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# Application for Certification – Part 1 2022 Model Year

**Test Group:** NLMUV00.0ZA2

**Durability Group: NLMUEEVNNZA2** 

**Evaporative Families:** Not Applicable

**Test Group Description: Battery Electric Vehicle** 

**OBD Group:** Not Applicable

**Carlines Covered:** Lucid Air Dream Performance w/19" wheels

Lucid Air Dream Performance w/21" wheels

Lucid Air Dream Range w/19" wheels Lucid Air Dream Range w/21" wheels Lucid Air Grand Touring w/19" wheels Lucid Air Grand Touring w/21" wheels

**Vehicle Category:** Light-duty vehicle

**Applicable standards:** FEDERAL Tier 3 BIN 0 &

CALIFORNIA LEV 3 - ZEV

**EPA Response Requested By: 15<sup>th</sup> September 2021** 

Nitin Rana (510) 284-5049 For Application related Questions, Contact:

nitinrana@lucidmotors.com

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#### 01.00.00 Communications

## 01.01.00 Mailing Information

#### 01.01.01 **Certification Information**

Lucid USA, Inc. 7373 Gateway Blvd Newark CA 94560

#### 01.01.02 Responsible Official

#### **Primary Contact**

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# **Secondary Contact**

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#### **Additional Contacts**

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#### 02.00.00 Confidential Information

#### 02.01.00 Statement of Confidentiality

According to Class determination 3-78, the following sections in the below listed Applications are determined by Lucid to be kept as confidential.

08.00.00 General technical description 13.00.00 Projected Sales 15.00.00 Fee Filing Details

#### 02.02.00 Test Vehicle Selection

All variants were tested

#### 03.00.00 Facilities, equipment, and test procedure

#### 03.00.01 Test Procedure

Testing was conducted at a third-party facility – per SAE J1634 procedure (as Revised 2012) Steady State at 55 mph

#### 03.02.00 Battery Pre-conditioning Procedures

Cell manufacturer cycles the lithium ion battery cells before they are assembled into battery modules and then battery packs. No further pre-conditioning needed.

#### 04.00.00 (Reserved)



# 05.00.00 (Reserved) 06.00.00 Maintenance

Will be provided in Owner's Manual

#### 06.01.00 Test Vehicle Scheduled Maintenance

NA

#### 06.02.00 Recommended Customer Maintenance Schedule

Will be provided in Owner's Manual

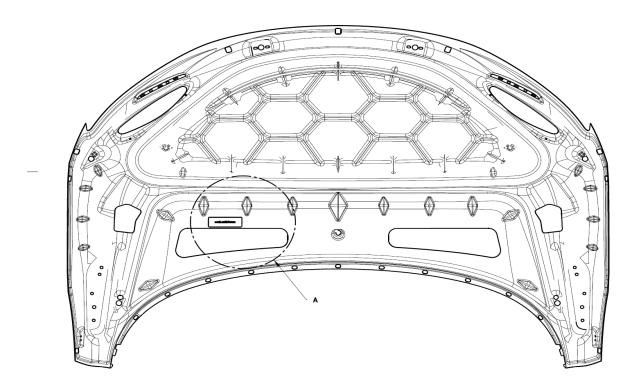
### 06.03.00 Lubricants and Heater Fuels, if any

Capacity (Front/Rear)	2600 ml/3000 ml
Make	Mobil1
Trade Name	Mobil1 EV Cooldrive 303(previously known as
	Mobil 1 LV HP)
Type	Synthetic
Viscosity @ -40C	8000 mPa-s (millipascal-seconds)
Viscosity @ 100C	5.7 cst (centistokes)

# 07.00.00 Vehicle Emission Control Information (VECI) and Environmental Performance (EP) Labels

#### 07.01.00 VECI & Monroney Label locations

VECI label is located under the frunk



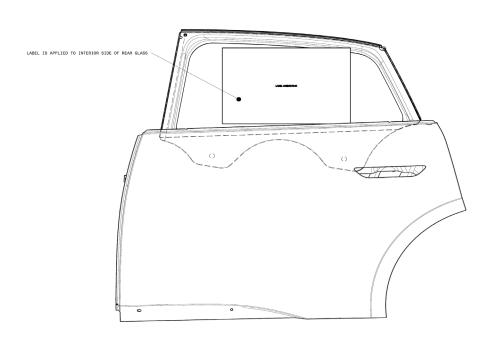
### **VECI Label Sample**

# VEHICLE EMISSION CONTROL INFORMATION / INFORMATIONS SUR LE CONTRÔLE DES ÉMISSIONS DU VÉHICULE

THIS VEHICLE CONFORMS TO U.S. EPA REGULATIONS APPLICABLE TO 2022 MODEL YEAR NEW TIER 3 BIN 0 LIGHT DUTY VEHICLES AND TO CALIFORNIA REGULATIONS APPLICABLE TO 2022 MODEL YEAR NEW ZEV PASSENGER CARS. CE VÉHICULE EST CONFORME AUX NORMES DE L'USEPA APPLICABLES AUX VÉHICULES LÉGERS TIER 3 BIN 0 DE L'ANNÉE-MODÈLE 2022 ET AUX NORMES CALIFORNIENNES APPLICABLES AUX VÉHICULES À ZÉRO ÉMISSIONS DE L'ANNÉE-MODÈLE 2022.

MODEL / MODÈLE: MOTOR / MOTEUR: TEST GROUP / GROUPE D'ESSAI: 2022 LUCID AIR 3 PHASE AC NLMUVOO.0ZA2





Monroney Label is located on the left rear window of the vehicle

## 07.02.00 Sample EP label

Will be added once fuel economy datasets are approved by EPA

### 07.03.00 Statement of Compliance

All vehicle within the test group conforms to US EPA Federal Tier 3 Bin 0 and State of California regulations applicable to 2022 Model Year new ZEV Light- duty vehicles.

#### 08.08.00 Description of Charger

The Lucid Air can accept energy either from a permanent charging station or an outlet installed at the owner's residence or from various available power outlets while at work or other public locations. The Lucid Air can also send/receive energy from another Lucid vehicle (V2V), along with sending energy back to the home (V2H) and/or grid (V2G).

A charging cord will come included with the purchase of a Lucid Air, inclusive of adapters to charge off NEMA 5-15 and 14-50 outlets. These are swappable adapters with the vehicle-side plug being fixed as the SAE J1772 connector. Using the 5-15 outlet, the car can charge up to 3kW and with the 14-50 outlet, 9.6kW. This product communicates with the Lucid vehicle to ensure it's only delivering the appropriate available power and ensuring safe conditions to allow charging to occur.

In addition, Lucid will offer a more permanent, wall-mounted charging station that can be purchased separately from the vehicle and a licensed electrician will provide guidance on the power level it can be set to, based upon available power at the location of install. This charging station can supply current up to 80A, or 19.2kW, and must be hardwired into the location's electrical panel. The unit will also be able to communicate directly with the vehicle to advise on available power to charge and discharge.

The Lucid Air is also capable of accepting DC current up to 500A and 900V from an off-board charging system.

#### **08.08.01 Proper Charging Procedures**

The charging system adjusts automatically to the available AC line voltage, frequency and current, within set parameters. The charging system in the vehicle works in conjunction with either of the three external charging stations; the wall-mounted charging station, permanently installed DC fast charging stations, or the included-with-purchase portable charging cord.

Anytime the charge port door is opened, the vehicle will prepare to enter the 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.

HARGING EXPERIENCE

# Cable Communicating



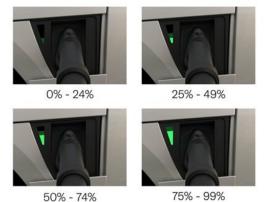
**Pulsing White Light** 



\_\_\_\_

CHARGING EXPERIENCE

# Charging



**Pulsing Green Light** 

Battery Level Progression Animation



حاجات

CHARGING EXPERIENCE

# Charging Complete



Solid Green Light



صنعت

CHARGING EXPERIENCE

# Error State

Check HMI or mobile app for more info



Solid Red Light

Lucib

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. The vehicle may also pull power from the source to heat the coolant without adding charge to the vehicle's battery itself.

#### 08.08.02 Power requirements necessary to recharge vehicle

The Lucid Air comes with one on-board charger that is capable of a maximum of 80A, or 19.2kW.

#### **08.09.00 Other Unique Features**

The Lucid Air can additionally support charging in forms of Vehicle to Vehicle (V2V), Vehicle to Home/Building (V2H), and Vehicle to Grid (V2G).

#### 08.10.00 Description of Warning System(s) for Maintenance/Malfunction

The Lucid Air is equipped with a LED bar next to the charging port to advise on issues and/or errors during the charging session, as well as charging progress. Additional details on the specific issues can be found within the owner's manual for the vehicle.

#### 08.10.01 Cut-off terminal voltages for prevention of battery damage

The Battery Management System (BMS) monitors battery pack voltage by way of voltage sensors on each of the battery modules within the pack. It monitors these voltages continually to ensure the safe limits of operation of the battery cells. In the event of other systems in the Powertrain exhibiting a spike in voltage or current, the battery will self-protect by opening contactors and disabling the entire high voltage system in the vehicle.

09.00.00 (Reserved)

10.00.00 (Reserved)



#### 11.00.00 Starting and Shifting Schedules

Starting: The vehicle does not require a key to be turned or a button to be pressed to start it. If a paired key fob, NFC card or phone is recognized when the driver's door is

opened, the Cockpit and Pilot panels will power on indicating the vehicle is ready to operate.

Drive mode: While seating in the driver's seat, press the brake pedal to put the car in Drive mode. The vehicle will search for a recognized keyfob, NFC card or phone. If a known device is detected, the vehicle can start. If no known device is detected, a message will be displayed on the instrument cluster "Keyfob not detected"

The display on the instrument cluster will change to show the Speedometer, Power meter and the PRND display. The indicator lights will briefly illuminate as a system check and then extinguish unless applicable.

The drive mode enabled indicator (telltale) will be displayed on the instrument cluster.

#### Selecting a Gear:

With the vehicle in Drive mode, move the right steering column lever up or down to select a gear. The instrument cluster will show the currently selected gear.

To select a gear when the vehicle is in P (Park), you must also press the brake pedal.

Note: If you try to select a gear when the current vehicle speed prohibits a gear change, a chime will sound, and a message will be displayed on the instrument cluster.

#### R (Reverse)

Push the lever up and release to select R. R can only be selected when the vehicle is stationary, or its forward speed is less than 5 mph (8 km/h).

### N (Neutral)

Allows the vehicle to roll freely unless the brakes are applied. Push the lever up or down from the currently selected gear and release to select N.



Note: You must apply the brake pedal before D or R can be selected.

#### D (Drive)

Push the lever down and release to select D. You can only select D when the vehicle is stationary, or its speed is less than 5 mph (8 km/h) in reverse.

#### P (Park)

When P is selected, the parking brake is automatically applied.

With the vehicle stationary, you should press the end of the gear selector to select P.

Note: P is automatically engaged whenever you connect a charging cable to the charging port. This is to prevent the vehicle being moved while still connected.

Note: If the vehicle is in D or R, P will automatically be selected if you open the driver's door and get up from the driver's seat.

# 12.00.00 Vehicle Description

Carline	ETW (lbs.)	Tire Sizes	F0 [lbf]	F1 [lbf/(mph)]	F2 [lbf/(mph) <sup>2</sup> ]	TRL50	N/V	Axle Ratio
Air Dream P AWD w/19" wheels	5500	245/45R19 (F) 245/45R19 (R)	34.190	0.13310	0.01444	10.3	86.7	7.06:1
Air Dream P AWD w/21" wheels	5500	HL245/35R21 (F) HL265/35R21 (R)	39.485	0.020807	0.01247	10.8	85.7	7.06:1
Air Dream R AWD w/19" wheels	5500	245/45R19 (F) 245/45R19 (R)	32.372	0.15288	0.01179	9.3	86.7	7.06:1
Air Dream R AWD w/21" wheels	5500	HL245/35R21 (F) HL265/35R21 (R)	39.350	0.13188	0.01262	10.3	85.7	7.06:1
Air G Touring AWD w/19" wheels	5500	245/45R19 (F) 245/45R19 (R)	32.398	0.15113	0.01171	9.3	86.7	7.06:1
Air G Touring AWD w/21" wheels	5500	HL245/35R21 (F) HL265/35R21 (R)	39.364	0.13153	0.01261	10.3	85.7	7.06:1

# 12.01.00 Motor & Battery Description

Parameter	Air Dream P	Air Dream R	Air GT
Drive motor Type (Front)	Permanent Magnet AC Motor	Permanent Magnet AC Motor	Permanent Magnet AC Motor
Drive motor Type (Rear)	Permanent Magnet AC Motor	Permanent Magnet AC Motor	Permanent Magnet AC Motor
Number of Drive Motor (s)	2	2	2
Rated Motor Power (KW) Front / Rear	370 kW / 459 kW	198 kW / 498 kW	178 kW / 433 kW
Drive type (AWD/2WD/4WD)	AWD	AWD	AWD
Regenerative Braking (Yes/No)	Yes	Yes	Yes
Driver Controlled Regen Braking (Yes/No)	Yes	Yes	Yes
Rated Horsepower (hp)	1111	933	819
Number of Battery Modules	22	22	22



Total number of Cells	6600	6600	6600
Nominal Battery Energy Capacity (kWh)	118	118	112
Nominal voltage (V)	800	800	800

#### 14.00.00 Request for Certificate

Mr. Jim Snyder Compliance Division Office of Mobile Sources U. S. Environmental Protection Agency 2000 Traverwood Drive Ann Arbor, MI 48105

Subject: Request for Certificate of Conformity – Lucid USA, Inc. 2022 Test Group NLMUV00.0ZA2

Dear Mr. Snyder,

Lucid hereby submits, with this letter, the model year 2022 Part 1 Application for Certificate of Conformity for the following Test Group: NLMUV00.0ZA2

EPA Standard: Tier 3 Bin 0 Federal

California Standard: LEV III ZEV California

Certification Fee Filing Form Copy of the Certification Fee filing form is added in section 15 of the electronic application.

Lucid believes all vehicles within this test group comply with all applicable regulations and are in accordance with the provisions of 40 CFR 86.

Please review this information and reach out if you have any questions regarding the request for a Certificate of Conformity.

Sincerely, Emad Dlala

Mr. A. Lyons, Chief Emissions Certification and Compliance Division Air Resources Board 9480 Telstar Avenue, Suite 4 El Monte, CA 91731

Dear Mr. Lyons:

Subject: Request for Executive Order – Lucid USA, Inc. 2022 Test Group NLMUV00.0ZA2

Lucid USA, Inc. requests that CARB issue an executive order for NLMUV00.0ZA2 test group. Lucid requests that the CARB treat the information contained in this Part 1 application, or information subsequently submitted for inclusion in this application, as confidential business information pursuant to the California Public Records Act and Sections 91000-91022 of Title 17 of the California Code of Regulations.

The EPA certificate of conformity for this test group will be submitted to DMS when it becomes available.

Please review this information and reach out if you have any questions regarding the request for an executive order.

Sincerely, Emad Dlala



#### 16.00.00 (Reserved)

#### 17.00.00 CALIFORNIA REQUIREMENTS

Statement of Compliance

Lucid states, this Test Group containing All Electric Vehicles in this application, tailpipe emissions of regulated pollutants from which are deemed to be zero with reference to 40 CFR 86.1829-15(f), based on our engineering judgement, comply with all the requirements of 40 CFR Part 86 Subpart S instead of submitting test data as allowed by § 86.1829-01(b)(4) and 40 CFR 86.1829-15(f).

This vehicle conforms to US EPA Federal Tier 3 Bin 0 and State of California regulations applicable to 2022 Model Year new ZEV Light-duty Vehicles.

Test Group: NLMUV00.0ZA2

Information provided in Supplemental Data Sheet

**VEHICLE SAFETY** 

All information related to the safe operation of the vehicle can be found in Vehicle Owner's Manual Handbook. It will be submitted when it becomes available

SAFE HANDLING OF BATTERY SYSTEM

Handling

Pack should not be exposed to external abuse such as, but not limited to mechanical compression, puncturing, external short circuit, overcharge or over discharge. They should be kept within normal operating temperature, i.e. -30 to + 60°C.

The pack is protected from external mechanical aggression by a robust casing which is isolated from the High Voltage traction chain. The pack enclosure should not be opened since it would expose live high voltage parts.



The cells contained within the pack are hermetically sealed and will not expose electrolyte or electrode material.

#### Storage

Battery packs should be stored in their packaging or in appropriate racks designed for that purpose. The packs should not be exposed to heat source or direct sunlight for long period of time. They should also be protected from rain or snowfall by being stored indoors.

Battery crates should not be stacked by more than 2 packages high. To preserve the battery life cycle, storage at SOC higher than 50% and temperature higher than 60°C is not recommended.

#### 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).

Supplemental Data

Please refer to E-cert

Manufacturer	Lucid USA, Inc.	Manufacturer Code	LMU
Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Certificate Number		CARB Executive Order #	
Certificate Issue Date		Certificate Revision Date	
Certificate Effective Date		<b>Conditional Certificate</b>	
CSI Revision #		CSI Submission/Revision Date	09/08/2021 08:46:23 PM
Model Year	2022		

**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 Sto	orage System Indicator Yes		
<b>Multiple Fuel Combustion</b>		Off-board Charge Capal	ble Indicator Yes		
Fuel Cell Indicator	No	<b>EPA Vehicle Class</b>	LDV		
Federal Clean Fuel Vehicle	Yes	Federal Clean Fuel Vehic	cle Standard ZEV		
Federal Clean Fuel Vehicle ILE	V Yes	California Partial Zero I	Emissions Vehicle Indicator		
<b>Durability Group Name</b>	NLMUEEVNNZA2	Durability Group Equiva	alency Factor 1		
Reduced Fee Test Group	No	Certification Region Cod	le(s) FA, CA	Λ	
Complies with HD GHG 2b/3 re	egulations? No				
Introduction into Commerce Da	onte 09/20/2021	CAP2000 Conditional Co	ertificate? N/A		
<b>Independent Commercial Impo</b>	rter?	Alternative Fuel Conver	ter Certificate?		
SFTP Federal Composite Comp Identifier	oliance Tier 3	SFTP Tier 2 Composite	CO Option		
SFTP LEV-III Composite Comp Indicator	pliance Yes				
<b>OBD</b> Compliance Type	CARB	OBD Demonstration Veh	nicle Test Group NLMU	V00.0ZA2	
<b>Test Group OBD Compliance L</b>	<b>Level</b> Full - no deficiencies	Number of Test Group C	OBD Deficiencies 0		
<b>OBD Deficiencies Comments</b>					
Mfr Test Group Comments					
Mfr Exhaust / Evap Standards	Comments				

Test Group		NLMUV00.0ZA2		Evaporative/Refueling	Family			
<b>Models Covered by</b>	this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	-# of Gears	Trans - Lockup	
Lucid USA, Inc.	2 - Lucid USA Inc.	2 - Air Dream P AWD w/21" wheels	Federal	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	4 - Air Dream R AWD w/21" wheels	Federal	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	4 - Air Dream R AWD w/21" wheels	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	5 - Air G Touring AWD w/19" wheels	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	1 - Air Dream P AWD w/19" wheels	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	3 - Air Dream R AWD w/19" wheels	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	6 - Air G Touring AWD w/21" wheels	Federal	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	5 - Air G Touring AWD w/19" wheels	Federal	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	6 - Air G Touring AWD w/21" wheels	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	1 - Air Dream P AWD w/19" wheels	Federal	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	2 - Air Dream P AWD w/21" wheels	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No	
Lucid USA, Inc.	2 - Lucid USA Inc.	3 - Air Dream R AWD w/19" wheels	Federal	All Wheel Drive	Automatic	1	No	
<b>Engine Description</b>								
Hybrid Type				<b>Hybrid Description</b>				
Engine Type				Mfr Engine Description				
Engine Block Arrangen				Mfr Engine Block Arra	-			
Camless Valvetrain Ind				Oil Viscosity/Classification				
Number of Cylinders/R	otors			Mechanically Variable	Compression Ratio Indi	cator		
After Treatment Do	evice(s) (ATD)							
Mfr After Treatment D	Device (ATD)							
Comments	(DOD) D :							
Direct Ozone Reduction	` '							
Mfr Emission Control	Device Comments							

Test Group	NLMUV00.0ZA2 Evaporative/Refueling Family								
Official Test Numbers									
Test Group Fuel FTP	J <b>S06</b>	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Electricity									
Hybrid Electric Vehicle And Fuel Co	Hybrid Electric Vehicle And Fuel Cell Information								
Rechargable Energy Storage System	Battery(s)			Rechargable Energy	Storage System	, if Other			
Battery Type	Lithium Io			Number of Battery Packs			1		
<b>Total Voltage of Battery Packs</b>	924			Battery Energy Capa	acity		150		
Battery Specific Energy	171			Battery Charger Typ	e		Both		
Number of Capacitors				Capacitor Rating (In	Farads)				
Mfr Capacitor Comments									
Hydraulic System Description									
Regenerative Braking Type	Electrical 1	Regen Brake							
Regenerative Braking Source	Both	_		Driver Controlled Regenerative Braking		Yes			
Mfr Regenerative Braking Description									
Drive Motor(s)/Generator(s)	2								
Motor/Generator Type 1	Permanent	ermanent Magnet AC Motor Rated Motor/Generator Power			370				
Motor/Generator Type 2	Permanent	Magnet AC Motor		Rated Motor/Genera	itor Power		459		
Mfr Fuel Cell Description									
Fuel Cell On-Board H2 Storage Capacity (kg	g)			Usable H2 Fill Capac	city (kg)				
Mfr Hybrid Electric/ Electric Vehicle Comments									

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Emission Data Vehicle Information	n		
Vehicle ID / Configuration	2022111 / 1	Manufacturer Vehicle Configuration Number	er 1
Original Test Group Name	NLMUV00.0ZA2	Original Evaporative/Refueling Family	
Original Test Vehicle Model Year	2022		
Vehicle Model			
Represented Test Vehicle Make	2022	Represented Test Vehicle Model	Lucid Air Dream F
Leak Family Details			
Leak Family Identifier		Leak Family Name	
Drive Sources and Fuel System De	etails		
Drive Sou	rce and Fuel#	D ive Source	Fuel
	1	El ctric Motor	Electric y
Hybrid Indicator	No		
Multiple Fuel Storage		<b>Multiple Fuel Combustion</b>	
Fuel Cell Indicator	No	Rechargeable Energy Storage System Indica	ntor Yes
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if 'Ot	
Off-board charge Capable Indicator	Yes	Rechargeable Energy Storage System, in Oc	nci
Odometer Correction Initial	1	Odometer Correction Factor	1
Odometer Correction Sign	+ = System Miles is equal to (7	Test odometer reading * Correction factor) + Initial system miles	-
Odometer Correction Units	Miles	,,	
Engine Code	ZA2	Rated Horsepower	1111
Displacement (liters)	0.001	•	
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'	
Number of Air Aspiration Devices		Air Aspiration Device Configuration	
Charge Air Cooler Type		<b>Drive Mode While Testing</b>	All Wheel Drive
Charge All Cooler Type	N-4: 1	Aged Emission Components	4,000 (mi)
	Not eqipped	8	
Shift Indicator Light Usage Curb Weight (lbs)	5203	Equivalent Test Weight (pounds)	5500
Shift Indicator Light Usage			
Shift Indicator Light Usage Curb Weight (lbs) GVWR (lbs)	5203	<b>Equivalent Test Weight (pounds)</b>	5500
Shift Indicator Light Usage Curb Weight (lbs)	5203 6283	<b>Equivalent Test Weight (pounds)</b>	5500

Test Group		NLMUV(	00.0ZA2	Evaporative/Refueling Family			
Dynamometer Co	efficients:						
	7	<b>Farget Coefficient</b>	ts		<b>Set Coefficients</b>		
Coefficient							EPA Calculated Total Road Load Horse Power for
Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	City/Highway/Evap Coefficients
City/Highway/Evap	39.49	0.2081	0.01247	-8.19	0.0525	0.01107	10.8
Cold CO	43.43	0.2289	0.01372	-17.59	-0.0773	0.01242	N/A
US06	39.49	0.2081	0.01247	-8.19	0.0525	0.01107	N/A

Emission Control Device Comments --Manufacturer Test Vehicle Comments ---

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Test #	NLMU10071374	Test Procedure	2 - CVS 75 and later (w/o can. load)
Exhaust Test # for this Evap Test		Test Fuel Type	62 - Electricity
Test Date	04/28/2021	Fuel	Electricity
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	2988	<b>Odometer Units</b>	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes

#### **Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (kilowatt-hour per 100 miles)
CO (Carbon Monoxide)	0	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.56645	
DT-EER (Drive Trace Energy Economy Rating)	-0.63448	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.06844	1
MFR FE (Manufacturer Fuel Economy)	23.427	143.851112

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	0	0

Test Result Name	<b>Unrounded Test Result</b>	Verify Calculated CO2	
Carbon dioxide	0		

**Manufacturer Test Comments** 

5-cycle test data vehicle MY22 Air Dream P w 21" wheels: CVS75 and Later Ac wh/mi Bag1FE: 234.27 Ac wh/mi Bag2FE: 205.69 Ac wh/mi Bag3FE: 219.93 Ac wh/mi Bag4FE: 200.30

Test Gro	ир		NLMUV00.0ZA2	?		Evaporati	ve/Refueling F	amily				
Certific			E . N	Rounded	D.E.	NMOG/NM	9	ALLDE	MARE	Certification		D /E 1
Regio	on Useful Life	Standard Level	<b>Emission Name</b>	Result	RAF	HC Ratio	Factor	Add DF	Mult DF	Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	СО	0.0				1	1	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0					1	0		
CA	150,000 miles	California ZEV	CO	0.0				-	1	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0					1	0		

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Test #	NLMU10071375	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test		Test Fuel Type	62 - Electricity
Test Date	04/24/2021	Fuel	N/A
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	N/A	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	2988	<b>Odometer Units</b>	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes

#### **Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (kilowatt-hour per 100 miles)
CO (Carbon Monoxide)	0	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.06203	
<b>DT-EER (Drive Trace Energy Economy Rating)</b>	-0.43928	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.85724	
MFR FE (Manufacturer Fuel Economy)	20.064	167.9625199

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	0	0

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	0	

**Manufacturer Test Comments** 

5-cycle test data vehicle MY22 Dream P w 21" wheels Ac wh/mi Bag1FE: 200.64 Ac wh/mi Bag2FE: 195.73

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Test #	NLMU10071376	Test Procedure	90 - US06
Exhaust Test # for this Evap Test		Test Fuel Type	62 - Electricity
Test Date	04/24/2021	Fuel	N/A
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	N/A	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	2988	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes

#### **Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (kilowatt-hour per 100 miles)
CO (Carbon Monoxide)	0	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.74668	-1
DT-EER (Drive Trace Energy Economy Rating)	-0.66751	-
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.48552	-1
MFR FE (Manufacturer Fuel Economy)	29.715	113.4107353
NOX (Nitrogen Oxide)	0	
NMOG (Non-methane organic gases)	0	

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	0		

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	0	

**Manufacturer Test Comments** 

5-cycle test data vehicle MY22 Dream P w 21" wheels: US06 Combo Ac wh/mi City Bag1FE: 297.15 Ac wh/mi HWY Bag2FE: 247.52 Ac wh/mi City Bag3FE: 297.55 Ac wh/mi HWY Bag4FE: 246.92

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Test #	NLMU10071377	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test		Test Fuel Type	62 - Electricity
Test Date	04/24/2021	Fuel	N/A
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	N/A	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	3039	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Took Dooules			

#### **Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (kilowatt-hour per 100 miles)
CO (Carbon Monoxide)	0	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.32709	1
DT-EER (Drive Trace Energy Economy Rating)	-0.6989	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.71917	1
MFR FE (Manufacturer Fuel Economy)	24.429	137.9507962
NOX (Nitrogen Oxide)	0	
NMOG (Non-methane organic gases)	0	

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	0		

Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	0		

**Manufacturer Test Comments** 

5-cycle test data vehicle MY22 Dream P w 21" wheels: SC03 Wh/mi FE: 244.29

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Test #	NLMU10071372	Test Procedure	81 - Charge Depleting UDDS
Exhaust Test # for this Evap Test		Test Fuel Type	62 - Electricity
Test Date	04/28/2021	Fuel	N/A
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	N/A	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	2113	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
PHEV/EV Charge Depleting Test In	formation		
Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	137.312
Charge Depleting Range (Calculated miles)	598.31	Charge Depleting Range (Actual miles)	598.31
All Electric Range Unadjusted (miles)		Derived 5-Cycle Coefficient Model Year	
Equivalent All Electric Range (miles)	598.31		
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	0.2178
5	Drive Trace Energy Economy Rating	0.6936
6	Drive Trace Inertia Work Ratio Rating	0.547
7	Manufacturer Fuel Economy	146.86

**Manufacturer Test Comments** 

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Test #	NLMU10071373	Test Procedure	84 - Charge Depleting Highway
Exhaust Test # for this Evap Test	<del></del>	Test Fuel Type	62 - Electricity
Test Date	04/28/2021	Fuel	Electricity
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	2113	<b>Odometer Units</b>	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
PHEV/EV Charge Depleting Test Int	formation		
Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	137.312
Charge Depleting Range (Calculated miles)	604.37	Charge Depleting Range (Actual miles)	604.37
All Electric Range Unadjusted (miles)		Derived 5-Cycle Coefficient Model Year	
Equivalent All Electric Range (miles)	604.37		
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	3.2176
5	Drive Trace Energy Economy Rating	2.1546
6	Drive Trace Inertia Work Ratio Rating	3.1396
7	Manufacturer Fuel Economy	148.35

**Manufacturer Test Comments** 

Test Group			NLMUV00.0ZA2			Evaporativ	ve/Refueling Fa	amily				
Certification Region	Useful Life	Standard Level	<b>Emission Name</b>	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	СО	0.0				0		0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0				0		0		
CA	150,000 miles	California ZEV	CO	0.0				0		0	0	Pass
CA	150,000 miles	California ZEV	CREE	0				0		0		

Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family	
Test #	NLMU10071415	Test Procedure	86 - Charge Depleting 20 Degree F FTP
Exhaust Test # for this Evap Test		Test Fuel Type	62 - Electricity
Test Date	05/25/2021	Fuel	N/A
Fuel Batch ID		Fuel Calibration Number	
Vehicle Class	N/A	DF Type	Mfr. Assigned
Verify Test Lab ID	FEV North America Inc. Vehicle Development Center		
E10 Evaporative Test Measurement Method			
<b>Test Start Odometer Reading</b>	3046	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
PHEV/EV Charge Depleting Test In	formation		
Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	112.445
Charge Depleting Range (Calculated miles)	305.5	Charge Depleting Range (Actual miles)	305.5
All Electric Range Unadjusted (miles)		Derived 5-Cycle Coefficient Model Year	
<b>Equivalent All Electric Range (miles)</b>	305.5		
Number of Charge Depleting Bags/Phases Conducted	41	Transition Bag/Phase Number	
Charge Denleting Rag/Phase			

#### **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	0.94857
5	Drive Trace Energy Economy Rating	0.54785
6	Drive Trace Inertia Work Ratio Rating	1.15876
7	Manufacturer Fuel Economy	29.037
8	System End State of Charge Watt-hours	88.69862
9	System Start State of Charge Watt-hours	0

Manufacturer Test Comments

Recharge Event Energy energy is an estimated value generated from cold 20 Degree FTP test and the energy efficiency from MCT test. Detailed Charge Depleting 20 Degree F FTP test data has already been submitted to EPA

#### **Fuel Properties**

Test Group	NLM	IUV00.0ZA2		Evapora	tive/Refueling Fam	ıly			
			Consolida	ated List of St	andards				
Exhaust Standar	·ds								
Cert Region	Calif	ornia + CAA Section	n 177 states	Cert/In-l	U <b>se Code</b>		Cer	t	
Vehicle Class		/Passenger Car		Standard	l Level			ifornia ZEV	
Fuel	Elect	•		Test Procedure			CVS 75 and later (w/o can. load)		
		Electricity					eve ve ve una mater (me cam roua)		
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						1		0
150,000 miles	CO-COMP			-			1		0
150,000 miles	CREE						1		0
150,000 miles	NMOG						1		0
150,000 miles	NMOG+NOX						1		0
150,000 miles	NMOG+NOX-COMP						1		0
150,000 miles	NOX						1		0
Cert Region	Fede	ral		Cert/In_l	Ise Code		Cert	f	
Vehicle Class	Fede LDV Elect	/Passenger Car		Cert/In-l Standard Test Pro	l Level			t eral Tier 3 Bin 0 arge Depleting Hig	hway
Vehicle Class	LDV	/Passenger Car	RAF	Standard	l Level	Downward Diesel Adjustment Factor	Fed	eral Tier 3 Bin 0	hway <b>Std</b>
Vehicle Class Fuel	LDV Elect	Passenger Car ricity Rounded	RAF 	Standard Test Pro NMOG /	l Level cedure Upward Diesel Adjustment	Diesel Adjustment	Fed Cha	eral Tier 3 Bin 0 arge Depleting Hig	•
Vehicle Class Fuel Useful Life	LDV Elect <b>Emission Name</b>	Passenger Car ricity Rounded Result		Standard Test Pro NMOG / NMHC	l Level cedure Upward Diesel Adjustment Factor	Diesel Adjustment Factor	Fed Cha <b>Mult DF</b>	eral Tier 3 Bin 0 urge Depleting Hig  Add DF	Std
Vehicle Class Fuel  Useful Life 150,000 miles	LDV Elect Emission Name CO	/Passenger Car ricity  Rounded Result		Standard Test Pro NMOG / NMHC	l Level cedure Upward Diesel Adjustment Factor	Diesel Adjustment Factor	Fed Cha Mult DF 	eral Tier 3 Bin 0 urge Depleting Hig  Add DF	Std 0
Vehicle Class Fuel  Useful Life  150,000 miles  150,000 miles	Emission Name  CO  CO-COMP	Passenger Car ricity  Rounded Result		Standard Test Pro  NMOG / NMHC	Level cedure  Upward Diesel Adjustment Factor	Diesel Adjustment Factor 	Fed Cha Mult DF 	eral Tier 3 Bin 0 arge Depleting Hig  Add DF  0 0	Std 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles 150,000 miles	Emission Name  CO  CO-COMP  CREE  NMOG+NOX-COMP	/Passenger Car ricity  Rounded Result	  	NMOG / NMHC	d Level cedure  Upward Diesel Adjustment Factor	Diesel Adjustment Factor  	Fed Cha	Add DF  0 0 0	Std 0 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles 150,000 miles Cert Region	Emission Name  CO  CO-COMP  CREE  NMOG+NOX-COMP	Passenger Car ricity  Rounded Result  cornia + CAA Section	  	Standard Test Pro  NMOG / NMHC Cert/In-I	Upward Diesel Adjustment Factor Use Code	Diesel Adjustment Factor  	Fed Cha	Add DF  0 0 0 t	Std 0 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles 150,000 miles Cert Region Vehicle Class	Emission Name  CO  CO-COMP  CREE  NMOG+NOX-COMP  Calif	Passenger Car ricity  Rounded Result  cornia + CAA Section Passenger Car	  	NMOG / NMHC Cert/In-U	Upward Diesel Adjustment Factor Use Code	Diesel Adjustment Factor  	Fed Cha	Add DF  0 0 0 tifornia ZEV	Std 0 0 0 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles Cert Region Vehicle Class	Emission Name  CO  CO-COMP  CREE  NMOG+NOX-COMP	Passenger Car ricity  Rounded Result  cornia + CAA Section Passenger Car	  	Standard Test Pro  NMOG / NMHC Cert/In-I	Upward Diesel Adjustment Factor Use Code	Diesel Adjustment Factor	Fed Cha	Add DF  0 0 0 t	Std 0 0 0 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles Cert Region Vehicle Class	Emission Name  CO  CO-COMP  CREE  NMOG+NOX-COMP  Calif	Passenger Car ricity  Rounded Result  cornia + CAA Section Passenger Car	  	NMOG / NMHC Cert/In-U	Upward Diesel Adjustment Factor Use Code	Diesel Adjustment Factor  	Fed Cha	Add DF  0 0 0 tifornia ZEV	Std 0 0 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles 150,000 miles Cert Region Vehicle Class Fuel	Emission Name CO CO-COMP CREE NMOG+NOX-COMP  Calif	Passenger Car ricity  Rounded Result  cornia + CAA Section Passenger Car ricity  Rounded	   1 177 states	Standard Test Pro  NMOG / NMHC Cert/In-I Standard Test Pro  NMOG /	Upward Diesel Adjustment Factor Use Code I Level cedure  Upward Diesel Adjustment	Diesel Adjustment Factor Downward Diesel Adjustment	Mult DF  Cerr Cali	Add DF  O  O  O  trige Depleting Higher  Add DF  O  O  O  O  trige Depleting Higher  trige Depleting Higher  O  O  O  O  O  O  O  O  O  O  O  O  O	Std 0 0 0 0 0 0 hway
150,000 miles 150,000 miles 150,000 miles 150,000 miles Cert Region Vehicle Class Fuel Useful Life	Emission Name  CO  CO-COMP  CREE  NMOG+NOX-COMP  Calift LDV Elect	Rounded Result	    1 177 states	Standard Test Pro  NMOG / NMHC  Cert/In-l Standard Test Pro  NMOG / NMHC	Upward Diesel Adjustment Factor  Use Code I Level cedure  Upward Diesel Adjustment Factor	Diesel Adjustment Factor Downward Diesel Adjustment Factor	Mult DF  Cert Cali Cha	Add DF  Add DF  0 0 0 0 trige Depleting High	Std 0 0 0 0 0
Vehicle Class Fuel  Useful Life 150,000 miles 150,000 miles 150,000 miles Cert Region Vehicle Class Fuel  Useful Life 150,000 miles	Emission Name  CO CO-COMP CREE NMOG+NOX-COMP  Calif LDV Elect  Emission Name	Rounded Result	   177 states	Standard Test Pro  NMOG / NMHC Cert/In-l Standard Test Pro  NMOG / NMHC	Upward Diesel Adjustment Factor Use Code I Level cedure  Upward Diesel Adjustment Factor	Diesel Adjustment Factor Downward Diesel Adjustment Factor	Mult DF Cerr Cali Cha	Add DF  O  o  t  ffornia ZEV  arge Depleting Hig  Add DF  0  0  Add DF	Std

Test Group	NLMUV00.0ZA2			Evaporative/Refueling Family					
Cert Region	Feder		Cert/In-Use Code			Cert			
Vehicle Class	LDV	LDV/Passenger Car Standard Level				Federal Tier 3 Bin 0			
Fuel	Elect	tricity Test Procedure			CVS 75 and later (w/o can. load)				
Useful Life	<b>Emission Name</b>	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	СО						1		0
150,000 miles	CO-COMP						1		0
150,000 miles	CREE						1		0
150,000 miles	NMOG						1		0
150,000 miles	NMOG+NOX						1		0
150,000 miles	NMOG+NOX-COMP						1		0
150,000 miles	NOX						1		0

Test Group	NLMUV00.0ZA2	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					
<b>Emission Name</b>						
HC-TOTAL	Total Hydrocarbon	METHANOL	CH3OH - Methanol			
CO	Carbon Monoxide	N2O	Nitrous Oxide			
CO2	Carbon dioxide	SPITBACK	Spitback Hydrocarbon in grams			
CREE	Carbon-Related Exhaust Emissions	AMP-HRS	Integrated Amp-hours			
OPT-CREE	Optional Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours			
NOX	Nitrogen Oxide	END-SOC	System End State of Charge Watt-hours			
PM	Particulate Matter	ACT-DISTANCE	Actual Distance Driven (miles)			
PM-COMP	SFTP Composite Particulate Matter	AS-VOLT	Average System Voltage			
HC-NM	Non-methane Hydrocarbon	CO2 BAG 1	Bag 1 Carbon Dioxide			
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 2	Bag 2 Carbon Dioxide			
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide			
NMOG	Non-methane organic gases	CO2 BAG 4	Bag 4 Carbon Dioxide			
НСНО	Formaldehyde	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides			
Н3С2НО	Acetaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides			
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-IWRR	Drive Trace Inertia Work Ratio Rating			
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-ASCR	Drive Trace Absolute Speed Change Rating			
CO-COMP	SFTP Composite Carbon Monoxide	DT-EER	Drive Trace Energy Economy Rating			
ETHANOL	C2H5OH - Ethanol	COMB-CREE	Combined Carbon-Related Exhaust Emissions			
FE BAG 1	Bag 1 Fuel Economy	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions			
FE BAG 2	Bag 2 Fuel Economy	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only			
FE BAG 3	Bag 3 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only			
FE BAG 4	Bag 4 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only			
MFR FE	Manufacturer Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)			
НС	Hydrocarbon for Running Loss and ORVR	LEAK-GAS CAP	Gas Cap Leakage (cc/min)			
METHANE	CH4 - Methane	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only			
Certification Region						
CA	California + CAA Section 177 states	FA	Federal			
Exhaust Emission Star	ndard Level					
B1	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340			
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250			
В3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200			
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170			
B5	Federal Tier 2 Bin 5	L3SULEV150	California LEV-III SULEV150			

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Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family			
B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630		
В7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570		
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400		
В9	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 Co	ode				
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		
R	2-Wheel Drive, Rear				

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Test Group	NLMUV00.0ZA2	Evaporative/Refueling Family				
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			