Canoo Technologies

Application for Certification – Part 1

2024 Model Year

EPA Manufacturer Code: CAN
Test Group: RCANJ.000LRD

Durability Group: N.A.
Evaporative Family: N.A.

Test Group Description:	Battery Electric Vehicle
Applicable Standards:	U.S. EPA: Tier 3 Bin 0 LDT3 CA: ZEV LDT2
Carlines Covered:	LDV 130 LDV 190
Document Date:	01/17/2024

For Questions, Contact:
Gordon Kaskin, gordon.kaskin@canoo.com
Jan Urbahn, jan.urbahn@canoo.com

– C A N O O –

CANOO.COM
19951 MARINER AVE.
TORRANCE, CA 90503

01/17/2024

Mr. David Wright
Vehicle Programs and Compliance Division
Environmental Protection Agency
2000 Traverwood,
Ann Arbor, MI 48105

Subject: MY 2024 Canoo Technologies Lifestyle Delivery Vehicle (LDV) Application for Issuance of Certificate of Conformity for Test Group RCANJ.000LRD

Attached to this request is the Part 1 Carryover Application. Canoo Technologies believes that all vehicles within this test group comply with all applicable regulations within the Code of Federal Regulations Title 40 Parts 85, 86, and 600.

Vehicle Category:	LDT3
Durability Group:	NA
Test Group:	RCANJ.000LRD
Summary Sheet No:	NA
Durability Group Description:	NA
Durability Vehicle:	NA
OBD Group:	NA
Test Group Description:	R = 2024 model year L = Lithium-Ion battery R = RWD Motor D = Delivery
Federal Standard: California Standard:	FEDERAL Tier 3 BIN 0 ZEV
Carlines Covered by this certificate:	Lifestyle Delivery Vehicle (LDV) 130 LDV 190

Your early review and issuance of the certificate is greatly appreciated. If you have any questions, please contact me at (262) 374-2073

Sincerely,

Gordon Kaskin
Senior Test Engineer

– C A N O O –

CANOO.COM
19951 MARINER AVE.
TORRANCE, CA 90503

01/17/2024

Mr. Matthew Choi
Emissions Certification and Compliance Division
California Air Resources Board
4001 Iowa Ave,
Riverside, CA 92507

Subject: MY 2024 Canoo Technologies Lifestyle Delivery Vehicle (LDV) Application for Issuance of Certificate of Conformity for Test Group RCANJ.000LRD

Attached to this request is the Part 1 Carryover Application. Canoo Technologies believes that all vehicles within this test group comply with all applicable regulations within the Code of Federal Regulations Title 40 Parts 85, 86, and 600.

Vehicle Category:	ZEV LDT2
Durability Group:	NA
Test Group:	RCANJ.000LRD
Summary Sheet No:	NA
Durability Group Description:	NA
Durability Vehicle:	NA
OBD Group:	NA
Test Group Description:	R = 2024 model year L = Lithium-Ion battery R = RWD Motor D = Delivery
Federal Standard:	FEDERAL Tier 3 BIN 0
California Standard:	ZEV
Carlines Covered by this certificate:	Lifestyle Delivery Vehicle (LDV) 130 LDV 190

Your early review and issuance of the certificate is greatly appreciated. If you have any questions, please contact me at (262) 374-2073

Sincerely,

Gordon Kaskin
Senior Test Engineer

Contents

01 COMMUNICATIONS

01.01 Mailing Information

Canoo Technologies
19951 Mariner Ave
Torrance, CA, US 90503

01.01.01 Certification Information

Canoo Technologies
19951 Mariner Ave
Torrance, CA, US 90503

01.01.02 Responsible Officials

03 FACILITIES, EQUIPMENT AND TEST PROCEDURES

Internal range test reports are on file at Canoo.

03.01 Procedure To Determine Mass Emissions of The Fuel-Fired Heater

Not applicable; vehicle not equipped with a fuel fired heater.

03.02 Battery Pre-Conditioning Procedures

The lithium-ion battery cells are cycled by the battery cell manufacturer before they are assembled into battery packs. There is no further pre-conditioning necessary.

03.03 Vehicle Configuration and Sub Configurations

Lifestyle Delivery Vehicle (LDV) 130 and 190. The difference between these two configurations is the cargo volume determined by the style of door used at the rear of the vehicle. The two configurations share all powertrain hardware and have the same wheelbase.

LDV 130

LDV 190

03.04 Test Procedures

SAE J1634 was followed for all Range testing and SAE J2263 was followed for Road load measurement. LDV130 and LDV190 tests were conducted independently.

03.05 Dyno Test Instructions

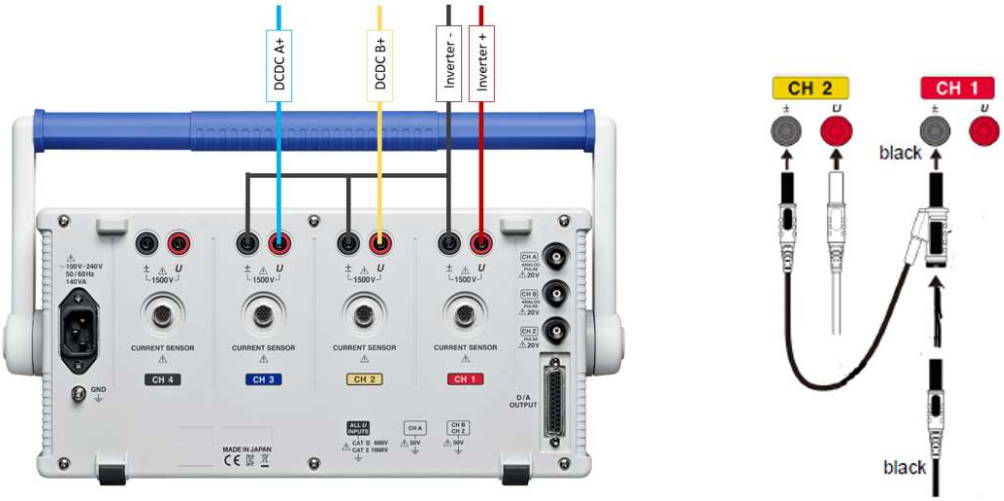
Canoo has not yet implemented “Dyno Mode” within the user interface (UI) features. The vehicle will function properly on a 4WD chassis dynamometer. This type of dyno should be used for testing. A 2WD dynamometer will not work with our vehicle. Test vehicles are outfitted with four tow hooks, one at each corner of the vehicle, for dyno restraints.

***Front* Vehicle Restraint**

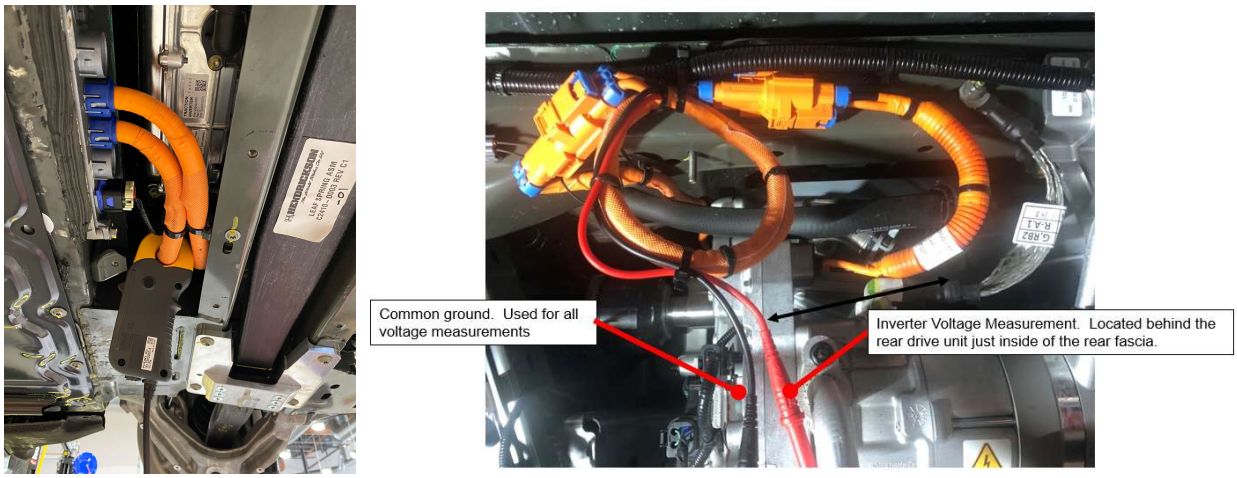
Rear *Vehicle* Restraint

03.06 Instrumentation

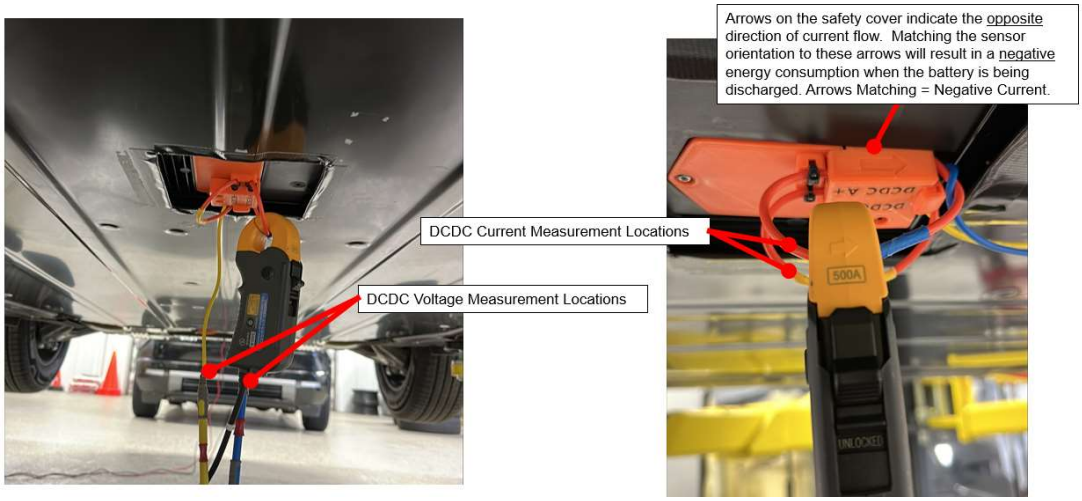
The Canoo LDV platform requires three current measurements for ambient test conditions. The current clamps measure all current leaving the high voltage battery pack and are located on power cable to the rear drive unit inverter (500A) and one on each of the two DCDC modules (20A) supplying the 12V system with power. If conducting climate testing a fourth current measurement must be added for the PTC heater located at the front of the vehicle. A single ground is shared for all voltage measurements.



Hioki Power Analyzer Voltage Measurement



Inverter Current/Voltage Measurement (Rear Drive Unit)



DCDC Current/Voltage Measurements

04 STATEMENT OF COMPLIANCE

Every vehicle covered by this application conforms to US EPA Federal Tier 3 Bin 0 regulations applicable to 2024 Model Year new Light-duty Vehicles and state of California ZEV regulations applicable to 2024 Model Year new Light-duty Vehicles.

05 RESERVED

06 MAINTENANCE

06.01 Test Vehicle Scheduled Maintenance

Not applicable.

06.02 Recommended Customer Maintenance Schedule

See owner handbook.

06.03 Lubricants And Heater Fuels

Heater fuel:	Not applicable
Transmission lubricant:	Factory Fill
Capacity	2.4 litres
Make	Valvoline
Trade name	HPEV
Type	Premium Synthetic Oil
Viscosity	25.58 cSt at 40°C (104°F)
Viscosity	5.93 cSt at 100°C (212°F)

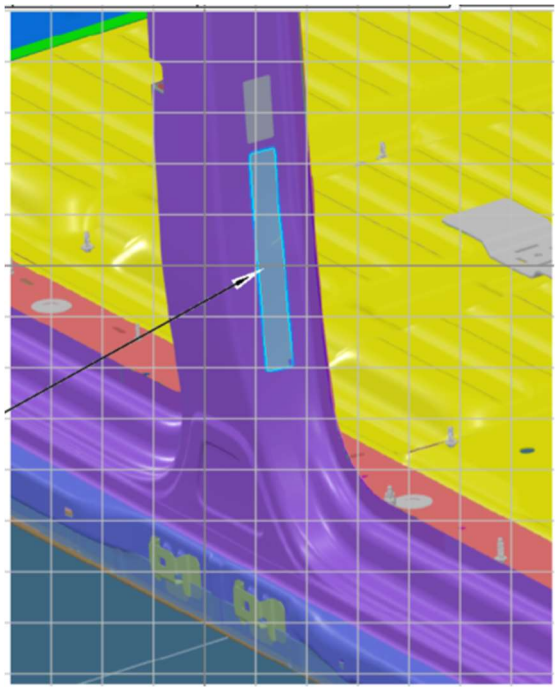
Test Vehicle

Same as factory fill

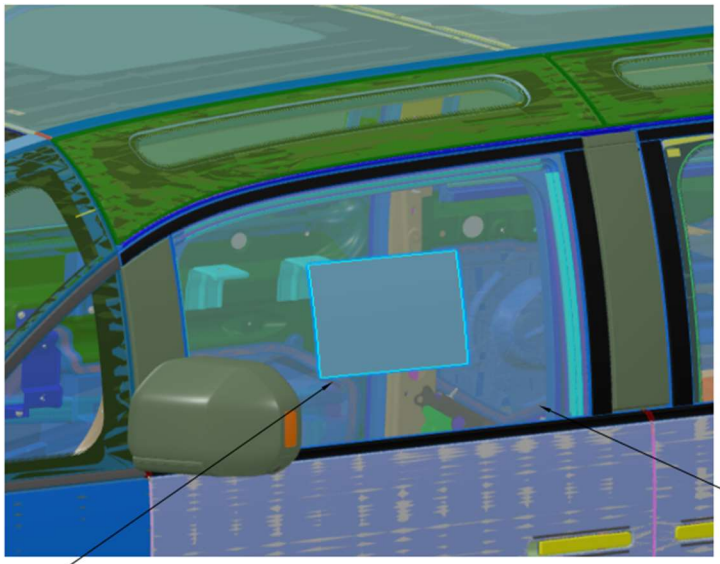
07 LABELS

07.01 Label Locations

VECI Emission Label



Monroney Label



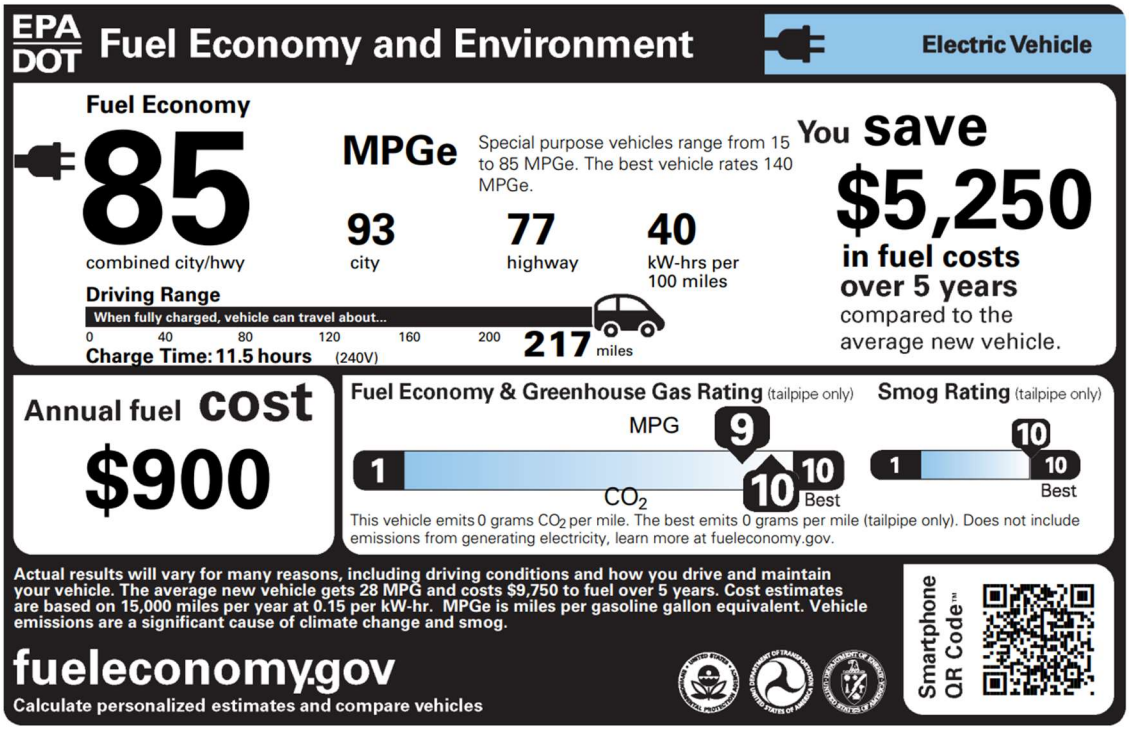
07.02 Sample Emission Control Information Label
(Mandated in CFR Title 40, Part 86; §86.1807. Label format agreed with EPA

– C A N O O –	CANOO INC. VEHICLE EMISSION CONTROL INFORMATION
Conforms to regulations: 2024 MY BEV	
U.S. EPA: T3B0 LDT2 **OBD: N/A**	
California: N/A **OBD: N/A**	
No adjustments needed.	
Group: **RCANJ.000VDR**	
1A23BC4567D890E24	

07.03 California Environmental Performance Index Label: 2024 Model Year

(Mandated in California Environmental Performance Label Specifications for 2009 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Passenger Cars. Label format agreed with EPA/ CARB)

Sample FE Label (LDV 130):



07.04 Projected Sales Information (Confidential)

The Canoo LDV projected sales are expected to total roughly 100 LDV 130 units and 100 LDV 190 units in total. Approximately 100 units of the MY24 vehicles will be sold in California.

08 GENERAL TECHNICAL DESCRIPTION

08.01 Description of Propulsion System

The Canoo LDV propulsion system consists of one drive unit and a high voltage battery pack. The drive unit is a 3-in-1 system containing a traction motor, a fixed ratio gearbox, and a drive inverter. The drive unit is located in the rear of the vehicle and connected to the rear wheels through the rear axle half shafts.

08.02 Description of Motor(s)

The rear motor is an 8 pole 3-phase AC interior permanent magnet motor utilizing a hairpin wound stator.

08.03 Description of Batteries

The battery packs used in the Canoo Lifestyle Vehicle is one of the most technically advanced lithium-ion battery packs in the world. Using automotive grade lithium-ion cells, the Canoo battery achieves unmatched energy density and enables the long-range capability of the vehicle. The low-profile flat packaging enables an efficient and functional occupant area. The battery has a replaceable fuse that is accessible with the battery removed from the vehicle and two sets of contactors inside the pack that disconnect high voltage from the positive and negative terminals on the battery pack. To disable contactors from closing during vehicle service, the 12V power feed can be disconnected in the vehicle fuse box. The battery control system consists of the Battery Monitoring System (BMS) which controls the contactors, measures pack current and voltages, electrical isolation of the battery from chassis ground and monitors cell brick voltages, module temperatures, and faults from the Battery Monitor Boards (BMBs) installed on each of the many modules. The battery is rated at 400V and can deliver in excess of 1000 Amperes. The battery mass is greater than 430 kg.

08.03.01 Battery Charging Capacity

The battery, when fully charged, contains 228Ah nominal capacity.

08.03.02 Self-Discharge Information

The self-discharge rate of the battery is likely to be less than 4% per month.

08.03.03 Description Of Thermal Management System

The Canoo battery pack contains an integrated cooling system to ensure that the individual cells are maintained at, or close to, their optimum operating temperature. The system is a closed loop liquid coolant (glycol 50% mixed) connected to the vehicle coolant system.

08.03.04 Definition Of End-Of-Life

The battery pack end-of-life shall be determined by Canoo's local service centers and dealerships with proper inspection and test methods.

08.03.05 Description Of Battery Disposal Plan

Canoo's lithium-ion battery packs do not contain heavy metals such as lead, Cadmium, or mercury. They are exempt from hazardous waste disposal standards in the USA under the Universal Waste Regulations. However, they do contain recyclable materials, and Canoo plans to recycle all battery packs removed from vehicles.

Canoo highly recommends that all battery packs be taken to local service facilities and recycled by authorized agencies, so that the battery packs can be recycled in a safe and efficient manner.

If the customer chooses to recycle independently, then the owner must assume responsibility for recycling in a safe and legal manner. If an owner does assume this responsibility, Canoo recommends consulting with the appropriate local, state or federal authorities to determine the appropriate methods for disposal and recycling. Keep in mind that disposal regulations may vary dependent on location.

08.04 Description of Controller / Inverter

The drive inverter performs several critical functions in the Canoo LDV to provide propulsion and regeneration including torque control, power/torque derating, and status and diagnostic monitoring. The drive inverter is an integral part of the drive unit.

08.05 Description of Transmission

The Canoo LDV transmission is a co-axial, fixed ratio, transversely mounted gearbox with integrated gear differential (transaxle configuration) and integrated park lock system.

08.06 Description of Climate Control System

General Specifications:

The LDV is a single zone system with automatic HVAC control. The modes are automatically controlled and include Defrost, Face and Foot (or any combination of these three). The system consists of two headliner vents, two-foot vents, two front quarter glass defrost outlets, and two side window defrost outlets.

08.06.01 Electric Cabin Heater

The heater unit incorporating a variable speed electric fan is located in the front "under hood" area.

The heater element is a variable high voltage Positive Temperature Coefficient (PTC) Heater with High Voltage Interlock Loop.

08.06.02 Fuel-Fired Heater

Not applicable.

08.06.03 Air Conditioning

The LDV air conditioner system is an R1234yf refrigerant system consisting of a high voltage electric scroll type with integrated inverter and High Voltage Interlock Loop. The compressor Oil is Poly Olefin Ester oil that is non-conducting.

08.06.04 Climate Control System Logic

Various printed circuit boards activate actuators, fans, compressor, and/or PTC Heater to maintain the cabin comfort of the occupant based on their desired set point. Evaporator temperature sensor, duct outlet temperature sensors, cabin temperature sensor, solar load sensor, and ambient temperature sensors are all used to influence the operation of the auto HVAC system.

08.06.05 Tamper Resistance of Climate Control System That Includes A Fuel-Fired Heater

Not applicable.

08.07 Description of Regenerative Braking System

When using regenerative braking, a portion of the energy of the braking process can be recovered that is otherwise lost in the form of heat. The regenerative braking in Canoo vehicles is divided into two categories: coast regeneration and braking regeneration.

The coast regeneration driving modes on the Canoo vehicle are calibrated to make the vehicle deceleration feel like a conventional ICE (internal combustion engine) vehicle or comparable to other BEV's with selectable deceleration modes – Low, Standard, and One Pedal. The "Standard" coast regeneration mode is the default mode on the Canoo vehicle and provides a balance of familiar driving feeling and maximum regen. The "Low" setting provides a vehicle deceleration similar to most ICE vehicles. The "1PD" mode is the most aggressive deceleration setting designed to allow the driver to only use a single pedal in most driving conditions.

The amount of coast regenerative torque is proportional to the accelerator pedal position. It is at its maximum when the accelerator pedal is fully depressed, and it is reduced as the user presses the pedal. At a specific pedal position, the amount of regenerative torque is reduced to zero.

Braking regeneration is a function of the brake pedal position and it gradually increases as user presses the brake pedal until it crosses a preset threshold. After crossing the threshold, the regenerative torque fades out and the friction brakes take over without any distinctive change in the user's feel. When regenerative torque fades out, the remaining amount of deceleration torque is provided using the friction brakes. The system is calibrated so that the user will not feel any sudden change in the vehicle's deceleration during this blending process. The use of friction brakes helps to ensure the vehicle deceleration feels the same in scenarios where the vehicle cannot apply enough regen torque due to physical limits, for example, when the high voltage battery pack is near its maximum capacity.

With the braking system designed to be a true brake blending system all deceleration modes are capable of producing the same amount of regen energy.

Both coast regeneration and braking regeneration are also a function of vehicle speed and are gradually reduced to zero as vehicle speed starts dropping below a preset threshold.

08.08 Description of Vehicle Electrical Supply Equipment (Charger)

The Canoo LDV is capable of accepting energy either from a permanent facility installed at the owner's location or from many readily available power outlets when 'on the road'.

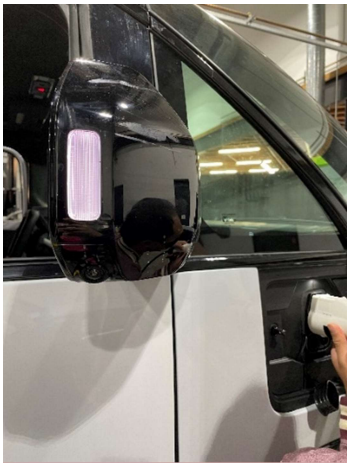
The Canoo LDV comes equipped with a Combined Charging System 1 (CCS1) port.

Charging rates up to 32A can be achieved with a SAE J1772 AC connector. The charger communicates with the vehicle to manage the charging process. The vehicle is also capable of accepting DC current up to 415A from an off-board charger.

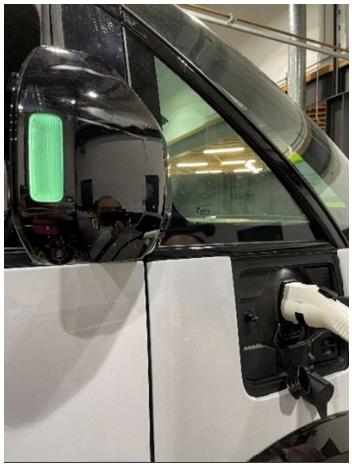
08.08.01 Proper Recharging Procedures

The charging system adjusts automatically to the available AC line voltage, frequency and current, within limits. The charging system in the vehicle works in conjunction with either of the external charging stations; the permanently installed public charger or the portable on-board charger.

Anytime the EV Inlet door is opened, the vehicle will prepare to enter CHARGE state. Once the user connects either supply cable to the vehicle, the charging system signals to the vehicle that it is ready to deliver the charge. The vehicle locks the cable onto the vehicle and then indicates that it is ready to accept energy and charging will commence. Failure of any of these steps will result in fault condition and lack of charge.



Preparing to charge state (White)



Charge SOC Indication (Green, Yellow, or Red)

If the battery temperature is near or below freezing temperatures, normal charging will not occur. The vehicle will identify this condition and will begin heating the battery coolant and circulating the coolant to raise the battery temperature to enable charge. When the pack temperature rises to a temperature within the allowable charging range, heating will reduce or stop, and charging will commence.

08.08.02 Power Requirements Necessary to Recharge Vehicle

Canoo LDV comes with one on-board charger that is capable of a maximum of 32A.

08.09 Other Unique Features (i.e. solar panels)

Not applicable; vehicle is not equipped with any such features.

08.10 Description Of Warning System(S) For Maintenance / Malfunction

The Canoo LDV is equipped with a screen that will display warnings and malfunctions. It also indicates the nature of the malfunction as well as a wide range of additional vehicle data, such as when maintenance is needed.

08.10.01 Cut-Off Terminal Voltages for Prevention of Battery Damage

The control electronics inside of the Drive Unit and Charger are programmed not to allow the unit to drive the voltage of the battery above or below hard voltage limits. If the battery pack is unable to achieve a desired response from these systems and the voltage reaches above or below a set limit, the two contactors inside the battery pack will open, disabling the entire high voltage system in the car.

08.11 Description of Dyno Mode

Canoo has not yet implemented "Dyno Mode" within the user interface (UI) features. The vehicle will function properly on a 4WD chassis dynamometer. This type of dyno should be used for testing. A 2WD dynamometer will not work with our vehicle.

08.12 Description of Coastdown Mode

Canoo does not have a special Coastdown Mode. Coastdowns should be completed in Neutral with HVAC Off.

09 RUNNING CHANGE VEHICLE DESCRIPTION

N/A

10 ROAD LOAD DATA

Configuration	A [lbf]	B [lbf/mph]	C [lbf/mph2]	Test Weight [lbs]	Tire Size	Tire Make/Model
LDV 130	25.05	0.4173	0.02605	4,750	225/60R18	Nexen Roadian GTX
LDV 190	36.45	0.1508	0.02993	5,250	235/60R18	Michelin Primacy Tour A/S

11 STARTING AND SHIFTING SCHEDULES

11.01 Starting

The Lifestyle Delivery Vehicle (LDV) does not have a traditional starter switch and instead has a smart entry system for greater safety and customer convenience. The smart entry system comprises of a smart key and the brake pedal. When the driver enters the vehicle with the smart key and sits on the driver's seat, the vehicle controller attempts to validate the unique key code by reading the key code. If successful interaction between the coded key and vehicle controller occurs, the system wakes up. The vehicle then enters accessory mode analogous to a "ACC" position on a conventional IC engine. In this mode, low voltage (12V) is supplied to the vehicle allowing operation of the infotainment and other accessories connected to the accessory rail. High Voltage (HV) necessary to enable vehicle propulsion is enabled only by the closing of the contactors, which can only be triggered when the following conditions are both satisfied:

1. Smart key is detected, and key code is validated AND
2. Brake pedal is depressed.

By requiring brake pedal activation, along with the appropriate key code, this system ensures the safety of vehicle occupants by not allowing self-mobility of the vehicle without the driver providing proper control inputs (electronic parking brake activated) and appropriate driver authorization (presence of the unique key code). If either the service brake is not activated or the key code not present, the vehicle controller will not close the connectors and self-mobility is not possible.

If the brake pedal is depressed and the proper key code present, the drive rail will activate, electronic parking brake will disengage, and

allows the transmission to be shifted out of Park.

11.02 Shifting

Not applicable – the vehicle has a single-speed transmission.

12 RESERVED

13 RESERVED

14 RESERVED

15 RESERVED

16 RESERVED

17 CALIFORNIA REQUIREMENTS

17.01 Statement of Compliance

All vehicles within this test group conform to US EPA Federal Tier 3 Bin 0 regulations applicable to 2024 Model Year new light-duty vehicles and to California regulations applicable to 2024 model year new ZEV light-duty vehicles.

17.01.01 General Statement

The production vehicles which are subject to registration or sale in the State of California will be, in all material respects, substantially the same construction as test vehicles that are certified by the California Air Research Board. These vehicles will meet all the applicable emissions standards, which are issued and enforced by the California Air Research Board in accordance with Section 43101 of the Health and Safety Code.

Canoo states that the vehicle emission control label complies with the label durability requirements of the “California Motor Vehicle Emission Control and Smog Index Label Specifications”, Title 13, CCR, Section 1965.

17.01.02 Drivability statement

N/A - This statement is no longer included / no longer necessary.

17.02 Supplemental Data and Certification Review Sheets

17.02.01 LDV 130 ARB Supplemental Data Sheet

LDV 130	
CD MCT Test Identification	20230093001
AC Recharge Energy Wh	85306
AER Unadjusted UDDS, miles	336
AER Unadjusted HWFET, miles	277
CO2 Composite Adjusted	0 g/mi (factors into 0 g/mi on FE label)

2024 MODEL-YEAR AIR RESOURCES BOARD
SUPPLEMENTAL DATA SHEET
ZEV-PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM DUTY VEHICLES
LDV 130

Manufacturer	Canoo Technologies, Inc.
Engine Family	RCANJ.000LRD
Vehicle Class (es)	LDT2
Number of ZEV Credits per vehicle	3.86
Fuel Type (s)	Electro-Chemical Battery
Battery Type (s)	Lithium Ion
Total Battery Weight, Kg	430.1
Total Battery Volume, m3	0.269
Battery Specific Energy, Wh/Kg	183.8
Number of Batteries or modules per vehicle	1
Total Battery Voltage, Nominal	345.6
Charger(s)	On-Board
Charger(s)	Conductive
Drive Motor (s) (Front)	Not Applicable
Drive Motor (s) (Rear)	AC Permanent Magnet
Rated Motor Power, kW	149
Number of Drive Motor (s)	1
Drive	RWD
Regenerative Braking	Yes
Regenerative Braking	RW
Driver Controlled Regen Braking	Yes
Coast Regen Braking	Yes
Air Conditioning	Yes
Fuel-Fired Heater	No
Transmission Type: M5, A4 (if applicable)	Automatic Single Speed
GVWR, lbs	5949
Curb Weight, 33%, lbs	4514
Loaded Vehicle Weight	4814
ETW or Test Weight, lbs	4750
DPA / RLHP or Dyno Set Coefficient, a= , lbf	-9.13
DPA / RLHP or Dyno Set Coefficient, b= , lbf/mph	-0.0696
DPA / RLHP or Dyno Set Coefficient, c= , lbf/mph^2	0.02974
Vehicle ID	GR40
Transmission	Automatic Single Speed
ETW	4750
RLHP	14.82
City Range, miles	335.9
System AC, Wh/mile	253.99
System DC, Wh/mile	227.26

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Highway Range, miles	277.0
System AC, Wh/mile	308.01
System DC, Wh/mile	275.59
Battery Test Results - Specific Energy, wh/kg	185
Fuel-Fired Heater Emission Results, g/mile	Not applicable

17.02.02 LDV 190 ARB Supplemental Data Sheet

LDV 190	
CD MCT Test Identification	20231212 152837
AC Recharge Energy Wh	83556
AER Unadjusted UDDS, miles	301
AER Unadjusted HWFET, miles	266
CO2 Composite Adjusted	0 g/mi (factors into 0 g/mi on FE label)

2024 MODEL-YEAR AIR RESOURCES BOARD
SUPPLEMENTAL DATA SHEET
ZEV-PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM DUTY VEHICLES
LDV 190

Manufacturer	Canoo Technologies, Inc.
Engine Family	RCANJ.000LRD
Vehicle Class (es)	LDT2
Number of ZEV Credits per vehicle	3.51
Fuel Type (s)	Electro-Chemical Battery
Battery Type (s)	Lithium Ion
Total Battery Weight, Kg	430.1
Total Battery Volume, m3	0.269
Battery Specific Energy, Wh/Kg	183.8
Number of Batteries or modules per vehicle	1
Total Battery Voltage, Nominal	345.6
Charger(s)	On-Board
Charger(s)	Conductive
Drive Motor (s) (Front)	Not Applicable
Drive Motor (s) (Rear)	AC Permanent Magnet
Rated Motor Power, kW	149
Number of Drive Motor (s)	1
Drive	RWD
Regenerative Braking	Yes
Regenerative Braking	RW
Driver Controlled Regen Braking	Yes
Coast Regen Braking	Yes
Air Conditioning	Yes
Fuel-Fired Heater	No
Transmission Type: M5, A4 (if applicable)	Automatic Single Speed
GVWR, lbs	6614
Curb Weight, 33%, lbs	4989
Loaded Vehicle Weight	5289
ETW or Test Weight, lbs	5250
DPA / RLHP or Dyno Set Coefficient, a= , lbf	-1.055
DPA / RLHP or Dyno Set Coefficient, b= , lbf/mph	-0.2880
DPA / RLHP or Dyno Set Coefficient, c= , lbf/mph^2	0.03189
Vehicle ID	GR44
Transmission	Automatic Single Speed
ETW	5250
RLHP	15.85
City Range, miles	300.81
System AC, Wh/mile	277.77
System DC, Wh/mile	245.08

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Highway Range, miles	266.33
System AC, Wh/mile	313.72
System DC, Wh/mile	276.80
Battery Test Results - Specific Energy, wh/kg	185
Fuel-Fired Heater Emission Results, g/mile	Not applicable

17.03 Engineering Evaluation of Zero Evaporative Emissions Under Any and All Operating Conditions (For Vehicles Equipped with Fuel- Fired Heater Only)

Not applicable; vehicle is not equipped with fuel-fired heater.

17.04 Credits

17.04.01 Description of Multi-Manufacturer Arrangements

N/A

17.04.02 Credit Calculation

Canoo manufacturers pure battery electric vehicles, and therefore is not required to produce a percentage of annual production volume as ZEVs. Canoo will earn credits on all 2023 model year vehicles. This vehicle is a fully functional ZEV. Based on the UDDS range shown in the table below, and according to: "*California Exhaust Emission Standards and Test procedures for the 2018 through 2025 Model Year Zero-Emission Vehicles*…" and "provision *1962.2, Title 13, California Code of Regulations".*

LDV130:

ZEV Credit = (0.01)*(UDDS Range)+0.50 = (0.01)*(335.857)+0.50 = 3.86 Credits.

LDV190:

ZEV Credit = (0.01)*(UDDS Range)+0.50 = (0.01)*(300.812)+0.50 = 3.51 Credits.

17.05 Vehicle Safety

17.05.01 All Information for Safe Operation of Vehicle

Canoo will submit a copy of the finalized vehicle owner's handbook by separate letter when it becomes available.

17.05.02 Information On Safe Handling of Battery System

Handling

Do not short circuit, puncture, incinerate, crush, immerse, force discharge, or expose the battery pack to temperatures outside the specified maximum storage temperature range of -20°C to 60°C.

The battery pack has a nominal operating voltage of 345.6 VDC. The battery pack is sealed in a rigid metal case and its exterior is isolated from high voltage. Handling the battery pack is electrically safe provided the enclosure remains closed.

The battery pack contains hermetically sealed lithium-ion cells that contain a number of chemicals and materials of construction. Risk of exposure to electrode materials and liquid electrolyte will only occur in cases of mechanical or thermal abuse of the battery pack.

Storage

Do not store the battery pack in a manner that allows terminals to short circuit. Do not place it near heating equipment, nor expose it to direct sunlight for long periods. The battery pack should only be stored in approved packaging and stacked no more than two (2) packages high. To maintain service life, the battery pack should be stored at a state of charge (SOC) of 15 to 50%.

Transport

Lithium-ion batteries are regulated as Class 9 Miscellaneous dangerous goods (also known as "hazardous materials") pursuant to the International Civil Aviation Organization.

(ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air, International Air Transport Association (IATA) Dangerous Goods Regulations, the International Maritime Dangerous Goods (IMDG) Code, European Agreements concerning the International Carriage of Dangerous Goods by Rail (RID) and Road (ADR), and applicable national regulations such as the USA's hazardous materials regulations (see 49 CFR 173.185). These regulations contain very specific packaging, labelling, marking, and documentation requirements. The regulations also require that individuals involved in the preparation of dangerous goods for transport be trained on how to properly package, label, mark and prepare shipping documents.

17.05.03 Description of Emergency Procedures

High Voltage Exposure

If one of the Canoo products has been visibly damaged or its enclosure compromised, then practice appropriate high voltage preventative measures until the danger has been assessed (and dissipated if necessary). Personal Protective Equipment (PPE) provides protection against live high voltage and electrical PPE must be worn.

Firefighting Measures

If a fire or explosion occurs when the battery pack is charging, shut off the power to the charger. In case of lithium-ion fires, flood the area with water. The water may not extinguish them but will cool the adjacent batteries and control the spread of the fire. CO2, dry chemical, and foam extinguishers are preferred for small fires, but also may not extinguish burning lithium-ion batteries. Burning batteries will burn themselves out. Virtually all fires involving lithium-ion batteries can be controlled with water. When water is used, however, hydrogen gas may be a by-product which can form an explosive mixture with air. LITH-X (powdered graphite) or copper powder fire extinguishers, sand, dry ground dolomite or soda ash may also be used. These materials act as smothering agents.

Damaged or opened cells or batteries can result in rapid heating (due to exothermic reaction of constituent materials) and the release of flammable vapors. Water (and other items listed above) disperses heat when applied in sufficient quantity to a fire. Extended heat exposure can lead to ignition of adjacent cells with a potential complete envelopment of the battery pack if not cooled. An extinguished lithium-ion battery fire can re-ignite due to the exothermic reaction of constituent materials from broken or damaged cells. To avoid this, remove sources of ignition and cool the burned mass by flooding with (or immersing in) water. Fire-fighters should wear self-contained breathing apparatus. Cells or batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat, fire or over voltage conditions. Never cut into the sealed battery pack enclosure due to the high voltage and electrocution risks.

If a decision is made to fight a battery fire aggressively, then large amounts of water should be applied from a safe distance with the intent of flooding the battery pack enclosure as completely as possible. Alternatively, if a decision is made to fight a battery fire defensively, then the fire crew should pull back a safe distance and allow the battery to burn itself out. Fire crews may choose to utilize a water stream or fog pattern to protect exposures or control the path of smoke.

First Aid Measures

Under normal conditions of use, the constituent battery cells are hermetically sealed. Contents of an open (broken) constituent battery cell can cause skin irritation and/or chemical burns. If materials from a ruptured or otherwise damaged cell or battery contact skin, flush immediately with water and wash affected area with soap and water. For eye contact, flush with significant amounts of water for 15 minutes and see a physician at once. Avoid inhaling any vented gases. If a chemical burn occurs or if irritation persists, seek medical assistance. Seek immediate medical assistance if an electrical shock or electrocution has occurred (or is suspected).

17.06 Description Of Fuel-Fired Heater / Fuel Tank Evaporative System

Not applicable; vehicle is not equipped with fuel-fired heater.

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18 FUEL ECONOMY DATA VEHICLE AND DE-RATING CALCULATIONS

Fuel Economy Data Vehicle (FEDV) Selection Justification – FEDV curb mass vehicle accounts for options that have a greater than 33% take rate and highest sold wheel/tire combination that collectively represents a vehicle configuration / sub configuration that has the largest sales volume within that Model Type. Canoo affirms that the road load power and the target coefficients are those that are appropriate for the ETW of the vehicle.

18.01 LDV 130 Range Test Results

Make	Canoo
Carline	LDV 130
Type	Battery Electric Vehicle
Test Group	RCANJ.000LRD
Axle Ratio / Final Drive Ratio	8.97
Emission Control	NA (BEV)
Exhaust	NA (BEV)
EVAP	NA (BEV)
Model Type	130
Basic Engine Code (F/R)	261
Transmission Type / Code	Automatic
Vehicle ID Tested	GR-40
Vehicle Configuration	0
Gross Vehicle Weight (lbs)	5949
33% Curb Mass (lbs)	4514
Loaded Vehicle Weight (lbs)	4814
Equivalent Test Weight (lbs)	4750
Base wheel / Tire	225/60R18
Target Road Load Coefficients	
A (lbf)	25.054
B (lbf/mph)	0.41733
C (lbf/mph^2)	0.026047
RLHP @ 50 MPH	14.82
Dyno Road Load Coefficients	
A (lbf)	-9.13
B (lbf/mph)	-0.0696
C (lbf/mph^2)	0.02974

EPA EV Multicycle Calculator (SAE J1634) – LDV 130

Manufacturer	Canoo Technologies
Carline	LDV 130
Model Year	2024
Vehicle	GR-40
Test Number	20230093001
Comments	Carry-over from 2023MY PCANJ.000261
Lab	National Vehicle and Fuel Emissions Laboratory
Test Date	03/01/2023

Item	Parameter / Measurement	Units	Value
1	Battery amphere-hour capacity	DC A.h	215.3
2	Ambient test temperature	C	23
3	Time, soak start	-	NA
4	Time, soak end	-	NA
5	Time, test start	-	03/01/2023 @ 7:55
6	Distance driven (total)	mi	227.65
7	Distance driven per phase ($D_{[cycle]\_i}$)	mi	Next Table
8	Discharge Energy (Edc_{total})	DC Wh	76327.56
9	Discharge energy (Edc_{total}, $Edc_{totalN7C}$)	DC Ah	Not Applicable applies to 5-cycle and SMCT only
10	Phase and cycle discharge energy ($Edc_{[phase]\_i}$, $Edc_{[cycle]\_i}$)	DC Wh	Next Table
11	Time, end of test	-	03/01/2023 @ 13:57
12	Vehicle charging mode	-	"Normal"
13	Time, start of charge	-	NA
14	Power outlet voltage	AC volts	240
15	AC recharge voltage	AC volts	243.4
16	AC recharge energy (Eac_{post}, FRE_{post}, Eac_{pre}, FRE_{pre})	AC Wh	85305.5
17	Time, end of vehicle soak period	-	NA
18	Time, end of recharging period	-	NA

Cycle Component	Edc [Wh]	Dist [mi]	ECdc Unweighted [Wh/mi]	ECdc Weighted [Wh/mi]
UDDS1	2449.80	7.36	332.85	10.68
UDDS2	1758.64	7.37	238.62	76.99
UDDS3	1567.70	7.39	212.14	68.44
UDDS4	1631.87	7.40	220.52	71.15
HFEDS1	2995.10	10.27	291.64	145.8
HFEDS2	2652.60	10.22	259.55	129.8
CSCm	54402.14	153.09	355.36	
CSCe	8869.71	24.55	361.29	

Usable Battery Energy [Wh]	76327.6	227.65
AC Recharge Energy [Wh]	85305.5	
Recharge Allocation Factor (RAF)	1.1176	

Unadjusted City Range (AER) [miles]	335.9
Unadjusted Highway Range (AER) [miles]	277.0

Adjusted City Range [miles]	235.1
Adjusted Highway Range [miles]	193.9
Adjusted Combined Range [miles]	216.6
AC Energy Consumption [kWh / 100 miles]	27.8

Energy consumption AC City [Wh/mi]	254.0
Energy consumption AC Hwy [Wh/mi]	308.0

City Unadjusted Fuel Economy [MPGe]	132.7
Highway Unadjusted Fuel Economy [MPGe]	109.4

City Adjusted Fuel Economy [MPGe]	92.9
Highway Adjusted Fuel Economy [MPGe]	76.6
Combined Adjusted Fuel Economy [MPGe]	84.8

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18.02 LDV 190 Range Test Results

Make	Canoo
Carline	LDV 190
Type	Battery Electric Vehicle
Test Group	RCANJ.000LRD
Axle Ratio / Final Drive Ratio	8.97
Emission Control	NA (BEV)
Exhaust	NA (BEV)
EVAP	NA (BEV)
Model Type	190
Basic Engine Code (F/R)	224
Transmission Type / Code	Automatic
Vehicle ID Tested	GR-44
Vehicle Configuration	0
Gross Vehicle Weight (lbs)	6614
33% Curb Mass (lbs)	4989
Loaded Vehicle Weight (lbs)	5289
Equivalent Test Weight (lbs)	5250
Base wheel / Tire	235/60R18
Target Road Load Coefficients	
A (lbf)	36.45
B (lbf/mph)	0.1508
C (lbf/mph^2)	0.02993
RLHP @ 50 MPH	15.85
Dyno Road Load Coefficients	
A (lbf)	-1.055
B (lbf/mph)	-0.288
C (lbf/mph^2)	0.03189

EPA EV Multicycle Calculator (SAE J1634) – LDV 190

Manufacturer	Canoo Technologies
Carline	LDV 190
Model Year	2024
Vehicle	GR-44
Test Number	20231212 152837
Comments	
Lab	Venshure Test Services
Test Date	12/12/2023

Item	Parameter / Measurement	Units	Value
1	Battery amphere-hour capacity	DC A.h	215.3
2	Ambient test temperature	C	23
3	Time, soak start	-	12/11/2023 @ 14:04
4	Time, soak end	-	12/12/2023 @ 9:53
5	Time, test start	-	12/12/2023 @ 9:59
6	Distance driven (total)	mi	217.9
7	Distance driven per phase ($D_{[cycle]\_i}$)	mi	Next Table
8	Discharge Energy (Edc_{total})	DC Wh	73722.2
9	Discharge energy (Edc_{total}, $Edc_{totalN7C}$)	DC Ah	Not Applicable applies to 5-cycle and SMCT only
10	Phase and cycle discharge energy ($Edc_{[phase]\_i}$, $Edc_{[cycle]\_i}$)	DC Wh	Next Table
11	Time, end of test	-	12/12/2023 @ 15:29
12	Vehicle charging mode	-	"Normal"
13	Time, start of charge	-	12/12/2023 @ 15:55
14	Power outlet voltage	AC volts	240
15	AC recharge voltage	AC volts	238.3
16	AC recharge energy (Eac_{post}, FRE_{post}, Eac_{pre}, FRE_{pre})	AC Wh	83555.6
17	Time, end of vehicle soak period	-	12/13/2023 @ 6:37
18	Time, end of recharging period	-	12/13/2023 @ 6:37

EPA EV Multicycle Calculator (SAE J1634) – LDV 190

Cycle Component	Edc [Wh]	Dist [mi]	ECdc Unweighted [Wh/mi]	ECdc Weighted [Wh/mi]
UDDS1	2095.8	7.45	281.32	8.00
UDDS2	1853.5	7.45	248.79	80.57
UDDS3	1789.0	7.45	240.13	77.77
UDDS4	1813.7	7.46	243.12	78.74
HFEDS1	2903.3	10.26	282.97	141.49
HFEDS2	2776.7	10.26	270.63	135.32
CSCm	47286.3	131.31	360.11	
CSCe	13203.8	36.28	363.94	

Usable Battery Energy [Wh]	73722.1	217.92
AC Recharge Energy [Wh]	83555.6	
Recharge Allocation Factor (RAF)	1.1334	

Unadjusted City Range (AER) [miles]	300.8
Unadjusted Highway Range (AER) [miles]	266.3

Adjusted City Range [miles]	210.6
Adjusted Highway Range [miles]	186.4
Adjusted Combined Range [miles]	199.7
AC Energy Consumption [kWh / 100 miles]	29.4

Energy consumption AC City [Wh/mi]	277.8
Energy consumption AC Hwy [Wh/mi]	313.7
City Unadjusted Fuel Economy [MPGe]	121.3
Highway Unadjusted Fuel Economy [MPGe]	107.4
City Adjusted Fuel Economy [MPGe]	84.9
Highway Adjusted Fuel Economy [MPGe]	75.2
Combined Adjusted Fuel Economy [MPGe]	80.2

19 VEHICLE OPERATION

19.01 Power On/Off

The test vehicles can be powered on/off using one of two methods:

1. NFC card with TCXM.
2. PKE box connected to diagnostic harness.

Each gamma vehicle will use one or the other of these methods, but not both. In general, the NFC card method should be used, with the PKE box method kept as an emergency back-up in case NFC fails.

Vehicle Operation Using NFC Card

Step 1: Ensure 12V batteries are connected and voltage on both is above 12.5V.

Step 2: Swipe the vehicle's paired NFC card on the driver-side B-Pillar to unlock the doors. You may need several attempts before a successful swipe. Some vehicles may have tape indicating the sweet spot for the NFC reader. Hold the NFC card in place over the tape for at least 3 seconds.

NFC Card Swipe

Step 3: Ensure the touch screen wakes up, doors unlock, and mirrors unfold.

Step 4: With the brake pedal depressed, swipe the NFC card to the left of the steering wheel to activate the vehicles "ignition on" state.

Vehicle Shutdown

Step 1: Place the vehicle in Park.

Step 2: Exit vehicle and close all doors.

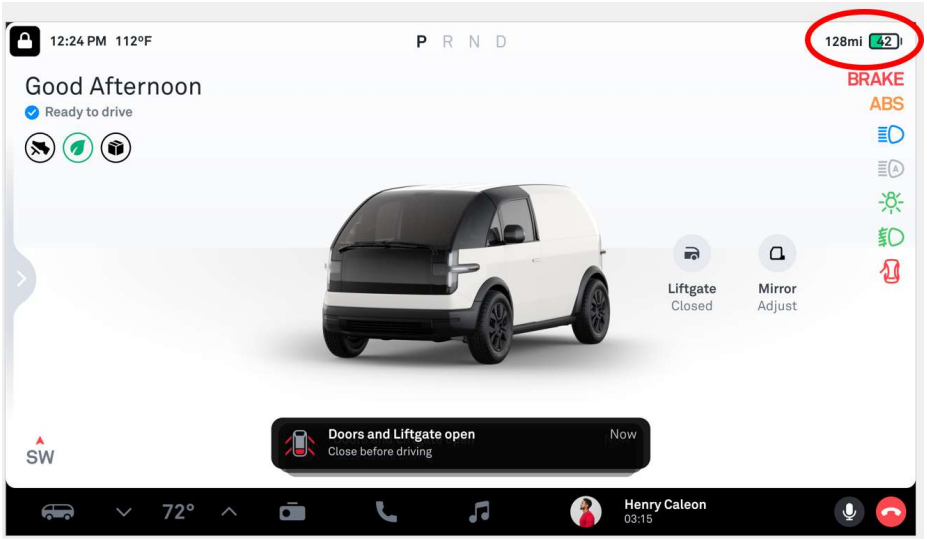
Step 3: Swipe the vehicle's paired NFC card on the driver-side B-Pillar. You may need several attempts before a successful swipe. Hold the NFC card in place over the tape for at least 3 seconds.

Step 4: Ensure the swipe was accepted. Doors should now lock, mirror lights will indicate the swipe action, and powertrain resolver alignment will be performed (beep sound you will hear after vehicle exits HV).

19.02 General Vehicle Controls

SOC % – State of Charge

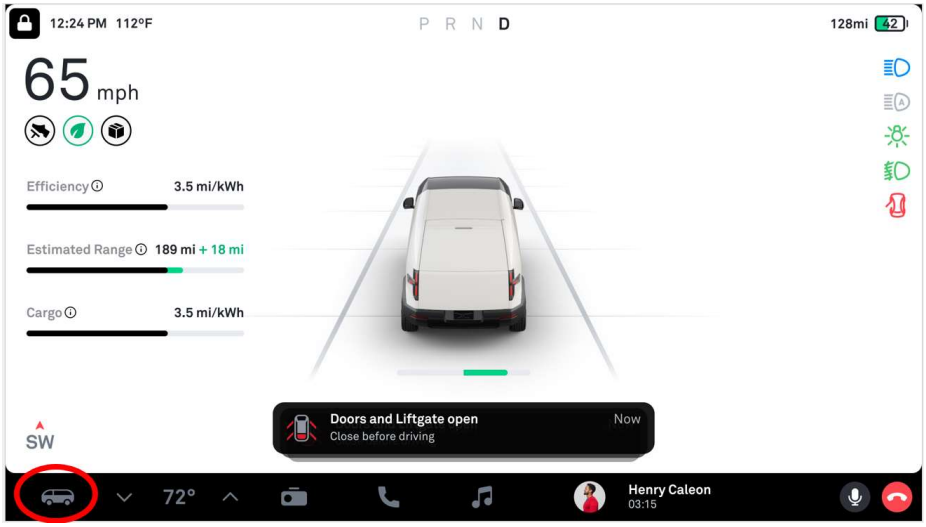
The infotainment screen will automatically display the current state of charge (SOC) in percentage value. Please ensure that the vehicle is appropriately charged for the duration of your trip.



SOC Indicator

Headlamp Low Beam Control

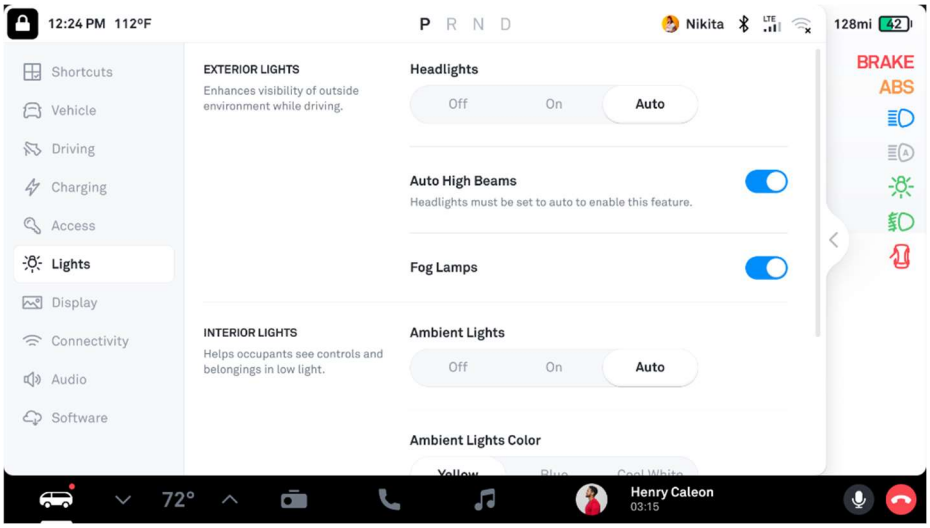
Step 1: Open the vehicle settings menu by tapping the vehicle icon in the lower left corner of the user display.



Vehicle Settings Menu Icon

Step 2: Select “Lights” from the column on the left.

Step 3: Toggle Low Beams On, Off, or set to Auto with the Headlights toggle. If the setting is set to “Off” then DRLs will turn on when vehicle is out of a park state.



Light Control Menu

Headlamp High Beam Control

The high beams can be controlled by the left steering wheel stalk. Pulling the stalk will momentarily actuate the high beams. Pushing the stalk will latch the high beams on until the stalk is pushed or pulled again. The auto high beams can be turned on from the light control menu on the user display.

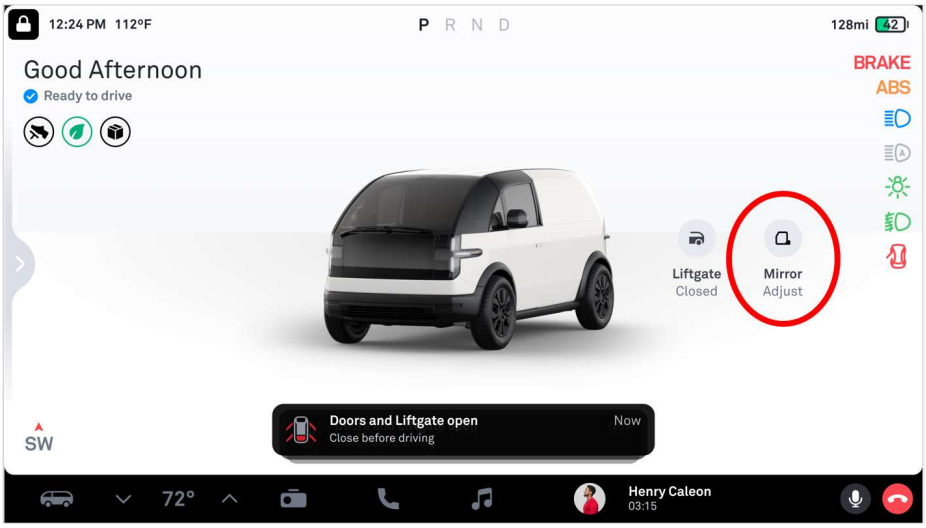
Wiper Control

Wipers are controlled by the left-hand stalk. Wipers contain an Int (Low), Medium (40 wipes per second), High (60 wipes per second), and Auto which switches between the modes.

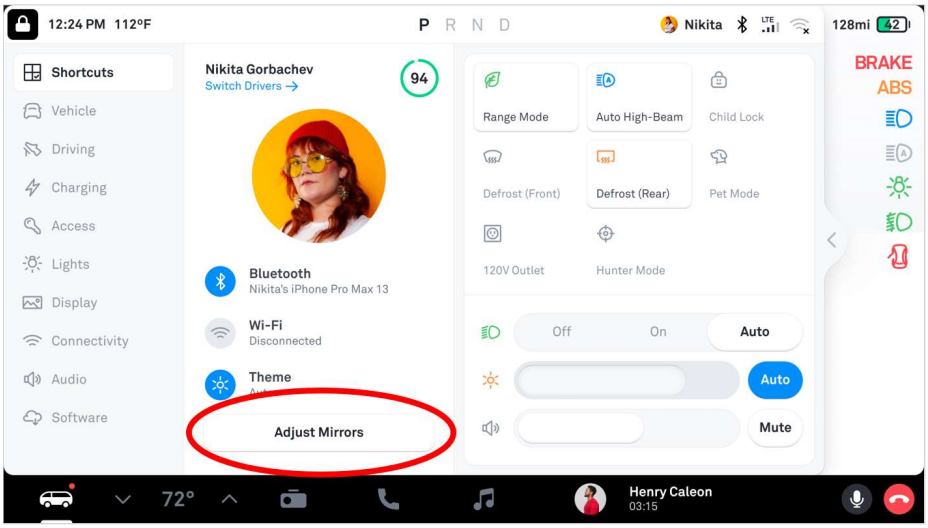
Left Steering Wheel Stalk Controls

Adjust Mirrors

The mirror adjust menu can be accessed in multiply ways. The first, and quickest method is by selecting the “Mirror Adjust” icon from the home screen of the user display. The second method is done through the “Shortcuts” menu withing the vehicle settings menu.



Mirror Adjust Icon on Home Screen



Mirror Adjust Option in Vehicle Settings Menu

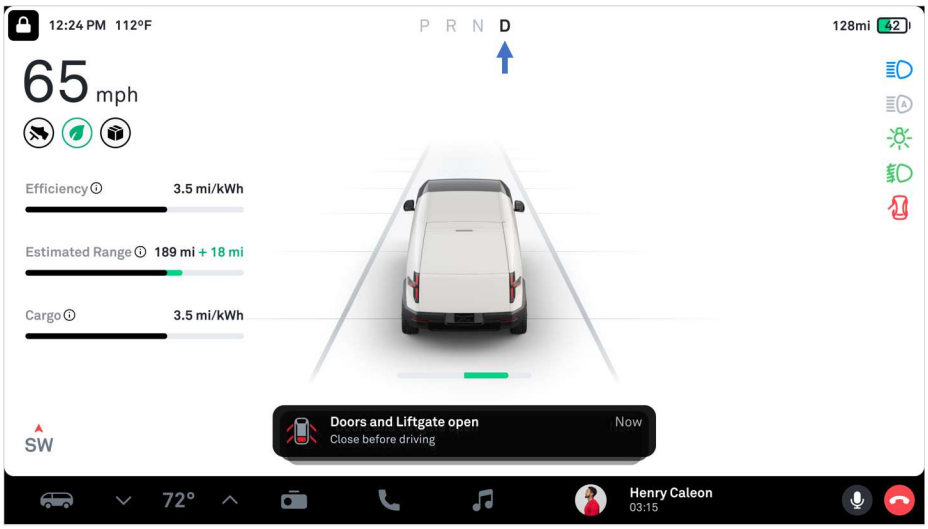
Once either of the adjust mirror icons are selected the steering wheel scroll wheels are used to adjust mirrors according to your preference.

Shifting/Changing Gears

Changing gears is done using the PRND stalk on the right side of the steering column.

Gear Selection Stalk

The current gear state is indicated on the infotainment screen in the upper right corner (as seen below denoted by the blue arrow), and on the smaller 4” screen in the front center of the vehicle.



Gear Indication

KEEP YOUR FOOT ON THE BRAKE AT ALL TIMES WHEN SHIFTING/CHANGING GEARS

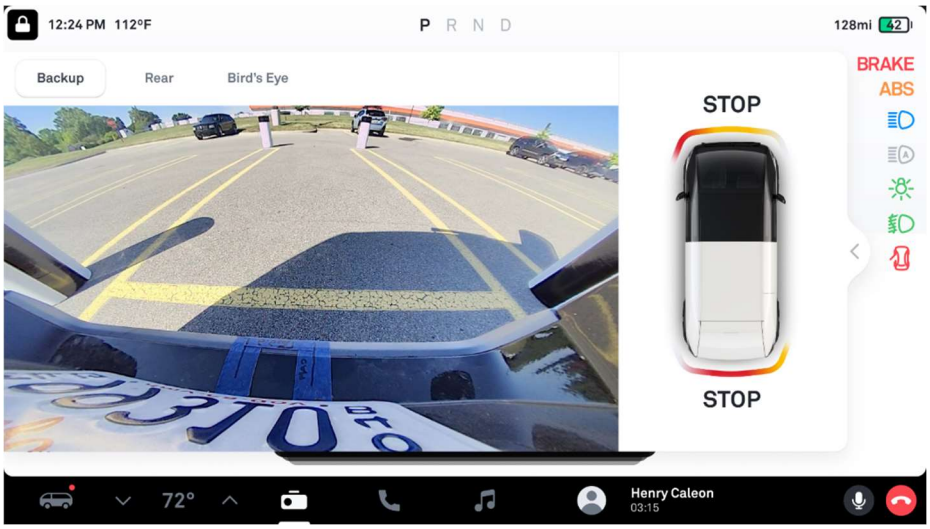
PARK: Push in the button on the end of the PRND stalk to enter Park (P). The front display should show “P”. Release the button.

REVERSE: Push the PRND stalk all the way up and hold to enter Reverse (R). The front display should show “R”. Release the stalk.

NEUTRAL: Push the PRND stalk up or down one detent/click and hold to enter Neutral (N). The front display should show “N”. Release the stalk.

DRIVE: Press the PRND stalk all the way down and hold to enter Drive (D). The front display should show “D”. Release the stalk.

Reverse Mode – Back Up Camera
Upon shifting the vehicle into reverse, the infotainment screen will automatically display the back-up camera.



Back-up Camera

Certification Summary Information Report

Manufacturer	Canoo Technologies Inc	**Manufacturer Code**	CAN
Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	01/16/2024 09:09:30 PM
Model Year	2024		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	--
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Electric Motor

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Electricity	--	--

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	Yes
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	Yes
Fuel Cell Indicator	No	**EPA Vehicle Class**	LDT3
Federal Clean Fuel Vehicle	Yes	**Federal Clean Fuel Vehicle Standard**	ZEV
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	--
Durability Group Name	RCANEEVNNLRD	**Durability Group Equivalency Factor**	1
Reduced Fee Test Group	No	**Certification Region Code(s)**	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	--	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	Tier 3	**SFTP Tier 2 Composite CO Option**	--
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	RCANJ.000LRD
Test Group OBD Compliance Level	Full - no deficiencies	**Number of Test Group OBD Deficiencies**	0
OBD Deficiencies Comments	OBD COMPLIANCE IS NOT APPLICABLE TO ZEV. PARAMETERS ARE PLACEHOLDERS TO ALLOW DATASET SUBMISSION.		
Mfr Test Group Comments	MY2024 certification for LDV carlines.		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Canoo Technologies Inc	1 - Canoo Technologies Inc	191 - LDV 190	Federal	2-Wheel Drive, Rear	Automatic	1	No
Canoo Technologies Inc	1 - Canoo Technologies Inc	131 - LDV 130	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	1	No
Canoo Technologies Inc	1 - Canoo Technologies Inc	191 - LDV 190	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	1	No
Canoo Technologies Inc	1 - Canoo Technologies Inc	131 - LDV 130	Federal	2-Wheel Drive, Rear	Automatic	1	No

Engine Description

Hybrid Type	--	**Hybrid Description**	--
Engine Type	--	**Mfr Engine Description**	--
Engine Block Arrangement	--	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	--	**Oil Viscosity/Classification**	
Number of Cylinders/Rotors	--	**Mechanically Variable Compression Ratio Indicator**	--

After Treatment Device(s) (ATD)

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	--
Mfr Emission Control Device Comments	--

Official Test Numbers

Test Group Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Electricity	--	--	--	--	--	--	--	--	--	--

Official Charge Depleting Test Numbers

Test Group Fuel	UDDS	Highway
Electricity	NCAN10079087	NCAN10079088
Electricity	RCAN10084056	RCAN10084055

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Hybrid Electric Vehicle And Fuel Cell Information

Rechargable Energy Storage System	Battery(s)	**Rechargable Energy Storage System, if Other**	--
Battery Type	Lithium Ion	**Number of Battery Packs**	1
Total Voltage of Battery Packs	346	**Battery Energy Capacity**	225
Battery Specific Energy	80	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Rear Wheels	**Driver Controlled Regenerative Braking**	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	1		
Motor/Generator Type 1	AC Induction	**Rated Motor/Generator Power**	149
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	**Usable H2 Fill Capacity (kg)**	--
Mfr Hybrid Electric/ Electric Vehicle Comments	--		

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Emission Data Vehicle Information

Vehicle ID / Configuration	GR40 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	NCANJ.000261	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2022		

Vehicle Model

Represented Test Vehicle Make	Canoo	**Represented Test Vehicle Model**	LDV 130

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Electric Motor	Electricity

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	Yes		
Odometer Correction -- Initial	1	**Odometer Correction Factor**	1
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	261	**Rated Horsepower**	200
Displacement (liters)	0.01		
Air Aspiration Method	Naturally Aspirated	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	--	**Air Aspiration Device Configuration**	--
Charge Air Cooler Type	--	**Drive Mode While Testing**	2-Wheel Drive, Rear
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	4514	**Equivalent Test Weight (pounds)**	4750
GVWR (lbs)	--	**N/V Ratio**	1.1
Axle Ratio	8.97		
Transmission Type	Direct Drive	**# of Transmission Gears**	1
Transmission Lockup	No	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	25.054	0.41733	0.026047	-9.13	-0.0696	0.02974	14.8

Emission Control Device Comments N/A - this is a BEV

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Manufacturer Test Vehicle Comments N/V ratio is 105.32. Data entered is a placeholder.

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Test #	**NCAN10078405**	**Test Procedure**	**84 - Charge Depleting Highway**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	11/11/2022	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Volkswagen Test Center Oxnard		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	2602	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	240	**Recharge Event Energy (kiloWatt-hours)**	85.868
Charge Depleting Range (Calculated miles)	289.7	**Charge Depleting Range (Actual miles)**	289.7
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	289.7
Number of Charge Depleting Bags/Phases Conducted	2	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon Monoxide	0
2	Carbon dioxide	0
3	Carbon-Related Exhaust Emissions	0
4	Drive Trace Absolute Speed Change Rating	2.53
5	Drive Trace Energy Economy Rating	-0.346
6	Drive Trace Inertia Work Ratio Rating	3.403
7	Manufacturer Fuel Economy	113.7
8	Nitrogen Oxide	0
9	Non-methane organic gases	0
10	Non-methane organic gases plus Nitrogen Oxides	999.999
11	Particulate Matter	0
12	System End State of Charge Watt-hours	11.7668
13	System Start State of Charge Watt-hours	14.3595

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
14	Carbon Monoxide	0
15	Carbon dioxide	0
16	Carbon-Related Exhaust Emissions	0
17	Drive Trace Absolute Speed Change Rating	2.72
18	Drive Trace Energy Economy Rating	0.52
19	Drive Trace Inertia Work Ratio Rating	3.16
20	Manufacturer Fuel Economy	113.7
21	Nitrogen Oxide	0
22	Non-methane organic gases	0
23	Non-methane organic gases plus Nitrogen Oxides	999.999
24	Particulate Matter	0
25	System End State of Charge Watt-hours	70.6685
26	System Start State of Charge Watt-hours	73.4491

Manufacturer Test Comments DC energy consumption HWFE1 = 270.8 Wh/mi; HWFE2 = 252.7 Wh/mi; HWFE average = 261.7 Wh/m. **Start SOC and End SOC for each phase for tables above are entered as Kilowatt Hours, due to value limit of 9999.99.**

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Test #	**NCAN10078406**	**Test Procedure**	**81 - Charge Depleting UDDS**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	11/11/2022	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Volkswagen Test Center Oxnard		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	2602	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	240	**Recharge Event Energy (kiloWatt-hours)**	85.868
Charge Depleting Range (Calculated miles)	355.5	**Charge Depleting Range (Actual miles)**	355.5
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	355.5
Number of Charge Depleting Bags/Phases Conducted	4	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon Monoxide	0
2	Carbon dioxide	0
3	Carbon-Related Exhaust Emissions	0
4	Drive Trace Absolute Speed Change Rating	-2.31
5	Drive Trace Energy Economy Rating	-0.942
6	Drive Trace Inertia Work Ratio Rating	-3.128
7	Manufacturer Fuel Economy	139.5
8	Nitrogen Oxide	0
9	Non-methane organic gases	0
10	Non-methane organic gases plus Nitrogen Oxides	999.999
11	System End State of Charge Watt-hours	14.3595
12	System Start State of Charge Watt-hours	15.8512

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group	RCANJ.000LRD	Evaporative/Refueling Family	--

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
13	Carbon Monoxide	0
14	Carbon dioxide	0
15	Carbon-Related Exhaust Emissions	0
16	Drive Trace Absolute Speed Change Rating	0.09
17	Drive Trace Energy Economy Rating	0.27
18	Drive Trace Inertia Work Ratio Rating	0.376
19	Manufacturer Fuel Economy	139.5
20	Nitrogen Oxide	0
21	Non-methane organic gases	0
22	Non-methane organic gases plus Nitrogen Oxides	999.999
23	Particulate Matter	0
24	System End State of Charge Watt-hours	73.4491
25	System Start State of Charge Watt-hours	75.8256

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
26	Carbon Monoxide	0
27	Carbon dioxide	0
28	Carbon-Related Exhaust Emissions	0
29	Drive Trace Absolute Speed Change Rating	-1.83
30	Drive Trace Energy Economy Rating	-1.286
31	Drive Trace Inertia Work Ratio Rating	-2.269
32	Manufacturer Fuel Economy	139.5
33	Nitrogen Oxide	0
34	Non-methane organic gases	0
35	Non-methane organic gases plus Nitrogen Oxides	999.999
36	System End State of Charge Watt-hours	10.2418
37	System Start State of Charge Watt-hours	11.7668

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
38	Carbon Monoxide	0
39	Carbon dioxide	0
40	Carbon-Related Exhaust Emissions	0
41	Drive Trace Absolute Speed Change Rating	-0.68
42	Drive Trace Energy Economy Rating	-0.216
43	Drive Trace Inertia Work Ratio Rating	-0.452
44	Manufacturer Fuel Economy	139.5
45	Nitrogen Oxide	0
46	Non-methane organic gases	0
47	Non-methane organic gases plus Nitrogen Oxides	999.999
48	Particulate Matter	0
49	System End State of Charge Watt-hours	69.0227
50	System Start State of Charge Watt-hours	70.6685

Manufacturer Test Comments DC energy consumption UDDS 1 = 319.4 Wh/mi; UDDS2 = 220.6 Wh/mi; UDDS3 = 203.0 Wh/mi; UDDS4 = 206.1 Wh/mi; UDDS weighted = 213.3 Wh/mi; UDDS1 DC discharge energy = 2376.5 Wh/mi; MCT UBE energy = 75825.6 Wh. **Start SOC and End SOC for each phase for tables above are entered as Kilowatt Hours, due to value limit of 9999.99.**

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Test #	**NCAN10079087**	**Test Procedure**	**81 - Charge Depleting UDDS**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	03/01/2023	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	NVFEL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3137	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	243.4	**Recharge Event Energy (kiloWatt-hours)**	85.306
Charge Depleting Range (Calculated miles)	335.86	**Charge Depleting Range (Actual miles)**	335.86
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	335.86
Number of Charge Depleting Bags/Phases Conducted	4	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon Monoxide	0
2	Carbon dioxide	0
3	Carbon-Related Exhaust Emissions	0
4	Drive Trace Absolute Speed Change Rating	0.61
5	Drive Trace Energy Economy Rating	0.531
6	Drive Trace Inertia Work Ratio Rating	1.729
7	Manufacturer Fuel Economy	132.7
8	Nitrogen Oxide	0
9	Non-methane organic gases	0
10	Non-methane organic gases plus Nitrogen Oxides	999.999
11	System End State of Charge Watt-hours	8.86971
12	System Start State of Charge Watt-hours	10.50158

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group	RCANJ.000LRD	Evaporative/Refueling Family	--

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
13	Carbon Monoxide	0
14	Carbon dioxide	0
15	Carbon-Related Exhaust Emissions	0
16	Drive Trace Absolute Speed Change Rating	1.03
17	Drive Trace Energy Economy Rating	1.182
18	Drive Trace Inertia Work Ratio Rating	1.782
19	Manufacturer Fuel Economy	132.7
20	Nitrogen Oxide	0
21	Non-methane organic gases	0
22	Non-methane organic gases plus Nitrogen Oxides	999.999
23	Particulate Matter	0
24	System End State of Charge Watt-hours	73.8778
25	System Start State of Charge Watt-hours	76.3276

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
26	Carbon Monoxide	0
27	Carbon dioxide	0
28	Carbon-Related Exhaust Emissions	0
29	Drive Trace Absolute Speed Change Rating	1.39
30	Drive Trace Energy Economy Rating	0.146
31	Drive Trace Inertia Work Ratio Rating	1.564
32	Manufacturer Fuel Economy	132.7
33	Nitrogen Oxide	0
34	Non-methane organic gases	0
35	Non-methane organic gases plus Nitrogen Oxides	999.999
36	System End State of Charge Watt-hours	13.15418
37	System Start State of Charge Watt-hours	14.72188

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
38	Carbon Monoxide	0
39	Carbon dioxide	0
40	Carbon-Related Exhaust Emissions	0
41	Drive Trace Absolute Speed Change Rating	0.4
42	Drive Trace Energy Economy Rating	0.765
43	Drive Trace Inertia Work Ratio Rating	0.699
44	Manufacturer Fuel Economy	132.7
45	Nitrogen Oxide	0
46	Non-methane organic gases	0
47	Non-methane organic gases plus Nitrogen Oxides	999.999
48	Particulate Matter	0
49	System End State of Charge Watt-hours	69.12402
50	System Start State of Charge Watt-hours	70.88266

Manufacturer Test Comments

DC energy consumption UDDS 1 = 332.85 Wh/mi; UDDS2 = 238.62 Wh/mi; UDDS3 = 212.14 Wh/mi; UDDS4 = 220.52 Wh/mi; UDDS weighted = 253.99 Wh/mi; UDDS1 DC discharge energy = 2449.8 Wh/mi; MCT UBE energy = 76327.56 Wh. **Start SOC and End SOC for each phase for tables above are entered as Kilowatt Hours, due to value limit of 9999.99.**

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Test #	**NCAN10079088**	**Test Procedure**	**84 - Charge Depleting Highway**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	03/01/2023	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Volkswagen Test Center Oxnard		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3137	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	243.4	**Recharge Event Energy (kiloWatt-hours)**	85.306
Charge Depleting Range (Calculated miles)	276.96	**Charge Depleting Range (Actual miles)**	276.96
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	276.96
Number of Charge Depleting Bags/Phases Conducted	2	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon Monoxide	0
2	Carbon dioxide	0
3	Carbon-Related Exhaust Emissions	0
4	Drive Trace Absolute Speed Change Rating	5.94
5	Drive Trace Energy Economy Rating	0.764
6	Drive Trace Inertia Work Ratio Rating	7.055
7	Manufacturer Fuel Economy	109.43
8	Nitrogen Oxide	0
9	Non-methane organic gases	0
10	Non-methane organic gases plus Nitrogen Oxides	999.999
11	Particulate Matter	0
12	System End State of Charge Watt-hours	70.8827
13	System Start State of Charge Watt-hours	73.8778

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
14	Carbon Monoxide	0
15	Carbon dioxide	0
16	Carbon-Related Exhaust Emissions	0
17	Drive Trace Absolute Speed Change Rating	9.41
18	Drive Trace Energy Economy Rating	0.257
19	Drive Trace Inertia Work Ratio Rating	10.95
20	Manufacturer Fuel Economy	109.43
21	Nitrogen Oxide	0
22	Non-methane organic gases	0
23	Non-methane organic gases plus Nitrogen Oxides	999.999
24	Particulate Matter	0
25	System End State of Charge Watt-hours	10.5016
26	System Start State of Charge Watt-hours	13.1542

Manufacturer Test Comments DC energy consumption HWFE1 = 291.64 Wh/mi; HWFE2 = 259.55 Wh/mi; HWFE average = 308.01 Wh/m. **Start SOC and End SOC for each phase for tables above are entered as Kilowatt Hours, due to value limit of 9999.99.**

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Emission Data Vehicle Information

Vehicle ID / Configuration	GR44 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	RCANJ.000LRD	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2024		

Vehicle Model

Represented Test Vehicle Make	Canoo	**Represented Test Vehicle Model**	LDV 190

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Electric Motor	Electricity

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	Yes		
Odometer Correction -- Initial	1	**Odometer Correction Factor**	1
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	224	**Rated Horsepower**	200
Displacement (liters)	0.01		
Air Aspiration Method	Naturally Aspirated	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	--	**Air Aspiration Device Configuration**	--
Charge Air Cooler Type	--	**Drive Mode While Testing**	2-Wheel Drive, Rear
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	4989	**Equivalent Test Weight (pounds)**	5250
GVWR (lbs)	--	**N/V Ratio**	1.1
Axle Ratio	8.97		
Transmission Type	Direct Drive	**# of Transmission Gears**	1
Transmission Lockup	No	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	36.45	0.1508	0.02993	-1.055	-0.288	0.03189	15.8

Emission Control Device Comments N/A - this is a BEV

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Manufacturer Test Vehicle Comments N/V ratio is 103.61. Data entered is a placeholder.

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Test #	**RCAN10084055**	**Test Procedure**	**84 - Charge Depleting Highway**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	12/12/2023	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Venshure Test Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	2556	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	240	**Recharge Event Energy (kiloWatt-hours)**	83.556
Charge Depleting Range (Calculated miles)	266.334	**Charge Depleting Range (Actual miles)**	266.334
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	266.334
Number of Charge Depleting Bags/Phases Conducted	2	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Actual Distance Driven (miles)	10.26
2	Carbon Monoxide	0
3	Carbon dioxide	0
4	Carbon-Related Exhaust Emissions	0
5	Drive Trace Absolute Speed Change Rating	7.53
6	Drive Trace Energy Economy Rating	0.47
7	Drive Trace Inertia Work Ratio Rating	9.65
8	Integrated DC KW-HRS	2776.7
9	Manufacturer Fuel Economy	107.4
10	Nitrogen Oxide	0
11	Non-methane organic gases	0
12	Non-methane organic gases plus Nitrogen Oxides	999.999
13	Particulate Matter	0
14	System End State of Charge Watt-hours	15.0175
15	System Start State of Charge Watt-hours	17.7942

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
16	Actual Distance Driven (miles)	10.26
17	Carbon Monoxide	0
18	Carbon dioxide	0
19	Carbon-Related Exhaust Emissions	0
20	Drive Trace Absolute Speed Change Rating	3.47
21	Drive Trace Energy Economy Rating	-0.02
22	Drive Trace Inertia Work Ratio Rating	4.67
23	Integrated DC KW-HRS	2903.3
24	Manufacturer Fuel Economy	107.4
25	Nitrogen Oxide	0
26	Non-methane organic gases	0
27	Non-methane organic gases plus Nitrogen Oxides	999.999
28	Particulate Matter	0
29	System End State of Charge Watt-hours	68.723
30	System Start State of Charge Watt-hours	71.6263

Manufacturer Test Comments DC energy consumption HWFE1 = 283.0 Wh/mi; HWFE2 = 270.6 Wh/mi; HWFE average = 276.8 Wh/m. **Start SOC and End SOC for each phase for tables above are entered as Kilowatt Hours, due to value limit of 9999.99.**

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Test #	**RCAN10084056**	**Test Procedure**	**81 - Charge Depleting UDDS**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	12/12/2023	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Venshure Test Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	2556	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	240	**Recharge Event Energy (kiloWatt-hours)**	83.556
Charge Depleting Range (Calculated miles)	300.812	**Charge Depleting Range (Actual miles)**	300.812
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	300.812
Number of Charge Depleting Bags/Phases Conducted	4	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Actual Distance Driven (miles)	7.45
2	Carbon Monoxide	0
3	Carbon dioxide	0
4	Carbon-Related Exhaust Emissions	0
5	Drive Trace Absolute Speed Change Rating	2.07
6	Drive Trace Energy Economy Rating	1.21
7	Drive Trace Inertia Work Ratio Rating	3.17
8	Integrated DC KW-HRS	2095.8
9	Manufacturer Fuel Economy	121.3
10	Nitrogen Oxide	0
11	Non-methane organic gases	0
12	Non-methane organic gases plus Nitrogen Oxides	999.999
13	Particulate Matter	0
14	System End State of Charge Watt-hours	71.6263
15	System Start State of Charge Watt-hours	73.7221

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group	RCANJ.000LRD	Evaporative/Refueling Family	--

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
16	Actual Distance Driven (miles)	7.46
17	Carbon Monoxide	0
18	Carbon dioxide	0
19	Carbon-Related Exhaust Emissions	0
20	Drive Trace Absolute Speed Change Rating	2.12
21	Drive Trace Energy Economy Rating	0.81
22	Drive Trace Inertia Work Ratio Rating	3.55
23	Integrated DC KW-HRS	1813.7
24	Manufacturer Fuel Economy	121.3
25	Nitrogen Oxide	0
26	Non-methane organic gases	0
27	Non-methane organic gases plus Nitrogen Oxides	999.999
28	Particulate Matter	0
29	System End State of Charge Watt-hours	13.2038
30	System Start State of Charge Watt-hours	15.0175

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
31	Actual Distance Driven (miles)	7.45
32	Carbon Monoxide	0
33	Carbon dioxide	0
34	Carbon-Related Exhaust Emissions	0
35	Drive Trace Absolute Speed Change Rating	1.88
36	Drive Trace Energy Economy Rating	0.67
37	Drive Trace Inertia Work Ratio Rating	3.09
38	Integrated DC KW-HRS	1789
39	Manufacturer Fuel Economy	121.3
40	Nitrogen Oxide	0
41	Non-methane organic gases	0
42	Non-methane organic gases plus Nitrogen Oxides	999.999
43	Particulate Matter	0
44	System End State of Charge Watt-hours	17.7942
45	System Start State of Charge Watt-hours	19.5832

Charge Depleting Bag/Phase

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
46	Actual Distance Driven (miles)	7.45
47	Carbon Monoxide	0
48	Carbon dioxide	0
49	Carbon-Related Exhaust Emissions	0
50	Drive Trace Absolute Speed Change Rating	1.96
51	Drive Trace Energy Economy Rating	0.8
52	Drive Trace Inertia Work Ratio Rating	3.15
53	Integrated DC KW-HRS	1853.5
54	Manufacturer Fuel Economy	121.3
55	Nitrogen Oxide	0
56	Non-methane organic gases	0
57	Non-methane organic gases plus Nitrogen Oxides	999.999
58	Particulate Matter	0
59	System End State of Charge Watt-hours	66.8695
60	System Start State of Charge Watt-hours	68.723

Manufacturer Test Comments

DC energy consumption UDDS 1 = 281.32 Wh/mi; UDDS2 = 248.79 Wh/mi; UDDS3 = 240.13 Wh/mi; UDDS4 = 243.12 Wh/mi; UDDS weighted = 245.1 Wh/mi; UDDS1 DC discharge energy = 2095.8 Wh/mi; MCT UBE energy = 73722.1 Wh. **Start SOC and End SOC for each phase for tables above are entered as Kilowatt Hours, due to value limit of 9999.99.**

Certification Summary Information Report

Test Group RCANJ.000LRD **Evaporative/Refueling Family** --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail
CA	150,000 miles	California ZEV	NMOG+NOX	1000	--	--	--	--	--	1000	0	Fail

Fuel Properties

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Consolidated List of Standards

Exhaust Standards

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	0
150,000 miles	CREE	--	--	--	--	--	--	0	0
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Charge Depleting UDDS

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	0
150,000 miles	CREE	--	--	--	--	--	--	0	0
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Charge Depleting Highway

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	0
150,000 miles	CREE	--	--	--	--	--	--	0	0
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--
Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Charge Depleting Highway

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	0
150,000 miles	CREE	--	--	--	--	--	--	0	0
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0
150,000 miles	CO	--	--	--	--	--	--	0	0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	0
150,000 miles	CREE	--	--	--	--	--	--	0	0

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Charge Depleting UDDS

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	0
150,000 miles	CREE	--	--	--	--	--	--	0	0
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--

Glossary

Useful Life			
4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		

Emission Name			
HC-TOTAL	Total Hydrocarbon	N2O	Nitrous Oxide
CO	Carbon Monoxide	SPITBACK	Spitback Hydrocarbon in grams
CO2	Carbon dioxide	AMP-HRS	Integrated Amp-hours
CREE	Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours
OPT-CREE	Optional Carbon-Related Exhaust Emissions	END-SOC	System End State of Charge Watt-hours
NOX	Nitrogen Oxide	ACT-DISTANCE	Actual Distance Driven (miles)
PM	Particulate Matter	AS-VOLT	Average System Voltage
PM-COMP	SFTP Composite Particulate Matter	CO2 BAG 1	Bag 1 Carbon Dioxide
HC-NM	Non-methane Hydrocarbon	CO2 BAG 2	Bag 2 Carbon Dioxide
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 4	Bag 4 Carbon Dioxide
NMOG	Non-methane organic gases	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
HCHO	Formaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
H3C2HO	Acetaldehyde	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-ASCR	Drive Trace Absolute Speed Change Rating
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-EER	Drive Trace Energy Economy Rating
CO-COMP	SFTP Composite Carbon Monoxide	COMB-CREE	Combined Carbon-Related Exhaust Emissions
ETHANOL	C2H5OH - Ethanol	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
FE BAG 1	Bag 1 Fuel Economy	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
FE BAG 2	Bag 2 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
FE BAG 3	Bag 3 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
FE BAG 4	Bag 4 Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)
MFR FE	Manufacturer Fuel Economy	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
HC	Hydrocarbon for Running Loss and ORVR	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
METHANE	CH4 - Methane	KW-HRS	Integrated DC KW-HRS
METHANOL	CH3OH - Methanol		

Certification Region			
CA	California + CAA Section 177 states	FA	Federal

Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250
B3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--
B5	Federal Tier 2 Bin 5	L3SULEV150	California LEV-III SULEV150
B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630
B7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400
B9	Federal Tier 2 Bin 9	L3ULEV270	California LEV-III ULEV270
B10	Federal Tier 2 Bin 10	L3SULEV230	California LEV-III SULEV230
B11	Federal Tier 2 Bin 11	L3SULEV200	California LEV-III SULEV200
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	T3B160	Federal Tier 3 Bin 160
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	T3B125	Federal Tier 3 Bin 125
L2	California LEV-II LEV	T3B110	Federal Tier 3 Transitional Bin 110
L2OP	California LEV-II LEV Optional	T3B85	Federal Tier 3 Transitional Bin 85
U2	California LEV-II ULEV	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
S2	California LEV-II SULEV	T3B70	Federal Tier 3 Bin 70
ZEV	California ZEV	T3B50	Federal Tier 3 Bin 50
OT	Other	T3B30	Federal Tier 3 Bin 30
T1	Federal Tier 1	T3B20	Federal Tier 3 Bin 20
PZEV	California PZEV	T3B0	Federal Tier 3 Bin 0
L2LEV160	California LEV-II LEV160	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
L2ULEV125	California LEV-II ULEV125	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
L2SULEV30	California LEV-II SULEV30	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2LEV395	California LEV-II LEV395	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2ULEV340	California LEV-II ULEV340	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
L2LEV630	California LEV-II LEV630	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
L2ULEV570	California LEV-II ULEV570	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
L3LEV160	California LEV-III LEV160	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
L3ULEV125	California LEV-III ULEV125	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
L3ULEV70	California LEV-III ULEV70	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
L3ULEV50	California LEV-III ULEV50	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L3SULEV30	California LEV-III SULEV30	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L3SULEV20	California LEV-III SULEV20	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L3LEV395	California LEV-III LEV395	HDV3B0	Federal Tier 3 HD Class 3 Bin 0

Transmission Type Code			
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual
A	Automatic	OT	Other
AM	Automated Manual	SA	Semi-Automatic
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)

Drive System Code			
4	4-Wheel Drive	P	Part-time 4-Wheel Drive
F	2-Wheel Drive, Front	A	All Wheel Drive

Certification Summary Information Report

Test Group	RCANJ.000LRD	**Evaporative/Refueling Family**	--
R	2-Wheel Drive, Rear		

Additional Terms and Acronyms

AFC	Alternative Fuel Converter	ICI	Independent Commercial Importer
CSI	Certificate Summary Information	ORVR	Onboard Refueling Vapor Recovery
DF	Deterioration Factor	SIL	Shift Indicator Light
Evap	Evaporation, Evaporative	Trans	Transmission