

Application for Certification

Part 1



FORD MOTOR COMPANY

APPLICATION FOR CERTIFICATION - PART 1

2022 Model Year

Test Group: NFMXD07.363H

Evaporative Families: NFMXR0250NHJ
NFMXR0360NHJ

Durability Group: NFMXGPGNND2A

Test Group Description: 7.3 Liter V8 <= 10k GVWR

Durability Group Description: Four Stroke, Otto Cycle,
Gasoline Fueled, Sequential FI,
Catalyst Code D (Pd/Rh)

Applicable Standards: Federal Exhaust - Tier 3 Bin 200
California Exhaust - LEV III ULEV200
Evaporative - Tier 3/Lev III
SFTP FEL - 0.800 g/mi NMOG+NOx
PM - 8 mg/mi

Carlines Covered: F250 4X2, F250 4X4, F350 4X2, F350 4X4

Vehicles Tested:

Exhaust Emissions Vehicle: LFE1-7.3-J-585 Config 0		Exhaust Emissions Vehicle: LFE1-7.3-J-591 Config 0		Evap Emissions Vehicle: LFE1-6.2-571 Config 0	Evap Emissions Vehicle: LFE1-6.2-J-578 Config 0
US06	LFMX10060509	FTP	LFMX91004398	LFMXR0250NHJ	LFMXR0360NHJ
50 NMOG	LFMX10065866	HWY	LFMX91004397		
		SC03	LFMX10060143	3Day: LFMX10061480	3Day: LFMX10061061
		FTP E0	LFMX10060378	RL: LFMX10061482	RL: LFMX10061062
		HWY E0	LFMX10060379	ORVR: LFMX10061481	ORVR: LFMX10061057
				2-Day: LFMX10061483	2-Day: LFMX10061060
				BETP: LFMX10065858	BETP: LFMX10065864

Release Date: July 13th, 2021

For Questions, Contact: Reid Cuddy, rcuddy@ford.com (313) 805-3619



Part 1 Application Index

- § 00.00.00.00 Cover Page**
- § 02.00.00.00 Durability Group Description**
- § 03.00.00.00 Evaporative/ Refueling Family Description**
- § 04.00.00.00 Durability Procedure Description**
- § 05.00.00.00 Test Group Description**
- § 06.00.00.00 Test Vehicle Description**
- § 07.00.00.00 Test Results**
 - 07.00.01.00 EPA Certification Summary Information (CSI) report(s)
- § 08.00.00.00 Emission Testing Waiver Statements**
 - 08.00.01.00 Statements of compliance
- § 09.00.00.00 OBDII System Description**
- § 10.00.00.00 Alternate –Fueled Vehicle Description**
- § 11.00.00.00 AECD Descriptions**
- § 12.00.00.00 Description of Vehicles Covered by Certificate and Test Parameters**
 - 12.00.01.00 Common Family Parameters
 - 12.00.02.00 Calibration Description
 - 12.00.03.00 Calibration Parts List
 - 12.00.05.00 Test Vehicle Requirements
 - 12.00.06.00 Vehicle Description Reports
- § 14.00.00.00 Request for Certification**
- § 15.00.00.00 Other Information**
 - 15.00.01.00 Fee Filing Form
- § 16.00.00.00 Confidential Information**
 - 16.00.01.00 Family Catalyst Information
 - 16.00.03.00 OBD II Deficiency Summary
 - 16.00.04.00 DF Summary
 - 16.00.05.00 PowerTrain Control Module (PCM) - Parameters
- § 17.00.00.00 California ARB Information**
 - 17.00.01.00 Certification Review Sheet
 - 17.00.02.00 Supplemental Data Sheet
 - 17.00.03.00 VECI Label
- § 18.00.00.00 Revisions**

Part 2 Application Index **(Running change updates)**



SECTION 2

Durability Group Description

For a description of the Durability Group for this test group refer to Section 16.00.00.00 of the Common Section.



SECTION 3

Evaporative/Refueling Family Description

03.00.01.00 Evaporative Family and Calibration Parameters

Evaporative Family Names:

NFMXR0250NHJ (Complete Pickup; 34.5 gallon fuel tank; ORVR; 6.2L FFV and 7.3L)

2022 6.2L FFV and 7.3L F-250 / F-350

<u>Emission Component</u>	<u>Sensed Parameter</u>	<u>Controlled Parameter</u>	<u>Justification</u>	<u>Calibration Specification</u>
Fuel Cap LC34-9030-AA (7.3L Only) LC34-9030-CA (6.2L FFV Only)	None	Fuel Tank Vapor	Operates in EVAP	
Fuel Filler Pipe with ORVR Recirculation Orifice (Complete Only) MC34-9034-AA (Short Box Pickup) MC34-9034-BA (Long Box Pickup)	None	Vapor Recirculation	Operates in ORVR	Recirc. Orifice Diameter: 2.0 mm
Combo Fuel Limiting Vent Valve & Grade Vent Valve HC34-9B190-AE	Fuel Tank Vapor	Fuel Tank Vapor	Operates in EVAP and/or ORVR	FLVV Orifice: 10.3 mm GVV Orifice: 2.5 mm
Grade Vent Valve HC34-9B593-CB	Fuel Tank Vapor	Fuel Tank Vapor	Operates in EVAP	GVV Orifice: 2.0mm
Fuel Tank Pressure Sensor 9U5A-9C052-CD	Fuel Tank Pressure	None	Operates in FTP	
Carbon Canister LU5A-9D653-MA	None	Fuel Vapor	Operates in EVAP and/or ORVR	250g BWC 3.8 liter Total Volume (includes 2 x 0.048L Bleed)
Canister Purge Valve EU5A-9G866-BD (7.3L Only) AU5A-9G866-AB (6.2L FFV Only)	Signal from PCM	Vacuum to canister	Operates in FTP	85 SLPM
Vapor Blocking Valve (VBV) GU5A-9G712-CC	None	Fuel Tank Vapor	Operates in FTP	
AIS Hydrocarbon Trap GN15-9T303-AA	None	Fuel Vapor	Operates in EVAP	

03.00.01.00 Evaporative Family and Calibration Parameters

Evaporative Family Names:

NFMXR0360NHJ (Complete Pickup; 48.9 gallon fuel tank; ORVR; 6.2L FFV and 7.3L)

2022 6.2L FFV and 7.3L F-350

<u>Emission Component</u>	<u>Sensed Parameter</u>	<u>Controlled Parameter</u>	<u>Justification</u>	<u>Calibration Specification</u>
Fuel Cap LC34-9030-AA (7.3L Only) LC34-9030-CA (6.2L FFV Only)	None	Fuel Tank Vapor	Operates in EVAP	
Fuel Filler Pipe with ORVR Recirculation Orifice (Complete Only) MC34-9034-BA	None	Vapor Recirculation	Operates in ORVR	Recirc. Orifice Diameter: 2.0 mm
Combo Fuel Limiting Vent Valve & Grade Vent Valve HC34-9B190-CC	Fuel Tank Vapor	Fuel Tank Vapor	Operates in EVAP and/or ORVR	FLVV Orifice: 10.3 mm GVV Orifice: 1.8 mm
Grade Vent Valve HC34-9B593-AA	Fuel Tank Vapor	Fuel Tank Vapor	Operates in EVAP	GVV Orifice: 4.0mm
Fuel Tank Pressure Sensor 9U5A-9C052-CD	Fuel Tank Pressure	None	Operates in FTP	
Carbon Canister #1 (in-series) LC34-9E857-EB	None	Fuel Vapor	Operates in EVAP and/or ORVR	360g BWC (determined for assembly with all canisters) 1.8L Total Volume (part of 5.7L Total Canister volume)
Carbon Canister #2 (in-series) LU5A-9D653-PA	None	Fuel Vapor	Operates in EVAP and/or ORVR	360g BWC (determined for assembly with all canisters) 3.9L Total Volume (includes 5 x 0.048L Bleed) (part of 5.7L Total Canister volume)
Canister Purge Valve EU5A-9G866-BD (7.3L Only) AU5A-9G866-AB (6.2L FFV Only)	Signal from PCM	Vacuum to canister	Operates in FTP	85 SLPM
Vapor Blocking Valve (VBV) GU5A-9G712-CC	None	Fuel Tank Vapor	Operates in FTP	
AIS Hydrocarbon Trap GN15-9T303-AA	None	Fuel Vapor	Operates in EVAP	



SECTION 4

Durability Procedure Description

For a description of the Durability Procedure,
refer to Section 16.00.00.00 of the Common Section.



SECTION 5

Test Group Description

For a description of this Test Group, refer to the Cover Page (00.00.00.00) and to the Test Results Section (07.00.00.00) of this application.



SECTION 6

Test Vehicle Description

For a description of the Test Vehicles utilized in this Test Group,
refer to Section 07.00.00.00 of this application.



SECTION 7

EPA Certification Summary Information Report (Test Results)

Certification Summary Information Report

Manufacturer	Ford Motor Company	Manufacturer Code	FMX
Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	03/24/2021 10:58:55 AM
Model Year	2022		

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

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Multipoint/sequential fuel injection	No

Hybrid Indicator	No		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	--
Fuel Cell Indicator	--	EPA Vehicle Class	HDV1, M6
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	NFMXGPGNND2A	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	Yes		
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	Yes
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	NFMXT02.52NG
Test Group OBD Compliance Level	Partial - with deficiencies and penalty	Number of Test Group OBD Deficiencies	3
OBD Deficiencies Comments	--		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Evaporative/Refueling Family Information			
Evaporative Summary Information Type	New	Submission/Correction Date	03/23/2021 06:27:59 PM
Integrated ORVR?	Yes	Fuel(s)	Gasoline, Ethanol
Multiple Fuel Storage	Fuels Stored Together		
Bladder Fuel Tank?	No		
Fuel Tank Material	Plastic	Fuel Tank Material Description	Plastic
Fill Pipe Seal Type	Liquid seal		
Air Intake System Vapor Storage Device?	Yes	Air Intake System Vapor Storage Device Description	Hydrocarbon Trap
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	1x3.7L HA + 2x0.048L BLEED
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	250	Number of Primary Canisters	1
Number of Bleed Canisters	2	Bleed Canister Total Working Capacity (grams)	2
Mfr Evaporative/Refueling Family Comments	F250/350 Completes.		
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	--		
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
NFMXR0250NHJ-001	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
Ford Motor Company	1 - Ford	115 - F250 PICKUP 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	192 - F350 4WD	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	130 - F250 PICKUP 4WD	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	190 - F350 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	130 - F250 PICKUP 4WD	Federal	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	190 - F350 2WD	Federal	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	192 - F350 4WD	Federal	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	115 - F250 PICKUP 2WD	Federal	2-Wheel Drive, Rear	Semi-Automatic	10	Yes

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ	
Engine Description				
Hybrid Type	--	Hybrid Description	--	
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--	
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	V-shaped engine	
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30 API SP	
Number of Cylinders/Rotors	8	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	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
Mfr After Treatment Device (ATD) Comments				
2TWC				
Direct Ozone Reduction (DOR) Device				
Not Equipped				
Mfr Emission Control Device Comments				
--				
Engine Configuration Number 1				
Engine Displacement (liters)	7.3	Engine Rated Horsepower	430	
Number of Inlet Valves Per Cylinder	1	Number of Exhaust Valves Per Cylinder	1	
Air Aspiration Method	Naturally Aspirated	Number of Air Aspiration Devices	--	
Air Aspiration Device Configuration	--	Charge Air Cooler Type	N/A	
Air Aspiration Drive Method(s)	--			
Cylinder Deactivation	No			
Cylinder Deactivation Description	--			
Variable Valve Timing	Yes			
Variable Valve Timing System Description	Oil pressure actuated			
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	Other	Air/Fuel Sensor # 3 Description	WR-HO2S	
Air/Fuel Sensor # 4 Type	Other	Air/Fuel Sensor # 4 Description	WR-HO2S	
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	--			

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family		NFMXR0250NHJ			
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		LFMX91004398	LFMX10060509	LFMX10060143	--	LFMX91004397	--	228.2	--	286.1	1
SFTP LEV-III Official Test Numbers											
Test Group Fuel		FTP			US06		SC03				
Gasoline		LFMX91004398			LFMX10060509		LFMX10060143				

Page 5 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ									
Manufacturer Test Vehicle Comments	F-350 Crew Cab 4x4 SRW											
Test #	LFMX10061480	Test Procedure	34 - Federal fuel 3-day evap									
Exhaust Test # for this Evap Test	LFMX10061479	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)									
Test Date	09/13/2019	Fuel	Gasoline									
Fuel Batch ID	--	Fuel Calibration Number	--									
Vehicle Class	N/A	DF Type	Mfr. Determined									
Verify Test Lab ID	APTL											
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)											
Test Start Odometer Reading	4001	Odometer Units	M									
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--									
State of Charge Delta	--											
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	--									
Test Results												
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>OMHCE (Organic material Hydrocarbon Equivalent)</td> <td>0.3521</td> <td>--</td> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.3521</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	OMHCE (Organic material Hydrocarbon Equivalent)	0.3521	--	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3521	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)										
OMHCE (Organic material Hydrocarbon Equivalent)	0.3521	--										
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3521	--										
Manufacturer Test Comments	3-Day											
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	0.3521	0.0000	0.352	0.600	Pass				
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.3521	0.0000	0.352	0.600	Pass				

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10061483	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	LFMX10061479	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/16/2019	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3846	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.2307	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.2307	--

Manufacturer Test Comments

Measured NMOG

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	0.2307	0.0000	0.231	0.600	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.2307	0.0000	0.231	0.600	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ									
Test #	LFMX10061481	Test Procedure	24 - Federal fuel refueling test (ORVR)									
Exhaust Test # for this Evap Test	LFMX10061479	Test Fuel Type	37 - E10 (10% Ethanol 90% EPA Unleaded Gasoline)									
Test Date	08/28/2019	Fuel	N/A									
Fuel Batch ID	--	Fuel Calibration Number	--									
Vehicle Class	N/A	DF Type	Mfr. Determined									
Verify Test Lab ID	APTL											
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)											
Test Start Odometer Reading	3909	Odometer Units	M									
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--									
State of Charge Delta	--											
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No									
Test Results												
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>OMHCE (Organic material Hydrocarbon Equivalent)</td> <td>0.03737</td> <td>--</td> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.03737</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	OMHCE (Organic material Hydrocarbon Equivalent)	0.03737	--	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.03737	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)										
OMHCE (Organic material Hydrocarbon Equivalent)	0.03737	--										
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.03737	--										
Manufacturer Test Comments	ORVR Test											

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10061482	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	LFMX10061479	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/13/2019	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4001	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0	--

Manufacturer Test Comments

Runloss

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.000	0.000	0.00	0.05	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.000	0.000	0.00	0.05	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10065858	Test Procedure	65 - Evap Canister Bleed Test
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/08/2020	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)		
Test Start Odometer Reading	4001	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.0069	--

Manufacturer Test Comments

Measured NMOG

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	0.0069	0.000	0.007	0.030	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL	0.0069	0.000	0.007	0.030	Pass

Page 11 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Page 12 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10065866	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/02/2020	Fuel	Gasoline
Fuel Batch ID	373-B	Fuel Calibration Number	40
Vehicle Class	MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4759	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	1.3338	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.44	--
DT-EER (Drive Trace Energy Economy Rating)	0.38	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.2	--
HCHO (Formaldehyde)	0.001553	--
NOX (Nitrogen Oxide)	0.0294	--
NMOG (Non-methane organic gases)	0.07062	--
HC-TOTAL (Total Hydrocarbon)	0.0806	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	769.0228	--

Manufacturer Test Comments NMOG = 1.1 * NMHC

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0250NHJ		
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-III ULEV200	CO	1.33	--	--	--	0.0	--	1.3	4.2	Pass
CA	4,000 miles	California LEV-III ULEV200	HCHO	0.0016	--	--	--	0.0	--	0.002	0.016	Pass
CA	4,000 miles	California LEV-III ULEV200	NMOG	0.0706	--	1.1	--	0.0	--	0.071	999.999	Pass
CA	4,000 miles	California LEV-III ULEV200	NMOG+NOX	0.1000	--	--	--	--	--	0.100	0.400	Pass
CA	4,000 miles	California LEV-III ULEV200	NOX	0.0294	--	--	--	0.0	--	0.029	999.999	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10060509	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/24/2019	Fuel	Gasoline
Fuel Batch ID	373-B	Fuel Calibration Number	41
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4731	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	1202.18102	--
FE BAG 1 (Bag 1 Fuel Economy)	7.16495	7.16495
CO2 BAG 2 (Bag 2 Carbon Dioxide)	628.02852	--
FE BAG 2 (Bag 2 Fuel Economy)	13.83673	13.83673
METHANE (CH4 - Methane)	0.00507	--
CO (Carbon Monoxide)	2.59302	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-3.42301	--
DT-EER (Drive Trace Energy Economy Rating)	99.99	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-7.16751	--
MFR FE (Manufacturer Fuel Economy)	11.47312	11.47312
NOX (Nitrogen Oxide)	0.05806	--
HC-NM (Non-methane Hydrocarbon)	0.0071391	--
NMOG (Non-methane organic gases)	0.00733	--
PM (Particulate Matter)	0.0023272	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0651991	--
HC-TOTAL (Total Hydrocarbon)	0.01224	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	754.69565	--

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0250NHJ		
Manufacturer Test Comments		NMOG = 1.03*NMHC										
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 HD Class 2b Bin 200	NMOG	0.0073	--	1.03	--	0.0247	--	0.032	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0581	--	--	--	0.0656	--	0.124	999.999	Pass

Page 17 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Page 18 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10060378	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	07/10/2019	Fuel	Gasoline
Fuel Batch ID	CERT_5	Fuel Calibration Number	137
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4760	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	896.283	--
FE BAG 1 (Bag 1 Fuel Economy)	9.8645883	9.8645883
CO2 BAG 2 (Bag 2 Carbon Dioxide)	899.647	--
FE BAG 2 (Bag 2 Fuel Economy)	9.9195242	9.9195242
CO2 BAG 3 (Bag 3 Carbon Dioxide)	810.243	--
FE BAG 3 (Bag 3 Fuel Economy)	11.021986	11.021986
METHANE (CH4 - Methane)	0.019545	--
CO (Carbon Monoxide)	1.3371	--
METHANE-COMB (Combined CH4 for HD 2b/3 vehicles only)	0.0129	--
N2O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)	0.0008	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.621528	--
DT-EER (Drive Trace Energy Economy Rating)	0.213727	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.1533	--
MFR FE (Manufacturer Fuel Economy)	10.1928678	10.1928678
NOX (Nitrogen Oxide)	0.0427782	--
N2O (Nitrous Oxide)	0.0014617	--
HC-NM (Non-methane Hydrocarbon)	0.0404905	--
NMOG (Non-methane organic gases)	0.0421101	--
HC-TOTAL (Total Hydrocarbon)	0.05857	--

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0250NHJ		
		Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE						
		Carbon-Related Exhaust Emissions		876		876						
		Optional Carbon-Related Exhaust Emissions		877		877						
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		874.387		--						
Manufacturer Test Comments		E0 GHG NMOG = 1.04 * NMHC _r										
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 HD Class 2b Bin 200	CO	1.34	--	--	--	1.32	--	2.7	4.2	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	CO2	876	--	--	--	0.0	--	876	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	METHANE-COMB	0.0129	--	--	--	0.0152	--	0.028	0.050	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	N2O-COMB	0.0008	--	--	--	0.0105	--	0.011	0.050	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0421	--	1.1	--	0.0247	--	0.067	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0849	--	--	--	--	--	0.175	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0428	--	--	--	0.0656	--	0.108	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	CO	1.34	--	--	--	1.32	--	2.7	4.2	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	876	--	--	--	0.0	--	876	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0421	--	1.1	--	0.0247	--	0.067	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0849	--	--	--	--	--	0.175	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0428	--	--	--	0.0656	--	0.108	999.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX91004398	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/09/2019	Fuel	Gasoline
Fuel Batch ID	27723	Fuel Calibration Number	1
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4838	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	913.5244751	--
FE BAG 1 (Bag 1 Fuel Economy)	999	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	870.0299683	--
FE BAG 2 (Bag 2 Fuel Economy)	999	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	785.7267456	--
FE BAG 3 (Bag 3 Fuel Economy)	999	--
METHANE (CH4 - Methane)	0.0219266	--
CO (Carbon Monoxide)	1.9709315	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.2206827	--
DT-EER (Drive Trace Energy Economy Rating)	1.9373193	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.7501837	--
MFR FE (Manufacturer Fuel Economy)	999	--
NOX (Nitrogen Oxide)	0.0260508	--
N2O (Nitrous Oxide)	0.002182	--
HC-NM (Non-methane Hydrocarbon)	0.054684	--
NMOG (Non-methane organic gases)	0.0600317	--
PM (Particulate Matter)	0.0007988	--
HC-TOTAL (Total Hydrocarbon)	0.0759244	--

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ						
	<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated CREE/OPT-CREE</th></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>9999.9999999</td><td>999</td></tr></table>			Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	Carbon-Related Exhaust Emissions	9999.9999999	999
	Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE						
	Carbon-Related Exhaust Emissions	9999.9999999	999						
	<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated CO2</th></tr><tr><td>Carbon dioxide</td><td>855.8945923</td><td>--</td></tr></table>			Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	855.8945923	--
	Test Result Name	Unrounded Test Result	Verify Calculated CO2						
	Carbon dioxide	855.8945923	--						
	Manufacturer Test Comments								
	None								
	Unrounded Result for the following test results were modified by Verify: FE BAG 3, FE BAG 1, MFR FE, FE BAG 2								

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family					NFMXR0250NHJ		
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 HD Class 2b Bin 200	CO	1.97	--	--	--	1.32	--	3.3	4.2	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	CO-COMP	3.0	--	--	--	0	--	3	22	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	CO2	999	--	--	--	0.0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0600	--	1.1	--	0.0247	--	0.085	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0861	--	--	--	--	--	0.176	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX-COMP	0.1571	--	--	--	0	--	0.157	0.800	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0261	--	--	--	0.0656	--	0.092	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	PM	0.0008	--	--	--	0.0000	--	0.001	0.008	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	PM-COMP	0.0022	--	--	--	0	--	0.002	0.010	Pass
CA	150,000 miles	California LEV-III ULEV200	CO	1.97	--	--	--	1.32	--	3.3	4.2	Pass
CA	150,000 miles	California LEV-III ULEV200	CO-COMP	3.0	--	--	--	0	--	3	22	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	999	--	--	--	0.0	--	999	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0600	--	1.1	--	0.0247	--	0.085	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0861	--	--	--	--	--	0.176	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX-COMP	0.1571	--	--	--	0	--	0.157	0.800	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0261	--	--	--	0.0656	--	0.092	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	PM	0.0008	--	--	--	0.0000	--	0.001	0.008	Pass
CA	150,000 miles	California LEV-III ULEV200	PM-COMP	0.0022	--	--	--	0	--	0.002	0.010	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10060379	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	07/10/2019	Fuel	Gasoline
Fuel Batch ID	CERT_5	Fuel Calibration Number	137
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4771	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0048806	--
CO (Carbon Monoxide)	0.0589643	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.26523	--
DT-EER (Drive Trace Energy Economy Rating)	0.443409	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.62862	--
MFR FE (Manufacturer Fuel Economy)	15.187528	15.187528
NOX (Nitrogen Oxide)	0.0128043	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0004424	--
NMOG (Non-methane organic gases)	0.0004601	--
HC-TOTAL (Total Hydrocarbon)	0.0049571	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	588	588
Optional Carbon-Related Exhaust Emissions	588	588

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	587.616	--

Manufacturer Test Comments

E0 GHG NMOG = 1.04 * NMHC_r

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0250NHJ		
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 HD Class 2b Bin 200	CO2	588	--	--	--	0.0	--	588	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0005	--	1.1	--	0.0247	--	0.025	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0133	--	--	--	--	--	0.104	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0128	--	--	--	0.0656	--	0.078	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	588	--	--	--	0.0	--	588	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0005	--	1.1	--	0.0247	--	0.025	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0133	--	--	--	--	--	0.104	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0128	--	--	--	0.0656	--	0.078	999.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ																																				
Test #	LFMX91004397	Test Procedure	3 - HWFE																																				
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)																																				
Test Date	08/09/2019	Fuel	Gasoline																																				
Fuel Batch ID	27723	Fuel Calibration Number	1																																				
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined																																				
Verify Test Lab ID	--																																						
E10 Evaporative Test Measurement Method	--																																						
Test Start Odometer Reading	4849	Odometer Units	M																																				
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																				
State of Charge Delta	--																																						
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes																																				
Test Results																																							
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>METHANE (CH4 - Methane)</td> <td>0.0041496</td> <td>--</td> </tr> <tr> <td>CO (Carbon Monoxide)</td> <td>0.030376</td> <td>--</td> </tr> <tr> <td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td> <td>0.8526726</td> <td>--</td> </tr> <tr> <td>DT-EER (Drive Trace Energy Economy Rating)</td> <td>0.6944497</td> <td>--</td> </tr> <tr> <td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td> <td>1.1964048</td> <td>--</td> </tr> <tr> <td>MFR FE (Manufacturer Fuel Economy)</td> <td>15.1675625</td> <td>--</td> </tr> <tr> <td>NOX (Nitrogen Oxide)</td> <td>0.0114339</td> <td>--</td> </tr> <tr> <td>N2O (Nitrous Oxide)</td> <td>0.0005522</td> <td>--</td> </tr> <tr> <td>HC-NM (Non-methane Hydrocarbon)</td> <td>0.0015421</td> <td>--</td> </tr> <tr> <td>NMOG (Non-methane organic gases)</td> <td>0.0015883</td> <td>--</td> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td>0.0055618</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	METHANE (CH4 - Methane)	0.0041496	--	CO (Carbon Monoxide)	0.030376	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.8526726	--	DT-EER (Drive Trace Energy Economy Rating)	0.6944497	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.1964048	--	MFR FE (Manufacturer Fuel Economy)	15.1675625	--	NOX (Nitrogen Oxide)	0.0114339	--	N2O (Nitrous Oxide)	0.0005522	--	HC-NM (Non-methane Hydrocarbon)	0.0015421	--	NMOG (Non-methane organic gases)	0.0015883	--	HC-TOTAL (Total Hydrocarbon)	0.0055618	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																					
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<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated CREE/OPT-CREE</th> </tr> </thead> <tbody> <tr> <td>Carbon-Related Exhaust Emissions</td> <td>9999.9999999</td> <td>999</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	Carbon-Related Exhaust Emissions	9999.9999999	999																														
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE																																					
Carbon-Related Exhaust Emissions	9999.9999999	999																																					
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated CO2</th> </tr> </thead> <tbody> <tr> <td>Carbon dioxide</td> <td>570.9714966</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	570.9714966	--																														
Test Result Name	Unrounded Test Result	Verify Calculated CO2																																					
Carbon dioxide	570.9714966	--																																					
Manufacturer Test Comments	None																																						

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family					NFMXR0250NHJ		
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 HD Class 2b Bin 200	CO2	999	--	--	--	0.0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0016	--	1.1	--	0.0247	--	0.026	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0130	--	--	--	--	--	0.103	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0114	--	--	--	0.0656	--	0.077	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	999	--	--	--	0.0	--	999	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0016	--	1.1	--	0.0247	--	0.026	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0130	--	--	--	--	--	0.103	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0114	--	--	--	0.0656	--	0.077	999.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Test #	LFMX10060143	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/11/2019	Fuel	N/A
Fuel Batch ID	373-B	Fuel Calibration Number	40
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4746	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO (Carbon Monoxide)	0.7163	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.34649	--	
DT-EER (Drive Trace Energy Economy Rating)	0.571304	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.60864	--	
MFR FE (Manufacturer Fuel Economy)	9.17507	9.17507	
NOX (Nitrogen Oxide)	0.03191	--	
HC-NM (Non-methane Hydrocarbon)	0.0171678	--	
NMOG (Non-methane organic gases)	0.01769	--	
PM (Particulate Matter)	0.0034	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0490778	--	
HC-TOTAL (Total Hydrocarbon)	0.03487	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	948.12314	--	
Manufacturer Test Comments	NMOG = 1.03 * NMHCr		

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
Fuel Properties			
Fuel Batch ID	373-B	Fuel Calibration Number	41
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/20/2019
Fuel Batch Calibration Effective Date	06/20/2019	Fuel Batch Calibration Ineffective Date	12/31/2100
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.75
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value (BTU / lb)	17965
Fuel Blend Carbon Weight Fraction	0.831	Weight Fraction CO2	--
Fuel Batch ID	27723	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	05/09/2019
Fuel Batch Calibration Effective Date	05/09/2019	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	0.747
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value (BTU / lb)	17954
Fuel Blend Carbon Weight Fraction	0.827	Weight Fraction CO2	--
Fuel Batch ID	373-B	Fuel Calibration Number	40
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	05/21/2019
Fuel Batch Calibration Effective Date	05/21/2019	Fuel Batch Calibration Ineffective Date	12/31/2100
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 (%)	9.5	Fuel Net Heating Value (BTU / lb)	17965
Fuel Blend Carbon Weight Fraction	0.831	Weight Fraction CO2	--
Fuel Batch ID	CERT_5	Fuel Calibration Number	137
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	07/08/2019
Fuel Batch Calibration Effective Date	07/08/2019	Fuel Batch Calibration Ineffective Date	12/31/2100
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.747
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18438
Fuel Blend Carbon Weight Fraction	0.867	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family			NFMXR0250NHJ		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 200	
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	--	--	--	--	--	--	1.32	4.2
150,000 miles	CO-COMP	--	--	--	--	--	--	0	22
150,000 miles	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	HCHO	--	--	--	--	--	--	0.0004	0.006
150,000 miles	METHANE-COMB	--	--	--	--	--	--	0.0152	0.050
150,000 miles	N2O-COMB	--	--	--	--	--	--	0.0105	0.050
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.800
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.008
150,000 miles	PM-COMP	--	--	--	--	--	--	0	0.010

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family			NFMXR0250NHJ	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)			Standard Level			California LEV-III ULEV200	
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	--	--	--	--	--	--	1.32	4.2
150,000 miles	CO-COMP	--	--	--	--	--	--	0	22
150,000 miles	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	HCHO	--	--	--	--	--	--	0.0004	0.006
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.800
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.008
150,000 miles	PM-COMP	--	--	--	--	--	--	0	0.010
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)			Standard Level			California LEV-III ULEV200	
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	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 200	
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	NMOG	--	--	1.03	--	--	--	0.0247	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family			NFMXR0250NHJ	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 200	
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	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)			Standard Level			California LEV-III ULEV200	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
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	4.2
4,000 miles	HCHO	--	--	--	--	--	--	0.0	0.016
4,000 miles	NMOG	--	--	1.1	--	--	--	0.0	999.999
4,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.400
4,000 miles	NOX	--	--	--	--	--	--	0.0	999.999

Evaporative/Refueling Standards

Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	OMHCE	--	0.05	0.000		

Evaporative/Refueling Family		NFMXR0250NHJ		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	--	0.20	0.003		

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family		NFMXR0250NHJ	
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III 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	OMHCE	--	0.20	0.003		
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III 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	--	0.030	0.000		
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000		

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family		NFMXR0250NHJ	
Evaporative/Refueling Family		NFMXR0250NHJ		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	--	0.030	0.000		
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	OMHCE	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0250NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	OMHCE	--	0.600	0.0000		

Certification Summary Information Report

Test Group		NFMXD07.363H	Evaporative/Refueling Family		NFMXR0250NHJ
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		METHANOL	CH3OH - Methanol	
CO	Carbon Monoxide		N2O	Nitrous Oxide	
CO2	Carbon dioxide		SPITBACK	Spitback Hydrocarbon in grams	
CREE	Carbon-Related Exhaust Emissions		AMP-HRS	Integrated Amp-hours	
OPT-CREE	Optional Carbon-Related Exhaust Emissions		START-SOC	System Start State of Charge Watt-hours	
NOX	Nitrogen Oxide		END-SOC	System End State of Charge Watt-hours	
PM	Particulate Matter		ACT-DISTANCE	Actual Distance Driven (miles)	
PM-COMP	SFTP Composite Particulate Matter		AS-VOLT	Average System Voltage	
HC-NM	Non-methane Hydrocarbon		CO2 BAG 1	Bag 1 Carbon Dioxide	
OMHCE	Organic material Hydrocarbon Equivalent		CO2 BAG 2	Bag 2 Carbon Dioxide	
OMNMHCE	Organic material non-methane HC equivalent		CO2 BAG 3	Bag 3 Carbon Dioxide	
NMOG	Non-methane organic gases		CO2 BAG 4	Bag 4 Carbon Dioxide	
HCHO	Formaldehyde		NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides	
H3C2HO	Acetaldehyde		NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides	
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03		DT-IWRR	Drive Trace Inertia Work Ratio Rating	
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides		DT-ASCR	Drive Trace Absolute Speed Change Rating	
CO-COMP	SFTP Composite Carbon Monoxide		DT-EER	Drive Trace Energy Economy Rating	
ETHANOL	C2H5OH - Ethanol		COMB-CREE	Combined Carbon-Related Exhaust Emissions	
FE BAG 1	Bag 1 Fuel Economy		COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions	
FE BAG 2	Bag 2 Fuel Economy		HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only	
FE BAG 3	Bag 3 Fuel Economy		METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only	
FE BAG 4	Bag 4 Fuel Economy		N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only	
MFR FE	Manufacturer Fuel Economy		LEAK-DIA	Effective Leak Diameter (inches)	
HC	Hydrocarbon for Running Loss and ORVR		LEAK-GAS CAP	Gas Cap Leakage (cc/min)	
METHANE	CH4 - Methane		CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		L3ULEV340	California LEV-III ULEV340	
B2	Federal Tier 2 Bin 2		L3ULEV250	California LEV-III ULEV250	
B3	Federal Tier 2 Bin 3		L3ULEV200	California LEV-III ULEV200	
B4	Federal Tier 2 Bin 4		L3SULEV170	California LEV-III SULEV170	
B5	Federal Tier 2 Bin 5		L3SULEV150	California LEV-III SULEV150	

Certification Summary Information Report

Test Group		NFMXD07.363H	Evaporative/Refueling Family	NFMXR0250NHJ
B6	Federal Tier 2 Bin 6		L3LEV630	California LEV-III LEV630
B7	Federal Tier 2 Bin 7		L3ULEV570	California LEV-III ULEV570
B8	Federal Tier 2 Bin 8		L3ULEV400	California LEV-III ULEV400
B9	Federal Tier 2 Bin 9		L3ULEV270	California LEV-III ULEV270
B10	Federal Tier 2 Bin 10		L3SULEV230	California LEV-III SULEV230
B11	Federal Tier 2 Bin 11		L3SULEV200	California LEV-III SULEV200
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		T3B160	Federal Tier 3 Bin 160
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		T3B125	Federal Tier 3 Bin 125
L2	California LEV-II LEV		T3B110	Federal Tier 3 Transitional Bin 110
L2OP	California LEV-II LEV Optional		T3B85	Federal Tier 3 Transitional Bin 85
U2	California LEV-II ULEV		T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
S2	California LEV-II SULEV		T3B70	Federal Tier 3 Bin 70
ZEV	California ZEV		T3B50	Federal Tier 3 Bin 50
OT	Other		T3B30	Federal Tier 3 Bin 30
T1	Federal Tier 1		T3B20	Federal Tier 3 Bin 20
PZEV	California PZEV		T3B0	Federal Tier 3 Bin 0
L2LEV160	California LEV-II LEV160		HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
L2ULEV125	California LEV-II ULEV125		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
L2SULEV30	California LEV-II SULEV30		HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2LEV395	California LEV-II LEV395		HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2ULEV340	California LEV-II ULEV340		HDV2B170	Federal Tier 3 HD Class 2b Bin 170
L2LEV630	California LEV-II LEV630		HDV2B150	Federal Tier 3 HD Class 2b Bin 150
L2ULEV570	California LEV-II ULEV570		HDV2B0	Federal Tier 3 HD Class 2b Bin 0
L3LEV160	California LEV-III LEV160		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
L3ULEV125	California LEV-III ULEV125		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
L3ULEV70	California LEV-III ULEV70		HDV3B400	Federal Tier 3 HD Class 3 Bin 400
L3ULEV50	California LEV-III ULEV50		HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L3SULEV30	California LEV-III SULEV30		HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L3SULEV20	California LEV-III SULEV20		HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L3LEV395	California LEV-III LEV395		HDV3B0	Federal Tier 3 HD Class 3 Bin 0
Transmission Type Code				
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual	
A	Automatic	OT	Other	
AM	Automated Manual	SA	Semi-Automatic	
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)	
Drive System Code				
4	4-Wheel Drive	P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front	A	All Wheel Drive	
R	2-Wheel Drive, Rear			

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family		NFMXR0250NHJ	
Additional Terms and Acronyms							
AFC	Alternative Fuel Converter			ICI	Independent Commercial Importer		
CSI	Certificate Summary Information			ORVR	Onboard Refueling Vapor Recovery		
DF	Deterioration Factor			SIL	Shift Indicator Light		
Evap	Evaporation, Evaporative			Trans	Transmission		

Certification Summary Information Report

Manufacturer	Ford Motor Company	Manufacturer Code	FMX
Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	03/24/2021 10:58:55 AM
Model Year	2022		

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

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Multipoint/sequential fuel injection	No

Hybrid Indicator	No		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	--
Fuel Cell Indicator	--	EPA Vehicle Class	HDV1, M6
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	NFMXGPGNND2A	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	Yes		
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	Yes
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	NFMXT02.52NG
Test Group OBD Compliance Level	Partial - with deficiencies and penalty	Number of Test Group OBD Deficiencies	3
OBD Deficiencies Comments	--		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	03/23/2021 06:27:59 PM				
Integrated ORVR?	Yes	Fuel(s)	Ethanol, Gasoline				
Multiple Fuel Storage	Fuels Stored Together						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	Plastic				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	Yes	Air Intake System Vapor Storage Device Description	Hydrocarbon Trap				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	1x3.7L HA + 1x1.8L HA +5x0.48L				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	360	Number of Primary Canisters	2				
Number of Bleed Canisters	5	Bleed Canister Total Working Capacity (grams)	2				
Mfr Evaporative/Refueling Family Comments	F250/350 Completes.						
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	--						
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				
NFMXR0360NHJ-001	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
Ford Motor Company	1 - Ford	192 - F350 4WD	Federal	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	190 - F350 2WD	Federal	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	115 - F250 PICKUP 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	115 - F250 PICKUP 2WD	Federal	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	130 - F250 PICKUP 4WD	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	190 - F350 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	192 - F350 4WD	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	130 - F250 PICKUP 4WD	Federal	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ	
Engine Description				
Hybrid Type	--	Hybrid Description	--	
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--	
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	V-shaped engine	
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30 API SP	
Number of Cylinders/Rotors	8	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	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
Mfr After Treatment Device (ATD) Comments				
2TWC				
Direct Ozone Reduction (DOR) Device				
Not Equipped				
Mfr Emission Control Device Comments				
--				
Engine Configuration Number 1				
Engine Displacement (liters)	7.3	Engine Rated Horsepower	430	
Number of Inlet Valves Per Cylinder	1	Number of Exhaust Valves Per Cylinder	1	
Air Aspiration Method	Naturally Aspirated	Number of Air Aspiration Devices	--	
Air Aspiration Device Configuration	--	Charge Air Cooler Type	N/A	
Air Aspiration Drive Method(s)	--			
Cylinder Deactivation	No			
Cylinder Deactivation Description	--			
Variable Valve Timing	Yes			
Variable Valve Timing System Description	Oil pressure actuated			
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	Other	Air/Fuel Sensor # 3 Description	WR-HO2S	
Air/Fuel Sensor # 4 Type	Other	Air/Fuel Sensor # 4 Description	WR-HO2S	
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	--			

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family		NFMXR0360NHJ			
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		LFMX91004398	LFMX10060509	LFMX10060143	--	LFMX91004397	--	228.2	--	286.1	1

SFTP LEV-III Official Test Numbers					
Test Group Fuel		FTP		US06	SC03
Gasoline		LFMX91004398		LFMX10060509	LFMX10060143

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ					
Emission Data Vehicle Information								
Vehicle ID / Configuration	LFE1-6.2-J-578 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	LFMXD06.26BC	Original Evaporative/Refueling Family	LFMXF0360NHJ					
Original Test Vehicle Model Year	2020							
Vehicle Model								
Represented Test Vehicle Make	Ford	Represented Test Vehicle Model	F350 4x4					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline, Ethanol</td> </tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline, Ethanol	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline, Ethanol						
Hybrid Indicator	No							
Multiple Fuel Storage	Fuels Stored Together	Multiple Fuel Combustion	Fuels Combusted Together					
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--					
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--					
Off-board charge Capable Indicator	--							
Odometer Correction -- Initial	0	Odometer Correction Factor	1.03					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	LTFETRNG05	Rated Horsepower	383					
Displacement (liters)	6.2							
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	--	Air Aspiration Device Configuration	--					
Charge Air Cooler Type	N/A	Drive Mode While Testing	2-Wheel Drive, Rear					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	9000	Equivalent Test Weight (pounds)	9500					
GVWR (lbs)	10000	N/V Ratio	30					
Axle Ratio	4.3							
Transmission Type	Semi-Automatic	# of Transmission Gears	10					
Transmission Lockup	Yes	Creep Gear	No					
Dynamometer Coefficients:								
	Target Coefficients		Set Coefficients					
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
City/Highway/Evap	72.06	1.1573	0.11685					
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
	31.71	0.58462	0.1229					
	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients							
	56.3							
Emission Control Device Comments	T20-0255-01 60 ft^2							

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Manufacturer Test Vehicle Comments	F-350 Crew Cab 4x4 SRW		
Test #	LFMX10061060	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	LFMX10061056	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/23/2019	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)		
Test Start Odometer Reading	4735	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.356	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.356	--

Manufacturer Test Comments Measured NMOG

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	0.3560	0.0000	0.356	0.600	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.3560	0.0000	0.356	0.600	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10061061	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	LFMX10061056	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/18/2019	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)		
Test Start Odometer Reading	4700	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	--

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.3774	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3774	--

Manufacturer Test Comments

3-Day Measured NMOG

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	0.3774	0.0000	0.377	0.600	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.3774	0.0000	0.377	0.600	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ									
Test #	LFMX10061057	Test Procedure	24 - Federal fuel refueling test (ORVR)									
Exhaust Test # for this Evap Test	LFMX10061056	Test Fuel Type	44 - E85 (85% Ethanol 15% CAL Phase II Gasoline)									
Test Date	07/30/2019	Fuel	N/A									
Fuel Batch ID	--	Fuel Calibration Number	--									
Vehicle Class	N/A	DF Type	Mfr. Determined									
Verify Test Lab ID	APTL											
E10 Evaporative Test Measurement Method	--											
Test Start Odometer Reading	4754	Odometer Units	M									
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--									
State of Charge Delta	--											
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	--									
Test Results												
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>OMHCE (Organic material Hydrocarbon Equivalent)</td> <td>0.01241</td> <td>--</td> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.01241</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	OMHCE (Organic material Hydrocarbon Equivalent)	0.01241	--	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.01241	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)										
OMHCE (Organic material Hydrocarbon Equivalent)	0.01241	--										
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.01241	--										
Manufacturer Test Comments	ORVR TEST											

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10061062	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	LFMX10061056	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/17/2019	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)		
Test Start Odometer Reading	4711	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.0003939	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0003939	--

Manufacturer Test Comments

Measured NMOG

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.000	0.000	0.00	0.05	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.000	0.000	0.00	0.05	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10065864	Test Procedure	65 - Evap Canister Bleed Test
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/16/2020	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)		
Test Start Odometer Reading	4001	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.0101	--

Manufacturer Test Comments

Measured NMOG

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	0.0101	0.000	0.010	0.030	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL	0.0101	0.000	0.010	0.030	Pass

Page 11 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Page 12 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10065866	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/02/2020	Fuel	Gasoline
Fuel Batch ID	373-B	Fuel Calibration Number	40
Vehicle Class	MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4759	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	1.3338	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.44	--
DT-EER (Drive Trace Energy Economy Rating)	0.38	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.2	--
HCHO (Formaldehyde)	0.001553	--
NOX (Nitrogen Oxide)	0.0294	--
NMOG (Non-methane organic gases)	0.07062	--
HC-TOTAL (Total Hydrocarbon)	0.0806	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	769.0228	--

Manufacturer Test Comments

NMOG = 1.1 * NMHC

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0360NHJ		
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-III ULEV200	CO	1.33	--	--	--	0.0	--	1.3	4.2	Pass
CA	4,000 miles	California LEV-III ULEV200	HCHO	0.0016	--	--	--	0.0	--	0.002	0.016	Pass
CA	4,000 miles	California LEV-III ULEV200	NMOG	0.0706	--	1.1	--	0.0	--	0.071	999.999	Pass
CA	4,000 miles	California LEV-III ULEV200	NMOG+NOX	0.1000	--	--	--	--	--	0.100	0.400	Pass
CA	4,000 miles	California LEV-III ULEV200	NOX	0.0294	--	--	--	0.0	--	0.029	999.999	Pass

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10060509	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/24/2019	Fuel	Gasoline
Fuel Batch ID	373-B	Fuel Calibration Number	41
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4731	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	1202.18102	--
FE BAG 1 (Bag 1 Fuel Economy)	7.16495	7.16495
CO2 BAG 2 (Bag 2 Carbon Dioxide)	628.02852	--
FE BAG 2 (Bag 2 Fuel Economy)	13.83673	13.83673
METHANE (CH4 - Methane)	0.00507	--
CO (Carbon Monoxide)	2.59302	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-3.42301	--
DT-EER (Drive Trace Energy Economy Rating)	99.99	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-7.16751	--
MFR FE (Manufacturer Fuel Economy)	11.47312	11.47312
NOX (Nitrogen Oxide)	0.05806	--
HC-NM (Non-methane Hydrocarbon)	0.0071391	--
NMOG (Non-methane organic gases)	0.00733	--
PM (Particulate Matter)	0.0023272	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0651991	--
HC-TOTAL (Total Hydrocarbon)	0.01224	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	754.69565	--

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0360NHJ		
Manufacturer Test Comments		NMOG = 1.03*NMHC										
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 HD Class 2b Bin 200	NMOG	0.0073	--	1.03	--	0.0247	--	0.032	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0581	--	--	--	0.0656	--	0.124	999.999	Pass

Page 17 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Page 18 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10060378	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	07/10/2019	Fuel	Gasoline
Fuel Batch ID	CERT_5	Fuel Calibration Number	137
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4760	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	896.283	--
FE BAG 1 (Bag 1 Fuel Economy)	9.8645883	9.8645883
CO2 BAG 2 (Bag 2 Carbon Dioxide)	899.647	--
FE BAG 2 (Bag 2 Fuel Economy)	9.9195242	9.9195242
CO2 BAG 3 (Bag 3 Carbon Dioxide)	810.243	--
FE BAG 3 (Bag 3 Fuel Economy)	11.021986	11.021986
METHANE (CH4 - Methane)	0.019545	--
CO (Carbon Monoxide)	1.3371	--
METHANE-COMB (Combined CH4 for HD 2b/3 vehicles only)	0.0129	--
N2O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)	0.0008	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.621528	--
DT-EER (Drive Trace Energy Economy Rating)	0.213727	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.1533	--
MFR FE (Manufacturer Fuel Economy)	10.1928678	10.1928678
NOX (Nitrogen Oxide)	0.0427782	--
N2O (Nitrous Oxide)	0.0014617	--
HC-NM (Non-methane Hydrocarbon)	0.0404905	--
NMOG (Non-methane organic gases)	0.0421101	--
HC-TOTAL (Total Hydrocarbon)	0.05857	--

Certification Summary Information Report

Test Group		NFMXD07.363H				Evaporative/Refueling Family				NFMXR0360NHJ		
		Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE						
		Carbon-Related Exhaust Emissions		876		876						
		Optional Carbon-Related Exhaust Emissions		877		877						
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		874.387		--						
Manufacturer Test Comments		E0 GHG NMOG = 1.04 * NMHC _r										
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 HD Class 2b Bin 200	CO	1.34	--	--	--	1.32	--	2.7	4.2	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	CO2	876	--	--	--	0.0	--	876	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	METHANE-COMB	0.0129	--	--	--	0.0152	--	0.028	0.050	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	N2O-COMB	0.0008	--	--	--	0.0105	--	0.011	0.050	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0421	--	1.1	--	0.0247	--	0.067	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0849	--	--	--	--	--	0.175	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0428	--	--	--	0.0656	--	0.108	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	CO	1.34	--	--	--	1.32	--	2.7	4.2	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	876	--	--	--	0.0	--	876	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0421	--	1.1	--	0.0247	--	0.067	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0849	--	--	--	--	--	0.175	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0428	--	--	--	0.0656	--	0.108	999.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX91004398	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/09/2019	Fuel	Gasoline
Fuel Batch ID	27723	Fuel Calibration Number	1
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4838	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	913.5244751	--
FE BAG 1 (Bag 1 Fuel Economy)	999	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	870.0299683	--
FE BAG 2 (Bag 2 Fuel Economy)	999	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	785.7267456	--
FE BAG 3 (Bag 3 Fuel Economy)	999	--
METHANE (CH4 - Methane)	0.0219266	--
CO (Carbon Monoxide)	1.9709315	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.2206827	--
DT-EER (Drive Trace Energy Economy Rating)	1.9373193	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.7501837	--
MFR FE (Manufacturer Fuel Economy)	999	--
NOX (Nitrogen Oxide)	0.0260508	--
N2O (Nitrous Oxide)	0.002182	--
HC-NM (Non-methane Hydrocarbon)	0.054684	--
NMOG (Non-methane organic gases)	0.0600317	--
PM (Particulate Matter)	0.0007988	--
HC-TOTAL (Total Hydrocarbon)	0.0759244	--

Page 22 of 38 CSI Submission/Revision Date: 03/24/2021 10:58:55 AM

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family					NFMXR0360NHJ		
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 HD Class 2b Bin 200	CO	1.97	--	--	--	1.32	--	3.3	4.2	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	CO-COMP	3.0	--	--	--	0	--	3	22	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	CO2	999	--	--	--	0.0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0600	--	1.1	--	0.0247	--	0.085	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0861	--	--	--	--	--	0.176	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX-COMP	0.1571	--	--	--	0	--	0.157	0.800	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0261	--	--	--	0.0656	--	0.092	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	PM	0.0008	--	--	--	0.0000	--	0.001	0.008	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	PM-COMP	0.0022	--	--	--	0	--	0.002	0.010	Pass
CA	150,000 miles	California LEV-III ULEV200	CO	1.97	--	--	--	1.32	--	3.3	4.2	Pass
CA	150,000 miles	California LEV-III ULEV200	CO-COMP	3.0	--	--	--	0	--	3	22	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	999	--	--	--	0.0	--	999	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0600	--	1.1	--	0.0247	--	0.085	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0861	--	--	--	--	--	0.176	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX-COMP	0.1571	--	--	--	0	--	0.157	0.800	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0261	--	--	--	0.0656	--	0.092	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	PM	0.0008	--	--	--	0.0000	--	0.001	0.008	Pass
CA	150,000 miles	California LEV-III ULEV200	PM-COMP	0.0022	--	--	--	0	--	0.002	0.010	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10060379	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	07/10/2019	Fuel	Gasoline
Fuel Batch ID	CERT_5	Fuel Calibration Number	137
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4771	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0048806	--
CO (Carbon Monoxide)	0.0589643	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.26523	--
DT-EER (Drive Trace Energy Economy Rating)	0.443409	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.62862	--
MFR FE (Manufacturer Fuel Economy)	15.187528	15.187528
NOX (Nitrogen Oxide)	0.0128043	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0004424	--
NMOG (Non-methane organic gases)	0.0004601	--
HC-TOTAL (Total Hydrocarbon)	0.0049571	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	588	588
Optional Carbon-Related Exhaust Emissions	588	588

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	587.616	--

Manufacturer Test Comments

E0 GHG NMOG = 1.04 * NMHCr

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family					NFMXR0360NHJ		
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 HD Class 2b Bin 200	CO2	588	--	--	--	0.0	--	588	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0005	--	1.1	--	0.0247	--	0.025	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0133	--	--	--	--	--	0.104	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0128	--	--	--	0.0656	--	0.078	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	588	--	--	--	0.0	--	588	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0005	--	1.1	--	0.0247	--	0.025	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0133	--	--	--	--	--	0.104	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0128	--	--	--	0.0656	--	0.078	999.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX91004397	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/09/2019	Fuel	Gasoline
Fuel Batch ID	27723	Fuel Calibration Number	1
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4849	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0041496	--
CO (Carbon Monoxide)	0.030376	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.8526726	--
DT-EER (Drive Trace Energy Economy Rating)	0.6944497	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.1964048	--
MFR FE (Manufacturer Fuel Economy)	15.1675625	--
NOX (Nitrogen Oxide)	0.0114339	--
N2O (Nitrous Oxide)	0.0005522	--
HC-NM (Non-methane Hydrocarbon)	0.0015421	--
NMOG (Non-methane organic gases)	0.0015883	--
HC-TOTAL (Total Hydrocarbon)	0.0055618	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	570.9714966	--

Manufacturer Test Comments None

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family					NFMXR0360NHJ		
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 HD Class 2b Bin 200	CO2	999	--	--	--	0.0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG	0.0016	--	1.1	--	0.0247	--	0.026	999.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NMOG+NOX	0.0130	--	--	--	--	--	0.103	0.200	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 200	NOX	0.0114	--	--	--	0.0656	--	0.077	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	CO2	999	--	--	--	0.0	--	999	--	--
CA	150,000 miles	California LEV-III ULEV200	NMOG	0.0016	--	1.1	--	0.0247	--	0.026	999.999	Pass
CA	150,000 miles	California LEV-III ULEV200	NMOG+NOX	0.0130	--	--	--	--	--	0.103	0.200	Pass
CA	150,000 miles	California LEV-III ULEV200	NOX	0.0114	--	--	--	0.0656	--	0.077	999.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Test #	LFMX10060143	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/11/2019	Fuel	N/A
Fuel Batch ID	373-B	Fuel Calibration Number	40
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4746	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO (Carbon Monoxide)	0.7163	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.34649	--	
DT-EER (Drive Trace Energy Economy Rating)	0.571304	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.60864	--	
MFR FE (Manufacturer Fuel Economy)	9.17507	9.17507	
NOX (Nitrogen Oxide)	0.03191	--	
HC-NM (Non-methane Hydrocarbon)	0.0171678	--	
NMOG (Non-methane organic gases)	0.01769	--	
PM (Particulate Matter)	0.0034	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0490778	--	
HC-TOTAL (Total Hydrocarbon)	0.03487	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	948.12314	--	
Manufacturer Test Comments	NMOG = 1.03 * NMHCr		

Certification Summary Information Report

Test Group	NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
Fuel Properties			
Fuel Batch ID	373-B	Fuel Calibration Number	41
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/20/2019
Fuel Batch Calibration Effective Date	06/20/2019	Fuel Batch Calibration Ineffective Date	12/31/2100
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.75
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value (BTU / lb)	17965
Fuel Blend Carbon Weight Fraction	0.831	Weight Fraction CO2	--
Fuel Batch ID	27723	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	05/09/2019
Fuel Batch Calibration Effective Date	05/09/2019	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	0.747
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value (BTU / lb)	17954
Fuel Blend Carbon Weight Fraction	0.827	Weight Fraction CO2	--
Fuel Batch ID	373-B	Fuel Calibration Number	40
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	05/21/2019
Fuel Batch Calibration Effective Date	05/21/2019	Fuel Batch Calibration Ineffective Date	12/31/2100
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 (%)	9.5	Fuel Net Heating Value (BTU / lb)	17965
Fuel Blend Carbon Weight Fraction	0.831	Weight Fraction CO2	--
Fuel Batch ID	CERT_5	Fuel Calibration Number	137
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	07/08/2019
Fuel Batch Calibration Effective Date	07/08/2019	Fuel Batch Calibration Ineffective Date	12/31/2100
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.747
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18438
Fuel Blend Carbon Weight Fraction	0.867	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family			NFMXR0360NHJ		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 200	
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	--	--	--	--	--	--	1.32	4.2
150,000 miles	CO-COMP	--	--	--	--	--	--	0	22
150,000 miles	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	HCHO	--	--	--	--	--	--	0.0004	0.006
150,000 miles	METHANE-COMB	--	--	--	--	--	--	0.0152	0.050
150,000 miles	N2O-COMB	--	--	--	--	--	--	0.0105	0.050
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.800
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.008
150,000 miles	PM-COMP	--	--	--	--	--	--	0	0.010

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family			NFMXR0360NHJ	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)			Standard Level			California LEV-III ULEV200	
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	--	--	--	--	--	--	1.32	4.2
150,000 miles	CO-COMP	--	--	--	--	--	--	0	22
150,000 miles	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	HCHO	--	--	--	--	--	--	0.0004	0.006
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.800
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.008
150,000 miles	PM-COMP	--	--	--	--	--	--	0	0.010
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)			Standard Level			California LEV-III ULEV200	
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	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 200	
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	NMOG	--	--	1.03	--	--	--	0.0247	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999

Certification Summary Information Report

Test Group		NFMXD07.363H			Evaporative/Refueling Family			NFMXR0360NHJ	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 200	
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	CO2	--	--	--	--	--	--	0.0	999
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0247	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.200
150,000 miles	NOX	--	--	--	--	--	--	0.0656	999.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3 MDV GVW 8501-10000)			Standard Level			California LEV-III ULEV200	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
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	4.2
4,000 miles	HCHO	--	--	--	--	--	--	0.0	0.016
4,000 miles	NMOG	--	--	1.1	--	--	--	0.0	999.999
4,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0	0.400
4,000 miles	NOX	--	--	--	--	--	--	0.0	999.999

Evaporative/Refueling Standards

Evaporative/Refueling Family		NFMXR0360NHJ		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	--	0.20	0.000		

Evaporative/Refueling Family		NFMXR0360NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	OMHCE	--	0.05	0.000		

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family		NFMXR0360NHJ	
Evaporative/Refueling Family		NFMXR0360NHJ		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0360NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	OMHCE	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0360NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	OMHCE	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0360NHJ		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0.0000		
Evaporative/Refueling Family		NFMXR0360NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III 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	--	0.030	0.000		

Certification Summary Information Report

Test Group	NFMXD07.363H		Evaporative/Refueling Family		NFMXR0360NHJ	
Evaporative/Refueling Family	NFMXR0360NHJ		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	--	0.030	0.000	
Evaporative/Refueling Family	NFMXR0360NHJ		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code	Cert		Standard Level		California LEV-III 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	OMHCE	--	0.20	0.000	
Evaporative/Refueling Family	NFMXR0360NHJ		Cert Region		Federal	
Cert/In-Use Code	Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure	Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF	
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000	

Certification Summary Information Report

Test Group		NFMXD07.363H	Evaporative/Refueling Family		NFMXR0360NHJ
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		METHANOL	CH3OH - Methanol	
CO	Carbon Monoxide		N2O	Nitrous Oxide	
CO2	Carbon dioxide		SPITBACK	Spitback Hydrocarbon in grams	
CREE	Carbon-Related Exhaust Emissions		AMP-HRS	Integrated Amp-hours	
OPT-CREE	Optional Carbon-Related Exhaust Emissions		START-SOC	System Start State of Charge Watt-hours	
NOX	Nitrogen Oxide		END-SOC	System End State of Charge Watt-hours	
PM	Particulate Matter		ACT-DISTANCE	Actual Distance Driven (miles)	
PM-COMP	SFTP Composite Particulate Matter		AS-VOLT	Average System Voltage	
HC-NM	Non-methane Hydrocarbon		CO2 BAG 1	Bag 1 Carbon Dioxide	
OMHCE	Organic material Hydrocarbon Equivalent		CO2 BAG 2	Bag 2 Carbon Dioxide	
OMNMHCE	Organic material non-methane HC equivalent		CO2 BAG 3	Bag 3 Carbon Dioxide	
NMOG	Non-methane organic gases		CO2 BAG 4	Bag 4 Carbon Dioxide	
HCHO	Formaldehyde		NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides	
H3C2HO	Acetaldehyde		NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides	
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03		DT-IWRR	Drive Trace Inertia Work Ratio Rating	
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides		DT-ASCR	Drive Trace Absolute Speed Change Rating	
CO-COMP	SFTP Composite Carbon Monoxide		DT-EER	Drive Trace Energy Economy Rating	
ETHANOL	C2H5OH - Ethanol		COMB-CREE	Combined Carbon-Related Exhaust Emissions	
FE BAG 1	Bag 1 Fuel Economy		COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions	
FE BAG 2	Bag 2 Fuel Economy		HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only	
FE BAG 3	Bag 3 Fuel Economy		METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only	
FE BAG 4	Bag 4 Fuel Economy		N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only	
MFR FE	Manufacturer Fuel Economy		LEAK-DIA	Effective Leak Diameter (inches)	
HC	Hydrocarbon for Running Loss and ORVR		LEAK-GAS CAP	Gas Cap Leakage (cc/min)	
METHANE	CH4 - Methane		CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		L3ULEV340	California LEV-III ULEV340	
B2	Federal Tier 2 Bin 2		L3ULEV250	California LEV-III ULEV250	
B3	Federal Tier 2 Bin 3		L3ULEV200	California LEV-III ULEV200	
B4	Federal Tier 2 Bin 4		L3SULEV170	California LEV-III SULEV170	
B5	Federal Tier 2 Bin 5		L3SULEV150	California LEV-III SULEV150	

Certification Summary Information Report

Test Group		NFMXD07.363H	Evaporative/Refueling Family	NFMXR0360NHJ
B6	Federal Tier 2 Bin 6		L3LEV630	California LEV-III LEV630
B7	Federal Tier 2 Bin 7		L3ULEV570	California LEV-III ULEV570
B8	Federal Tier 2 Bin 8		L3ULEV400	California LEV-III ULEV400
B9	Federal Tier 2 Bin 9		L3ULEV270	California LEV-III ULEV270
B10	Federal Tier 2 Bin 10		L3SULEV230	California LEV-III SULEV230
B11	Federal Tier 2 Bin 11		L3SULEV200	California LEV-III SULEV200
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		T3B160	Federal Tier 3 Bin 160
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		T3B125	Federal Tier 3 Bin 125
L2	California LEV-II LEV		T3B110	Federal Tier 3 Transitional Bin 110
L2OP	California LEV-II LEV Optional		T3B85	Federal Tier 3 Transitional Bin 85
U2	California LEV-II ULEV		T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
S2	California LEV-II SULEV		T3B70	Federal Tier 3 Bin 70
ZEV	California ZEV		T3B50	Federal Tier 3 Bin 50
OT	Other		T3B30	Federal Tier 3 Bin 30
T1	Federal Tier 1		T3B20	Federal Tier 3 Bin 20
PZEV	California PZEV		T3B0	Federal Tier 3 Bin 0
L2LEV160	California LEV-II LEV160		HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
L2ULEV125	California LEV-II ULEV125		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
L2SULEV30	California LEV-II SULEV30		HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2LEV395	California LEV-II LEV395		HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2ULEV340	California LEV-II ULEV340		HDV2B170	Federal Tier 3 HD Class 2b Bin 170
L2LEV630	California LEV-II LEV630		HDV2B150	Federal Tier 3 HD Class 2b Bin 150
L2ULEV570	California LEV-II ULEV570		HDV2B0	Federal Tier 3 HD Class 2b Bin 0
L3LEV160	California LEV-III LEV160		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
L3ULEV125	California LEV-III ULEV125		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
L3ULEV70	California LEV-III ULEV70		HDV3B400	Federal Tier 3 HD Class 3 Bin 400
L3ULEV50	California LEV-III ULEV50		HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L3SULEV30	California LEV-III SULEV30		HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L3SULEV20	California LEV-III SULEV20		HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L3LEV395	California LEV-III LEV395		HDV3B0	Federal Tier 3 HD Class 3 Bin 0
Transmission Type Code				
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual	
A	Automatic	OT	Other	
AM	Automated Manual	SA	Semi-Automatic	
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)	
Drive System Code				
4	4-Wheel Drive	P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front	A	All Wheel Drive	
R	2-Wheel Drive, Rear			

Certification Summary Information Report

Test Group		NFMXD07.363H		Evaporative/Refueling Family		NFMXR0360NHJ	
Additional Terms and Acronyms							
AFC	Alternative Fuel Converter			ICI	Independent Commercial Importer		
CSI	Certificate Summary Information			ORVR	Onboard Refueling Vapor Recovery		
DF	Deterioration Factor			SIL	Shift Indicator Light		
Evap	Evaporation, Evaporative			Trans	Transmission		



SECTION 8

Emission Testing Waiver Statements

Refer to Section 14.01.00.00 of the Common Section for
Statements of Compliance.



SECTION 8

Emission Testing Waiver Statements and Statements of Compliance

Statement of Compliance for test group NFMXD07.363H

Ford Motor Company's test and production vehicles do not have defeat devices. All AECDs have been declared and described in the application. This test group has been designed and engineered to comply with 40 CFR 86.1809-12 (prohibition of defeat devices), satisfies 40 CFR 86.1844-01 (application submittal requirements for AECDs), and does not utilize alternate emissions control maps that are unique for testing purposes relative to on-road operation.

Is the transmission part of any AECD, for example, by receiving outputs from the ECU or providing inputs to the ECU, in any emission control strategy, for example, engine and/or catalyst warm-up?

If yes, please describe, including purpose, entry/exit conditions, actuations, and justifications.

Ford describes the transmission controls and potential interaction effects within the confidential AECD documentation found in section 16.05.00 of the common section area of the application submittals. This documentation covers the purpose, inputs, controlled actions, and justifications. For example, as referenced in the Drive Speed Control section of that document, the transmission can receive requests from the ECU to delay upshifts based on cold engine coolant temperature and/or low inferred catalyst temperature to assist with engine or catalyst warm-up.

Does the transmission behave and perform the same as, or differently than, while on road versus on a dynamometer?

Please explain any differences.

Ford does not attempt to discern whether the vehicle is operating on a dynamometer or on the road. However, there are certain conditions that can cause the transmission to operate differently based on the sensed inputs that may not be encountered during dynamometer testing. For example, when climbing grades or when towing, the transmission will make gear ratio adjustments to compensate against excessive engine lugging and reduced vehicle response. There can also be unique transmission scheduling in different customer selectable drive modes, such as EcoSelect, Sport, Snow, Rock Crawl, etc. The types of conditions that are anticipated to cause transmission adjustments are described in the confidential AECD descriptions located in 16.05.00 of the common section. For customer-selectable drive modes that could reasonably be driven over emission test cycles, Ford evaluates emission performance to assure that these modes meet applicable emission standards.

Special dynamometer test modes are required for certain vehicle technologies such as start/stop and HEVs to assure that fault conditions are not set while operating on two-wheel drive dynamometers. This allows the vehicles to behave normally, as they would on the road, rather than causing default/FMEM actions to occur due to significant wheel speed differences between the front and rear axles.

For additional statements of compliance, please refer to Section 14.01.00.00 of the Common Section.



SECTION 9

OBD-II System Description

For a description of the OBD System utilized for this Test Group, refer to Section 16.06.00.00 of the Common Section.



SECTION 10

Description of Alternate-Fueled Vehicles

For a description of the Alternate-Fueled vehicles covered by this Test Group, refer to Section 12.00.00.00 (Description of Vehicles Covered by Certificate and Test Parameters) of this Application.



SECTION 11

AECD Description

For a description of the AECDs utilized in this Test Group,
refer to Section 16.00.05.00 of this application,
and 16.05 of the Common Section.



SECTION 12

Description of Vehicles Covered by Certificate and Testing Parameters

12.00.01.00 Common Family Parameters – Test Group NFMXD07.363H

Vehicle Program: 7.3L F-Series Super Duty

Test Group Information	
Vehicle/Engine Class	HDV
Vehicle Fuel Category	Single Fuel
Operating Fuel 1	Gas
Operating Fuel 2	N/A
Engine Displacement (liters)	7.3
Engine Cooling medium	Water/OAT Coolant
SAE net HP @ RPM (Reg fuel)	430 @ 5500
SAE net torque ft-lb @ RPM (Reg fuel)	475 @ 4000
Cylinder Deactivation	N
Variable Valve Timing (VVT)	Oil pressure actuated VCT
Variable Valve Lift	N
Number of Inlet Valves Per Cylinder	1
Number of Exhaust Valves Per Cylinder	1
Air Aspiration Method*	Naturally Aspirated
Number of Air Aspiration Devices	1
Air Aspiration Configuration	N=Single
Charge Air Cooler Type* (TG-51)	NA
Number of Charge Air Cooler	
Charge Air Cooler Configuration	NA

Exhaust Emission Control System:	
Exhaust Gas Recirculation (EGR)*	No
Cooled EGR	No
EGR Type	N/A
Electronic Controls	PCM
Closed Loop Air Injection System	N
Air injection Type (AIR)*	NA=Not applicable
Location of injected air	None
Direct Ozone Reduction (DOR) Device	NE=Not equipped

Calibrations that Vary with Time or Dist.	See Common Section
Maintenance Schedule	Normal
Compression ratio (nominal)	10.5:1
Cylinder head design Ref. (08.05)	OHV

Camshaft Timing: (with VCT fully advanced)	
Cam Phase – Computer Controlled	
Int valve opens (° BTDC)	30
Int valve closes (° ABDC)	83
Int valve duration (°)	293
Int valve maximum lift (mm)	13.75
Exh valve opens (° BBDC)	97
Exh valve closes (° ATDC)	20
Exh valve duration (°)	297
Exh valve maximum lift (mm)	15.32
Valve lash (N/A for RFF)	N/A

Fuel Metering System	Sequential Fuel (SFI)
After-Treatment Device Information	
After-Treatment Type	TWC
After-Treatment Configuration	2TWC
After-Treatment Type/size/code	Ref. 16.00.01
Feedback Sensor Type:	
Knock sensor (quantity)	Yes Qty: 4
Oxygen sensor (O ₂ S)*	No
Heated oxygen sensor (HO ₂ S)*	Yes Qty: 4
Air/Fuel Sensor (AFS)*	No
Heated Air/Fuel Sensor (HAFS)*	No
Feedback Sensor Configuration	2WR-HO2S, 2HO2S

Test Group: NFMXD07.363H

Issued: 3/26/2021

Revised:

12.00.02.00 Calibration Descriptions - NFMXD07.363H

Running Changes

<u>Exhaust Calibration</u>	<u>Evaporative Family</u>	<u>Application</u>	<u>Transmission</u>	<u>Leak Check</u>	<u>Vehicle</u>
NTFEJ0NX05	NFMXR0250NHJ	50S	Auto (10R140)	.02	F250/350 Complete 35 gal, AFS, Vacuum Boost
NTFEJ0NW05	NFMXR0250NHJ	50S	Auto (10R140)	.02	F250/350 Complete 35 gal, Vacuum Boost
NTFEJ0NZ05	NFMXR0360NHJ	50S	Auto (10R140)	.02	F250/350 Complete 48 gal, AFS, Vacuum Boost
NTFEJ0NY05	NFMXR0360NHJ	50S	Auto (10R140)	.02	F250/350 Complete 48 gal, Vacuum Boost

Reference Specifications

Spark Plug: CYFS12NPG;

Gap: 1.04 – 1.20 mm

Ignition Timing °BTDC (No SPOUT connector)

Idle RPM

Target (Base) in Drive; (A/C-off/ A/C-on)

PCM Controlled

PCM Controlled

600 / 600 Pickups w/ AFS

525 / 525 Pickups w/o AFS

Special conditions which may require idle speeds higher than Base are listed below. (See Section 16.05 for descriptions of these strategies):

<u>Potential Idle/Drive Speed Modifier</u>	<u>Function Utilized (Y/ N)</u>	<u>Purpose</u>
Low or high air charge temperature	N	Heater, A/C or engine cooling performance
Low catalyst temperature	N	Achieve/maintain light off
Low engine coolant temperature	Y	Combustion stability
Low or high ambient temperature	Y	Heater or A/C performance
High transmission oil temperature	N	Ensure adequate fluid pressure
Low battery voltage	Y	Avoid stalling or no-start
High Alternator load	N	Preserve battery life and avoid low voltage
High-speed fan operation	N/A	For engine and A/C condenser cooling
Extended neutral idle time	Y	Maintain catalyst temperature and protect valve train
Power steering pressure	Y	Ensure adequate P/S assistance (non AFS only)
High Altitude	N	Maintain air mass flow to avoid stalling
Alternate calibration	Y	Avoid spark plug fouling during plant/dealer handling
Drive Speed Control or Shift Delay	Y	Increase engine speed to improve cabin heating or cooling

1 – Justification provided for AECD systems (i.e. sense operating conditions and control the function of an emission component) and not for the individual components.

2 – See Section 16.05 for Strategy Control Systems descriptions

3 – "FTP" represents all tests required for certification

* – indicates that ending characters on some parameter names may vary

Test Group: NFMXD07.363H

Issued: 3/26/21

Revised:

12.00.02.00 Calibration Descriptions, continued

Emission Component	Sensed Parameter	Controlled Parameter	Justification ¹	Calibration
<u>ELECTRONICS – PCM²</u>				
<u>FUEL</u>				
Fuel Injector	Signal from PCM	Fuel flow	N/A	Static Flow: 4.14 +/- 0.13 g/sec (@270kPa)
Regulated Fuel Pressure	Signal from PCM	Fuel pressure	N/A	NA - MRFS
Fuel Pump	Signal from PCM	Fuel Flow	N/A	Nom Rated Flow: 258 lph (@ 435 kPa-12.5V)
Torque Based Electronic Throttle control	Signal from PCM	None	Operates in FTP	80 ± 0.3 mm Throttle Diameter
<u>Fuel System Control Strategy²</u>				
Open loop enrichment for driver torque demand	Throttle Position or Pedal Position or Engine LOAD, and Engine RPM	Air-Fuel Ratio (LAMBSE)	Protection against damage or accident; provides additional power under extended torque demand	See Section 16.00.05.00 for air-fuel calibration (LAMBSE) in function ol_lam_pwr_a_m* (a separate LAM_F table is utilized only for FFVs) and the entry conditions in function ol_tm_pwr_dly_a_m
Open Loop Delay Timers	Time and Gear	Delay open loop fuel	Allows time for downshift; limit enrichment to unusual conditions	See Section 16.00.05.00 for delay time calibration ol_tm_pwr_dly_a_m and the maximum non-stoichiometric count-up time, PWR_DELAYMAX
Open Loop Enrichment Catalyst Protection	Inferred Catalyst Temperature	Air-Fuel Ratio (LAMBSE)	Protection against damage	See Section 16.00.05.00 for inferred catalyst temperature to trigger enrichment, either CAT_MAX_LO and CAT_MAX_HI and the time delay on CAT_MAX_LO, CAT_TMR_THRES
Open Loop Enrichment EGO Protection	Inferred Oxygen Sensor Temperature	Air-Fuel Ratio (LAMBSE)	Protection against damage	See Section 16.00.05.00 for inferred EGO temperature to trigger enrichment, FEGO_MAX
Open Loop Enrichment Engine/Exhaust Manifold Protection	Inferred Exhaust Manifold Flange Temperature	Air-Fuel Ratio (LAMBSE)	Protection against damage	See Section 16.00.05.00 for inferred exhaust flange temperature, FLN_MAX_LO and FLN_MAX_HI and the time delay on FLN_MAX_LO, FLN_TMR_THRES
Open Loop Enrichment following Deceleration Fuel Shut-Off (DFSO)	Injector state, inferred catalyst O ₂ stored, and CMS voltage	Air-Fuel Ratio (LAMBSE)	Substantially demonstrated on FTP	See Section 16.00.05.00 for air-fuel ratio utilized following fuel shut-off event, LAM_REACT
<u>CRANKCASE</u>				
PCV Valve	Manifold Vacuum	Air flow to engine	Operates in FTP	4L2E-6A666-BC 3.50 – 5.10 SCFM @ 3" Hg 2.60 – 3.60 SCFM @ 8" Hg 1.30 - 1.80 SCFM @ 15" Hg

1 – Justification provided for AECD systems (i.e. sense operating conditions and control the function of an emission component) and not for the individual components.

2 – See Section 16.05 for Strategy Control Systems descriptions

3 – "FTP" represents all tests required for certification

* – indicates that ending characters on some parameter names may vary

Test Group: NFMXD07.363H

Issued: 3/26/21

Revised:

12.00.02.00 Calibration Descriptions, continued

Emission Component	Sensed Parameter	Controlled Parameter	Justification¹	Calibration
<u>VCT Control Strategy</u>				
Cam timing based on requested torque and percent torque	Requested Torque, Percent Torque, Engine Speed, and Load	Cam Phase Timing	Demonstrated on FTP ³	See Section 16.00.05.00 for FNHDFX_BEST_FE_DIST
Cam timing limitation For combustion stability At low loads	Requested Torque and Engine Speed	Cam Phase Timing	Protection against damage or accident	See Section 16.00.05.00 FNHDFX_OPSTAB_RPM_DPL_DIST
Cam actuator limitation for oil temperature	Oil Temperature; or Time-since-start and ECT-at-start	Cam Phase Timing	Protection against damage or accident	See Section 16.00.05.00 for FNHDFX_FNEOT_EXH
Cam actuator limitation for start-up	Engine Coolant Temp. At Start and Time-Since-Start	Cam Phase Timing	Protection against damage or accident	See Section 16.00.05.00 fnvct_enable_delay
Cam retard limitation Under high torque demand	Engine Speed and Requested Desired Percent Load	Cam Phase Timing	Protection against damage or accident	See Section 16.00.05.00 for FNHDFX_BEST_DRIVE_DIST
Cam Timing limitations for high engine speeds	Engine speed	Cam Phase Timing	Protection against damage or accident	See Section 16.00.05.00 FNHDFX_FNEOT_EXH
<u>ENGINE COOLING</u>				
Thermostat	Coolant Temperature	Coolant Flow	Engine Protection	Start to Open: 192° F

1 – Justification provided for AECD systems (i.e. sense operating conditions and control the function of an emission component) and not for the individual components.

2 – See Section 16.05 for Strategy Control Systems descriptions

3 – "FTP" represents all tests required for certification

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Test Group: NFMXD07.363H

Issued: 3/26/21

Revised:

**2022 MY 7.3L (P558) F-Series Super Duty
Exhaust Emissions Parts List**

Engine Family(ies)	Certification		w/PCM -12A650- Assembly Part #
	Level	Calibration(s)	
NFMXD07.363H	Initial	NTFEJ0NX05 (P558)	NC3A-CBA
	Initial	NTFEJ0NW05 (P558)	NC3A-CCA
	Initial	NTFEJ0NZ05 (P558)	NC3A-CHA
	Initial	NTFEJ0NY05 (P558)	NC3A-CJA

All Other Exhaust Emission Parts

<u>Part Name (Quantity if more than 1)</u>	<u>Part Number</u>
Catalyst (50S)	LC34-5F250- BC
Cylinder Head Temperature Sensor	GN1A-6G004-DA
Camshaft Variable Timing Solenoid	LC3E-6B297-JA
Crankshaft Position Sensor	LC3A-6C315-BA
PCV Valve	KR3E-6A666-CA
Fuel Injector (8)	LC3E-9F593-JA
Throttle Body	JL3E-9F991-AA
Camshaft Position Sensor	KR3A-12K073-AA
Heated Oxygen Sensor - Downstream (2)	LC3A-9G444-AC
Heated Oxygen Sensor (WR) – Universal (2)	LC3A-9Y460-BA
Mass Air Flow/Intake Air Temperature Sensor	LC3A -12B579-AA
Knock Sensor (2)	AL3A-12A699-BB
Fuel Pump Assembly	LC34-9350-AA
Fuel Pressure Regulator	LC34-9C375-AA

	<u>CAP2000 Evaporative Emission Data Vehicle</u>	<u>CAP2000 Evaporative Emission Data Vehicle</u>	<u>CAP2000 Exhaust Emission Data Vehicle</u>	<u>CAP2000 Exhaust Emission Data Vehicle</u>	<u>Durability Data Vehicle</u>
<i>Evap. Emission Family</i>	LFMXR0250NHJ	LFMXR0360NHJ	LFMXR0360NHJ	LFMXR0360NHJ	LFMXR0250NHJ
<i>Displacement Liters</i>	6.2L	6.2L	7.3L	7.3L	7.3L
<i>Engine Code</i>	LTFER4NE05	LTFER4NG05	LTFEJ0NE05	LTFEJ0NY05	LTFEJ0NA91
<i>Fuel Tank Code</i>	TT (35 gal)	TX (48 gal)	TX (48 gal)	TX (48 gal)	TT (35 gal)
<i>Catalyst Code</i>	*	*	*	*	*
<i>Exhaust Control System</i>	2TWC/2WR-HO2S/2HO2S/SFI	2TWC/2WR-HO2S/2HO2S/SFI	2TWC/2WR-HO2S/2HO2S/SFI	2TWC/2WR-HO2S/2HO2S/SFI	2TWC/2WR-HO2S/2HO2S/SFI
<i>Model</i>	F350 Crew Chassis Cab DRW	F350 Crew Chassis Cab DRW	F350 Crew Chassis Cab DRW	F350 Crew Chassis Cab DRW	F350 Crew Chassis Cab DRW
<i>Transmission</i>	Semi-Auto 10	Semi-Auto 10	Semi-Auto 10	Semi-Auto 10	Semi-Auto 10
<i>Shift Schedule</i>	NA	NA	NA	NA	NA
<i>Equivalent Test Weight</i>	9,500 lbs	9,500 lbs	10,500 lbs	8,500 lbs	10,500 lbs
<i>Curb Weight</i>	8,742 lbs	9,000 lbs	7,449 lbs	7,044 lbs	7,449 lbs
<i>GVWR</i>	10,000 lbs	10,000 lbs	14,000 lbs	10,000 lbs	14,000 lbs
<i>THP/DPA</i>	f0=72.06, f1=1.1573, f2=0.11685	f0=72.06, f1=1.1573, f2=0.11685	f0=71.54, f1=1.0966, f2=0.04824	f0=60.67, f1=1.0178, f2=0.04446	f0=71.54, f1=1.0966, f2=0.04824
<i>Axle Ratio</i>	4.30	4.30	4.30	4.30	4.30
<i>N/V Ratio - RPM/MPH</i>	30.0	30.0	32.0	32.0	32.0
<i>Tires</i>	LT245/75R17	LT245/75R17	LT245/75R17	LT245/75R17	LT245 / 75R17
ACTUAL TEST VEHICLES					
<i>Model Year</i>	2020	2020	2020	2020	2020
<i>Engine Family</i>	LFMXD06.26CH	LFMXD06.26CH	LFMXD07.373K	LFMXD07.363H	LFMXD07.373K
<i>Vehicle ID No</i>	LFE1-6.2-571	LFE1-6.2-J-578	LFE1-7.3-J-591	LFE1-7.3-J-585	LFE1-7.3-576
<i>Configuration</i>	0	0	0	0	0
*See Section 16					

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758343	5758355	5758347	5758341	5758339	5758337	5758359	5758345
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	REGULAR CAB	REGULAR CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Short	Short	Long	Long	Long	Long	Short	Short
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X2	4X2	4X2	4X2	4X2	4X2	4X2	4X2
Curb Weight	6180	6180	5801	5801	6186	6186	6076	6076
ETW	8000	8000	8000	8000	8000	8000	8000	8000
Loaded Weight - LVW	6480	6480	6101	6101	6486	6486	6376	6376
ALVW - ETW	8000	8000	8000	8000	8000	8000	8000	8000
Adj. Loaded Weight	8040	8090	7850	7900	8043	8093	7988	8038
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
Max N/V Ratio	30	30	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8
Max Tire Size	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5
Alt Tire 1	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Alt Tire 2	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7
Alt Tire 3	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4
Alt Tire 4	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								
DAW Full Tank	2649	2649	2439	2439	2622	2622	2612	2612
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758419	5758421	5758401	5758407	5758427	5758417	5758409	5758405
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X2
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	REGULAR CAB	REGULAR CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Short	Short	Long	Long	Long	Long	Short	Short
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X2	4X2	4X2	4X2	4X2	4X2	4X2	4X2
Curb Weight	6180	6180	5801	5801	6186	6186	6076	6076
ETW	8000	8000	8000	8000	8000	8000	8000	8000
Loaded Weight - LVW	6480	6480	6101	6101	6486	6486	6376	6376
ALVW - ETW	8000	8000	8000	8000	8000	8000	8000	8000
Adj. Loaded Weight	8040	8090	7850	7900	8043	8093	7988	8038
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
Max N/V Ratio	30	30	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8
Max Tire Size	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5
Alt Tire 1	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Alt Tire 2	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7
Alt Tire 3	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4
Alt Tire 4	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								
DAW Full Tank	2649	2649	2439	2439	2622	2622	2612	2612
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758467	5758465	5758483	5758481	5758001	5757995	5758195	5758197
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NY05	NTFEJ0NY05	NTFEJ0NZ05	NTFEJ0NZ05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05
Fuel Tank(s)	TX	TX	TX	TX	TT	TT	TT	TT
Carline	F250 4X2	F250 4X2	F250 4X2	F250 4X2	F250 4X4	F250 4X4	F250 4X4	F250 4X4
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB ORV	CREW CAB ORV
Wheelbase	Long	Long	Long	Long	Short	Short	Short	Short
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X2	4X2	4X2	4X2	4X4	4X4	4X4	4X4
Curb Weight	6409	6409	6409	6409	6633	6633	6633	6633
ETW	8000	8000	8000	8000	8500	8500	8500	8500
Loaded Weight - LVW	6709	6709	6709	6709	6933	6933	6933	6933
ALVW - ETW	8000	8000	8000	8000	8500	8500	8500	8500
Adj. Loaded Weight	8154	8204	8154	8204	8266	8316	8266	8316
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.55	3.55	3.55	3.55	3.55	3.55	4.3	4.3
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	24.4	24.4	24.4	24.4	22.6	22.6	27.1	27.1
Max N/V Ratio	30	30	30	30	30	30	27.1	27.1
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT285/75R18 - 27.1	LT285/75R18 - 27.1
Max Tire Size	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT285/75R18 - 27.1	LT285/75R18 - 27.1
Alt Tire 1	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT275/65R20 - 22.6	LT275/65R20 - 22.6		
Alt Tire 2	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT245/75R17 - 30	LT245/75R17 - 30		
Alt Tire 3	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/70R18 - 23.5	LT275/70R18 - 23.5		
Alt Tire 4	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 24.7	LT265/70R17 - 24.7		
Alt Tire 5					LT275/65R18 - 24.4	LT275/65R18 - 24.4		
Alt Tire 6					LT275/70R18 - 28.5	LT275/70R18 - 28.5		
Alt Tire 7					LT265/70R17 - 29.9	LT265/70R17 - 29.9		
DAW Full Tank	2775	2775	2775	2775	2718	2718	2718	2718
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5757887	5757893	5757999	5757993	5757885	5757997	5758059	5758055
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NX05	NTFEJ0NX05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	REGULAR CAB	REGULAR CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	CREW CAB	CREW CAB
Wheelbase	Long	Long	Long	Long	Short	Short	Short	Short
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X4	4X4	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	6277	6277	6631	6631	6541	6541	6633	6633
ETW	8000	8000	8500	8500	8000	8500	8500	8500
Loaded Weight - LVW	6577	6577	6931	6931	6841	6841	6933	6933
ALVW - ETW	8000	8000	8500	8500	8000	8500	8500	8500
Adj. Loaded Weight	8088	8138	8266	8316	8220	8270	8266	8316
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Max Axle Ratio	3.55	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	23.5	23.5	22.6	22.6	22.6	22.6	22.6	22.6
Max N/V Ratio	24.8	30	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8
Max Tire Size	LT275/70R18 - 23.5	LT275/70R18 - 28.5	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4
Alt Tire 1	LT265/70R17 - 24.7	LT245/75R17 - 30	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6
Alt Tire 2	LT275/65R18 - 24.4	LT275/70R18 - 23.5	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Alt Tire 3		LT265/70R17 - 24.7	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5
Alt Tire 4		LT275/65R18 - 24.4	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7
Alt Tire 5		LT265/70R17 - 29.9	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4
Alt Tire 6		LT275/65R18 - 29.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5
Alt Tire 7			LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
DAW Full Tank	2547	2547	2690	2690	2709	2709	2718	2718
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758267	5758269	5757919	5757923	5758053	5758061	5757917	5758057
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F250 4X4
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB ORV	CREW CAB ORV	REGULAR CAB	REGULAR CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Short	Short	Long	Long	Long	Long	Short	Short
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X4	4X4	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	6633	6633	6277	6277	6631	6631	6541	6541
ETW	8500	8500	8000	8000	8500	8500	8000	8500
Loaded Weight - LVW	6933	6933	6577	6577	6931	6931	6841	6841
ALVW - ETW	8500	8500	8000	8000	8500	8500	8000	8500
Adj. Loaded Weight	8266	8316	8088	8138	8266	8316	8220	8270
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	4.3	4.3	3.55	3.55	3.55	3.55	3.55	3.55
Max Axle Ratio	4.3	4.3	3.55	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	27.1	27.1	23.5	23.5	22.6	22.6	22.6	22.6
Max N/V Ratio	27.1	27.1	24.8	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT285/75R18 - 27.1	LT285/75R18 - 27.1	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8
Max Tire Size	LT285/75R18 - 27.1	LT285/75R18 - 27.1	LT275/70R18 - 23.5	LT275/70R18 - 28.5	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4
Alt Tire 1			LT265/70R17 - 24.7	LT245/75R17 - 30	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6
Alt Tire 2			LT275/65R18 - 24.4	LT275/70R18 - 23.5	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Alt Tire 3				LT265/70R17 - 24.7	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5
Alt Tire 4				LT275/65R18 - 24.4	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7
Alt Tire 5				LT265/70R17 - 29.9	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4
Alt Tire 6				LT275/65R18 - 29.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5
Alt Tire 7					LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
DAW Full Tank	2718	2718	2547	2547	2690	2690	2709	2709
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758115	5758113	5758139	5758137	5759125	5759133	5759129	5759131
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NY05	NTFEJ0NY05	NTFEJ0NZ05	NTFEJ0NZ05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05
Fuel Tank(s)	TX	TX	TX	TX	TT	TT	TT	TT
Carline	F250 4X4	F250 4X4	F250 4X4	F250 4X4	F350 4X2	F350 4X2	F350 4X2	F350 4X2
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	REGULAR CAB	REGULAR CAB
Wheelbase	Long	Long	Long	Long	Short	Short	Long	Long
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X4	4X4	4X4	4X4	4X2	4X2	4X2	4X2
Curb Weight	6889	6889	6889	6889	6350	6350	5935	5935
ETW	8500	8500	8500	8500	8000	8000	8000	8000
Loaded Weight - LVW	7189	7189	7189	7189	6650	6650	6235	6235
ALVW - ETW	8500	8500	8500	8500	8000	8000	8000	8000
Adj. Loaded Weight	8394	8444	8394	8444	8125	8175	7918	7968
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.55	3.55	3.55	3.55	3.73	3.73	3.73	3.73
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	22.6	22.6	22.6	22.6	25.6	25.6	25.6	25.6
Max N/V Ratio	30	30	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 24.8	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Max Tire Size	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5
Alt Tire 1	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT275/65R20 - 22.6	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26
Alt Tire 2	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6
Alt Tire 3	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT275/70R18 - 23.5	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9
Alt Tire 4	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 24.7	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
Alt Tire 5	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4	LT275/65R18 - 24.4				
Alt Tire 6	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5				
Alt Tire 7	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9				
DAW Full Tank	2793	2793	2793	2793	2796	2796	2561	2561
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5759137	5759127	5759139	5759135	5759197	5759189	5759203	5759199
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	CREW CAB	CREW CAB	REGULAR CAB	REGULAR CAB
Wheelbase	Long	Long	Short	Short	Short	Short	Long	Long
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X2	4X2	4X2	4X2	4X2	4X2	4X2	4X2
Curb Weight	6302	6302	6189	6189	6350	6350	5935	5935
ETW	8000	8000	8000	8000	8000	8000	8000	8000
Loaded Weight - LVW	6602	6602	6489	6489	6650	6650	6235	6235
ALVW - ETW	8000	8000	8000	8000	8000	8000	8000	8000
Adj. Loaded Weight	8101	8151	8044	8094	8125	8175	7918	7968
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
Max N/V Ratio	30	30	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 26	LT245/75R17 - 30	LT245/75R17 - 30
Max Tire Size	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5
Alt Tire 1	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 30	LT245/75R17 - 26	LT245/75R17 - 26
Alt Tire 2	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6
Alt Tire 3	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
Alt Tire 4	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								
DAW Full Tank	2718	2718	2707	2707	2796	2796	2561	2561
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5759195	5759211	5759193	5759191	5759253	5759413	5759261	5759421
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NY05	NTFEJ0NY05	NTFEJ0NZ05	NTFEJ0NZ05
Fuel Tank(s)	TT	TT	TT	TT	TX	TX	TX	TX
Carline	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2	F350 4X2
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB
Wheelbase	Long	Long	Short	Short	Long	Long	Long	Long
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X2	4X2	4X2	4X2	4X2	4X2	4X2	4X2
Curb Weight	6302	6302	6189	6189	6577	6577	6577	6577
ETW	8000	8000	8000	8000	8000	8500	8000	8500
Loaded Weight - LVW	6602	6602	6489	6489	6877	6877	6877	6877
ALVW - ETW	8000	8000	8000	8000	8000	8500	8000	8500
Adj. Loaded Weight	8101	8151	8044	8094	8238	8288	8238	8288
GVWR	9900	10000	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
Max N/V Ratio	30	30	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR	2-WHEEL DRIVE, REAR
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 30	LT245/75R17 - 26	LT245/75R17 - 30
Max Tire Size	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT275/65R18 - 29.5
Alt Tire 1	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 26	LT245/75R17 - 30	LT245/75R17 - 26
Alt Tire 2	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6
Alt Tire 3	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 25.9	LT265/70R17 - 29.9	LT265/70R17 - 25.9
Alt Tire 4	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 29.9	LT265/70R17 - 25.9	LT265/70R17 - 29.9
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								
DAW Full Tank	2718	2718	2707	2707	2841	2841	2841	2841
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758737	5758753	5758941	5758657	5758659	5758741	5758747	5758745
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05	NTFEJ0NW05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	CREW CAB ORV	REGULAR CAB	REGULAR CAB	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Short	Short	Short	Long	Long	Long	Long	Short
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X4	4X4	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	6811	6811	6811	6403	6403	6769	6769	6660
ETW	8500	8500	8500	8000	8000	8500	8500	8500
Loaded Weight - LVW	7111	7111	7111	6703	6703	7069	7069	6960
ALVW - ETW	8500	8500	8500	8000	8000	8500	8500	8500
Adj. Loaded Weight	8356	8406	8406	8152	8202	8334	8384	8280
GVWR	9900	10000	10000	9900	10000	9900	10000	9900
Min Axle Ratio	3.73	3.73	4.3	3.73	3.73	3.73	3.73	3.73
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	23.8	23.8	27.1	24.7	24.7	23.8	23.8	23.8
Max N/V Ratio	30	30	27.1	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 30	LT245/75R17 - 30	LT285/75R18 - 27.1	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Max Tire Size	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT285/75R18 - 27.1	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4
Alt Tire 1	LT275/65R20 - 23.8	LT275/65R20 - 23.8		LT245/75R17 - 26	LT245/75R17 - 26	LT275/65R20 - 23.8	LT275/65R20 - 23.8	LT275/65R20 - 23.8
Alt Tire 2	LT245/75R17 - 26	LT245/75R17 - 26		LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26
Alt Tire 3	LT275/65R18 - 25.6	LT275/65R18 - 25.6		LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6
Alt Tire 4	LT275/70R18 - 24.7	LT275/70R18 - 24.7		LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/70R18 - 24.7
Alt Tire 5	LT275/70R18 - 28.5	LT275/70R18 - 28.5		LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5
Alt Tire 6	LT265/70R17 - 25.9	LT265/70R17 - 25.9		LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9
Alt Tire 7	LT265/70R17 - 29.9	LT265/70R17 - 29.9				LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
DAW Full Tank	2849	2849	2849	2658	2658	2785	2785	2794
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758739	5758819	5758811	5759055	5758677	5758679	5758817	5758809
Displacement	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NW05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NX05
Fuel Tank(s)	TT	TT	TT	TT	TT	TT	TT	TT
Carline	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	SUPER CAB	CREW CAB	CREW CAB	CREW CAB ORV	REGULAR CAB	REGULAR CAB	SUPER CAB	SUPER CAB
Wheelbase	Short	Short	Short	Short	Long	Long	Long	Long
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X4	4X4	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	6660	6811	6811	6811	6403	6403	6769	6769
ETW	8500	8500	8500	8500	8000	8000	8500	8500
Loaded Weight - LVW	6960	7111	7111	7111	6703	6703	7069	7069
ALVW - ETW	8500	8500	8500	8500	8000	8000	8500	8500
Adj. Loaded Weight	8330	8356	8406	8406	8152	8202	8334	8384
GVWR	10000	9900	10000	10000	9900	10000	9900	10000
Min Axle Ratio	3.73	3.73	3.73	4.3	3.73	3.73	3.73	3.73
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	23.8	23.8	23.8	27.1	24.7	24.7	23.8	23.8
Max N/V Ratio	30	30	30	27.1	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT285/75R18 - 27.1	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Max Tire Size	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT285/75R18 - 27.1	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/65R20 - 27.4	LT275/65R20 - 27.4
Alt Tire 1	LT275/65R20 - 23.8	LT275/65R20 - 23.8	LT275/65R20 - 23.8		LT245/75R17 - 26	LT245/75R17 - 26	LT275/65R20 - 23.8	LT275/65R20 - 23.8
Alt Tire 2	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26		LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT245/75R17 - 26	LT245/75R17 - 26
Alt Tire 3	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6		LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/65R18 - 25.6	LT275/65R18 - 25.6
Alt Tire 4	LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/70R18 - 24.7		LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT275/70R18 - 24.7	LT275/70R18 - 24.7
Alt Tire 5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5		LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT275/70R18 - 28.5	LT275/70R18 - 28.5
Alt Tire 6	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9		LT275/65R18 - 29.5	LT275/65R18 - 29.5	LT265/70R17 - 25.9	LT265/70R17 - 25.9
Alt Tire 7	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9				LT265/70R17 - 29.9	LT265/70R17 - 29.9
DAW Full Tank	2794	2849	2849	2849	2658	2658	2785	2785
DAW Empty Tank								

Vehicle Description Report

Application: 50 ST

Test Group: NFMXD07.363H

ID Number	5758815	5758813	5758883	5758881	5758907	5758905
Displacement	7.3	7.3	7.3	7.3	7.3	7.3
Calibration	NTFEJ0NX05	NTFEJ0NX05	NTFEJ0NY05	NTFEJ0NY05	NTFEJ0NZ05	NTFEJ0NZ05
Fuel Tank(s)	TT	TT	TX	TX	TX	TX
Carline	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4	F350 4X4
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	SUPER CAB	SUPER CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB
Wheelbase	Short	Short	Long	Long	Long	Long
Trans Code Combo	B FE	B FE	B FE	B FE	B FE	B FE
Drive	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	6660	6660	7044	7044	7044	7044
ETW	8500	8500	8500	8500	8500	8500
Loaded Weight - LVW	6960	6960	7344	7344	7344	7344
ALVW - ETW	8500	8500	8500	8500	8500	8500
Adj. Loaded Weight	8280	8330	8472	8522	8472	8522
GVWR	9900	10000	9900	10000	9900	10000
Min Axle Ratio	3.73	3.73	3.73	3.73	3.73	3.73
Max Axle Ratio	4.3	4.3	4.3	4.3	4.3	4.3
Min N/V Ratio	23.8	23.8	23.8	23.8	23.8	23.8
Max N/V Ratio	30	30	30	30	30	30
Emissions Vehicle Class	HDV	HDV	HDV	HDV	HDV	HDV
Drive Code	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL	PART-TIME 4-WHEEL
Trans Type	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC	SEMI-AUTOMATIC
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30	LT245/75R17 - 30
Max Tire Size	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4	LT275/65R20 - 27.4
Alt Tire 1	LT275/65R20 - 23.8	LT275/65R20 - 23.8	LT275/65R20 - 23.8	LT275/65R20 - 23.8	LT275/65R20 - 23.8	LT275/65R20 - 23.8
Alt Tire 2	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26	LT245/75R17 - 26
Alt Tire 3	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6	LT275/65R18 - 25.6
Alt Tire 4	LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/70R18 - 24.7	LT275/70R18 - 24.7
Alt Tire 5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5	LT275/70R18 - 28.5
Alt Tire 6	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9	LT265/70R17 - 25.9
Alt Tire 7	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9	LT265/70R17 - 29.9
DAW Full Tank	2794	2794	2919	2919	2919	2919
DAW Empty Tank						



SECTION 14

Request for Certification



**Vehicle Environmental Engineering
Environmental & Safety Engineering**

**Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W-200
Allen Park, Michigan 48101-2053**

March 26, 2021

Mr. Tristin Rojeck
Certification Division
Mobile Source Pollution Control
U. S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, Michigan 48105

Dear Mr. Rojeck:

Ford Motor Company (Ford) herewith submits its Part I Application for Certification for 2022 model year heavy-duty vehicles (HDVs) contained in Ford's 50 states test group NFMXD07.363H and evaporative emission families NFMXR0250NHJ and NFMXR0360NHJ. Federal Tier-3 fuel was used for exhaust emission tests.

The EPA Final Tier 3 certification and in-use exhaust emission standards applicable to this test group are:

Certification and In-Use FTP Standards (g/mi)	Useful Life	NMOG + NOx (g/mi)	CO (g/mi)	HCHO (g/mi)	PM (g/mi)
Tier 3 Bin 200	150K	0.200	4.2	0.006	0.008

NOTE –Combined CH₄ standard is 0.05 g/mi and combined N₂O standard is 0.05 g/mi.

The EPA Tier 3 certification and in-use evaporative emission standards applicable to this test group are:

Tier 3	Useful Life	Hot Soak + 2-day diurnal	Hot Soak + 3-day diurnal	Running Loss	ORVR	BETP
Evaporative Standards NFMXR0250NHJ NFMXR0360NHJ	150K	0.600 grams per test	0.600 grams per test	0.05 g/mi	0.20 g/mi	0.030 g/mi

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this Application are designed to comply with the applicable intermediate and full useful life standards, as described above. Please note that Ford is currently investigating its process for characterizing road load force specifications, and it is possible that road load specification information may be revised as a result of the investigation. As of the date of this signature, I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the prepared information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained in this document used in the development of the road load force specifications is, to the best of my knowledge and belief, true, accurate, and complete.

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # VPCD-99-06 (LDV, LDT, SVM), subject: "CAP 2000 Implementation: Guidance Documents and Workshop", dated April 22, 1999. Therefore, in accordance with

the provisions of 40 CFR 86.1844-01(d)(14), Ford requests that a Certificate of Conformity be issued for the HDV test group listed in this Application for Certification.

Please contact Reid Cuddy at 313-805-3619 or rcuddy@ford.com, if you have any questions regarding this submission.

Sincerely

DocuSigned by:

324454DCB23E436...

Glen Heiser, Manager
Car and Truck Certification
Certification Programs



**Vehicle Environmental Engineering
Environmental & Safety Engineering**

**Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W200
Allen Park, Michigan 48101- 2053**

March 26, 2021

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

Dear Mr. Lyons:

Ford Motor Company (Ford) herewith submits its Part I Application for Certification for 2022 model year powered heavy-duty vehicles (HDVs) contained in Ford's 50 states (Federal/CA) test group NFMXD07.363H and evaporative emission families NFMXR0250NHJ and NFMXR0360NHJ. Federal Tier-3 fuel was used for exhaust emission tests.

The FTP certification and in-use standards applicable to this test group for vehicle offered in California are as follows:

Certification and In-Use FTP Standards (g/mi)	Useful Life	NMOG + NOx (g/mi)	CO (g/mi)	HCHO (g/mi)	PM (g/mi)
LEV III ULEV200	150K	0.200	4.2	0.006	0.008

The evaporative certification and in-use standards applicable to this test group are as follows:

LEV III	Useful Life	Hot Soak + 2-day diurnal	Hot Soak + 3-day diurnal	Running Loss	ORVR	BETP
Evaporative Standards NFMXR0250NHJ NFMXR0360NHJ	150K	0.600 grams per test	0.600 grams per test	0.05 g/mi	0.20 g/mi	0.030 g/mi

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this Application are designed to comply with the applicable intermediate and full useful life standards, as described above. Please note that Ford is currently investigating its process for characterizing road load force specifications, and it is possible that road load specification information may be revised as a result of the investigation. As of the date of this signature, I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the prepared information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained in this document used in the development of the road load force specifications is, to the best of my knowledge and belief, true, accurate, and complete.

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # VPCD-99-06 (LDV, LDT, SVM), subject: "CAP 2000 Implementation: Guidance Documents and Workshop" dated April 22, 1999. This Application has also been prepared in accordance with the California Air Resources Board, Final Regulation Order, Amendments to Sections 1960.1, 1960.5, 1961, and 1962 Title 13, California Code of Regulations (As Amended August 4, 2005). Therefore, in

accordance with the provisions of 40 CFR 86.1844-01(d)(14), Ford requests that an Executive Order be issued for the HDVs test group listed in this Application for Certification.

Please contact Reid Cuddy at 313-805-3619 or rcuddy@ford.com, if you have any questions regarding this submission.

Sincerely

DocuSigned by:

324454DCB23E436...

Glen Heiser, Manager
Car and Truck Certification
Certification Programs

cc M. Rahman



SECTION 15

Other Information

15.00.00.00

US EPA Fee Form

General Information

Date:	02/26/2021
Process Code:	Submit New Filing Fee Form
Manufacturer Code:	FMX
Manufacturer Name:	FORD MOTOR COMPANY

Manufacturer Contact

Name:	Tina Oliver
Email Address:	toliver@ford.com
Phone:	3133228938
Calendar Year complete application submitted to EPA:	2021
Engine Family / Evaporative Family / Test Group:	NFMXD07.363H

Certificate Request Type (Industry Sector Code)

- | | |
|--|---|
| ☒ On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V) | ☐ Nonroad CI (L) |
| ☐ On-Highway HDE Dyno Cert (Federal) (E, H) | ☐ Nonroad SI (B, S) |
| ☐ On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V) | ☐ Locomotive (G, K) |
| ☐ On-Highway Motorcycle (C) | ☐ All Nonroad Recreational, excluding Marine engines (X, Y) |
| ☐ On-Highway HDV Evap (F) | ☐ All Marine (Including IMO) (M, N, W) |
| ☐ On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V) | ☐ Component Certification for Evaporative Emissions (P) |
| ☐ On-Highway HDE Dyno Cert (California-Only) (E, H) | |

IMO Name (Required for dual US/IMO Marine Only):

ICI VIN Number (Required for ICIs Only):

Do you qualify for a Reduced Fee (RF)?

What is the total number of vehicles, engines, or units covered?:

What is the aggregate total retail value of the vehicles, engines or units covered?:

Payment Information

Amount Owed:	27,399.00
Payment Type:	Offline ACH

Comments:

26RC8CG7 rpc

EPA Form Number 3520-29

OMB Control No. 2060-0545

Approval expires 12/31/2019

The public reporting and recordkeeping burden for this collection of information is estimated to average 20 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.



SECTION 17

California ARB Requirements

NFMXD07.363H

VECI and EPL LABEL

180 MAX.			
45 MAX.	FoMoCo	Ford Motor Company VEHICLE EMISSION CONTROL INFORMATION	
	Conforms to regulations: 2022 MY		
	U.S. EPA: T3B200 HDV	CA OBD II	FUEL: Gasoline
	California: ULEV200 MDV	CA OBD II	FUEL: Gasoline
	TWC/HO2S/WR-HO2S/SFI		No adjustments needed.
	7.3L-Group: NFMXD07.363H Evap: NFMXR0250NHJ		

180 MAX.			
45 MAX.	FoMoCo	Ford Motor Company VEHICLE EMISSION CONTROL INFORMATION	
	Conforms to regulations: 2022 MY		
	U.S. EPA: T3B200 HDV	CA OBD II	FUEL: Gasoline
	California: ULEV200 MDV	CA OBD II	FUEL: Gasoline
	TWC/HO2S/WR-HO2S/SFI		No adjustments needed.
	7.3L-Group: NFMXD07.363H Evap: NFMXR0360NHJ		

Environmental Performance

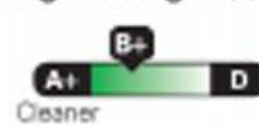
These ratings are not directly comparable to the U.S. EPA/DOT light-duty vehicle label ratings.
For information on how to compare, please see www.arb.ca.gov/ep_label.

Protect the environment. Choose vehicles with **higher ratings**:

Greenhouse Gas Rating (tailpipe only)



Smog Rating (tailpipe only)



Vehicle emissions are a primary contributor to climate change and smog. Ratings are determined by the California Air Resources Board based on this vehicle's measured emissions.

Template for Requesting GHG and Smog Ratings Approval

[illegible]



SECTION 18

Revisions

18.00.00.00

Application for Certification

Part 2