, the Average Track value listed is good to an accuracy of 0.17%. The resolution in the recorded value is 0.05 inches, which is one-half of the listed accuracy.

The Average C.G. Height listed is based on the average value calculation for the four individual C.G. Height tests (Runs #2-5 listed on the results pages). The VIMF software/database uses more than two decimal places in this calculation, and rounding to two decimal places is done for reporting purposes. The values listed on the sheets for Average C.G. Height are to the nearest 0.01 inches, with a resolution of 0.005 inches. Based on theoretical error analysis, on doing numerous

repeat testing of the same vehicles, and on numerous tests done using calibration fixtures; the accuracy of the VIMF is thought to be 0.5% or better. This means that for a 20 inch C.G. Height, the measured value is accurate to 0.1 inches, or better. Based on this fact and the significance of the VIMF measurement values that go into calculating C.G. Height, recording the Average C.G. Height using two decimal places is warranted.

As requested by NHTSA, the T/2h values are listed on the data sheets using four decimal places. The SSF, defined by NHTSA as the two decimal place value of the T/2h for the vehicle with a driver, is reported accordingly in the Summary Results Table, Appendix B.

Results

Results for all the values listed in Table II are summarized for all 37 vehicles tested in the spreadsheet contained in Appendix A.

Appendix B contains a one-page Summary Results Table containing all measured track widths, C.G. Heights, and SSF values using two decimal places.

Appendix C contains individual test results pages for all 37 tests.

Photos of the test vehicles (a side view and a $\frac{3}{4}$ front view) are provided in Appendix D.

References

- 1) *Laboratory Test Procedure for Rollover Stability Measurement for New Car Assessment Program (NCAP) – Static Stability Factor (SSF) Measurements*, U.S. Department of Transportation, National Highway Traffic Safety Administration, March 2013.
- 2) *The Design of a Vehicle Inertia Measurement Facility*, Heydinger, G.J., Durisek, N.J., Coover, D.A., Guenther, D.A., and Novak, S.J., SAE Paper No. 950309, February, 1995. Also presented and reprinted by invitation at the 1995 Society of Allied Weight Engineers (SAWE) International Conference, May, 1995.
- 3) *An Overview of a Vehicle Inertia Measurement Facility*, Heydinger, G.J., Durisek, N.J., Coover, D.A., Lawrence, R.D., Nowjack, J.A., and Guenther, D.A., 27th International Symposium on Automotive Technology and Automation, ISATA Paper 94SF034, October, 1994.
- 4) *Road Vehicles – Determination of Centre of Gravity*, ISO 10392, 2011.

Table I Test Vehicles						
Seq. No.	MY	Make	Model	Drivetrain	Date Tested	VIMF Number
1	2023	Toyota	bZ4X	FWD	12/15/2022	8325
2	2023	Jeep	Wrangler Unlimited PHEV	AWD	2/3/2023	8354
3	2023	Jeep	Grand Cherokee PHEV	AWD	2/3/2023	8358
4	2023	Mini	Cooper S Countryman	AWD	2/9/2023	8365
5	2023	Lexus	GX 460	AWD	2/10/2023	8369
6	2023	Hyundai	Santa Cruz	AWD	2/13/2023	8371
7	2023	Genesis	GV70	AWD	2/24/2023	8382
8	2023	Toyota	Prius HEV	FWD	3/17/2023	8390
9	2023	Mazda	CX-50	AWD	3/23/2023	8392
10	2023	Rivian	R1S	AWD	3/27/2023	8398
11	2023	Jeep	Wagoneer	AWD	3/30/2023	8403
12	2023	Nissan	Ariya	FWD	4/6/2023	8408
13	2023	Subaru	Solterra	AWD	4/10/2023	8410
14	2023	Honda	CR-V	AWD	4/19/2023	8418
15	2023	Honda	Accord	FWD	4/19/2023	8420
16	2023	Kia	Niro	FWD	5/10/2023	8433
17	2023	Hyundai	Santa Cruz	FWD	5/10/2023	8435
18	2023	Honda	Pilot	AWD	5/16/2023	8446
19	2023	Mitsubishi	Outlander	FWD	5/17/2023	8449
20	2023	Mitsubishi	Outlander	AWD	5/17/2023	8451
21	2023	Honda	HR-V	FWD	5/24/2023	8458
22	2023	Honda	Pilot	FWD	5/24/2023	8460
23	2023	Chevrolet	Colorado	4WD	5/25/2023	8462
24	2023	Hyundai	Kona Electric	FWD	8/25/2023	8521
25	2023	Kia	Sportage	AWD	8/29/2023	8526
26	2023	BMW	X1	AWD	9/7/2023	8533
27	2023	Lexus	RX 350	AWD	9/13/2023	8538
28	2023	Toyota	Crown	AWD	9/19/2023	8547
29	2023	Lexus	RX 350	FWD	9/19/2023	8549
30	2023	Lexus	RZ 450e	AWD	9/19/2023	8552
31	2023	Nissan	Ariya	AWD	9/22/2023	8555
32	2023	Chevrolet	Colorado	RWD	9/22/2023	8557
33	2023	Jeep	Wagoneer	RWD	9/26/2023	8560
34	2023	Kia	EV6	RWD	9/26/2023	8562
35	2023	Acura	MDX	AWD	9/26/2023	8564
36	2023	Toyota	Prius PHEV	FWD	10/10/2023	8569
37	2023	Kia	EV6	AWD	10/11/2023	8573

Table II
Vehicle Information Contained in Results Spreadsheets

Seq. No.

Testing sequence number for current MY 2023 Contract

MY

Model Year (all test vehicles are model year 2023)

Make

Vehicle Manufacturer

Model

Vehicle Model

Drive

FWD – Front Wheel Drive
 RWD – Rear Wheel Drive
 AWD – All Wheel Drive
 4WD or 4X4 – Four Wheel Drive
 4X2 – Two Wheel Drive

Type

Vehicle body style

VIN

17 Digit Vehicle Identification Number

Engine Size/Type

Vehicle engine size and type

Transmission Type

Vehicle transmission type

Doors

Number of doors

Significant Options

Optional equipment that may significantly affect the C.G. Height.
 Shorthand notes: RR = Roof Rack, RB = Running Boards, SR = Sunroof,
 MR = Moon Roof, PSR = Panoramic Sunroof, GR = Glass Roof, SS = Side Steps
 AS = Air Suspension, HT = Hard Top, TC = Tonneau Cover.

Table II (continued)
Vehicle Information Contained in Results Spreadsheets

Front Tire Make/Type – Front Tire Size – Front Press.

Rear Tire Make/Type – Rear Tire Size – Rear Press.

These six columns contain information on the tires on the test vehicles. The tire size and type are specified, and the tire pressures are the vehicle manufacturer's specified tire pressures that were used during the tests.

Front Track – Rear Track – Average Track (T)

Front, rear and average track widths measured on test vehicles

Wheelbase

Average of measured left side wheelbase and right side wheelbase

GVWR, GAWR Front, GAWR Rear

Gross vehicle and axle weight ratings for the test vehicle

Load

Driver Only - described in the Discussion section on Page 1 of the report.

Test Date

Test date for the VIMF test

VIMF Test No.

VIMF test number

Roof Height

Measured height of test vehicle after loading – does not include roof rack (if applicable)

Test Weight

Measured weight of test vehicles

C.G. Longitudinal

Longitudinal distance from front wheel axis (axis through the centers of the front wheels) to vehicle center of gravity location

C.G. Lateral

Lateral distance from vehicle centerline to vehicle center of gravity location (negative to driver's side of vehicle)

C.G. Height (h)

Measured height of vehicle center of gravity

T/2h

(Average Track Width) / (2 x C.G. Height)

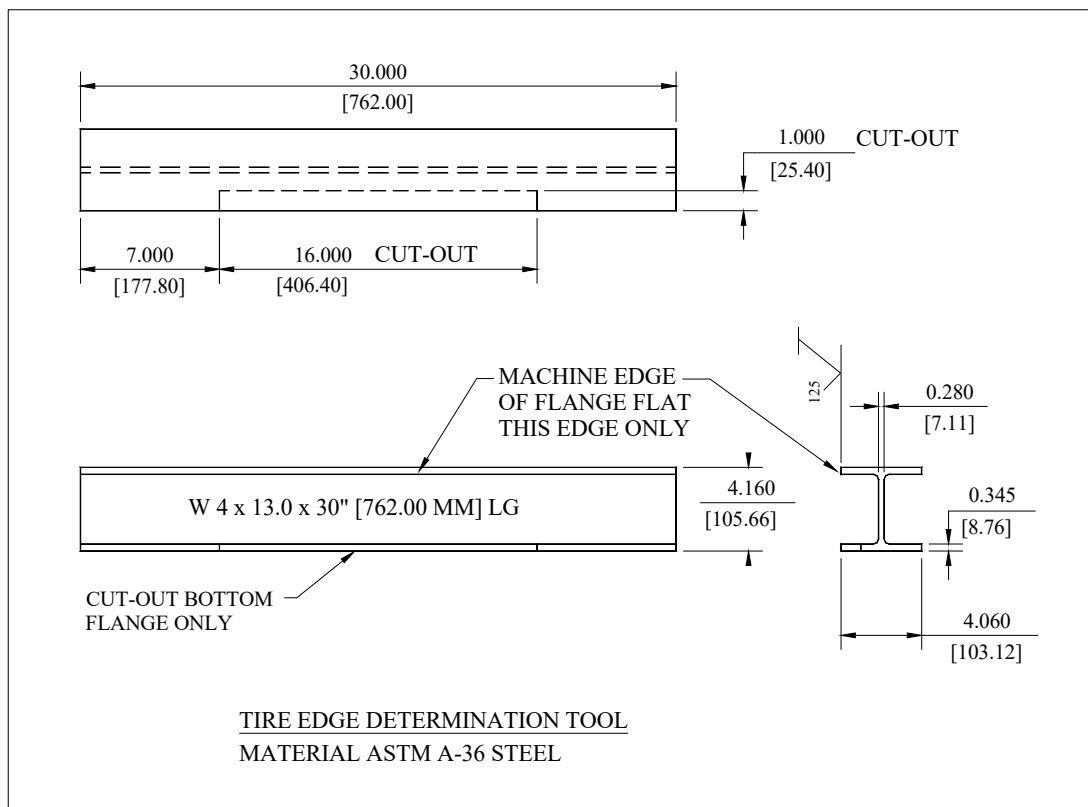


Figure 1: Tire Edge Determination Tool Used for Track Width Measurements



Figure 2: Measurements at S-E-A

Acura MDX AWD

YEAR: 2023	DATE TESTED: 9/26/2023
MAKE: Acura	VIMF TEST NO.: 8564
MODEL: MDX	
VIN: 5J8YE1H47PL0XXXXX	Mfg Date: 01/23
TYPE SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 3.5L V6	
TRANSMISSION TYPE: 10AT	
DRIVE: AWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT: Sunroof	

FRONT TIRE TYPE: Bridgestone Alenza Sport A/S M+S
 FRONT TIRE SIZE: 255/50R20 105H
 FRONT TIRE PRESSURE: 35
 REAR TIRE TYPE: Bridgestone Alenza Sport A/S M+S
 REAR TIRE SIZE: 255/50R20 105H
 REAR TIRE PRESSURE: 35

FRONT TRACK:	67.7	inches
REAR TRACK:	67.8	inches
AVERAGE TRACK:	67.7	inches
WHEELBASE:	114.0	inches
ROOF HEIGHT:	66.8	inches

Track Width Measurements

Front A	67.65	inches
B	67.70	inches
C	67.70	inches
D	67.65	inches
Rear E	67.75	inches
F	67.75	inches
G	67.75	inches
H	67.75	inches

GVWR	5820	lb
FRONT GAWR	2976	lb
REAR GAWR	2965	lb

LEFT FRONT WEIGHT	1402.6	lb
RIGHT FRONT WEIGHT	1294.5	lb
LEFT REAR WEIGHT	1025.6	lb
RIGHT REAR WEIGHT	959.3	lb
TOTAL WEIGHT	4682.0	lb

Wheelbase Measurements

Left Side	114.00	inches
Right Side	114.00	inches

C.G. LONGITUDINAL	48.33	inches (From Front Axle)
C.G. LATERAL	-1.26	inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.200	-0.028	26.21
Run #3	41.8	4.191	-0.038	26.21
Run #4	31.8	-3.164	0.018	26.26
Run #5	41.8	-4.163	0.029	26.29
AVERAGE C.G. HEIGHT				26.24

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.2901$$

Appendix A

Results Spreadsheets for all Tests

Seq No.	MY	Make	Model	Drive	Type	VIN	Engine Size/Type	Transmission Type	Doors	Significant Options
35	2023	Acura	MDX	AWD	SUV	5J8YE1H47PL02####	3.5L V6	10AT	4	SR
26	2023	BMW	X1	AWD	SUV	WBX73EF02P5X6####	2.0L I4	7AT	4	
23	2023	Chevrolet	Colorado	4WD	Pickup Crew Cab	1GCPTEEK6P116####	2.7L I4 Turbo	8AT	4	
32	2023	Chevrolet	Colorado	RWD	Pickup Crew Cab	1GCPSBK4P123####	2.7L I4 Turbo	8AT	4	
7	2023	Genesis	GV70	AWD	SUV	KMUMADTB9PU11####	2.5L I4 Turbo	8AT	4	RR
15	2023	Honda	Accord	FWD	Sedan	1HGCY1F37PA01####	1.5L I4 Turbo	CVT	4	SR
14	2023	Honda	CR-V	AWD	SUV	7FARS4H21PE01####	1.5L I4 Turbo	CVT	4	
21	2023	Honda	HR-V	FWD	SUV	3CZRZ1H3XPM73####	2.0L I4	CVT	4	
18	2023	Honda	Pilot	AWD	SUV	5FNYG1H25PB02####	3.5L V6	10AT	4	
22	2023	Honda	Pilot	FWD	SUV	5FNYG2H42PB00####	3.5L V6	10AT	4	
24	2023	Hyundai	Kona Electric	FWD	SUV	KM8K53AG2PU17####	Electric	Auto	4	SR
6	2023	Hyundai	Santa Cruz	AWD	SUV	5NTJDDAF0PH05####	2.5L I4 Turbo	8AT	4	RR
17	2023	Hyundai	Santa Cruz	FWD	SUV	5NTJ4AE4PH06####	2.5L I4 Turbo	8AT	4	
3	2023	Jeep	Grand Cherokee PHEV	AWD	SUV	1C4RJYB64P878####	2.0L I4 Turbo Hybrid	8AT	4	
11	2023	Jeep	Wagoneer	AWD	SUV	1C4SJVDP6PS50####	3.0L I6 Turbo	8AT	4	PSR
33	2023	Jeep	Wagoneer	RWD	SUV	1C4SJUDP7PS56####	3.0L I6 Turbo	8AT	4	PSR, RR
2	2023	Jeep	Wrangler Unlimited PHEV	AWD	SUV	1C4JXP65PW55####	2.0L I4 Turbo Hybrid	8AT	4	HT, SS
37	2023	Kia	EV6	AWD	Sedan	KNDC3DLC5P515####	Electric	Auto	4	SR
34	2023	Kia	EV6	RWD	Sedan	KNDC44LA0P510####	Electric	Auto	4	SR
16	2023	Kia	Niro	FWD	SUV	KNDCP3LE2P508####	1.6L I4 Hybrid	6AT	4	
25	2023	Kia	Sportage	AWD	SUV	KNDPUCAF5P720####	2.5L I4	8AT	4	
5	2023	Lexus	GX 460	AWD	SUV	JTJAM7BX7P534####	4.6L V8	6AT	4	RR
27	2023	Lexus	RX 350	AWD	SUV	2T2BAMCA7PC03####	2.4L I4 Turbo	8AT	4	RR, SR
29	2023	Lexus	RX 350	FWD	SUV	2T2BAMBA0PC02####	2.4L I4 Turbo	8AT	4	PSR, RR
30	2023	Lexus	RZ 450e	AWD	SUV	JTJAAAAB1PA01####	Electric	Auto	4	PSR
9	2023	Mazda	CX-50	AWD	SUV	7MMVABCM7PN13####	2.5L I4	6AT	4	PSR, RR
4	2023	Mini	Cooper S Countryman	AWD	SUV	WMZ83BR00P3R0####	2.0L I4 Turbo	8AT	4	RR
20	2023	Mitsubishi	Outlander	AWD	SUV	JA4J4UA85PZ04####	2.5L I4	8AT	4	
19	2023	Mitsubishi	Outlander	FWD	SUV	JA4J3VA81PZ04####	2.5L I4	8AT	4	PSR
31	2023	Nissan	Ariya	AWD	SUV	JN1DF0BB8PM70####	Electric	Auto	4	PSR
12	2023	Nissan	Ariya	FWD	SUV	JN1BF0BAXPM40####	Electric	Auto	4	SR
10	2023	Rivian	R1S	AWD	SUV	7PDSGABL5PN00####	Electric	Auto	4	PSR
13	2023	Subaru	Solterra	AWD	SUV	JTMABABA7PA00####	Electric	Auto	4	SR
1	2023	Toyota	bZ4X	FWD	SUV	JTMAAAA7PA00####	Electric	Auto	4	PSR
28	2023	Toyota	Crown	AWD	Sedan	JTDAAAAFXP300####	2.5L I4 Hybrid	CVT	4	PSR
8	2023	Toyota	Prius Hybrid	FWD	Hatchback	JTDACAAU7P300####	2.0L I4 Hybrid	Auto	4	GR
36	2023	Toyota	Prius PHEV	FWD	Hatchback	JTDACACU6P300####	2.0L I4 Hybrid	Auto	4	SR

Seq No.	MY	Make	Model	Drive	Front Tire Make/Type	Front Tire Size	Front Press. (psi)	Rear Tire Make/Type
35	2023	Acura	MDX	AWD	Bridgestone Alenza Sport A/S M+S	255/50R20 105H	35	Bridgestone Alenza Sport A/S M+S
26	2023	BMW	X1	AWD	Michelin Primacy All Season	245/45R19 102H	32	Michelin Primacy All Season
23	2023	Chevrolet	Colorado	4WD	Bridgestone Dueler A/T M+S	275/60R20 115S	35	Bridgestone Dueler A/T M+S
32	2023	Chevrolet	Colorado	RWD	Goodyear Wrangler Territory HT M+S	255/65R17 110T	38	Goodyear Wrangler Territory HT M+S
7	2023	Genesis	GV70	AWD	Bridgestone Dueler HP Sport A/S	235/60R18 107W	33	Bridgestone Dueler HP Sport A/S
15	2023	Honda	Accord	FWD	Michelin Energy Saver A/S M+S	225/50R17 94V	33	Michelin Energy Saver A/S M+S
14	2023	Honda	CR-V	AWD	Bridgestone Ecopia H/L 422 Plus M+S	235/65R17 104H	33	Bridgestone Ecopia H/L 422 Plus M+S
21	2023	Honda	HR-V	FWD	Hankook Kinergy GT M+S	215/60R17 96H	33	Hankook Kinergy GT M+S
18	2023	Honda	Pilot	AWD	Goodyear Eagle Touring M+S	255/60R18 108H	35	Goodyear Eagle Touring M+S
22	2023	Honda	Pilot	FWD	Hankook Dynapro HP2 M+S	255/60R18 108H	35	Hankook Dynapro HP2 M+S
24	2023	Hyundai	Kona Electric	FWD	Nexen NPPriz AH8 M+S	215/55R17 94V	36	Nexen NPPriz AH8 M+S
6	2023	Hyundai	Santa Cruz	AWD	Kumho Crugen HP71 M+S	245/60R18 105H	35	Kumho Crugen HP71 M+S
17	2023	Hyundai	Santa Cruz	FWD	Kumho Crugen HP71 M+S	245/60R18 105H	35	Kumho Crugen HP71 M+S
3	2023	Jeep	Grand Cherokee PHEV	AWD	Bridgestone Dueler H/L 400 M+S	265/50R20 107T	39	Bridgestone Dueler H/L 400 M+S
11	2023	Jeep	Wagoneer	AWD	Pirelli Scorpion Verde All Season M+S	285/45R22 114H	40	Pirelli Scorpion Verde All Season M+S
33	2023	Jeep	Wagoneer	RWD	Pirelli Scorpion Verde All Season M+S	285/45R22 114H	40	Pirelli Scorpion Verde All Season M+S
2	2023	Jeep	Wrangler Unlimited PHEV	AWD	Bridgestone Dueler H/L Alenza M+S	275/55R20 113T	36	Bridgestone Dueler H/L Alenza M+S
37	2023	Kia	EV6	AWD	Continental Cross Contact RX M+S	255/45R20 105H	36	Continental Cross Contact RX M+S
34	2023	Kia	EV6	RWD	Kumho Crugen HP71 EV M+S	235/55R19 101H	36	Kumho Crugen HP71 EV M+S
16	2023	Kia	Niro	FWD	Nexen NPPriz S M+S	205/60R16 92H	36	Nexen NPPriz S M+S
25	2023	Kia	Sportage	AWD	Hankook Dynapro HP2 M+S	235/65R17 104H	35	Hankook Dynapro HP2 M+S
5	2023	Lexus	GX 460	AWD	Bridgestone Dueler HT 840	265/60R18 109H	32	Bridgestone Dueler HT 840
27	2023	Lexus	RX 350	AWD	Goodyear Eagle Touring M+S	235/50R21 101V	33	Goodyear Eagle Touring M+S
29	2023	Lexus	RX 350	FWD	Bridgestone Alenza Sport A/S M+S	235/50R21 101V	33	Bridgestone Alenza Sport A/S M+S
30	2023	Lexus	RZ 450e	AWD	Dunlop Sportmaxx 060 Extra Load	235/50R20 104V	38	Dunlop Sportmaxx 060 Extra Load
9	2023	Mazda	CX-50	AWD	Goodyear Assurance Finesse M+S	225/65R17 102H	36	Goodyear Assurance Finesse M+S
4	2023	Mini	Cooper S Countryman	AWD	Pirelli Cinturato P7 M+S	225/50R18 95V	35	Pirelli Cinturato P7 M+S
20	2023	Mitsubishi	Outlander	AWD	Bridgestone Ecopia H/L 422 Plus M+S	P255/45R20 101W	35	Bridgestone Ecopia H/L 422 Plus M+S
19	2023	Mitsubishi	Outlander	FWD	Nexen Roadian GTX M+S	P255/45R20 101W	35	Nexen Roadian GTX M+S
31	2023	Nissan	Ariya	AWD	Dunlop Grand Trek PT21 M+S	235/55R19 101V	41	Dunlop Grand Trek PT21 M+S
12	2023	Nissan	Ariya	FWD	Dunlop Grand Trek PT21	235/55R19 101V	41	Dunlop Grand Trek PT21
10	2023	Rivian	R1S	AWD	Pirelli Scorpion Zero All Season M+S	HL275/50R22 116H	48	Pirelli Scorpion Zero All Season M+S
13	2023	Subaru	Solterra	AWD	Bridgestone Turanza EL450 M+S	235/50R20 100V	38	Bridgestone Turanza EL450 M+S
1	2023	Toyota	bZ4X	FWD	Bridgestone Turanza EL450 M+S0	235/60R18 103V	38	Bridgestone Turanza EL450 M+S0
28	2023	Toyota	Crown	AWD	Bridgestone Ecopia H/L 422 Plus M+S	225/55R19 99V	30	Bridgestone Ecopia H/L 422 Plus M+S
8	2023	Toyota	Prius Hybrid	FWD	Toyo Extensa A/S II M+S	195/50R19 88H	35	Toyo Extensa A/S II M+S
36	2023	Toyota	Prius PHEV	FWD	Toyo Extensa A/S M+S	195/50R19 88H	35	Toyo Extensa A/S M+S

Seq No.	MY	Make	Model	Drive	Rear Tire Size	Rear Press. (psi)	Front Track (in)	Rear Track (in)	Avg. Track (in)	Wheel Base (in)	GVWR (lb)	GAWR Front (lb)	GAWR Rear (lb)
35	2023	Acura	MDX	AWD	255/50R20 105H	35	67.7	67.8	67.7	114.0	5820	2976	2965
26	2023	BMW	X1	AWD	245/45R19 102H	32	62.4	62.2	62.3	105.8	4850	2546	2524
23	2023	Chevrolet	Colorado	4WD	275/60R20 115S	35	66.1	65.9	66.0	131.3	6250	3500	3600
32	2023	Chevrolet	Colorado	RWD	255/65R17 110T	38	63.0	62.9	62.9	131.3	6050	3500	3600
7	2023	Genesis	GV70	AWD	235/60R18 107W	36	64.9	65.6	65.2	113.1	5501	2745	3131
15	2023	Honda	Accord	FWD	225/50R17 94V	32	63.1	63.8	63.4	111.5	4321	2358	2094
14	2023	Honda	CR-V	AWD	235/65R17 104H	32	63.3	63.7	63.5	106.5	4795	2469	2469
21	2023	Honda	HR-V	FWD	215/60R17 96H	32	62.6	63.2	62.9	104.6	4210	2248	2039
18	2023	Honda	Pilot	AWD	255/60R18 108H	35	67.5	67.6	67.6	114.0	6195	2998	3340
22	2023	Honda	Pilot	FWD	255/60R18 108H	35	67.6	67.7	67.7	114.1	5963	2976	3164
24	2023	Hyundai	Kona Electric	FWD	215/55R17 94V	36	61.6	62.0	61.8	102.5	4762	2425	2469
6	2023	Hyundai	Santa Cruz	AWD	245/60R18 105H	35	64.7	65.2	64.9	118.3	5732	2645	3196
17	2023	Hyundai	Santa Cruz	FWD	245/60R18 105H	35	64.5	65.0	64.7	118.4	5456	2645	3196
3	2023	Jeep	Grand Cherokee PHEV	AWD	265/50R20 107T	42	65.6	65.8	65.7	116.7	6900	3200	3800
11	2023	Jeep	Wagoneer	AWD	285/45R22 114H	40	68.5	68.6	68.5	123.0	7500	3900	4530
33	2023	Jeep	Wagoneer	RWD	285/45R22 114H	40	68.5	68.8	68.6	123.2	7200	3900	4530
2	2023	Jeep	Wrangler Unlimited PHEV	AWD	275/55R20 113T	36	64.6	64.6	64.6	118.3	6200	3100	3550
37	2023	Kia	EV6	AWD	255/45R20 105H	36	63.9	64.2	64.0	114.4	5556	2822	3064
34	2023	Kia	EV6	RWD	235/55R19 101H	36	64.2	64.4	64.3	114.4	5335	2822	3064
16	2023	Kia	Niro	FWD	205/60R16 92H	36	62.4	63.1	62.7	107.2	4211	2348	2315
25	2023	Kia	Sportage	AWD	235/65R17 104H	35	63.7	64.1	63.9	108.6	4850	2777	2645
5	2023	Lexus	GX 460	AWD	265/60R18 109H	32	62.6	62.6	62.6	109.9	6600	3200	3800
27	2023	Lexus	RX 350	AWD	235/50R21 101V	33	65.0	65.7	65.3	112.1	5620	3085	3260
29	2023	Lexus	RX 350	FWD	235/50R21 101V	33	65.2	65.7	65.4	112.1	5465	3085	3260
30	2023	Lexus	RZ 450e	AWD	255/45R20 105W	35	63.5	63.7	63.6	112.3	5820	3040	3195
9	2023	Mazda	CX-50	AWD	225/65R17 102H	36	65.2	65.1	65.1	111.0	4848	2498	2379
4	2023	Mini	Cooper S Countryman	AWD	225/50R18 95V	35	61.8	61.5	61.6	105.2	4696	2469	2337
20	2023	Mitsubishi	Outlander	AWD	P255/45R20 101W	35	62.8	63.0	62.9	106.6	5192	2668	3009
19	2023	Mitsubishi	Outlander	FWD	P255/45R20 101W	35	62.7	63.0	62.8	106.6	5192	2668	3009
31	2023	Nissan	Ariya	AWD	235/55R19 101V	41	64.5	64.3	64.4	109.5	5930	2778	3175
12	2023	Nissan	Ariya	FWD	235/55R19 101V	41	64.4	64.3	64.4	109.4	5644	2767	2888
10	2023	Rivian	R1S	AWD	HL275/50R22 116H	48	68.4	69.2	68.8	121.6	8532	4134	4960
13	2023	Subaru	Solterra	AWD	235/50R20 100V	38	62.9	63.2	63.1	112.3	5620	2985	3085
1	2023	Toyota	bZ4X	FWD	235/60R18 103V	38	62.9	63.2	63.0	112.5	5435	2985	2985
28	2023	Toyota	Crown	AWD	225/55R19 99V	30	63.0	63.4	63.2	112.5	5020	2755	2755
8	2023	Toyota	Prius Hybrid	FWD	195/50R19 88H	33	61.5	61.9	61.7	108.3	4145	2345	2270
36	2023	Toyota	Prius PHEV	FWD	195/50R19 88H	33	61.5	61.9	61.7	108.2	4475	2345	2270

Seq No.	MY	Make	Model	Drive	Load	Test Date	VIMF Test No.	Roof Height (in)	Test Weight (lb)	C.G. Long. (in)	C.G. Lateral (in)	C.G. Height (in)	T/2h
35	2023	Acura	MDX	AWD	Driver	9/26/2023	8564	66.8	4682.0	48.3	-1.3	26.24	1.2901
26	2023	BMW	X1	AWD	Driver	9/7/2023	8533	64.2	3920.0	46.1	-0.5	25.43	1.2246
23	2023	Chevrolet	Colorado	4WD	Driver	5/25/2023	8462	72.1	4885.2	58.2	-0.8	28.92	1.1412
32	2023	Chevrolet	Colorado	RWD	Driver	9/22/2023	8557	69.5	4514.2	59.7	-0.7	27.89	1.1275
7	2023	Genesis	GV70	AWD	Driver	2/24/2023	8382	64.2	4404.7	54.1	-0.6	24.48	1.3323
15	2023	Honda	Accord	FWD	Driver	4/19/2023	8420	56.7	3439.7	45.3	-1.2	21.44	1.4793
14	2023	Honda	CR-V	AWD	Driver	4/19/2023	8418	65.7	3722.9	44.9	-1.3	25.18	1.2613
21	2023	Honda	HR-V	FWD	Driver	5/24/2023	8458	62.4	3309.8	43.2	-1.1	24.13	1.3036
18	2023	Honda	Pilot	AWD	Driver	5/16/2023	8446	69.7	4632.3	48.9	-1.2	26.23	1.2881
22	2023	Honda	Pilot	FWD	Driver	5/24/2023	8460	69.5	4517.9	48.4	-1.2	26.75	1.2644
24	2023	Hyundai	Kona Electric	FWD	Driver	8/23/2023	8521	60.8	4015.6	48.7	-1.5	20.72	1.4902
6	2023	Hyundai	Santa Cruz	AWD	Driver	2/13/2023	8371	66.5	4259.7	51.0	-1.0	26.22	1.2377
17	2023	Hyundai	Santa Cruz	FWD	Driver	5/10/2023	8435	66.7	3856.5	50.4	-1.0	26.15	1.2375
3	2023	Jeep	Grand Cherokee PHEV	AWD	Driver	2/3/2023	8358	68.0	5615.1	55.9	-0.7	25.33	1.2971
11	2023	Jeep	Wagoneer	AWD	Driver	3/30/2023	8403	75.0	6234.5	59.1	-1.2	29.49	1.1620
33	2023	Jeep	Wagoneer	RWD	Driver	9/26/2023	8560	75.3	6077.8	60.7	-1.5	30.12	1.1386
2	2023	Jeep	Wrangler Unlimited PHEV	AWD	Driver	2/2/2023	8354	68.0	5289.7	58.9	0.0	27.87	1.1590
37	2023	Kia	EV6	AWD	Driver	10/11/2023	8573	61.1	4823.3	58.2	-0.7	20.43	1.5674
34	2023	Kia	EV6	RWD	Driver	9/26/2023	8562	60.3	4545.0	61.4	-0.8	20.49	1.5686
16	2023	Kia	Niro	FWD	Driver	5/10/2023	8433	60.6	3254.6	42.4	-1.1	22.87	1.3713
25	2023	Kia	Sportage	AWD	Driver	8/29/2023	8526	65.4	3726.2	45.6	-1.1	25.98	1.2290
5	2023	Lexus	GX 460	AWD	Driver	2/10/2023	8369	72.4	5387.4	52.6	-1.3	28.22	1.1087
27	2023	Lexus	RX 350	AWD	Driver	9/13/2023	8538	66.0	4506.8	47.3	-1.2	25.87	1.2624
29	2023	Lexus	RX 350	FWD	Driver	9/19/2023	8549	66.6	4423.4	46.4	-1.0	26.59	1.2302
30	2023	Lexus	RZ 450e	AWD	Driver	9/19/2023	8552	63.1	4822.2	51.8	-0.4	22.24	1.4293
9	2023	Mazda	CX-50	AWD	Driver	3/23/2023	8392	63.4	3820.5	46.7	-0.9	25.92	1.2560
4	2023	Mini	Cooper S Countryman	AWD	Driver	2/9/2023	8365	63.2	3892.2	45.4	-0.7	23.65	1.3023
20	2023	Mitsubishi	Outlander	AWD	Driver	5/17/2023	8451	66.5	3975.0	45.8	-0.8	25.96	1.2110
19	2023	Mitsubishi	Outlander	FWD	Driver	5/17/2023	8449	66.5	3922.7	45.8	-0.9	26.63	1.1791
31	2023	Nissan	Ariya	AWD	Driver	9/22/2023	8555	63.9	5149.9	54.1	-0.3	22.08	1.4580
12	2023	Nissan	Ariya	FWD	Driver	4/6/2023	8408	64.1	4912.1	51.0	-0.4	22.59	1.4245
10	2023	Rivian	R1S	AWD	Driver	3/27/2023	8398	69.3	7027.7	62.2	-0.5	25.65	1.3408
13	2023	Subaru	Solterra	AWD	Driver	4/10/2023	8410	63.0	4621.6	51.6	-0.6	22.81	1.3823
1	2023	Toyota	bZ4X	FWD	Driver	12/15/2022	8325	62.6	4401.8	48.9	-0.6	22.76	1.3843
28	2023	Toyota	Crown	AWD	Driver	9/19/2023	8547	59.8	4231.1	50.1	-0.7	22.73	1.3895
8	2023	Toyota	Prius Hybrid	FWD	Driver	3/17/2023	8390	55.3	3372.4	43.9	-1.3	21.35	1.4447
36	2023	Toyota	Prius PHEV	FWD	Driver	10/10/2023	8569	55.1	3743.3	47.7	-1.1	20.61	1.4972

Appendix B

Summary Results Table with Track Width, CG Height, and SSF

Table I
Test Vehicles

Seq. No.	MY	Make	Model	Drivetrain	Date Tested	VIMF Number	Track Width (inches)	DRIVER ONLY	
								C.G. Height (inches)	SSF
35	2023	Acura	MDX	AWD	9/26/2023	8564	67.7	26.24	1.29
26	2023	BMW	X1	AWD	9/7/2023	8533	62.3	25.43	1.22
23	2023	Chevrolet	Colorado	4WD	5/25/2023	8462	66.0	28.92	1.14
32	2023	Chevrolet	Colorado	RWD	9/22/2023	8557	62.9	27.89	1.13
7	2023	Genesis	GV70	AWD	2/24/2023	8382	65.2	24.48	1.33
15	2023	Honda	Accord	FWD	4/19/2023	8420	63.4	21.44	1.48
14	2023	Honda	CR-V	AWD	4/19/2023	8418	63.5	25.18	1.26
21	2023	Honda	HR-V	FWD	5/24/2023	8458	62.9	24.13	1.30
18	2023	Honda	Pilot	AWD	5/16/2023	8446	67.6	26.23	1.29
22	2023	Honda	Pilot	FWD	5/24/2023	8460	67.7	26.75	1.26
24	2023	Hyundai	Kona Electric	FWD	8/25/2023	8521	61.8	20.72	1.49
6	2023	Hyundai	Santa Cruz	AWD	2/13/2023	8371	64.9	26.22	1.24
17	2023	Hyundai	Santa Cruz	FWD	5/10/2023	8435	64.7	26.15	1.24
3	2023	Jeep	Grand Cherokee PHEV	AWD	2/3/2023	8358	65.7	25.33	1.30
11	2023	Jeep	Wagoneer	AWD	3/30/2023	8403	68.5	29.49	1.16
33	2023	Jeep	Wagoneer	RWD	9/26/2023	8560	68.6	30.12	1.14
2	2023	Jeep	Wrangler Unlimited PHEV	AWD	2/3/2023	8354	64.6	27.87	1.16
37	2023	Kia	EV6	AWD	10/11/2023	8573	64.0	20.43	1.57
34	2023	Kia	EV6	RWD	9/26/2023	8562	64.3	20.49	1.57
16	2023	Kia	Niro	FWD	5/10/2023	8433	62.7	22.87	1.37
25	2023	Kia	Sportage	AWD	8/29/2023	8526	63.9	25.98	1.23
5	2023	Lexus	GX 460	AWD	2/10/2023	8369	62.6	28.22	1.11
27	2023	Lexus	RX 350	AWD	9/13/2023	8538	65.3	25.87	1.26
29	2023	Lexus	RX 350	FWD	9/19/2023	8549	65.4	26.59	1.23
30	2023	Lexus	RZ 450e	AWD	9/19/2023	8552	63.6	22.24	1.43
9	2023	Mazda	CX-50	AWD	3/23/2023	8392	65.1	25.92	1.26
4	2023	Mini	Cooper S Countryman	AWD	2/9/2023	8365	61.6	23.65	1.30
20	2023	Mitsubishi	Outlander	AWD	5/17/2023	8451	62.9	25.96	1.21
19	2023	Mitsubishi	Outlander	FWD	5/17/2023	8449	62.8	26.63	1.18
31	2023	Nissan	Ariya	AWD	9/22/2023	8555	64.4	22.08	1.46
12	2023	Nissan	Ariya	FWD	4/6/2023	8408	64.4	22.59	1.42
10	2023	Rivian	R1S	AWD	3/27/2023	8398	68.8	25.65	1.34
13	2023	Subaru	Solterra	AWD	4/10/2023	8410	63.1	22.81	1.38
1	2023	Toyota	bZ4X	FWD	12/15/2022	8325	63.0	22.76	1.38
28	2023	Toyota	Crown	AWD	9/19/2023	8547	63.2	22.73	1.39
8	2023	Toyota	Prius HEV	FWD	3/17/2023	8390	61.7	21.35	1.445
36	2023	Toyota	Prius PHEV	FWD	10/10/2023	8569	61.7	20.61	1.50

Appendix C

Individual Test Results Pages

Acura MDX AWD

YEAR: 2023
MAKE: Acura
MODEL: MDX
VIN: 5J8YE1H47PL02####

DATE TESTED: 9/26/2023
VIMF TEST NO.: 8564

Mfg Date: 01/23

TYPE SUV
LOAD: Driver
ENGINE SIZE AND TYPE: 3.5L V6
TRANSMISSION TYPE: 10AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Sunroof

Ride Height: N/A

FRONT TIRE TYPE: Bridgestone Alenza Sport A/S M+S
FRONT TIRE SIZE: 255/50R20 105H
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Bridgestone Alenza Sport A/S M+S
REAR TIRE SIZE: 255/50R20 105H
REAR TIRE PRESSURE: 35

FRONT TRACK: 67.7 inches
REAR TRACK: 67.8 inches
AVERAGE TRACK: 67.7 inches
WHEELBASE: 114.0 inches
ROOF HEIGHT: 66.8 inches

Track Width Measurements

Front A	67.65	inches
B	67.70	inches
C	67.70	inches
D	67.65	inches
Rear E	67.75	inches
F	67.75	inches
G	67.75	inches
H	67.75	inches

GVWR 5820 lb
FRONT GAWR 2976 lb
REAR GAWR 2965 lb

LEFT FRONT WEIGHT 1402.6 lb
RIGHT FRONT WEIGHT 1294.5 lb
LEFT REAR WEIGHT 1025.6 lb
RIGHT REAR WEIGHT 959.3 lb
TOTAL WEIGHT 4682.0 lb

Wheelbase Measurements

Left Side	114.00	inches
Right Side	114.00	inches

C.G. LONGITUDINAL 48.33 inches (From Front Axle)
C.G. LATERAL -1.26 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.200	-0.028	26.21
Run #3	41.8	4.191	-0.038	26.21
Run #4	31.8	-3.164	0.018	26.26
Run #5	41.8	-4.163	0.029	26.29

AVERAGE C.G. HEIGHT 26.24

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2901

BMW X1 AWD

YEAR: 2023	DATE TESTED: 9/7/2023
MAKE: BMW	VIMF TEST NO.: 8533
MODEL: X1	
VIN: WBX73EF02P5X6####	Mfg Date: 08/23
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 2.0L I4	
TRANSMISSION TYPE: 7AT	
DRIVE: AWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT:	
FRONT TIRE TYPE: Michelin Primacy All Season	
FRONT TIRE SIZE: 245/45R19 102H	
FRONT TIRE PRESSURE: 32	
REAR TIRE TYPE: Michelin Primacy All Season	
REAR TIRE SIZE: 245/45R19 102H	
REAR TIRE PRESSURE: 32	
FRONT TRACK: 62.4 inches	Track Width Measurements
REAR TRACK: 62.2 inches	Front A 62.40 inches
AVERAGE TRACK: 62.3 inches	B 62.35 inches
WHEELBASE: 105.8 inches	C 62.35 inches
ROOF HEIGHT: 64.2 inches	D 62.40 inches
	Rear E 62.20 inches
GVWR 4850 lb	F 62.20 inches
FRONT GAWR 2546 lb	G 62.20 inches
REAR GAWR 2524 lb	H 62.20 inches
LEFT FRONT WEIGHT 1133.4 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1080.2 lb	Left Side 105.80 inches
LEFT REAR WEIGHT 857.1 lb	Right Side 105.80 inches
RIGHT REAR WEIGHT 849.3 lb	
TOTAL WEIGHT 3920.0 lb	
C.G. LONGITUDINAL 46.06 inches (From Front Axle)	
C.G. LATERAL -0.49 inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.459	-0.027	25.40
Run #3	46.7	4.379	-0.035	25.41
Run #4	36.8	-3.450	0.023	25.47
Run #5	46.7	-4.358	0.029	25.45
AVERAGE C.G. HEIGHT				25.43

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.2246$$

Chevrolet Colorado 4WD

YEAR: 2023 **DATE TESTED:** 5/25/2023
MAKE: Chevrolet **VIMF TEST NO.:** 8462
MODEL: Colorado
VIN: 1GCPTEEK6P116#### **Mfg Date:** 04/23
TYPE: Pickup Crew Cab **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.7L I4 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: 4WD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:

FRONT TIRE TYPE: Bridgestone Dueler A/T M+S
FRONT TIRE SIZE: 275/60R20 115S
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Bridgestone Dueler A/T M+S
REAR TIRE SIZE: 275/60R20 115S
REAR TIRE PRESSURE: 35

FRONT TRACK: 66.1 inches
REAR TRACK: 65.9 inches
AVERAGE TRACK: 66.0 inches
WHEELBASE: 131.3 inches
ROOF HEIGHT: 72.1 inches

Track Width Measurements

Location	Measurement	Value	Unit
Front	A	66.10	inches
	B	66.10	inches
	C	66.10	inches
	D	66.10	inches
Rear	E	65.90	inches
	F	65.95	inches
	G	65.90	inches
	H	65.95	inches

GVWR 6250 lb
FRONT GAWR 3500 lb
REAR GAWR 3600 lb

LEFT FRONT WEIGHT 1402.7 lb
RIGHT FRONT WEIGHT 1315.4 lb
LEFT REAR WEIGHT 1095.5 lb
RIGHT REAR WEIGHT 1071.6 lb
TOTAL WEIGHT 4885.2 lb

Wheelbase Measurements

Side	Measurement	Value	Unit
Left Side		131.30	inches
		131.30	inches

C.G. LONGITUDINAL 58.25 inches (From Front Axle)
C.G. LATERAL -0.75 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	56.7	3.089	-0.031	28.92
Run #3	81.7	4.412	-0.049	28.89
Run #4	56.7	-3.056	0.022	28.94
Run #5	81.7	-4.374	0.037	28.93

AVERAGE C.G. HEIGHT 28.92

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.1412

Chevrolet Colorado RWD

YEAR: 2023
MAKE: Chevrolet
MODEL: Colorado
VIN: 1GCPSBEK4P123####
TYPE: Pickup Crew Cab
LOAD: Driver
ENGINE SIZE AND TYPE: 2.7L I4 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: RWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:

DATE TESTED: 9/22/2023
VIMF TEST NO.: 8557

Mfg Date: 09/23

Ride Height: N/A

FRONT TIRE TYPE: Goodyear Wrangler Territory HT M+S
FRONT TIRE SIZE: 255/65R17 110T
FRONT TIRE PRESSURE: 38
REAR TIRE TYPE: Goodyear Wrangler Territory HT M+S
REAR TIRE SIZE: 255/65R17 110T
REAR TIRE PRESSURE: 38

FRONT TRACK: 63.0 inches
REAR TRACK: 62.9 inches
AVERAGE TRACK: 62.9 inches
WHEELBASE: 131.3 inches
ROOF HEIGHT: 69.5 inches

Track Width Measurements

Front	A	62.80 inches
	B	63.00 inches
	C	63.10 inches
	D	62.90 inches
Rear	E	62.90 inches
	F	62.80 inches
	G	62.90 inches
	H	62.80 inches

GVWR 6050 lb
FRONT GAWR 3500 lb
REAR GAWR 3600 lb

LEFT FRONT WEIGHT 1261.6 lb
RIGHT FRONT WEIGHT 1200.6 lb
LEFT REAR WEIGHT 1047.8 lb
RIGHT REAR WEIGHT 1004.2 lb
TOTAL WEIGHT 4514.2 lb

Wheelbase Measurements

Left Side	131.30	inches
Right Side	131.30	inches

C.G. LONGITUDINAL 59.68 inches (From Front Axle)
C.G. LATERAL -0.73 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	66.6	3.497	-0.029	27.88
Run #3	86.6	4.517	-0.040	27.88
Run #4	66.6	-3.487	0.029	27.91
Run #5	86.6	-4.508	0.045	27.90

AVERAGE C.G. HEIGHT 27.89

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.1275

Genesis GV70 AWD

YEAR: 2023 **DATE TESTED:** 2/24/2023
MAKE: Genesis **VIMF TEST NO.:** 8382
MODEL: GV70
VIN: KMUMADTB9PU11#### **Mfg Date:** 12/22
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.5L I4 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Roof Rails
FRONT TIRE TYPE: Bridgestone Dueler HP Sport A/S
FRONT TIRE SIZE: 235/60R18 107W
FRONT TIRE PRESSURE: 33
REAR TIRE TYPE: Bridgestone Dueler HP Sport A/S
REAR TIRE SIZE: 235/60R18 107W
REAR TIRE PRESSURE: 36

FRONT TRACK:	64.9	inches	Track Width Measurements
REAR TRACK:	65.6	inches	Front A 64.85 inches
AVERAGE TRACK:	65.2	inches	B 64.95 inches
WHEELBASE:	113.1	inches	C 64.95 inches
ROOF HEIGHT:	64.2	inches	D 64.85 inches
			Rear E 65.40 inches
GVWR	5501	lb	F 65.70 inches
FRONT GAWR	2745	lb	G 65.40 inches
REAR GAWR	3131	lb	H 65.70 inches

LEFT FRONT WEIGHT	1175.0	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1124.1	lb	Left Side 113.10 inches
LEFT REAR WEIGHT	1066.7	lb	Right Side 113.10 inches
RIGHT REAR WEIGHT	1038.9	lb	
TOTAL WEIGHT	4404.7	lb	

C.G. LONGITUDINAL 54.07 inches (From Front Axle)
C.G. LATERAL -0.58 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.269	-0.028	24.42
Run #3	46.7	4.141	-0.037	24.43
Run #4	36.8	-3.241	0.016	24.55
Run #5	46.7	-4.092	0.020	24.52
AVERAGE C.G. HEIGHT				24.48

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.3323$$

Honda Accord FWD

YEAR: 2023
MAKE: Honda
MODEL: Accord
VIN: 1HGCV1F37PA01####
DATE TESTED: 4/19/2023
VIMF TEST NO.: 8420
Mfg Date: 02/23
TYPE: Sedan
LOAD: Driver
ENGINE SIZE AND TYPE: 1.5L I4 Turbo
TRANSMISSION TYPE: CVT
DRIVE: FWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Sunroof
FRONT TIRE TYPE: Michelin Energy Saver A/S M+S
FRONT TIRE SIZE: 225/50R17 94V
FRONT TIRE PRESSURE: 33
REAR TIRE TYPE: Michelin Energy Saver A/S M+S
REAR TIRE SIZE: 225/50R17 94V
REAR TIRE PRESSURE: 32

FRONT TRACK:	63.1	inches	Track Width Measurements
REAR TRACK:	63.8	inches	Front A 63.10 inches
AVERAGE TRACK:	63.4	inches	B 63.00 inches
WHEELBASE:	111.5	inches	C 63.00 inches
ROOF HEIGHT:	56.7	inches	D 63.10 inches
			Rear E 63.75 inches
GVWR	4321	lb	F 63.85 inches
FRONT GAWR	2358	lb	G 63.75 inches
REAR GAWR	2094	lb	H 63.85 inches
LEFT FRONT WEIGHT	1057.6	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	984.6	lb	Left Side 111.50 inches
LEFT REAR WEIGHT	727.6	lb	Right Side 111.50 inches
RIGHT REAR WEIGHT	669.9	lb	
TOTAL WEIGHT	3439.7	lb	
C.G. LONGITUDINAL	45.30	inches (From Front Axle)	
C.G. LATERAL	-1.20	inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.8	3.224	-0.019	21.40
Run #3	56.8	4.361	-0.026	21.43
Run #4	41.8	-3.225	0.020	21.46
Run #5	56.8	-4.351	0.026	21.46
AVERAGE C.G. HEIGHT				21.44

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.4793$$

Honda CR-V AWD

YEAR: 2023
MAKE: Honda
MODEL: CR-V

DATE TESTED: 4/19/2023
VIMF TEST NO.: 8418

VIN: 7FARS4H21PE01####

Mfg Date: 02/23

TYPE SUV
LOAD: Driver
ENGINE SIZE AND TYPE: 1.5L I4 Turbo
TRANSMISSION TYPE: CVT
DRIVE: AWD
DOORS: 4
FUEL: Full

Ride Height: N/A

OPTIONAL EQUIPMENT:

FRONT TIRE TYPE: Bridgestone Ecopia H/L 422 Plus M+S
FRONT TIRE SIZE: 235/65R17 104H
FRONT TIRE PRESSURE: 33
REAR TIRE TYPE: Bridgestone Ecopia H/L 422 Plus M+S
REAR TIRE SIZE: 235/65R17 104H
REAR TIRE PRESSURE: 32

FRONT TRACK: 63.3 inches
REAR TRACK: 63.7 inches
AVERAGE TRACK: 63.5 inches
WHEELBASE: 106.5 inches
ROOF HEIGHT: 65.7 inches

Track Width Measurements

Measurement	Value	Unit
Front A	63.30	inches
B	63.30	inches
C	63.30	inches
D	63.30	inches
Rear E	63.70	inches
F	63.75	inches
G	63.70	inches
H	63.75	inches

GVWR 4795 lb
FRONT GAWR 2469 lb
REAR GAWR 2469 lb

LEFT FRONT WEIGHT 1138.2 lb
RIGHT FRONT WEIGHT 1015.7 lb
LEFT REAR WEIGHT 802.0 lb
RIGHT REAR WEIGHT 767.0 lb
TOTAL WEIGHT 3722.9 lb

Wheelbase Measurements

Measurement	Value	Unit
Left Side	106.50	inches
Right Side	106.50	inches

C.G. LONGITUDINAL 44.88 inches (From Front Axle)
C.G. LATERAL -1.34 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	2.943	-0.016	25.18
Run #3	41.8	3.844	-0.024	25.14
Run #4	31.8	-2.933	0.015	25.19
Run #5	41.8	-3.844	0.023	25.20

AVERAGE C.G. HEIGHT 25.18

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2613

Honda HR-V FWD

YEAR: 2023	DATE TESTED: 5/24/2023
MAKE: Honda	VIMF TEST NO.: 8458
MODEL: HR-V	
VIN: 3CZRZ1H3XPM73####	Mfg Date: 03/23
TYPE: SUV	Ride Height:
LOAD: Driver	
ENGINE SIZE AND TYPE: 2.0L I4	
TRANSMISSION TYPE: CVT	
DRIVE: FWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT:	
FRONT TIRE TYPE: Hankook Kinergy GT M+S	
FRONT TIRE SIZE: 215/60R17 96H	
FRONT TIRE PRESSURE: 33	
REAR TIRE TYPE: Hankook Kinergy GT M+S	
REAR TIRE SIZE: 215/60R17 96H	
REAR TIRE PRESSURE: 32	
FRONT TRACK: 62.6 inches	Track Width Measurements
REAR TRACK: 63.2 inches	Front A 62.65 inches
AVERAGE TRACK: 62.9 inches	B 62.60 inches
WHEELBASE: 104.6 inches	C 62.60 inches
ROOF HEIGHT: 62.4 inches	D 62.65 inches
	Rear E 63.05 inches
GVWR 4210 lb	F 63.30 inches
FRONT GAWR 2248 lb	G 63.05 inches
REAR GAWR 2039 lb	H 63.30 inches
LEFT FRONT WEIGHT 1014.8 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 927.9 lb	Left Side 104.60 inches
LEFT REAR WEIGHT 700.5 lb	Right Side 104.60 inches
RIGHT REAR WEIGHT 666.6 lb	
TOTAL WEIGHT 3309.8 lb	
C.G. LONGITUDINAL 43.20 inches (From Front Axle)	
C.G. LATERAL -1.15 inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.223	-0.018	24.09
Run #3	51.7	4.502	-0.026	24.08
Run #4	36.8	-3.214	0.016	24.16
Run #5	51.7	-4.500	0.024	24.17
AVERAGE C.G. HEIGHT				24.13

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.3036$$

Honda Pilot AWD

YEAR: 2023
MAKE: Honda
MODEL: Pilot
VIN: 5FNYG1H25PB02####
DATE TESTED: 5/16/2023
VIMF TEST NO.: 8446
Mfg Date: 04/23
TYPE: SUV
LOAD: Driver
ENGINE SIZE AND TYPE: 3.5L V6
TRANSMISSION TYPE: 10AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:

FRONT TIRE TYPE: Goodyear Eagle Touring M+S
FRONT TIRE SIZE: 255/60R18 108H
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Goodyear Eagle Touring M+S
REAR TIRE SIZE: 255/60R18 108H
REAR TIRE PRESSURE: 35

FRONT TRACK: 67.5 inches
REAR TRACK: 67.6 inches
AVERAGE TRACK: 67.6 inches
WHEELBASE: 114.0 inches
ROOF HEIGHT: 69.7 inches

Track Width Measurements

Front	A	67.55 inches
	B	67.55 inches
	C	67.50 inches
	D	67.50 inches
Rear	E	67.60 inches
	F	67.65 inches
	G	67.60 inches
	H	67.65 inches

GVWR 6195 lb
FRONT GAWR 2998 lb
REAR GAWR 3340 lb

LEFT FRONT WEIGHT 1390.8 lb
RIGHT FRONT WEIGHT 1253.7 lb
LEFT REAR WEIGHT 1010.2 lb
RIGHT REAR WEIGHT 977.6 lb
TOTAL WEIGHT 4632.3 lb

Wheelbase Measurements

Left Side	114.00	inches
Right Side	114.00	inches

C.G. LONGITUDINAL 48.92 inches (From Front Axle)
C.G. LATERAL -1.24 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.166	-0.019	26.20
Run #3	41.8	4.146	-0.025	26.23
Run #4	31.8	-3.154	0.016	26.24
Run #5	41.8	-4.132	0.024	26.24

AVERAGE C.G. HEIGHT 26.23

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2881

Honda Pilot FWD

YEAR: 2023	DATE TESTED: 5/24/2023
MAKE: Honda	VIMF TEST NO.: 8460
MODEL: Pilot	
VIN: 5FNYG2H42PB00####	Mfg Date: 04/23
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 3.5L V6	
TRANSMISSION TYPE: 10AT	
DRIVE: FWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT:	
FRONT TIRE TYPE: Hankook Dynapro HP2 M+S	
FRONT TIRE SIZE: 255/60R18 108H	
FRONT TIRE PRESSURE: 35	
REAR TIRE TYPE: Hankook Dynapro HP2 M+S	
REAR TIRE SIZE: 255/60R18 108H	
REAR TIRE PRESSURE: 35	

FRONT TRACK: 67.6 inches	Track Width Measurements
REAR TRACK: 67.7 inches	Front A 67.50 inches
AVERAGE TRACK: 67.7 inches	B 67.60 inches
WHEELBASE: 114.1 inches	C 67.60 inches
ROOF HEIGHT: 69.5 inches	D 67.60 inches
	Rear E 67.65 inches
	F 67.80 inches
	G 67.65 inches
	H 67.80 inches

GVWR 5963 lb	
FRONT GAWR 2976 lb	
REAR GAWR 3164 lb	

LEFT FRONT WEIGHT 1353.8 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1246.4 lb	Left Side 114.10 inches
LEFT REAR WEIGHT 986.1 lb	Right Side 114.10 inches
RIGHT REAR WEIGHT 931.6 lb	
TOTAL WEIGHT 4517.9 lb	

C.G. LONGITUDINAL 48.43 inches (From Front Axle)
C.G. LATERAL -1.21 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.284	-0.019	26.71
Run #3	41.8	4.300	-0.025	26.74
Run #4	31.8	-3.275	0.018	26.74
Run #5	41.8	-4.315	0.026	26.81

AVERAGE C.G. HEIGHT 26.75

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2644

Hyundai Kona Electric FWD

YEAR: 2023	DATE TESTED: 8/23/2023
MAKE: Hyundai	VIMF TEST NO.: 8521
MODEL: Kona Electric	
VIN: KM8K53AG2PU17####	Mfg Date: 11/22
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: Electric	
TRANSMISSION TYPE: Auto	
DRIVE: FWD	
DOORS: 4	
FUEL: Electric	
OPTIONAL EQUIPMENT: Sunroof	
FRONT TIRE TYPE: Nexen NPriz AH8 M+S	
FRONT TIRE SIZE: 215/55R17 94V	
FRONT TIRE PRESSURE: 36	
REAR TIRE TYPE: Nexen NPriz AH8 M+S	
REAR TIRE SIZE: 215/55R17 94V	
REAR TIRE PRESSURE: 36	
FRONT TRACK: 61.6 inches	Track Width Measurements
REAR TRACK: 62.0 inches	Front A 61.50 inches
AVERAGE TRACK: 61.8 inches	B 61.60 inches
WHEELBASE: 102.5 inches	C 61.60 inches
ROOF HEIGHT: 60.8 inches	D 61.50 inches
	Rear E 62.00 inches
GVWR 4762 lb	F 61.95 inches
FRONT GAWR 2425 lb	G 62.00 inches
REAR GAWR 2469 lb	H 61.95 inches
LEFT FRONT WEIGHT 1088.2 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1021.3 lb	Left Side 102.50 inches
LEFT REAR WEIGHT 1017.3 lb	Right Side 102.50 inches
RIGHT REAR WEIGHT 888.8 lb	
TOTAL WEIGHT 4015.6 lb	
C.G. LONGITUDINAL 48.65 inches (From Front Axle)	
C.G. LATERAL -1.50 inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.7	3.008	-0.018	20.68
Run #3	61.7	4.411	-0.028	20.67
Run #4	41.7	-3.009	0.017	20.76
Run #5	61.7	-4.418	0.027	20.78
AVERAGE C.G. HEIGHT				20.72

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.4902$$

Hyundai Santa Cruz AWD

YEAR: 2023	DATE TESTED: 2/13/2023
MAKE: Hyundai	VIMF TEST NO.: 8371
MODEL: Santa Cruz	
VIN: 5NTJDDAF0PH05####	Mfg Date: 12/22
TYPE: SUV	Ride Height:
LOAD: Driver	
ENGINE SIZE AND TYPE: 2.5L I4 Turbo	
TRANSMISSION TYPE: 8AT	
DRIVE: AWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT: Roof Rails	
FRONT TIRE TYPE: Kumho Crugen HP71 M+S	
FRONT TIRE SIZE: 245/60R18 105H	
FRONT TIRE PRESSURE: 35	
REAR TIRE TYPE: Kumho Crugen HP71 M+S	
REAR TIRE SIZE: 245/60R18 105H	
REAR TIRE PRESSURE: 35	

FRONT TRACK: 64.7 inches	Track Width Measurements
REAR TRACK: 65.2 inches	Front A 64.60 inches
AVERAGE TRACK: 64.9 inches	B 64.70 inches
WHEELBASE: 118.3 inches	C 64.70 inches
ROOF HEIGHT: 66.5 inches	D 64.60 inches
	Rear E 65.20 inches
GVWR 5732 lb	F 65.10 inches
FRONT GAWR 2645 lb	G 65.20 inches
REAR GAWR 3196 lb	H 65.10 inches

LEFT FRONT WEIGHT 1256.2 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1168.0 lb	Left Side 118.30 inches
LEFT REAR WEIGHT 938.4 lb	Right Side 118.30 inches
RIGHT REAR WEIGHT 897.1 lb	
TOTAL WEIGHT 4259.7 lb	

C.G. LONGITUDINAL 50.98 inches (From Front Axle)
C.G. LATERAL -0.99 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.150	-0.018	26.21
Run #3	41.8	4.116	-0.024	26.21
Run #4	31.8	-3.129	0.015	26.20
Run #5	41.8	-4.105	0.020	26.25
AVERAGE C.G. HEIGHT				26.22

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.2377$$

Hyundai Santa Cruz FWD

YEAR: 2023 **DATE TESTED:** 5/10/2023
MAKE: Hyundai **VIMF TEST NO.:** 8435
MODEL: Santa Cruz
VIN: 5NTJA4AE4PH06#### **Mfg Date:** 03/23
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.5L I4 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: FWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:
FRONT TIRE TYPE: Kumho Crugen HP71 M+S
FRONT TIRE SIZE: 245/60R18 105H
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Kumho Crugen HP71 M+S
REAR TIRE SIZE: 245/60R18 105H
REAR TIRE PRESSURE: 35

FRONT TRACK:	64.5	inches	Track Width Measurements
REAR TRACK:	65.0	inches	Front A 64.50 inches
AVERAGE TRACK:	64.7	inches	B 64.50 inches
WHEELBASE:	118.4	inches	C 64.50 inches
ROOF HEIGHT:	66.7	inches	D 64.50 inches
			Rear E 64.90 inches
GVWR	5456	lb	F 65.00 inches
FRONT GAWR	2645	lb	G 64.90 inches
REAR GAWR	3196	lb	H 65.00 inches

LEFT FRONT WEIGHT	1141.8	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1071.6	lb	Left Side 118.30 inches
LEFT REAR WEIGHT	844.3	lb	Right Side 118.40 inches
RIGHT REAR WEIGHT	798.8	lb	
TOTAL WEIGHT	3856.5	lb	

C.G. LONGITUDINAL 50.42 inches (From Front Axle)
C.G. LATERAL -0.97 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.606	-0.021	26.15
Run #3	46.7	4.562	-0.028	26.14
Run #4	36.8	-3.574	0.015	26.17
Run #5	46.7	-4.524	0.021	26.16
AVERAGE C.G. HEIGHT				26.15

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.2375$$

Jeep Grand Cherokee PHEV AWD

YEAR: 2023
MAKE: Jeep
MODEL: Grand Cherokee PHEV
VIN: 1C4RJYB64P878####
TYPE: SUV
LOAD: Driver
ENGINE SIZE AND TYPE: 2.0L I4 Turbo Hybrid
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:

DATE TESTED: 2/3/2023
VIMF TEST NO.: 8358

Mfg Date: 1/23

Ride Height: N/A

FRONT TIRE TYPE: Bridgestone Dueler H/L 400 M+S
FRONT TIRE SIZE: 265/50R20 107T
FRONT TIRE PRESSURE: 39
REAR TIRE TYPE: Bridgestone Dueler H/L 400 M+S
REAR TIRE SIZE: 265/50R20 107T
REAR TIRE PRESSURE: 42

FRONT TRACK: 65.6 inches
REAR TRACK: 65.8 inches
AVERAGE TRACK: 65.7 inches
WHEELBASE: 116.7 inches
ROOF HEIGHT: 68.0 inches

Track Width Measurements

Front	A	65.65 inches
	B	65.60 inches
	C	65.60 inches
	D	65.65 inches
Rear	E	65.80 inches
	F	65.80 inches
	G	65.80 inches
	H	65.80 inches

GVWR 6900 lb
FRONT GAWR 3200 lb
REAR GAWR 3800 lb

LEFT FRONT WEIGHT 1494.6 lb
RIGHT FRONT WEIGHT 1430.4 lb
LEFT REAR WEIGHT 1374.1 lb
RIGHT REAR WEIGHT 1316.0 lb
TOTAL WEIGHT 5615.1 lb

Wheelbase Measurements

Left Side	116.70	inches
Right Side	116.70	inches

C.G. LONGITUDINAL 55.91 inches (From Front Axle)
C.G. LATERAL -0.72 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.423	-0.025	25.33
Run #3	46.7	4.348	-0.038	25.31
Run #4	36.8	-3.382	0.021	25.33
Run #5	46.7	-4.301	0.029	25.35

AVERAGE C.G. HEIGHT 25.33

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2971

Jeep Wagoneer AWD

YEAR: 2023 **DATE TESTED:** 3/30/2023
MAKE: Jeep **VIMF TEST NO.:** 8403
MODEL: Wagoneer
VIN: 1C4SJVDP6PS50#### **Mfg Date:** 02/23
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 3.0L I6 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Panoramic Sunroof
FRONT TIRE TYPE: Pirelli Scorpion Verde All Season M+S
FRONT TIRE SIZE: 285/45R22 114H
FRONT TIRE PRESSURE: 40
REAR TIRE TYPE: Pirelli Scorpion Verde All Season M+S
REAR TIRE SIZE: 285/45R22 114H
REAR TIRE PRESSURE: 40

FRONT TRACK:	68.5	inches	Track Width Measurements
REAR TRACK:	68.6	inches	Front A 68.55 inches
AVERAGE TRACK:	68.5	inches	B 68.50 inches
WHEELBASE:	123.0	inches	C 68.50 inches
ROOF HEIGHT:	75.0	inches	D 68.55 inches
			Rear E 68.50 inches
GVWR	7500	lb	F 68.60 inches
FRONT GAWR	3900	lb	G 68.50 inches
REAR GAWR	4530	lb	H 68.60 inches
LEFT FRONT WEIGHT	1641.8	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1597.1	lb	Left Side 122.95 inches
LEFT REAR WEIGHT	1584.7	lb	Right Side 123.00 inches
RIGHT REAR WEIGHT	1410.9	lb	
TOTAL WEIGHT	6234.5	lb	
C.G. LONGITUDINAL	59.09	inches (From Front Axle)	
C.G. LATERAL	-1.20	inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	61.7	3.290	-0.049	29.48
Run #3	86.6	4.580	-0.074	29.45
Run #4	61.7	-3.252	0.038	29.54
Run #5	86.6	-4.536	0.061	29.50
AVERAGE C.G. HEIGHT				29.49

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.1620$$

Jeep Wagoneer RWD

YEAR: 2023 **DATE TESTED:** 9/26/2023
MAKE: Jeep **VIMF TEST NO.:** 8560
MODEL: Wagoneer
VIN: 1C4SJUDP7PS56#### **Mfg Date:** 06/23
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 3.0L I6 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: RWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Panoramic Sunroof, Roof Rails
FRONT TIRE TYPE: Pirelli Scorpion Verde All Season M+S
FRONT TIRE SIZE: 285/45R22 114H
FRONT TIRE PRESSURE: 40
REAR TIRE TYPE: Pirelli Scorpion Verde All Season M+S
REAR TIRE SIZE: 285/45R22 114H
REAR TIRE PRESSURE: 40

FRONT TRACK:	68.5	inches	Track Width Measurements
REAR TRACK:	68.8	inches	Front A 68.50 inches
AVERAGE TRACK:	68.6	inches	B 68.40 inches
WHEELBASE:	123.2	inches	C 68.40 inches
ROOF HEIGHT:	75.3	inches	D 68.50 inches
			Rear E 68.70 inches
GVWR	7200	lb	F 68.80 inches
FRONT GAWR	3900	lb	G 68.70 inches
REAR GAWR	4530	lb	H 68.80 inches
LEFT FRONT WEIGHT	1598.4	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1482.5	lb	Left Side 123.20 inches
LEFT REAR WEIGHT	1569.9	lb	Right Side 123.20 inches
RIGHT REAR WEIGHT	1427.0	lb	
TOTAL WEIGHT	6077.8	lb	
C.G. LONGITUDINAL	60.75	inches (From Front Axle)	
C.G. LATERAL	-1.46	inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	56.7	3.121	-0.034	30.11
Run #3	76.7	4.181	-0.050	30.04
Run #4	56.7	-3.091	0.025	30.19
Run #5	76.7	-4.162	0.040	30.16
AVERAGE C.G. HEIGHT				30.12

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.1386$$

Jeep Wrangler Unlimited PHEV AWD

YEAR: 2023 **DATE TESTED:** 2/2/2023
MAKE: Jeep **VIMF TEST NO.:** 8354
MODEL: Wrangler Unlimited PHEV
VIN: 1C4JJXP65PW55#### **Mfg Date:** 11/22
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.0L I4 Turbo Hybrid
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: 3 Piece Hard Top, Side Steps
FRONT TIRE TYPE: Bridgestone Dueler H/L Alenza M+S
FRONT TIRE SIZE: 275/55R20 113T
FRONT TIRE PRESSURE: 36
REAR TIRE TYPE: Bridgestone Dueler H/L Alenza M+S
REAR TIRE SIZE: 275/55R20 113T
REAR TIRE PRESSURE: 36

FRONT TRACK:	64.6	inches	Track Width Measurements	
REAR TRACK:	64.6	inches	Front A	64.60 inches
AVERAGE TRACK:	64.6	inches	B	64.60 inches
WHEELBASE:	118.3	inches	C	64.60 inches
ROOF HEIGHT:	68.0	inches	D	64.60 inches
			Rear E	64.60 inches
GVWR	6200	lb	F	64.60 inches
FRONT GAWR	3100	lb	G	64.60 inches
REAR GAWR	3550	lb	H	64.60 inches
LEFT FRONT WEIGHT	1324.5	lb	Wheelbase Measurements	
RIGHT FRONT WEIGHT	1330.7	lb	Left Side	118.30 inches
LEFT REAR WEIGHT	1323.4	lb	Right Side	118.30 inches
RIGHT REAR WEIGHT	1311.1	lb		
TOTAL WEIGHT	5289.7	lb		
C.G. LONGITUDINAL	58.92	inches (From Front Axle)		
C.G. LATERAL	-0.04	inches (Negative Towards Driver's Side)		

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	26.8	3.193	-0.023	27.88
Run #3	36.8	4.394	-0.034	27.95
Run #4	26.8	-3.078	0.011	27.78
Run #5	36.8	-4.268	0.020	27.87
AVERAGE C.G. HEIGHT				27.87

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.1590$$

Kia EV6 AWD

YEAR: 2023 **DATE TESTED:** 10/11/2023
MAKE: Kia **VIMF TEST NO.:** 8573
MODEL: EV6
VIN: KNDC3DLC5P515#### **Mfg Date:** 05/23
TYPE: Sedan **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: Electric
TRANSMISSION TYPE: Auto
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Sunroof
FRONT TIRE TYPE: Continental Cross Contact RX M+S
FRONT TIRE SIZE: 255/45R20 105H
FRONT TIRE PRESSURE: 36
REAR TIRE TYPE: Continental Cross Contact RX M+S
REAR TIRE SIZE: 255/45R20 105H
REAR TIRE PRESSURE: 36

FRONT TRACK:	63.9	inches	Track Width Measurements
REAR TRACK:	64.2	inches	Front A 63.90 inches
AVERAGE TRACK:	64.0	inches	B 63.90 inches
WHEELBASE:	114.4	inches	C 63.90 inches
ROOF HEIGHT:	61.1	inches	D 63.90 inches
			Rear E 64.10 inches
GVWR	5556	lb	F 64.25 inches
FRONT GAWR	2822	lb	G 64.10 inches
REAR GAWR	3064	lb	H 64.25 inches

LEFT FRONT WEIGHT	1219.5	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1149.2	lb	Left Side 114.40 inches
LEFT REAR WEIGHT	1247.9	lb	Right Side 114.40 inches
RIGHT REAR WEIGHT	1206.7	lb	
TOTAL WEIGHT	4823.3	lb	

C.G. LONGITUDINAL 58.22 inches (From Front Axle)
C.G. LATERAL -0.74 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	46.7	3.156	-0.019	20.41
Run #3	61.8	4.149	-0.027	20.40
Run #4	46.7	-3.144	0.017	20.43
Run #5	61.8	-4.149	0.026	20.47
AVERAGE C.G. HEIGHT				20.43

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.5674$$

Kia EV6 RWD

YEAR: 2023 **DATE TESTED:** 9/26/2023
MAKE: Kia **VIMF TEST NO.:** 8562
MODEL: EV6
VIN: KNDC44LA0P510#### **Mfg Date:** 12/22
TYPE: Sedan **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: Electric
TRANSMISSION TYPE: Auto
DRIVE: RWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Sunroof
FRONT TIRE TYPE: Kumho Crugen HP71 EV M+S
FRONT TIRE SIZE: 235/55R19 101H
FRONT TIRE PRESSURE: 36
REAR TIRE TYPE: Kumho Crugen HP71 EV M+S
REAR TIRE SIZE: 235/55R19 101H
REAR TIRE PRESSURE: 36

FRONT TRACK:	64.2	inches	Track Width Measurements
REAR TRACK:	64.4	inches	Front A 64.20 inches
AVERAGE TRACK:	64.3	inches	B 64.20 inches
WHEELBASE:	114.4	inches	C 64.10 inches
ROOF HEIGHT:	60.3	inches	D 64.20 inches
			Rear E 64.35 inches
GVWR	5335	lb	F 64.40 inches
FRONT GAWR	2822	lb	G 64.35 inches
REAR GAWR	3064	lb	H 64.40 inches

LEFT FRONT WEIGHT	1080.9	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1025.3	lb	Left Side 114.40 inches
LEFT REAR WEIGHT	1250.1	lb	Right Side 114.40 inches
RIGHT REAR WEIGHT	1188.7	lb	
TOTAL WEIGHT	4545.0	lb	

C.G. LONGITUDINAL 61.39 inches (From Front Axle)
C.G. LATERAL -0.83 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.7	2.916	-0.031	20.45
Run #3	56.7	3.956	-0.046	20.47
Run #4	51.7	-3.570	0.027	20.51
Run #5	66.7	-4.594	0.039	20.52
AVERAGE C.G. HEIGHT				20.49

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.5686$$

Kia Niro FWD

YEAR: 2023	DATE TESTED: 5/10/2023
MAKE: Kia	VIMF TEST NO.: 8433
MODEL: Niro	
VIN: KNDCP3LE2P508####	Mfg Date: 2/23
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 1.6L I4 Hybrid	
TRANSMISSION TYPE: 6AT	
DRIVE: FWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT:	
FRONT TIRE TYPE: Nexen NPriz S M+S	
FRONT TIRE SIZE: 205/60R16 92H	
FRONT TIRE PRESSURE: 36	
REAR TIRE TYPE: Nexen NPriz S M+S	
REAR TIRE SIZE: 205/60R16 92H	
REAR TIRE PRESSURE: 36	

FRONT TRACK: 62.4 inches	Track Width Measurements
REAR TRACK: 63.1 inches	Front A 62.40 inches
AVERAGE TRACK: 62.7 inches	B 62.40 inches
WHEELBASE: 107.2 inches	C 62.40 inches
ROOF HEIGHT: 60.6 inches	D 62.40 inches
	Rear E 62.95 inches
GVWR 4211 lb	F 63.15 inches
FRONT GAWR 2348 lb	G 62.95 inches
REAR GAWR 2315 lb	H 63.15 inches

LEFT FRONT WEIGHT 1020.3 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 945.9 lb	Left Side 107.20 inches
LEFT REAR WEIGHT 663.9 lb	Right Side 107.20 inches
RIGHT REAR WEIGHT 624.5 lb	
TOTAL WEIGHT 3254.6 lb	

C.G. LONGITUDINAL 42.44 inches (From Front Axle)
C.G. LATERAL -1.09 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.056	-0.013	22.85
Run #3	51.8	4.277	-0.019	22.86
Run #4	36.8	-3.037	0.011	22.86
Run #5	51.8	-4.262	0.017	22.91
AVERAGE C.G. HEIGHT				22.87

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.3713$$

Kia Sportage AWD

YEAR: 2023
MAKE: Kia
MODEL: Sportage
VIN: KNDPUCAF5P720####
TYPE: SUV
LOAD: Driver
ENGINE SIZE AND TYPE: 2.5L I4
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:

DATE TESTED: 8/29/2023
VIMF TEST NO.: 8526

Mfg Date: 06/23

Ride Height: N/A

FRONT TIRE TYPE: Hankook Dynapro HP2 M+S
FRONT TIRE SIZE: 235/65R17 104H
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Hankook Dynapro HP2 M+S
REAR TIRE SIZE: 235/65R17 104H
REAR TIRE PRESSURE: 35

FRONT TRACK: 63.7 inches
REAR TRACK: 64.1 inches
AVERAGE TRACK: 63.9 inches
WHEELBASE: 108.6 inches
ROOF HEIGHT: 65.4 inches

Track Width Measurements

Location	Measurement	Value	Unit
Front	A	63.70	inches
	B	63.60	inches
	C	63.60	inches
	D	63.70	inches
Rear	E	63.95	inches
	F	64.20	inches
	G	63.95	inches
	H	64.20	inches

GVWR 4850 lb
FRONT GAWR 2777 lb
REAR GAWR 2645 lb

LEFT FRONT WEIGHT 1126.9 lb
RIGHT FRONT WEIGHT 1035.4 lb
LEFT REAR WEIGHT 799.3 lb
RIGHT REAR WEIGHT 764.6 lb
TOTAL WEIGHT 3726.2 lb

Wheelbase Measurements

Side	Measurement	Value	Unit
Left Side	Wheelbase	108.60	inches
Right Side	Wheelbase	108.60	inches

C.G. LONGITUDINAL 45.58 inches (From Front Axle)
C.G. LATERAL -1.08 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.072	-0.015	25.95
Run #3	41.8	4.019	-0.022	25.94
Run #4	31.8	-3.069	0.013	26.02
Run #5	41.8	-4.017	0.019	26.02

AVERAGE C.G. HEIGHT 25.98

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2290

Lexus GX 460 AWD

YEAR: 2023	DATE TESTED: 2/10/2023
MAKE: Lexus	VIMF TEST NO.: 8369
MODEL: GX460	
VIN: JTJAM7BX7P534####	Mfg Date: 12/22
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 4.6L V8	
TRANSMISSION TYPE: 6AT	
DRIVE: AWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT: Roof Rails	
FRONT TIRE TYPE: Bridgestone Dueler HT	
FRONT TIRE SIZE: 265/60R18 109H	
FRONT TIRE PRESSURE: 32	
REAR TIRE TYPE: Bridgestone Dueler HT	
REAR TIRE SIZE: 265/60R18 109H	
REAR TIRE PRESSURE: 32	
FRONT TRACK: 62.6 inches	Track Width Measurements
REAR TRACK: 62.6 inches	Front A 62.65 inches
AVERAGE TRACK: 62.6 inches	B 62.55 inches
WHEELBASE: 109.9 inches	C 62.55 inches
ROOF HEIGHT: 72.4 inches	D 62.65 inches
	Rear E 62.55 inches
GVWR 6600 lb	F 62.55 inches
FRONT GAWR 3200 lb	G 62.55 inches
REAR GAWR 3800 lb	H 62.55 inches
LEFT FRONT WEIGHT 1464.3 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1345.2 lb	Left Side 109.90 inches
LEFT REAR WEIGHT 1343.1 lb	Right Side 109.90 inches
RIGHT REAR WEIGHT 1234.8 lb	
TOTAL WEIGHT 5387.4 lb	
C.G. LONGITUDINAL 52.59 inches (From Front Axle)	
C.G. LATERAL -1.32 inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	26.8	3.329	-0.026	28.17
Run #3	36.8	4.554	-0.039	28.17
Run #4	26.8	-3.364	0.028	28.27
Run #5	36.8	-4.629	0.045	28.27
AVERAGE C.G. HEIGHT				28.22

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h \quad \boxed{1.1087}$$

Lexus RX 350 AWD

YEAR: 2023 **DATE TESTED:** 9/13/2023
MAKE: Lexus **VIMF TEST NO.:** 8538
MODEL: RX 350
VIN: 2T2BAMCA7PC03#### **Mfg Date:** 08/23
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.4L I4 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Roof Rails, Sunroof
FRONT TIRE TYPE: Goodyear Eagle Touring M+S
FRONT TIRE SIZE: 235/50R21 101V
FRONT TIRE PRESSURE: 33
REAR TIRE TYPE: Goodyear Eagle Touring M+S
REAR TIRE SIZE: 235/50R21 101V
REAR TIRE PRESSURE: 33
FRONT TRACK: 65.0 inches
REAR TRACK: 65.7 inches
AVERAGE TRACK: 65.3 inches
WHEELBASE: 112.1 inches
ROOF HEIGHT: 66.0 inches
GVWR: 5620 lb
FRONT GAWR: 3085 lb
REAR GAWR: 3260 lb
LEFT FRONT WEIGHT: 1360.3 lb
RIGHT FRONT WEIGHT: 1242.9 lb
LEFT REAR WEIGHT: 974.3 lb
RIGHT REAR WEIGHT: 929.3 lb
TOTAL WEIGHT: 4506.8 lb
C.G. LONGITUDINAL: 47.34 inches (From Front Axle)
C.G. LATERAL: -1.17 inches (Negative Towards Driver's Side)

Track Width Measurements

Front A	65.00	inches
B	65.00	inches
C	65.00	inches
D	65.00	inches
Rear E	65.65	inches
F	65.65	inches
G	65.65	inches
H	65.65	inches

Wheelbase Measurements

Left Side	112.05	inches
Right Side	112.10	inches

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.553	-0.023	25.85
Run #3	46.7	4.513	-0.035	25.85
Run #4	36.8	-3.542	0.020	25.90
Run #5	46.7	-4.490	0.030	25.89

AVERAGE C.G. HEIGHT 25.87

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.2624

Lexus RX 350 FWD

YEAR: 2023	DATE TESTED: 9/19/2023
MAKE: Lexus	VIMF TEST NO.: 8549
MODEL: RX 350	
VIN: 2T2BAMBA0PC02####	Mfg Date: 08/23
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 2.4L I4 Turbo	
TRANSMISSION TYPE: 8AT	
DRIVE: FWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT: Panoramic Sunroof, Roof Rails	
FRONT TIRE TYPE: Bridgestone Alenza Sport A/S M+S	
FRONT TIRE SIZE: 235/50R21 101V	
FRONT TIRE PRESSURE: 33	
REAR TIRE TYPE: Bridgestone Alenza Sport A/S M+S	
REAR TIRE SIZE: 235/50R21 101V	
REAR TIRE PRESSURE: 33	

FRONT TRACK: 65.2 inches	Track Width Measurements
REAR TRACK: 65.7 inches	Front A 65.20 inches
AVERAGE TRACK: 65.4 inches	B 65.20 inches
WHEELBASE: 112.1 inches	C 65.20 inches
ROOF HEIGHT: 66.6 inches	D 65.20 inches
	Rear E 65.60 inches
GVWR 5465 lb	F 65.70 inches
FRONT GAWR 3085 lb	G 65.60 inches
REAR GAWR 3260 lb	H 65.70 inches

LEFT FRONT WEIGHT 1351.5 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1242.8 lb	Left Side 112.10 inches
LEFT REAR WEIGHT 930.0 lb	Right Side 112.10 inches
RIGHT REAR WEIGHT 899.1 lb	
TOTAL WEIGHT 4423.4 lb	

C.G. LONGITUDINAL 46.35 inches (From Front Axle)
C.G. LATERAL -1.03 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.248	-0.021	26.56
Run #3	41.8	4.250	-0.030	26.55
Run #4	31.8	-3.256	0.021	26.64
Run #5	41.8	-4.251	0.029	26.62
AVERAGE C.G. HEIGHT				26.59

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = \mathbf{1.2302}$$

Lexus RZ 450e AWD

YEAR: 2023	DATE TESTED: 9/19/2023
MAKE: Lexus	VIMF TEST NO.: 8552
MODEL: RZ450e	
VIN: JTJAAAAB1PA01####	Mfg Date: 06/23
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: Electric	
TRANSMISSION TYPE: Auto	
DRIVE: AWD	
DOORS: 4	
FUEL: Electric	
OPTIONAL EQUIPMENT: Panoramic Sunroof	
FRONT TIRE TYPE: Dunlop Sportmaxx 060 Extra Load	
FRONT TIRE SIZE: 235/50R20 104V	
FRONT TIRE PRESSURE: 38	
REAR TIRE TYPE: Dunlop Sportmaxx 060 Extra Load	
REAR TIRE SIZE: 255/45R20 105W	
REAR TIRE PRESSURE: 35	
FRONT TRACK: 63.5 inches	Track Width Measurements
REAR TRACK: 63.7 inches	Front A 63.50 inches
AVERAGE TRACK: 63.6 inches	B 63.50 inches
WHEELBASE: 112.3 inches	C 63.55 inches
ROOF HEIGHT: 63.1 inches	D 63.55 inches
	Rear E 63.65 inches
GVWR 5820 lb	F 63.65 inches
FRONT GAWR 3040 lb	G 63.65 inches
REAR GAWR 3195 lb	H 63.65 inches
LEFT FRONT WEIGHT 1333.3 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1266.4 lb	Left Side 112.30 inches
LEFT REAR WEIGHT 1106.3 lb	Right Side 112.30 inches
RIGHT REAR WEIGHT 1116.2 lb	
TOTAL WEIGHT 4822.2 lb	
C.G. LONGITUDINAL 51.76 inches (From Front Axle)	
C.G. LATERAL -0.38 inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.8	3.195	-0.037	22.23
Run #3	56.8	4.328	-0.056	22.21
Run #4	41.8	-3.190	0.037	22.26
Run #5	56.8	-4.327	0.055	22.27
AVERAGE C.G. HEIGHT				22.24

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.4293$$

Mazda CX-50 AWD

YEAR: 2023 **DATE TESTED:** 3/23/2023
MAKE: Mazda **VIMF TEST NO.:** 8392
MODEL: CX-50
VIN: 7MMVABCM7PN13#### **Mfg Date:** 01/23
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.5L I4
TRANSMISSION TYPE: 6AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Panoramic Sunroof, Roof Rack
FRONT TIRE TYPE: Goodyear Assurance Finesse M+S
FRONT TIRE SIZE: 225/65R17 102H
FRONT TIRE PRESSURE: 36
REAR TIRE TYPE: Goodyear Assurance Finesse M+S
REAR TIRE SIZE: 225/65R17 102H
REAR TIRE PRESSURE: 36

FRONT TRACK:	65.2	inches	Track Width Measurements	
REAR TRACK:	65.1	inches	Front A	65.25 inches
AVERAGE TRACK:	65.1	inches	B	65.15 inches
WHEELBASE:	111.0	inches	C	65.10 inches
ROOF HEIGHT:	63.4	inches	D	65.15 inches
			Rear E	65.00 inches
GVWR	4848	lb	F	65.10 inches
FRONT GAWR	2498	lb	G	65.00 inches
REAR GAWR	2379	lb	H	65.10 inches

LEFT FRONT WEIGHT	1137.3	lb	Wheelbase Measurements	
RIGHT FRONT WEIGHT	1076.8	lb	Left Side	111.00 inches
LEFT REAR WEIGHT	828.1	lb	Right Side	111.00 inches
RIGHT REAR WEIGHT	778.3	lb		
TOTAL WEIGHT	3820.5	lb		

C.G. LONGITUDINAL 46.67 inches (From Front Axle)
C.G. LATERAL -0.94 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	3.539	-0.017	25.90
Run #3	46.7	4.478	-0.023	25.89
Run #4	36.8	-3.517	0.014	25.94
Run #5	46.7	-4.456	0.019	25.95
AVERAGE C.G. HEIGHT				25.92

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.2560$$

Mini Cooper S Countryman AWD

YEAR: 2023
MAKE: Mini
MODEL: Cooper S Countryman
VIN: WMZ83BR00P3R0####
TYPE: SUV
LOAD: Driver
ENGINE SIZE AND TYPE: 2.0L I4 Turbo
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Roof Rails

DATE TESTED: 2/9/2023
VIMF TEST NO.: 8365

Mfg Date: 12/22

Ride Height: N/A

FRONT TIRE TYPE: Pirelli Cinturato P7 M+S
FRONT TIRE SIZE: 225/50R18 95V
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Pirelli Cinturato P7 M+S
REAR TIRE SIZE: 225/50R18 95V
REAR TIRE PRESSURE: 35

FRONT TRACK: 61.8 inches
REAR TRACK: 61.5 inches
AVERAGE TRACK: 61.6 inches
WHEELBASE: 105.2 inches
ROOF HEIGHT: 63.2 inches

Track Width Measurements

Front A 61.80 inches
B 61.70 inches
C 61.70 inches
D 61.80 inches
Rear E 61.30 inches
F 61.60 inches
G 61.35 inches
H 61.60 inches

GVWR 4696 lb
FRONT GAWR 2469 lb
REAR GAWR 2337 lb

LEFT FRONT WEIGHT 1113.8 lb
RIGHT FRONT WEIGHT 1097.1 lb
LEFT REAR WEIGHT 877.8 lb
RIGHT REAR WEIGHT 803.5 lb
TOTAL WEIGHT 3892.2 lb

Wheelbase Measurements

Left Side 105.20 inches
Right Side 105.20 inches

C.G. LONGITUDINAL 45.44 inches (From Front Axle)
C.G. LATERAL -0.72 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.9	3.128	-0.019	23.61
Run #3	56.8	4.781	-0.032	23.60
Run #4	36.9	-3.100	0.009	23.71
Run #5	56.8	-4.751	0.020	23.70

AVERAGE C.G. HEIGHT 23.65

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.3023

Mitsubishi Outlander AWD

YEAR: 2023 **DATE TESTED:** 5/17/2023
MAKE: Mitsubishi **VIMF TEST NO.:** 8451
MODEL: Outlander
VIN: JA4J4UA85PZ04#### **Mfg Date:** 03/23
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.5L I4
TRANSMISSION TYPE: 8AT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT:
FRONT TIRE TYPE: Bridgestone Ecopia H/L 422 Plus M+S
FRONT TIRE SIZE: P255/45R20 101W
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Bridgestone Ecopia H/L 422 Plus M+S
REAR TIRE SIZE: P255/45R20 101W
REAR TIRE PRESSURE: 35

FRONT TRACK:	62.8	inches	Track Width Measurements
REAR TRACK:	63.0	inches	Front A 62.80 inches
AVERAGE TRACK:	62.9	inches	B 62.80 inches
WHEELBASE:	106.6	inches	C 62.80 inches
ROOF HEIGHT:	66.5	inches	D 62.80 inches
			Rear E 62.95 inches
GVWR	5192	lb	F 63.00 inches
FRONT GAWR	2668	lb	G 62.95 inches
REAR GAWR	3009	lb	H 63.00 inches

LEFT FRONT WEIGHT	1156.8	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1108.8	lb	Left Side 106.60 inches
LEFT REAR WEIGHT	883.2	lb	Right Side 106.60 inches
RIGHT REAR WEIGHT	826.2	lb	
TOTAL WEIGHT	3975.0	lb	

C.G. LONGITUDINAL 45.84 inches (From Front Axle)
C.G. LATERAL -0.83 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.091	-0.018	25.94
Run #3	41.8	4.054	-0.026	25.96
Run #4	31.8	-3.082	0.016	25.97
Run #5	41.8	-4.043	0.025	25.99
AVERAGE C.G. HEIGHT				25.96

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.2110$$

Mitsubishi Outlander FWD

YEAR: 2023	DATE TESTED: 5/17/2023
MAKE: Mitsubishi	VIMF TEST NO.: 8449
MODEL: Outlander	
VIN: JA4J3VA81PZ04####	Mfg Date: 03/23
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 2.5L I4	
TRANSMISSION TYPE: 8AT	
DRIVE: FWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT: Panoramic Sunroof	
FRONT TIRE TYPE: Nexen Roadian GTX M+S	
FRONT TIRE SIZE: P255/45R20 101W	
FRONT TIRE PRESSURE: 35	
REAR TIRE TYPE: Nexen Roadian GTX M+S	
REAR TIRE SIZE: P255/45R20 101W	
REAR TIRE PRESSURE: 35	
FRONT TRACK: 62.7 inches	Track Width Measurements
REAR TRACK: 63.0 inches	Front A 62.70 inches
AVERAGE TRACK: 62.8 inches	B 62.60 inches
WHEELBASE: 106.6 inches	C 62.60 inches
ROOF HEIGHT: 66.5 inches	D 62.70 inches
	Rear E 62.90 inches
GVWR 5192 lb	F 63.00 inches
FRONT GAWR 2668 lb	G 62.90 inches
REAR GAWR 3009 lb	H 63.00 inches
LEFT FRONT WEIGHT 1154.6 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1081.1 lb	Left Side 106.60 inches
LEFT REAR WEIGHT 862.9 lb	Right Side 106.60 inches
RIGHT REAR WEIGHT 824.1 lb	
TOTAL WEIGHT 3922.7 lb	
C.G. LONGITUDINAL 45.84 inches (From Front Axle)	
C.G. LATERAL -0.90 inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	31.8	3.233	-0.020	26.59
Run #3	41.8	4.237	-0.029	26.61
Run #4	31.8	-3.235	0.020	26.66
Run #5	41.8	-4.249	0.032	26.67
AVERAGE C.G. HEIGHT				26.63

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.1791$$

Nissan Ariya AWD

YEAR: 2023
MAKE: Nissan
MODEL: Ariya
VIN: JN1DF0BB8PM70####
DATE TESTED: 9/22/2023
VIMF TEST NO.: 8555
Mfg Date: 03/23
TYPE: SUV
LOAD: Driver
ENGINE SIZE AND TYPE: Electric
TRANSMISSION TYPE: Auto
DRIVE: AWD
DOORS: 4
FUEL: Electric
OPTIONAL EQUIPMENT: Panoramic Sunroof
FRONT TIRE TYPE: Dunlop Grand Trek PT21 M+S
FRONT TIRE SIZE: 235/55R19 101V
FRONT TIRE PRESSURE: 41
REAR TIRE TYPE: Dunlop Grand Trek PT21 M+S
REAR TIRE SIZE: 235/55R19 101V
REAR TIRE PRESSURE: 41

FRONT TRACK:	64.5	inches	Track Width Measurements
REAR TRACK:	64.3	inches	Front A 64.45 inches
AVERAGE TRACK:	64.4	inches	B 64.45 inches
WHEELBASE:	109.5	inches	C 64.45 inches
ROOF HEIGHT:	63.9	inches	D 64.45 inches
			Rear E 64.30 inches
GVWR	5930	lb	F 64.30 inches
FRONT GAWR	2778	lb	G 64.30 inches
REAR GAWR	3175	lb	H 64.30 inches
LEFT FRONT WEIGHT	1319.8	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1282.8	lb	Left Side 109.45 inches
LEFT REAR WEIGHT	1281.6	lb	Right Side 109.45 inches
RIGHT REAR WEIGHT	1265.7	lb	
TOTAL WEIGHT	5149.9	lb	
C.G. LONGITUDINAL	54.14	inches (From Front Axle)	
C.G. LATERAL	-0.33	inches (Negative Towards Driver's Side)	

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.8	3.063	-0.026	21.99
Run #3	56.8	4.153	-0.037	22.02
Run #4	41.8	-3.055	0.019	22.16
Run #5	56.8	-4.148	0.032	22.14
AVERAGE C.G. HEIGHT				22.08

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.4580

Nissan Ariya FWD

YEAR: 2023	DATE TESTED: 4/6/2023
MAKE: Nissan	VIMF TEST NO.: 8408
MODEL: Ariya	
VIN: JN1BF0BAXPM40####	Mfg Date: 11/22
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: Electric	
TRANSMISSION TYPE: Auto	
DRIVE: FWD	
DOORS: 4	
FUEL: Electric	
OPTIONAL EQUIPMENT: Sunroof	
FRONT TIRE TYPE: Dunlop Grand Trek PT21	
FRONT TIRE SIZE: 235/55R19 101V	
FRONT TIRE PRESSURE: 41	
REAR TIRE TYPE: Dunlop Grand Trek PT21	
REAR TIRE SIZE: 235/55R19 101V	
REAR TIRE PRESSURE: 41	

FRONT TRACK: 64.4 inches	Track Width Measurements
REAR TRACK: 64.3 inches	Front A 64.40 inches
AVERAGE TRACK: 64.4 inches	B 64.40 inches
WHEELBASE: 109.4 inches	C 64.40 inches
ROOF HEIGHT: 64.1 inches	D 64.40 inches
	Rear E 64.25 inches
GVWR 5644 lb	F 64.35 inches
FRONT GAWR 2767 lb	G 64.25 inches
REAR GAWR 2888 lb	H 64.35 inches

LEFT FRONT WEIGHT 1337.6 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1285.5 lb	Left Side 109.40 inches
LEFT REAR WEIGHT 1148.6 lb	Right Side 109.40 inches
RIGHT REAR WEIGHT 1140.4 lb	
TOTAL WEIGHT 4912.1 lb	

C.G. LONGITUDINAL 50.98 inches (From Front Axle)
C.G. LATERAL -0.40 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.8	3.216	-0.023	22.54
Run #3	56.8	4.351	-0.034	22.55
Run #4	41.8	-3.199	0.019	22.60
Run #5	56.8	-4.345	0.029	22.66

AVERAGE C.G. HEIGHT 22.59

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.4245

Rivian R1S AWD

YEAR: 2023 **DATE TESTED:** 3/27/2023
MAKE: Rivian **VIMF TEST NO.:** 8398
MODEL: R1S
VIN: 7PDSGABL5PN00#### **Mfg Date:** 12/22
TYPE: SUV **Ride Height:** Standard
LOAD: Driver
ENGINE SIZE AND TYPE: Electric
TRANSMISSION TYPE: Auto
DRIVE: AWD
DOORS: 4
FUEL: Electric
OPTIONAL EQUIPMENT: Panoramic Sunroof
FRONT TIRE TYPE: Pirelli Scorpion Zero All Season M+S
FRONT TIRE SIZE: HL275/50R22 116H
FRONT TIRE PRESSURE: 48
REAR TIRE TYPE: Pirelli Scorpion Zero All Season M+S
REAR TIRE SIZE: HL275/50R22 116H
REAR TIRE PRESSURE: 48

FRONT TRACK:	68.4	inches	Track Width Measurements	
REAR TRACK:	69.2	inches	Front A	68.50 inches
AVERAGE TRACK:	68.8	inches	B	68.30 inches
WHEELBASE:	121.6	inches	C	68.30 inches
ROOF HEIGHT:	69.3	inches	D	68.50 inches
			Rear E	69.10 inches
GVWR	8532	lb	F	69.20 inches
FRONT GAWR	4134	lb	G	69.10 inches
REAR GAWR	4960	lb	H	69.20 inches
LEFT FRONT WEIGHT	1739.0	lb	Wheelbase Measurements	
RIGHT FRONT WEIGHT	1696.2	lb	Left Side	121.55 inches
LEFT REAR WEIGHT	1825.6	lb	Right Side	121.65 inches
RIGHT REAR WEIGHT	1766.9	lb		
TOTAL WEIGHT	7027.7	lb		
C.G. LONGITUDINAL	62.16	inches (From Front Axle)		
C.G. LATERAL	-0.50	inches (Negative Towards Driver's Side)		

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	71.6	2.983	-0.050	25.60
Run #3	96.5	4.005	-0.074	25.58
Run #4	71.6	-2.964	0.039	25.73
Run #5	96.5	-4.001	0.068	25.68
AVERAGE C.G. HEIGHT				25.65

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.3408$$

Subaru Solterra AWD

YEAR: 2023 **DATE TESTED:** 4/10/2023
MAKE: Subaru **VIMF TEST NO.:** 8410
MODEL: Solterra
VIN: JTMABABA7PA00#### **Mfg Date:** 10/22
TYPE: SUV **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: Electric
TRANSMISSION TYPE: Auto
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Sunroof
FRONT TIRE TYPE: Bridgestone Turanza EL450 M+S
FRONT TIRE SIZE: 235/50R20 100V
FRONT TIRE PRESSURE: 38
REAR TIRE TYPE: Bridgestone Turanza EL450 M+S
REAR TIRE SIZE: 235/50R20 100V
REAR TIRE PRESSURE: 38
FRONT TRACK: 62.9 inches
REAR TRACK: 63.2 inches
AVERAGE TRACK: 63.1 inches
WHEELBASE: 112.3 inches
ROOF HEIGHT: 63.0 inches
GVWR: 5620 lb
FRONT GAWR: 2985 lb
REAR GAWR: 3085 lb
LEFT FRONT WEIGHT: 1260.5 lb
RIGHT FRONT WEIGHT: 1234.7 lb
LEFT REAR WEIGHT: 1097.5 lb
RIGHT REAR WEIGHT: 1028.9 lb
TOTAL WEIGHT: 4621.6 lb
C.G. LONGITUDINAL: 51.65 inches (From Front Axle)
C.G. LATERAL: -0.64 inches (Negative Towards Driver's Side)

Track Width Measurements

Front A	63.00	inches
B	62.85	inches
C	62.85	inches
D	63.00	inches
Rear E	63.15	inches
F	63.25	inches
G	63.15	inches
H	63.25	inches

Wheelbase Measurements

Left Side	112.30	inches
Right Side	112.20	inches

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.7	3.319	-0.035	22.79
Run #3	56.7	4.493	-0.051	22.79
Run #4	41.7	-3.294	0.028	22.82
Run #5	56.7	-4.470	0.043	22.85

AVERAGE C.G. HEIGHT 22.81

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.3823

Toyota bZ4X FWD

YEAR: 2023	DATE TESTED: 12/15/2022
MAKE: Toyota	VIMF TEST NO.: 8325
MODEL: bZ4X	
VIN: JTMAAAA7PA00####	Mfg Date: 04/22
TYPE: SUV	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: Electric	
TRANSMISSION TYPE: Auto	
DRIVE: FWD	
DOORS: 4	
FUEL: Electric	
OPTIONAL EQUIPMENT: Panoramic Sunroof	
FRONT TIRE TYPE: Bridgestone Turanza EL450 M+S0	
FRONT TIRE SIZE: 235/60R18 103V	
FRONT TIRE PRESSURE: 38	
REAR TIRE TYPE: Bridgestone Turanza EL450 M+S0	
REAR TIRE SIZE: 235/60R18 103V	
REAR TIRE PRESSURE: 38	

FRONT TRACK: 62.9 inches	Track Width Measurements
REAR TRACK: 63.2 inches	Front A 62.90 inches
AVERAGE TRACK: 63.0 inches	B 62.80 inches
WHEELBASE: 112.5 inches	C 62.80 inches
ROOF HEIGHT: 62.6 inches	D 62.90 inches
	Rear E 63.25 inches
GVWR 5435 lb	F 63.15 inches
FRONT GAWR 2985 lb	G 63.25 inches
REAR GAWR 2985 lb	H 63.15 inches

LEFT FRONT WEIGHT 1268.8 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1221.3 lb	Left Side 112.50 inches
LEFT REAR WEIGHT 977.1 lb	Right Side 112.50 inches
RIGHT REAR WEIGHT 934.6 lb	
TOTAL WEIGHT 4401.8 lb	

C.G. LONGITUDINAL 48.86 inches (From Front Axle)
C.G. LATERAL -0.64 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.7	3.278	-0.021	22.74
Run #3	56.7	4.423	-0.029	22.72
Run #4	41.7	-3.245	0.012	22.79
Run #5	56.7	-4.399	0.020	22.81
AVERAGE C.G. HEIGHT				22.76

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.3843$$

Toyota Crown AWD

YEAR: 2023 **DATE TESTED:** 9/19/2023
MAKE: Toyota **VIMF TEST NO.:** 8547
MODEL: Crown
VIN: JTDAAAFXP300#### **Mfg Date:** 05/23
TYPE: Sedan **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.5L I4 Hybrid
TRANSMISSION TYPE: CVT
DRIVE: AWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Panoramic Sunroof
FRONT TIRE TYPE: Bridgestone Ecopia H/L 422 Plus M+S
FRONT TIRE SIZE: 225/55R19 99V
FRONT TIRE PRESSURE: 30
REAR TIRE TYPE: Bridgestone Ecopia H/L 422 Plus M+S
REAR TIRE SIZE: 225/55R19 99V
REAR TIRE PRESSURE: 30

FRONT TRACK:	63.0	inches	Track Width Measurements
REAR TRACK:	63.4	inches	Front A 63.00 inches
AVERAGE TRACK:	63.2	inches	B 63.00 inches
WHEELBASE:	112.5	inches	C 63.00 inches
ROOF HEIGHT:	59.8	inches	D 63.00 inches
			Rear E 63.30 inches
GVWR	5020	lb	F 63.40 inches
FRONT GAWR	2755	lb	G 63.30 inches
REAR GAWR	2755	lb	H 63.40 inches

LEFT FRONT WEIGHT	1203.2	lb	Wheelbase Measurements
RIGHT FRONT WEIGHT	1145.5	lb	Left Side 112.50 inches
LEFT REAR WEIGHT	959.4	lb	Right Side 112.50 inches
RIGHT REAR WEIGHT	923.0	lb	
TOTAL WEIGHT	4231.1	lb	

C.G. LONGITUDINAL 50.05 inches (From Front Axle)
C.G. LATERAL -0.70 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	36.8	2.920	-0.016	22.69
Run #3	51.7	4.083	-0.024	22.69
Run #4	36.8	-2.911	0.014	22.76
Run #5	51.7	-4.085	0.021	22.80
AVERAGE C.G. HEIGHT				22.73

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.3895$$

Toyota Prius HEV FWD

YEAR: 2023 **DATE TESTED:** 3/17/2023
MAKE: Toyota **VIMF TEST NO.:** 8390
MODEL: Prius Hybrid
VIN: JTDACAAU7P300#### **Mfg Date:** 1/23
TYPE: Hatchback **Ride Height:** N/A
LOAD: Driver
ENGINE SIZE AND TYPE: 2.0L I4 Hybrid
TRANSMISSION TYPE: Auto
DRIVE: FWD
DOORS: 4
FUEL: Full
OPTIONAL EQUIPMENT: Glass Roof
FRONT TIRE TYPE: Toyo Extensa A/S II M+S
FRONT TIRE SIZE: 195/50R19 88H
FRONT TIRE PRESSURE: 35
REAR TIRE TYPE: Toyo Extensa A/S II M+S
REAR TIRE SIZE: 195/50R19 88H
REAR TIRE PRESSURE: 33

FRONT TRACK: 61.5 inches REAR TRACK: 61.9 inches AVERAGE TRACK: 61.7 inches WHEELBASE: 108.3 inches ROOF HEIGHT: 55.3 inches GVWR: 4145 lb FRONT GAWR: 2345 lb REAR GAWR: 2270 lb LEFT FRONT WEIGHT: 1050.9 lb RIGHT FRONT WEIGHT: 953.4 lb LEFT REAR WEIGHT: 704.3 lb RIGHT REAR WEIGHT: 663.8 lb TOTAL WEIGHT: 3372.4 lb C.G. LONGITUDINAL: 43.93 inches (From Front Axle) C.G. LATERAL: -1.26 inches (Negative Towards Driver's Side)	Track Width Measurements <table border="0"> <tr><td>Front A</td><td>61.50</td><td>inches</td></tr> <tr><td>B</td><td>61.55</td><td>inches</td></tr> <tr><td>C</td><td>61.55</td><td>inches</td></tr> <tr><td>D</td><td>61.50</td><td>inches</td></tr> <tr><td>Rear E</td><td>61.85</td><td>inches</td></tr> <tr><td>F</td><td>61.90</td><td>inches</td></tr> <tr><td>G</td><td>61.85</td><td>inches</td></tr> <tr><td>H</td><td>61.90</td><td>inches</td></tr> </table> Wheelbase Measurements <table border="0"> <tr><td>Left Side</td><td>108.30</td><td>inches</td></tr> <tr><td>Right Side</td><td>108.30</td><td>inches</td></tr> </table>	Front A	61.50	inches	B	61.55	inches	C	61.55	inches	D	61.50	inches	Rear E	61.85	inches	F	61.90	inches	G	61.85	inches	H	61.90	inches	Left Side	108.30	inches	Right Side	108.30	inches
Front A	61.50	inches																													
B	61.55	inches																													
C	61.55	inches																													
D	61.50	inches																													
Rear E	61.85	inches																													
F	61.90	inches																													
G	61.85	inches																													
H	61.90	inches																													
Left Side	108.30	inches																													
Right Side	108.30	inches																													

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	41.8	3.216	-0.015	21.32
Run #3	61.7	4.712	-0.024	21.30
Run #4	41.8	-3.203	0.010	21.41
Run #5	61.7	-4.692	0.018	21.39
AVERAGE C.G. HEIGHT				21.35

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

$$T/2h = 1.4447$$

Toyota Prius PHEV FWD

YEAR: 2023	DATE TESTED: 10/10/2023
MAKE: Toyota	VIMF TEST NO.: 8569
MODEL: Prius PHEV	
VIN: JTDACACU6P300####	Mfg Date: 07/23
TYPE: Hatchback	Ride Height: N/A
LOAD: Driver	
ENGINE SIZE AND TYPE: 2.0L I4 Hybrid	
TRANSMISSION TYPE: Auto	
DRIVE: FWD	
DOORS: 4	
FUEL: Full	
OPTIONAL EQUIPMENT: Sunroof	
FRONT TIRE TYPE: Toyo Extensa A/S M+S	
FRONT TIRE SIZE: 195/50R19 88H	
FRONT TIRE PRESSURE: 35	
REAR TIRE TYPE: Toyo Extensa A/S M+S	
REAR TIRE SIZE: 195/50R19 88H	
REAR TIRE PRESSURE: 33	

FRONT TRACK: 61.5 inches	Track Width Measurements
REAR TRACK: 61.9 inches	Front A 61.50 inches
AVERAGE TRACK: 61.7 inches	B 61.50 inches
WHEELBASE: 108.2 inches	C 61.50 inches
ROOF HEIGHT: 55.1 inches	D 61.50 inches
	Rear E 61.80 inches
GVWR 4475 lb	F 62.00 inches
FRONT GAWR 2345 lb	G 61.80 inches
REAR GAWR 2270 lb	H 62.00 inches

LEFT FRONT WEIGHT 1087.7 lb	Wheelbase Measurements
RIGHT FRONT WEIGHT 1006.4 lb	Left Side 108.20 inches
LEFT REAR WEIGHT 850.4 lb	Right Side 108.20 inches
RIGHT REAR WEIGHT 798.8 lb	
TOTAL WEIGHT 3743.3 lb	

C.G. LONGITUDINAL 47.67 inches (From Front Axle)
C.G. LATERAL -1.09 inches (Negative Towards Driver's Side)

VIMF C.G. HEIGHT MEASUREMENT RESULTS

	Applied Weight (lb)	Platform Angle (deg)	Relative Motion (inches)	C.G. Height (inches)
Run #1	0.0	0.000	0.000	0.00
Run #2	46.7	3.396	-0.019	20.56
Run #3	61.7	4.474	-0.028	20.59
Run #4	46.7	-3.374	0.011	20.63
Run #5	61.7	-4.441	0.019	20.64

AVERAGE C.G. HEIGHT 20.61

$$T/(2 \times H) = \text{AVERAGE TRACK}/(2 \times \text{AVERAGE C.G. HEIGHT})$$

T/2h 1.4972

Appendix D

Test Vehicle Photos



2023 Acura MDX AWD



2023 BMW X1 AWD



2023 Chevrolet Colorado 4WD



2023 Chevrolet Colorado RWD



2023 Genesis GV70 AWD



2023 Honda Accord FWD



2023 Honda CR-V AWD



2023 Honda HR-V FWD



2023 Honda Pilot AWD



2023 Honda Pilot FWD



2023 Hyundai Kona Electric FWD



2023 Hyundai Santa Cruz AWD



2023 Hyundai Santa Cruz FWD



2023 Jeep Grand Cherokee PHEV AWD



2023 Jeep Wagoneer AWD



2023 Jeep Wagoneer RWD



2023 Jeep Wrangler Unlimited PHEV AWD



2023 Kia EV6 AWD



2023 Kia EV6 RWD



2023 Kia Niro FWD



2023 Kia Sportage AWD



2023 Lexus GX 460 AWD



2023 Lexus RX 350 AWD



2023 Lexus RX 350 FWD



2023 Lexus RZ 450e AWD



2023 Mazda CX-50 AWD



2023 Mini Cooper S Countryman AWD



2023 Mitsubishi Outlander AWD



2023 Mitsubishi Outlander FWD



2023 Nissan Ariya AWD



2023 Nissan Ariya FWD



2023 Rivian R1S AWD



2023 Subaru Solterra AWD



2023 Toyota bZ4X FWD



2023 Toyota Crown AWD



2023 Toyota Prius HEV FWD



2023 Toyota Prius PHEV FWD