

PART 1 APPLICATION FOR EMISSIONS CERTIFICATION

MODEL YEAR: 2027

TEST GROUP: VMLNV03.0M16

DURABILITY GROUP: VMLNHHGVN005

EVAPORATIVE FAMILY: VMLNR0130M16

DURABILITY GROUP DESCRIPTION: FOUR STROKE, OTTO CYCLE, HYBRID ELECTRIC, GASOLINE/ELECTRIC-FUELLED, GASOLINE DIRECT INJECTION

CATALYST CODE: 005

3-WAY PD/RH COATED SUBSTRATE

TEST GROUP DESCRIPTION: 3.0 LITRE V6 TWIN TURBO PHEV
2TWC(2)/2WR-HO2S/2HO2S/DFI/2TC/2CAC

APPLICABLE STANDARDS

EXHAUST: FEDERAL INTERIM TIER4 BIN 50

CARB LEV4 ULEV50

EVAPORATIVE: FEDERAL TIER3 / CARB LEV4 (Option 2) with FEL

CARLINES 160: ARTURA COUPE

161: ARTURA SPIDER

Category	EDV	Test	Test Number
Exhaust	SBM16AEA3MW000014	UDDS CST	SMLN10083970
		UDDS CDT	SMLN10083978
		HWFET CST	SMLN10083971
		HWFET CDT	SMLN10083979
		US06	SMLN10083969
		SC03	SMLN10083968
		FTP20	SMLN10083929
		FTP50	SMLN10083930
Evaporative	SBM16AEA9KW990020	2DD	NMLN10070647
		3DD	NMLN10070631
		RUNNING LOSS	NMLN10070648
		ORVR	NMLN10070659
		SPITBACK	NMLN10070660
		LEAK DIAMETER	NMLN10070657
		BETP	NMLN10070661

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Issue	Date	Changes
00	1 st April 2026	Initial Issue
00r1	28 th April 2026	Corrected exhaust emission level from T3B50 to Interim T4B50
00r2	29 th April 2026	Updated VECI label

1 COMMUNICATION

Authorised representative situated in the United States

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Address: McLaren Automotive Limited
McLaren Technology Centre
Chertsey Road
Woking
Surrey
GU21 4YH
United Kingdom

Corporate name and address that should appear on the certificate of conformity:

Address: McLaren Automotive Limited
McLaren Technology Centre
Chertsey Road
Woking
Surrey
GU21 4YH
United Kingdom

The certificate of conformity should be issued to:

Name	Title	Email	Telephone
Peter Montague	Head of Homologation	peter.montague@mclaren.com	+44 148 326 1839

2 DURABILITY GROUP

2.1 Durability Group Description

Durability Group Name:	VMLNHHGVN005
Carlines Within Durability Group	160 Artura Coupe 161 Artura Spider
Combustion Cycle:	Hybrid electric with otto cycle, four stroke
Engine Type:	Hybrid electric
Fuel:	Gasoline, Electric
Basic Fuel Metering:	Spark Ignition Direct fuel injection
Catalyst Construction:	Coated metal substrate monolith with stainless steel casing 1 starter and 1 secondary catalyst per bank Starter: 1.1468 litre, Pd 19:1 Rh 200g/ft ³ Secondary: 2.7294 litre, Pd 9:1 Rh 50g/ft ³
Precious metals in catalyst:	Palladium and Rhodium 3-way
Grouping statistic:	8.632 g/litre

3 EVAPORATIVE / REFUELLING FAMILY

3.1 Evaporative Family Description

Evaporative / Refuelling Family Name:	VMLNR0130M16
Type of vapour storage:	Charcoal canister
Basic canister design:	2-chamber, closed bottom
Working capacity:	130 g
System configuration:	Single canister
Canister geometry, construction & materials:	Total volume: 2.300 litres BAX1100/BAX 1500 carbon (pellet) PA6.6 Casing
Fuel system:	Non-return
Type of refuelling emission control system:	Integrated with evaporative control system
Fill pipe seal mechanism:	Mechanical seal
Vapour control system:	Open system
Purge control system:	PWM valve control
Vapour hose material:	Cadbar multi-layer (NBR x2, CPT LP100, Aramid and CM)
Fuel tank material:	Aluminium

4 DURABILITY INFORMATION

4.1 Durability Information

McLaren is a Small Volume Manufacturer as agreed with EPA and has used Assigned Deterioration Factors (DFs) in accordance with the small volume provisions of 40 CFR 86.1838-01(b)(1), as detailed in 40 CFR 86.1826-01.

The EPA Tier 3 DFs are detailed in CD-2023-01 dated 30th January 2023.

The Tier 3 Bin 50 Light Duty Vehicle additive tailpipe emission DFs are detailed below:

Additive Exhaust DF	NMOG/NMHC mg/mi	CO mg/mi	NOx mg/mi	HCHO mg/mi
150k	6.2	160	4.7	0.2

The Tier 3 Light Duty Vehicle additive evaporative emission DFs are detailed below:

Additive Evaporative DF	3-Day & Hot Soak mg	2-Day & Hot Soak mg	Running Loss mg/mi	ORVR mg/gal
FEL <325mg	2.1	0.0	0.0	6
FEL ≥325mg	0.0	0.0	0.0	6

5 TEST GROUP

5.1 Test Group Description

Test Group Name: VMLNV03.0M16

Engine displacement: 2993 cm³ / 182.6 in³

Arrangement of cylinders: V-configuration

Number of cylinders: 6

Vehicle Class: LDV

Applicable emissions standards:

Exhaust: FEDERAL INTERIM TIER4 BIN 50

CARB LEV4 ULEV50

Evaporative: FEDERAL TIER3 / CARB LEV3 (Option 2) with FEL

FTP Family Emissions Limit: 50 mg/mile

FTP Fleet Standard: 51 mg/mile

SFTP Family Emissions Limit (EPA): 40 mg/mile

STFP Fleet Standard (EPA): 50 mg/mile

6 TEST VEHICLE

6.1 Test Vehicle Description

Emission Data Vehicle:

Represented Model:

Tailpipe: Artura Spider [Carline 161]

Evaporative: Artura Coupe [Carline 160]

Vehicle Identification Number:

Tailpipe: SBM16AEA3MW000014

Evaporative: SBM16AEA9KW990020

Configuration Number:

Tailpipe: 0 = E-mode Auto powertrain mode,
692 hp

Evaporative: 0 = E-mode Auto powertrain mode,
671 hp

Engine Displacement: 2993 cm³ / 182.6 in³

Engine Code: 30JBAK

ETW:

Tailpipe: 3875 lb

Evaporative: 3625 lb

Axle Ratio: 3.48

Transmission: 8-Speed Automatic

Full vehicle details are given in the vehicle information submitted to Verify and reproduced in Section 7.

7 TEST RESULTS

7.1 Certification Summary Information is provided in this section for the tests carried out for this Test Group:

Test	Test Number
UDDS CST	SMLN10083970
UDDS FCT	SMLN10083978
HFEDS CST	SMLN10083971
HFEDS FCT	SMLN10083979
US06 CST	SMLN10083969
SC03 CST	SMLN10083968
FTP20 CST	SMLN10083929
FTP50 CST	SMLN10083930
FTP75 2DD EVAP	NMLN10070646
FTP75 3DD EVAP	NMLN10070630
FTP75 ORVR EVAP	NMLN10070658
CARB 2-Day Evap	NMLN10070647
CARB 3-Day Evap	NMLN10070631
ORVR	NMLN10070659
Running Loss	NMLN10070648
Spitback	NMLN10070660
BETP	NMLN10070661
Leak Diameter	NMLN10070657

7.2 Testing Decisions:

MY27 VMLNV03.0M16 contains full carryover Carlines 160 & 161. As the existing test datasets demonstrate compliance with the MY27 standards, no testing decisions were required as all test data remains valid from the preceding model year.



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Certification Summary Information Report

Manufacturer	McLaren Automotive Limited	Manufacturer Code	MLN
Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	04/01/2026 11:18:52 AM
Model Year	2027		



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16						
Test Group Information									
CSI Type	New	Running Change Reference Number	--						
GHG Exempt Status	Not Exempt								
Drive Sources and Fuel(s)									
Drive Source #1:	Combustion Engine								
	<table><tr><th>Fuel</th><th>Basic Fuel Metering System</th><th>Lean Burn Strategy Indicator</th></tr><tr><td>Gasoline</td><td>Spark Ignition Direct fuel injection</td><td>No</td></tr></table>	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator	Gasoline	Spark Ignition Direct fuel injection	No		
Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator							
Gasoline	Spark Ignition Direct fuel injection	No							
Drive Source #2:	Electric Motor								
	<table><tr><th>Fuel</th><th>Basic Fuel Metering System</th><th>Lean Burn Strategy Indicator</th></tr><tr><td>Electricity</td><td>--</td><td>--</td></tr></table>	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator	Electricity	--	--		
Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator							
Electricity	--	--							
Hybrid Indicator	Yes								
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	Yes						
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	Yes						
Fuel Cell Indicator	No	EPA Vehicle Class	LDV						
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--						
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	No						
Durability Group Name	VMLNHHGVN005	Durability Group Equivalency Factor	1.0						
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA						
Complies with HD GHG 2b/3 regulations?	No								
Introduction into Commerce Date	--	CAP2000 Conditional Certificate?	N/A						
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--						
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	No						
SFTP LEV-III Composite Compliance Indicator	Yes								
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	VMLNV03.0M16						
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	2						
OBD Deficiencies Comments	Full details of OBD approval can be seen in OBD letter E-26-055. 1 PCV monitoring deficiency carried over, one new deficiency (J1979-2 implementation).								
Mfr Test Group Comments	--								
Mfr Exhaust / Evap Standards Comments	--								



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	04/01/2026 10:06:28 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	No						
Fuel Tank Material	Metal	Fuel Tank Material Description	Aluminium				
Fill Pipe Seal Type	Mechanical seal						
Air Intake System Vapor Storage Device?	No	Air Intake System Vapor Storage Device Description	N/A				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	N/A				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	130	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	0				
Mfr Evaporative/Refueling Family Comments	Vehicle is fitted with a single carbon canister with two chambers. Total canister volume of 2300 ml, with a rated EPA capacity of 130g.						
Leak Family Details							
Leak Family Indicator	Yes						
Canister Bleed Test Indicator	Yes	Applicability of Evaporative Canister Bleed Test	50 State				
Evaporative Canister Bleed Test Comments	Bleed test performed with fuel system only.						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Leak Family Name	Applicability of Leak Family Requirements	Leak Family Standard (Inches)	Leak Family Description				
VMLNR0130M16-L16	50 State	0.02	--				
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
McLaren Automotive Limited	2 - McLaren	160 - Artura Coupe	California + CAA Section 177 states	2-Wheel Drive, Rear	Automated Manual-Selectable (e.g. Automated Manual with paddles)	8	Yes
McLaren Automotive Limited	2 - McLaren	160 - Artura Coupe	Federal	2-Wheel Drive, Rear	Automated Manual-Selectable (e.g. Automated Manual with paddles)	8	Yes
McLaren Automotive Limited	2 - McLaren	161 - Artura Spider	California + CAA Section 177 states	2-Wheel Drive, Rear	Automated Manual-Selectable (e.g. Automated Manual with paddles)	8	Yes
McLaren Automotive Limited	2 - McLaren	161 - Artura Spider	Federal	2-Wheel Drive, Rear	Automated Manual-Selectable (e.g. Automated Manual with paddles)	8	Yes



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Certification Summary Information Report

Test Group	VMLNV03.0M16		Evaporative/Refueling Family	VMLNR0130M16	
Engine Description					
Hybrid Type	IC Engine/Electric Motor		Hybrid Description	--	
Engine Type	4-Stroke Spark Ignition		Mfr Engine Description	--	
Engine Block Arrangement	V-shaped engine		Mfr Engine Block Arrangement Description	--	
Camless Valvetrain Indicator	No		Oil Viscosity/Classification	0W40	
Number of Cylinders/Rotors	6		Mechanically Variable Compression Ratio Indicator	N	
After Treatment Device(s) (ATD)					
ATD Number		ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1		Three-way catalyst	Palladium + Rhodium	Metal	Other
2		Three-way catalyst	Palladium + Rhodium	Metal	Monolith
3		Three-way catalyst	Palladium + Rhodium	Metal	Other
4		Three-way catalyst	Palladium + Rhodium	Metal	Monolith
Mfr After Treatment Device (ATD) Comments		1 starter and 1 secondary catalyst per bank, total 4.			
Direct Ozone Reduction (DOR) Device		Not Equipped			
Mfr Emission Control Device Comments		--			



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Certification Summary Information Report

Test Group		VMLNV03.0M16	Evaporative/Refueling Family		VMLNR0130M16						
Engine Configuration Number 1											
Engine Displacement (liters)	3.0		Engine Rated Horsepower		597						
Number of Inlet Valves Per Cylinder	2		Number of Exhaust Valves Per Cylinder		2						
Air Aspiration Method	Turbocharged		Number of Air Aspiration Devices		2						
Air Aspiration Device Configuration	Parallel		Charge Air Cooler Type		Liquid						
Air Aspiration Drive Method(s)	Mechanical										
Cylinder Deactivation	No										
Cylinder Deactivation Description	--										
Variable Valve Timing	Yes										
Variable Valve Timing System Description	Variable Inlet Valve Timing by camshaft rotation offset.										
Variable Valve Lift?	No										
Variable Valve Lift System Description	--										
Number of Knock Sensors	4		Number of Air/Fuel Sensors		4						
Air/Fuel Sensor # 1 Type	Heated oxygen		Air/Fuel Sensor # 1 Description		--						
Air/Fuel Sensor # 2 Type	Heated oxygen		Air/Fuel Sensor # 2 Description		--						
Air/Fuel Sensor # 3 Type	Heated oxygen		Air/Fuel Sensor # 3 Description		--						
Air/Fuel Sensor # 4 Type	Heated oxygen		Air/Fuel Sensor # 4 Description		--						
Mfr Air/Fuel Sensor Comments	--										
Exhaust Gas Recirculation	No		Cooled Exhaust Gas Recirculation		No						
EGR Type	--		Exhaust Gas Recirculation Description if 'Other'		--						
Closed Loop Air Injection System	No										
Air Injection Type	Not Applicable		Air Injection Type if 'Other'		--						
Mfr Engine Configuration Comments	--										
Official Test Numbers											
Test Group Fuel		FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Gasoline		SMLN10083970	SMLN10083969	SMLN10083968	SMLN10083929	SMLN10083971	18.8	228.2	28.7	286.1	--
Electricity		SMLN10083970	SMLN10083969	SMLN10083968	SMLN10083929	SMLN10083971	--	--	--	--	--
SFTP LEV-III Official Test Numbers											
Test Group Fuel		FTP		US06		SC03					
Gasoline		SMLN10083970		SMLN10083969		SMLN10083968					
Electricity		SMLN10083970		SMLN10083969		SMLN10083968					



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Test Group		VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Official Charge Depleting Test Numbers				
Test Group Fuel		UDDS	Highway	
Gasoline		SMLN10083978	SMLN10083979	
Electricity		SMLN10083978	SMLN10083979	
Hybrid Electric Vehicle And Fuel Cell Information				
Rechargeable Energy Storage System	Battery(s)		Rechargeable Energy Storage System, if Other	--
Battery Type	Lithium Ion		Number of Battery Packs	1
Total Voltage of Battery Packs	296		Battery Energy Capacity	34
Battery Specific Energy	116		Battery Charger Type	Off-Board
Number of Capacitors	--		Capacitor Rating (In Farads)	--
Mfr Capacitor Comments	--			
Hydraulic System Description	--			
Regenerative Braking Type	Not applicable			
Regenerative Braking Source	--		Driver Controlled Regenerative Braking	--
Mfr Regenerative Braking Description	--			
Drive Motor(s)/Generator(s)	1			
Motor/Generator Type 1	DC Permanent Magnet, brushless		Rated Motor/Generator Power	71
Mfr Fuel Cell Description	--			
Fuel Cell On-Board H2 Storage Capacity (kg)	--		Usable H2 Fill Capacity (kg)	--
Mfr Hybrid Electric/ Electric Vehicle Comments	--			

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Test Group		VMLNV03.0M16			Evaporative/Refueling Family		VMLNR0130M16	
Dynamometer Coefficients:								
		Target Coefficients			Set Coefficients			
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
City/Highway/Evap	44.99	0.8244	0.0137	30.57	0.2236	0.0178	16.1	
Cold CO	49.46	0.9067	0.0151	20.5	0.0829	0.021	N/A	
US06	44.99	0.8244	0.0137	30.57	0.2236	0.0178	N/A	
Emission Control Device Comments	--							
Manufacturer Test Vehicle Comments	Config #0 - Artura Spider - E-Mode Powertrain Mode							

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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083929	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)
Test Date	06/01/2023	Fuel	Gasoline
Fuel Batch ID	41064	Fuel Calibration Number	2940
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7225	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	583.762	--	
FE BAG 1 (Bag 1 Fuel Economy)	14.58	14.58	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	639.667	--	
FE BAG 2 (Bag 2 Fuel Economy)	13.57	13.57	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	427.546	--	
FE BAG 3 (Bag 3 Fuel Economy)	20.29	20.29	
METHANE (CH4 - Methane)	0.028008	--	
CO (Carbon Monoxide)	1.214999	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-8.83	--	
DT-EER (Drive Trace Energy Economy Rating)	-5.31	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-14	--	
MFR FE (Manufacturer Fuel Economy)	15.17	15.17	
NOX (Nitrogen Oxide)	0.024856	--	
HC-NM (Non-methane Hydrocarbon)	0.251822	--	
NMOG (Non-methane organic gases)	0.277288	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.276678	--	
HC-TOTAL (Total Hydrocarbon)	0.279829	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	569.51	--	

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Test Group			VMLNV03.0M16			Evaporative/Refueling Family			VMLNR0130M16			
Manufacturer Test Comments			FE in miles per gallon. All emissions results in grams per mile. Config #0: E-mode Powertrain Mode - Artura Spider									
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 50	CO	1.21	--	--	--	0.1600	--	1.4	10.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HC-NM	0.25	--	--	--	0.0062	--	0.3	0.3	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	1.21	--	--	--	0.1600	--	1.4	10.0	Pass



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083930	Test Procedure	51 - CA fuel 50 Deg(F) exhaust test
Exhaust Test # for this Evap Test	--	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline
Test Date	06/14/2023	Fuel	Gasoline
Fuel Batch ID	44869	Fuel Calibration Number	2455
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7491	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	609.876	--	
FE BAG 1 (Bag 1 Fuel Economy)	14.22	14.22	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	397.571	--	
FE BAG 2 (Bag 2 Fuel Economy)	21.92	21.92	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	400.56	--	
FE BAG 3 (Bag 3 Fuel Economy)	21.72	21.72	
METHANE (CH4 - Methane)	0.007789	--	
CO (Carbon Monoxide)	0.475101	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.89	--	
DT-EER (Drive Trace Energy Economy Rating)	0.21	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.21	--	
HCHO (Formaldehyde)	0.000458	--	
MFR FE (Manufacturer Fuel Economy)	19.66	19.66	
NOX (Nitrogen Oxide)	0.012373	--	
HC-NM (Non-methane Hydrocarbon)	0.032747	--	
NMOG (Non-methane organic gases)	0.035957	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.04512	--	
HC-TOTAL (Total Hydrocarbon)	0.040536	--	



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Test Group	VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16			
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		442.489		--						
Manufacturer Test Comments		FE in miles per gallon. All emissions results in grams per mile. Config #0: Artura Spider - E-mode Powertrain Mode.										
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	4,000 miles	California LEV-IV ULEV50	CO	0.48	--	--	--	0.0	--	0.5	1.7	Pass
CA	4,000 miles	California LEV-IV ULEV50	HCHO	0.0005	--	--	--	0.0	--	0.000	0.016	Pass
CA	4,000 miles	California LEV-IV ULEV50	NMOG	0.03596	--	1.1	--	0.0	--	0.0360	999.9999	Pass
CA	4,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.04833	--	--	--	--	--	0.048	0.100	Pass
CA	4,000 miles	California LEV-IV ULEV50	NOX	0.01237	--	--	--	0.0	--	0.0124	999.9999	Pass

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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083970	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	07/06/2023	Fuel	Gasoline
Fuel Batch ID	43987	Fuel Calibration Number	3157
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7600	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	467.997	--	
FE BAG 1 (Bag 1 Fuel Economy)	18.68	18.68	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	397.12	--	
FE BAG 2 (Bag 2 Fuel Economy)	22.05	22.05	
METHANE (CH4 - Methane)	0.003004	--	
CO (Carbon Monoxide)	0.237735	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.11	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.51	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.37	--	
HCHO (Formaldehyde)	0.000908	--	
MFR FE (Manufacturer Fuel Economy)	20.9	20.9	
NOX (Nitrogen Oxide)	0.007558	--	
N2O (Nitrous Oxide)	0.001812	--	
HC-NM (Non-methane Hydrocarbon)	0.013749	--	
NMOG (Non-methane organic gases)	0.014161	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.021307	--	
HC-TOTAL (Total Hydrocarbon)	0.016753	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	428.025	999	

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Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
Test Result Name			Unrounded Test Result				Verify Calculated CO2					
Carbon dioxide			427.597				--					
Manufacturer Test Comments			FE in miles per gallon. All emissions results in grams per mile. Config #0: Artura Spider E-mode Powertrain Mode. 2x UDDS.									
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 50	CO	0.24	--	--	--	0.160	--	0.4	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO-COMP	0.30	--	--	--	0.160	--	0.3	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	999	--	--	--	0.0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0009	--	--	--	0.0002	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0030	--	--	--	0.00265	--	0.006	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.0018	--	--	--	0.0011	--	0.003	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0142	--	1.1	--	0.0062	--	0.020	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0218	--	--	--	--	--	0.033	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX-COMP	0.0300	--	--	--	0.0	--	0.030	0.040	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0076	--	--	--	0.0047	--	0.012	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.24	--	--	--	0.160	--	0.4	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	HCHO	0.0009	--	--	--	0.0002	--	0.001	0.004	Pass
CA	150,000 miles	California LEV-IV ULEV50	METHANE	0.0030	--	--	--	0.00265	--	0.006	0.030	Pass
CA	150,000 miles	California LEV-IV ULEV50	N2O	0.0018	--	--	--	0.0011	--	0.003	0.010	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.01416	--	1.1	--	0.0062	--	0.0204	999.9999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.02172	--	--	--	--	--	0.033	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.00756	--	--	--	0.0047	--	0.0123	999.9999	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	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083971	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	07/06/2023	Fuel	Gasoline
Fuel Batch ID	43987	Fuel Calibration Number	3157
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7659	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
METHANE (CH4 - Methane)	0.00001	--	
CO (Carbon Monoxide)	0.000041	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	3.44	--	
DT-EER (Drive Trace Energy Economy Rating)	0.25	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	4.18	--	
MFR FE (Manufacturer Fuel Economy)	29.34	29.34	
NOX (Nitrogen Oxide)	0.00304	--	
HC-NM (Non-methane Hydrocarbon)	0	--	
NMOG (Non-methane organic gases)	0	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.00304	--	
HC-TOTAL (Total Hydrocarbon)	0.000011	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	298.5	999	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	298.487	--	
Manufacturer Test Comments	FE in miles per gallon. All emissions results in grams per mile. Config #0: Artura Spider E-mode Powertrain Mode.		



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Certification Summary Information Report

Test Group		VMLNV03.0M16			Evaporative/Refueling Family					VMLNR0130M16		
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 50	CREE	999	--	--	--	0.0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0030	--	--	--	--	--	0.014	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0030	--	--	--	0.0047	--	0.008	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.00000	--	1.1	--	0.0062	--	0.0062	999.9999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.00304	--	--	--	--	--	0.014	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.00304	--	--	--	0.0047	--	0.0077	999.9999	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	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083969	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	07/24/2023	Fuel	Gasoline
Fuel Batch ID	43987	Fuel Calibration Number	3157
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7966	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	531.946	--	
FE BAG 1 (Bag 1 Fuel Economy)	16.46	16.46	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	367.627	--	
FE BAG 2 (Bag 2 Fuel Economy)	23.82	23.82	
METHANE (CH4 - Methane)	0.000574	--	
CO (Carbon Monoxide)	0	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-3.22	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.7	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-4.97	--	
MFR FE (Manufacturer Fuel Economy)	21.67	21.67	
NOX (Nitrogen Oxide)	0.020633	--	
HC-NM (Non-methane Hydrocarbon)	0.001685	--	
NMOG (Non-methane organic gases)	0.001736	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.022318	--	
HC-TOTAL (Total Hydrocarbon)	0.002259	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	404.172	--	
Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Config #0: Artura Spider E-mode Powertrain Mode.			



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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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 50	CO	0.00000	--	--	--	0.160	--	0.1600	999.9999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.00174	--	1.1	--	0.0062	--	0.0079	999.9999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.02063	--	--	--	0.0047	--	0.0253	999.9999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.00	--	--	--	0.160	--	0.2	9.6	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.00174	--	1.1	--	0.0062	--	0.0079	999.9999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.02237	--	--	--	--	--	0.033	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.02063	--	--	--	0.0047	--	0.0253	999.9999	Pass

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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																				
Test #	SMLN10083968	Test Procedure	95 - SC03																																				
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)																																				
Test Date	06/02/2023	Fuel	Gasoline																																				
Fuel Batch ID	43987	Fuel Calibration Number	3157																																				
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned																																				
Verify Test Lab ID	Applus IDIADA Group																																						
E10 Evaporative Test Measurement Method	--																																						
Test Start Odometer Reading	7309	Odometer Units	K																																				
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																				
State of Charge Delta	Yes																																						
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes																																				
Test Results																																							
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value (miles per gallon)</th></tr><tr><td>METHANE (CH4 - Methane)</td><td>0.001296</td><td>--</td></tr><tr><td>CO (Carbon Monoxide)</td><td>0.154061</td><td>--</td></tr><tr><td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td><td>-0.15</td><td>--</td></tr><tr><td>DT-EER (Drive Trace Energy Economy Rating)</td><td>0.06</td><td>--</td></tr><tr><td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td><td>0.08</td><td>--</td></tr><tr><td>MFR FE (Manufacturer Fuel Economy)</td><td>16.19</td><td>16.19</td></tr><tr><td>NOX (Nitrogen Oxide)</td><td>0.002625</td><td>--</td></tr><tr><td>HC-NM (Non-methane Hydrocarbon)</td><td>0.011021</td><td>--</td></tr><tr><td>NMOG (Non-methane organic gases)</td><td>0.011352</td><td>--</td></tr><tr><td>HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)</td><td>0.013646</td><td>--</td></tr><tr><td>HC-TOTAL (Total Hydrocarbon)</td><td>0.012318</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	METHANE (CH4 - Methane)	0.001296	--	CO (Carbon Monoxide)	0.154061	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.15	--	DT-EER (Drive Trace Energy Economy Rating)	0.06	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.08	--	MFR FE (Manufacturer Fuel Economy)	16.19	16.19	NOX (Nitrogen Oxide)	0.002625	--	HC-NM (Non-methane Hydrocarbon)	0.011021	--	NMOG (Non-methane organic gases)	0.011352	--	HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.013646	--	HC-TOTAL (Total Hydrocarbon)	0.012318	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																					
METHANE (CH4 - Methane)	0.001296	--																																					
CO (Carbon Monoxide)	0.154061	--																																					
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.15	--																																					
DT-EER (Drive Trace Energy Economy Rating)	0.06	--																																					
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.08	--																																					
MFR FE (Manufacturer Fuel Economy)	16.19	16.19																																					
NOX (Nitrogen Oxide)	0.002625	--																																					
HC-NM (Non-methane Hydrocarbon)	0.011021	--																																					
NMOG (Non-methane organic gases)	0.011352	--																																					
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.013646	--																																					
HC-TOTAL (Total Hydrocarbon)	0.012318	--																																					
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated CO2</th></tr><tr><td>Carbon dioxide</td><td>536.104</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	536.104	--																														
Test Result Name	Unrounded Test Result	Verify Calculated CO2																																					
Carbon dioxide	536.104	--																																					
Manufacturer Test Comments		FE in miles per gallon. All emissions results in grams per mile. Config #0: Artura Spider - E-mode Powertrain Mode.																																					



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Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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 50	CO	0.15406	--	--	--	0.160	--	0.3141	999.9999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.01135	--	1.1	--	0.0062	--	0.0176	999.9999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.00262	--	--	--	0.0047	--	0.0073	999.9999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.15	--	--	--	0.160	--	0.3	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.01135	--	1.1	--	0.0062	--	0.0176	999.9999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.01397	--	--	--	--	--	0.025	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.00262	--	--	--	0.0047	--	0.0073	999.9999	Pass

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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083978	Test Procedure	81 - Charge Depleting UDDS
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	07/19/2023	Fuel	Gasoline
Fuel Batch ID	43987	Fuel Calibration Number	3157
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7749	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
PHEV/EV Charge Depleting Test Information			
Recharge Event Voltage	235	Recharge Event Energy (kiloWatt-hours)	13.14
Charge Depleting Range (Calculated miles)	22.21	Charge Depleting Range (Actual miles)	18.89
Charge Depleting Range Highway (Calculated miles)	--	Derived 5-Cycle Coefficient Model Year	2017
All Electric Range Unadjusted (miles)	18.66	Equivalent All Electric Range (miles)	19.07
Number of Charge Depleting Bags/Phases Conducted	4	Transition Bag/Phase Number	3
Charge Depleting Bag/Phase #1			



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.4	
	Average System Voltage	315.7	
	CH4 - Methane	0.000031	
	Carbon Monoxide	0	
	Carbon dioxide	0.1	
	Carbon-Related Exhaust Emissions	0.1	
	Drive Trace Absolute Speed Change Rating	1.91	
	Drive Trace Energy Economy Rating	0.74	
	Drive Trace Inertia Work Ratio Rating	2.58	
	Formaldehyde	0.00005	
	Integrated Amp-hours	10.767	
	Manufacturer Fuel Economy	9999.999	
	Nitrogen Oxide	0.000044	
	Nitrous Oxide	0	
	Non-methane Hydrocarbon	0.000065	
	Non-methane organic gases	0.000067	
	Non-methane organic gases plus Nitrogen Oxides	999.999	
	Optional Carbon-Related Exhaust Emissions	0.1	
	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.000109	
	System End State of Charge Watt-hours	3399.2	
	System Start State of Charge Watt-hours	0	
	Total Hydrocarbon	0.000096	
Charge Depleting Bag/Phase #2			



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																														
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>7.4</td></tr><tr><td>Average System Voltage</td><td>294.6</td></tr><tr><td>CH4 - Methane</td><td>0</td></tr><tr><td>Carbon Monoxide</td><td>0</td></tr><tr><td>Carbon dioxide</td><td>0</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>0.004</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>1.21</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>0.43</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>1.37</td></tr><tr><td>Formaldehyde</td><td>0.00006</td></tr><tr><td>Integrated Amp-hours</td><td>22.484</td></tr><tr><td>Manufacturer Fuel Economy</td><td>9999.999</td></tr><tr><td>Nitrogen Oxide</td><td>0</td></tr><tr><td>Nitrous Oxide</td><td>0</td></tr><tr><td>Non-methane Hydrocarbon</td><td>0.00179</td></tr><tr><td>Non-methane organic gases</td><td>0.001844</td></tr><tr><td>Non-methane organic gases plus Nitrogen Oxides</td><td>999.999</td></tr><tr><td>Optional Carbon-Related Exhaust Emissions</td><td>0.004</td></tr><tr><td>SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03</td><td>0.00179</td></tr><tr><td>System End State of Charge Watt-hours</td><td>6851</td></tr><tr><td>System Start State of Charge Watt-hours</td><td>3399.2</td></tr><tr><td>Total Hydrocarbon</td><td>0.00117</td></tr></table>			Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.4	Average System Voltage	294.6	CH4 - Methane	0	Carbon Monoxide	0	Carbon dioxide	0	Carbon-Related Exhaust Emissions	0.004	Drive Trace Absolute Speed Change Rating	1.21	Drive Trace Energy Economy Rating	0.43	Drive Trace Inertia Work Ratio Rating	1.37	Formaldehyde	0.00006	Integrated Amp-hours	22.484	Manufacturer Fuel Economy	9999.999	Nitrogen Oxide	0	Nitrous Oxide	0	Non-methane Hydrocarbon	0.00179	Non-methane organic gases	0.001844	Non-methane organic gases plus Nitrogen Oxides	999.999	Optional Carbon-Related Exhaust Emissions	0.004	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00179	System End State of Charge Watt-hours	6851	System Start State of Charge Watt-hours	3399.2	Total Hydrocarbon	0.00117
Test Result/Emission Name	Unrounded Test Result																																																
Actual Distance Driven (miles)	7.4																																																
Average System Voltage	294.6																																																
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Drive Trace Energy Economy Rating	0.43																																																
Drive Trace Inertia Work Ratio Rating	1.37																																																
Formaldehyde	0.00006																																																
Integrated Amp-hours	22.484																																																
Manufacturer Fuel Economy	9999.999																																																
Nitrogen Oxide	0																																																
Nitrous Oxide	0																																																
Non-methane Hydrocarbon	0.00179																																																
Non-methane organic gases	0.001844																																																
Non-methane organic gases plus Nitrogen Oxides	999.999																																																
Optional Carbon-Related Exhaust Emissions	0.004																																																
SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00179																																																
System End State of Charge Watt-hours	6851																																																
System Start State of Charge Watt-hours	3399.2																																																
Total Hydrocarbon	0.00117																																																

Charge Depleting Bag/Phase #3



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																														
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>7.4</td></tr><tr><td>Average System Voltage</td><td>281.7</td></tr><tr><td>CH4 - Methane</td><td>0.00875</td></tr><tr><td>Carbon Monoxide</td><td>0.69495</td></tr><tr><td>Carbon dioxide</td><td>232.2</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>233.403</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>-0.21</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>-0.23</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>-0.39</td></tr><tr><td>Formaldehyde</td><td>0.00091</td></tr><tr><td>Integrated Amp-hours</td><td>29.248</td></tr><tr><td>Manufacturer Fuel Economy</td><td>37.59</td></tr><tr><td>Nitrogen Oxide</td><td>0.00983</td></tr><tr><td>Nitrous Oxide</td><td>0.00098</td></tr><tr><td>Non-methane Hydrocarbon</td><td>0.02764</td></tr><tr><td>Non-methane organic gases</td><td>0.028469</td></tr><tr><td>Non-methane organic gases plus Nitrogen Oxides</td><td>999.999</td></tr><tr><td>Optional Carbon-Related Exhaust Emissions</td><td>233.403</td></tr><tr><td>SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03</td><td>0.03747</td></tr><tr><td>System End State of Charge Watt-hours</td><td>8756.4</td></tr><tr><td>System Start State of Charge Watt-hours</td><td>6851</td></tr><tr><td>Total Hydrocarbon</td><td>0.03639</td></tr></table>			Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.4	Average System Voltage	281.7	CH4 - Methane	0.00875	Carbon Monoxide	0.69495	Carbon dioxide	232.2	Carbon-Related Exhaust Emissions	233.403	Drive Trace Absolute Speed Change Rating	-0.21	Drive Trace Energy Economy Rating	-0.23	Drive Trace Inertia Work Ratio Rating	-0.39	Formaldehyde	0.00091	Integrated Amp-hours	29.248	Manufacturer Fuel Economy	37.59	Nitrogen Oxide	0.00983	Nitrous Oxide	0.00098	Non-methane Hydrocarbon	0.02764	Non-methane organic gases	0.028469	Non-methane organic gases plus Nitrogen Oxides	999.999	Optional Carbon-Related Exhaust Emissions	233.403	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.03747	System End State of Charge Watt-hours	8756.4	System Start State of Charge Watt-hours	6851	Total Hydrocarbon	0.03639
Test Result/Emission Name	Unrounded Test Result																																																
Actual Distance Driven (miles)	7.4																																																
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System Start State of Charge Watt-hours	6851																																																
Total Hydrocarbon	0.03639																																																
Charge Depleting Bag/Phase #4																																																	



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.4	
	Average System Voltage	276.1	
	CH4 - Methane	0.00225	
	Carbon Monoxide	0.13926	
	Carbon dioxide	390.1	
	Carbon-Related Exhaust Emissions	390.326	
	Drive Trace Absolute Speed Change Rating	-0.32	
	Drive Trace Energy Economy Rating	-0.58	
	Drive Trace Inertia Work Ratio Rating	-0.37	
	Formaldehyde	0.00039	
	Integrated Amp-hours	29.437	
	Manufacturer Fuel Economy	22.42	
	Nitrogen Oxide	0.00139	
	Nitrous Oxide	0	
	Non-methane Hydrocarbon	0.00015	
	Non-methane organic gases	0.000155	
	Non-methane organic gases plus Nitrogen Oxides	999.999	
	Optional Carbon-Related Exhaust Emissions	390.326	
	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00154	
	System End State of Charge Watt-hours	8808.6	
	System Start State of Charge Watt-hours	8756.4	
	Total Hydrocarbon	0.0024	
Manufacturer Test Comments			
4x UDDS Charge-Depleting Test. Config #0: Artura Spider - E-mode Powertrain Mode. FE figures in miles per US gallon. All emissions results in grams per mile. 1 bag per cycle (4 total). E10 Fuel: Emissions Compliance Only.			

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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 50	CO	0.14	--	--	--	0.160	--	0.3	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.00	--	--	--	0.160	--	0.2	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.69	--	--	--	0.160	--	0.8	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.00	--	--	--	0.160	--	0.2	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	390	--	--	--	0.0	--	390	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	0	--	--	--	0.0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	233	--	--	--	0.0	--	233	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	0	--	--	--	0.0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0004	--	--	--	0.0002	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0000	--	--	--	0.0002	--	0.000	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0009	--	--	--	0.0002	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0001	--	--	--	0.0002	--	0.000	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0022	--	--	--	0.0026	--	0.005	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0000	--	--	--	0.0026	--	0.003	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0088	--	--	--	0.0026	--	0.011	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0000	--	--	--	0.0026	--	0.003	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.0000	--	--	--	0.0011	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.0000	--	--	--	0.0011	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.0010	--	--	--	0.0011	--	0.002	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.0000	--	--	--	0.0011	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0002	--	1.1	--	0.0062	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0001	--	1.1	--	0.0062	--	0.006	999.999	Pass

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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 50	NMOG	0.0285	--	1.1	--	0.0062	--	0.035	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0018	--	1.1	--	0.0062	--	0.008	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0014	--	--	--	0.0047	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0000	--	--	--	0.0047	--	0.005	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0098	--	--	--	0.0047	--	0.014	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0000	--	--	--	0.0047	--	0.005	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.14	--	--	--	0.160	--	0.3	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.00	--	--	--	0.160	--	0.2	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.69	--	--	--	0.160	--	0.8	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.00	--	--	--	0.160	--	0.2	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	CREE	390	--	--	--	0.0	--	390	--	--
CA	150,000 miles	California LEV-IV ULEV50	CREE	0	--	--	--	0.0	--	0	--	--
CA	150,000 miles	California LEV-IV ULEV50	CREE	233	--	--	--	0.0	--	233	--	--
CA	150,000 miles	California LEV-IV ULEV50	CREE	0	--	--	--	0.0	--	0	--	--
CA	150,000 miles	California LEV-IV ULEV50	HCHO	0.0004	--	--	--	0.0002	--	0.001	0.004	Pass
CA	150,000 miles	California LEV-IV ULEV50	HCHO	0.0000	--	--	--	0.0002	--	0.000	0.004	Pass
CA	150,000 miles	California LEV-IV ULEV50	HCHO	0.0009	--	--	--	0.0002	--	0.001	0.004	Pass
CA	150,000 miles	California LEV-IV ULEV50	HCHO	0.0001	--	--	--	0.0002	--	0.000	0.004	Pass

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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	150,000 miles	California LEV-IV ULEV50	METHANE	0.0022	--	--	--	0.0026	--	0.005	0.030	Pass
CA	150,000 miles	California LEV-IV ULEV50	METHANE	0.0000	--	--	--	0.0026	--	0.003	0.030	Pass
CA	150,000 miles	California LEV-IV ULEV50	METHANE	0.0088	--	--	--	0.0026	--	0.011	0.030	Pass
CA	150,000 miles	California LEV-IV ULEV50	METHANE	0.0000	--	--	--	0.0026	--	0.003	0.030	Pass
CA	150,000 miles	California LEV-IV ULEV50	N2O	0.0000	--	--	--	0.0011	--	0.001	0.010	Pass
CA	150,000 miles	California LEV-IV ULEV50	N2O	0.0000	--	--	--	0.0011	--	0.001	0.010	Pass
CA	150,000 miles	California LEV-IV ULEV50	N2O	0.0010	--	--	--	0.0011	--	0.002	0.010	Pass
CA	150,000 miles	California LEV-IV ULEV50	N2O	0.0000	--	--	--	0.0011	--	0.001	0.010	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0002	--	1.1	--	0.0062	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0001	--	1.1	--	0.0062	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0285	--	1.1	--	0.0062	--	0.035	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0018	--	1.1	--	0.0062	--	0.008	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0014	--	--	--	0.0047	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0000	--	--	--	0.0047	--	0.005	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0098	--	--	--	0.0047	--	0.014	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0000	--	--	--	0.0047	--	0.005	999.999	Pass



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	SMLN10083979	Test Procedure	84 - Charge Depleting Highway
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2023	Fuel	Gasoline
Fuel Batch ID	43987	Fuel Calibration Number	3157
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7799	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
PHEV/EV Charge Depleting Test Information			
Recharge Event Voltage	235	Recharge Event Energy (kiloWatt-hours)	13.12
Charge Depleting Range (Calculated miles)	40.79	Charge Depleting Range (Actual miles)	21.25
Charge Depleting Range Highway (Calculated miles)	--	Derived 5-Cycle Coefficient Model Year	2017
All Electric Range Unadjusted (miles)	21.83	Equivalent All Electric Range (miles)	21.67
Number of Charge Depleting Bags/Phases Conducted	5	Transition Bag/Phase Number	3
Charge Depleting Bag/Phase #1			

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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Charge Depleting Bag/Phase #2	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.23	
	Average System Voltage	313.9	
	CH4 - Methane	0	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0.001	
	Drive Trace Absolute Speed Change Rating	1.55	
	Drive Trace Energy Economy Rating	0.06	
	Drive Trace Inertia Work Ratio Rating	1.88	
	Integrated Amp-hours	13.032	
	Manufacturer Fuel Economy	9999.99	
	Nitrogen Oxide	0.00036	
	Non-methane Hydrocarbon	0.00039	
	Non-methane organic gases	0.000402	
	Non-methane organic gases plus Nitrogen Oxides	999.999	
	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00075	
	System End State of Charge Watt-hours	4090.8	
	System Start State of Charge Watt-hours	0	
	Total Hydrocarbon	0.00037	



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.17	
	Average System Voltage	288	
	CH4 - Methane	0	
	Carbon Monoxide	0	
	Carbon dioxide	0.2	
	Carbon-Related Exhaust Emissions	0.201	
	Drive Trace Absolute Speed Change Rating	4.35	
	Drive Trace Energy Economy Rating	-0.64	
	Drive Trace Inertia Work Ratio Rating	4.65	
	Integrated Amp-hours	27.791	
	Manufacturer Fuel Economy	9999.99	
	Nitrogen Oxide	0.0001	
	Non-methane Hydrocarbon	0.00024	
	Non-methane organic gases	0.0002472	
	Non-methane organic gases plus Nitrogen Oxides	999.999	
	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00034	
	System End State of Charge Watt-hours	8341.3	
	System Start State of Charge Watt-hours	4090.8	
	Total Hydrocarbon	0.00019	

Charge Depleting Bag/Phase #3



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Charge Depleting Bag/Phase #4	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.23	
	Average System Voltage	277.85	
	CH4 - Methane	0.00633	
	Carbon Monoxide	0.46319	
	Carbon dioxide	302.9	
	Carbon-Related Exhaust Emissions	303.701	
	Drive Trace Absolute Speed Change Rating	3.41	
	Drive Trace Energy Economy Rating	-0.12	
	Drive Trace Inertia Work Ratio Rating	4.19	
	Integrated Amp-hours	29.623	
	Manufacturer Fuel Economy	28.82	
	Nitrogen Oxide	0.00855	
	Non-methane Hydrocarbon	0.01753	
	Non-methane organic gases	0.018056	
	Non-methane organic gases plus Nitrogen Oxides	999.999	
	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.02608	
	System End State of Charge Watt-hours	8850.2	
	System Start State of Charge Watt-hours	8341.3	
	Total Hydrocarbon	0.02386	



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.18	
	Average System Voltage	277.65	
	CH4 - Methane	0.00005	
	Carbon Monoxide	0	
	Carbon dioxide	308.1	
	Carbon-Related Exhaust Emissions	308.1	
	Drive Trace Absolute Speed Change Rating	3.89	
	Drive Trace Energy Economy Rating	-0.53	
	Drive Trace Inertia Work Ratio Rating	4.72	
	Integrated Amp-hours	29.072	
	Manufacturer Fuel Economy	28.41	
	Nitrogen Oxide	0.00221	
	Non-methane Hydrocarbon	0	
	Non-methane organic gases	0	
	Non-methane organic gases plus Nitrogen Oxides	999.999	
	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00221	
	System End State of Charge Watt-hours	8697.3	
	System Start State of Charge Watt-hours	8850.2	
	Total Hydrocarbon	0.00005	
Charge Depleting Bag/Phase #5			



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																								
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>10.25</td></tr><tr><td>Average System Voltage</td><td>278.55</td></tr><tr><td>CH4 - Methane</td><td>0.00056</td></tr><tr><td>Carbon Monoxide</td><td>0.00355</td></tr><tr><td>Carbon dioxide</td><td>312.2</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>312.21</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>4.75</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>0.22</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>5.67</td></tr><tr><td>Integrated Amp-hours</td><td>28.971</td></tr><tr><td>Manufacturer Fuel Economy</td><td>28.09</td></tr><tr><td>Nitrogen Oxide</td><td>0.00231</td></tr><tr><td>Non-methane Hydrocarbon</td><td>0</td></tr><tr><td>Non-methane organic gases</td><td>0</td></tr><tr><td>Non-methane organic gases plus Nitrogen Oxides</td><td>999.999</td></tr><tr><td>SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03</td><td>0.00231</td></tr><tr><td>System End State of Charge Watt-hours</td><td>8668.7</td></tr><tr><td>System Start State of Charge Watt-hours</td><td>8850.2</td></tr><tr><td>Total Hydrocarbon</td><td>0.00056</td></tr></table>			Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	10.25	Average System Voltage	278.55	CH4 - Methane	0.00056	Carbon Monoxide	0.00355	Carbon dioxide	312.2	Carbon-Related Exhaust Emissions	312.21	Drive Trace Absolute Speed Change Rating	4.75	Drive Trace Energy Economy Rating	0.22	Drive Trace Inertia Work Ratio Rating	5.67	Integrated Amp-hours	28.971	Manufacturer Fuel Economy	28.09	Nitrogen Oxide	0.00231	Non-methane Hydrocarbon	0	Non-methane organic gases	0	Non-methane organic gases plus Nitrogen Oxides	999.999	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	0.00231	System End State of Charge Watt-hours	8668.7	System Start State of Charge Watt-hours	8850.2	Total Hydrocarbon	0.00056
Test Result/Emission Name	Unrounded Test Result																																										
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System Start State of Charge Watt-hours	8850.2																																										
Total Hydrocarbon	0.00056																																										
Manufacturer Test Comments 5x HFEDS Charge-Depleting Test. Config #0: Artura Spider - E-mode Powertrain Mode. FE figures in miles per US gallon. All emissions results in grams per mile. 1 bag per cycle (5 total). E10 Fuel: Emissions Compliance Only.																																											



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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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 50	CREE	304	--	--	--	0.0	--	304	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	312	--	--	--	0.0	--	312	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	0	--	--	--	0.0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	0	--	--	--	0.0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	308	--	--	--	0.0	--	308	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0181	--	1.1	--	0.0062	--	0.024	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0004	--	1.1	--	0.0062	--	0.007	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0002	--	1.1	--	0.0062	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0086	--	--	--	0.0047	--	0.013	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0023	--	--	--	0.0047	--	0.007	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0004	--	--	--	0.0047	--	0.005	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0001	--	--	--	0.0047	--	0.005	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0022	--	--	--	0.0047	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0181	--	1.1	--	0.0062	--	0.024	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16		
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	150,000 miles	California LEV-IV ULEV50	NMOG	0.0004	--	1.1	--	0.0062	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0002	--	1.1	--	0.0062	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0023	--	--	--	--	--	0.013	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0086	--	--	--	0.0047	--	0.013	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0023	--	--	--	0.0047	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0004	--	--	--	0.0047	--	0.005	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0001	--	--	--	0.0047	--	0.005	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0022	--	--	--	0.0047	--	0.007	999.999	Pass

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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16									
Emission Data Vehicle Information												
Vehicle ID / Configuration	SBM16AEA9KW990020 / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	NMLNV03.0M16	Original Evaporative/Refueling Family	NMLNR0130M16									
Original Test Vehicle Model Year	2022											
Vehicle Model												
Represented Test Vehicle Make	McLaren	Represented Test Vehicle Model	Artura									
Leak Family Details												
Leak Family Identifier	--	Leak Family Name	--									
Drive Sources and Fuel System Details												
<table><tr><th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr><tr><td>1</td><td>Electric Motor</td><td>Electricity</td></tr><tr><td>2</td><td>Combustion Engine</td><td>Gasoline</td></tr></table>				Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity	2	Combustion Engine	Gasoline
Drive Source and Fuel#	Drive Source	Fuel										
1	Electric Motor	Electricity										
2	Combustion Engine	Gasoline										
Hybrid Indicator	Yes											
Multiple Fuel Storage	--	Multiple Fuel Combustion	--									
Fuel Cell Indicator	No	Rechargeable Energy Storage System Indicator	Yes									
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if 'Other'	--									
Off-board charge Capable Indicator	No											
Odometer Correction -- Initial	0	Odometer Correction Factor	1									
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor											
Odometer Correction Units	Miles											
Engine Code	30JBAK	Rated Horsepower	577									
Displacement (liters)	2.993											
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'										
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel									
Charge Air Cooler Type	Liquid	Drive Mode While Testing	2-Wheel Drive, Rear									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)									
Curb Weight (lbs)	3303	Equivalent Test Weight (pounds)	3625									
GVWR (lbs)	3871	N/V Ratio	24.4									
Axle Ratio	3.48											
Transmission Type	Automatic	# of Transmission Gears	8									
Transmission Lockup	No	Creep Gear	No									
Dynamometer Coefficients:												
	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients					
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)						
City/Highway/Evap	47.88	0.8119	0.015	18.39	0.4967	0.0167	16.8					

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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Emission Control Device Comments	--		
Manufacturer Test Vehicle Comments	Config #0 - Artura - E-Mode Powertrain Mode		



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	NMLN10070630	Test Procedure	35 - California fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline
Test Date	06/23/2021	Fuel	Gasoline
Fuel Batch ID	IJ2303	Fuel Calibration Number	849
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4399	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	407.963	--	
FE BAG 1 (Bag 1 Fuel Economy)	21.32	21.32	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	104.123	--	
FE BAG 2 (Bag 2 Fuel Economy)	83.76	83.76	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	0.038	--	
FE BAG 3 (Bag 3 Fuel Economy)	9999.99	9999.99	
METHANE (CH4 - Methane)	0.002778	--	
CO (Carbon Monoxide)	0.139878	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.94	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.43	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.41	--	
MFR FE (Manufacturer Fuel Economy)	62.83	62.83	
NOX (Nitrogen Oxide)	0.007336	--	
HC-NM (Non-methane Hydrocarbon)	0.013628	--	
NMOG (Non-methane organic gases)	0.014972	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0209632	--	
HC-TOTAL (Total Hydrocarbon)	0.016406	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	138.86999	999	

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16																												
<table><tr><td colspan="3">Test Result Name</td><td colspan="4">Unrounded Test Result</td><td colspan="6">Verify Calculated CO2</td></tr><tr><td colspan="3">Carbon dioxide</td><td colspan="4">138.577</td><td colspan="6">--</td></tr></table>													Test Result Name			Unrounded Test Result				Verify Calculated CO2						Carbon dioxide			138.577				--					
Test Result Name			Unrounded Test Result				Verify Calculated CO2																															
Carbon dioxide			138.577				--																															
Manufacturer Test Comments		FE in miles per gallon. All emissions results in grams per mile. Config #0: E-mode Powertrain Mode. FTP75 Evaporative 3DD FCT.																																				
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 50	CO	0.14	--	--	--	0.160	--	0.3	1.7	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	999	--	--	--	0.0	--	999	--	--																										
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0028	--	--	--	0.0026	--	0.005	0.030	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0150	--	1.1	--	0.0062	--	0.021	999.999	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0223	--	--	--	--	--	0.033	0.050	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0073	--	--	--	0.0047	--	0.012	999.999	Pass																										
CA	150,000 miles	California LEV-IV ULEV50	CO	0.14	--	--	--	0.160	--	0.3	1.7	Pass																										
CA	150,000 miles	California LEV-IV ULEV50	CREE	999	--	--	--	0.0	--	999	--	--																										
CA	150,000 miles	California LEV-IV ULEV50	METHANE	0.0028	--	--	--	0.0026	--	0.005	0.030	Pass																										
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0150	--	1.1	--	0.0062	--	0.021	999.999	Pass																										
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0223	--	--	--	--	--	0.033	0.050	Pass																										
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0073	--	--	--	0.0047	--	0.012	999.999	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	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	NMLN10070646	Test Procedure	25 - California fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline
Test Date	06/04/2021	Fuel	Gasoline
Fuel Batch ID	IJ2303	Fuel Calibration Number	849
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4342	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	0	--	
FE BAG 1 (Bag 1 Fuel Economy)	0	0	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	0	--	
FE BAG 2 (Bag 2 Fuel Economy)	0	0	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	0	--	
FE BAG 3 (Bag 3 Fuel Economy)	0	0	
METHANE (CH4 - Methane)	0	--	
CO (Carbon Monoxide)	0	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.82	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.34	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.14	--	
MFR FE (Manufacturer Fuel Economy)	0	0	
NOX (Nitrogen Oxide)	0	--	
HC-NM (Non-methane Hydrocarbon)	0	--	
NMOG (Non-methane organic gases)	0	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0	--	
HC-TOTAL (Total Hydrocarbon)	0	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	0	999	

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16																												
<table><tr><td colspan="3">Test Result Name</td><td colspan="4">Unrounded Test Result</td><td colspan="6">Verify Calculated CO2</td></tr><tr><td colspan="3">Carbon dioxide</td><td colspan="4">0</td><td colspan="6">--</td></tr></table>													Test Result Name			Unrounded Test Result				Verify Calculated CO2						Carbon dioxide			0				--					
Test Result Name			Unrounded Test Result				Verify Calculated CO2																															
Carbon dioxide			0				--																															
Manufacturer Test Comments		Emissions not sampled. Config #0: E-mode Powertrain Mode. FTP75 Evaporative 2DD FCT.																																				
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 50	CO	0.00	--	--	--	0.160	--	0.2	1.7	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	999	--	--	--	0.0	--	999	--	--																										
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0000	--	--	--	0.0026	--	0.003	0.030	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0000	--	--	--	--	--	0.011	0.050	Pass																										
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0000	--	--	--	0.0047	--	0.005	999.999	Pass																										
CA	150,000 miles	California LEV-III ULEV50	CO	0.00	--	--	--	0.160	--	0.2	1.7	Pass																										
CA	150,000 miles	California LEV-III ULEV50	CREE	999	--	--	--	0.0	--	999	--	--																										
CA	150,000 miles	California LEV-III ULEV50	METHANE	0.0000	--	--	--	0.0026	--	0.003	0.030	Pass																										
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0000	--	1.1	--	0.0062	--	0.006	999.999	Pass																										
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0000	--	--	--	--	--	0.011	0.050	Pass																										
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0000	--	--	--	0.0047	--	0.005	999.999	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	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Test #	NMLN10070658	Test Procedure	35 - California fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline
Test Date	03/17/2021	Fuel	Gasoline
Fuel Batch ID	IG0903	Fuel Calibration Number	3548
Vehicle Class	LDV/Passenger Car	DF Type	EPA Assigned
Verify Test Lab ID	Applus IDIADA Group		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3922	Odometer Units	K
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	409.467	--	
FE BAG 1 (Bag 1 Fuel Economy)	21.25	21.25	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	208.737	--	
FE BAG 2 (Bag 2 Fuel Economy)	41.79	41.79	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	48.075	--	
FE BAG 3 (Bag 3 Fuel Economy)	181.47	181.47	
METHANE (CH4 - Methane)	0.003266	--	
CO (Carbon Monoxide)	0.173613	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.58	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.41	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.4	--	
MFR FE (Manufacturer Fuel Economy)	42.24	42.24	
NOX (Nitrogen Oxide)	0.007816	--	
HC-NM (Non-methane Hydrocarbon)	0.016815	--	
NMOG (Non-methane organic gases)	0.018517	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.024631	--	
HC-TOTAL (Total Hydrocarbon)	0.020081	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	206.634	999	

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Certification Summary Information Report

Test Group		VMLNV03.0M16				Evaporative/Refueling Family				VMLNR0130M16																				
<table><tr><td colspan="2">Test Result Name</td><td colspan="4">Unrounded Test Result</td><td colspan="3">Verify Calculated CO2</td></tr><tr><td colspan="2">Carbon dioxide</td><td colspan="4">206.265</td><td colspan="3">--</td></tr></table>													Test Result Name		Unrounded Test Result				Verify Calculated CO2			Carbon dioxide		206.265				--		
Test Result Name		Unrounded Test Result				Verify Calculated CO2																								
Carbon dioxide		206.265				--																								
Manufacturer Test Comments		FE in miles per gallon. All emissions results in grams per mile. Config #0: E-mode Powertrain Mode. FTP75 Evaporative ORVR FCT.																												
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 50	CO	0.17	--	--	--	0.160	--	0.3	1.7	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	999	--	--	--	0.0	--	999	--	--																		
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0033	--	--	--	0.0026	--	0.006	0.030	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0185	--	1.1	--	0.0062	--	0.025	999.999	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0263	--	--	--	--	--	0.037	0.050	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0078	--	--	--	0.0047	--	0.012	999.999	Pass																		
CA	150,000 miles	California LEV-IV ULEV50	CO	0.17	--	--	--	0.160	--	0.3	1.7	Pass																		
CA	150,000 miles	California LEV-IV ULEV50	CREE	999	--	--	--	0.0	--	999	--	--																		
CA	150,000 miles	California LEV-IV ULEV50	METHANE	0.0033	--	--	--	0.0026	--	0.006	0.030	Pass																		
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0185	--	1.1	--	0.0062	--	0.025	999.999	Pass																		
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0263	--	--	--	--	--	0.037	0.050	Pass																		
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0078	--	--	--	0.0047	--	0.012	999.999	Pass																		
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.																														



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																
Test #	NMLN10070631	Test Procedure	38 - CA fuel 3-day evap.																																
Exhaust Test # for this Evap Test	NMLN10070630	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline																																
Test Date	06/23/2021	Fuel	Gasoline																																
Fuel Batch ID	IJ2303	Fuel Calibration Number	849																																
Vehicle Class	N/A	DF Type	EPA Assigned																																
Verify Test Lab ID	Applus IDIADA Group																																		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)																																		
Test Start Odometer Reading	4399	Odometer Units	K																																
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																
State of Charge Delta	Yes																																		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes																																
Test Results																																			
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value (miles per gallon)</th></tr><tr><td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td><td>0.268</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.268	--																										
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																	
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.268	--																																	
Manufacturer Test Comments 3-day diurnal emission result in grams.																																			
<table><tr><th>Certification Region</th><th>Useful Life</th><th>Standard Level</th><th>Emission Name</th><th>Rounded Result</th><th>Add DF</th><th>Certification Level</th><th>Standard</th><th>Pass/Fail</th></tr><tr><td>Fed</td><td>150,000 miles</td><td>Federal Tier 3 Evap</td><td>HC-TOTAL-EQUIV</td><td>0.27</td><td>0.0021</td><td>0.3</td><td>0.3</td><td>Pass</td></tr><tr><td>CA</td><td>150,000 miles</td><td>California LEV-IV Zero Evap (Option 2)</td><td>HC-TOTAL-EQUIV</td><td>0.27</td><td>0.0021</td><td>0.3</td><td>0.3</td><td>Pass</td></tr></table>									Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.27	0.0021	0.3	0.3	Pass	CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.27	0.0021	0.3	0.3	Pass
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail																											
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.27	0.0021	0.3	0.3	Pass																											
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.27	0.0021	0.3	0.3	Pass																											

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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																
Test #	NMLN10070647	Test Procedure	27 - California fuel 2-day evap																																
Exhaust Test # for this Evap Test	NMLN10070646	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline																																
Test Date	06/04/2021	Fuel	Gasoline																																
Fuel Batch ID	IJ2303	Fuel Calibration Number	849																																
Vehicle Class	N/A	DF Type	EPA Assigned																																
Verify Test Lab ID	Applus IDIADA Group																																		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)																																		
Test Start Odometer Reading	4342	Odometer Units	K																																
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																
State of Charge Delta	Yes																																		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes																																
Test Results																																			
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value (miles per gallon)</th></tr><tr><td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td><td>0.26</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.26	--																										
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																	
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.26	--																																	
Manufacturer Test Comments 2-day diurnal emission result in grams.																																			
<table><tr><th>Certification Region</th><th>Useful Life</th><th>Standard Level</th><th>Emission Name</th><th>Rounded Result</th><th>Add DF</th><th>Certification Level</th><th>Standard</th><th>Pass/Fail</th></tr><tr><td>Fed</td><td>150,000 miles</td><td>Federal Tier 3 Evap</td><td>HC-TOTAL-EQUIV</td><td>0.26</td><td>0.0</td><td>0.3</td><td>0.3</td><td>Pass</td></tr><tr><td>CA</td><td>150,000 miles</td><td>California LEV-IV Zero Evap (Option 2)</td><td>HC-TOTAL-EQUIV</td><td>0.26</td><td>0.0</td><td>0.3</td><td>0.3</td><td>Pass</td></tr></table>									Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.26	0.0	0.3	0.3	Pass	CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.26	0.0	0.3	0.3	Pass
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail																											
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.26	0.0	0.3	0.3	Pass																											
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.26	0.0	0.3	0.3	Pass																											



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16						
Test #	NMLN10070648	Test Procedure	37 - California Fuel Running Loss						
Exhaust Test # for this Evap Test	NMLN10070630	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline						
Test Date	06/23/2021	Fuel	Gasoline						
Fuel Batch ID	IJ2303	Fuel Calibration Number	849						
Vehicle Class	N/A	DF Type	EPA Assigned						
Verify Test Lab ID	Applus IDIADA Group								
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)								
Test Start Odometer Reading	4399	Odometer Units	K						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	Yes								
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes						
Test Results									
<table><tr><td>Test Result Name</td><td>Unrounded Test Result</td><td>Verify Calculated FE Equivalent Value (miles per gallon)</td></tr><tr><td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td><td>0.0007</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0007	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0007	--							
Manufacturer Test Comments Emission result in grams per mile.									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.001	0.000	0.00	0.05	Pass	
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.001	0.000	0.00	0.05	Pass	



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																
Test #	NMLN10070659	Test Procedure	24 - Federal fuel refueling test (ORVR)																																
Exhaust Test # for this Evap Test	NMLN10070658	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline																																
Test Date	03/17/2021	Fuel	Gasoline																																
Fuel Batch ID	IG0903	Fuel Calibration Number	3548																																
Vehicle Class	N/A	DF Type	EPA Assigned																																
Verify Test Lab ID	Applus IDIADA Group																																		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)																																		
Test Start Odometer Reading	3922	Odometer Units	K																																
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																
State of Charge Delta	Yes																																		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes																																
Test Results																																			
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value (miles per gallon)</th></tr><tr><td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td><td>0.083</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.083	--																										
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																	
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.083	--																																	
Manufacturer Test Comments ORVR Refueling emissions result in g/dispensed gal																																			
<table><tr><th>Certification Region</th><th>Useful Life</th><th>Standard Level</th><th>Emission Name</th><th>Rounded Result</th><th>Add DF</th><th>Certification Level</th><th>Standard</th><th>Pass/Fail</th></tr><tr><td>Fed</td><td>150,000 miles</td><td>Federal Tier 3 Evap</td><td>HC-TOTAL-EQUIV</td><td>0.08</td><td>0.006</td><td>0.1</td><td>0.2</td><td>Pass</td></tr><tr><td>CA</td><td>150,000 miles</td><td>California LEV-IV Zero Evap (Option 2)</td><td>HC-TOTAL-EQUIV</td><td>0.08</td><td>0.006</td><td>0.1</td><td>0.2</td><td>Pass</td></tr></table>									Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.08	0.006	0.1	0.2	Pass	CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.08	0.006	0.1	0.2	Pass
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail																											
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.08	0.006	0.1	0.2	Pass																											
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.08	0.006	0.1	0.2	Pass																											



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16						
Test #	NMLN10070660	Test Procedure	15 - Spitback						
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)						
Test Date	05/11/2021	Fuel	Gasoline						
Fuel Batch ID	38321	Fuel Calibration Number	2255						
Vehicle Class	N/A	DF Type	EPA Assigned						
Verify Test Lab ID	Applus IDIADA Group								
E10 Evaporative Test Measurement Method	--								
Test Start Odometer Reading	3922	Odometer Units	K						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	--								
Drive Cycle Speed Tolerance Criteria	--	Road Speed Fan Usage	--						
Test Results									
<table><tr><td>Test Result Name</td><td>Unrounded Test Result</td><td>Verify Calculated FE Equivalent Value</td></tr><tr><td>SPITBACK (Spitback Hydrocarbon in grams)</td><td>0.1</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	SPITBACK (Spitback Hydrocarbon in grams)	0.1	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
SPITBACK (Spitback Hydrocarbon in grams)	0.1	--							
Manufacturer Test Comments Spitback tested according to 40 CFR §86.146-96.									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	SPITBACK	0.10	0.000	0.1	1.0	Pass	
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	SPITBACK	0.10	0.000	0.1	1.0	Pass	



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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16																																
Test #	NMLN10070661	Test Procedure	65 - Evap Canister Bleed Test																																
Exhaust Test # for this Evap Test	--	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline																																
Test Date	01/08/2021	Fuel	Gasoline																																
Fuel Batch ID	IJ2303	Fuel Calibration Number	4414																																
Vehicle Class	N/A	DF Type	EPA Assigned																																
Verify Test Lab ID	Applus IDIADA Group																																		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)																																		
Test Start Odometer Reading	0	Odometer Units	K																																
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																
State of Charge Delta	--																																		
Drive Cycle Speed Tolerance Criteria	--	Road Speed Fan Usage	--																																
Test Results																																			
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value</th></tr><tr><td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td><td>0.0103</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0103	--																										
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value																																	
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0103	--																																	
Manufacturer Test Comments Rig test performed. Result in g.																																			
<table><tr><th>Certification Region</th><th>Useful Life</th><th>Standard Level</th><th>Emission Name</th><th>Rounded Result</th><th>Add DF</th><th>Certification Level</th><th>Standard</th><th>Pass/Fail</th></tr><tr><td>Fed</td><td>150,000 miles</td><td>Federal Tier 3 Evap</td><td>HC-TOTAL-EQUIV</td><td>0.010</td><td>0.000</td><td>0.01</td><td>0.02</td><td>Pass</td></tr><tr><td>CA</td><td>150,000 miles</td><td>California LEV-IV Zero Evap (Option 2)</td><td>HC-TOTAL-EQUIV</td><td>0.010</td><td>0.000</td><td>0.01</td><td>0.02</td><td>Pass</td></tr></table>									Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.010	0.000	0.01	0.02	Pass	CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.010	0.000	0.01	0.02	Pass
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail																											
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.010	0.000	0.01	0.02	Pass																											
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.010	0.000	0.01	0.02	Pass																											



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16						
Test #	NMLN10070657	Test Procedure	67 - Leak Test - Port Near Canister						
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)						
Test Date	05/04/2021	Fuel	Gasoline						
Fuel Batch ID	IF2603	Fuel Calibration Number	7216						
Vehicle Class	N/A	DF Type	EPA Assigned						
Verify Test Lab ID	Applus IDIADA Group								
E10 Evaporative Test Measurement Method	--	Odometer Units	K						
Test Start Odometer Reading	3922	Diesel Adjustment Factor Usage	--						
4WD Test Dyno	No								
State of Charge Delta	--	Road Speed Fan Usage	--						
Drive Cycle Speed Tolerance Criteria	--								
Test Results									
<table><tr><td>Test Result Name</td><td>Unrounded Test Result</td><td>Verify Calculated FE Equivalent Value</td></tr><tr><td>LEAK-DIA (Effective Leak Diameter (inches))</td><td>0.003</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	LEAK-DIA (Effective Leak Diameter (inches))	0.003	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
LEAK-DIA (Effective Leak Diameter (inches))	0.003	--							
Manufacturer Test Comments Leak Check tested according to 40 CFR §1066.985. Result given = deff.									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	LEAK-DIA	0.003	0.000	0.00	0.02	Pass	
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	LEAK-DIA	0.003	0.000	0.00	0.02	Pass	



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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Fuel Properties			
Fuel Batch ID	IJ2303	Fuel Calibration Number	849
Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline	Fuel Batch Calibration Date	10/21/2020
Fuel Batch Calibration Effective Date	11/23/2020	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 (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17810
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.836	Weight Fraction CO2	--
Fuel Batch ID	43987	Fuel Calibration Number	3157
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	09/02/2021
Fuel Batch Calibration Effective Date	03/24/2022	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	0.752
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17807
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.835	Weight Fraction CO2	--
Fuel Batch ID	IG0903	Fuel Calibration Number	3548
Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline	Fuel Batch Calibration Date	07/13/2020
Fuel Batch Calibration Effective Date	08/19/2020	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	0.749
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17770
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.837	Weight Fraction CO2	--
Fuel Batch ID	41064	Fuel Calibration Number	2940
Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)	Fuel Batch Calibration Date	05/11/2021
Fuel Batch Calibration Effective Date	05/18/2021	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--

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Certification Summary Information Report

Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.745
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17803
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.834	Weight Fraction CO2	--
Fuel Batch ID	IF2603	Fuel Calibration Number	7216
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/29/2020
Fuel Batch Calibration Effective Date	10/06/2020	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	0.753
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17642
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.836	Weight Fraction CO2	--
Fuel Batch ID	38321	Fuel Calibration Number	2255
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	10/15/2020
Fuel Batch Calibration Effective Date	12/11/2020	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	0.754
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17921
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.839	Weight Fraction CO2	--
Fuel Batch ID	44869	Fuel Calibration Number	2455
Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline	Fuel Batch Calibration Date	08/31/2021
Fuel Batch Calibration Effective Date	08/08/2022	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 (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17829
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.835	Weight Fraction CO2	--

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Test Group	VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Fuel Batch ID	IJ2303	Fuel Calibration Number	4414
Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline	Fuel Batch Calibration Date	10/21/2020
Fuel Batch Calibration Effective Date	01/13/2021	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 (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17810
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.836	Weight Fraction CO2	--



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Test Group		VMLNV03.0M16			Evaporative/Refueling Family		VMLNR0130M16		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		California LEV-IV ULEV50		
Fuel		Gasoline			Test Procedure		Federal fuel 2-day exhaust (w/can load)		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.00265	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.9999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.9999
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		California LEV-IV ULEV50		
Fuel		Gasoline			Test Procedure		CA fuel 50 Deg(F) exhaust test		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
4,000 miles	CO	--	--	--	--	--	--	0.0	1.7
4,000 miles	HCHO	--	--	--	--	--	--	0.0	0.016
4,000 miles	NMOG	--	--	1.1	--	--	--	0.0	999.9999
4,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.100
4,000 miles	NOX	--	--	--	--	--	--	0.0	999.9999
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		Federal Tier 3 Bin 50		
Fuel		Gasoline			Test Procedure		US06		
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	--	--	--	--	--	--	0.160	999.9999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.9999
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.9999

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Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50	
Fuel		Gasoline			Test Procedure			US06	
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	--	--	--	--	--	--	0.160	9.6
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.9999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.9999
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50	
Fuel		Gasoline			Test Procedure			Charge Depleting Highway	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50	
Fuel		Gasoline			Test Procedure			Charge Depleting UDDS	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999

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Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50	
Fuel		Gasoline			Test Procedure			SC03	
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	--	--	--	--	--	--	0.160	1.7
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.9999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.9999

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50	
Fuel		Gasoline			Test Procedure			California fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999



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Test Group		VMLNV03.0M16			Evaporative/Refueling Family			VMLNR0130M16	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50	
Fuel		Gasoline			Test Procedure			Charge Depleting UDDS	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50	
Fuel		Gasoline			Test Procedure			Federal fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CO-COMP	--	--	--	--	--	--	0.160	4.2
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.00265	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0.0	0.040
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999



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Test Group		VMLNV03.0M16			Evaporative/Refueling Family			VMLNR0130M16	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50	
Fuel		Gasoline			Test Procedure			California fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50	
Fuel		Gasoline			Test Procedure			California fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999



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Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV50	
Fuel		Gasoline			Test Procedure			California fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.160	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
150,000 miles	N2O	--	--	--	--	--	--	0.0011	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50	
Fuel		Gasoline			Test Procedure			HWFE	
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	--	--	--	--	--	--	0.0	999.999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50	
Fuel		Gasoline			Test Procedure			Charge Depleting Highway	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0.0	999.999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.999



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Test Group		VMLNV03.0M16			Evaporative/Refueling Family			VMLNR0130M16		
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50		
Fuel		Gasoline			Test Procedure			HWFE		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.9999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.050	
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.9999	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50		
Fuel		Gasoline			Test Procedure			Cold CO		
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	--	--	--	--	--	--	0.1600	10.0	
Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50		
Fuel		Gasoline			Test Procedure			Cold CO		
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	--	--	--	--	--	--	0.1600	10.0	
150,000 miles	HC-NM	--	--	--	--	--	--	0.0062	0.3	
Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50		
Fuel		Gasoline			Test Procedure			SC03		
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	--	--	--	--	--	--	0.160	999.9999	
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0062	999.9999	
150,000 miles	NOX	--	--	--	--	--	--	0.0047	999.9999	

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Evaporative/Refueling Standards							
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.2	0.006		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.02	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.02	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		Spitback					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	SPITBACK	--	1.0	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Spitback					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	SPITBACK	--	1.0	0.000		

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Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		CA fuel 3-day evap.					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.3	0.0021		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Leak Test - Port Near Canister					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		CA fuel 3-day evap.					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.3	0.0021		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		Leak Test - Port Near Canister					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		California fuel 2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.3	0.0		



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Certification Summary Information Report

Test Group		VMLNV03.0M16		Evaporative/Refueling Family		VMLNR0130M16	
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.2	0.006		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		California Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		California Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000		
Evaporative/Refueling Family		VMLNR0130M16		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		California fuel 2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.3	0.0		

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Certification Summary Information Report

Test Group		VMLNV03.0M16	Evaporative/Refueling Family	VMLNR0130M16
Glossary				
Useful Life				
4	4,000 miles	120	120,000 miles	
50	50,000 miles	150	150,000 miles	
100	100,000 miles			
Emission Name				
HC-TOTAL	Total Hydrocarbon	COMB-CREE	Combined Carbon-Related Exhaust Emissions	
CO	Carbon Monoxide	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions	
CO2	Carbon dioxide	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only	
CREE	Carbon-Related Exhaust Emissions	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only	
OPT-CREE	Optional Carbon-Related Exhaust Emissions	N2O-COMB	Combined Nitrous Oxide for IID 2b/3 vehicles only	
NOX	Nitrogen Oxide	LEAK-DIA	Effective Leak Diameter (inches)	
PM	Particulate Matter	LEAK-GAS CAP	Gas Cap Leakage (cc/min)	
PM-COMP	SFTP Composite Particulate Matter	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
HC-NM	Non-methane Hydrocarbon	KW-HRS	Integrated DC KW-HRS	
OMHCE	Organic material Hydrocarbon Equivalent	CH4 BAG 1	Bag 1 Methane	
OMNMHCE	Organic material non-methane HC equivalent	CH4 BAG 2	Bag 2 Methane	
NMOG	Non-methane organic gases	CH4 BAG 3	Bag 3 Methane	
HCHO	Formaldehyde	CH4 BAG 4	Bag 4 Methane	
H3C2HO	Acetaldehyde	CO BAG 1	Bag 1 Carbon Monoxide	
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	CO BAG 2	Bag 2 Carbon Monoxide	
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	CO BAG 3	Bag 3 Carbon Monoxide	
CO-COMP	SFTP Composite Carbon Monoxide	CO BAG 4	Bag 4 Carbon Monoxide	
ETHANOL	C2H5OH - Ethanol	NMOG BAG 1	Bag 1 Non-methane organic gases	
FE BAG 1	Bag 1 Fuel Economy	NMOG BAG 2	Bag 2 Non-methane organic gases	
FE BAG 2	Bag 2 Fuel Economy	NMOG BAG 3	Bag 3 Non-methane organic gases	
FE BAG 3	Bag 3 Fuel Economy	NMOG BAG 4	Bag 4 Non-methane organic gases	
FE BAG 4	Bag 4 Fuel Economy	ACT-DISTANCE BAG 1	Bag 1 Actual Distance	
MFR FE	Manufacturer Fuel Economy	ACT-DISTANCE BAG 2	Bag 2 Actual Distance	
HC	Hydrocarbon for Running Loss and ORVR	ACT-DISTANCE BAG 3	Bag 3 Actual Distance	
METHANE	CH4 - Methane	ACT-DISTANCE BAG 4	Bag 4 Actual Distance	
METHANOL	CH3OH - Methanol	HC-TOTAL BAG 1	Bag 1 Total Hydrocarbon	
N2O	Nitrous Oxide	HC-TOTAL BAG 2	Bag 2 Total Hydrocarbon	
SPITBACK	Spitback Hydrocarbon in grams	HC-TOTAL BAG 3	Bag 3 Total Hydrocarbon	
AMP-HRS	Integrated Amp-hours	HC-TOTAL BAG 4	Bag 4 Total Hydrocarbon	
START-SOC	System Start State of Charge Watt-hours	WATT-HRS BAG 1	Bag 1 Watt Hours	
END-SOC	System End State of Charge Watt-hours	WATT-HRS BAG 2	Bag 2 Watt Hours	

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Certification Summary Information Report

Test Group		VMLNV03.0M16	Evaporative/Refueling Family		VMLNR0130M16
ACT-DISTANCE	Actual Distance Driven (miles)		WATT-HRS BAG 3	Bag 3 Watt Hours	
AS-VOLT	Average System Voltage		WATT-HRS BAG 4	Bag 4 Watt Hours	
CO2 BAG 1	Bag 1 Carbon Dioxide		WATT-HRS	Watt Hours	
CO2 BAG 2	Bag 2 Carbon Dioxide		HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon	
CO2 BAG 3	Bag 3 Carbon Dioxide		IIC-NM BAG 2	Bag 2 Non-methane Hydrocarbon	
CO2 BAG 4	Bag 4 Carbon Dioxide		HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon	
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides		HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon	
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides		N2O BAG 1	Bag 1 Nitrous Oxide	
DT-IWRR	Drive Trace Inertia Work Ratio Rating		N2O BAG 2	Bag 2 Nitrous Oxide	
DT-ASCR	Drive Trace Absolute Speed Change Rating		N2O BAG 3	Bag 3 Nitrous Oxide	
DT-EER	Drive Trace Energy Economy Rating		N2O BAG 4	Bag 4 Nitrous Oxide	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
B2	Federal Tier 2 Bin 2		HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
B3	Federal Tier 2 Bin 3		IIDV2B200	Federal Tier 3 IID Class 2b Bin 200	
B4	Federal Tier 2 Bin 4		HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
B5	Federal Tier 2 Bin 5		HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
B6	Federal Tier 2 Bin 6		HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
B7	Federal Tier 2 Bin 7		IIDV3B630	Federal Tier 3 IID Class 3 Transitional Bin 630	
B8	Federal Tier 2 Bin 8		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
B9	Federal Tier 2 Bin 9		HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
B10	Federal Tier 2 Bin 10		HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
B11	Federal Tier 2 Bin 11		HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
IIDV2	IIDV2 (Federal IID chassis Class 3 GVW 10001-14000)		IIDV3B0	Federal Tier 3 IID Class 3 Bin 0	
L2	California LEV-II LEV		L4SULEV100	California LEV-IV SULEV100	
L2OP	California LEV-II LEV Optional		L4SULEV125	California LEV-IV SULEV125	
U2	California LEV-II ULEV		L4SULEV15	California LEV-IV SULEV15	
S2	California LEV-II SULEV		L4SULEV150	California LEV-IV SULEV150	
ZEV	California ZEV		L4SULEV170	California LEV-IV SULEV170	
OT	Other		L4SULEV175	California LEV-IV SULEV175	
T1	Federal Tier 1		L4SULEV20	California LEV-IV SULEV20	
PZEV	California PZEV		L4SULEV200	California LEV-IV SULEV200	
L2LEV160	California LEV-II LEV160		L4SULEV230	California LEV-IV SULEV230	
L2ULEV125	California LEV-II ULEV125		L4SULEV25	California LEV-IV SULEV25	
L2SULEV30	California LEV-II SULEV30		L4SULEV30	California LEV-IV SULEV30	
L2LEV395	California LEV-II LEV395		L4SULEV75	California LEV-IV SULEV75	

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Test Group		VMLNV03.0M16	Evaporative/Refueling Family		VMLNR0130M16
L2ULEV340	California	LEV-II ULEV340	L4SULEV85	California	LEV-IV SULEV85
L2LEV630	California	LEV-II LEV630	L4ULEV125	California	LEV-IV ULEV125
L2ULEV570	California	LEV-II ULEV570	L4ULEV200	California	LEV-IV ULEV200
L3LEV160	California	LEV-III LEV160	L4ULEV250	California	LEV-IV ULEV250
L3ULEV125	California	LEV-III ULEV125	L4ULEV270	California	LEV-IV ULEV270
L3ULEV70	California	LEV-III ULEV70	L4ULEV40	California	LEV-IV ULEV40
L3ULEV50	California	LEV-III ULEV50	L4ULEV400	California	LEV-IV ULEV400
L3SULEV30	California	LEV-III SULEV30	L4ULEV50	California	LEV-IV ULEV50
L3SULEV20	California	LEV-III SULEV20	L4ULEV60	California	LEV-IV ULEV60
L3LEV395	California	LEV-III LEV395	L4ULEV70	California	LEV-IV ULEV70
L3ULEV340	California	LEV-III ULEV340	T4B170	Federal Tier 4 MDV	Bin 170
L3ULEV250	California	LEV-III ULEV250	T4B150	Federal Tier 4 MDV	Bin 150
L3ULEV200	California	LEV-III ULEV200	T4B125	Federal Tier 4 MDV	Bin 125
L3SULEV170	California	LEV-III SULEV170	T4B100	Federal Tier 4 MDV	Bin 100
L3SULEV150	California	LEV-III SULEV150	T4B85	Federal Tier 4 MDV	Bin 85
L3LEV630	California	LEV-III LEV630	T4B75	Federal Tier 4 MDV	Bin 75
L3ULEV570	California	LEV-III ULEV570	T4B70	Federal Tier 4	Bin 70
L3ULEV400	California	LEV-III ULEV400	T4B65	Federal Tier 4	Bin 65
L3ULEV270	California	LEV-III ULEV270	T4B60	Federal Tier 4	Bin 60
L3SULEV230	California	LEV-III SULEV230	T4B55	Federal Tier 4	Bin 55
L3SULEV200	California	LEV-III SULEV200	T4B50	Federal Tier 4	Bin 50
T3B160	Federal Tier 3	Bin 160	T4B45	Federal Tier 4	Bin 45
T3B125	Federal Tier 3	Bin 125	T4B40	Federal Tier 4	Bin 40
T3B110	Federal Tier 3	Transitional Bin 110	T4B35	Federal Tier 4	Bin 35
T3B85	Federal Tier 3	Transitional Bin 85	T4B30	Federal Tier 4	Bin 30
T3SULEV30	Federal Tier 3	Transitional LEV-II SULEV30 Carryover	T4B25	Federal Tier 4	Bin 25
T3B70	Federal Tier 3	Bin 70	T4B20	Federal Tier 4	Bin 20
T3B50	Federal Tier 3	Bin 50	T4B15	Federal Tier 4	Bin 15
T3B30	Federal Tier 3	Bin 30	T4B10	Federal Tier 4	Bin 10
T3B20	Federal Tier 3	Bin 20	T4B5	Federal Tier 4	Bin 5
T3B0	Federal Tier 3	Bin 0	T4B0	Federal Tier 4	Bin 0
H0V2B395	Federal Tier 3	HD Class 2b Transitional Bin 395			
Transmission Type Code					
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual		
A	Automatic	OT	Other		
AM	Automated Manual	SA	Semi-Automatic		
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)		
Drive System Code					
4	4-Wheel Drive	P	Part-time 4-Wheel Drive		



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Certification Summary Information Report

Test Group		VMLNV03.0M16		Evaporative/Refueling Family		VMLNR0130M16	
F	2-Wheel Drive, Front			A	All Wheel Drive		
R	2-Wheel Drive, Rear						
Additional Terms and Acronyms							
AFC	Alternative Fuel Converter			ICI	Independent Commercial Imperter		
CSI	Certificate Summary Information			ORVR	Onboard Refueling Vapor Recovery		
DF	Deterioration Factor			SIL	Shift Indicator Light		
Evap	Evaporation, Evaporative			Trans	Transmission		

8 MANUFACTURER STATEMENTS

8.1 Emissions Testing Waiver Statements

8.1.1 High Altitude Emissions

McLaren affirms that all light-duty vehicles included in the application comply with the applicable high-altitude exhaust and evaporative emissions standards. This is based on good engineering judgement and development testing.

In accordance with 40 CFR 86.1829-15(c) and 40 CFR 86.1829-01(b)(2)(ii)(B), we waive the data submittal on the basis of this statement.

In accordance with 40 CFR 86.1810-17(f) and 40 CFR 86.1865-12(h), McLaren affirms that emissions control strategies are used similarly across all altitudes for light-duty vehicles included in this application.

8.1.2 Particulate Matter (PM)

McLaren affirms that all light-duty vehicles included in the application comply with the applicable particulate matter emission standards. This is based on good engineering judgement and development testing.

In accordance with 40 CFR 86.1829-15(d)(2), we waive the data submittal on the basis of this statement.

8.1.3 Knock Sensor [ref. EPA Guidance VPCD-97-01]

McLaren affirms that the knock sensors do not activate in any way during the FTP and HWFET, and knock sensor control does not influence the City/Highway fuel economy and emission results; both remain within the normal test variability. The calibration is designed to operate on 91 RON gasoline without the need for spark adjustment.

8.1.4 Lean Best Torque [ref. EPA Guidance VPCD-98-17 / 40 CFR 86.1810-01(i)(6)]

McLaren affirms that in determining Lean Best Torque, good engineering practice has been used to establish a calibration such that the Air/Fuel ratio is not richer than the leanest required to obtain maximum torque plus a tolerance of 6% throughout all normal vehicle use. At very high torque and engine speed additional enrichment is provided to protect the engine and emissions control hardware.

8.1.5 Emission Control System Continuity

In accordance with 40 CFR 86.1809-12(e), McLaren affirms that based on engineering evaluation and emission testing there is no discontinuity in emission performance of non-methane organic gases, carbon monoxide, carbon dioxide, oxides of nitrogen, nitrous oxide, methane, and formaldehyde measured on the Federal Test Procedure and Highway Fuel Economy Test procedure in the temperature range 20°F to 86°F.

8.1.6 A/C-On Specific Calibrations

In accordance with 40 CFR 86.1811-17(d)(3), McLaren affirms that no A/C-On specific calibrations are used in the light-duty vehicles included in this application.

8.1.7 Lean-On-Cruise Calibration

In accordance with 40 CFR 86.1811-17(d)(4), McLaren affirms that no lean-on-cruise calibrations are used in the light-duty vehicles included in this application.

8.1.8 Exhaust System Statement

McLaren affirms that the exhaust system for the 2027MY Test Group VMLNV03.0M16 has been analysed and designed to provide a durable and leak-free exhaust system for the whole vehicle life. The exhaust system design takes into account the need to enable repairs to be performed with commonly available tools to provide and maintain a leak-free status.

8.1.9 Adjustable Parameters

In accordance with 40 CFR 86.1833-01, McLaren affirms that no adjustable parameters are used in the light duty vehicles included in this application.

9 OBD SYSTEM

9.1 OBD System Description

The VMLNV03.0M16 OBD system is designed and calibrated to be fully compliant with the following regulations/specifications:

- a) Title 13, California Code of Regulations, Section 1968.2
- b) SAE J1979 – (R) E.E Diagnostic Test Modes
- c) ISO 15031-5 Road Vehicles – Communication between vehicle and external equipment for emissions related diagnostics – Part 5: Emissions – related diagnostic services
- d) ISO 15765-4 Road Vehicles – Diagnostics on Controller Area Networks (CAN) – Part 4: Requirement for emissions related systems.

The corresponding OBD diagnostic connector is designed and located in accordance with specification SAE J1962.

The OBD system is detailed in Section 16 of the CBI version of this application.

9.2 OBD Approval

The CARB OBD approval letter is in Section 16 of the CBI version of this application.

10 DESCRIPTION OF ALTERNATE FUEL VEHICLES

Not applicable.

11 AUXILIARY EMISSION CONTROL DEVICE (AECD) DESCRIPTIONS

The AECD description information can be found in Section 16.3 of the CBI version of this application.

12 DESCRIPTION OF VEHICLES AND TEST PARAMETERS COVERED BY CERTIFICATE

Vehicle Description	Model Name	Artura Coupe	Artura Spider
	Carline Code	160	161
	Vehicle Classification	LDV	
	Sales Area	50 States	
Emissions Control System Description	Catalysts	Coated monolith with stainless steel casing. 2 starter and 2 secondary catalysts	
	EGR	N/A	
	Air Pump Type	N/A	
	Fuel System Type	Spark Ignition Direct fuel injection	
	Air Intake Aspiration Method	Forced	
	Other	N/A	
	Engine Code	30JBAK	
	Number of valves per cylinder	4	
	Engine Displacement	2993 cm ³ / 182.6 in ³	
	Transmission	Dual Clutch Transmission (Automatic)	
	Shift Indicator Light	No	
	Fuel Tank Volume	66 litres	
Tyre Description	Tyre Size – Front	235/35/ZR19 91Y	
	Rim Size – Front	8.5Jx19, offset 43mm	
	Tyre Size – Rear	295/35/ZR20 105Y	
	Rim Size – Rear	10.5Jx20, offset 49mm	
Transmission	Highest Gear Ratio	0.58	
	Final Drive Ratio	3.48	
	N/V Ratio	24.4	
	Road Load Horsepower	16.8	
Vehicle Weight	Curb Weight	3303 lb	3458 lb
	GVWR	3871 lb	3990 lb
	Equivalent Test Weight	3625 lb	3875 lb

12.1 Test Parameters

12.1.1 Vehicle Operation and Engine Start/Stop Procedures (Extract from Owner's Manual)

Driving Controls Starting and Driving

Brake pedal

⚠ WARNING: Do not keep any objects in the driver's footwell. Ensure that floor mats or carpets are properly secured and do not obstruct the pedals. If objects become trapped between the pedals, you may not be able to brake or accelerate, and this could lead to an accident.

⚠ WARNING: Do not rest your foot on the brake pedal while travelling as this may overheat the brakes, reduce their efficiency and cause excessive wear.

⚠ WARNING: If the brake warning light illuminates while the vehicle is in motion, stop the vehicle as soon as safety permits and contact your McLaren retailer immediately.

Brake discs and pads

⚠ WARNING: New brake pads require a period of bedding in. For the first 625 miles (1,000 km), avoid situations where heavy braking is required.

Brake disc and pad wear depends on the driving style and driving conditions.

Brake warning light

ⓘ The brake warning light will illuminate when the ignition is switched on as a system test. If the brake warning light illuminates at any other time, a fault is indicated. Stop the vehicle as soon as safety permits and contact your McLaren retailer immediately.

Starting/stopping the vehicle

⚠ WARNING: Never run the engine when the vehicle is in an enclosed space. Exhaust fumes contain poisonous carbon monoxide. Breathing exhaust fumes could lead to unconsciousness and death.

ⓘ NOTE: Do not depress the accelerator pedal when starting the engine.

Starting the vehicle

1. Ensure that the key fob is in the vehicle.



2.09

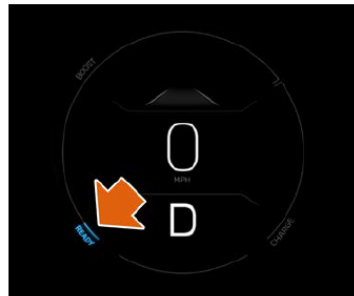
Driving Controls Starting and Driving

2. Depress the brake pedal, press and release the START/STOP button and the vehicle will start.

Starting in Electric mode

The vehicle defaults to Electric powertrain and Comfort handling modes on startup.

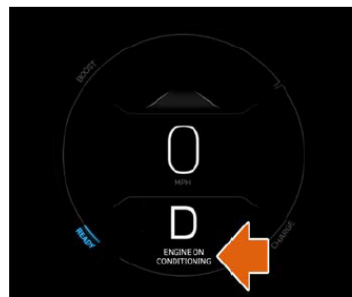
Press the brake pedal and push the START/STOP button. The READY indicator on the Driver Display shows that electric power is available.



ⓘ NOTE: With the vehicle in Electric mode the engine may start in certain conditions:

- To purge fuel vapour on startup if the vehicle has not been operated for more than 48 hours.
- To warm the catalysts to support efficient use of the engine.
- To charge the High Voltage (HV) battery when electric range is depleted.

If the engine starts to purge fuel vapour or warm the catalysts, CONDITIONING ENGINE is shown on the Driver Display.



If the engine starts because electric range is depleted, the engine will provide drive to the wheels once the catalysts are warm. However, torque will be limited to that provided by the eMotor and the HV battery level will be sustained. A message displays recommending that you change powertrain mode.

Changing to an alternative powertrain mode will provide access to the vehicle's combined hybrid power and will provide charge to the HV battery.

Starting in Hybrid mode

To start the vehicle in a hybrid mode:

1. Press the START/STOP button without pressing the brake pedal.
2. Select the desired powertrain mode using the powertrain control. See Powertrain control, page 2.24.
3. Press the brake pedal and push the START/STOP button.

ⓘ NOTE: The engine will start and warm the catalysts. During this period:

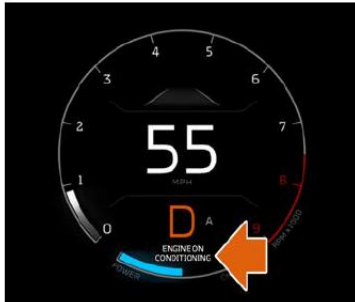
- Drive is provided by the eMotor only. The engine does not provide power or respond to throttle input.
- The transmission remains in automatic.

2.10

Driving Controls Starting and Driving

- The tachometer remains at idle.

During this state, the progress bar displays on the Powertrain mode indicator and CONDITIONING ENGINE is shown on the Driver Display.



To start the vehicle with full torque and throttle response immediately available, the engine must still be warm from previous use.

Stopping the vehicle

1. Depress the brake pedal.
2. Select neutral.



3. Press the START/STOP button. The engine stops, the vehicle enters Awake mode, see Vehicle electrical status, page 2.04. The immobiliser is activated.

NOTE: The parking brake will apply automatically when the engine is stopped. Automatic application can be overridden by holding the parking brake switch in the off position whilst opening the driver's door.

Driving

Driving away

WARNING: Never turn the vehicle off while driving, there will be no assistance for the steering or the foot brake. You will need more effort to steer and brake and could lose control of the vehicle and cause an accident.

NOTE: Do not drive at high engine speeds until the engine has reached normal operating temperature.

NOTE: The doors will lock when the vehicle reaches a speed of approximately 9 mph (15 km/h). Auto lock can be set on the Central Display, see Automatic door locking, page 4.15.

NOTE: During extensive parking manoeuvres the steering assistance might feel slightly stiffer. This is normal and designed to protect the steering system from overheating.

12.1.2 Operation of the vehicle in a dynamometer test environment

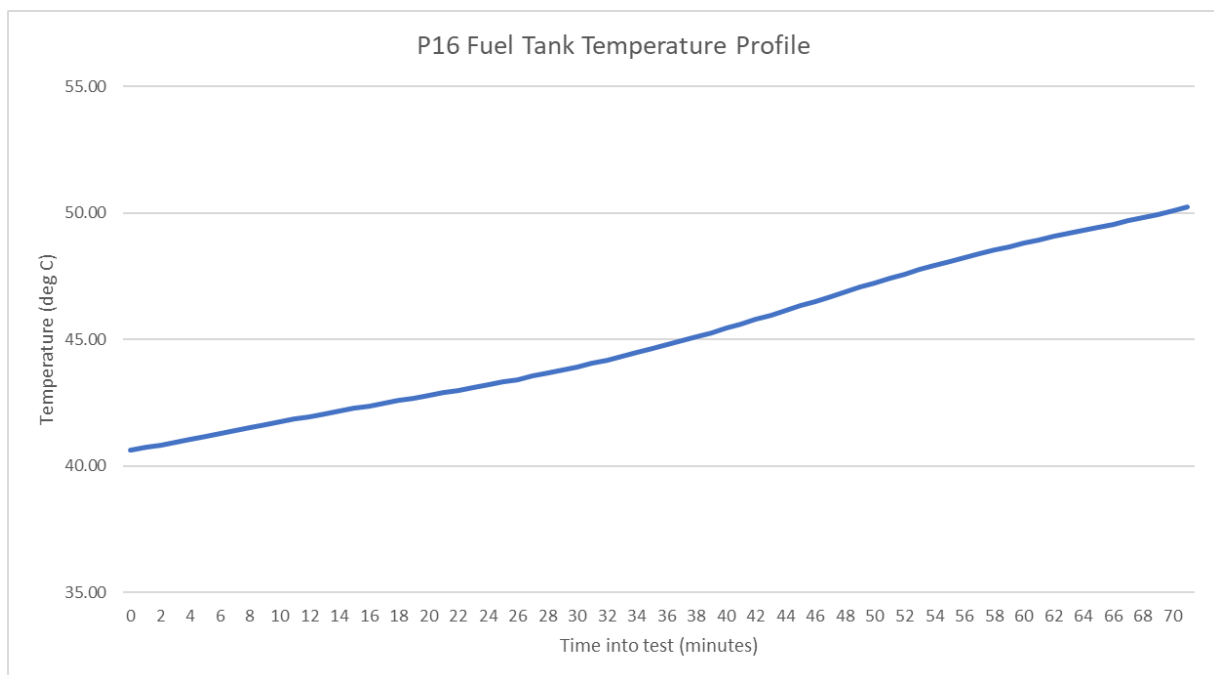
Information relating to operation of the vehicle in a dynamometer test environment is provided in Section 16 of the CBI version of this application.

12.2 Shift schedules:

FTA and US6A Automatic Transmission

12.2.1 Fuel Tank Temperature Profile

In accordance with the requirements of the California Evaporative Emissions Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles, Part III Section C and USA Federal requirements 40 CFR 86.129-94, testing has been conducted to measure the worst-case Fuel Tank Temperature Profile. The FTTP was corrected to 105°F using the provisions outlined in the California Evaporative Emissions Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles, Part III, Section C, Point 1.8. The data from which is presented in the graph below:



13 PROJECTED USA VEHICLE SALES

Refer to Section 16 of the CBI version of this application.

14 REQUEST FOR CERTIFICATION

14.1 Statement of Compliance:

McLaren Automotive Limited (McLaren) affirms that any element of design, system, or emission control device installed on or incorporated in McLaren'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 McLaren's information and belief, cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk of public health or welfare except as specifically permitted by the standards prescribed under Section 202 of the Clean Air Act.

McLaren further states that any element of design, system, or emission control device installed on or incorporated in McLaren'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 McLaren's information and belief, cause or contribute to an unreasonable risk to the public safety.

The term pollutant means:

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

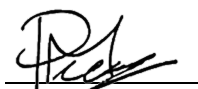
or any other pollutant which McLaren has identified which can reasonably be expected to be emitted from these vehicles.

The test vehicle with respect to which data is submitted is in all material respects as described in the application for certification and has been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the application for certification. It meets the requirements of such tests, and on the basis of such tests, it conforms to the requirements of the regulations in 40 CFR Part 86 Subpart S.

The test vehicle for which certification is requested conforms to the requirements in 40 CFR 86.1810-17(a) and the description of tests performed to ascertain compliance with the general standards in 40 CFR 86.1810-17(a), and the data derived from such tests, is available.

McLaren Automotive Limited herewith applies for the Federal Certificate of Conformity and a California ARB Executive Order for the Test Group VMLNV03.0M16.

This Test Group complies with all applicable regulations contained in 40 Code of Federal Regulations Part 86 and the California Code of Regulations.



Peter Montague

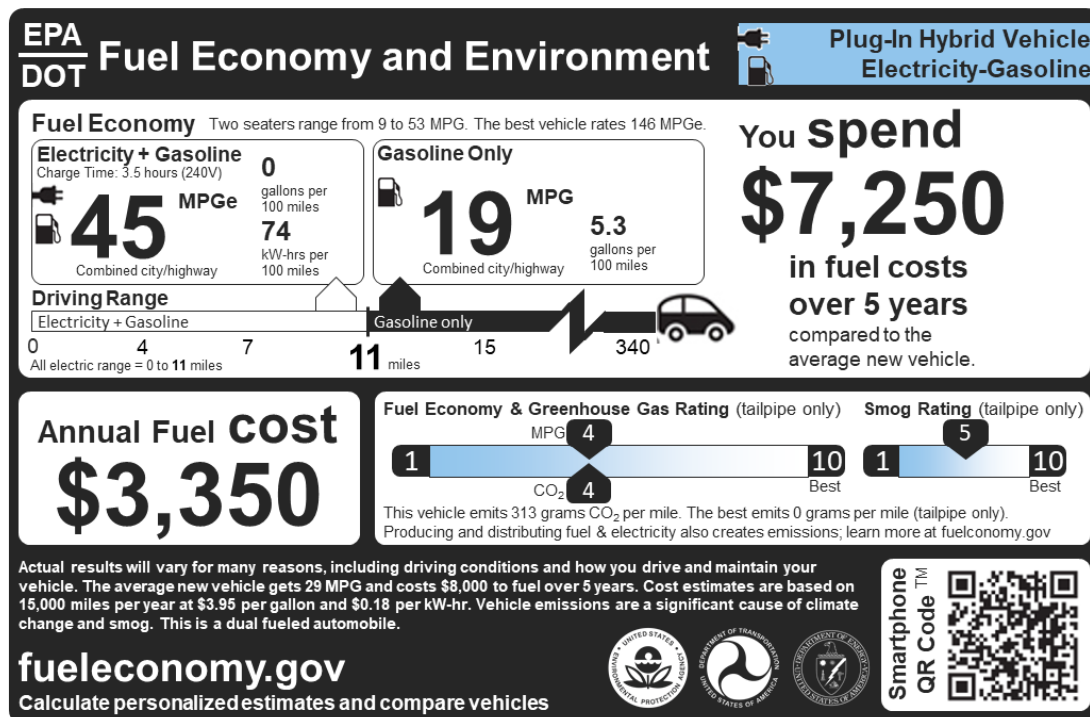
Head of Homologation, McLaren Automotive Limited

15 OTHER INFORMATION

15.1 Vehicle Emission Control Information Label

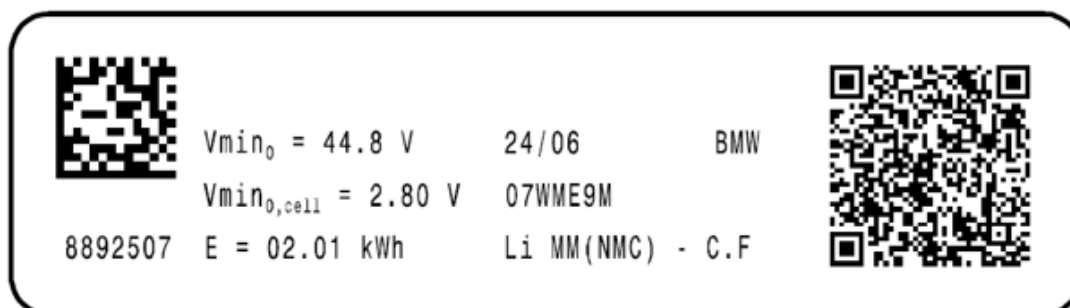
McLAREN AUTOMOTIVE LTD	
VEHICLE EMISSION CONTROL INFORMATION	
CONFORMS TO REGULATIONS: 2027MY	
TEST GROUP: VMLNV03.0M16	
EVAP FAMILY: VMLNR0130M16	
MONITOR FAMILY: M16	
U.S. EPA: INTERIM T4 B50 LDV	FUEL: GASOLINE
CALIFORNIA: LEV IV ULEV50 PC	OBD: II
2TWC(2)/2WR-HO2S/2HO2S/DFI/2TC/2CAC	
NO ADJUSTMENTS NEEDED	
REMARKS:	
	16PA###CP

15.2 Fuel Economy Label

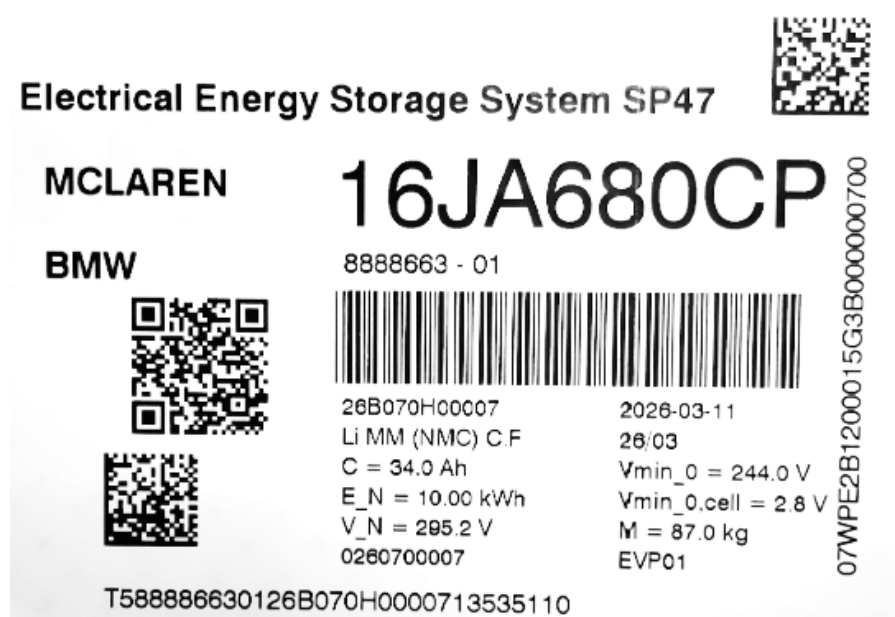


15.3 Battery Labels

15.3.1 Module Label



15.3.2 Pack Label



15.3.3 Vehicle Label



15.4 Certification Fee Payment

To the representative for McLaren Automotive Limited:

Your certification Fee Filing Form(s) submitted for the following family or test group(s) and the associated financial documentation for your payment of \$64634.00 were received on 04/03/2026.

- VMLNV03.0M16

- VMLNV04.0M22

This message indicates only that EPA has received record of your payment and form(s) for the above certification fee. It does not constitute the granting of a Certificate of Conformity by EPA or convey any information about the status of your certification application for the subject family or test group(s).

Please do not respond to this email. If you have any questions regarding certification of the family or test group(s), please contact your EPA Certification Representative; for questions on fees, contact Fees@epa.gov.