

# Lotus Cars Ltd Application for Certification – Part 1 2024 Model Year Emira

Durability Group: Evap. Family: Test Group:	RLTXGPGNNEV1 RLTXR0130JHB RLTXV03.5JHB
Summary Sheet No:	CSI Report
Durability Group Description:	Four stroke, Otto Cycle, Gasoline Fuelled, Ported FI, Catalyst description: unheated monolith & precious metal
Ceramic Monolith:	Pt/Pd/Rh Catalyst
Test Group Description:	3.5 Litre V6 LDV
Applicable Standards:	50 State, Tier 3, BIN 125 / LEV III, ULEV 125
Models Covered:	Emira
Issue Date:	25th October 2023
EPA Response Date:	As soon as possible

Vehicles Tested & EPA Test Numbers:

VID	Config	Test Type / Test Number		
		FTP75	RLTX10082871	
		Highway	RLTX10082867	
	0	Cold CO	RLTX10082874	
EDV-24-EV31010	Coning 0	50 Deg F	RLTX10028273	
		SC03	RLTX10082869	
		US06	RLTX10082868	
	Config 0	FTP75	RLTX10082872	
EDV-24-EV3100/1	Coning U	Highway	RLTX10082870	
		2-Day EVAP	RLTX10082876	
	Config 0	3-Day EVAP	RLTX10082877	
EDV-24-EVSA0		BETP	RLTX10082875	
		Running Loss	RLTX10082878	
EDV-17-EVM6/2	Config 0	ORVR	HLTX10043888	

Contacts:

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# 1. CORRESPONDENCE AND COMMUNICATIONS

### 1.1. Organisation Chart

		Mr Matt Windle		
		Managing Director		
		Lotus Cars Ltd		
Mr Mark N	/lacDonald		Mr James	Eccleston
Principle	Engineer		Chief Engineer	
Powertrain calibra	ation and controls		Type Approval	
EPA/CAR	B Liaison		EPA/CARE	3 Liaison
			Mr David F	Robinson
Mr Simon Finch			Lead Engineer	
Senior Lea	d Engineer		Emissions Certification	
Powertrain Controls			EPA/CARE	3 Liaison

### 1.2. USA Contact Information

Lotus Cars Ltd is situated in the United Kingdom. The name of the US-based representative is Mr Stephen Burke who can be contacted at the address of our US importer:

Lotus Cars USA Inc 47584 Galleon Drive Plymouth MI 48170 USA Tel: 734 995 2544

Lotus Cars USA Inc. is a wholly-owned subsidiary of Lotus Group International Limited, which in turn is a subsidiary of Zhejiang Geely Holdings Group.

### 1.3. Mailing information

All technical information should be sent to:

Mr M. MacDonald Group Lotus Ltd Potash Lane Hethel Norwich Norfolk NR14 8EZ UK



### 1.4. EPA & CARB Liaison

The following people are authorised to liaise with EPA and CARB on behalf of Lotus Cars Ltd:

Mr D. Robinson	Lead Engineer – Type Approval Department
Miss S Way	Lead Engineer – Type Approval Department
Mr M. MacDonald	Principal Engineer – Powertrain Calibration and Controls
Mr J. Eccleston	Chief Engineer – Type Approval Department

### 1.5. Certification information

The corporation name which should appear on the Certificate of Conformity is:

### LOTUS CARS LIMITED

The certificate should be mailed to:

Mr D. Robinson Lotus Cars Ltd Potash Lane Hethel Norwich Norfolk NR14 8EZ UK **1.6. Contact information** 

Lotus Cars LtdTel: +44 (0)1953 608000 Fax: +44 (0)1953 608300

Mr M. MacDonald Tel: +44 (0)1953 608679 Email: mmacdonald@lotuscars.com

Mr D. Robinson Tel: ++44 (0)1953 608000 Email: <u>drobinson@lotuscars.com</u>

Miss S.Way Tel: ++44 (0)1953 608836 Email: sway@lotuscars.com

Mr J. Eccleston Tel: ++44 (0)1953 608000 Email: jeccleston@lotuscars.com



# 2. DURABILITY/REFUELLING FAMILY DESCRIPTION

Durability Group:	RLTXGPGNNEV1
Combustion Cycle:	4-Stroke Otto Cycle
Engine:	V6
Fuel:	Gasoline
Fuel Metering System:	Electronic MPI Sequential
Catalysts:	Three, 3-Way Ceramic Monolith
'Primary' Catalyst:	1 per cylinder bank
Catalyst metals	Pt/Rh/Pd
'Underfloor' Catalyst:	1 Catalyst fed by both cylinder banks
Catalyst Metals:	Pd/Rh

For useful life, the Emira family is in the light duty vehicles test group as per 40 CFR 86.1811-17.



# 3. DURABILITY PROCEDURE DESCRIPTION

Evaporative Name:	RLTXR0130JHB
Vapour storage method:	Single canister
Canister Design:	Plastic unit, 2520 cc
Fuel system:	The fuel system has a single stainless steel tank, filled via a single filler neck system
Control system:	Integrated
Fill-pipe design:	Liquid trap
Vapour control:	The vapours are collected by the canister from the fuel level vent valve & grade valves during refuelling, normal running and parked conditions
Purge Control:	The engine management controller defines when and how much the purge valve can be operated to clean the canister during operations
Hose material:	The hoses are constructed from multi-layer materials
Fuel tank:	The fuel tank is of stainless steel construction

The Lotus Emira Test Group is combined with the Evaporative & Refuelling Family in Engine Family RLTXV03.5JHB.

### 3.1. EPA REVIEW OF LOTUS 2005MY ORVR DESCRIPTION

### **Summary**

Lotus Emira ORVR system does not require a full ORVR safety application as allowed for by EPA communication CISD-06-06.

### **Background**

Lotus Emira ORVR system uses standard ORVR technology, and follows the design of the Lotus Elise/Exige ORVR system. This is in accordance with the guidance given in CISD-06-06.

The Lotus Emira EVAP Family RLTXR0130JHB uses the same technology as our 2005 model year submission, EVAP Family 5LTXR0115JHB (Lotus Elise/Exige). Lotus affirms there has been no significant in-use problems associated with this system.



### Lotus Emira ORVR System Information

The Lotus Emira ORVR system is a fully integrated ORVR system using a liquid seal and a proven ORVR canister.

Proprietary Fill Level Vent Valves and Gradient Venting Valves have been used to control vapour flow to the 2520cc volume proprietary ORVR canister, which has an EPA minimum working capacity of 130 grams.

The Canister Close Valve is the same components used on the Lotus Elise / Exige/ Evora since its first EPA certification in 2004. The purge valve is supplied by Toyota Motor Company with the engine.

Lotus engine management software controls the purge valve to regenerate the canister, as undertaken on Elise/Exige/Evora, and its refuelling / evaporative emissions have been proved in certification testing.

### ElectroStatic Discharge

The ElectroStatic Discharge strategy for the refuelling system is the same as that approved by the ORVR safety application for the Elise / Exige for MY05 (please see Attachment 1). This uses a stainless steel fuel filler neck that ensures metal contact between it and the fuel dispensing nozzle. A conductive inner layer hose joins the neck to the stainless steel fuel tank. The fuel filler neck is earthed to the vehicle ground via its mounting bracket, an earth braid, and via the conductive hose to the earthed fuel tank.

Testing has proven that the system is sufficiently conductive to both vehicle ground and, via the tyres, actual ground. This has confirmed that the system is compliant with the requirements that prevent accumulation of charge in the refuelling system (ref SAE J1645).

### Comparison to Existing Approved Design

As stated, the components used in the Evora ORVR system are of the same technology as those employed in the Lotus Elise ORVR system. Differences are changes in pipe / hose lengths, and an increase in canister size, in line with fuel tank volume increase. The in-tank venting valves are of similar design and construction, but are proprietary parts from another proven component supplier (Raval).

Attachment 2 shows images of the Elise / Exige / Evora and Emira Fuel Systems to illustrate the similarity.



# Attachment 1 - Elise/Exige 2005 MY ORVR Report Approval



LOTUS CARS LTD.

1-9-04 CAA review Complete. Review includes e-mails dated 12/22/03. Ilohochu Johochu 5 MY

December 10th 2003 LOTUS ELISE: ORVR REPORT: 2005 MY

Lynn Sohacki EPA, Ann Arbor

LOTUS









← Reply ← Reply All → Forward ····

Tue 14/03/2023 13:44

All

#### Attachment 3 – Email EPA / Lotus dated 14 March 23

From: Cawdron, Ian <<u>ICawdron@lotuscars.com</u>> Sent: Tuesday, November 22, 2022 11:42 AM To: Snyder, Jim <<u>Snyder.Jim@epa.gov</u>> Cc: Robinson, David <<u>DRobinson@lotuscars.com</u>> Subject: ORVR - Lotus Emira

Hi Jim

Please see attached slides detailing the similarity between our previously approved Evora ORVR system and the new Emira system. Apart from the revised filler cap and new canister, there is very little difference and I don't believe these adversely affect ORVR.

I'd be grateful if you would review these changes and confirm whether EPA is happy to carry over approval from Evora to Emira?

Many thanks



IAN CAWDRON LCCI LEAD ENGINEER - LEGISLATION icawdron@iotuscars.com T: +44 (0) 1953 608297 GROUP LOTUS Hethel. Norwich. Norfolk. NR14 8EZ. England

#### RE: ORVR - Lotus Emira



Snyder, Jim <Snyder,Jim@epa.gov> To O Cawdron, Ian Cc O Robinson, David

This email is from an external sender, please ensure that you recognise the sender or that you are expecting the email before opening any files or clicking any links that it may contain.

Yes, the minimal changes appear to be improvements and Lotus can carry over the approval of the ORVR system.

Jim Snyder Light-Duty Vehicle Group Compliance Division United States Environmental Protection Agency (734) 214-4946 snyder\_jim@epa.gov



# 4. DURABILITY PROCEDURE DESCRIPTION

Lotus has requested the continued use of assigned DFs in accordance with the small volume provision of 86.1838-01(b)(2), as detailed in 86.1826-01.

The EPA and CARB assigned DFs are additive for emissions. These DFs are used with certification test data to prove compliance and are detailed below:

### 4.1. EPA & CARB Exhaust DFs (additive – g/mile)

	<u>50K</u>	<u>120K</u>	150K
NMHC/NMOG	0.0047	0.0118	0.0149
CO	0.1197	-	0.38
NOX	0.0036	-	0.0115
НСНО	0.0002	-	0.0005
CH4	-	0.0069	-
N2O	-	0.0028	-

120k NMHC/NMOG, 50k DFs, 120k CH4 and 150k N2O DFs were derived from the Tier 3 DFs supplied in CD-2023-01:

Criteria Pollutant Assigned DFs							
Tier 3 BIN	Useful Life	CO (g/mile)	HCHO (g/mile)	NMOG (g/mile)	NOx (g/mile)	NMOG+NOx (g/mile)*	PM (g/mile)
0	150,000 miles	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
20	150,000 miles	0.06	0.0001	0.0025	0.0019	0.0043	0.0000
30	150,000 miles	0.11	0.0001	0.0034	0.0024	0.0058	0.0000
50	150,000 miles	0.16	0.0002	0.0062	0.0047	0.0109	0.0000
70	150,000 miles	0.24	0.0003	0.0098	0.0070	0.0168	0.0000
125	150,000 miles	0.38	0.0005	0.0149	0.0115	0.0264	0.0000
160	150,000 miles	0.50	0.0006	0.0198	0.0149	0.0347	0.0000

	GHG Assigned DFs		
Tier 3 BIN	Useful Life	N2O (g/mile)	CH4 (g/mile)
0	120,000 miles	0.0000	0.0000
20	120,000 miles	0.0004	0.0010
30	120,000 miles	0.0007	0.0020
50	120,000 miles	0.0011	0.0026
70	120,000 miles	0.0012	0.0027
125	120,000 miles	0.0028	0.0069
160	120.000 miles	0.0034	0.0083

50k DF = (150k DF)(46k / 146k)

120k DF = (150k DF)(116k / 146k) unless provided in the table All calculations use the same method described in CCD-12-07

### 4.2. Evaporative DFs (additive)

Lotus has used the Evaporative DFs supplied in CD-2023-01 for a '0.325 FEL or higher, integrated system':

Standards	Useful Life	Vehicle class	Hot Soak + 2-day Diurnal DF (g)	Hot Soak + 3-day Diurnal DF (g)	Running Loss DF (g/mi)	ORVR DF (g/USgal)
Tier 3 / LEV III	150K	LDV	0.0000	0.0000	0.000	0.006



### 5. TEST GROUP DESCRIPTION

Test Group name:	RLTXV03.5JHB
Summary sheet number:	CSI Report
Arrangement and number of cylinders:	V6
Vehicle class covered:	LDV
Emission standards class:	Tier 3 - BIN 125 / LEV III – ULEV125
Applicable emission standards:	50-State, Tier 3-BIN 125 & LEV III-ULEV125

### 5.1. Tier 3, Bin 125 FTP Applicable Standards

(g/mile, unless otherwise stated)

Lotus has declared a COLD NMHC Family Emission Limit of 0.4 g/test for this Test Group

	50K	120K	150K
NMOG + NOx	-	-	0.125
NMHC – COLD	-	0.4	-
CO	-	-	2.1
CO – COLD	10.0	-	-
НСНО	-	-	0.004
PM	-	-	0.003
CH4	-	0.03	-
N2O	-	0.01	-

### 5.2. 50°F

	<u>50K</u>
CO	as FTP
NMOG + NOx	0.25
НСНО	0.0016

### 5.3. SFTP

5.3.1. SC03

	<u>150K</u>
CO	3.2
NMHC + NOx	0.07

#### 5.3.2. US06

	<u>150K</u>
NMHC + NOx	0.120
CO	9.6
PM	0.006



Lotus has declared an Evaporative Family Emission Limit of 0.450 g/test for this Test Group.

EPA 2-Day	-	0.450 g/test
EPA 3-Day	-	0.450 g/test
EPA Running Loss	-	0.050 g/mile
EPA ORVR	-	0.200 g/gallon
EPA BETP	-	0.020 g

### 6. TEST VEHICLE DESCRIPTION

EDV-24-EVSM6	Emira MT – low altitude exhaust tests
EDV-24-EVSM6/1	Emira MT – low altitude fuel economy testing
EDV-24-EVSA6	Emira AT – evaporative and Running Loss testing
EDV-17-EVM6/2	Evora 400 MT – ORVR

### 6.1. Base Vehicle Description

Lotus Emira is a 2-door, mid-engine sports car.

Engine:	V6, 3.5 litre DOHC				
Engine Control System:	Please refer to the Verify CSI report				
Transmission:	Please refer to the Verify CSI report				
ETW:	3,625 lbs. Please refer to the Verify CSI report				
Axle ratio:	Manual 1st – 4th = 3.777 5th & 6th = 3.238				

### 6.2. Vehicle Information

Please refer to the CSI Report in Section 7



### 7. TEST RESULTS

#### Attachment 4 – CSI Report

Date: 10/26/2023 06	:18:53 AM		Certification Summary Information R	eport		
Manufacturer		Lotus Cars Ltd	Manufacturer Code		LTX	
Test Group		RLTXV03.5JHB	Evaporative/Refueling F	RLTXR0130JHB		
Certificate Number	r		CARB Executive Order			
Certificate Issue D	ate		Certificate Revision Date	•		
Certificate Effectiv	e Date		Conditional Certificate			
CSI Revision #			CSI Submission/Revision	Date	10/26/2023 06:18:28 A	M
Model Year		2024				
Test Group Inf	ormation					
CSI Type		Update for Correction	Running Change Referen	ace Number		
GHG Exempt State	15	Not Exempt				
Drive Sources a	nd Fuel(s)					
Drive Source #	1:	Combustion Engine				
	Fu	el	Basic Fuel Metering System	Basic Fuel Metering System Lean Burn Strateg		
	Gasol	line	Multipoint/sequential fuel injection	No		
Hybrid Indicator		No				
Multiple Fuel Stor:	nge		Rechargeable Energy Sto	Rechargeable Energy Storage System Indicator		
Multiple Fuel Com	bustion		Off-board Charge Capal	ole Indicator		
Fuel Cell Indicator	Fuel Cell Indicator		EPA Vehicle Class	EPA Vehicle Class		
Federal Clean Fue	Vehicle	No	Federal Clean Fuel Vehi	cle Standard		
Federal Clean Fue	Vehicle ILEV	No	California Partial Zero E	Imissions Vehicle Indicator	No	
Durability Group !	Name	RLTXGPGNNEV1	Durability Group Equiva	Durability Group Equivalency Factor		
Reduced Fee Test	Group	No	Certification Region Code(s)		FA, CA	
Complies with HD	GHG 2b/3 regulations?	No				
Introduction into C	ommerce Date		CAP2000 Conditional Co	CAP2000 Conditional Certificate?		
Independent Com	nercial Importer?		Alternative Fuel Conver	ter Certificate?		
SFTP Federal Con	posite Compliance					
Identifier		Not Applicable	SFTP Tier 2 Composite	CO Option		
SFTP LEV-III Con Indicator	nposite Compliance	No				
OBD Compliance	Гуре	CARB	OBD Demonstration Vel	OBD Demonstration Vehicle Test Group		
Test Group OBD C	ompliance Level	Full - no deficiencies	Number of Test Group O	BD Deficiencies	0	
OBD Deficiencies (	Comments					
Mfr Test Group Co	omments	Emira Base Approval				
Mfr Exhaust / Eva	p Standards Comments					

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Certification Summary Information Report

Test Group		RLTXV0	3.5JHB		Evaporative/Refueling	Family		RLTXR0130J	нв
Evaporative/Refuel	ling Family Inform	ation							
Evaporative Summary	Information Type	New			Submission/Correction	Date		10/09/2023 08:42:46 AM	
Integrated ORVR? Yes				Fuel(s)			Gasoline		
Multiple Fuel Storage	Multiple Fuel Storage								
Bladder Fuel Tank?		No							
Fuel Tank Material		Metal			Fuel Tank Material De	scription		Stainless Steel	
Fill Pipe Seal Type		Liquid se	al						
Air Intake System Vapo	or Storage Device?	Ves			Air Intake System Vap	or Storage Device Descr	iption	Panel filter permanently fixed to the clean air side of the air cleaner box	
Fuel System Vapor Stor	rage Canister?	Yes			Other Vapor Storage	-	-		
Fuel System Vapor Stor Working Capacity (gray	rage Canister(s) Total	130			Number of Primary Ca	nisters		1	
Number of Bleed Canis	ters	0			Bleed Canister Total W	orking Canacity (gram	0	-	
Mfr Evaporative/Refue	ling Family Comments	The Lotu	s Emira utilises	a standard liquid seal OI	RVR system, similar to ot	her Lotus products, with n	o known	in-use issues. T	he stainless steel filler
	neck is co regenerat dependin	eck is connected to a single stainless steel fuel tank. You pause through proprietary venting values to a Kayser ORVR canister. The canister is generated by operation of the Toyota purge valve. Lotus' engine management system controls this valve to optimise purge flow into the engine epending upon operating conditions.							
Leak Family Detail	s								
Leak Family Indicator		Yes							
Canister Bleed Test Ind	licator	Yes			Applicability of Evaporative Canister Bleed Test		st	50 State	
Evaporative Canister B	leed Test Comments								
CARB Fuel Only (Rig)	Test Indicator	No		Applicability of CARB Fuel Only (Rig) Test					
CARB Fuel Only (Rig)	Test Comments								
	Applicability	ofLeak	Leak Famil	v Standard					
Leak Family Name	Family Requir	irements (inches)				Leak Family Des	cription		
RLTXR0130JHB-13	1 50 State	2	0.	02					
Models Covered by	this Certificate								
Carline Manufacturer	Division	6	arline	Certification Region	Drive System	Trans - Trne	-	of Coore	Trans - Lookun
Carine Manuacturer	DIVISION		arme	California + CAA	Dive System	Trans- Type		of Gears	TTAIls - Lockup
Lotus Cars Ltd	l - Lotus Cars Ltd	8	- Emira	Section 177 states	2-Wheel Drive, Rear	Manual		6	No
Lotus Cars Ltd	l - Lotus Cars Ltd	8	- Emira	Federal	2-Wheel Drive, Rear	Manual		6	No
Engine Decemintion									
Engine Description					Habeld December				
Engine Type		4 Stroke	Snark Imitian		Ayoria Description				
Engine Block Arrangen	nent	V-shaped	angina		Mir Engine Description				
Camless Valvetrain Ind	licator	No	enguie		Oil Viscority/Classification			0W-40	
Number of Cylinders/R	otors	6			Mechanically Variable	Compression Ratio Indi	icator	N	
realized of cymidel are	·			second only variable	Compression reacto ind				

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	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 18	
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Certification Summary Information Report

Test Group	RL	TXV03.5JHB	E	vaporative/Refuelin	g Family		RLTXR(	RLTXR0130JHB		
After Treatment Device(s)	(ATD)									
ATD Number	,	ATD Type	ATD Preciou	ıs Metal	Substrat	e Material	s	ubstrate Const	ruction	
1	Th	ree-way catalyst	Platinum + Palladiu	m + Rhodium	Cer	amie		Monolith	L	
2	Th	ree-way catalyst	Palladium + F	Chodium	Cer	amie		Monolith	L	
3	Th	ree-way catalyst	Platinum + Palladiu	m + Rhodium	Cer	amie		Monolith		
Mfr After Treatment Device (AT Comments Direct Ozone Reduction (DOR) 1	D) Tw	Two primary TWC (PT/PL/RH) and One secondary TWC (PL/RH) Not Equipped								
Mfr Emission Control Device Co	mments	( Lquipped								
Engine Configuration Num	hor 1									
Engine Configuration Num	ber 1									
Engine Displacement (liters)	3.5		E	ngine Rated Horsep	ower		400			
Number of Inlet Valves Per Cylin	der 2		N	umber of Exhaust V	alves Per Cylin	der	2			
Air Aspiration Method	Suj	percharged	N	umber of Air Aspira	ation Devices		1			
Air Aspiration Device Configurat	ion Sin	gle	C	harge Air Cooler Ty	ype		Liquid			
Air Aspiration Drive Method(s)	Me	chanical								
Cylinder Deactivation	No									
Cylinder Deactivation Description	ı									
Variable Valve Timing	Ye	5								
Variable Valve Timing System D	scription VV spe	T mechanisms are on the i ed range in accordance to e	nlet and exhaust camsh engine speed and load.	afts for both engine	banks. The syste	m changes inlet	and exhaust va	alve timing over	the entire	
Variable Valve Lift?	No									
Variable Valve Lift System Descr	iption									
Number of Knock Sensors	2		N	umber of Air/Fuel S	Sensors		1			
Air/Fuel Sensor # 1 Type	He	ated oxygen	Ai	ir/Fuel Sensor # 1 D	escription					
Mfr Air/Fuel Sensor Comments										
Exhaust Gas Recirculation	No		C	ooled Exhaust Gas l	Recirculation		No			
EGR Type			E	xhaust Gas Recircul	lation Description	on if 'Other'				
<b>Closed Loop Air Injection System</b>	No									
Air Injection Type	No	t Applicable	Ai	ir Injection Type if	'Other'					
Mfr Engine Configuration Comm	ents The pov	e 2GR engine is a proven T vertrains and found both re	oyota engine, in use on liability and emissions	such vehicles as the durability to be exce	US specification llent. This engin	n Toyota Camry e does not featu	y. Lotus has pre ire any new, un	eviously used To proven technolo	oyota ogy.	
Official Test Numbers										
					EPA City	EPA City	EPA Highway	EPA Highway	CREE	
Test Group Fuel FTP	US06	SC03	Cold CO	Highway	Litmus Value	Litmus Threshold	Litmus Value	Litmus Threshold	Weighting Factor	
Gasoline RLTX1008287	RLTX10082	868 RLTX10082869	RLTX10082874	RLTX10082867	19.2	228.2	32.2	286.1		

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LOTUS	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 19
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Certification Summary Information Report

Test Group		RLTXV03	.5ЛНВ		Evaporative/Re	fueling Family		RLTXR0130JHB
Emission Data	Vehicle Informa	tion						
Vehicle ID / Config	uration	EDV-17-1	EVM6/2 / 0		Manufacturer	Vehicle Configu	ration Number	5
Original Test Grou	p Name	HLTXV0	3.5JHB		Original Evapo	rative/Refueling	Family	HLTXR0130JHB
Original Test Vehic	le Model Year	2017						
Vehicle Model								
Represented Test V	ehicle Make	Lotus			Represented Te	est Vehicle Mod	4	Evora 400
Leak Family De	tails							
Leak Family Identi	fier				Leak Family Name			
Drive Sources and Fuel System Detai		Details						
	Drive	Source and Fuel#		Driv	e Source		Fuel	
		1	Combustion Engine Gasolin			Gasoline		
Hybrid Indicator No								
Multiple Fuel Storage					Multiple Fuel Combustion			_
Fuel Cell Indicator	56				Rechargeable Energy Storage System Indicator			-
Rechargeable Ener	ev Storage System				Rechargeable F	nergy Storage	vstem, if 'Other'	
Off-board charge C	Off-board charge Capable Indicator							
Odometer Correcti	on Initial	0	Odometer Correction Factor				1	
Odometer Correcti	on Sign	+ = Syster	n Miles is equal to	o (Test odometer re	ading * Correction	factor) + Initial s	ystem miles	
Odometer Correcti	on Units	Miles	-		-			
Engine Code		2GR-3.5S			Rated Horsepo	wer		400
Displacement (liter	s)	3.5						
Air Aspiration Met	hod	Superchar	ged		Air Aspiration	Method, if 'Oth	er'	
Number of Air Asp	iration Devices	1			Air Aspiration	Device Configu	ation	Single
Charge Air Cooler	Type	Liquid			Drive Mode W	hile Testing		2-Wheel Drive, Rear
Shift Indicator Lig	ht Usage	Equipped	not shifted by SI	L	Aged Emission	Components		4,000 (mi)
Curb Weight (lbs)		3175			Equivalent Tes	t Weight (pound	s)	3500
GVWR (lbs)		4061			N/V Ratio			36
Axle Ratio		3.24						
Transmission Type		Manual			# of Transmissi	ion Gears		6
Transmission Lock	սթ	No			Creeper Gear			No
Dynamometer	Coefficients:							
Target Coefficients			s		Set Coefficients			
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	EPA Calcula B (lbf/mph) C (lbf/mph**2) Cit			Fotal Road Load Horse Power for ghway/Evap Coefficients
City/Highway/Eva	p 37.485	0.406	0.01764	17.86	-0.0029 0.02059			13.6
Emission Control Device Comments								
L		Pa	ae4 of 41 CS	I Submission/Re	evision Date: 10	/26/2023 06:1	8:28 AM	

LOTUS	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 20	
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Certification Summary Information Report

Test Group	RLTXV03.5JHB		Evaporative/Refueling F	amily	RLTXR0130JHB	
Manufacturer Test Vehicle Comments	2017MY Evora 400 M	T - Evap tests only				
Test #	HLTX10043888		Test Procedure		24 - Federal fuel refueling test (ORVR)	
Exhaust Test # for this Evap Test	HLTX10041983		Test Fuel Type		61 - Tier 2 Cert Gasoline	
Test Date	03/16/2016		Fuel		N/A	
Fuel Batch ID	DJ2221		Fuel Calibration Number	r	2221	
Vehicle Class	N/A		DF Type		EPA Assigned	
Verify Test Lab ID	Roush Emissions Labo	ratory				
E10 Evaporative Test Measurement Method						
Test Start Odometer Reading	6012		Odometer Units		M	
4WD Test Dyno	No		Diesel Adjustment Factor	r Usage		
State of Charge Delta						
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mp	bh, +/- l sec)	Road Speed Fan Usage		Yes	
Test Results						
Test Rest	ılt Name	Unrounde	d Test Result	Verify Calculated FE Eq	uivalent Value	
HC (Hydrocarbon fo	r Running Loss and	0.0	96043	-		
OK	(K)					
Manufacturer Test Comments						
Manufacturer rest comments						
	Dene h ct 11		Line Line 100 Brown	NC. 10. 10 AM		

Reference TA/USREP/86.1843 Issue Date 25<sup>th</sup> Oct 2023 Revision date 26<sup>th</sup> Oct 2023

	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 21
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Certification Summary Information Report

Test Group		RLTXV03	.5ЛНВ		Evaporative/R	efueling Fai	mily		RLTXR0130JHB
Emission Data V	Vehicle Informa	tion							
Vehicle ID / Config	uration	EDV-24-E	VSA6 / 0		Manufacturer	Vehicle Cor	afiguration	Number	2
Original Test Group	p Name	RLTXV03	.5JHB		Original Evapo	orative/Refu	ieling Famil	ly	RLTXR0130JHB
Original Test Vehic	le Model Year	2024							
Vehicle Model									
Represented Test V	ehicle Make	Lotus			Represented T	est Vehicle I	Model		Emira
Leak Family De	tails								
Leak Family Identi	fier				Leak Family N	ame			
Drive Sources a	nd Fuel System	Details							
Drive Source and Fuel#				Driv	e Source			Fuel	
		1		Combu	Combustion Engine Gasoline				
Hybrid Indicator No									
Multiple Fuel Stora	ge				Multiple Fuel Combustion			-	
Fuel Cell Indicator					Rechargeable Energy Storage System Indicator			-	
Rechargeable Energy Storage System					Kechargeable I	Energy Stor	age System	, if 'Other'	-
Off-board charge Capable Indicator									
Odometer Correction	on Initial	0			Odometer Cor	rection Fac	tor		1
Odometer Correcto	on Sign	+ = Syster	n Miles is equal to	o (Test odometer rea	ading * Correction	factor) + Ini	tial system r	miles	
Odometer Correction	on Units	Miles							
Engine Code		2GR-3.55			Kated Horsepo	wer			400
Displacement (liters	s)	3.0				N. 4. 4. 10	0.1		
Air Aspiration Met	noa	Superchar	gea		Air Aspiration	Method, if	Other		S: 1
Number of Air Asp	ration Devices	1			Air Aspiration	Device Con	inguration		Single
Charge Air Cooler	Type	Liquid			Drive Mode W	nile Lesting			2-wheel Drive, Kear
Shift Indicator Ligh	it Usage	Equipped,	not shifted by SII	L	Aged Emission	Componen	its		4,000 (mi)
Curb Weight (lbs)		3241			Equivalent Les	t Weight (p	ounds)		3625
GVWK (Ibs)		3902			N/V Katio				28.5
Axle Katio		3.69							
Transmission Type		Semi-Auto	mane		# of 1 ransmiss	ion Gears			0
Transmission Lockup No Creeper Gear				No					
Dynamometer Coefficients:									
Target Coefficients					Set Coefficients				
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	bf) B (lbf/mph) C (lbf/mph <sup>±±</sup> 2) City/H			Total Road Load Horse Power for ghway/Evap Coefficients	
City/Highway/Eva	p 37.419	0.55691	0.017409	13.151	151 0.21852 0.020146				14.5
Emission Control Device Comments									
L		Pag	ge6ot41 CS	I Submission/Re	evision Date: 10	/26/2023	06:18:287	AM	

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Certification Summary Information Report

Test Group		RLTXV03.5JH	3	Evaporativ	ve/Refueling F	amily	RLTXR0130JH	В		
Manufacturer Test	Vehicle Comments	2024MY Emira	EVAP testing configu	ration						
Test #		RLTX100828	76	Test Proc	Test Procedure			23 - 2-day evap		
Exhaust Test # for	this Evap Test	RLTX10082871	L	Test Fuel	Type		47 - CARB LEV Gasoline	47 - CARB LEV3 E10 Premium Gasoline		
Test Date		07/12/2023		Fuel			Gasoline			
Fuel Batch ID		C50641		Fuel Calib	ration Numbe	r	9043			
Vehicle Class		N/A		DF Type			EPA Assigned			
Verify Test Lab ID		Applus IDIAD	Group							
E10 Evaporative T	est Measurement Meth	d Calculated (1.08	x FID Total Hydrocar	rbons)						
Test Start Odomet	er Reading	4254		Odometer	Units		М			
4WD Test Dyno		No			ustment Facto	r Usage				
State of Charge Delta										
Drive Cycle Speed Tolerance Criteria Used Part 1066 (+/-			(+/- 2.0 mph, +/- 1.0 s	ec) Road Spee	d Fan Usage		Yes			
Test Results										
	Test Re	sult Name	U	Inrounded Test Resul	ounded Test Result Verify Calculated FE Eq			7		
					per gallor					
	HC-TOTAL-EQUI equivalent	V (Total Hydrocarb - Evap only)	on	0.269	0.269					
Manufacturer Test	Comments									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Cartification Loval	Standard	Pace/Fail		
Fed	150.000 miles	Federal Tier 3 Evan	HC-TOTAL-FOUIV	0.269	0.0000	0.27	0.45	Page		
CA	150,000 miles	California LEV-III	HC-TOTAL-EQUIV	0.269	0.0000	0.27	0.45	Pass		
- CA	150,000 miles	Zero Evap (Option 2)	ne-ronal-loon	0.205	0.0000	0.27	0.45	1 455		

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Certification Summary Information Report

Test Group		RLTXV03.5JH	3	Evaporati	ve/Refueling F	amily	RLTXR0130JHB	1		
Test #		RLTX100828	77	Test Pro	cedure		34 - Federal fue	el 3-day evap		
Frhaust Test # for	this Even Test	RI TV10082871		Test Fuel	Test Fuel Type			47 - CARB LEV3 E10 Premium Gasoline		
Test Date	this Lyap Test	07/04/2023		Fuel	lest Fuel Lype Fuel			Gasoline		
Fuel Batch ID		C50641		Fuel Calib	Fuel Fuel Calibration Number					
Vehicle Class		N/A		DF Type			EPA Assigned			
Verify Test Lab ID	)	Applus IDIADA	Group	21 1/21			Littingaca			
E10 Evaporative T	Fest Measurement Metl	hod Calculated (1.08	3 x FID Total Hydrocar	(bons)						
Test Start Odomet	ter Reading	4218	-	Odometer	Units		М			
4WD Test Dyno		No		Diesel Adi	iustment Facto	r Usage				
State of Charge De	elta					0				
Drive Cycle Speed	Tolerance Criteria	Used Part 1066	(+/- 2.0 mph, +/- 1.0 s	ec) Road Spe	ed Fan Usage		Yes			
Test Decelts				· ·	-					
Lest Results								_		
	Test R	lesult Name	U	nrounded Test Resu	lt	Verify Calculated FE Eq per gal	uivalent Value (miles lon)			
	HC-TOTAL-EQU equivaler	IV (Total Hydrocarb 1t - Evap only)	on	0.357						
Manufacturer Tes Certification	t Comments	Declared FEL 0	.45	Provided Provide		Card Section Lond	Stee land	Dece/Endl		
Fed	150 000 miles	Fadaral Tiar 3 Evan	HC TOTAL FOUN	0 357	Add Dr	Certification Level	Standard	Pass/Fall		
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.357	0.0000	0.36	0.45	Pass		

LOTUS	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 24	
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Certification Summary Information Report

Test Group		RLTXV03.5JHB		Evaporati	ve/Refueling F	amily		RLTXR0130JHB		
Test #		RLTX10082878		Test Proc	edure			32 - Federal Fue	l Running Loss	
Exhaust Test # for t	his Evap Test	RLTX10082871		Test Fuel	Type			Gasoline	Gasoline	
Test Date		07/04/2023		Fuel				Gasoline		
Fuel Batch ID		C50641		Fuel Calibration Number				9043		
Vehicle Class		N/A		DF Type				EPA Assigned		
Verify Test Lab ID		Applus IDIADA Grou	ID .					-		
E10 Evaporative Te	st Measurement Metl	hod Calculated (1.08 x FII	) Total Hydrocar	bons)						
Test Start Odomete	r Reading	4218		Odometer	Units			М		
4WD Test Dyno	-	No		Diesel Adj	ustment Facto	r Usage				
State of Charge Del	ta									
Drive Cycle Speed 1	Folerance Criteria	olerance Criteria Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)			d Fan Usage			Yes		
Test Results										
Г									ı	
	Test R	Test Result Name			t	Verify Calcu	ated FE Equ per gall	uivalent Value (miles on)		
	HC-TOTAL-EQU	IV (Total Hydrocarbon at - Evan only)	0.0008							
-	equivale	1 - 2 ( n) ( n) (							1	
Manufacturer Test	Comments	-								
Region	Useful Life	Standard Level En	ission Name	Rounded Result	Add DF	Certific	ation Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap HC-T	OTAL-EQUIV	0.001	0.0000		0.00	0.05	Pass	

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CA

150,000 miles

Certification Summary Information Report

Test Group	RLTXV03.5JHB	3.5JHB Evaporative/Refueling F			ily	RLTXR0130JH	В
Test #	RLTX1008287	75	Test Pro	cedure		65 - Evap Can	ister Bleed Test
Exhaust Test # for this Evap Test			Test Fuel	Type		47 - CARB LEV Gasoline	3 E10 Premium
Test Date	11/06/2022		Fuel			Gasoline	
Fuel Batch ID	C44869		Fuel Calibration Number				
Vehicle Class	N/A		DF Type			EPA Assigned	
Verify Test Lab ID	Applus IDIADA	Group					
E10 Evaporative Test Measurement Method	d						
Test Start Odometer Reading	Test Start Odometer Reading 4254			Units	М		
4WD Test Dyno	No		Diesel Ad	Diesel Adjustment Factor Usage			
State of Charge Delta							
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/-	Used Part 86 (+/- 2 mph, +/- 1 sec)		ed Fan Usage		No	
Test Results							
Test Res	ult Name	τ	Jnrounded Test Resu	lt	verify Calculated FE Eq	uivalent Value (miles	7
					per gall	on)	-
HC-TOTAL (Tot	tal Hydrocarbon)		0.0113				
Manufacturer Test Comments	BETP conducted	at Idiada using produ	action canister, therefor	re vehicle values a	e dummy values only		
Certification Region Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed 150,000 miles F	ederal Tier 3 Evap	HC-TOTAL	0.011	0.0000	0.01	0.02	Pass

0.011

0.0000

0.01

0.02

Pass

California LEV-III Zero Evap (Option

HC-TOTAL

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Certification Summary Information Report

Test Group	Test Group			Evaporative/Refueling Fa	amily	RLTXR0130JHB
Emission Data	Vehicle Information					
Vehicle ID / Config Original Test Grou Original Test Vehic	uration p Name :le Model Year	EDV-24-EVSM6 / 0 RLTXV03.5JHB 2024		Manufacturer Vehicle Co Original Evaporative/Ref	onfiguration Number fueling Family	l RLTXR0130JHB
Represented Test V	ehicle Make	Lotus		Represented Test Vehicle	Model	Emira
Leak Family De	tails					
Leak Family Identi	fier			Leak Family Name		
Drive Sources a	nd Fuel System Deta	ils				
1	Drive Source	a and Fuel#	Duive	Source	Fuel	
	1	e and I del#	Combust	ion Engine	Gasoline	
Hybrid Indicator	*	No	comous	ion highe	Casonine	
Multiple Fuel Stors	ige			Multiple Fuel Combustio	n	
Fuel Cell Indicator				Rechargeable Energy Sto	orage System Indicator	
Rechargeable Ener	gy Storage System			Rechargeable Energy Sto	orage System, if 'Other'	
Off-board charge C	apable Indicator					
Odometer Correcti	on Initial	0		Odometer Correction Fac	ctor	1
Odometer Correcti	on Sign	+ = System Miles is eq	ual to (Test odometer read	ling * Correction factor) + In	uitial system miles	
Odometer Correcti	on Units	Miles				
Engine Code		2GR-3.5S		Rated Horsepower		400
Displacement (liter	s)	3.5				
Air Aspiration Met	hod	Supercharged		Air Aspiration Method, it	f 'Other'	
Number of Air Asp	iration Devices	1		Air Aspiration Device Co	onfiguration	Single
Charge Air Cooler	Type	Liquid		Drive Mode While Testin	g	2-Wheel Drive, Rear
Shift Indicator Lig	ht Usage	Equipped, not shifted b	by SIL	Aged Emission Compone	nts	4,000 (mi)
Curb Weight (lbs)		3225		Equivalent Test Weight (	pounds)	3625
GVWR (Ibs)		3887		N/V Katio		35.5
Axle Katio		3.24				
Transmission Type		Manual		# of I ransmission Gears		6
I ransmission Lock	up	No		Creeper Gear		No
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Test Group	Test Group RLTXV03.5JHB		3.5ЛНВ		Evaporative/Re	efueling Family	RLTXR0130JHB
Dynamometer Co	efficients:						
Target Coefficients			ts		Set Coefficients		
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	37.419	0.55691	0.017409	19.963	0.24494	0.018929	14.5
Cold CO	41.161	0.6126	0.01915	23.268	0.1364	0.02205	N/A
US06	37.419	0.55691	0.017409	15.579	0.17764	0.019657	N/A

Emission Control Device Comments

Manufacturer Test Vehicle Comments MY24 Emissions Testing

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Certification Summary Information Report

Test Group		RLTXV03.5JHB		Evaporative/Refueling F	amily	RLTXR0130JHB	
Test #		RLTX10082871		Test Procedure		21 - Federal fuel (w/can load)	2-day exhaust
Exhaust Test # for	this Evan Test			Test Fuel Type		46 - CARB LEV3 I Gasoline	E10 Regular
Test Date	this Lyap Test	05/17/2023		Fuel		Gasoline	
Fuel Batch ID		C55270		Fuel Calibration Number	r.	9093	
Vehicle Class		LDV/Passenger Car		DF Type	-	EPA Assigned	
Verify Test Lab II	•	MAHLE Powertrain Lt	d				
E10 Evaporative T	est Measurement Method						
Test Start Odomet	er Reading	4152		Odometer Units		М	
4WD Test Dyno	-	No		Diesel Adjustment Facto	r Usage		
State of Charge De	lta				2		
Drive Cycle Speed	ed Tolerance Criteria Used Part 1066 (+/- 2		0 mph, +/- 1.0 sec)	Road Speed Fan Usage		Yes	
Test Results							
	Test Result Name		Unrounde	d Test Result	Verify Calculated FE Equiva per gallon)	y Calculated FE Equivalent Value (miles per gallon)	
	CO2 BAG 1 (Bag 1 Carbon Dioxide)		431.4	717087			
	FE BAG 1 (Bag 1 Fuel Economy)		20.0	)56572	20.056572		
	CO2 BAG 2 (Bag 2	Carbon Dioxide)	479.8	3468874			
	FE BAG 2 (Bag 2)	Fuel Economy)	18.1212154		18.1212154		
	CO2 BAG 3 (Bag 3	Carbon Dioxide)	387.1607582				
	FE BAG 3 (Bag 3)	Fuel Economy)	22.4	499677	22.4499677		
	METHANE (CH	I4 - Methane)	0.00	59399			
	CO (Carbon )	Monoxide)	0.2	72692			
	DT-ASCR (Drive Trace A Ratin	bsolute Speed Change g)	5	5.02			
	DT-EER (Drive Trace En	ergy Economy Rating)	1	.48			
	DT-IWRR (Drive Trace Ratin	e Inertia Work Ratio g)	٤	3.34			
	MFR FE (Manufactur	rer Fuel Economy)	19.5	174765	19.5174765		
	NOX (Nitrog	en Oxide)	0.01	28045			
	N2O (Nitrou	15 Oxide)	0.00	011626			
	HC-NM (Non-methane Hydrocarbon)		0.01	34667			
	NMOG (Non-methane organic gases)		0.01	48368			
	PM (Particula	te Matter)	0.00	02693			
	HC-TOTAL (Total	l Hydrocarbon)	0.01	90187			
	Test Resul	t Name	Unrounde	d Test Result	Verify Calculated CREE/OPT-CREE		
	Carbon-Related Ex	haust Emissions	445.5	5313012	999		

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Certification Summary Information Report

Test Group	est Group RLTXV03.5JHB				Evaporative/Refueling Family					RLTXR0130JHB		
		Test Result Carbon di	t Name		Unroun 44	ded Test Resul 4 4032963	t	١	Verify Calcula	ted CO2		
Manufacture	r Test Comme	nts		I		4.4032703	I					
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	Federal Tier 3 Bin 125	CREE	999				0		999		
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.006				0.0069		0.01	0.03	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.001				0.0028		0.00	0.01	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.27				0.38		0.6	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0148		1.1		0.0149		0.030	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0276						0.054	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0128				0.0115		0.024	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0003				0	-	0.000	0.003	Pass
CA	120,000 miles	California LEV- III ULEV125	CREE	999				0	-	999	-	
CA	120,000 miles	California LEV- III ULEV125	METHANE	0.006			-	0.0069		0.01	0.03	Pass
CA	120,000 miles	California LEV- III ULEV125	N2O	0.001				0.0028		0.00	0.01	Pass
CA	150,000 miles	California LEV- III ULEV125	со	0.27			-	0.38		0.6	2.1	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG	0.0148		1.1		0.0149		0.030	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG+NOX	0.0276						0.054	0.125	Pass
CA	150,000 miles	California LEV- III ULEV125	NOX	0.0128				0.0115		0.024	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	PM	0.0003				0		0.000	0.003	Pass
	NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.											

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**Certification Summary Information Report** 

Tet fKLTX10082872Tet Procedure1.1- Federal fuel 2-day exhauses (Wain Mage)Eduant Tet # for this Exp Term-Tet Fava Type0.1- Trat 2 cet GasolineFet BaveD7077023Fet IGasolinePat Bave DinC. 40000Fuel Calibration Number946Vahiet ClassD/D Prossenger CarD TypePA AssignerVahiet ClassD/D Prossenger CarD Gasoner UnitsMattTet Start Odometer Reading368Odometer UnitsMattVariet Tet Mesurement MetherTet Start Odometer Reading0.58Odometer UnitsMattW1D Tet DypoDate Adjutement Factor Utageo-Start Odometer Reading0.58Odometer UtageTet StartW1D Tet DypoDate Adjutement Factor UtageStart Odometer Reading0.58Odometer UtageTet StartW1D Tet DypoDate Adjutement Factor UtageStart Odometer Reading0.58Date Adjutement Factor Utage-W1D Tet DypoDate Adjutement Factor UtageW1D Tet DypoDa	Test Group		RLTXV03.5JHB		Evaporative/Refueling F	amily	RLTXR0130JHB		
Ethen ter for this Evan PeretTer Fuel Type6.1 Fra C cer GasolineTest Date0940Fuel Calibration Number0946Value C ClassLDV Processor CarDT TypePart Calibration NumberVerify Test Lab IDCHERPORT CarDT TypePart Calibration NumberFuel Start O founder Test Maturement MethodTest Start O founder Test ResultMaturement MethodTest Start O founder Test Result NumeUnrounded Test ResultYesify Calculated FE Equity-less Value (nile)Test Result NumeUnrounded Test ResultVerify Calculated FE Equity-less Value (nile)CO 2 BAG I (Bag 1 Carloso Diocide)343 (180021)FE BAG I (Bag 1 Fuel Fecosony)18.20053418.200534CO 2 BAG I (Bag 1 Fuel Fecosony)18.200535418.2005354FE BAG I (Bag 1 Fuel Fecosony)25.5968948D CO (D RAG I (Bag 1 S and Ecosony)25.5968948D FLANDER (CH - Mathane)0.0095822D FLANDER (Ch - Mathane)0.0095823D FLANDER (Ch - Mathane)0.0095823D FLANDER (Charles Altarge Nore Katain)3.19- </td <td>Test #</td> <td></td> <td>RLTX10082872</td> <td></td> <td>Test Procedure</td> <td></td> <td>21 - Federal fuel (w/can load)</td> <td>2-day exhaust</td>	Test #		RLTX10082872		Test Procedure		21 - Federal fuel (w/can load)	2-day exhaust	
Terd Date0707/203FuelGaodineFard Barth DoC44900Fuel Calibration Number9446Vahite ChairLDV/Parsenger CarDT TypeEPA AxignedVerify Tert Lab DMAHLE Preventian LidiEPA AxignedED Traynorisor Tert Manarement MethodTert Start Odomater Reading456Odomater RuinMVDT Tert DynoNoDisel Adjustment Pactor Viage-State of Charge DeltaTert Start Odomater Reading0.0Rod Speed Fan UsagereTert ResultState of Charge DeltaTert Result NameUnrounded Tert ResultVerify Calculated FE Equiralent Value (miles)C02 BAG 1 (Big 1 Carbon Dioxide)443 1080921-C02 BAG 1 (Big 1 Fuel Economy)202224765202224765C02 BAG 1 (Big 1 Fuel Economy)202224765-C02 BAG 3 (Big 2 Carbon Dioxide)344 789278-FE BAG 2 (Big 2 Carbon Dioxide)347 789278-FE BAG 2 (Big 2 Carbon Dioxide)0.0478275-DT-ACKCR (Driv Trace Absolute Speed Change Ruing)1.74-DT-ACKCR (Driv Trace Absolute Speed Change Ruing)1.74-DT-ELFUR RUINT Table Resonany19.6678795-DT-ELFUR RUINT Table Resonany19.6678795-NOX (Nitrogen Oxide)0.002563NOX (Nitrogen Oxide)0.0021561NOX (Nitrogen Oxide)0.0021561-<	Exhaust Test # for	this Evap Test			Test Fuel Type		61 - Tier 2 Cert Ga	soline	
Fuel Bank ID         C44000         Fuel Calibration Number         90.64           Value Cals         LDV Parsenger Cals         DF Type         DE PA A singnet           Verity Test Lab ID         MAHLE Proventian Lab         MAHLE Proventian Lab         MAHLE Proventian Lab           Evel Start Obsammeter Reading         36 No         Odsameter Uasin         MA           AVD Te Dyno         No         Desel Adjustment Pactor Uage         -           Test Start Obsammeter Reading         Use Part 1065 (+2.0 mph, +1.0 msc)         Red Speed Fan Uage         Test           Test Result         Bart 1065 (+2.0 mph, +1.0 msc)         Red Speed Fan Uage         Test           Test Result         Same         Verity Calculated FE Fujivisal Value (malies provide)           C02 BAG 1 (Barg 1 Carbon Dioxide)         438 140005         -         -           C02 BAG 1 (Barg 1 Carbon Dioxide)         438 14005         -         -           FE BAG 3 (Barg 3 Carbon Dioxide)         438 14005         -         -           C02 BAG 1 (Barg 1 Carbon Dioxide)         438 14005         -         -           FE BAG 3 (Barg 3 Carbon Dioxide)         0000552         -         -           C02 BAG 1 (Barg 1 Carbon Dioxide)         0.000552         -         -           FE BAG 3 (Bar	Test Date	-	07/07/2023		Fuel		Gasoline		
Verify Test Lab IDDV Pysneyr Car MHLE Powertana LidDF TypeEPA AssignedVerify Test Lab IDMAHLE Powertana LidEll D'Exportative Test Mexturement Methal.Test Start Odonaeter Reading368Odonaeter UnitsMAlb D'Exet PowerNoDiesel Adjustment Factor Utage.State of Charge DelnTest ResultUnit Power PowerYesTest ResultTest Result NameVano MextureVerify Calculated FE Equivalent Value (naller Per galavalent Value (Naller Per galavaler Per	Fuel Batch ID		C44900		Fuel Calibration Number	r	9046		
Verify Ter Lab IDMAHLE Powertnin LidE10 Exporative Ter Measurement MethodE10 Struporative Ter Measurement MethodTert Start Odometer Reading4565Odometer UnitsM40D Ter DynoNoDisel Adjustmeast Factor UsageState of Charge DataDrive Cycle Speed Tolerance CriteriaUsde Part 1066 (+-2.0 mph, +-1.0 sec)Road Speed Fan UsageYesTest ResultTest ResultTest ResultTest Result NameUurounded Test ResultVerify Calculated FE Equivalest Value (mileper gallon)C02 BAG 1 (Bag 1 Carbon Dioxide)483.1080921FE BAG 1 (Bag 1 Carbon Dioxide)483.9449005C01 BAG 2 (Bag 2 Carbon Dioxide)483.9449005C01 BAG 2 (Bag 2 Carbon Dioxide)483.9449005C01 BAG 2 (Bag 2 Carbon Dioxide)483.9449005C01 BAG 3 (Bag 2 Carbon Dioxide)483.9449005C01 BAG 3 (Bag 3 Carbon Dioxide)494.7839278C01 BAG 3 (Bag 3 Carbon Dioxide)0.4763755Di-AGC (Drive Trace Absolute Speed Change1.74Di AGC Rop Drive Trace Baerge Leasongy1.94687759Di AGC Rop Trive Trace Baerge Leasongy1.94678759Di AGC Rop Trive Trace Baerge Leasongy1.94678759Di AGC Rop Trive Trace Baerge Leasongy1.94678759Di AGC Rop Trive Trace Baerge Leasongy1.96787799 <td colspa<="" td=""><td>Vehicle Class</td><td></td><td>LDV/Passenger Car</td><td></td><td>DF Type</td><td></td><td>EPA Assigned</td><td></td></td>	<td>Vehicle Class</td> <td></td> <td>LDV/Passenger Car</td> <td></td> <td>DF Type</td> <td></td> <td>EPA Assigned</td> <td></td>	Vehicle Class		LDV/Passenger Car		DF Type		EPA Assigned	
E10 Er sporzitiv Tert Mesurement Methon          Tert Sporzitiv Tert Mesurement Methon          MDT Tert Jyon       No       Disedi Adjuitument Factor Usage          State GC Large Delto            Tert Cycle Speed Tolerance Criterio       U and Tol (66 (r-/ 2.0 mph, +/. 1.0 sc))       Rod Speed Fan Usage       Yes         Tert Result       Tert Result Name       Varounded Test Result       Verify Calculated FE Equivalent Value (mile)         C02 BAG 1 (Bag 1 Earlo Dioxide)       438.1080921           FE BAG 1 (Bag 1 Fuel Economy)       20.2224765       20.2224765          C02 BAG 2 (Bag 2 Carbon Dioxide)       349.47839278           FE BAG 1 (Bag 1 Fuel Economy)       12.2566534       12.2566534          C02 BAG 2 (Bag 2 Carbon Dioxide)       0.494783755           FE BAG 1 (Bag 1 Fuel Economy)       12.2566546       22.566548          O (Carbon Maonide)       0.4786755           DT-ASCR Drive Trace Barety Economy Ratio       3.19           METHANE (CH4 - Methane)       0.0017605            DT-ASCR Drive Trace Abolte Speed Change       3.19	Verify Test Lab II	)	MAHLE Powertrain Lt	d			-		
Tert Sur Odometer Reading4368Odometer UnitsM4WD ret DynaNoDiesel Adjustment Factor UtageState of Charge DeltaTert Cycle Speed Tolerance CriteriaUsed Part 1065 (+/-2.0 mph, +/-1.0 sec)Road Speed Fan UtageYesTest ResultTest Result NameUarounded Test ResultVerify Calculated FE Equivalent Value (mile per galloa)CO1 BAG 1 (Bag 1 Carbon Dioxide)438 1080921FE BAG 1 (Bag 1 Test ResultVerify Calculated FE Equivalent Value (mile) per galloa)CO1 BAG 1 (Bag 1 Carbon Dioxide)438 1080921CO1 BAG 2 (Bag 2 Carbon Dioxide)437 678378Diate Conomy22 596834822 5968348Diate Conomy19 6078779Diate Conomy Cating1.1/4Di Act Chrive Trace Abrolute Speed Change Rating1.1/4<	E10 Evaporative 7	est Measurement Method							
NMDiesel Adjustment Factor UsageState of Charge DeltsDirter Oyte Speed Tolerance CriteriaUsal Part 1066 (+ 2.0 mph, +c.10 sec)Rad Speed Fan UsageYesTest ResultVariance CriteriaUsal Part 1066 (+ 2.0 mph, +c.10 sec)Rad Speed Fan UsageYesTest ResultTest Result NameUarounded Test ResultVerify Calculated FE Equinalent Value (miles per gluba)CO2 BAC 1 (Bg 1 Carbon Dioxide)438,1080921FE BAG 1 (Bg 1 Fuel Economy)20 2224765CO2 BAC 2 (Bg 2 Carbon Dioxide)488,9448005CO2 BAC 2 (Bg 2 Carbon Dioxide)349,7839278CO2 BAC 3 (Bg 3 Fuel Economy)EconomyDi 25566848CO2 BAC 3 (Bg 3 Fuel Economy)Co2 BAC 3 (Bg 3 Fuel Economy)Di 25566348DI -SCR (Drive Trace Baretia Work Ratio Rating)DI -SCR (Drive Oride) <td>Test Start Odome</td> <td>er Reading</td> <td>4368</td> <td colspan="2">Odometer Units</td> <td></td> <td>М</td> <td></td>	Test Start Odome	er Reading	4368	Odometer Units			М		
<text>Start of Dirac gene 30The start of the st</text>	4WD Test Dyno		No		Diesel Adjustment Facto	r Usage			
Date 20 Gene CentersUse Part 1066 (+ 0.2 mph, + (-1.0 sec))Rad Spee Rau UseYesJest ResultsTest ResultTest ResultUnrounded Test ResultVerify Calculated FE guiloa)C02 BAC 1 (Bag 1 Carbon Dioxide)438 1080921C02 BAC 1 (Bag 1 Fuel Economy)202224765202224765C02 BAC 2 (Bag 2 Carbon Dioxide)488 9448005FE BAC 2 (Bag 2 Carbon Dioxide)488 9448005C02 BAC 3 (Bag 3 Carbon Dioxide)394 7839278C02 BAC 3 (Bag 3 Carbon Dioxide)394 7839278C02 BAC 3 (Bag 3 Carbon Dioxide)0.0095822C02 BAC 3 (Bag 3 Carbon Dioxide)0.0195822C02 BAC 3 (Bag 3 Carbon Dioxide)0.0195822DTASCR (Drive Trace Energy Conomy Trans)1.19DTASCR (Drive Trace Energy Conomy Trans)1.96678799DTASCR (Drive Trace Energy Economy)1.9678799DTASCR (Drive Trace Energy Economy)1.9678799DTASCR (Drive Trace Energy Economy)1.9678799N20 (Nirose Oxide)0.0017603N20 (Nirose Oxide)0.00121581AND (Nirose Oxide)0.0021581Di ASCR (Drive Trace Energy Economy)0.0021581N20 (Nirose Oxide)0.0001585-N20 (Nirose Oxide)0.0001585 <t< td=""><td>State of Charge D</td><td>elta</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	State of Charge D	elta							
Test ResultTest ResultTest ResultVerify Calculated FE Equivalent Value (miles per gullon)CO2 BAG 1 (Bag 1 Carbon Dioxide)438.1080921-FE BAG 1 (Bag 1 Carbon Dioxide)488.9448005-CO2 BAG 2 (Bag 2 Carbon Dioxide)488.9448005-CO2 BAG 3 (Bag 3 Carbon Dioxide)394.7839278-FE BAG 3 (Bag 2 Fuel Economy)18.200653418.200534CO2 BAG 3 (Bag 3 Carbon Dioxide)394.7839278-FE EAG 3 (Bag 3 Fuel Economy)22.596694822.5966948MTETHANE (CH4-Methane)0.0095522-CO (Carbon Monoxide)0.4763755-DT-ASCR (Drive Trace Absolute Speed Change Raing)1.74-DT-MER Drive Trace Leargy Economy Rating)-0.14-DT-WRR Drive Trace Interin Work Ratio Rating)3.19-MIFE FE (Manufacturer Fuel Economy)19.667879919.6678799NOX (Nitrouer Oxide)0.0015661-HC-NM (Non-methane Hydrocarbon)0.0021544-NOX (Nitrouer Oxide)0.0015661-HC-TOTAL (Total Hydrocarbon)0.00306828-MIC Return Lottal Mattery0.00306828-Mot Con-Related Exhaut Emission:454.0137692454	Drive Cycle Speed	Tolerance Criteria	Used Part 1066 (+/- 2.0	) mph, +/- 1.0 sec)	Road Speed Fan Usage		Yes		
Test Result NameUnrounded Test ResultVerify Calculated FE Equivalent Value (miles per gallon)CO2 BAG 1 (Bag 1 Carbon Dioxide)438.1080921FE BAG 1 (Bag 1 Fuel Economy)20.222476520.2224765CO2 BAG 2 (Bag 2 Carbon Dioxide)488.9448005FE BAG 2 (Bag 2 Fuel Economy)18.260653418.2606534CO2 BAG 3 (Bag 3 Fuel Economy)22.596594822.5965948METHANE (CH - Methane)0.0095822-CO (Carbon Monoxide)0.4763755-DT-ASCR (Drive Trace Absolute Speed Change Rating)1.74-DT-IVER (Drive Trace Intertia Work Ratio Rating)3.19-MFR FE (Manufacturer Fuel Economy)19.667879919.6678799NOX (Nitrogen Oxide)0.00215814-NMOG (Non-methane Hydrocarbon)0.0215814-NMOG (Non-methane Organic gates)0.0224446-PM (Particulate Matter)0.00306828-MIC TOTAL (Total Hydrocarbon)0.0306828-Test Result NameUnrounded Test ResultVerify Calculated CREE/OPT-CREE Carbon-Related Exhaust Emission:454.0137692454	Test Results								
C01 BAC 1 (Bag 1 Carbon Dioxide)         438.1080921            FE BAC 1 (Bag 1 Fuel Economy)         20.2224765         20.2224765           C02 BAC 2 (Bag 2 Carbon Dioxide)         488.948005            FE BAC 2 (Bag 1 Fuel Economy)         18.2608534         18.2608534           C02 BAC 3 (Bag 3 Carbon Dioxide)         394.7839278            FE BAC 3 (Bag 3 Carbon Dioxide)         22.5968948         22.5968948           METHANE (CH4 - Methane)         0.0095822            C C0 (Carbon Monoxide)         0.4763755            DT-ASCR (Drive Trace Absolute Speed Change Rating)         .0.14            DT-WRR (Drive Trace Energy Economy Rating)         .0.14            DT-WRR (Drive Trace Energy Economy Rating)         .0.14            DT-WRR (Drive Trace Energy Economy)         19.6678799         19.6678799           NOC (Nitrogen Oxide)         0.0127603            N2O (Nitrogen Oxide)         0.00127603            N2O (Nitrogen Oxide)         0.0215814            NMOG (Non-methane Tydrocarbon)         0.0224446            PM (Particulate Matter)         0.0004135            HC-TOTAL (Total Hydrocarbon)		Test Result	t Name	Unrounded	l Test Result	Verify Calculated FE Equiva per gallon)	erify Calculated FE Equivalent Value (miles		
FE BAG 1 (Bag 1 Fuel Economy)         20.2224765         20.2224765           CO2 BAG 2 (Bag 2 Carbon Dioxide)         488.9448005            FE BAG 2 (Bag 2 Fuel Economy)         18.2608534         18.2608534           CO2 BAG 3 (Bag 3 Carbon Dioxide)         394.7839278            FE BAG 3 (Bag 3 Fuel Economy)         22.5968948         22.5968948           METHANE (CH4 - Methane)         0.0095822            CO (Carbon Monoxide)         0.4768755            DT-ASCR (Drive Trace Abordue Espeed Change Rating)         1.74            DT-ASCR (Drive Trace Leving Yeconomy Rating)         -0.14            DT-INRR (Drive Trace Leving Work Ratio Rating)         3.19            MFR FE (Manufacturer Fuel Economy)         19.6678799         19.6678799           NOX (Nitrogen Oxide)         0.0127603            NOQ (Non-methane Hydrocarbon)         0.0224446            PM (Particulate Matter)         0.0004135            MNOG (Non-methane reganic gates)         0.0224446            PM (Particulate Matter)         0.00306828            HC-TOTAL (Total Hydrocarbon)         0.0306828		CO2 BAG 1 (Bag 1 Carbon Dioxide) FE BAG 1 (Bag 1 Fuel Economy) CO2 BAG 2 (Bag 2 Carbon Dioxide)		438.1	080921				
CO2 BAC 2 (Bng 2 Carbon Dioxide)         488.9448005            FE BAC 2 (Bng 3 Fuel Economy)         18.2608534         18.2608534           CO2 BAC 3 (Bng 3 Carbon Dioxide)         394.7839278            FE BAC 3 (Bng 3 Fuel Economy)         22.5968948         22.5968948           METHANE (CH4 - Methane)         0.0095822            CO (Carbon Monoxide)         0.4763755            DT-ASCR (Drive Trace Absolute Speed Change Rating)         -0.14            DT-IWRR (Drive Trace Lnergy Economy Rating)         -0.14            DT-IWRR (Drive Trace Lnergy Economy)         19.6678799         19.6678799           NOX (Nitrogen Oxide)         0.0127603            N2O (Nitrour Oxide)         0.0211814            NMOG (Non-methane Hydrocarbon)         0.021814            NMOG (Non-methane organic gates)         0.0024446            PM (Particulate Matter)         0.00306828            Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE           Carbon-Related Exhaust Emission:         454.0137692         454				20.22	24765	20.2224765			
FE BAC 2 (Bag 2 Fuel Economy)         18.2608534         18.2608534           CO2 BAG 3 (Bag 3 Carbon Dioxide)         394,7839278            FE BAG 3 (Bag 3 Fuel Economy)         22.5968948         22.5968948           METHANE (CH4 - Methane)         0.0095822            C O (Carbon Monoxide)         0.4763755            DT-ASCR (Drive Trace Abrolute Speed Change Rating)         1.74            DT-EER (Drive Trace Energy Economy Rating)         -0.14            DT-IWRR (Drive Trace Inertia Work Ratio Rating)         3.19            MFR FE (Manufacturer Fuel Economy)         19.6678799         19.6678799           NOX (Nitrogen Oxide)         0.0127603            NOQ (Nitrous Oxide)         0.0215814            NMOG (Non-methane Hydrocarbon)         0.0215814            PM (Particulate Matter)         0.0024446            PM (Particulate Matter)         0.0024446            PM (Particulate Matter)         0.0306828            Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE           Carbon-Related Exhaust Emission:         454.0137692         454				488.9	448005				
CO2 BAG 3 (Bag 3 Carbon Dioxide)         394.7839278            FE BAG 3 (Bag 3 Fuel Economy)         22.5968948         22.5968948           METHANE (CH+ Methane)         0.0095822            C O (Carbon Monoxide)         0.4763755            DT-ASCR (Drive Trace Absolute Speed Change Rating)         1.74            DT-EER (Drive Trace Absolute Speed Change Rating)         -0.14            DT-IWRR (Drive Trace Interia Work Ratio Rating)         3.19            MFR FE (Manufacturer Fuel Economy)         19.6678799         19.6678799           NOX (Nitrogen Oxide)         0.0127603            NOQ (Nitrous Oxide)         0.0215814            NMOG (Non-methane Hydrocarbon)         0.021544            PM (Particulate Matter)         0.0306828            MC-TOTAL (Total Hydrocarbon)         0.0306828            Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE		FE BAG 2 (Bag 2 ]	Fuel Economy)	18.2608534		18.2608534			
FE BAG 3 (Bag 3 Fuel Economy)22.596894822.5968948METHANE (CH4 - Methane)0.0095822CO (Carbon Monoxide)0.4763755DT-ASCR (Drive Trace Absolute Speed Change Rating)1.74DT-EER (Drive Trace Energy Economy Rating)-0.14DT-IWRR (Drive Trace Inertia Work Ratio Rating)3.19MFR FE (Manufacturer Fuel Economy)19.667879919.6678799NOX (Nitrogen Oxide)0.0127603MC (Non-methane Hydrocarbon)0.0215814MOG (Non-methane organic gates)0.0224446PM (Particulate Matter)0.00306828MC-TOTAL (Total Hydrocarbon)0.0306828Test Result NameUnrounded Test ResultVerify Calculated CREE/OPT-CREECarbon-Related Exhaust Emissions454.0137692454		CO2 BAG 3 (Bag 3 (	Carbon Dioxide)	394.7839278					
METHANE (CH4 - Methane)0.0095822CO (Carbon Monoxide)0.4763755DT-ASCR (Drive Trace Absolute Speed Change Rating)1.74DT-EER (Drive Trace Energy Economy Rating)-0.14DT-IWRR (Drive Trace Inertia Work Ratio Rating)3.19MFR FE (Manufacturer Fuel Economy)19.667879919.6678799NOX (Nitrogen Oxide)0.0127603NY20 (Nitrous Oxide)0.0016661HC-NM (Non-methane Hydrocarbon)0.0215814NMOG (Non-methane grains gatest)0.0224446PM (Particulate Matter)0.00306828Test Result NameUnrounded Test ResultVerify Calculated CREE/OPT-CREECarbon-Related Exhaust Emissions454.0137692454		FE BAG 3 (Bag 3 I	Fuel Economy)	22.5968948		22.5968948			
CO (Carbon Monoxide)0.4763755DT-ASCR (Drive Trace Absolute Speed Change Rating)1.74DT-EER (Drive Trace Laergy Economy Rating)-0.14DT-IWRR (Drive Trace Inertia Work Ratio Rating)3.19MFR FE (Manufacturer Fuel Economy)19.667879919.6678799NOX (Nitrogen Oxide)0.0127603NY20 (Nitrou: Oxide)0.0016661HC-NM (Non-methane Hydrocarbon)0.0215814NMOG (Non-methane organic gates)0.0024446PM (Particulate Matter)0.00306828HC-TOTAL (Total Hydrocarbon)0.0306828Test Result NameUnrounded Test ResultVerify Calculated CREE/OPT-CREECarbon-Related Exhaust Emissions454.0137692454		METHANE (CH	4 - Methane)	0.00	95822				
DT-ASCR (Drive Trace Absolute Speed Change Rating)1.74DT-EER (Drive Trace Energy Economy Rating)-0.14DT-IWRR (Drive Trace Inertia Work Ratio Rating)3.19MFR FE (Manufacturer Fuel Economy)19.667879919.6678799NOX (Nitrogen Oxide)0.0127603N20 (Nitrou: Oxide)0.0016661HC-NM (Non-methane Hydrocarbon)0.0215814NMOG (Non-methane Hydrocarbon)0.0224446PM (Particulate Matter)0.00004135HC-TOTAL (Total Hydrocarbon)0.0306828Test Result NameUnrounded Test ResultVerify Calculated CREE/OPT-CREECarbon-Related Exhaust Emission:454.0137692454		CO (Carbon M	(fonoxide)	0.47	63755	-			
DT-EER (Drive Trace Energy Economy Rating)0.14DT-IWRR (Drive Trace Inertia Work Ratio Rating)3.19		DT-ASCR (Drive Trace A Ratin	bsolute Speed Change g)	1	74				
DT-IWRR (Drive Trace Inertia Work Ratio Rating)3.19MFR FE (Manufacture Fuel Economy)19.667879919.6678799NOX (Nitrogen Oxide)0.0127603N20 (Nitrou: Oxide)0.0016661HC-NM (Non-methane Hydrocarbon)0.0215814NMOG (Non-methane organic gases)0.0024446PM (Particulate Matter)0.00306828HC-TOTAL (Total Hydrocarbon)0.0306828Test Result NameUnrounded Test ResultVerify Calculated CREE/OPT-CREECarbon-Related Exhaust Emissions454.0137692454		DT-EER (Drive Trace En	ergy Economy Rating)	-0	.14				
MFR FE (Manufacturer Fuel Economy)         19.6678799         19.6678799           NOX (Nitrogen Oxide)         0.0127603            N20 (Nitrour Oxide)         0.0016661            HC-NM (Non-methane Hydrocarbon)         0.0215814            NMOG (Non-methane Organic gates)         0.0224446            PM (Particulate Matter)         0.0004135            HC-TOTAL (Total Hydrocarbon)         0.0306828            Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE           Carbon-Related Exhaust Emissions         454.0137692         454		DT-IWRR (Drive Trace Ratin	Inertia Work Ratio g)	3.	19				
NOX (Nitrogen Oxide)         0.0127603            N2O (Nitrous Oxide)         0.0016661            HC-NM (Non-methane Hydrocarbon)         0.0215814            NMOG (Non-methane Organic gates)         0.0224446            PM (Particulate Matter)         0.0004135            HC-TOTAL (Total Hydrocarbon)         0.0306828            Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE           Carbon-Related Exhaust Emissions         454.0137692         454		MFR FE (Manufactur	er Fuel Economy)	19.66	78799	19.6678799			
N20 (Nirous Oxide)         0.0016661            HC-NM (Non-methane Hydrocarbon)         0.0215814            NMOG (Non-methane organic gases)         0.0224446            PM (Particulate Matter)         0.0004135            HC-TOTAL (Total Hydrocarbon)         0.0306828            Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE           Carbon-Related Exhaust Emissions         454.0137692         454		NOX (Nitrog	en Oxide)	0.01	27603				
HC-NM (Non-methane Hydrocarbon)     0.0215814       NMOG (Non-methane organic gases)     0.0224446       PM (Particulate Matter)     0.0004135       HC-TOTAL (Total Hydrocarbon)     0.0306828       Test Result Name     Unrounded Test Result     Verify Calculated CREE/OPT-CREE       Carbon-Related Exhaust Emissions     454.0137692     454		N2O (Nitrou	is Oxide)	0.00	16661				
NMOG (Non-methane organic gases)     0.0224446       PM (Particulate Matter)     0.0004135       HC-TOTAL (Total Hydrocarbon)     0.0306828       Test Result Name     Unrounded Test Result     Verify Calculated CREE/OPT-CREE       Carbon-Related Exhaust Emissions     454.0137692     454		HC-NM (Non-metha	ne Hydrocarbon)	0.02	15814				
PM (Particulate Matter)     0.0004135        HC-TOTAL (Total Hydrocarbon)     0.0306828        Test Result Name     Unrounded Test Result     Verify Calculated CREE/OPT-CREE       Carbon-Related Exhaust Emissions     454.0137692     454		NMOG (Non-methane organic gases)		0.02	24446				
HC-TOTAL (Total Hydrocarbon)     0.0306828        Test Result Name     Unrounded Test Result     Verify Calculated CREE/OPT-CREE       Carbon-Related Exhaust Emissions     454.0137692     454		PM (Particulate Matter)		0.00	04135				
Test Result Name         Unrounded Test Result         Verify Calculated CREE/OPT-CREE           Carbon-Related Exhaust Emissions         454.0137692         454		HC-TOTAL (Total Hydrocarbon)		0.03	06828	-			
Lest Result Name         Onrounded lest Résult         Verify Calculated CREFOPT-CREE           Carbon-Related Exhaust Emissions         454.0137692         454		Test Pour	N						
Caroon-Related LXBAUST LIBISSIONS 434.0157092 434		Lest Kesult	t ivame banat Emissions	Unrounded 1 est Kesult		ASA			
		Carooli-Related EX	nanst Finission2	434.0	13/072	434			

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R.OTUS	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 31	
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#### Certification Summary Information Report

Test Group		RLTXV03.5JHB				Evaporati	ve/Refueling F	amily	RLTXR0130JHB			
		Test Result	t Name		Unroun	ded Test Resul	t	,	Verify Calcula	ted CO2		
		Carbon d	ioxide		45	2.5703984						
Manufacture	r Test Comme	nts	NMOG=1.04 x N	MHC								
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	Federal Tier 3 Bin 125	CREE	454				0		454		
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.010				0.0069		0.02	0.03	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.002				0.0028		0.00	0.01	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	со	0.48		-		0.38		0.9	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0224		1.1		0.0149		0.037	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0352						0.062	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0128				0.0115		0.024	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0004				0		0.000	0.003	Pass
CA	120,000 miles	California LEV- III ULEV125	CREE	454				0		454		
CA	120,000 miles	California LEV- III ULEV125	METHANE	0.010				0.0069		0.02	0.03	Pass
CA	120,000 miles	California LEV- III ULEV125	N2O	0.002				0.0028		0.00	0.01	Pass
CA	150,000 miles	California LEV- III ULEV125	со	0.48				0.38		0.9	2.1	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG	0.0224		1.1	-	0.0149		0.037	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG+NOX	0.0352		-				0.062	0.125	Pass
CA	150,000 miles	California LEV- III ULEV125	NOX	0.0128		-		0.0115		0.024	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	PM	0.0004				0		0.000	0.003	Pass
		NOTE: For Non	-charge depleting	tests, the Roun	ded Result	for CREE/OPT	-CREE Emissi	ion names are	Verify-calcul	ated values.		

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Certification Summary Information Report

Test Group RLTXV03.5JHB			Evaporative/Refueling F	amily	RLTXR0130JHB		
Test #		RLTX10082873		Test Procedure		51 - CA fuel 50 Deg(F) exhaust test	
Exhaust Test # for this Evan Test			Test First Terrs		46 - CARB LEV3 E10 Regular		
Test Date	Test Date 05/24/2023			Fuel		Gasoline	
Fuel Batch ID		C55270		Fuel Calibration Numbe		9093	
Vehicle Class		LDV/Passenger Car		DF Type	•	EPA Assigned	
Verify Test Lab ID	)	MAHLE Powertrain Lt	d				
E10 Evaporative T	est Measurement Method						
Test Start Odomet	er Reading	4223		Odometer Units		М	
4WD Test Dyno	2	No		Diesel Adjustment Facto	or Usage		
State of Charge De	elta				-		
Drive Cycle Speed	Tolerance Criteria	Used Part 1066 (+/- 2.	0 mph, +/- 1.0 sec)	Road Speed Fan Usage		Yes	
Test Results							
	Test Resul	t Name	Unrounded Test Result		Verify Calculated FE Equivalent Value (miles		
	CO2 BAG 1 (Bag 1	Carbon Dioxide)	463.9377893				
	FE BAG 1 (Bag 1	Fuel Economy)	18.69003		18.69003		
	CO2 BAG 2 (Bag 2	Carbon Dioxide)	501.5931543				
	FE BAG 2 (Bag 2)	Fuel Economy)	17.335858		17.335858		
	CO2 BAG 3 (Bag 3	Carbon Dioxide)	405.7932074				
	FE BAG 3 (Bag 3	Fuel Economy)	21.4	274223	21.4274223		
	METHANE (CH	I4 - Methane)	0.01	130196			
	CO (Carbon l	Monoxide)	0.00	006439			
	DT-ASCR (Drive Trace A Ratin	bsolute Speed Change g)	3	3.71			
	DT-EER (Drive Trace En	ergy Economy Rating)	1	1.92			
	DT-IWRR (Drive Trace Ratin	e Inertia Work Ratio 1g)	5	5.77			
	MFR FE (Manufactur	rer Fuel Economy)	18.5	804853	18.5804853		
	NOX (Nitrog	(en Oxide)	0.01	119637			
	HC-NM (Non-metha	ne Hydrocarbon)	0.08	803337			
	NMOG (Non-methane organic gases)		0.10	005566			
	HC-TOTAL (Total Hydrocarbon)		0.09	932092	-		
	Test Resul	t Name	Unrounde	d Test Result	Verify Calculate	d CO2	
	Carbon d	lioxide	467.	528024			
Manufacturer Tes	t Comments	-			•		

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#### Certification Summary Information Report

Test Group	RLTXV03.5JHB			Evaporative/Refueling Family			RLTXR0130JHB					
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
CA	50,000 miles	California LEV- III ULEV125	со	0.00				0.1197		0.1	2.1	Pass
CA	50,000 miles	California LEV- III ULEV125	NMOG	0.1006		1.1		0.0047		0.105	99.999	Pass
CA	50,000 miles	California LEV- III ULEV125	NMOG+NOX	0.1126						0.12	0.25	Pass
CA	50,000 miles	California LEV- III ULEV125	NOX	0.0120				0.0036		0.016	99.999	Pass

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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling Family	RLTXR0130JHB
Test #	RLTX10082874	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	-	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	06/07/2023	Fuel	Gasoline
Fuel Batch ID	C31346	Fuel Calibration Number	9346
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	MAHLE Powertrain Ltd		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	4298	Odometer Units	М
4WD Test Dyno	No	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	500.6396265	
FE BAG 1 (Bag 1 Fuel Economy)	16.826501	16.826501
CO2 BAG 2 (Bag 2 Carbon Dioxide)	520.3448839	
FE BAG 2 (Bag 2 Fuel Economy)	16.580611	16.580611
CO2 BAG 3 (Bag 3 Carbon Dioxide)	420.1108055	
FE BAG 3 (Bag 3 Fuel Economy)	20.5246714	20.5246714
METHANE (CH4 - Methane)	0.0168336	
CO (Carbon Monoxide)	1.1649144	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.3	
DT-EER (Drive Trace Energy Economy Rating)	-0.77	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.33	
MFR FE (Manufacturer Fuel Economy)	17.5518469	17.5518469
NOX (Nitrogen Oxide)	0.0121607	
HC-NM (Non-methane Hydrocarbon)	0.2811593	
NMOG (Non-methane organic gases)	0.3100597	
HC-TOTAL (Total Hydrocarbon)	0.2974806	
Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	488.7918485	
afacturer Test Comments		

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Test Group			RLTXV03.5JHB Evaporative/Refueling Family RLTXR0130JHB									
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	50,000 miles	Federal Tier 3 Bin 125	CO	1.2				0.1197		1	10	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	HC-NM	0.28			-	0.0118		0.3	0.4	Pass
CA	50,000 miles	California LEV- III ULEV125	со	1.2				0.1197		1	10	Pass
									•			

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Certification Summary Information Report

Test Group	RLTXV03.5JHB		Evaporative/Refueling F	amily	RLTXR0130JHB	
Test #	RLTX10082867		Test Procedure		3 - HWFE	
Exhaust Test # for this Evap Test			Test Fuel Type		46 - CARB LEV3 E10 Regular Gasoline	
Test Date	05/17/2023		Fuel		Gasoline	
Fuel Batch ID	C55270		Fuel Calibration Number		9093	
Vehicle Class	LDV/Passenger Car		DF Type		EPA Assigned	
Verify Test Lab ID	MAHLE Powertrain Lt	d			-	
E10 Evaporative Test Measurement Method						
Test Start Odometer Reading	4152		Odometer Units		М	
4WD Test Dyno	No		Diesel Adjustment Factor Usage			
State of Charge Delta						
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)		Road Speed Fan Usage		Yes	
Test Results						
Test Resul	t Name	Unrounde	ed Test Result	Verify Calculated FE Equiv per gallon)	alent Value (miles	
METHANE (CE	I4 - Methane)	0.0	006753			
CO (Carbon ]	CO (Carbon Monoxide)		024502			
DT-ASCR (Drive Trace Absolute Speed Change Rating)		11.9		-		
DT-EER (Drive Trace En	ergy Economy Rating)	(	0.78			

Rating)	11.9	-	
DT-EER (Drive Trace Energy Economy Rating)	0.78	-	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	15.42	-	
MFR FE (Manufacturer Fuel Economy)	30.9906783	30.9906783	
NOX (Nitrogen Oxide)	0.0037919	-	
HC-NM (Non-methane Hydrocarbon)	0	-	
NMOG (Non-methane organic gases)	0		
HC-TOTAL (Total Hydrocarbon)	0.0005048	-	

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	280.5891181	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	279.9416795	

Manufacturer Test Comments

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Certification Summary Information Report

Test Group			RLTXV03.5JHB			Evaporativ	ve/Refueling Fa	mily		RLTXR01	30ЛНВ	
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	Federal Tier 3 Bin 125	CREE	999				0		999		
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0000		1.03		0.0149		0.015	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0038						0.030	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0038				0.0115		0.015	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	CREE	999				0		999		
CA	150,000 miles	California LEV- III ULEV125	NMOG	0.0000		1.03		0.0149		0.015	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG+NOX	0.0038						0.030	0.125	Pass
CA	150,000 miles	California LEV- III ULEV125	NOX	0.0038				0.0115		0.015	99.999	Pass
		NOTE: For Non	-charge depleting	tests, the Roun	ded Result f	or CREE/OPT	-CREE Emissi	on names are	Verify-calcul	ated values.		

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Certification Summary Information Report

Test Group		RLTXV03.5JHB		Evaporative/Refueling F	amily	RLTXR0130JHB
Test #		RLTX10082868		Test Procedure		90 - US06
						46 - CARB LEV3 E10 Regular
Exhaust Test # for	this Evap Test			Test Fuel Type		Gasoline
Test Date		05/18/2023		Fuel		Gasoline
Fuel Batch ID		C55270		Fuel Calibration Number		9093
Vehicle Class		LDV/Passenger Car		DF Type		EPA Assigned
Verify Test Lab ID		MAHLE Powertrain Lt	d			
E10 Evaporative T	est Measurement Method					
Test Start Odomete	er Reading	4192		Odometer Units		М
4WD Test Dyno		No		Diesel Adjustment Factor	r Usage	
State of Charge De	lta					
Drive Cycle Speed	Tolerance Criteria	Used Part 1066 (+/- 2.0	0 mph, +/- 1.0 sec)	Road Speed Fan Usage		Yes
Test Results						
]	Test Resul	t Name	Unrounded	d Test Result	Verify Calculated FE Equiva	dent Value (miles

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (mile per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	535.9601247	
FE BAG 1 (Bag 1 Fuel Economy)	16.0852601	16.0852601
CO2 BAG 2 (Bag 2 Carbon Dioxide)	330.7490276	
FE BAG 2 (Bag 2 Fuel Economy)	26.2345347	26.2345347
METHANE (CH4 - Methane)	0.0031279	
CO (Carbon Monoxide)	1.0005683	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.36	
DT-EER (Drive Trace Energy Economy Rating)	-1.1	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.79	
MFR FE (Manufacturer Fuel Economy)	22.96763	22.96763
NOX (Nitrogen Oxide)	0.01142	
HC-NM (Non-methane Hydrocarbon)	0.0022425	
NMOG (Non-methane organic gases)	0.0023098	
PM (Particulate Matter)	0.0043807	
HC-TOTAL (Total Hydrocarbon)	0.0034217	

[	Test Result Name	Unrounded Test Result	Verify Calculated CO2
[	Carbon dioxide	376.3797786	

Manufacturer Test Comments

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Certification Summary Information Report

Test Group			RLTXV03.5JHB			Evaporati	ve/Refueling Fa	amily		RLTXR01	30JHB	
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 125	со	1.00				0.38		1.4	9.6	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0023		1.03		0.0149		0.017	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0137						0.04	0.12	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0114				0.0115		0.023	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0044				0		0.004	0.006	Pass
CA	150,000 miles	California LEV- III ULEV125	со	1.00				0.38		1.4	9.6	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG	0.0023		1.03		0.0149		0.017	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG+NOX	0.0137			-	-		0.04	0.12	Pass
CA	150,000 miles	California LEV- III ULEV125	NOX	0.0114				0.0115		0.023	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	PM	0.0044				0		0.004	0.006	Pass
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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling Family	RLTXR0130JHB
Test #	RLTX10082869	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	-	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	06/12/2023	Fuel	Gasoline
Fuel Batch ID	C55270	Fuel Calibration Number	9093
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	MAHLE Powertrain Ltd		
E10 Evaporative Test Measurement Method			
Test Start Odometer Reading	4322	Odometer Units	М
4WD Test Dyno	No	Diesel Adjustment Factor Usage	
State of Charge Delta			
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0060136	
CO (Carbon Monoxide)	0.0449242	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.76	-
DT-EER (Drive Trace Energy Economy Rating)	-0.06	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.51	-
MFR FE (Manufacturer Fuel Economy)	16.2721521	16.2721521
NOX (Nitrogen Oxide)	0.0225937	
HC-NM (Non-methane Hydrocarbon)	0.0043519	
NMOG (Non-methane organic gases)	0.0044825	
HC-TOTAL (Total Hydrocarbon)	0.0101825	

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	533.6449472	

Manufacturer Test Comments

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Certification Summary Information Report

1	Fest Group	RLTXV03.5JHB				Evaporative/Refueling Family				RLTXR0130JHB			
	Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
	Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.04				0.38		0.4	2.1	Pass
	Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0045		1.03		0.0149		0.019	99.999	Pass
	Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0271						0.05	0.07	Pass
	Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0226				0.0115		0.034	99.999	Pass
	CA	150,000 miles	California LEV- III ULEV125	со	0.04				0.38		0.4	3.2	Pass
	CA	150,000 miles	California LEV- III ULEV125	NMOG	0.0045		1.03		0.0149		0.019	99.999	Pass
	CA	150,000 miles	California LEV- III ULEV125	NMOG+NOX	0.0271						0.05	0.07	Pass
	CA	150,000 miles	California LEV- III ULEV125	NOX	0.0226				0.0115		0.034	99.999	Pass

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Test Group		RLTXV0	3.5ЛНВ		Evaporative/R	efueling Fam	ily		RLTXR0130JHB
Emission Data	Vehicle Informa	tion							
Vehicle ID / Config Original Test Grou Original Test Vehic	uration 1p Name cle Model Year	EDV-24- RLTXV0 2024	DV-24-EVSM6/1 / 0 LTXV03.5JHB )24		Manufacturer Vehicle Configuration Number Original Evaporative/Refueling Family			l RLTXR0130JHB	
Vehicle Model Represented Test V	ehicle Make	Lotus			Represented T	est Vehicle M	lodel		Emira
Leak Family De									
Leak Family Identifier					Leak Family N	ame			
Drive Sources and Fuel System Details									
	Drive	Source and Fuel#		Driv	e Source			Fuel	
		1		Combu	stion Engine			Gasoline	
		-				I			
Hybrid Indicator		No							
Multiple Fuel Stor:	nge					Combustion			
Fuel Cell Indicator					Rechargeable I	echargeable Energy Storage System Indicator			
Rechargeable Ener				Rechargeable I	Energy Stora	ge System	ı, if 'Other'		
Off-board charge (	Capable Indicator								
Odometer Correcti	ion Initial	0			Odometer Cor	rection Facto	г		1
Odometer Correcti	ion Sign	+ = Syste	m Miles is equal to	(Test odometer rea	ading * Correction	factor) + Initia	al system i	miles	
Odometer Correcti	ion Units	Miles			-		-		
Engine Code		2GR-3.55	2GR-3 5S			Rated Horsepower			400
Displacement (liter	's)	3.5							
Air Aspiration Met	thod	Supercha	rzed		Air Aspiration Method, if 'Other'				
Number of Air Asn	iration Devices	1	-		Air Aspiration Device Configuration				Single
Charge Air Cooler	Type	Liquid			Drive Mode W	hile Testing			2-Wheel Drive, Rear
Shift Indicator Lig	ht Usage	Equipped	not shifted by SII		Aged Emission	Components			4 000 (mi)
Curb Weight (lbs)		3225	,,	-	Equivalent Tes	t Weight (no	unds)		3625
GVWR (lbs)		3887			N/V Ratio				35.5
Ayle Ratio		3.24							
Transmission Type		Manual			# of Transmissi	ion Gears			6
Transmission Lock		No			Creener Gear				No
Dunamamatan	Coofficients				encipii etai				
Dynamometer	Coefficients:								
		Target Coefficien	ts		Set Coefficients				
Coefficient		D (II (I I I)			EPA Calculated		EPA Calculated T	Total Road Load Horse Power for	
Category	A (lbt)	B (lbf/mph)	C (lbf/mph**2)	A (lbt)	B (lbf/mph)	C (lbf/mph		City/Hig	nway/Evap Coefficients
City/Highway/Eva	p 37.419	0.55691	0.017409	21.177	0.21672	0.01916	/		14.5
Emission Control I	Cmission Control Device Comments								

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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling Family	RLTXR0130JHB
Manufacturer Test Vehicle Comments	2024MY FE testing		

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Certification Summary Information Report

Test Group		RLTXV03.5JHB		Evaporative/Refueling	Family	RLTXR0130JHB
Test #		RLTX10082870		Test Procedure		3 - HWFE
Exhaust Test # for	r this Evap Test		Test Fuel Type			61 - Tier 2 Cert Gasoline
Test Date		07/07/2023		Fuel		Gasoline
Fuel Batch ID		C44900		Fuel Calibration Numb	er	9046
Vehicle Class	Vehicle Class LDV/Passenger Car			DF Type		EPA Assigned
Verify Test Lab II	Verify Test Lab ID MAHLE Powertrain Ltd		td			
E10 Evaporative	Test Measurement Method					
Test Start Odome	ter Reading	4368		Odometer Units		M
4WD Test Dyno		No		Diesel Adjustment Fact	tor Usage	
State of Charge D	elta					
Drive Cycle Speed	l Tolerance Criteria	Used Part 1066 (+/- 2.	0 mph, +/- 1.0 sec)	Road Speed Fan Usage	•	Yes
Test Results						
	Test Result Name		Unrounde	d Test Result	Verify Calculated FE Equiv per gallon	valent Value (miles )
	METHANE (CI	H4 - Methane)	0.00	013667		
	CO (Carbon	Monoxide)	0.05	520847	-	
	DT-ASCR (Drive Trace Absolute Speed Change Rating)		5.11			
	DT-EER (Drive Trace Er	nergy Economy Rating)	-	-0.03		
	DT-IWRR (Drive Trac Ratin	e Inertia Work Ratio ng)	6.65			
	MFR FE (Manufactu	rer Fuel Economy)	31.8139189		31.813918	9
	NOX (Nitro	gen Oxide)	0.0	03115		
	HC-NM (Non-meth:	ane Hydrocarbon)		0		
	NMOG (Non-meth:	nne organic gases)		0		
	HC-TOTAL (Tota	d Hydrocarbon)	0.00	012924	-	
	Test Resu	lt Name	Unrounde	d Test Result	Verify Calculated CRE	E/OPT-CREE
	Carbon-Related E:	xhaust Emissions	281.0	0032996	280	
	Test Resu	lt Name	Unrounde	d Test Result	Verify Calculate	ed CO2
	Carbon	lioxide	279.9	9957733		
Manufacturer Te	st Comments	NMOG=1.04 x NMHC	;			

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Certification Summary Information Report

Test Group			RLTXV03.5JHB			Evaporativ	ve/Refueling Fa	mily		RLTXR01	30JHB	
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	Federal Tier 3 Bin 125	CREE	280		-		0		280		
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0000		1.03		0.0149		0.015	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0031						0.030	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0031		-		0.0115		0.015	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	CREE	280		-		0		280		
CA	150,000 miles	California LEV- III ULEV125	NMOG	0.0000		1.03		0.0149		0.015	99.999	Pass
CA	150,000 miles	California LEV- III ULEV125	NMOG+NOX	0.0031		-				0.030	0.125	Pass
CA	150,000 miles	California LEV- III ULEV125	NOX	0.0031				0.0115		0.015	99.999	Pass
	NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.											

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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling Family	RLTXR0130JHB
Fuel Properties			
Fuel Batch ID	C50641	Fuel Calibration Number	9043
Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline	Fuel Batch Calibration Date	05/17/2022
Fuel Batch Calibration Effective Date	09/22/2022	Fuel Batch Calibration Ineffective Date	
Carbon Weight Fraction NMHC		Carbon Weight Fraction HC	
Exhaust Carbon Weight Fraction		Fuel Methanol Volume Fraction	
Fuel Density (grams/cubic ft)		Fuel Specific Gravity	0.748
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value (BTU / lb)	17830
Fuel Blend Carbon Weight Fraction	0.829	Weight Fraction CO2	
Fuel Batch ID	C55270	Fuel Calibration Number	9093
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	Fuel Batch Calibration Date	02/20/2023
Fuel Batch Calibration Effective Date	02/20/2023	Fuel Batch Calibration Ineffective Date	
Carbon Weight Fraction NMHC		Carbon Weight Fraction HC	
Exhaust Carbon Weight Fraction		Fuel Methanol Volume Fraction	
Fuel Density (grams/cubic ft)		Fuel Specific Gravity	0.75
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value (BTU / lb)	17847
Fuel Blend Carbon Weight Fraction	0.826	Weight Fraction CO2	
Fuel Batch ID	C31346	Fuel Calibration Number	9346
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	03/22/2023
Fuel Batch Calibration Effective Date	03/22/2023	Fuel Batch Calibration Ineffective Date	
Carbon Weight Fraction NMHC		Carbon Weight Fraction HC	
Exhaust Carbon Weight Fraction		Fuel Methanol Volume Fraction	
Fuel Density (grams/cubic ft)		Fuel Specific Gravity	0.738
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value (BTU / lb)	17803
Fuel Blend Carbon Weight Fraction	0.824	Weight Fraction CO2	
Fuel Batch ID	C44900	Fuel Calibration Number	9046
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	07/04/2023
Fuel Batch Calibration Effective Date	07/04/2023	Fuel Batch Calibration Ineffective Date	
Carbon Weight Fraction NMHC		Carbon Weight Fraction HC	
Exhaust Carbon Weight Fraction		Fuel Methanol Volume Fraction	
Fuel Density (grams/cubic ft)		Fuel Specific Gravity	0.737
Fuel Ethanol Volume Percent (%)		Fuel Net Heating Value (BTU / lb)	18470
Fuel Blend Carbon Weight Fraction	0.872	Weight Fraction CO2	
Fuel Batch ID	C44869	Fuel Calibration Number	9455
Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline	Fuel Batch Calibration Date	08/31/2021
Fuel Batch Calibration Effective Date	08/31/2021	Fuel Batch Calibration Ineffective Date	
Carbon Weight Fraction NMHC		Carbon Weight Fraction HC	

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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling Family	RLTXR0130JHB
Exhaust Carbon Weight Fraction		Fuel Methanol Volume Fraction	
Fuel Density (grams/cubic ft)		Fuel Specific Gravity	0.748
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value (BTU / lb)	17829
Fuel Blend Carbon Weight Fraction	0.828	Weight Fraction CO2	
Fuel Batch ID	DJ2221	Fuel Calibration Number	2221
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	10/26/2015
Fuel Batch Calibration Effective Date	10/26/2015	Fuel Batch Calibration Ineffective Date	
Carbon Weight Fraction NMHC		Carbon Weight Fraction HC	
Exhaust Carbon Weight Fraction		Fuel Methanol Volume Fraction	
Fuel Density (grams/cubic ft)		Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)		Fuel Net Heating Value (BTU / lb)	18476
Fuel Blend Carbon Weight Fraction	0.865	Weight Fraction CO2	

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### Certification Summary Information Report

Test Group	RLT	XV03.5JHB		Evapora	tive/Refueling Fam	illy	RL	TXR0130JHB	
			Consolida	ated List of Sta	andards				
Exhaust Standard	ls								
Cert Region	Cali	fornia + CAA Sectio	n 177 states	Cert/In-U	Jse Code		Cer	t	
Vehicle Class	LDV	//Passenger Car		Standard	l Level		Cal	ifornia LEV-III U	LEV125
Fuel	Gas	oline		Test Pro	redure		Fed load	eral fuel 2-day exl l)	iaust (w/can
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	999.9
120,000 miles	METHANE							0.0069	0.03
120,000 miles	N2O							0.0028	0.01
150,000 miles	CO							0.38	2.1
150,000 miles	NMOG			1.1				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.125
150,000 miles	NOX							0.0115	99.999
150,000 miles	PM							0	0.003
Cert Region Vehicle Class Fuel	Cali LDV Gas	fornia + CAA Sectio //Passenger Car oline	n 177 states	Cert/In-U Standard Test Proc	Jse Code l Level cedure		Cer Cal: SC(	t ifornia LEV-III U )3	LEV125
		Rounded		NMOG /	Upward Diesel Adjustment	Downward Diesel Adjustment			
Useful Life	Emission Name	Result	RAF	NMHC	Factor	Factor	Mult DF	Add DF	Std
150,000 miles	200							0.38	3.2
150,000 miles	NMOG			1.03				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.07
150,000 miles	IIOA							0.0115	11.111

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### Certification Summary Information Report

Test Group	RLTX	V03.5JHB		Evaporat	ive/Refueling Fan	ily	RL	TXR0130JHB	
Cert Region	Federa	1		Cert/In-U	se Code		Cer	t	
Vehicle Class	LDV/F	assenger Car		Standard	Level		Fed	eral Tier 3 Bin 12	5
Fuel	Gasoli	1e		Test Proc	edure		US	06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150.000 miles	CO							0.38	9.6
150,000 miles	NMOG			1.03				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.12
150,000 miles	NOX							0.0115	99.999
150.000 miles	PM							0	0.006
Cert Region	Federa	1		Cert/In-U	se Code		Cer	t	
Vehicle Class	LDV/F	assenger Car		Standard	Level		Fed	eral Tier 3 Bin 12	5
		2					Fed	leral fuel 2-day ext	aust (w/can
Fuel	Gasoli	1e		Test Proc	edure		loa	d)	
		Rounded		NMOG /	Upward Diesel Adjustment	Downward Diesel Adjustment			
Useful Life	Emission Name	Result	RAF	NMHC	Factor	Factor	Mult DF	Add DF	Std
120,000 miles	CREE							0	999.9
120,000 miles	METHANE							0.0069	0.03
120,000 miles	N20							0.0028	0.01
150,000 miles	со							0.38	2.1
150,000 miles	NMOG			1.1				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.125
150,000 miles	NOX							0.0115	99.999
150,000 miles	PM							0	0.003
Cert Region	Federa	1		Cert/In-U	se Code		Cer	t	
Vehicle Class	LDV/F	assenger Car		Standard	Level		Fed	eral Tier 3 Bin 12	5
Fuel	Gasolii	1e		Test Proc	edure		HW	/FE	
		Rounded		NMOG /	Upward Diesel Adjustment	Downward Diesel Adjustment			
Useful Life	Emission Name	Kesult	KAF	NMHC	Factor	Factor	Mult DF	Add DF	Std
120,000 miles	CREE							0	999.9
150,000 miles	NMOG			1.03				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.125
150,000 miles	NOX							0.0115	99.999

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Certification Summary Information Report

Test Group	RLT	ХV03.5ЛНВ		Evaporat	ive/Refueling Fam	ily	RL	TXR0130JHB	
Cert Region Vehicle Class Fuel	Calif LDV Gaso	ornia + CAA Sectio /Passenger Car line	n 177 states	Cert/In-U Standard Test Proc	ise Code Level edure		Cer Cal: CA	t ifornia LEV-III U fuel 50 Deg(F) ex	LEV125 haust test
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO							0.1197	2.1
50,000 miles	NMOG			1.1				0.0047	99.999
50,000 miles	NMOG+NOX							0.0083	0.25
50,000 miles	NOX							0.0036	99.999
			•	•				•	•
Cert Region Vehicle Class Fuel	Fede LDV Gaso	ral /Passenger Car line		Cert/In-U Standard Test Proc	ise Code Level edure		Cer Fed SCO	t Ieral Tier 3 Bin 12 03	5
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	со							0.38	2.1
150,000 miles	NMOG			1.03				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.07
150,000 miles	NOX							0.0115	99.999
Cert Region Vehicle Class Fuel	Calif LDV Gaso	ornia + CAA Sectio /Passenger Car line	n 177 states	Cert/In-U Standard Test Proc	ise Code Level edure		Cer Cal HW	t ifornia LEV-III U. /FE	LEV125
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	CREE							0	999.9
150,000 miles	NMOG			1.03				0.0149	99.999
150,000 miles	NMOG+NOX							0.0264	0.125
150,000 miles	NOX							0.0115	99.999
		11 7/ -+ 41				W-40-10 AN			

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Certification Summary Information Report

Test Group	RLTY	CV03.5JHB		Evaporat	ive/Refueling Fam	iily	RL'	TXR0130JHB	
Cert Region	Califo	omia + CAA Sectio	n 177 states	Cert/In-U	se Code		Cer	t	
Vehicle Class	LDV	Passenger Car		Standard	Level		Cal	ifornia LEV-III U	LEV125
Fuel	Gaso	ine		Test Proc	edure		US	06	
Uraful Life	Emission Name	Rounded	RAF	NMOG /	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	5+1
150.000 miles	CO	Result			Tactor	1 4000	Mult DI	0.38	9.6
150,000 miles	NMOG			1.02				0.0149	9.0
150,000 miles	NMOG			1.05				0.0149	0.10
150,000 miles	NMOG+NOX							0.0264	0.12
150,000 miles	NOX							0.0115	99.999
150,000 miles	PM							0	0.006
Cert Region Vehicle Class Fuel	Feder LDV: Gaso	al Passenger Car line		Cert/In-U Standard Test Proc	'se Code Level edure		Cer Fed Col	t leral Tier 3 Bin 12 d CO	5
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	со							0.1197	10
120,000 miles	HC-NM							0.0118	0.4
Cert Region Vehicle Class Fuel	Califi LDV. Gasol	ornia + CAA Sectio Passenger Car line	on 177 states	Cert/In-U Standard Test Proc	ise Code Level edure		Cer Cal Col	t ifornia LEV-III UI d CO	LEV125
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO							0.1197	10
Evaporative/Refu	eling Standards	·					•		•
Evaporative/Refuelin	ng Family RLT	CR0130JHB		Cert Regi	ion		Cal Cal	ifornia + CAA Sec ifornia LEV-III Ze	ction 177 states ero Evap (Option
Cert/In-Use Code	Cert			Standard	Level		2)		
Test Procedure	Feder	al fuel 3-day evap							
Fuel	Useful Life		Emission Name	R	ounded Result		Std	Ad	ld DF
Gasoline	150,000 mile	s H	C-TOTAL-EQUIV				0.45	0.	0000

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#### Certification Summary Information Report Date: 10/26/2023 06:18:54 AM Test Group RLTXV03.5JHB Evaporative/Refueling Family RLTXR0130JHB RLTXR0130JHB California + CAA Section 177 states Evaporative/Refueling Family Cert Region California LEV-III Zero Evap (Option Cert/In-Use Code Cert Standard Level 2) Test Procedure 2-day evap Fuel Useful Life Emission Name **Rounded Result** Std Add DF Gasoline 150,000 miles HC-TOTAL-EQUIV 0.45 0.0000 Evaporative/Refueling Family RLTXR0130JHB Cert Region Federal Cert/In-Use Code Cert Standard Level Federal Tier 3 Evap Test Procedure Federal fuel refueling test (ORVR) Useful Life Emission Name Rounded Result Add DF Fuel Std HC-TOTAL-EQUIV 0.2 Gasoline 150,000 miles 0.006 Evaporative/Refueling Family RLTXR0130JHB Cert Region California + CAA Section 177 states California LEV-III Zero Evap (Option Cert/In-Use Code Cert Standard Level 2) Test Procedure Evap Canister Bleed Test Fuel Useful Life Emission Name **Rounded Result** Std Add DF Gasoline 150,000 miles HC-TOTAL 0.02 0.0000 RLTXR0130JHB Evaporative/Refueling Family Cert Region California + CAA Section 177 states California LEV-III Zero Evap (Option 2) Cert/In-Use Code Cert Standard Level Test Procedure California Fuel Running Loss Fuel Useful Life Emission Name Rounded Result Std Add DF Gasoline 150.000 miles HC-TOTAL-EQUIV 0.005 0.0000 Evaporative/Refueling Family RLTXR0130JHB Cert Region Federal Cert/In-Use Code Cert Standard Level Federal Tier 3 Evap Test Procedure Evap Canister Bleed Test Useful Life Emission Name Rounded Result Std Add DF Fuel Gasoline 150,000 miles HC-TOTAL 0.02 0.0000 Page 37 of 41 CSI Submission/Revision Date: 10/26/2023 06:18:28 AM

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Test Group    RLTXV03.5JHB    Evaporative/Refueling Family    RLTXR0130JHB      Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal      Cert/In-Use Code    Cert    Standard Level    Federal Tier 3 Evap      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.45    0.0000      Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal    Federal      Cert/In-Use Code    Cert    Standard Level    Federal     0.45    0.0000      Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal   <	ate: 10/26/2023 06:18:54 AM	М	Certification Su	ummary Information Report	t	
Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal      Cert/In-Use Code    Cert    Standard Level    Federal Tier 3 Evap      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add Df      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.45    0.0000      Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.05    0.0000      Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal    Federal      Evaporative/Refueling Family    RLTXR0130JHB    Cert Region    Federal    Federal      Evaporative/Refueling Family    RLTXR	fest Group	RLTXV03.5JHB		Evaporative/Refueling Family	RLT	XR0130JHB
Cert/In-Use Code    Cert    Standard Level    Federal Tier 3 Evap      Test Procedure    2-day evap    Fuel    Useful Life    Emission Name    Rounded Result    Std    Add Di      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.45    0.0000      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal      Cert/In-Use Code    Cert    Standard Level    Federal      Fuel    Useful Life    Emission Name    Rounded Result    Stad      Fuel    Useful Life    Emission Name    Rounded Result    Stad    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.05    0.0000      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal    Federal      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.05    0.0000      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal    Federal      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal    Federal      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Fed	Evaporative/Refueling Family	ily RLTXR0130JHB	3	Cert Region	Feder	ral
Test Procedure    2-day evap      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.45    0.0000      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal      Cert/In-Use Code    Cert    Standard Level    Federal Tier 3 Evap      Test Procedure    Federal Fuel Running Loss    Std    Add DF      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.05    0.0000      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal    Federal      Evaporative/Refueling Family    RLTXR0130/HB    Cert Region    Federal    Federal      Cert/In-Use Code    Cert    Standard Level    Federal    Federal      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.45    0.0000	Cert/In-Use Code	Cert		Standard Level	Feder	ral Tier 3 Evap
Fuel  Useful Life  Emission Name  Rounded Result  Std  Add Di    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000    Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal Fuel Running Loss   0.05  0.0000    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Test Procedure  Federal fuel 3-day evap  Federal fuel 3-day evap  Federal fuel 3-day evap    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000	l'est Procedure	2-day evap				
Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000    Evaporative/Refueling Family  RLTXR0130JHB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal Fuel Running Loss  Federal Tier 3 Evap    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family  RLTXR0130JHB  Cert Region  Federal    Evaporative/Refueling Family  RLTXR0130JHB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal    Fuel  Useful Life  Emission Name  Rounded Result  Standard Level    Fuel  Useful Life  Emission Name  Rounded Result  Standard Level    Fuel  Useful Life  Emission Name  Rounded Result  Standard DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000	Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal Fuel Running Loss  Federal Tier 3 Evap    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal    Test Procedure  Federal fuel 3-day evap  Federal Tier 3 Evap    Fuel  Useful Life  Emission Name  Rounded Result    Standard Level  Federal Tier 3 Evap	Gasoline	150,000 miles	HC-TOTAL-EQUIV		0.45	0.0000
Evaporative/Refueling Family Cert/In-Use Code Test Procedure    RLTXR0130/HB    Cert Region    Federal      Fuel    Useful Life    Emission Name    Rounded Result    Stad    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.05    0.0000      Evaporative/Refueling Family Cert/In-Use Code    RLTXR0130/HB    Cert Region    Federal      Evaporative/Refueling Family Cert/In-Use Code    Cert    Standard Level    Federal      Fuel    Useful Life    Emission Name    Rounded Result    Stad      Fuel    Cert    Standard Level    Federal      Fuel    Cert    Standard Level    Federal      Fuel    Useful Life    Emission Name    Rounded Result    Std      Fuel    Useful Life    Emission Name    Rounded Result    Std    Add DF      Gasoline    150,000 miles    HC-TOTAL-EQUIV     0.45    0.0000						
Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal Fuel Running Loss  Federal Tier 3 Evap    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add DI    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal fuel 3-day evap  Federal fuel 3-day evap    Fuel  Useful Life  Emission Name  Rounded Result  Std    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000	Evaporative/Refueling Family	ily RLTXR0130JHB	1	Cert Region	Feder	ral
Test Procedure  Federal Fuel Running Loss    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add Di    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal fuel 3-day evap   0.45  0.0000	Cert/In-Use Code	Cert		Standard Level	Feder	ral Tier 3 Evap
Fuel  Useful Life  Emission Name  Rounded Result  Std  Add Di    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal fuel 3-day evap   0.45  0.0000	fest Procedure	Federal Fuel Run	ning Loss			
Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.05  0.0000    Evaporative/Refueling Family Cert/In-Use Code  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal fuel 3-day evap  Federal fuel 3-day evap    Fuel  Useful Life  Emission Name  Rounded Result    Gasoline  150,000 miles  HC-TOTAL-EQUIV	Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal fuel 3-day evap  Federal fuel 3-day evap    Fuel  Useful Life  Emission Name  Rounded Result  Std  Add DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000	Gasoline	150,000 miles	HC-TOTAL-EQUIV		0.05	0.0000
Evaporative/Refueling Family  RLTXR0130/HB  Cert Region  Federal    Cert/In-Use Code  Cert  Standard Level  Federal Tier 3 Evap    Test Procedure  Federal fuel 3-day evap  Emission Name  Rounded Result  Std  Add DF    Gasoline  150,000 miles  HC-TOTAL-EQUIV   0.45  0.0000						
Cert/In-Use Code      Cert      Standard Level      Federal Tier 3 Evap        Test Procedure      Federal fuel 3-day evap           Fuel      Useful Life      Emission Name      Rounded Result      Std      Add DF        Gasoline      150,000 miles      HC-TOTAL-EQUIV       0.45      0.0000	Evaporative/Refueling Family	ily RLTXR0130JHB	1	Cert Region	Feder	ral
Test Procedure      Federal fuel 3-day evap        Fuel      Useful Life      Emission Name      Rounded Result      Std      Add DF        Gasoline      150,000 miles      HC-TOTAL-EQUIV       0.45      0.0000	Cert/In-Use Code	Cert		Standard Level	Feder	ral Tier 3 Evap
Fuel      Useful Life      Emission Name      Rounded Result      Std      Add DI        Gasoline      150,000 miles      HC-TOTAL-EQUIV       0.45      0.0000	l'est Procedure	Federal fuel 3-day	y evap			
Gasoline 150,000 miles HC-TOTAL-EQUIV 0.45 0.0000	Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
	Gasoline	150,000 miles	HC-TOTAL-EQUIV	-	0.45	0.0000
				C (P )	C 10	
Evaporative/Ketueling Family KLTXK0130/HB Cert Region California + CAA Section	vaporative/Kefueling Family	ily RLTXR0130JHB	•	Cert Kegion	Calif	ornia + CAA Section 177 states
Cert/In-Use Code Cert Standard Level 2)	Cert/In-Use Code	Cert		Standard Level	2)	ornia LEV-III Zero Evap (Option
Test Procedure Federal fuel refueling test (ORVR)	fest Procedure	Federal fuel refue	eling test (ORVR)			
Fuel Useful Life Emission Name Rounded Result Std Add DF	Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline 150,000 miles HC-TOTAL-EQUIV 0.2 0.006	Gasoline	150,000 miles	HC-TOTAL-EQUIV		0.2	0.006

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	Part 1	Engine Family	RLTXV03.5JHB	Engine code	All	Page 54
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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling	g Family RLTXR0130JHB
	Gl	ossary	
Useful Life			
4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		
Emission Name			
HC-TOTAL	Total Hydrocarbon	METHANOL	CH3OH - Methanol
co	Carbon Monoxide	N2O	Nitrous Oxide
CO2	Carbon dioxide	SPITBACK	Spitback Hydrocarbon in grams
CREE	Carbon-Related Exhaust Emissions	AMP-HRS	Integrated Amp-hours
OPT-CREE	Optional Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours
NOX	Nitrogen Oxide	END-SOC	System End State of Charge Watt-hours
PM	Particulate Matter	ACT-DISTANCE	Actual Distance Driven (miles)
PM-COMP	SFTP Composite Particulate Matter	AS-VOLT	Average System Voltage
HC-NM	Non-methane Hydrocarbon	CO2 BAG 1	Bag 1 Carbon Dioxide
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 2	Bag 2 Carbon Dioxide
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide
NMOG	Non-methane organic gases	CO2 BAG 4	Bag 4 Carbon Dioxide
HCHO	Formaldehyde	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
H3C2HO	Acetaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-ASCR	Drive Trace Absolute Speed Change Rating
CO-COMP	SFTP Composite Carbon Monoxide	DT-EER	Drive Trace Energy Economy Rating
ETHANOL	C2H5OH - Ethanol	COMB-CREE	Combined Carbon-Related Exhaust Emissions
FE BAG 1	Bag 1 Fuel Economy	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
FE BAG 2	Bag 2 Fuel Economy	HC-TOTAL-EOUIV	Total Hydrocarbon equivalent - Evap only
FE BAG 3	Bag 3 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
FE BAG 4	Bag 4 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
MFR FE	Manufacturer Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)
HC	Hydrocarbon for Running Loss and ORVR	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
METHANE	CH4 - Methane	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
Certification Region			
CA	California + CAA Section 177 states	FA	Federal
Exhaust Emission Star	ndard Level		
Bl	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250
B3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170
	Federal Tim 2 Din 5	1 3STH EV150	California LEV III SUI EV150

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### Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Refueling	g Family RLTXR0130JHB				
B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630				
B7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570				
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400				
B9	Federal Tier 2 Bin 9	L3ULEV270	California LEV-III ULEV270				
B10	Federal Tier 2 Bin 10	L3SULEV230	California LEV-III SULEV230				
B11	Federal Tier 2 Bin 11	L3SULEV200	California LEV-III SULEV200				
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	T3B160	Federal Tier 3 Bin 160				
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	T3B125	Federal Tier 3 Bin 125				
L2	California LEV-II LEV	T3B110	Federal Tier 3 Transitional Bin 110				
L2OP	California LEV-II LEV Optional	T3B85	Federal Tier 3 Transitional Bin 85				
U2	California LEV-II ULEV	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover				
S2	California LEV-II SULEV	T3B70	Federal Tier 3 Bin 70				
ZEV	California ZEV	T3B50	Federal Tier 3 Bin 50				
от	Other	T3B30	Federal Tier 3 Bin 30				
T1	Federal Tier 1	T3B20	Federal Tier 3 Bin 20				
PZEV	California PZEV	T3B0	Federal Tier 3 Bin 0				
L2LEV160	California LEV-II LEV160	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395				
L2ULEV125	California LEV-II ULEV125	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340				
L2SULEV30	California LEV-II SULEV30	HDV2B250	Federal Tier 3 HD Class 2b Bin 250				
L2LEV395	California LEV-II LEV395	HDV2B200	Federal Tier 3 HD Class 2b Bin 200				
L2ULEV340	California LEV-II ULEV340	HDV2B170 Federal Tier 3 HD Class 2b Bin 170					
L2LEV630	California LEV-II LEV630	HDV2B150	Federal Tier 3 HD Class 2b Bin 150				
L2ULEV570	California LEV-II ULEV570	HDV2B0	Federal Tier 3 HD Class 2b Bin 0				
L3LEV160	California LEV-III LEV160	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630				
L3ULEV125	California LEV-III ULEV125	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570				
L3ULEV70	California LEV-III ULEV70	HDV3B400	Federal Tier 3 HD Class 3 Bin 400				
L3ULEV50	California LEV-III ULEV50	HDV3B270	Federal Tier 3 HD Class 3 Bin 270				
L3SULEV30	California LEV-III SULEV30	HDV3B230	Federal Tier 3 HD Class 3 Bin 230				
L3SULEV20	California LEV-III SULEV20	HDV3B200	Federal Tier 3 HD Class 3 Bin 200				
L3LEV395	California LEV-III LEV395	HDV3B0	Federal Tier 3 HD Class 3 Bin 0				
Transmission Type Co	de						
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	М	Manual				
A	Automatic	OT	Other				
AM	Automated Manual	SA	Semi-Automatic				
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)				
Drive System Code							
4	4-Wheel Drive	Р	Part-time 4-Wheel Drive				
F	2-Wheel Drive, Front	A	All Wheel Drive				
R	2-Wheel Drive, Rear						
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Certification Summary Information Report

Test Group	RLTXV03.5JHB	Evaporative/Ref	ueling Family	RLTXR0130JHB
Additional Terms a	and Acronyms			
AFC	Alternative Fuel Converter	ICI	Independent Comm	nercial Importer
CSI	Certificate Summary Information	ORVR	Onboard Refueling	g Vapor Recovery
DF	Deterioration Factor	SIL	Shift Indicator Lig	ht
Evap	Evaporation, Evaporative	Trans	Transmission	

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# 8. EMISSION WAIVER/COMPLIANCE STATEMENTS

Please refer to confidential submission.



### 9. OBD SYSTEM DESCRIPTION

The ECM monitors the normal engine control sensors and via diagnostic algorithms determines the condition of the emissions control devices. The outputs of the diagnostic algorithms are compared to thresholds to enable the ECM to recognise 'faults' in the system.

Once a fault is confirmed, the OBD system lights a 'malfunction indicator lamp' (MIL) on the instrument panel. This informs the driver that a fault has been detected and furthermore, stores in its memory a Diagnostic Trouble Code (DTC) for the particular type of fault detected. This can then be accessed by a technician, using an off-board diagnostic tool, who will be guided to the problem area.

A hand-held electronic diagnostic tool capable of connecting to our diagnostic connector is able to communicate with the ECM and display trouble codes and sensor readings to facilitate speedy fault diagnosis.

### 9.1. Malfunction Indicator Lamp (MIL)

A MIL is provided in the instrument panel in order to indicate to the driver that an emissions control system problem has occurred and that the vehicle should be taken for check/repair as soon as is practicable. The MIL lamp shall illuminate when the vehicle is in the key-on/engine-off condition. If no faults are present that should illuminate the MIL then it will extinguish when the engine is started. If, however, the lamp remains on, or comes on whilst driving, this indicates that the OBD system has detected a problem and a DTC has been stored in the memory.

If the fault cures itself, or is no longer detected, the lamp will go out after three engine startups with no fault present. The trouble code will be stored in the ECM memory for the next 40 engine warm-up cycles, to indicate to a technician that an intermittent fault has been detected. If no further fault or recurrence is detected during this period, the fault will be erased from the memory.

In the case of a fault that causes a sufficiently severe engine misfire such that damage to the catalytic converter may be caused, the engine management system shall take such remedial action to ensure that catalyst damage does not occur.

### 9.2. OBD II Approval

Lotus received OBD II approval from CARB on 30<sup>th</sup> March 2023 with no deficiencies. The following Lotus OBD II compliance reports refer:

- CBI\_RLTXV03.5JHB\_A-P.pdf
- CBI\_RLTXV03.5JHB\_FLCHRT.pdf
- CBI\_RLTXV03.5JHB\_GENDES.pdf



### Attachment 5 – OBD Approval



Gavin Newsom, Governor Yana Garcia, CalEPA Secretary Liane M. Randolph, Chair

Reference No. E-23-085

March 30, 2023 Mr. Ian Cawdron Lotus Cars Limited Potash Lane, Hethel Norwich, Norfolk, NR14 8EZ ENGLAND Confidential

Subject: Approval of Lotus Cars Limited's (Lotus) On-Board Diagnostics II (OBD II) System for the 2024 Model Year Test Group RLTXV03.5JHB

Dear Mr. Cawdron:

The California Air Resources Board's (CARB) On-Board Diagnostics Branch has received the OBD II system description submitted by Lotus for the 2024 model year test group listed above. Representations made in the application indicate that the system is compliant with the OBD II regulation<sup>1</sup>. Therefore, CARB approves the 2024 model year system design for the test group listed above with no deficiencies.

Should you have any comments or questions regarding this letter, please contact Sana Dadabhoy, Air Resources Engineer, at (951) 542-3521 or sana.dadabhoy@arb.ca.gov. Sincerely.

Michael J. Reg

Michael Regenfuss, Chief On-Board Diagnostics Branch Emissions Certification and Compliance Division

cc: Sana Dadabhoy Air Resources Engineer Emissions Certification and Compliance Division

<sup>1</sup> Unless otherwi 1968.2.	se noted, all regulation references are to title 13, California Code of Regula	tions, section
arb.ca.gov	4001 Iowa Avenue • PO Box 55009 • Riverside, California 92507	(800) 242-4450

### 9.3. 40 CFR Part 85 Subpart W

Lotus Cars Ltd confirms that all vehicles within this test group have a diagnostic system that is adequate for the performance warranty test described in 40 CFR Part 85, Subpart W. (86.1844-01(d)(9)(iv) refers)



### 9.4. §86.1813 Leak test procedure

This description of the leak test procedure is taken from the CBI\_RLTXV03.5JHB\_A-P.pdf compliance report.

### Attachment 6 – Leak test access points

### D.11.1 Test Procedure

A 0.020" orifice (o'Keefe Controls Co, B-20-SS) was installed in 3 different locations.

- 1. Fuel tank filler neck (Figure D.11-1)
- 2. At the charcoal canister (Purge out) (Figure D.11-1)
- 3. At the purge valve (Figure D.11-2)

Test Sequence:

- 1. Introduce fault
- 2. Clear DTCs (Mode \$04)
- 3. Start engine and operate until the fault was detected (Pending DTC).
- 4. Stop engine
- 5. Start engine and operate until MIL illuminated (confirmed DTC)
- 6. Move fault to next location. Repeat steps 1 5.



Figure D.11-1

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Figure D.11-2



# Attachment 7 Emira LHD Diagnostic Link Connector





# **10. DESCRIPTION OF ALTERNATE FUEL VEHICLES**

Lotus Cars Ltd offers no alternate fuel vehicles for sale.



# 11. EMISSIONS COMPONENTS, AUXILIARY EMISSIONS CONTROL DEVICES & EMISSIONS CONTROL STRATEGIES

Please refer to confidential submission.



# **12. DESCRIPTION OF VEHICLES COVERED BY CERTIFICATION & TEST** PARAMETERS

**Durability Group: RLTXGPGNNEV1** Test Group: RLTXV03.5JHB **Evaporative Family:** RLTXR0130JHB **Emission Control System:** Eng Code 2GR-3.5S (SC Manual): SFI/SC/2HO2S(2)/2WU-WC/TWC/CAC

Carline	Model	Veh. Class	C- ratio	ldle RPM	Eng Config/Di	Eng Code	Valve s/cyl	Sales Area	Tire Size	Trans	ETW	Tank Cap
Emira	Emira	LDV	10.8	700	V6/3.5L	2GR- 3.5S	4	50S	Front: 245/35 ZR20 Rear: 295/30 ZR20	M6	3625	62.0 L

#### 12.1. **Test Parameters**

### 12.1.1. Starting procedure

### Attachment 8 – Starting procedure

### STARTING AND DRIVING

- Starting the Engine
- Ensure the keyfob is in the front seat area.
- Manual vehicles: Check that the transmission is in neutral and depress the clutch or brake pedal, see page 188.
- Automatic vehicles: Select P Park or N - Neutral and apply light foot pressure to the brake pedal, see pages 189 and 195.



- Lift the rear of the START/STOP ENGINE button flip cover.
- Press and release the START/ STOP ENGINE button, the autostart function will operate the starter motor until the vehicle starts.

- MARNING: To maintain vehicle control, ensure that the driving seat, steering wheel and door mirrors are adjusted correctly.
- MARNING: If necessary, adjust the driving seat to ensure that the brake pedal can be fully depressed.
- MARNING: Ensure that you and any passenger in the vehicle fastens their seatbelt before driving.
- MARNING: Never remove the keyfob from the vehicle or press the START/STOP ENGINE button when the vehicle is moving. This could stop the engine and cause an accident.
- () CAUTION: Do not accelerate a cold engine immediately after starting. Oil may not lubricate all engine components and could cause engine damage.



**Emergency Starting** A message is shown in the driver display if the keyfob battery is low and cannot be detected.



If this message is shown and the engine will not turn over then:

- Place the keyfob in the recess towards the rear of the storage area within centre console arm rest.
- Press the start button.
- The alarm siren will silence and the alarm is deactivated.



# 12.1.2. EPA Standard Shift Speeds (Manual Transmission)

15 – 25 - 40 – 45 – 50 mph

12.1.3 Shift schedule (Manual Transmission)

ID: FT6, H



### 12.1.4 RLHP Information

RLHP information, including coefficients, generated by coast-down procedure in accordance with SAE J2263:

Durability	Group: RL	TXGPGNNE	V1																
Test Grou	p: RLTXV03	.5JHB																	
Carline	Model	Engine	Trans	Curb	LVW	ETW	Axle	N/V	Tyre Size	Tyre Mfr.	Tyre	Coastdown	RLHP	Targe	et Coeff 70	F (lbf)	Targe	et Coeff 20	= (lbf)
	Code	Code	Type/Code	Weight			Ratio				Model	Time	@ 50mph	А	В	С	А	В	С
8	11	1	M6	3225lbs	3391lbs	3625lbs	1st - 4th: 3.777 5th - 6th: 3.238	35.5	Front: 245/35 ZR20 Rear: 295/30 ZR20	Michelin	PS CUP 2	N/A	14.5	37.419	0.55691	0.01741	41.1609	0.612601	0.01915

Test Report References:

Emira MT: IDIADA LME2203014\_01



### 12.1.5 FTTP

Lotus conducted FTTP testing at Highly Marelli UK Limited. This was presented to the EPA (Lotus Emira FTTP Test Report Highly Marelli CWT\_290922) and approval was granted November 3<sup>rd</sup> 2022.

## Attachment 9 – FTTP Approval



Jim Snyder Light-Duty Vehicle Group Compliance Division United States Environmental Protection Agency (734) 214-4946 snyder.jim@epa.gov

### 12.1.6 Canister Loading

As per EPA process.



# **13. VEHICLES PRODUCED FOR US SALE**

Please refer to confidential submission.



### 14. STATEMENT OF COMPLIANCE and REQUEST FOR CERTIFICATE OF CONFORMITY

### 14.1. Statement of Compliance

Lotus Cars Ltd states that any element of design, system, or emission control device installed on or incorporated in Lotus Cars Ltd's new motor vehicles or new motor vehicle engines for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of Lotus Cars Ltd's information and belief, cause the emission into the ambient air, pollutants in the operation of its motor vehicles or motor engines which cause or contribute to an unreasonable risk to public health welfare except as specifically permitted by the standards prescribed under section 202 of the Clean Air Act. Lotus Cars Ltd further states that any element of design, system, or emission control device installed or incorporated in Lotus Cars Ltd's new Motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of Lotus Cars Ltd's information and belief, cause or contribute to an unreasonable risk to public safety.

The term pollutant means:

- a. Diesel Particles
- b. Nickel
- c. NMT combustion products
- d. Ammonia
- e. Sulphates
- f. Hydrogen sulphide
- g. Hydrogen cyanide
- h. Ruthenium combustion products
- i. Nitrosamines

or any other pollutant which Lotus Cars Ltd has identified which can reasonably be expected to be emitted from these vehicles. All vehicles have been tested in accordance with good engineering practice to ascertain that such test vehicles meet the requirement of this section for the useful life of the vehicle.

The test vehicles, with respect to which data are submitted, are in all material respects as described in the application for certification and have been tested in accordance with the applicable test procedures utilising the fuels and equipment described in the application for certification. They meet the requirement of such tests, and on the basis of such tests, they conform to the requirements of the regulations in 40 CFR, Part 86, Subpart S.

The vehicles for which certification is requested conform to the requirements in 86.1810-17 (a) and the description of the tests performed to ascertain compliance with the general standards in 86.1810-17 (a) and the data derived from such tests are available.

The testing described under 86.1824-08 has been designed and conducted in accordance with good engineering practice to assure that the vehicles covered by a certificate issued under 86.1848-10 will meet the evaporative emission standards in 86.1811-17 for the useful life of the vehicle.



Part 1

### 14.2. Request for Certificate of Conformity

This Part 1 submission from Lotus Cars Ltd (Lotus) constitutes a final application and the request for the issue of a Certificate of Conformity for the following Test Group:

Test Group	Standards
RLTXV03.5JHB	Tier 3 Bin 125
	LEV III ULEV 125

**Sales Area** Federal California

All vehicles within this test group comply with all applicable regulations contained in 40 CFR Part 86 and with the compliance statements detailed in Sections 8 & 14 of this submission.

If you have any questions regarding this submission, please contact the undersigned.

Yours sincerely

David Robinson Lead Engineer Type Approval Department Lotus Cars Ltd Tel: +44(0)1953 608000 Email: drobinson@lotuscars.com



### **15. OTHER INFORMATION**

# 15.1. Certification Fee Payment

One payment made for RLTXV03.5JHB Emira (\$32,726).

# Attachment 10 – Fee Filing Form

### US EPA Fee Form

### Help and EPA Instructions

\* Required Field

General Information	
Date: 07/31/2023	
Process Code *	
Submit New Fee Filing Form	
Manufacturer Code *	
LTX	
Manufacturer Name *	
Lotus Cars Ltd	
Contact Name *	
David Robinson	
Contact Email Address *	Contact Phone *
drobinson@lotuscars.com	00441953 608000
Calendar Year complete application submitted to EPA *	
2023	
PLEASE NOTE: These fees apply to complete from January 1, 2023, through December 31, the calendar year in which the complete cert model year. Engine Family / Evaporative Family / Test Group *	te certification applications received by EPA , 2023. The applicable fee is determined by tification application is received, not the
RLTXV03.5JHB	


All

Certificate Request Type (Industry Sector Code)		
Certificate Request Type *		
On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V)		
On-Highway HDE Dyno Cert (Federal) (E, H)		
On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V)		
On-Highway Motorcycle (C)		
On-Highway HDV Evap (F)		
On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V)		
On-Highway HDE Dyno Cert (California-Only) (E, H)		
O Nonroad CI (L)		
O Nonroad SI (B, S)		
C Locomotive (G, K)		
All Nonroad Recreational, excluding Marine engines (X, Y)		
All Marine (Including IMO) (M, N, W)		
Component Certification for Evaporative Emissions (P)		
IMO Name (Required for dual US/IMO Marine Only)		
ICI VIN Number (Required for ICIs Only)		
ICI VIN Number (Required for ICIs Only)		
ICI VIN Number (Required for ICIs Only)		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee? *		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee? * No		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee? * No		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee?* No		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee?* No Payment Information		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee?* No Payment Information Amount Owed		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee?* No Payment Information Amount Owed \$32,726.00		
ICI VIN Number (Required for ICIs Only) Do you qualify for a Reduced Fee?* No Payment Information Amount Owed \$32,726.00 Payment Type *		

All

## **Attachment 11 - Certification Fee Payment**

Payment Information	
Status:	Despatched
Date registered:	04/09/2023 at 11:48
Registered by:	csmouton
Transaction reference:	51342824
Payment Details	
Debit account:	
Account allasi	
Payment date:	05/09/2023
Payment currency & amount:	USD 32.726.00
Indicative debit amount:	USD 32.726.00
Debit account reference:	RLTXV03.53HB
Destination country:	UNITED STATES
Priority:	Sw1FT
Payment method:	Electronic
Beneficiary Details	_
Beneficiary name:	Motor Vehicle & Engine Compliance
Beneficiary customer address:	
SWIFT/Bank Identification Code(BIC):	FRAVU\$33XXX
Beneficiary account number:	868010099013
Indicative credit amount:	USD 32,726.00
Credit Account Reference:	Lotus Cars Ltd (Code LTX)
	RLTXV03.53HB (Test Group)



## **16. EXHAUST SYSTEM STATEMENT**

Lotus Cars Ltd attests that the exhaust system for the 2024MY Engine Family RLTXV03.5JHB has been analysed and designed to provide a durable and leak free exhaust system for the whole vehicle life. The exhaust system components, up to post catalyst joint, are 100% leak free tested at the component supplier. The exhaust system design is based on ease of installation and to enable repairs to be performed with commonly available tools to provide and maintain a leak free status.