

**Application for Certification**

Model Year: 2027  
 Manufacturer Name: Rolls-Royce

Test Group: VRRGV06.7N74  
 Test Group Description: V12, 4-stroke, 6.7 Liter, gasoline

Durability Group: VRRGGPGNNV1T  
 Durability Group Description: 4-Stroke Otto Cycle  
 gasoline  
 direct fuel injection  
 ceramic, monolith  
 Palladium, Rhodium  
 Gasoline Particulate Filter, Three-Way Catalyst

Evaporative Group: VRRGR0170RR1

Applicable Standards: EPA  
 FTP Standard: Tier 4 - Bin 70  
 SFTP Standard: Tier 4 - Bin 70  
 EVAP FEL: Tier 3 - 500

Vehicle Classes Covered: EPA  
 LDV

Carlines Covered: Black Badge Cullinan, Black Badge Ghost, Cullinan, Ghost, Ghost Extended, Phantom, Phantom Extended

Test EDV:

VID	CFG	Fuel	FTP	HWY	US06	SC03	Cold CO
U231648	00	T3E10	VRRG10093091	VRRG10093092	VRRG10093093	VRRG10093094	VRRG10093095
U231648	01	T2E0	VRRG10093102	VRRG10093103	---	---	---

VID	CFG	Fuel	FTP Early Drive Away	FTP Intermediate Soak 10-minute	FTP Intermediate Soak 40-minute	FTP Intermediate Soak 3-hour
U231648	00	T3E10	VRRG10093096	VRRG10093097	VRRG10093098	VRRG10093099

Test EDV EVAP:

Family	VID	CFG	Fuel	3-day	RL	2-day	ORVR	BTP	Leak
R0170RR1	U220031	02	T3E10	TRRG10089851	TRRG10089852	TRRG10089846	TRRG10089848	TRRG10089849	TRRG10089850

For questions, Contact: Carlheinz Bayer, 201 / 571 - 5193

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**1. Correspondence and Communications**

- 1.1. Authorized Persons Refer to Common Section
- 1.2. Certificate Information Refer to Common Section
- 1.3. Primary certification contact:

Name: Carlheinz Bayer  
Phone Number: 201 / 571 - 5193  
Fax Number: 201 / 571 - 5479  
E-Mail-Address: Carlheinz.Bayer@bmwna.com

**2. Durability Group Description**

2.1.	Durability Group Name	VRRGGPGNNV1T
2.2.	Combustion Cycle	4-Stroke Otto Cycle
2.3.	Engine type	piston, water cooled
2.4.	Fuel used	gasoline
2.5.	Basic fuel metering system	direct fuel injection
2.6.	Catalyst construction	ceramic monolith
2.7.	Precious Metals in Catalyst	Palladium Rhodium
2.8.	Particulate Filter Construction	ceramic monolith
2.9.	Precious Metals in Particulate Filter	not applicable
2.10.	Precious Metal Loading	Refer to Section 16, Confidential Information
2.11.	Range of Catalyst Grouping Statistics	8.6- 11.4

**3. Evaporative / Refueling Family Description**

- 3.1. Evaporative / Refueling Family Name VRRGR0170RR1
- 3.2. Evaporative / Refueling Family Parameters specified in 40 CFR § 86.1821-01:
  - 3.2.1. Type of vapor storage device canister
  - 3.2.2. Basic canister design
    - Working capacity: 170 g
    - System configuration: 1 canister
    - Canister Construction: active charcoal granulate  
closed bottom
    - Canister Materials: plastic
  - 3.2.3. Fuel system time-contr. DI
  - 3.2.4. Type of refueling emission control system integrated system
  - 3.2.5. Fillpipe seal mechanism liquid seal
  - 3.2.6. Vapor control system passive mechanical system with liquid seal
  - 3.2.7. Purge control system electric purge valve
  - 3.2.8. Vapor hose material multilayer plastic
  - 3.2.9. Fuel tank material steel
- 3.3. Leak Family Description same Leak-Standard in between the evaporative family

## 3.4. ORVR Statement

Evaporative Family VRRGR0170RR1

ORVR safety application is carried over from previous model year.

This evaporative / refueling family was first certified for model year 2018.

During this time period we had no in-use problems or defects related to the ORVR system that required action by BMW.

There have been no service notifications, campaigns, instructions or bulletins to dealers or field personal or changes in production procedures or components.

No safety-related defect campaigns have been conducted related to the ORVR system.

Therefore no EPA/NHTSA review of this evaporative / refueling family was required.

**4. Durability Procedure Description**

4.1. Description of used durability process

4.1.1. Alternative Durability Program for Exhaust Emissions: The durability data vehicle was aged according to the bench aging process described in §86.1823-08. Following parameters were used to age the catalyst of the durability data vehicle:

	Exhaust branch 1. line	Exhaust branch 2. line
Tref [°C] =	852.49	853.23
calculated tref [h] =	74.856	74.102
effective tref [h] =	74.521	74.521

Statement: Based on BMW`s good engineering judgment, all the vehicles described in this Application for Certification comply with all applicable intermediate and full useful life standards.

4.1.2. Durability Program for Evaporative/Refueling Emissions: Confidential Information:  
Refer to Common Section

4.2. Determination of certification Levels

4.2.1. Exhaust Emissions: additive deterioration factor:  
  
For Deterioration Factors refer to Summary Sheet enclosed in Chapter 7 of this application.

4.2.2. Evaporative/Refueling Emissions: additive deterioration factor:  
  
For Deterioration Factors refer to Summary Sheet enclosed in Chapter 7 of this application.

**5. Test Group Description**

5.1.	Test Group Name	VRRGV06.7N74
5.2.	Engine information	
5.2.1.	Engine displacement	6749 cm <sup>3</sup>
5.2.2.	Arrangement of cylinders	in V-configuration
5.2.3.	Number of cylinders	12
5.4.	Vehicle class	EPA LDV
5.5.	Emission standards class	Tier 4 - Bin 70
5.6.	Applicable emission standards	Refer to Summary Sheet enclosed in Section 7 of this application.

**6. Test Vehicle Description**

6.1. Test Vehicle Description EDV, FEDV, DDV

VID	CFG	Carline	Model	Trans Type	Type	Fuel	ESS	Road Load CFG	Gear	Mode	eDrive	ETW
U231648	00	--	Black Badge Cullinan	SA-8	EDV	T3E10	---	10	refer to section 12	refer to section 12	refer to section 12	6500
U231648	01	31	Black Badge Cullinan	SA-8	FEDV	T2E0	---	11	D	default mode	---	6500
U231647	---	---	Black Badge Cullinan	---	DDV	T3E10	---	---	---	---	---	6500

Test parameters are described in the EV-CIS vehicle information

Road Load Configuration Description

X\_ means number of FEDV tire groups used for this model  
 10 Road Load for EDV (worst case)  
 11 Road Load for FEDV configuration

6.2. Test Vehicle Description EVAP EDV

VID	CFG	Model	Type	Fuel	Family
U220031	02	Black Badge Cullinan	EDV EVAP	T3E10	R0170RR1

For complete vehicle description, refer to Certification Summary Information Report Sheet, enclosed in Section 7 of this application.  
 Selection of vehicles carried out according to 40 CFR §86.1828-01(a).

**7. Test results (Cover page)**

7.1. Certification Summary Information Report submitted to EV-CIS

see attachment:  
CSI-VRRGV06.7N74-VRRGR0170RR1

7.2. Litmus Check

see attachment:  
CSI-VRRGV06.7N74-VRRGR0170RR1

**8. Statements****8.1 Emission Testing Waiver Statements**

All applicable vehicles will conform with the emission standards for which emission data is not being provided, as allowed under 40 CFR §86.1806-27, §86.1811-27, §86.1829-15 and §86.1865-12. The statements below identify the standards for which emission testing was not performed.

Data submittal waiver for HCHO emission compliance

Based on our engineering evaluation of appropriate HCHO emissions we state, that all light-duty vehicles included in the respective applications comply with the applicable HCHO emission standards. According to 40 CFR §86.1829-15 (d) (4), we waive the data submittal on the basis of this statement.

Data submittal waiver for high-altitude exhaust and evaporative emissions compliance

Based on an engineering evaluation of appropriate high-altitude emission testing we state that all vehicles included in this application comply with the applicable exhaust and evaporative emissions standards at high altitude. According to 40 CFR §86.1829-15 (c), we waive the data submittal on the basis of this statement.

According to 40 CFR §86.1865-12 (h) (3), we state for all vehicles included in this application that the hardware and software emission control strategies used during low altitude condition testing are used similarly across all altitudes for in-use operation.

According to 40 CFR §86.1811-27( c)(4) for Tier 4 vehicles we state based on an engineering evaluation for all vehicles included in this application that common calibration approaches are used at high altitudes, there is no deviation from low altitude emission control practices.

Evaporative Leak-Detection

For test groups not selected for OBD demonstration testing we state as the manufacturer, consistent with good engineering judgment, that all vehicles included in this application comply with the applicable leak monitoring requirement.

Spitback Testing Waiver

According to 40 CFR §86.1829-15 (e) (5), BMW certifies, that all vehicles included in this application do not exceed the fuel dispensing spitback standard of 1.0g THCE as given in §86.1813-17 (c).

**8.2 Compliance Statements**

"Lean-on-cruise" calibration strategies

There are no "Lean-on-cruise" calibration strategies according to 40 CFR §86.1811-17 (d)(4) incorporated into the vehicle design of this Test Group.

91RON-Statement

According to VPCD 97-01 we confirm that city and highway fuel economy test result differences between comparing 91 RON operation and 96 RON operation is within 3%. Emission standards are met at 91 RON operation and 96 RON operation as demonstrated by certification testing. Hereby EDV testing is done using Tier 3 E10 fuel with 91 RON, FEDV testing is using Tier 2 E0 fuel with 96 RON.

#### A/C-on specific calibrations-Statement

According to 40 CFR §86.1811-27(d) we state as the manufacturer that there are no A/C-on specific calibrations that differ from A/C-off calibrations for a given set of engine operating conditions which unnecessarily reduce emission control effectiveness during A/C-on operation when the vehicle is operated under conditions that may reasonably be expected during normal operation and use.

#### Cold Temperature Emission Control-Statement

According to 40 CFR §86.1809-12 (c) and based on engineering evaluations of emission testing between 25°F and 68°F, we confirm for all vehicles covered by this test group, that the guideline for CO, NMHC or NMOG+NO<sub>x</sub> as applicable, emission congruity in the intermediate temperature range is fulfilled by this test group.

#### Corporate Average Fuel Economy Calculation-Statement

Since the 2007 model year and in accordance with Dear Manufacturer letter CISD-09-19, BMW uses customer data to analyze whether predominance criteria are met regarding a certain operation mode of the multimode transmissions. Usage rates are determined by collecting data from the onboard powertrain and/or transmission control module. Using good engineering judgment, BMW has concluded that it is appropriate to carry-forward and carry-across the results of the earlier surveys where predominant use of one mode has been demonstrated.

#### Emission Control System Continuity-Statement

According to 40 CFR §86.1809-12 (e) and based on engineering evaluations of emission testing between 20°F and 86°F, we confirm for all vehicles covered by this test group, that there is no discontinuity in emissions of NMOG, PM, CO, CO<sub>2</sub>, N<sub>2</sub>O, NO<sub>x</sub>, CH<sub>4</sub>, HCHO, and in case of diesel vehicles also particulate emissions as measured on the FTP and Highway tests in the temperature range of 20°F to 86°F.

#### Engine Oil used for Certification Testing

Based on the guidance letters CISD-2008-11, CISD-10-11 and CD-2020-03 BMW confirms that it fulfills the "representativeness" requirements of 40 CFR 600.007(b)(6) with regard to the engine oils used in its test vehicles. BMW uses the factory fill oil for test vehicle run in, certification testing and fuel economy testing. The specific SAE viscosity grade used is included in the CSI information of each application. BMW uses non-API-registered fully synthetic oils. For factory fill, 0W-12, 0W-20, and 0W-30 oils are used (viscosity grades vary by engine model). For maintenance BMW recommends a 0W-12, 0W-20 or 0W-30 oil equivalent to or superior to the oil used for certification testing. BMW dealers are required to use this oil as part of the maintenance package included with each new vehicle. This approach is used to ensure that the oil used in certification test vehicles is no more fuel efficient than the oil that is used as the factory fill, or the oil recommended to the vehicle owner.

#### Intermediate Soak Statement

According to 40 CFR §86.1829-15 (d)(7) and based on engineering evaluations we confirm for all vehicles covered by this application to comply with the mid-temperature intermediate soak standards for soak times not covered by testing.

#### Leak free exhaust system

Based on our engineering analysis of the complete exhaust system we state as the manufacturer, that the exhaust system installed on any vehicles covered by this application comply with the requirements of § 86.1844-01(d)(16). The analysis covers the exhaust system and all related attached components from the engine block manifold gasket surface to a point sufficiently past the last catalyst and oxygen sensor in the system to assure that air will not reach the oxygen sensors under normal operating conditions.

OBD system

According to 40 CFR 86.1844-01 (d)(9)(iv) we confirm that the emission control diagnostic system installed on any vehicles included in this application is adequate for the performance warranty test described in 40 CFR Part 85 subpart W.

**9. OBD System Description**

The OBD System Description of this Test Group, MY 2027 has been uploaded separately to EV-CIS.

**10. Description of Alternate-fueled Vehicles**

not applicable

**11. Auxiliary Emission Control Devices (AECD) descriptions**

Confidential Information: Please refer to uploaded AECD document in EV-CIS

**12. Description of vehicles and test parameters covered by certificate**

12.1. Vehicle Parameters

12.1.1. Vehicle Information

Model Name	Carline	Trans	Vehicle Class	VCW [lbs]	ETW [lbs]	GVW [lbs]	Tank [gal]	Canister Working Capacity [g]	Canister Bed Volume [ccm]	Hydrocarb on Trap - Fleece
Black Badge Cullinan	--	SA	LDV	6160	6500	7231	23.8	170	3150	--
Black Badge Cullinan	31	SA	LDV	6160	6500	7231	23.8	170	3150	No
Black Badge Ghost	30	SA	LDV	5681	6000	6812	23.8	170	3150	No
Cullinan	19	SA	LDV	6100	6500	7231	23.8	170	3150	No
Ghost	21	SA	LDV	5633	6000	6812	23.8	170	3150	No
Ghost Extended	24	SA	LDV	5840	6000	6834	23.8	170	3150	No
Phantom	09	SA	LDV	6069	6500	7066	23.8	170	3150	No
Phantom Extended	23	SA	LDV	6246	6500	7198	23.8	170	3150	No

12.1.2. Drive Train Information

Model Name	Carline	Trans-Type (-drive Sys.)	# Gears	Axle ratio		Engine Code	hp / rpm	ft-lb / rpm
				front	rear			
Black Badge Cullinan	31	SA (A)	8	2.81	2.81	N74B68M2RR31X1	536 / 5000	738 / 1900 - 3250
Black Badge Cullinan	--	SA (A)	8	2.81	2.81	N74B68M2RR31X1	536 / 5000	738 / 1900 - 3250
Black Badge Ghost	30	SA (A)	8	2.81	2.81	N74B68M2RR21X1	536 / 5000	738 / 1900 - 3250
Cullinan	19	SA (A)	8	2.81	2.81	N74B68M2RR31X	536 / 5000	627 / 1600 - 4200
Ghost	21	SA (A)	8	2.81	2.81	N74B68M2RR21X	536 / 5000	627 / 1600 - 4200
Ghost Extended	24	SA (A)	8	2.81	2.81	N74B68M2RR22X	536 / 5000	627 / 1600 - 4200
Phantom	09	SA (R)	8	not applicable	2.81	N74B68M2RR11S	536 / 5000	738 / 1900 - 3250
Phantom Extended	23	SA (R)	8	not applicable	2.81	N74B68M2RR12S	536 / 5000	738 / 1900 - 3250

12.1.3. Tire Information

Modell	Carline	Trans	Road Load CFG	Tire Front	Tire Rear
Black Badge Cullinan	--	SA	10	worst case represented	worst case represented
	31	SA	11	255/45 R22 107Y STD	285/40 R22 110Y STD
Black Badge Ghost	30	SA	11	255/40 R23 104Y STD	295/35 R23 108Y STD
				255/45 R20 105Y STD	285/40 R20 108Y STD
				255/40 R21 102Y STD	285/35 R21 105Y STD
Cullinan	19	SA	11	255/35 R22 102Y STD	285/30 R22 104Y STD
				255/45 R22 107Y STD	285/40 R22 110Y STD
				255/40 R23 104Y STD	295/35 R23 108Y STD
Ghost	21	SA	11	255/40 R21 102Y STD	285/35 R21 105Y STD
				255/45 R20 105Y STD	285/40 R20 108Y STD
				255/35 R22 102Y STD	285/30 R22 104Y STD
Ghost Extended	24	SA	11	255/40 R21 102Y STD	285/35 R21 105Y STD
				255/35 R22 102Y STD	285/30 R22 104Y STD
				255/45 R20 105Y STD	285/40 R20 108Y STD
Phantom	09	SA	11	255/45 R22 107Y STD	285/40 R22 110Y STD
				255/50 R21 109Y STD	285/45 R21 113Y STD
Phantom Extended	23	SA	11	255/50 R21 109Y STD	285/45 R21 113Y STD
				255/45 R22 107Y STD	285/40 R22 110Y STD

M+S indicates an All-Season tire and not a dedicated Winter tire  
 (Winter) indicates a dedicated Winter tire  
 AT indicates an All-Terrain tire  
 HP indicates a High-Performance tire

RSC indicates a tire with run flat capability  
 STD indicates a tire without run flat capability

12.1.4. Emission control system description:

12.1.4.1. Catalyst	2TWC
12.1.4.2. Particulate Filter	yes
12.1.4.3. EGR / EGRC	EGR: no EGRC: no
12.1.4.4. Air pump type	not applicable
12.1.4.5. Fuel system type	Direct injection
12.1.4.6. Intake air aspiration method	exhaust gas turbo charger with charge pressure control via wastegate and intercooler
12.1.4.7. Other	Charged Air Cooler
12.1.5. Number of valves per cylinder	4
12.1.6. Engine displacement	6749 cm <sup>3</sup>
12.1.7. Certification Region	FA
12.1.8. Shift Indicator Light	not applicable
12.2. Test Parameters	
12.2.1. Engine Starting Procedures	Refer to Common Section
12.2.2. Shift Schedules	not applicable
12.2.3. Dynamometer loading information	
12.2.3.1. Sort of dynamometer	all wheel roll
12.2.3.2. Electric Dynamometer Coefficients	

Modell	Carline	Trans	Road Load CFG	N/V	A [lbf]	B [lbf/mph]	C [lbf/mph <sup>2</sup> ]	TRLHP	a [lbf]	b [lbf/mph]	c [lbf/mph <sup>2</sup> ]	Grill Shutter
Black Badge Cullinan	--	SA	10	20.1	83.7	-0.714	0.03841	19.2	1.2	-0.237	0.03310	No
Black Badge Cullinan	31	SA	11	20.1	83.7	-0.714	0.03785	19.0	-0.6	-0.181	0.03238	No
Black Badge Ghost	30	SA	11	20.1	76.4	-0.742	0.03239	16.0	not applicable	not applicable	not applicable	No
Cullinan	19	SA	11	20.1	83.7	-0.714	0.03785	19.0	not applicable	not applicable	not applicable	No
Ghost	21	SA	11	20.1	76.3	-0.742	0.03239	16.0	not applicable	not applicable	not applicable	No
Ghost Extended	24	SA	11	20.1	76.4	-0.742	0.03239	16.0	not applicable	not applicable	not applicable	No
Phantom	09	SA	11	20.1	78.1	-0.495	0.03148	17.6	not applicable	not applicable	not applicable	No
Phantom Extended	23	SA	11	20.1	77.5	-0.496	0.03148	17.5	not applicable	not applicable	not applicable	No

Road Load Configuration Description

X\_ means number of FEDV tire groups used for this model  
 10 Road Load for EDV (worst case)  
 11 Road Load for FEDV configuration

12.4. Information on driver selectable modes

<b>Drive Mode</b>	Default Mode	Function
not applicable		not applicable

<b>Transmission Mode</b>	Default Mode	Function
comfortable	no	standard comfortable vehicle gear operation
sporty	no	sporty setting for shift points

12.5. Modes used for EDV Testing

Test EDV:

<b>VID</b>	<b>CFG</b>	<b>Fuel</b>	<b>FTP</b>	<b>HWY</b>	<b>US06</b>	<b>SC03</b>	<b>Cold CO</b>
U231648	00	T3E10	VRRG10093091	VRRG10093092	VRRG10093093	VRRG10093094	VRRG10093095
U231648	01	T2E0	VRRG10093102	VRRG10093103	---	---	---

<b>VID</b>	<b>CFG</b>	<b>Fuel</b>	<b>FTP Early Drive Away</b>	<b>FTP Intermediate Soak 10-minute</b>	<b>FTP Intermediate Soak 40-minute</b>	<b>FTP Intermediate Soak 3-hour</b>
U231648	00	T3E10	VRRG10093096	VRRG10093097	VRRG10093098	VRRG10093099

<b>Drive Mode</b>
T3E10 EDV testing is done in transmission mode "D + LOW" (sporty). This is the worst case combination with highest engine revolutions. T2E0 EDV testing is done in transmission mode "D" (comfortable). This represents the default mode.

**13. Projected Sales**

Refer to Common Section for Model Year 2027

**14. Request for certification**

We herewith apply for the Federal Certificate of conformity for the Test Group VRRGV06.7N74.

The mentioned Test Group complies with all applicable regulations contained in 40 Code of Federal Regulations Part 85 and Part 86.



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Dr. Bernd Ofner

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**15. Other Information**

15.1. Vehicle Emission Control Information Label

Label according to certification requirements in 40 CFR § 86.1807-01.

The VEI label is attached to the engine hood.

Refer to Section 17, Attachment

Carline	Model Name	VECI Label
09	Phantom	see attachment: 03VE-VN74-01
19	Cullinan	see attachment: 03VE-VN74-01
21	Ghost	see attachment: 03VE-VN74-01
23	Phantom Extended	see attachment: 03VE-VN74-01
24	Ghost Extended	see attachment: 03VE-VN74-01
30	Black Badge Ghost	see attachment: 03VE-VN74-01
31	Black Badge Cullinan	see attachment: 03VE-VN74-01

15.2. Fuel Tank Temperature Profile

Fuel Tank Temperature Profile according to certification requirements in 40 CFR § 86.129-94(d).

Refer to Section 17, Attachment

Carline	Model Name	Evaporative Group	FTTP
09	Phantom	VRRGR0170RR1	see attachment: FTTP-ORR1-02
19	Cullinan		
21	Ghost		
23	Phantom Extended		
24	Ghost Extended		
30	Black Badge Ghost		
31	Black Badge Cullinan		

**17. Attachment**

- |      |  |  |
|------|--|--|
| 17.1 | Fuel Tank Temperature Profile            | see attachment: FTTP-0RR1-02                     |
| 17.2 | VECI Label                               | see attachment: 03VE-VN74-01                     |
| 17.3 | Certification Summary Information Report | see attachment:<br>CSI-VRRGV06.7N74-VRRGR0170RR1 |

**Test Vehicle Data**

Vehicle Type: Black Badge Cullinan  
Mileage: 3334 mi  
Fuel tank volume: 90 L  
Fuel volume: 36 L

**Ambient Conditions**

Weather: sunny  
clouds: 0 %  
Wind speed: 7,4 mph  
Ambient temp:  
Start: 104,4 °F  
End: 107,4 °F  
Surface temp.:  
Start: 136,7 °F  
End: 140,5 °F

**Test Data**

Date of test: 09/28/2024  
Engine start: 12:02  
Measure start: 12:07  
Measure stop: 13:19  
Test track: Dubai Bab Al shams

Time [s]	Fuel Temp 1 [°F]	Fuel Temp 2 [°F]	Fuel Temp Average [°F]	Fuel Temp Average Correctet (to95°F) [°F]	Vapor Temp [°F]	Tank pressure [in H2O]
0	91.61	91.19	91.40	95.00	91.17	-0.71
30	91.67	91.21	91.44	95.04	91.25	-2.37
60	91.72	91.23	91.48	95.07	91.33	-2.68
90	91.75	91.26	91.51	95.11	91.42	-1.35
120	91.78	91.32	91.55	95.15	91.50	-0.09
150	91.83	91.39	91.61	95.21	91.58	-0.75
180	91.94	91.47	91.70	95.30	91.65	0.10
210	92.07	91.56	91.82	95.42	91.74	-0.41
240	92.20	91.68	91.94	95.54	91.84	-2.87
270	92.31	91.80	92.05	95.65	91.96	-1.06
300	92.41	91.92	92.17	95.76	92.08	0.05
330	92.52	92.03	92.28	95.87	92.20	-0.05
360	92.63	92.15	92.39	95.99	92.35	0.13
390	92.76	92.26	92.51	96.11	92.52	0.07
420	92.89	92.37	92.63	96.23	92.65	-0.41
450	93.01	92.49	92.75	96.35	92.77	-3.55
480	93.14	92.61	92.87	96.47	92.90	-4.45
510	93.27	92.76	93.01	96.61	93.03	-0.10
540	93.41	92.91	93.16	96.76	93.15	0.14
570	93.56	93.05	93.30	96.90	93.27	-3.25
600	93.68	93.19	93.44	97.04	93.39	-4.10
630	93.80	93.32	93.56	97.16	93.52	-0.59
660	93.92	93.43	93.68	97.28	93.63	-3.65
690	94.06	93.54	93.80	97.40	93.75	-1.65
720	94.21	93.66	93.93	97.53	93.87	-0.40
750	94.34	93.80	94.07	97.67	94.00	-1.30
780	94.46	93.93	94.20	97.80	94.14	-4.32
810	94.59	94.07	94.33	97.93	94.28	0.14
840	94.72	94.19	94.46	98.06	94.42	-0.38
870	94.86	94.32	94.59	98.19	94.54	-1.12
900	95.00	94.45	94.72	98.32	94.67	-3.88
930	95.13	94.58	94.85	98.45	94.82	-4.38
960	95.27	94.71	94.99	98.59	94.97	-3.21
990	95.42	94.87	95.14	98.74	95.13	-0.79
1020	95.58	95.02	95.30	98.90	95.27	-0.11
1050	95.73	95.17	95.45	99.05	95.39	-2.16

1080	95.88	95.30	95.59	99.19	95.52	0.07
1110	96.01	95.44	95.72	99.32	95.67	-3.55
1140	96.12	95.58	95.85	99.45	95.82	-1.13
1170	96.23	95.74	95.98	99.58	95.96	-2.94
1200	96.35	95.88	96.12	99.72	96.09	-3.31
1230	96.48	96.03	96.25	99.85	96.23	-0.15
1260	96.61	96.17	96.39	99.99	96.37	-1.64
1290	96.76	96.29	96.52	100.12	96.51	-4.08
1320	96.90	96.41	96.66	100.26	96.67	-0.56
1350	97.05	96.52	96.79	100.39	96.83	-1.45
1380	97.18	96.65	96.91	100.51	96.98	-0.58
1410	97.30	96.77	97.04	100.64	97.09	-0.59
1440	97.41	96.89	97.15	100.75	97.17	-0.58
1470	97.50	96.99	97.25	100.85	97.24	-0.58
1500	97.60	97.09	97.35	100.95	97.34	-0.58
1530	97.71	97.19	97.45	101.05	97.45	-0.59
1560	97.83	97.32	97.57	101.17	97.58	-0.60
1590	97.96	97.46	97.71	101.31	97.75	-2.08
1620	98.12	97.62	97.87	101.47	97.93	-2.13
1650	98.27	97.77	98.02	101.62	98.09	-3.88
1680	98.41	97.90	98.16	101.76	98.23	-0.72
1710	98.55	98.04	98.30	101.90	98.36	-0.28
1740	98.71	98.20	98.45	102.05	98.50	-0.60
1770	98.87	98.36	98.62	102.22	98.68	-2.65
1800	99.04	98.52	98.78	102.38	98.86	-0.96
1830	99.19	98.67	98.93	102.53	99.01	-1.16
1860	99.33	98.80	99.07	102.67	99.15	-0.58
1890	99.46	98.94	99.20	102.80	99.25	-1.27
1920	99.58	99.07	99.33	102.93	99.33	-3.58
1950	99.70	99.21	99.45	103.05	99.43	-0.11
1980	99.81	99.33	99.57	103.17	99.54	-0.70
2010	99.92	99.44	99.68	103.28	99.65	-0.16
2040	100.03	99.54	99.79	103.39	99.77	-2.59
2070	100.14	99.66	99.90	103.50	99.89	-0.58
2100	100.26	99.78	100.02	103.62	100.00	-0.58
2130	100.38	99.88	100.13	103.73	100.10	-0.58
2160	100.51	99.99	100.25	103.85	100.21	-0.44
2190	100.64	100.12	100.38	103.98	100.34	-2.05
2220	100.76	100.27	100.51	104.11	100.50	-1.85
2250	100.88	100.40	100.64	104.24	100.67	-3.87
2280	101.01	100.52	100.76	104.36	100.83	-0.70
2310	101.14	100.66	100.90	104.50	100.98	-0.19
2340	101.29	100.80	101.05	104.65	101.13	-0.57
2370	101.45	100.94	101.19	104.79	101.27	-2.74
2400	101.61	101.07	101.34	104.94	101.40	-0.89
2430	101.77	101.22	101.49	105.09	101.53	-1.05
2460	101.91	101.37	101.64	105.24	101.66	-0.54
2490	102.03	101.50	101.77	105.36	101.78	-1.19
2520	102.14	101.63	101.89	105.49	101.89	-2.99
2550	102.26	101.76	102.01	105.61	102.00	-0.66
2580	102.38	101.89	102.13	105.73	102.12	-0.72
2610	102.50	102.02	102.26	105.86	102.24	-0.13
2640	102.64	102.15	102.39	105.99	102.37	-2.10
2670	102.77	102.27	102.52	106.12	102.51	-0.55
2700	102.88	102.39	102.64	106.24	102.64	-0.56
2730	102.98	102.49	102.73	106.33	102.76	-0.56
2760	103.07	102.59	102.83	106.43	102.86	0.14

2790	103.17	102.70	102.94	106.54	102.96	-0.54
2820	103.29	102.81	103.05	106.65	103.06	-0.54
2850	103.42	102.93	103.17	106.77	103.18	-0.12
2880	103.58	103.06	103.32	106.92	103.31	-3.72
2910	103.73	103.22	103.48	107.08	103.47	-0.73
2940	103.87	103.39	103.63	107.23	103.65	-0.38
2970	104.02	103.54	103.78	107.38	103.82	-0.99
3000	104.16	103.67	103.92	107.52	103.98	-0.35
3030	104.30	103.82	104.06	107.66	104.13	-4.51
3060	104.44	103.98	104.21	107.81	104.27	-2.49
3090	104.59	104.13	104.36	107.96	104.39	-2.49
3120	104.74	104.27	104.50	108.10	104.51	0.16
3150	104.90	104.40	104.65	108.25	104.65	-0.54
3180	105.06	104.54	104.80	108.40	104.80	-3.28
3210	105.21	104.68	104.95	108.55	104.96	-0.87
3240	105.35	104.82	105.09	108.69	105.11	-0.14
3270	105.47	104.96	105.22	108.82	105.27	-3.93
3300	105.59	105.11	105.35	108.95	105.43	-2.14
3330	105.71	105.24	105.47	109.07	105.57	-3.73
3360	105.83	105.36	105.59	109.19	105.68	0.06
3390	105.96	105.48	105.72	109.32	105.79	-1.52
3420	106.11	105.63	105.87	109.47	105.91	-3.02
3450	106.26	105.78	106.02	109.62	106.05	-0.70
3480	106.40	105.91	106.16	109.76	106.17	0.07
3510	106.55	106.03	106.29	109.89	106.27	-3.12
3540	106.68	106.17	106.43	110.02	106.39	-2.27
3570	106.83	106.31	106.57	110.17	106.53	0.03
3600	106.98	106.47	106.73	110.32	106.70	0.13
3630	107.13	106.62	106.88	110.48	106.86	0.16
3660	107.27	106.75	107.01	110.61	107.00	-0.70
3690	107.40	106.88	107.14	110.74	107.15	-3.10
3720	107.53	107.00	107.27	110.87	107.30	-0.93
3750	107.65	107.14	107.39	110.99	107.43	-3.93
3780	107.77	107.27	107.52	111.12	107.55	-4.44
3810	107.89	107.40	107.65	111.25	107.65	-1.15
3840	108.01	107.53	107.77	111.36	107.77	-0.44
3870	108.13	107.64	107.88	111.48	107.90	-3.77
3900	108.25	107.75	108.00	111.60	108.03	-0.51
3930	108.39	107.86	108.12	111.72	108.15	-3.94
3960	108.52	107.98	108.25	111.85	108.26	0.13
3990	108.65	108.12	108.38	111.98	108.38	-1.25
4020	108.78	108.26	108.52	112.12	108.52	-3.77
4050	108.90	108.41	108.66	112.26	108.66	0.11
4080	109.02	108.54	108.78	112.38	108.79	-2.67
4110	109.13	108.65	108.89	112.49	108.91	-2.07
4140	109.25	108.76	109.00	112.60	109.03	-0.53
4170	109.36	108.87	109.11	112.71	109.16	0.04
4200	109.47	108.99	109.23	112.83	109.27	-0.51
4230	109.57	109.12	109.34	112.94	109.40	-0.51
4260	109.66	109.23	109.44	113.04	109.52	-0.49
4290	109.75	109.33	109.54	113.14	109.62	-0.49
4320	109.84	109.44	109.64	113.24	109.73	-0.49

**BMW**

**Designation**



Attachment

**VECI Label LDV, VRRGV06.7N74,  
VRRGR0170RR1**

Date: 03.12.2025

03VE-VN74-01

DRAFT - Inverted Representation

		<b>Rolls Royce Motor Cars Ltd.</b>	
<b>VEHICLE EMISSION CONTROL INFORMATION</b>			
Conforms to regulations:		MY 2027	
U.S. EPA:	Tier 4 - Bin 70 LDV	CA OBD II	
EVAP:	Tier 3 - 500 LDV	Fuel: gasoline	
California:	Conforms to U.S. EPA regulations and is certified for sale in California	CA OBD II Fuel: gasoline	
No adjustments needed.	2WU-TWC, 2GPF, 2WR-HO2S, 2HO2S, DFI, 2TC, 2CAC		
Group: VRRGV06.7N74			
Evap: VRRGR0170RR1			
		8 898 696	

Original representation

Base: Black  
Characters: Silver



### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1				
<b>Evaporative/Refueling Family Information</b>							
<b>Evaporative Summary Information Type</b>	New	<b>Submission/Correction Date</b>	12/15/2025 04:12:58 AM				
<b>Integrated ORVR?</b>	Yes	<b>Fuel(s)</b>	Gasoline				
<b>Multiple Fuel Storage</b>	--						
<b>Bladder Fuel Tank?</b>	No						
<b>Fuel Tank Material</b>	Metal	<b>Fuel Tank Material Description</b>	--				
<b>Fill Pipe Seal Type</b>	Liquid seal						
<b>Air Intake System Vapor Storage Device?</b>	No	<b>Air Intake System Vapor Storage Device Description</b>	--				
<b>Fuel System Vapor Storage Canister?</b>	Yes	<b>Other Vapor Storage</b>	--				
<b>Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)</b>	170	<b>Number of Primary Canisters</b>	1				
<b>Number of Bleed Canisters</b>	0	<b>Bleed Canister Total Working Capacity (grams)</b>	--				
<b>Mfr Evaporative/Refueling Family Comments</b>	--						
<b>Leak Family Details</b>							
<b>Leak Family Indicator</b>	No						
<b>Canister Bleed Test Indicator</b>	Yes	<b>Applicability of Evaporative Canister Bleed Test</b>	50 State				
<b>Evaporative Canister Bleed Test Comments</b>	--						
<b>CARB Fuel Only (Rig) Test Indicator</b>	No	<b>Applicability of CARB Fuel Only (Rig) Test</b>	--				
<b>CARB Fuel Only (Rig) Test Comments</b>	--						
<b>Models Covered by this Certificate</b>							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	30 - Black Badge Ghost	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	21 - Ghost	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	31 - Black Badge Cullinan	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	19 - Cullinan	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	23 - Phantom Extended	Federal	2-Wheel Drive, Rear	Semi-Automatic	8	Yes
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	9 - Phantom	Federal	2-Wheel Drive, Rear	Semi-Automatic	8	Yes
Rolls-Royce Motor Cars Limited	1 - Rolls-Royce Motor Cars Limited	24 - Ghost Extended	Federal	All Wheel Drive	Semi-Automatic	8	Yes

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1	
<b>Engine Description</b>				
<b>Hybrid Type</b>	--	<b>Hybrid Description</b>	--	
<b>Engine Type</b>	4-Stroke Spark Ignition	<b>Mfr Engine Description</b>	--	
<b>Engine Block Arrangement</b>	V-shaped engine	<b>Mfr Engine Block Arrangement Description</b>	--	
<b>Camless Valvetrain Indicator</b>	No	<b>Oil Viscosity/Classification</b>	0W30	
<b>Number of Cylinders/Rotors</b>	12	<b>Mechanically Variable Compression Ratio Indicator</b>	N	
<b>After Treatment Device(s) (ATD)</b>				
<b>ATD Number</b>	<b>ATD Type</b>	<b>ATD Precious Metal</b>	<b>Substrate Material</b>	<b>Substrate Construction</b>
1	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
3	Other	non coated particular filter	Ceramic	Monolith
4	Other	non coated particular filter	Ceramic	Monolith
<b>Mfr After Treatment Device (ATD) Comments</b>	After Treatment Device #3 and #4: Gasoline Particulate Filter (GPF)			
<b>Direct Ozone Reduction (DOR) Device</b>	Not Equipped			
<b>Mfr Emission Control Device Comments</b>	--			

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Engine Configuration Number 1</b>			
<b>Engine Displacement (liters)</b>	6.7	<b>Engine Rated Horsepower</b>	536
<b>Number of Inlet Valves Per Cylinder</b>	2	<b>Number of Exhaust Valves Per Cylinder</b>	2
<b>Air Aspiration Method</b>	Turbocharged	<b>Number of Air Aspiration Devices</b>	2
<b>Air Aspiration Device Configuration</b>	Parallel	<b>Charge Air Cooler Type</b>	Liquid
<b>Air Aspiration Drive Method(s)</b>	Mechanical		
<b>Cylinder Deactivation</b>	No		
<b>Cylinder Deactivation Description</b>	--		
<b>Variable Valve Timing</b>	Yes		
<b>Variable Valve Timing System Description</b>	variable valve timing at inlet and outlet valves		
<b>Variable Valve Lift?</b>	No		
<b>Variable Valve Lift System Description</b>	--		
<b>Number of Knock Sensors</b>	6	<b>Number of Air/Fuel Sensors</b>	4
<b>Air/Fuel Sensor # 1 Type</b>	Air fuel	<b>Air/Fuel Sensor # 1 Description</b>	--
<b>Air/Fuel Sensor # 2 Type</b>	Heated oxygen	<b>Air/Fuel Sensor # 2 Description</b>	--
<b>Air/Fuel Sensor # 3 Type</b>	Air fuel	<b>Air/Fuel Sensor # 3 Description</b>	--
<b>Air/Fuel Sensor # 4 Type</b>	Heated oxygen	<b>Air/Fuel Sensor # 4 Description</b>	--
<b>Mfr Air/Fuel Sensor Comments</b>	--		
<b>Exhaust Gas Recirculation</b>	No	<b>Cooled Exhaust Gas Recirculation</b>	No
<b>EGR Type</b>	--	<b>Exhaust Gas Recirculation Description if 'Other'</b>	--
<b>Closed Loop Air Injection System</b>	No		
<b>Air Injection Type</b>	--	<b>Air Injection Type if 'Other'</b>	--
<b>Mfr Engine Configuration Comments</b>	Peak-Torque 627 foot-pounds: Cullinan, Ghost, Ghost Extended; 738 foot-pounds: Phantom, Phantom Extended, Black Badge Ghost, Black Badge Cullinan		

**Official Test Numbers**

Test Group	Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City	EPA City	EPA	EPA	CREE
							Litmus	Litmus	Highway	Highway	
							Value	Threshold	Value	Threshold	Weighting
Gasoline		VRRG10093091	VRRG10093093	VRRG10093094	VRRG10093095	VRRG10093092	9.2	8.7	15.6	12.4	--

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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**Emission Data Vehicle Information**

Vehicle ID / Configuration	U220031 / 2	Manufacturer Vehicle Configuration Number	0
Original Test Group Name	TRRGV06.7N74	Original Evaporative/Refueling Family	TRRGR0170RR1
Original Test Vehicle Model Year	2026		
<b>Vehicle Model</b>			
Represented Test Vehicle Make	Rolls Royce	Represented Test Vehicle Model	Black Badge Cullinan

**Leak Family Details**

Leak Family Identifier	--	Leak Family Name	--
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**Drive Sources and Fuel System Details**

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline

Hybrid Indicator	No		
Multiple Fuel Storage	--	Multiple Fuel Combustion	--
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--
Off-board charge Capable Indicator	--		
Odometer Correction -- Initial	1	Odometer Correction Factor	1
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	N74B68U2RR31X1	Rated Horsepower	591
Displacement (liters)	6.7		
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'	
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel
Charge Air Cooler Type	Liquid	Drive Mode While Testing	All Wheel Drive
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)
Curb Weight (lbs)	6151	Equivalent Test Weight (pounds)	6500
GVWR (lbs)	7231	N/V Ratio	20.1
Axle Ratio	2.81		
Transmission Type	Semi-Automatic	# of Transmission Gears	8
Transmission Lockup	Yes	Creeper Gear	No

**Dynamometer Coefficients:**

Coefficient Category	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	84.6	-0.712	0.03841	13	-0.106	0.03128	19.3

Emission Control Device Comments --

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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**Manufacturer Test Vehicle Comments**      vi\_U220031\_02\_EVAP EDV\_Black Badge Cullinan\_A\_ETW-6500\_RG10\_E10

<b>Test #</b>	<b>TRRG10089846</b>	<b>Test Procedure</b>	<b>23 - 2-day evap</b>
<b>Exhaust Test # for this Evap Test</b>	TRRG10089843	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	12/10/2024	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	43
<b>Vehicle Class</b>	N/A	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	Calculated (1.08 x FID Total Hydrocarbons)		
<b>Test Start Odometer Reading</b>	6570	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	No		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
<b>HC-TOTAL (Total Hydrocarbon)</b>	0.17072	--
<b>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</b>	0.18438	--

**Manufacturer Test Comments**      EVAP EDV - 2Day, Black Badge Cullinan

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.1844	0.0000	0.184	0.500	Pass

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>TRRG10089851</b>	<b>Test Procedure</b>	<b>34 - Federal fuel 3-day evap</b>
<b>Exhaust Test # for this Evap Test</b>	TRRG10089844	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	02/27/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	58
<b>Vehicle Class</b>	N/A	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	Calculated (1.08 x FID Total Hydrocarbons)		
<b>Test Start Odometer Reading</b>	6971	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	No		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
<b>HC-TOTAL (Total Hydrocarbon)</b>	0.19289	--
<b>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</b>	0.20832	--

**Manufacturer Test Comments**                      EVAP EDV - 3Day, Black Badge Cullinan

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.2083	0.0229	0.231	0.500	Pass

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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<b>Test #</b>	<b>TRRG10089848</b>	<b>Test Procedure</b>	<b>24 - Federal fuel refueling test (ORVR)</b>
<b>Exhaust Test # for this Evap Test</b>	TRRG10089842	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	02/05/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	58
<b>Vehicle Class</b>	N/A	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	Calculated (1.08 x FID Total Hydrocarbons)		
<b>Test Start Odometer Reading</b>	6857	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	No		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC (Hydrocarbon for Running Loss and ORVR)	0.0245	--

**Manufacturer Test Comments**                      EVAP EDV, ORVR, Black Badge Cullinan

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC	0.024	0.000	0.02	0.20	Pass

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>TRRG10089852</b>	<b>Test Procedure</b>	<b>32 - Federal Fuel Running Loss</b>
<b>Exhaust Test # for this Evap Test</b>	TRRG10089844	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	02/27/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	58
<b>Vehicle Class</b>	N/A	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	Calculated (1.08 x FID Total Hydrocarbons)		
<b>Test Start Odometer Reading</b>	6943	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	No		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
<b>HC (Hydrocarbon for Running Loss and ORVR)</b>	0.0002	--
<b>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</b>	0.0002	--

**Manufacturer Test Comments**                      EVAP EDV - RL, Black Badge Cullinan

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.000	0.000	0.00	0.05	Pass

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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<b>Test #</b>	<b>TRRG10089849</b>	<b>Test Procedure</b>	<b>65 - Evap Canister Bleed Test</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	01/22/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	43
<b>Vehicle Class</b>	N/A	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	Calculated (1.08 x FID Total Hydrocarbons)		
<b>Test Start Odometer Reading</b>	6686	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	No		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
<b>HC-TOTAL (Total Hydrocarbon)</b>	0.0097	--
<b>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</b>	0.01048	--

**Manufacturer Test Comments**                      EVAP EDV - BLEED, Black Badge Cullinan

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.0105	0.000	0.010	0.020	Pass

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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<b>Test #</b>	<b>TRRG10089850</b>	<b>Test Procedure</b>	<b>67 - Leak Test - Port Near Canister</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	12/03/2024	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	43
<b>Vehicle Class</b>	N/A	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	6495	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
LEAK-DIA (Effective Leak Diameter (inches))	0.006	--

**Manufacturer Test Comments**                      EVAP EDV - Leak Test, Black Badge Cullinan

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	LEAK-DIA	0.006	0.000	0.01	0.02	Pass

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1						
<b>Emission Data Vehicle Information</b>									
Vehicle ID / Configuration	U231648 / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	VRRGV06.7N74	Original Evaporative/Refueling Family	VRRGR0170RR1						
Original Test Vehicle Model Year	2027								
<b>Vehicle Model</b>									
Represented Test Vehicle Make	Rolls Royce	Represented Test Vehicle Model	Black Badge Cullinan						
<b>Leak Family Details</b>									
Leak Family Identifier	--	Leak Family Name	--						
<b>Drive Sources and Fuel System Details</b>									
	<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </tbody> </table>			Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
Hybrid Indicator	No								
Multiple Fuel Storage	--	Multiple Fuel Combustion	--						
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--						
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--						
Off-board charge Capable Indicator	--								
Odometer Correction -- Initial	1	Odometer Correction Factor	1						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	N74B68M2RR31X1	Rated Horsepower	536						
Displacement (liters)	6.7								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Liquid	Drive Mode While Testing	All Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	6160	Equivalent Test Weight (pounds)	6500						
GVWR (lbs)	7231	N/V Ratio	20.1						
Axle Ratio	2.81								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creeper Gear	No						

## Certification Summary Information Report

Test Group		VRRGV06.7N74			Evaporative/Refueling Family			VRRGR0170RR1
<b>Dynamometer Coefficients:</b>								
		Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)		
City/Highway/Evap	83.7	-0.714	0.03841	1.2	-0.237	0.0331	19.2	
Cold CO	92.1	-0.785	0.04225	-4.5	-0.161	0.03377	N/A	
US06	83.7	-0.714	0.03841	1.2	-0.237	0.0331	N/A	
Emission Control Device Comments	--							
Manufacturer Test Vehicle Comments	vi_U231648_00_EDV_Black Badge Cullinan_A_ETW-6500_RG10_low Button on_D							

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093091</b>	<b>Test Procedure</b>	<b>31 - Federal fuel 3-day exhaust</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/07/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3667	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>Test Results</b>			



## Certification Summary Information Report

Test Group		VRRGV06.7N74			Evaporative/Refueling Family					VRRGR0170RR1		
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	120,000 miles	Other	CREE	797	--	--	--	0.1	--	797	--	--
Fed	120,000 miles	Other	METHANE	0.0014	--	--	--	0.0012	--	0.003	0.030	Pass
Fed	120,000 miles	Other	N2O	0.0010	--	--	--	0.0000	--	0.001	0.010	Pass
Fed	150,000 miles	Other	CO	0.03	--	--	--	0.05	--	0.1	1.7	Pass
Fed	150,000 miles	Other	NMOG	0.0086	--	1.10	--	0.0017	--	0.010	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0192	--	--	--	--	--	0.028	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0106	--	--	--	0.0075	--	0.018	99.999	Pass
Fed	150,000 miles	Other	PM	0.00013	--	--	--	0.00000	--	0.0001	0.0005	Pass

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

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093095</b>	<b>Test Procedure</b>	<b>11 - Cold CO</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	28 - Cold CO E10 Regular Gasoline (Tier 3)
<b>Test Date</b>	11/14/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	COE10	<b>Fuel Calibration Number</b>	61
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	4337	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>Test Results</b>			



## Certification Summary Information Report

Test Group		VRRGV06.7N74			Evaporative/Refueling Family					VRRGR0170RR1		
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	Other	CO	0.41	--	--	--	0.05	--	0.5	10.0	Pass
Fed	150,000 miles	Other	NMOG	0.0493	--	1.10	--	0.0017	--	0.051	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0581	--	--	--	--	--	0.067	0.300	Pass
Fed	150,000 miles	Other	NOX	0.0088	--	--	--	0.0075	--	0.016	99.999	Pass
Fed	150,000 miles	Other	PM	0.00012	--	--	--	0.00000	--	0.0001	0.0005	Pass

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093096</b>	<b>Test Procedure</b>	<b>49 - Quick-Driveway (QD)</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/15/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3822	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>Test Results</b>			



### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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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	Other	NMOG	0.0072	--	1.10	--	0.0017	--	0.009	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0176	--	--	--	--	--	0.027	0.082	Pass
Fed	150,000 miles	Other	NOX	0.0104	--	--	--	0.0075	--	0.018	99.999	Pass

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093097</b>	<b>Test Procedure</b>	<b>57 - Partial Soak (PS) - 10 minute</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/13/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3791	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>Test Results</b>			

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
	<b>Test Result Name</b>	<b>Unrounded Test Result</b>	<b>Verify Calculated FE Equivalent Value (miles per gallon)</b>
	CO2 BAG 1 (Bag 1 Carbon Dioxide)	663.3366699	--
	CO BAG 1 (Bag 1 Carbon Monoxide)	0.2523	--
	FE BAG 1 (Bag 1 Fuel Economy)	13.1000003	13.1000003
	CH4 BAG 1 (Bag 1 Methane)	0.0009	--
	NMOG BAG 1 (Bag 1 Non-methane organic gases)	0	--
	CO2 BAG 2 (Bag 2 Carbon Dioxide)	873.7114257	--
	CO BAG 2 (Bag 2 Carbon Monoxide)	0.0051	--
	FE BAG 2 (Bag 2 Fuel Economy)	9.8999996	9.8999996
	CH4 BAG 2 (Bag 2 Methane)	0	--
	NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0014	--
	CO2 BAG 3 (Bag 3 Carbon Dioxide)	665.4955444	--
	CO BAG 3 (Bag 3 Carbon Monoxide)	0.1382	--
	FE BAG 3 (Bag 3 Fuel Economy)	13.1000003	13.1000003
	CH4 BAG 3 (Bag 3 Methane)	0.0011	--
	NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--
	METHANE (CH4 - Methane)	0.0005098	--
	CO (Carbon Monoxide)	0.0928218	--
	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.883	--
	DT-EER (Drive Trace Energy Economy Rating)	-0.065	--
	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.454	--
	MFR FE (Manufacturer Fuel Economy)	11.1999998	11.1999998
	NOX (Nitrogen Oxide)	0.0091363	--
	N2O (Nitrous Oxide)	0	--
	HC-NM (Non-methane Hydrocarbon)	0.0006299	--
	NMOG (Non-methane organic gases)	0.0006922	--
	PM (Particulate Matter)	0.0000244	--
	HC-TOTAL (Total Hydrocarbon)	0.0008145	--
	<b>Test Result Name</b>	<b>Unrounded Test Result</b>	<b>Verify Calculated CREE/OPT-CREE</b>
	Carbon-Related Exhaust Emissions	773	--
	<b>Test Result Name</b>	<b>Unrounded Test Result</b>	<b>Verify Calculated CO2</b>
	Carbon dioxide	772.9783935	--

Manufacturer Test Comments

07\_FTP\_PS\_10min\_U231648\_00\_EDV\_Black Badge Cullinan\_A\_ETW-6500\_RG10\_low Button on\_D

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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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	Other	NMOG	0.0007	--	1.10	--	0.0007	--	0.001	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0098	--	--	--	--	--	0.013	0.035	Pass
Fed	150,000 miles	Other	NOX	0.0091	--	--	--	0.0028	--	0.012	99.999	Pass

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093098</b>	<b>Test Procedure</b>	<b>58 - Partial Soak (PS) - 40 minute</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/20/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3961	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>Test Results</b>			

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	665.767883	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.0121	--	
FE BAG 1 (Bag 1 Fuel Economy)	13	13	
CH4 BAG 1 (Bag 1 Methane)	0.0092	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0026	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	865.471924	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0071	--	
FE BAG 2 (Bag 2 Fuel Economy)	10	10	
CH4 BAG 2 (Bag 2 Methane)	0	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0011	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	672.361145	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0176	--	
FE BAG 3 (Bag 3 Fuel Economy)	12.9	12.9	
CH4 BAG 3 (Bag 3 Methane)	0.0002	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--	
METHANE (CH4 - Methane)	0.001967	--	
CO (Carbon Monoxide)	0.011007	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.042	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.065	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.829	--	
MFR FE (Manufacturer Fuel Economy)	11.3	11.3	
NOX (Nitrogen Oxide)	0.011213	--	
N2O (Nitrous Oxide)	0.00078	--	
HC-NM (Non-methane Hydrocarbon)	0.00098	--	
NMOG (Non-methane organic gases)	0.001077	--	
PM (Particulate Matter)	0	--	
HC-TOTAL (Total Hydrocarbon)	0.002457	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	771	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	770.967773	--	

Manufacturer Test Comments

08\_FTP\_PS\_40min\_U231648\_00\_EDV\_Black Badge Cullinan\_A\_ETW-6500\_RG10\_low Button on\_D

## Certification Summary Information Report

Test Group		VRRGV06.7N74				Evaporative/Refueling Family				VRRGR0170RR1		
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	Other	NMOG	0.0011	--	1.10	--	0.0017	--	0.003	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0123	--	--	--	--	--	0.022	0.054	Pass
Fed	150,000 miles	Other	NOX	0.0112	--	--	--	0.0075	--	0.019	99.999	Pass

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093099</b>	<b>Test Procedure</b>	<b>59 - Partial Soak (PS) - 3 to 12 hour</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	11/04/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	4247	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>Test Results</b>			



## Certification Summary Information Report

Test Group		VRRGV06.7N74				Evaporative/Refueling Family				VRRGR0170RR1		
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	Other	NMOG	0.0082	--	1.10	--	0.0017	--	0.010	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0202	--	--	--	--	--	0.029	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0120	--	--	--	0.0075	--	0.020	99.999	Pass

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093092</b>	<b>Test Procedure</b>	<b>3 - HWFE</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/07/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3685	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

## Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.008685	--
CO (Carbon Monoxide)	0.11485	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	5.788518	--
DT-EER (Drive Trace Energy Economy Rating)	-0.051996	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.767969	--
MFR FE (Manufacturer Fuel Economy)	17.6	17.6
NOX (Nitrogen Oxide)	0.002919	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.012412	--
NMOG (Non-methane organic gases)	0.012785	--
HC-TOTAL (Total Hydrocarbon)	0.020794	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	493	493

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	492.936707	--

## Manufacturer Test Comments

02\_HWFET\_U231648\_00\_EDV\_Black Badge Cullinan\_A\_ETW-6500\_RG10\_low Button on\_D

## Certification Summary Information Report

Test Group		VRRGV06.7N74				Evaporative/Refueling Family				VRRGR0170RR1		
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	120,000 miles	Other	CREE	493	--	--	--	0.1	--	493	--	--
Fed	150,000 miles	Other	CO	0.11	--	--	--	0.05	--	0.2	1.7	Pass
Fed	150,000 miles	Other	NMOG	0.0128	--	1.03	--	0.0017	--	0.014	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0157	--	--	--	--	--	0.025	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0029	--	--	--	0.0075	--	0.010	99.999	Pass

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

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093093</b>	<b>Test Procedure</b>	<b>90 - US06</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/07/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3718	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

## Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	919.5274658	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.0235	--
FE BAG 1 (Bag 1 Fuel Economy)	9.4	9.4
CH4 BAG 1 (Bag 1 Methane)	0.0001	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0063	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	496.5996093	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.083	--
FE BAG 2 (Bag 2 Fuel Economy)	17.5	17.5
CH4 BAG 2 (Bag 2 Methane)	0.0038	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0113	--
METHANE (CH4 - Methane)	0.0029473	--
CO (Carbon Monoxide)	0.069736	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.4641742	--
DT-EER (Drive Trace Energy Economy Rating)	-1.4756746	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-4.3157486	--
MFR FE (Manufacturer Fuel Economy)	14.7	14.7
NOX (Nitrogen Oxide)	0.0102542	--
HC-NM (Non-methane Hydrocarbon)	0.0098795	--
NMOG (Non-methane organic gases)	0.0101759	--
PM (Particulate Matter)	0.0002634	--
HC-TOTAL (Total Hydrocarbon)	0.0127239	--

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	591	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	590.7568969	--

**Manufacturer Test Comments**                      03\_US06\_U231648\_00\_EDV\_Black Badge Cullinan\_A\_ETW-6500\_RG10\_low Button on\_D

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	Other	CO	0.07	--	--	--	0.05	--	0.1	9.6	Pass
Fed	150,000 miles	Other	NMOG	0.0102	--	1.03	--	0.0017	--	0.012	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0205	--	--	--	--	--	0.030	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0103	--	--	--	0.0075	--	0.018	99.999	Pass
Fed	150,000 miles	Other	PM	0.00026	--	--	--	0.00000	--	0.0003	0.0005	Pass

**Certification Summary Information Report**

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093094</b>	<b>Test Procedure</b>	<b>95 - SC03</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
<b>Test Date</b>	10/10/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T10/87	<b>Fuel Calibration Number</b>	60
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	3773	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

**Test Results**

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.000701	--
CO (Carbon Monoxide)	0.286246	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.335337	--
DT-EER (Drive Trace Energy Economy Rating)	-0.112692	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.021582	--
MFR FE (Manufacturer Fuel Economy)	11.1	11.1
NOX (Nitrogen Oxide)	0.012614	--
HC-NM (Non-methane Hydrocarbon)	0.000019	--
NMOG (Non-methane organic gases)	0.00002	--
HC-TOTAL (Total Hydrocarbon)	0.000686	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	783	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	783.363831	--

**Manufacturer Test Comments** 04\_SC03\_U231648\_00\_EDV\_Black Badge Cullinan\_A\_ETW-6500\_RG10\_low Button on\_D

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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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	Other	CO	0.29	--	--	--	0.05	--	0.3	1.7	Pass
Fed	150,000 miles	Other	NMOG	0.0000	--	1.03	--	0.0017	--	0.002	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0126	--	--	--	--	--	0.022	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0126	--	--	--	0.0075	--	0.020	99.999	Pass

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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**Emission Data Vehicle Information**

Vehicle ID / Configuration	U231648 / 1	Manufacturer Vehicle Configuration Number	0
Original Test Group Name	VRRGV06.7N74	Original Evaporative/Refueling Family	VRRGR0170RR1
Original Test Vehicle Model Year	2027		
<b>Vehicle Model</b>			
Represented Test Vehicle Make	Rolls Royce	Represented Test Vehicle Model	Black Badge Cullinan

**Leak Family Details**

Leak Family Identifier	--	Leak Family Name	--
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**Drive Sources and Fuel System Details**

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline

Hybrid Indicator	No	Multiple Fuel Combustion	--
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Fuel Cell Indicator	--	Rechargeable Energy Storage System, if 'Other'	--
Rechargeable Energy Storage System	--		
Off-board charge Capable Indicator	--		
Odometer Correction -- Initial	1	Odometer Correction Factor	1
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	N74B68M2RR31X1	Rated Horsepower	536
Displacement (liters)	6.7		
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'	
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel
Charge Air Cooler Type	Liquid	Drive Mode While Testing	All Wheel Drive
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)
Curb Weight (lbs)	6160	Equivalent Test Weight (pounds)	6500
GVWR (lbs)	7231	N/V Ratio	20.1
Axle Ratio	2.81		
Transmission Type	Semi-Automatic	# of Transmission Gears	8
Transmission Lockup	Yes	Creeper Gear	No

**Dynamometer Coefficients:**

Coefficient Category	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	83.7	-0.714	0.03785	-0.6	-0.181	0.03238	19
US06	83.7	-0.714	0.03785	-0.6	-0.181	0.03238	N/A

### Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Emission Control Device Comments</b>	--		
<b>Manufacturer Test Vehicle Comments</b>	vi_U231648_01_FEDV_Black Badge Cullinan_A_ETW-6500_RG11_default mode_D		

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093102</b>	<b>Test Procedure</b>	<b>31 - Federal fuel 3-day exhaust</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	61 - Tier 2 Cert Gasoline
<b>Test Date</b>	10/24/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T2/E0	<b>Fuel Calibration Number</b>	53
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	4068	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

## Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	670.242126	--
FE BAG 1 (Bag 1 Fuel Economy)	13	13
CO2 BAG 2 (Bag 2 Carbon Dioxide)	701.286926	--
FE BAG 2 (Bag 2 Fuel Economy)	12.5	12.5
CO2 BAG 3 (Bag 3 Carbon Dioxide)	548.797302	--
FE BAG 3 (Bag 3 Fuel Economy)	15.9	15.9
METHANE (CH4 - Methane)	0.003505	--
CO (Carbon Monoxide)	0.260918	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.414	--
DT-EER (Drive Trace Energy Economy Rating)	0.089	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.922	--
MFR FE (Manufacturer Fuel Economy)	13.4	13.4
NOX (Nitrogen Oxide)	0.017034	--
N2O (Nitrous Oxide)	0.000598	--
HC-NM (Non-methane Hydrocarbon)	0.013729	--
NMOG (Non-methane organic gases)	0.014144	--
PM (Particulate Matter)	0.000182	--
HC-TOTAL (Total Hydrocarbon)	0.017116	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	653	653

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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<b>Test Result Name</b>	<b>Unrounded Test Result</b>	<b>Verify Calculated CO2</b>
Carbon dioxide	652.993469	--

**Manufacturer Test Comments**                      01\_FTP\_U231648\_01\_FEDV\_Black Badge Cullinan\_A\_ETW-6500\_RG11\_default mode\_D

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	120,000 miles	Other	CREE	653	--	--	--	0.1	--	653	--	--
Fed	120,000 miles	Other	METHANE	0.0035	--	--	--	0.0012	--	0.005	0.030	Pass
Fed	120,000 miles	Other	N2O	0.0006	--	--	--	0.0000	--	0.001	0.010	Pass
Fed	150,000 miles	Other	CO	0.26	--	--	--	0.05	--	0.3	1.7	Pass
Fed	150,000 miles	Other	NMOG	0.0141	--	1.10	--	0.0017	--	0.016	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0311	--	--	--	--	--	0.040	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0170	--	--	--	0.0075	--	0.024	99.999	Pass
Fed	150,000 miles	Other	PM	0.00018	--	--	--	0.00000	--	0.0002	0.0005	Pass

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

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
<b>Test #</b>	<b>VRRG10093103</b>	<b>Test Procedure</b>	<b>3 - HWFE</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	61 - Tier 2 Cert Gasoline
<b>Test Date</b>	11/03/2025	<b>Fuel</b>	Gasoline
<b>Fuel Batch ID</b>	T2/E0	<b>Fuel Calibration Number</b>	57
<b>Vehicle Class</b>	LDV/Passenger Car	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	EETZ		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	4202	<b>Odometer Units</b>	K
<b>4WD Test Dyno</b>	Yes	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	--		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes

## Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
<b>METHANE (CH4 - Methane)</b>	0	--
<b>CO (Carbon Monoxide)</b>	0.000185	--
<b>DT-ASCR (Drive Trace Absolute Speed Change Rating)</b>	1.530142	--
<b>DT-EER (Drive Trace Energy Economy Rating)</b>	-0.553296	--
<b>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</b>	2.04469	--
<b>MFR FE (Manufacturer Fuel Economy)</b>	24.7	24.7
<b>NOX (Nitrogen Oxide)</b>	0.007643	--
<b>N2O (Nitrous Oxide)</b>	0	--
<b>HC-NM (Non-methane Hydrocarbon)</b>	0	--
<b>NMOG (Non-methane organic gases)</b>	0	--
<b>HC-TOTAL (Total Hydrocarbon)</b>	0	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
<b>Carbon-Related Exhaust Emissions</b>	355	355

Test Result Name	Unrounded Test Result	Verify Calculated CO2
<b>Carbon dioxide</b>	354.72879	--

## Manufacturer Test Comments

02\_HWFET\_U231648\_01\_FEDV\_Black Badge Cullinan\_A\_ETW-6500\_RG11\_default mode\_D

## Certification Summary Information Report

Test Group		VRRGV06.7N74				Evaporative/Refueling Family				VRRGR0170RR1		
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	120,000 miles	Other	CREE	355	--	--	--	0.1	--	355	--	--
Fed	150,000 miles	Other	CO	0.00	--	--	--	0.05	--	0.0	1.7	Pass
Fed	150,000 miles	Other	NMOG	0.0000	--	1.03	--	0.0017	--	0.002	99.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0076	--	--	--	--	--	0.017	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0076	--	--	--	0.0075	--	0.015	99.999	Pass

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

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Fuel Properties</b>			
<b>Fuel Batch ID</b>	<b>T10/87</b>	<b>Fuel Calibration Number</b>	<b>58</b>
<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	<b>Fuel Batch Calibration Date</b>	06/25/2024
<b>Fuel Batch Calibration Effective Date</b>	01/22/2025	<b>Fuel Batch Calibration Ineffective Date</b>	--
<b>Carbon Weight Fraction NMHC</b>	--	<b>Carbon Weight Fraction HC</b>	--
<b>Exhaust Carbon Weight Fraction</b>	0.827	<b>Fuel Methanol Volume Fraction</b>	--
<b>Fuel Density (grams/cubic ft)</b>	--	<b>Fuel Specific Gravity</b>	0.745
<b>Fuel Ethanol Volume Percent (%)</b>	9.7	<b>Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)</b>	17975
<b>Fuel Net Heat of Combustion (E10) (MJ/kg)</b>	--	<b>Fuel Carbon Mass Fraction (E10)</b>	--
<b>Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)</b>	0.827	<b>Weight Fraction CO2</b>	--
<b>Fuel Batch ID</b>	<b>T10/87</b>	<b>Fuel Calibration Number</b>	<b>60</b>
<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	<b>Fuel Batch Calibration Date</b>	04/15/2025
<b>Fuel Batch Calibration Effective Date</b>	07/31/2025	<b>Fuel Batch Calibration Ineffective Date</b>	--
<b>Carbon Weight Fraction NMHC</b>	--	<b>Carbon Weight Fraction HC</b>	--
<b>Exhaust Carbon Weight Fraction</b>	0.827	<b>Fuel Methanol Volume Fraction</b>	--
<b>Fuel Density (grams/cubic ft)</b>	--	<b>Fuel Specific Gravity</b>	0.746
<b>Fuel Ethanol Volume Percent (%)</b>	9.7	<b>Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)</b>	--
<b>Fuel Net Heat of Combustion (E10) (MJ/kg)</b>	41.82	<b>Fuel Carbon Mass Fraction (E10)</b>	0.827
<b>Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)</b>	--	<b>Weight Fraction CO2</b>	--
<b>Fuel Batch ID</b>	<b>T2/E0</b>	<b>Fuel Calibration Number</b>	<b>57</b>
<b>Test Fuel Type</b>	61 - Tier 2 Cert Gasoline	<b>Fuel Batch Calibration Date</b>	11/26/2024
<b>Fuel Batch Calibration Effective Date</b>	12/11/2024	<b>Fuel Batch Calibration Ineffective Date</b>	--
<b>Carbon Weight Fraction NMHC</b>	--	<b>Carbon Weight Fraction HC</b>	--
<b>Exhaust Carbon Weight Fraction</b>	0.862	<b>Fuel Methanol Volume Fraction</b>	--
<b>Fuel Density (grams/cubic ft)</b>	--	<b>Fuel Specific Gravity</b>	0.737
<b>Fuel Ethanol Volume Percent (%)</b>	--	<b>Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)</b>	18727
<b>Fuel Net Heat of Combustion (E10) (MJ/kg)</b>	--	<b>Fuel Carbon Mass Fraction (E10)</b>	--
<b>Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)</b>	0.862	<b>Weight Fraction CO2</b>	--
<b>Fuel Batch ID</b>	<b>T10/87</b>	<b>Fuel Calibration Number</b>	<b>43</b>
<b>Test Fuel Type</b>	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	<b>Fuel Batch Calibration Date</b>	11/27/2023
<b>Fuel Batch Calibration Effective Date</b>	02/27/2024	<b>Fuel Batch Calibration Ineffective Date</b>	--

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.827	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.746
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17962
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--
<b>Fuel Batch ID</b>	<b>COE10</b>	<b>Fuel Calibration Number</b>	<b>61</b>
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	10/25/2024
Fuel Batch Calibration Effective Date	10/24/2025	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.827	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.92	Fuel Carbon Mass Fraction (E10)	0.827
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
<b>Fuel Batch ID</b>	<b>T2/E0</b>	<b>Fuel Calibration Number</b>	<b>53</b>
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	02/21/2024
Fuel Batch Calibration Effective Date	02/27/2024	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.861	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.736
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18732
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.861	Weight Fraction CO2	--

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>	VRRGR0170RR1
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#### Consolidated List of Standards

**Exhaust Standards**

<b>Cert Region</b>	Federal	<b>Cert/In-Use Code</b>	Cert
<b>Vehicle Class</b>	LDV/Passenger Car	<b>Standard Level</b>	Other
<b>Fuel</b>	Gasoline	<b>Test Procedure</b>	Federal fuel 3-day exhaust

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	CREE	--	--	--	0.1	--	--	0.1	999.999
120,000 miles	METHANE	--	--	--	0.0000	--	--	0.0012	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0000	0.010
150,000 miles	CO	--	--	--	0.00	--	--	0.05	1.7
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	0.0000	--	--	0.0017	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999
150,000 miles	PM	--	--	--	0.00000	--	--	0.00000	0.0005

<b>Cert Region</b>	Federal	<b>Cert/In-Use Code</b>	Cert
<b>Vehicle Class</b>	LDV/Passenger Car	<b>Standard Level</b>	Other
<b>Fuel</b>	Gasoline	<b>Test Procedure</b>	Partial Soak (PS) - 3 to 12 hour

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	NMOG	--	--	1.10	0.0000	--	--	0.0017	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999

### Certification Summary Information Report

<b>Test Group</b>		VRRGV06.7N74			<b>Evaporative/Refueling Family</b>			VRRGR0170RR1	
<b>Cert Region</b>	Federal			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>	LDV/Passenger Car			<b>Standard Level</b>			Other		
<b>Fuel</b>	Gasoline			<b>Test Procedure</b>			US06		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>
150,000 miles	CO	--	--	--	0.00	--	--	0.05	9.6
150,000 miles	NMOG	--	--	1.03	0.0000	--	--	0.0017	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999
150,000 miles	PM	--	--	--	0.00000	--	--	0.00000	0.0005

<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert	
<b>Vehicle Class</b>	LDV/Passenger Car			<b>Standard Level</b>			Other		
<b>Fuel</b>	Gasoline			<b>Test Procedure</b>			SC03		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>
150,000 miles	CO	--	--	--	0.00	--	--	0.05	1.7
150,000 miles	NMOG	--	--	1.03	0.0000	--	--	0.0017	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999

<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert	
<b>Vehicle Class</b>	LDV/Passenger Car			<b>Standard Level</b>			Other		
<b>Fuel</b>	Gasoline			<b>Test Procedure</b>			HWFE		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>
120,000 miles	CREE	--	--	--	0.1	--	--	0.1	999.999
150,000 miles	CO	--	--	--	0.00	--	--	0.05	1.7
150,000 miles	NMOG	--	--	1.03	0.0000	--	--	0.0017	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999

### Certification Summary Information Report

<b>Test Group</b>		VRRGV06.7N74			<b>Evaporative/Refueling Family</b>			VRRGR0170RR1		
<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>		LDV/Passenger Car			<b>Standard Level</b>			Other		
<b>Fuel</b>		Gasoline			<b>Test Procedure</b>			Quick-Driveway (QD)		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>	
150,000 miles	NMOG	--	--	1.10	0.0000	--	--	0.0017	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.082	
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999	

<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>		LDV/Passenger Car			<b>Standard Level</b>			Other		
<b>Fuel</b>		Gasoline			<b>Test Procedure</b>			Cold CO		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>	
150,000 miles	CO	--	--	--	0.00	--	--	0.05	10.0	
150,000 miles	NMOG	--	--	1.10	0.0000	--	--	0.0017	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.300	
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999	
150,000 miles	PM	--	--	--	0.00000	--	--	0.00000	0.0005	

<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>		LDV/Passenger Car			<b>Standard Level</b>			Other		
<b>Fuel</b>		Gasoline			<b>Test Procedure</b>			Partial Soak (PS) - 40 minute		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>	
150,000 miles	NMOG	--	--	1.10	0.0000	--	--	0.0017	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.054	
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0075	99.999	

### Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74		<b>Evaporative/Refueling Family</b>			VRRGR0170RR1			
<b>Cert Region</b>	Federal		<b>Cert/In-Use Code</b>			Cert			
<b>Vehicle Class</b>	LDV/Passenger Car		<b>Standard Level</b>			Other			
<b>Fuel</b>	Gasoline		<b>Test Procedure</b>			Partial Soak (PS) - 10 minute			
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>
150,000 miles	NMOG	--	--	1.10	0.0000	--	--	0.0007	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.035
150,000 miles	NOX	--	--	--	0.0000	--	--	0.0028	99.999

#### Evaporative/Refueling Standards

<b>Evaporative/Refueling Family</b>	VRRGR0170RR1		<b>Cert Region</b>			Federal			
<b>Cert/In-Use Code</b>	Cert		<b>Standard Level</b>			Federal Tier 3 Evap			
<b>Test Procedure</b>	Federal Fuel Running Loss								
<b>Fuel</b>	<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>			<b>Std</b>	<b>Add DF</b>		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--			0.05	0.000		

<b>Evaporative/Refueling Family</b>	VRRGR0170RR1		<b>Cert Region</b>			Federal			
<b>Cert/In-Use Code</b>	Cert		<b>Standard Level</b>			Federal Tier 3 Evap			
<b>Test Procedure</b>	Evap Canister Bleed Test								
<b>Fuel</b>	<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>			<b>Std</b>	<b>Add DF</b>		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--			0.020	0.000		

<b>Evaporative/Refueling Family</b>	VRRGR0170RR1		<b>Cert Region</b>			Federal			
<b>Cert/In-Use Code</b>	Cert		<b>Standard Level</b>			Federal Tier 3 Evap			
<b>Test Procedure</b>	Leak Test - Port Near Canister								
<b>Fuel</b>	<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>			<b>Std</b>	<b>Add DF</b>		
Gasoline	150,000 miles	LEAK-DIA	--			0.02	0.000		

<b>Evaporative/Refueling Family</b>	VRRGR0170RR1		<b>Cert Region</b>			Federal			
<b>Cert/In-Use Code</b>	Cert		<b>Standard Level</b>			Federal Tier 3 Evap			
<b>Test Procedure</b>	Federal fuel 3-day evap								
<b>Fuel</b>	<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>			<b>Std</b>	<b>Add DF</b>		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--			0.500	0.0229		

## Certification Summary Information Report

<b>Test Group</b>	VRRGV06.7N74	<b>Evaporative/Refueling Family</b>			VRRGR0170RR1
<b>Evaporative/Refueling Family</b>	VRRGR0170RR1	<b>Cert Region</b>			Federal
<b>Cert/In-Use Code</b>	Cert	<b>Standard Level</b>			Federal Tier 3 Evap
<b>Test Procedure</b>	2-day evap				
<b>Fuel</b>	<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>Std</b>	<b>Add DF</b>
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0000
<b>Evaporative/Refueling Family</b>	VRRGR0170RR1	<b>Cert Region</b>			Federal
<b>Cert/In-Use Code</b>	Cert	<b>Standard Level</b>			Federal Tier 3 Evap
<b>Test Procedure</b>	Federal fuel refueling test (ORVR)				
<b>Fuel</b>	<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>Std</b>	<b>Add DF</b>
Gasoline	150,000 miles	HC	--	0.20	0.000

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family	VRRGR0170RR1
<b>Glossary</b>			
<b>Useful Life</b>			
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	AS-VOLT	Average System Voltage
CO	Carbon Monoxide	CO2 BAG 1	Bag 1 Carbon Dioxide
CO2	Carbon dioxide	CO2 BAG 2	Bag 2 Carbon Dioxide
CREE	Carbon-Related Exhaust Emissions	CO2 BAG 3	Bag 3 Carbon Dioxide
OPT-CREE	Optional Carbon-Related Exhaust Emissions	CO2 BAG 4	Bag 4 Carbon Dioxide
NOX	Nitrogen Oxide	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
PM	Particulate Matter	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
PM-COMP	SFTP Composite Particulate Matter	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM	Non-methane Hydrocarbon	DT-ASCR	Drive Trace Absolute Speed Change Rating
OMHCE	Organic material Hydrocarbon Equivalent	DT-EER	Drive Trace Energy Economy Rating
OMNMHCE	Organic material non-methane HC equivalent	COMB-CREE	Combined Carbon-Related Exhaust Emissions
NMOG	Non-methane organic gases	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
HCHO	Formaldehyde	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
H3C2HO	Acetaldehyde	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	LEAK-DIA	Effective Leak Diameter (inches)
CO-COMP	SFTP Composite Carbon Monoxide	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
ETHANOL	C2H5OH - Ethanol	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
FE BAG 1	Bag 1 Fuel Economy	KW-HRS	Integrated DC KW-HRS
FE BAG 2	Bag 2 Fuel Economy	CH4 BAG 1	Bag 1 Methane
FE BAG 3	Bag 3 Fuel Economy	CH4 BAG 2	Bag 2 Methane
FE BAG 4	Bag 4 Fuel Economy	CH4 BAG 3	Bag 3 Methane
MFR FE	Manufacturer Fuel Economy	CH4 BAG 4	Bag 4 Methane
HC	Hydrocarbon for Running Loss and ORVR	CO BAG 1	Bag 1 Carbon Monoxide
METHANE	CH4 - Methane	CO BAG 2	Bag 2 Carbon Monoxide
METHANOL	CH3OH - Methanol	CO BAG 3	Bag 3 Carbon Monoxide
N2O	Nitrous Oxide	CO BAG 4	Bag 4 Carbon Monoxide
SPITBACK	Spitback Hydrocarbon in grams	NMOG BAG 1	Bag 1 Non-methane organic gases
AMP-HRS	Integrated Amp-hours	NMOG BAG 2	Bag 2 Non-methane organic gases
START-SOC	System Start State of Charge Watt-hours	NMOG BAG 3	Bag 3 Non-methane organic gases
END-SOC	System End State of Charge Watt-hours	NMOG BAG 4	Bag 4 Non-methane organic gases
ACT-DISTANCE	Actual Distance Driven (miles)		
<b>Certification Region</b>			

## Certification Summary Information Report

Test Group	VRRGV06.7N74	Evaporative/Refueling Family		VRRGR0170RR1
CA	California + CAA Section 177 states	FA	Federal	
<b>Exhaust Emission Standard Level</b>				
B1	Federal Tier 2 Bin 1	T3B160	Federal Tier 3 Bin 160	
B2	Federal Tier 2 Bin 2	T3B125	Federal Tier 3 Bin 125	
B3	Federal Tier 2 Bin 3	T3B110	Federal Tier 3 Transitional Bin 110	
B4	Federal Tier 2 Bin 4	T3B85	Federal Tier 3 Transitional Bin 85	
B5	Federal Tier 2 Bin 5	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover	
B6	Federal Tier 2 Bin 6	T3B70	Federal Tier 3 Bin 70	
B7	Federal Tier 2 Bin 7	T3B50	Federal Tier 3 Bin 50	
B8	Federal Tier 2 Bin 8	T3B30	Federal Tier 3 Bin 30	
B9	Federal Tier 2 Bin 9	T3B20	Federal Tier 3 Bin 20	
B10	Federal Tier 2 Bin 10	T3B0	Federal Tier 3 Bin 0	
B11	Federal Tier 2 Bin 11	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
L2	California LEV-II LEV	HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
L2OP	California LEV-II LEV Optional	HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
U2	California LEV-II ULEV	HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
S2	California LEV-II SULEV	HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
ZEV	California ZEV	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
OT	Other	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
T1	Federal Tier 1	HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
PZEV	California PZEV	HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
L2LEV160	California LEV-II LEV160	HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
L2ULEV125	California LEV-II ULEV125	HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
L2SULEV30	California LEV-II SULEV30	HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2LEV395	California LEV-II LEV395	L4SULEV100	California LEV-IV SULEV100	
L2ULEV340	California LEV-II ULEV340	L4SULEV125	California LEV-IV SULEV125	
L2LEV630	California LEV-II LEV630	L4SULEV15	California LEV-IV SULEV15	
L2ULEV570	California LEV-II ULEV570	L4SULEV150	California LEV-IV SULEV150	
L3LEV160	California LEV-III LEV160	L4SULEV170	California LEV-IV SULEV170	
L3ULEV125	California LEV-III ULEV125	L4SULEV175	California LEV-IV SULEV175	
L3ULEV70	California LEV-III ULEV70	L4SULEV20	California LEV-IV SULEV20	
L3ULEV50	California LEV-III ULEV50	L4SULEV200	California LEV-IV SULEV200	
L3SULEV30	California LEV-III SULEV30	L4SULEV230	California LEV-IV SULEV230	
L3SULEV20	California LEV-III SULEV20	L4SULEV25	California LEV-IV SULEV25	
L3LEV395	California LEV-III LEV395	L4SULEV30	California LEV-IV SULEV30	
L3ULEV340	California LEV-III ULEV340	L4SULEV75	California LEV-IV SULEV75	
L3ULEV250	California LEV-III ULEV250	L4SULEV85	California LEV-IV SULEV85	
L3ULEV200	California LEV-III ULEV200	L4ULEV125	California LEV-IV ULEV125	

## Certification Summary Information Report

Test Group		VRRGV06.7N74	Evaporative/Refueling Family		VRRGR0170RR1
L3SULEV170	California LEV-III SULEV170		L4ULEV200	California LEV-IV ULEV200	
L3SULEV150	California LEV-III SULEV150		L4ULEV250	California LEV-IV ULEV250	
L3LEV630	California LEV-III LEV630		L4ULEV270	California LEV-IV ULEV270	
L3ULEV570	California LEV-III ULEV570		L4ULEV40	California LEV-IV ULEV40	
L3ULEV400	California LEV-III ULEV400		L4ULEV400	California LEV-IV ULEV400	
L3ULEV270	California LEV-III ULEV270		L4ULEV50	California LEV-IV ULEV50	
L3SULEV230	California LEV-III SULEV230		L4ULEV60	California LEV-IV ULEV60	
L3SULEV200	California LEV-III SULEV200		L4ULEV70	California LEV-IV ULEV70	
<b>Transmission Type Code</b>					
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)	
<b>Drive System Code</b>					
4	4-Wheel Drive		P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front		A	All Wheel Drive	
R	2-Wheel Drive, Rear				
<b>Additional Terms and Acronyms</b>					
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	