Application for Certification

Model Year: 2027
Manufacturer Name: BMW

Test Group: VBMXT04.4S68
Test Group Description: V8, 4-stroke, 4.4 Liter, gasoline

Durability Group: VBMXHHGVNV36
Durability Group Description: 4-Stroke Otto Cycle
gasoline
direct fuel injection
ceramic, metal, monolith
Palladium, Rhodium
Three-Way Catalyst

Evaporative Group: VBMXR0180G05

Applicable Standards: EPA
FTP Standard: Interim Tier 4 - Bin 70
SFTP Standard: Interim Tier 4 composite - 0.070
EVAP FEL: Tier 3 - 500

Vehicle Classes Covered: EPA
LDT 4

Carlines Covered: X6 M60i xDrive, X7 M60i xDrive

Test EDV:

VID	CFG	Fuel	FTP	HWY	US06	SC03	Cold CO
9020494	00	T3E10	VBMX10093002	VBMX10093003	VBMX10093004	VBMX10093005	VBMX10093012
9020494	02	T2E0	VBMX10093014	VBMX10093015	---	---	---

Test EDV EVAP:

Family	VID	CFG	Fuel	3-day	RL	2-day	ORVR	BTP	Leak
R0180G05	L084470	00	T3E10	MBMX10064490	MBMX10064491	MBMX10064376	MBMX10063966	MBMX10063967	MBMX10064377

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

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1. Correspondence and Communications

1.1. Authorized Persons — Refer to Common Section

1.2. Certificate Information — Refer to Common Section

1.3. Primary certification contact:

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

2. Durability Group Description

2.1.	Durability Group Name	VBMXHHGVNV36
2.2.	Combustion Cycle	4-Stroke Otto Cycle
2.3.	Engine type	piston, water cooled
2.4.	Fuel used	gasoline
2.5.	Basic fuel metering system	direct fuel injection
2.6.	Catalyst construction	ceramic metal monolith
2.7.	Precious Metals in Catalyst	Palladium Rhodium
2.8.	Particulate Filter Construction	not applicable
2.9.	Precious Metals in Particulate Filter	not applicable
2.10.	Precious Metal Loading	Refer to Section 16, Confidential Information
2.11.	Range of Catalyst Grouping Statistics	6.3 - 4.7

3. Evaporative / Refueling Family Description

3.1.	Evaporative / Refueling Family Name	VBMXR0180G05
3.2.	Evaporative / Refueling Family Parameters specified in 40 CFR § 86.1821-01:	
3.2.1.	Type of vapor storage device	canister
3.2.2.	Basic canister design	
	Working capacity:	180 g
	System configuration:	1 canister
	Canister Construction:	active charcoal granulate closed bottom
	Canister Materials:	plastic
3.2.3.	Fuel system	time-contr. DI
3.2.4.	Type of refueling emission control system	integrated system
3.2.5.	Fillpipe seal mechanism	liquid seal
3.2.6.	Vapor control system	passive mechanical system with liquid seal
3.2.7.	Purge control system	electric purge valve
3.2.8.	Vapor hose material	multilayer plastic
3.2.9.	Fuel tank material	hdpe
3.3.	Leak Family Description	same Leak-Standard in between the evaporative family

3.4. ORVR Statement

Evaporative Family VBMXR0180G05

ORVR safety application is carried over from previous model year.

This evaporative / refueling family was first certified for model year 2019.

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

There have been no service notifications, campaigns, instructions or bulletins to dealers or field personal or changes in production procedures or components.
No safety-related defect campaigns have been conducted related to the ORVR system.
Therefore no EPA/NHTSA review of this evaporative / refueling family was required.

4. Durability Procedure Description

4.1. Description of used durability process

4.1.1. Alternative Durability Program for Exhaust Emissions:

The durability data vehicle was aged according to the bench aging process described in §86.1823-08. Following parameters were used to age the catalyst of the durability data vehicle:

	Exhaust branch 1. line	Exhaust branch 2. line
Tref [°C] =	860.2	862.2
calculated tref [h] =	552.8	538.2
effective tref [h] =	552.5	538.2

Statement:

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

4.1.2. Durability Program for Evaporative/Refueling Emissions:

Confidential Information:
Refer to Common Section

4.2. Determination of certification Levels

4.2.1. Exhaust Emissions:

additive deterioration factor:

For Deterioration Factors refer to Summary Sheet enclosed in Chapter 7 of this application.

4.2.2. Evaporative/Refueling Emissions:

additive deterioration factor:

For Deterioration Factors refer to Summary Sheet enclosed in Chapter 7 of this application.

5. Test Group Description

5.1.	Test Group Name	VBMXT04.4S68
5.2.	Engine information	
5.2.1.	Engine displacement	4395 cm^3
5.2.2.	Arrangement of cylinders	in V-configuration
5.2.3.	Number of cylinders	8
5.3.	Hybrid Electric Vehicle System Description	
5.3.1.	Electric Motor	Refer to Section 12
5.3.2.	Battery	Refer to Section 12
5.4.	Vehicle class	EPA
		LDT 4
5.5.	Emission standards class	Interim Tier 4 - Bin 70
5.6.	Applicable emission standards	Refer to Summary Sheet enclosed in Section 7 of this application.

6. Test Vehicle Description

6.1. Test Vehicle Description EDV, FEDV, DDV

VID	CFG	Carline	Model	Trans Type	Type	Fuel	ESS	Road Load CFG	Gear	Mode	eDrive	ETW
9020494	00	--	X7 M60i xDrive	SA-8	EDV	T3E10	---	10	refer to section 12	refer to section 12	refer to section 12	6000
9020493	00	401	X6 M60i xDrive	SA-8	FEDV	T2E0	---	21	D	default mode	---	5500
9020493	01	401	X6 M60i xDrive	SA-8	FEDV	T2E0	---	22	D	default mode	---	5500
9020494	01	382	X7 M60i xDrive	SA-8	FEDV	T2E0	---	21	D	default mode	---	6000
9020494	02	382	X7 M60i xDrive	SA-8	FEDV	T2E0	---	22	D	default mode	---	6000
9K06061	---	---	X7 M60i xDrive	---	DDV	T3E10	---	---	---	---	---	6500

Test parameters are described in the EV-CIS vehicle information

Road Load Configuration Description

X_	means number of FEDV tire groups used for this model
20	Road Load for EDV (worst case)
21	Road Load for first FEDV configuration
22	Road Load for second FEDV configuration

6.2. Test Vehicle Description EVAP EDV

VID	CFG	Model	Type	Fuel	Family
L084470	00	X7 xDrive40i	EDV EVAP	T3E10	R0180G05

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

7. Test results (Cover page)

7.1. Certification Summary Information Report submitted to EV-CIS

see attachment:
CSI-VBMXT04.4S68-VBMXR0180G05

7.2. Litmus Check

see attachment: 03LC-0S68-03

8. Statements

8.1 Emission Testing Waiver Statements

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

Data submittal waiver for HCHO emission compliance

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

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

Based on an engineering evaluation of appropriate high-altitude emission testing we state that all vehicles included in this application comply with the applicable exhaust and evaporative emissions standards at high altitude. According to 40 CFR §86.1829-15 (c), we waive the data submittal on the basis of this statement.
According to 40 CFR §86.1865-12 (h) (3), we state for all vehicles included in this application that the hardware and software emission control strategies used during low altitude condition testing are used similarly across all altitudes for in-use operation.
According to 40 CFR §86.1811-27(c)(4) for Tier 4 vehicles we state based on an engineering evaluation for all vehicles included in this application that common calibration approaches are used at high altitudes, there is no deviation from low altitude emission control practices.

Evaporative Leak-Detection

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

Spitback Testing Waiver

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

8.2 Compliance Statements

"Lean-on-cruise" calibration strategies

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

91RON-Statement

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

A/C-on specific calibrations-Statement

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

Cold Temperature Emission Control-Statement

According to 40 CFR §86.1809-12 (c) and based on engineering evaluations of emission testing between 25°F and 68°F, we confirm for all vehicles covered by this test group, that the guideline for CO, NMHC or NMOG+N0x as applicable, emission congruity in the intermediate temperature range is fulfilled by this test group.

Corporate Average Fuel Economy Calculation-Statement

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

Emission Control System Continuity-Statement

According to 40 CFR §86.1809-12 (e) and based on engineering evaluations of emission testing between 20°F and 86°F, we confirm for all vehicles covered by this test group, that there is no discontinuity in emissions of NMOG, PM, CO, CO2, N2O, NOx, CH4, HCHO, and in case of diesel vehicles also particulate emissions as measured on the FTP and Highway tests in the temperature range of 20°F to 86°F.

Engine Oil used for Certification Testing

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

Enrichment Limit-Statement

According to 40 CFR §86.1811-17(d)(1) we confirm that the nominal air-fuel ratio throughout the US06 cycle at any speed and load point is not richer than the leanest air fuel mixture required to obtain maximum torque plus a tolerance of four percent.
For the engine covered by this application enrichment takes place at high engine loads (full load) resulting in high exhaust temperatures. Fixing spark advance at this condition allows very little Lambda variation without damaging either the engine (knocking) or the catalyst (over temperature). Therefore, BMW does not fix spark advance for LBT investigations at these full load engine operation conditions. The enrichment limit is fulfilled at any engine operation point.

Leak free exhaust system

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

OBD system

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

9. OBD System Description

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

10. Description of Alternate-fueled Vehicles

not applicable

11. Auxiliary Emission Control Devices (AECD) descriptions

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

12. Description of vehicles and test parameters covered by certificate

12.1. Vehicle Parameters

12.1.1. Vehicle Information

Model Name	Carline	Trans	Vehicle Class	VCW [lbs]	ETW [lbs]	GVW [lbs]	Tank [gal]	Canister Working Capacity [g]	Canister Bed Volume [ccm]	Hydrocarbon Trap - Fleece
X6 M60i xDrive	401	SA	LDT 4	5300	5500	6768	21.9	180	3250	No
X7 M60i xDrive	--	SA	LDT 4	5895	6000	7319	21.9	180	3250	--
X7 M60i xDrive	382	SA	LDT 4	5895	6000	7319	21.9	180	3250	No

12.1.2. Drive Train Information

Model Name	Carline	Trans-Type (-drive Sys.)	# Gears	Axle ratio		Engine Code	Combustion engine power [hp / rpm]	Combustion engine torque ft-lb / rpm
				front	rear			
X6 M60i xDrive	401	SA (A)	8	3.15	3.15	S68B44T0G06X	523 / 6000	553 / 1800 - 4600
X7 M60i xDrive	382	SA (A)	8	3.38	3.38	S68B44T0G07X	523 / 6000	553 / 1800 - 4600
X7 M60i xDrive	--	SA (A)	8	3.38	3.38	S68B44T0G07X	523 / 6000	553 / 1800 - 4600

12.1.3. Tire Information

Modell	Carline	Trans	Road Load CFG	Tire Front	Tire Rear
X6 M60i xDrive	401	SA	21	275/40 R21 107Y RSC	315/35 R21 111Y RSC
				275/45 R20 110H M+S RSC	275/45 R20 110H M+S RSC
				275/35 R22 104Y STD	315/30 R22 107Y STD
			22	275/45 R20 110Y RSC	305/40 R20 112Y RSC
				275/40 R21 107Y STD	315/35 R21 111Y STD
				275/35 R22 104Y STD	315/30 R22 107Y STD
X7 M60i xDrive	--	SA	20	worst case represented	worst case represented
	382	SA	21	275/40 R22 107Y RSC	315/35 R22 111Y RSC
				285/45 R21 113H M+S RSC STD	285/45 R21 113H M+S RSC STD
			22	275/35 R23 108Y STD	315/30 R23 111Y STD
				275/40 R22 107Y RSC STD	315/35 R22 111Y RSC STD

M+S indicates an all season tire and not a dedicated winter tire
RSC indicates a tire with run flat capability
STD indicates a tire without run flat capability

12.1.4. Emission control system description:

12.1.4.1. Catalyst	2TWC, 2WU-TWC
12.1.4.2. Particulate Filter	not applicable
12.1.4.3. EGR / EGRC	EGR: no EGRC: no
12.1.4.4. Air pump type	not applicable
12.1.4.5. Fuel system type	Direct injection
12.1.4.6. Intake air aspiration method	exhaust gas turbocharger with boost pressure control via waste gate
12.1.4.7. Other	Charged Air Cooler

12.1.5.	Number of valves per cylinder	4
12.1.6.	Engine displacement	4395 cm³
12.1.7.	Certification Region	FA
12.1.8.	Shift Indicator Light	not applicable
12.2.	Test Parameters	
12.2.1.	Engine Starting Procedures	Refer to Common Section
12.2.2.	Shift Schedules	not applicable
12.2.3.	Dynamometer loading information	
12.2.3.1.	Sort of dynamometer	all wheel roll

12.2.3.2. Electric Dynamometer Coefficients

Modell	Carline	Trans	Road Load CFG	N/V	A [lbf]	B [lbf/mph]	C [lbf/mph²]	TRLHP	a [lbf]	b [lbf/mph]	c [lbf/mph²]	Grill Shutter
X6 M60i xDrive	401	SA	21	23.6	55.6	-0.052	0.03017	17.1	0.7	0.397	0.02315	Yes
X6 M60i xDrive	401	SA	22	23.6	66.0	-0.022	0.03007	18.7	11.4	0.422	0.02283	Yes
X7 M60i xDrive	--	SA	20	24.5	82.6	-0.368	0.03556	20.4	24.4	-0.002	0.02998	Yes
X7 M60i xDrive	382	SA	21	24.5	68.8	-0.430	0.03445	17.8	10.0	-0.007	0.02817	Yes
X7 M60i xDrive	382	SA	22	24.5	82.6	-0.368	0.03556	20.4	19.2	0.132	0.02876	Yes

Road Load Configuration Description

X_ means number of FEDV tire groups used for this model
20 Road Load for EDV (worst case)
21 Road Load for first FEDV configuration
22 Road Load for second FEDV configuration

12.3. Hybrid Electric Vehicle System Description

12.3.1. Description of electric motor

Model Name	Type	Power (peak) [kW]	Max. torque [Nm]
X6 M60i xDrive	PMSM (permanent magnet synchronous motor)	9 @ 2000	200
X7 M60i xDrive	PMSM (permanent magnet synchronous motor)	9 @ 2000	200

12.3.2. Description of batteries

Model Name	System Chemistry	Capacity (C) [Ah]	Energy Capacity (E) [kWh]	Nominal Voltage [V]	Min. Voltage Pack [V]	Number of Packs	Number of Modules	Number of Battery Cells
X6 M60i xDrive	LI-ION	10.0	0.44	44.0	38.0	1	1	20
X7 M60i xDrive	LI-ION	10.0	0.44	44.0	38.0	1	1	20

Model Name	Cell format	Min. Voltage Cell [V]	Weight [kg]	Specific Energy Density [Wh/kg]	Chemistry Identifier
X6 M60i xDrive	pouch	1.90	11.6	38	Li MM(NMC) - Ti.F
X7 M60i xDrive	pouch	1.90	11.6	38	Li MM(NMC) - Ti.F

12.4. Information on driver selectable modes

Drive Mode	Default Mode	Function
comfortable	yes	comfortable setting for defined systems (e.g. climatic control, gas pedal progression)
efficiently	no	efficient setting for defined systems (e.g. climatic control, gas pedal progression)
sporty	no	sporty setting for defined systems (e.g. steering, gas pedal progression, shift points, less pure electric drive, e-boost)

Transmission Mode	Default Mode	Function
comfortable	no	standard comfortable vehicle gear operation
sporty	no	sporty setting for shift points

12.5. Modes used for EDV Testing

Test EDV:

VID	CFG	Fuel	FTP	HWY	US06	SC03	Cold CO
9020494	00	T3E10	VBMX10093002	VBMX10093003	VBMX10093004	VBMX10093005	VBMX10093012
9020494	02	T2E0	VBMX10093014	VBMX10093015	---	---	---

Drive Mode
T3E10 EDV testing is done in drive mode "Sport+" (sporty) and transmission mode "S" (sporty). This is the worst case combination with highest engine revolutions. T2E0 EDV testing is done in drive mode "Comfort" (comfortable) and transmission mode "D" (comfortable). This represents the default mode.

13. Projected Sales

Refer to Common Section for Model Year 2027

14. Request for certification

We herewith apply for the Federal Certificate of conformity for the Test Group VBMXT04.4S68.

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

Dr. Bernd Ofner

15. Other Information

15.1. Vehicle Emission Control Information Label

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

The VECI label is attached to the engine hood.

Refer to Section 17, Attachment

Carline	Model Name	VECI Label
382	X7 M60i xDrive	see attachment: 03VE-VS68-01
401	X6 M60i xDrive	see attachment: 03VE-VS68-01

15.2. Fuel Tank Temperature Profile

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

Refer to Section 17, Attachment

Carline	Model Name	Evaporative Group	FTTP
382	X7 M60i xDrive	VBMXR0180G05	see attachment: FTTP-0G05-02
401	X6 M60i xDrive		

17. Attachment

17.1	Fuel Tank Temperature Profile	see attachment: FTTP-0G05-02
17.2	VECI Label	see attachment: 03VE-VS68-01
17.3	Litmus Check	see attachment: 03LC-0S68-03
17.4	Certification Summary Information Report	see attachment: CSI-VBMXT04.4S68-VBMXR0180G05

Test Vehicle Data

Vehicle Type:	X7 xDrive40i
Mileage:	124011 mi
Fuel tank volume	83.0 L
Fuel volume:	33.2 L

Ambient Conditions

Weather:	sunny
clouds:	< 25 %
Wind speed:	< 15 mph
Ambient temp:	
Start:	107 °F
delta:	1 °F
Surface temperature:	100 %

Test Data

Date of test:	07/12/2019
Engine start:	16:10
Measure start:	16:10
Measure stop:	11:19
Test track:	Exponent Phoenix USA

Time [s]	Fuel Temp 1 [°F]	Fuel Temp 2 [°F]	Fuel Temp Average [°F]	Fuel Temp Average Correctet (to95°F) [°F]	Vapor Temp [°F]	Tank pressure [in H_2O]
0	102,5	102,2	102,3	95,0	102,8	0,5
30	102,5	102,2	102,4	95,0	102,8	0,5
60	102,6	102,3	102,4	95,1	102,8	0,2
90	102,6	102,3	102,5	95,1	102,9	-0,8
120	102,6	102,4	102,5	95,2	102,9	-1,1
150	102,7	102,4	102,6	95,2	102,9	-0,9
180	102,7	102,5	102,6	95,3	102,9	-0,9
210	102,8	102,6	102,7	95,4	103,0	-1,3
240	102,9	102,6	102,8	95,4	103,0	-1,2
270	103,0	102,7	102,9	95,5	103,1	-0,9
300	103,1	102,8	102,9	95,6	103,1	0,1
330	103,1	102,9	103,0	95,7	103,2	0,0
360	103,2	103,0	103,1	95,8	103,3	-0,5
390	103,4	103,1	103,2	95,9	103,4	-0,3
420	103,5	103,3	103,4	96,1	103,6	-0,5
450	103,7	103,4	103,6	96,2	103,8	-0,6
480	103,8	103,6	103,7	96,4	104,0	0,2
510	104,0	103,7	103,9	96,5	104,2	-1,3
540	104,1	103,8	104,0	96,7	104,4	-1,7
570	104,2	103,9	104,1	96,7	104,5	-1,4
600	104,3	104,1	104,2	96,9	104,7	-2,6
630	104,4	104,2	104,3	97,0	104,9	-1,4
660	104,6	104,3	104,5	97,1	105,0	-2,0
690	104,8	104,5	104,6	97,3	105,2	-1,0
720	104,9	104,7	104,8	97,5	105,4	-1,4
750	105,1	104,9	105,0	97,7	105,6	-0,6
780	105,3	105,0	105,1	97,8	105,7	-1,9
810	105,4	105,2	105,3	98,0	105,8	-1,5
840	105,6	105,4	105,5	98,1	106,0	-0,7
870	105,8	105,5	105,7	98,3	106,2	-2,9
900	106,0	105,7	105,8	98,5	106,5	-2,9
930	106,1	105,9	106,0	98,7	106,6	-3,1
960	106,2	106,0	106,1	98,8	106,6	-2,3

990	106,4	106,2	106,3	98,9	106,6	-1,7
1020	106,5	106,3	106,4	99,1	106,8	-1,3
1050	106,7	106,5	106,6	99,3	107,1	-1,2
1080	106,9	106,7	106,8	99,4	107,4	-1,2
1110	107,1	106,8	106,9	99,6	107,5	-2,2
1140	107,2	107,0	107,1	99,8	107,5	-1,1
1170	107,4	107,2	107,3	100,0	107,6	-1,3
1200	107,6	107,4	107,5	100,1	107,7	-2,1
1230	107,7	107,5	107,6	100,3	107,8	-1,8
1260	107,9	107,7	107,8	100,4	107,9	-1,7
1290	108,0	107,8	107,9	100,6	108,2	-2,9
1320	108,2	108,0	108,1	100,7	108,5	-1,0
1350	108,3	108,1	108,2	100,9	108,8	-1,5
1380	108,5	108,3	108,4	101,1	109,1	-0,6
1410	108,7	108,5	108,6	101,2	109,1	-0,3
1440	108,9	108,7	108,8	101,4	109,1	-0,6
1470	109,0	108,8	108,9	101,6	109,1	-0,6
1500	109,2	109,0	109,1	101,7	109,3	-0,6
1530	109,3	109,1	109,2	101,9	109,5	-0,3
1560	109,4	109,2	109,3	102,0	109,8	-1,1
1590	109,6	109,4	109,5	102,2	110,0	-0,8
1620	109,7	109,6	109,7	102,3	110,2	-1,9
1650	109,9	109,8	109,9	102,5	110,3	-2,4
1680	110,1	110,0	110,1	102,7	110,5	-1,3
1710	110,3	110,2	110,3	102,9	110,7	-1,1
1740	110,5	110,4	110,4	103,1	110,9	-0,9
1770	110,7	110,5	110,6	103,3	111,1	-0,9
1800	110,9	110,7	110,8	103,5	111,4	-1,2
1830	111,0	110,9	111,0	103,6	111,8	-1,4
1860	111,2	111,1	111,1	103,8	112,2	-0,4
1890	111,4	111,2	111,3	104,0	112,4	-0,4
1920	111,5	111,4	111,5	104,1	112,7	-1,6
1950	111,7	111,6	111,6	104,3	113,0	-0,5
1980	111,9	111,7	111,8	104,5	113,3	-0,1
2010	112,1	111,9	112,0	104,7	113,4	-0,9
2040	112,2	112,1	112,2	104,8	113,3	-1,3
2070	112,4	112,3	112,4	105,0	113,1	-0,6
2100	112,6	112,5	112,6	105,2	113,0	-0,3
2130	112,8	112,7	112,8	105,4	113,0	-0,3
2160	113,0	112,9	112,9	105,6	113,3	0,0
2190	113,2	113,0	113,1	105,8	113,5	0,1
2220	113,3	113,2	113,2	105,9	113,7	-1,3
2250	113,5	113,3	113,4	106,1	113,8	-2,0
2280	113,6	113,5	113,6	106,2	114,0	-0,9
2310	113,8	113,7	113,7	106,4	114,4	-0,3
2340	114,0	113,8	113,9	106,6	114,7	-0,2
2370	114,2	114,0	114,1	106,8	115,0	-0,3
2400	114,4	114,2	114,3	107,0	115,2	-1,1
2430	114,5	114,4	114,5	107,1	115,5	-1,0
2460	114,7	114,5	114,6	107,3	115,6	-0,2
2490	114,9	114,7	114,8	107,5	115,6	-0,3
2520	115,0	114,9	115,0	107,6	115,6	-1,2
2550	115,2	115,1	115,1	107,8	115,5	-0,6
2580	115,4	115,2	115,3	108,0	115,6	-0,5
2610	115,6	115,4	115,5	108,2	115,8	-0,3
2640	115,7	115,6	115,6	108,3	116,0	-1,0

2670	115,9	115,7	115,8	108,5	116,1	-0,6
2700	116,0	115,8	115,9	108,6	116,2	-0,4
2730	116,2	116,0	116,1	108,7	116,3	-0,5
2760	116,3	116,1	116,2	108,9	116,4	-0,2
2790	116,4	116,2	116,3	109,0	116,5	-0,3
2820	116,5	116,4	116,5	109,1	116,6	-0,3
2850	116,7	116,5	116,6	109,3	116,8	-0,4
2880	116,8	116,6	116,7	109,4	116,9	-1,5
2910	116,9	116,7	116,8	109,5	117,1	-0,8
2940	117,0	116,9	116,9	109,6	117,2	-0,3
2970	117,2	117,0	117,1	109,7	117,4	-0,3
3000	117,3	117,1	117,2	109,9	117,7	0,1
3030	117,4	117,3	117,4	110,0	118,0	0,9
3060	117,6	117,4	117,5	110,2	118,1	1,3
3090	117,7	117,6	117,6	110,3	118,2	0,9
3120	117,8	117,7	117,8	110,4	118,4	1,2
3150	118,0	117,8	117,9	110,6	118,7	0,8
3180	118,1	118,0	118,0	110,7	119,0	1,1
3210	118,3	118,1	118,2	110,8	119,2	0,3
3240	118,4	118,2	118,3	111,0	119,3	-0,5
3270	118,5	118,4	118,4	111,1	119,4	-0,4
3300	118,7	118,5	118,6	111,3	119,6	1,0
3330	118,9	118,7	118,8	111,4	120,0	0,8
3360	119,0	118,8	118,9	111,6	120,3	0,0
3390	119,1	119,0	119,0	111,7	120,5	0,5
3420	119,3	119,1	119,2	111,8	120,7	0,2
3450	119,4	119,2	119,3	112,0	120,8	0,1
3480	119,5	119,3	119,4	112,1	121,0	0,2
3510	119,6	119,5	119,6	112,2	121,0	-0,2
3540	119,8	119,6	119,7	112,4	121,0	-0,2
3570	119,9	119,7	119,8	112,5	121,0	0,2
3600	120,1	119,9	120,0	112,6	121,2	-0,1
3630	120,2	120,0	120,1	112,7	121,3	0,9
3660	120,3	120,1	120,2	112,9	121,2	-0,1
3690	120,4	120,2	120,3	113,0	121,2	-0,7
3720	120,5	120,3	120,4	113,1	121,3	0,1
3750	120,6	120,5	120,6	113,2	121,6	0,5
3780	120,8	120,6	120,7	113,3	121,7	-1,4
3810	120,9	120,7	120,8	113,4	121,8	-0,3
3840	120,9	120,8	120,9	113,5	121,9	-0,3
3870	121,0	120,9	121,0	113,6	122,0	-1,0
3900	121,1	121,0	121,1	113,7	122,3	1,3
3930	121,3	121,1	121,2	113,8	122,6	-0,1
3960	121,4	121,2	121,3	114,0	122,8	0,4
3990	121,5	121,3	121,4	114,1	123,0	0,1
4020	121,6	121,4	121,5	114,2	123,1	1,0
4050	121,7	121,5	121,6	114,3	123,2	0,7
4080	121,8	121,6	121,7	114,4	123,4	0,5
4110	122,0	121,8	121,9	114,5	123,4	-0,3
4140	122,1	121,9	122,0	114,6	123,4	-0,1
4170	122,2	122,0	122,1	114,7	123,4	0,5
4200	122,2	122,1	122,2	114,8	123,5	0,5
4230	122,3	122,1	122,2	114,9	123,7	0,5
4260	122,4	122,2	122,3	115,0	124,0	0,6
4290	122,5	122,3	122,4	115,1	124,2	0,6
4320	122,6	122,4	122,5	115,1	124,5	0,6

BMW

Designation

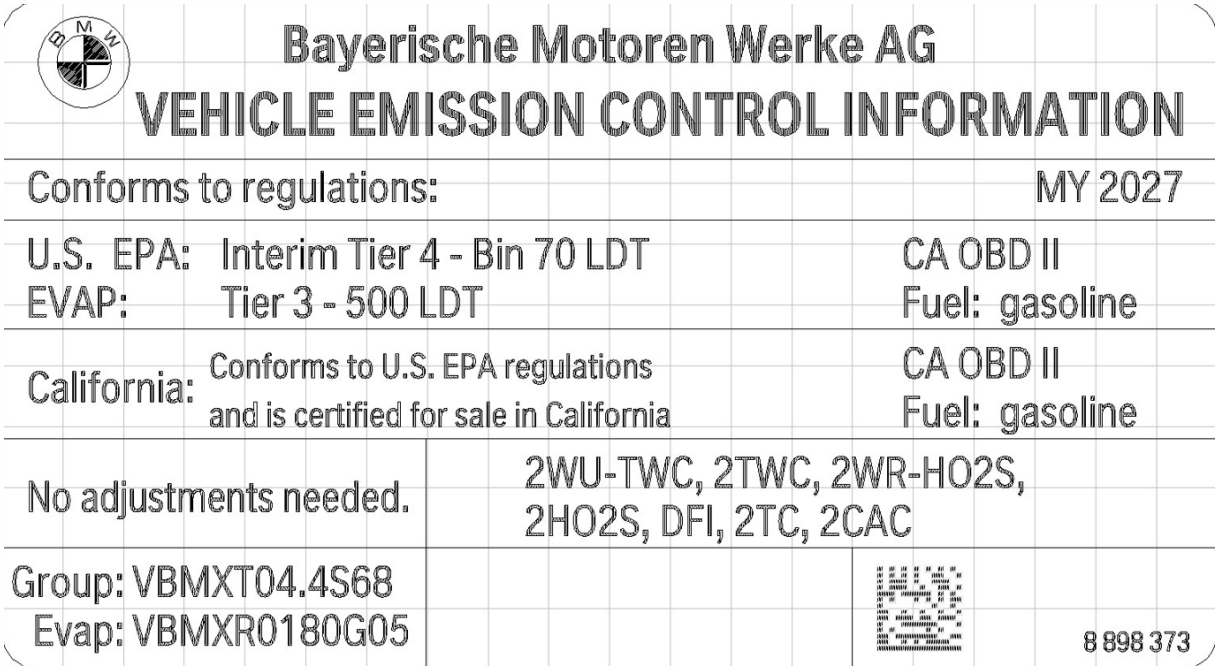
Attachment

VECI Label LDT, VBMXT04.4S68, VBMXR0180G05

Date: 03.12.2025

03VE-VS68-01

DRAFT - Inverted Representation



Original representation

Base: Black
Characters: Silver

Enclosure to Certification Summary Information Report

Test	Test Number	Test Procedure	Man FE	FE Bag1	FE Bag2	FE Bag3	FE Bag4
FTP	VBMX10093002	31	12.2	12.1	11.5	14.0	11.5
HWFET	VBMX10093003	3	19.0				
US06	VBMX10093004	90		10.0	18.0		
SC03	VBMX10093005	95		11.6			
Cold CO	VBMX10093012	11		10.2	10.6	13.4	

Model Specific Calculation (5 Cycle)

City	[mi/gallon]
Start FC	0.0041
Start Fuel 75	0.0404
Start Fuel 20	0.0843
Running FC	0.0837
Label City (5 Cycle)	10.3

Highway	[mi/gallon]
Start FC	0.0003
Start Fuel 75	0.0404
Start Fuel 20	0.0843
Running FC	0.0558
Label Highway (5 Cycle)	16.1

Derived Calculation (2 Cycle)

Label City (2 Cycle)	10.1
Threshhold (96% Derived MPG - 2 Cycle)	9.7

Label Highway (2 Cycle)	14.0
Threshhold (95% Derived MPG - 2 Cycle)	13.3

Model Specific Calculation Label City (5 Cycle)	Threshhold City (96% Derived MPG 2 Cycle)	Model Specific Calculation Label Highway (5 Cycle)	Threshhold HWY (95% Derived MPG - 2 Cycle)
10.3	9.7	16.1	13.3

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	01/21/2026 08:50:47 AM
Model Year	2027		

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

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	Spark Ignition Direct fuel injection	No

Drive Source #2: Electric Motor

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Electricity	--	--

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	Yes
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	No
Fuel Cell Indicator	No	**EPA Vehicle Class**	LDT4
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	--
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	--
Durability Group Name	VBMXHHGVNV36	**Durability Group Equivalency Factor**	1
Reduced Fee Test Group	No	**Certification Region Code(s)**	FA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	--	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	Tier 3	**SFTP Tier 2 Composite CO Option**	--
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	VBMXT04.4S68
Test Group OBD Compliance Level	Full - no deficiencies	**Number of Test Group OBD Deficiencies**	0
OBD Deficiencies Comments	E-25-317		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Evaporative/Refueling Family Information

Evaporative Summary Information Type	New	**Submission/Correction Date**	01/08/2026 08:14:58 AM
Integrated ORVR?	Yes	**Fuel(s)**	Gasoline
Multiple Fuel Storage	--		
Bladder Fuel Tank?	No		
Fuel Tank Material	Plastic	**Fuel Tank Material Description**	HDPE
Fill Pipe Seal Type	Liquid seal		
Air Intake System Vapor Storage Device?	No	**Air Intake System Vapor Storage Device Description**	--
Fuel System Vapor Storage Canister?	Yes	**Other Vapor Storage**	--
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	180	**Number of Primary Canisters**	1
Number of Bleed Canisters	0	**Bleed Canister Total Working Capacity (grams)**	--
Mfr Evaporative/Refueling Family Comments	--		

Leak Family Details

Leak Family Indicator	No		
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	--		

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
BMW	1 - BMW	382 - X7 M60i xDrive	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	401 - X6 M60i xDrive	Federal	All Wheel Drive	Semi-Automatic	8	Yes

Engine Description

Hybrid Type	IC Engine/Electric Motor	**Hybrid Description**	Fuel Economy Guide Category MHEV (Mild Hybrid Electric Vehicle)
Engine Type	4-Stroke Spark Ignition	**Mfr Engine Description**	--
Engine Block Arrangement	V-shaped engine	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	No	**Oil Viscosity/Classification**	0W30
Number of Cylinders/Rotors	8	**Mechanically Variable Compression Ratio Indicator**	N

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

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
3	Three-way catalyst	Palladium + Rhodium	Metal	Monolith
4	Three-way catalyst	Palladium + Rhodium	Metal	Monolith

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	Not Equipped
Mfr Emission Control Device Comments	--

Engine Configuration Number 1

Engine Displacement (liters)	4.4	**Engine Rated Horsepower**	523
Number of Inlet Valves Per Cylinder	2	**Number of Exhaust Valves Per Cylinder**	2
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	2
Air Aspiration Device Configuration	Parallel	**Charge Air Cooler Type**	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	**Number of Air/Fuel Sensors**	4
Air/Fuel Sensor # 1 Type	Air fuel	**Air/Fuel Sensor # 1 Description**	--
Air/Fuel Sensor # 2 Type	Heated oxygen	**Air/Fuel Sensor # 2 Description**	--
Air/Fuel Sensor # 3 Type	Air fuel	**Air/Fuel Sensor # 3 Description**	--
Air/Fuel Sensor # 4 Type	Heated oxygen	**Air/Fuel Sensor # 4 Description**	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	**Cooled Exhaust Gas Recirculation**	No
EGR Type	--	**Exhaust Gas Recirculation Description if 'Other'**	--
Closed Loop Air Injection System	No		
Air Injection Type	--	**Air Injection Type if 'Other'**	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

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	VBMX10093002	VBMX10093004	VBMX10093005	VBMX10093012	VBMX10093003	10.3	9.7	16.1	13.3	--
Electricity	--	--	--	--	--	--	--	--	--	--

SFTP LEV-III Official Test Numbers

Test Group Fuel	FTP	US06	SC03
Gasoline	VBMX10093002	VBMX10093004	VBMX10093005

Hybrid Electric Vehicle And Fuel Cell Information

Rechargable Energy Storage System	Battery(s)	**Rechargable Energy Storage System, if Other**	--
Battery Type	Lithium Ion	**Number of Battery Packs**	1
Total Voltage of Battery Packs	44	**Battery Energy Capacity**	10.0
Battery Specific Energy	38	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Both	**Driver Controlled Regenerative Braking**	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	1		
Motor/Generator Type 1	PMSM	**Rated Motor/Generator Power**	9
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	**Usable H2 Fill Capacity (kg)**	--
Mfr Hybrid Electric/ Electric Vehicle Comments	Starter Generator Engine with 48V Technology; Motor/Generator Type: permanent magnet synchronous machine (PMSM)		

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Emission Data Vehicle Information

Vehicle ID / Configuration	9020494 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	VBMXT04.4S68	**Original Evaporative/Refueling Family**	VBMXR0180G05
Original Test Vehicle Model Year	2027		

Vehicle Model

Represented Test Vehicle Make	BMW	**Represented Test Vehicle Model**	X7 M60i xDrive

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline
2	Electric Motor	Electricity

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	No		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	1
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	S68B44T0G05X	**Rated Horsepower**	523
Displacement (liters)	4.4		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	2	**Air Aspiration Device Configuration**	Parallel
Charge Air Cooler Type	Liquid	**Drive Mode While Testing**	All Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	5895	**Equivalent Test Weight (pounds)**	6000
GVWR (lbs)	7319	**N/V Ratio**	24.5
Axle Ratio	3.38		
Transmission Type	Semi-Automatic	**# of Transmission Gears**	8
Transmission Lockup	Yes	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Dynamometer Coefficients:

Coefficient Category	Target Coefficients A (lbf)	Target Coefficients B (lbf/mph)	Target Coefficients C (lbf/mph**2)	Set Coefficients A (lbf)	Set Coefficients B (lbf/mph)	Set Coefficients C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	82.6	-0.368	0.03556	24.4	-0.002	0.02998	20.4
Cold CO	90.8	-0.405	0.03911	16.6	-0.219	0.03338	N/A
US06	82.6	-0.368	0.03556	24.4	-0.002	0.02998	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments vi_9020494_00_EDV_X7 M60i xDrive_A_ETW-6000_RG20_Sport_S

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093002**	**Test Procedure**	**31 - Federal fuel 3-day exhaust**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	11/21/2025	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	60
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4121	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	718.7844238	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.5202	--
FE BAG 1 (Bag 1 Fuel Economy)	12.1	12.1
CH4 BAG 1 (Bag 1 Methane)	0.0184	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0479	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	758.4021606	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0536	--
FE BAG 2 (Bag 2 Fuel Economy)	11.5	11.5
CH4 BAG 2 (Bag 2 Methane)	0.0101	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0006	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	618.855957	--
CO BAG 3 (Bag 3 Carbon Monoxide)	0.1223	--
FE BAG 3 (Bag 3 Fuel Economy)	14	14
CH4 BAG 3 (Bag 3 Methane)	0.0124	--
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0034	--
CO2 BAG 4 (Bag 4 Carbon Dioxide)	754.6641235	--
CO BAG 4 (Bag 4 Carbon Monoxide)	0.0232	--
FE BAG 4 (Bag 4 Fuel Economy)	11.5	11.5
CH4 BAG 4 (Bag 4 Methane)	0.0088	--
NMOG BAG 4 (Bag 4 Non-methane organic gases)	0.0004	--
METHANE (CH4 - Methane)	0.0120648	--
CO (Carbon Monoxide)	0.1601595	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.363	--
DT-EER (Drive Trace Energy Economy Rating)	0.081	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.253	--
MFR FE (Manufacturer Fuel Economy)	12.2	12.2
NOX (Nitrogen Oxide)	0.0240676	--
N2O (Nitrous Oxide)	0.0014135	--
HC-NM (Non-methane Hydrocarbon)	0.0101121	--
NMOG (Non-methane organic gases)	0.0111118	--
PM (Particulate Matter)	0.0003594	--
HC-TOTAL (Total Hydrocarbon)	0.021957	--

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	711	711

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	710.760437	--

Manufacturer Test Comments 01_FTP_9020494_00_EDV_X7 M60i xDrive_A_ETW-6000_RG20_Sport_S

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Other	CREE	711	--	--	--	0.1	--	711	--	--
Fed	120,000 miles	Other	METHANE	0.0121	--	--	--	0.0044	--	0.016	0.030	Pass
Fed	120,000 miles	Other	N2O	0.0014	--	--	--	0.0003	--	0.002	0.010	Pass
Fed	150,000 miles	Other	CO	0.16	--	--	--	0.07	--	0.2	1.7	Pass
Fed	150,000 miles	Other	CO-COMP	0.29	--	--	--	--	--	0.3	4.2	Pass
Fed	150,000 miles	Other	NMOG	0.0111	--	1.10	--	0.0027	--	0.014	999.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0352	--	--	--	--	--	0.038	0.070	Pass
Fed	150,000 miles	Other	NMOG+NOX-COMP	0.0333	--	--	--	--	--	0.033	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0241	--	--	--	0.0006	--	0.025	999.999	Pass
Fed	150,000 miles	Other	PM	0.0004	--	--	--	0.0000	--	0.000	0.003	Pass

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

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093012**	**Test Procedure**	**11 - Cold CO**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	11/14/2025	**Fuel**	Gasoline
Fuel Batch ID	COE10	**Fuel Calibration Number**	61
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3974	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	849.6716	--
CO BAG 1 (Bag 1 Carbon Monoxide)	1.6065	--
FE BAG 1 (Bag 1 Fuel Economy)	10.2	10.2
CH4 BAG 1 (Bag 1 Methane)	0.044	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.2226	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	815.0459	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.1094	--
FE BAG 2 (Bag 2 Fuel Economy)	10.6	10.6
CH4 BAG 2 (Bag 2 Methane)	0.0048	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0005	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	648.2139	--
CO BAG 3 (Bag 3 Carbon Monoxide)	0.3524	--
FE BAG 3 (Bag 3 Fuel Economy)	13.4	13.4
CH4 BAG 3 (Bag 3 Methane)	0.0062	--
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0031	--
METHANE (CH4 - Methane)	0.0133	--
CO (Carbon Monoxide)	0.4868	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.681	--
DT-EER (Drive Trace Energy Economy Rating)	-0.307	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.991	--
MFR FE (Manufacturer Fuel Economy)	11.2	11.2
HC-NM (Non-methane Hydrocarbon)	0.043	--
NMOG (Non-methane organic gases)	0.0472	--
HC-TOTAL (Total Hydrocarbon)	0.0559	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	776.3872	--

Manufacturer Test Comments 05_FTPCOLD_9020494_00_EDV_X7 M60i xDrive_A_ETW-6000_RG20_Sport_S

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	50,000 miles	Other	CO	0.49	--	--	--	0.02	--	0.5	12.5	Pass
Fed	120,000 miles	Other	HC-NM	0.04	--	--	--	0.00	--	0.0	0.5	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093003**	**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	10/21/2025	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	60
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3561	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)	0.010274	--
CO (Carbon Monoxide)	0.2904337	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	5.6613235	--
DT-EER (Drive Trace Energy Economy Rating)	0.3356316	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.0534281	--
MFR FE (Manufacturer Fuel Economy)	19	19
NOX (Nitrogen Oxide)	0.0037534	--
HC-NM (Non-methane Hydrocarbon)	0.01285	--
NMOG (Non-methane organic gases)	0.0132355	--
HC-TOTAL (Total Hydrocarbon)	0.0228096	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	458	458

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	457.445404	--

Manufacturer Test Comments 02_HWFET_9020494_00_EDV_X7 M60i xDrive_A_ETW-6000_RG20_Sport_S

Certification Summary Information Report

Test Group VBMXT04.4S68 **Evaporative/Refueling Family** VBMXR0180G05

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Other	CREE	458	--	--	--	0.1	--	458	--	--
Fed	150,000 miles	Other	NMOG	0.0132	--	1.03	--	0.0027	--	0.016	999.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0170	--	--	--	--	--	0.020	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0038	--	--	--	0.0006	--	0.004	999.999	Pass

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

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093004**	**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	10/21/2025	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	60
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3594	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)	868.40741	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.7598	--
FE BAG 1 (Bag 1 Fuel Economy)	10	10
CH4 BAG 1 (Bag 1 Methane)	0.0107	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0354	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	483.148041	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.1734	--
FE BAG 2 (Bag 2 Fuel Economy)	18	18
CH4 BAG 2 (Bag 2 Methane)	0.0017	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0051	--
METHANE (CH4 - Methane)	0.003701	--
CO (Carbon Monoxide)	0.303587	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.576353	--
DT-EER (Drive Trace Energy Economy Rating)	0.147357	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.529323	--
MFR FE (Manufacturer Fuel Economy)	15.3	15.3
NOX (Nitrogen Oxide)	0.022611	--
HC-NM (Non-methane Hydrocarbon)	0.011474	--
NMOG (Non-methane organic gases)	0.011819	--
PM (Particulate Matter)	0.002022	--
HC-TOTAL (Total Hydrocarbon)	0.015062	--

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	570	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	568.68988	--

Manufacturer Test Comments 03_US06_9020494_00_EDV_X7 M60i xDrive_A_ETW-6000_RG20_Sport_S

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Other	CO	0.30	--	--	--	0.07	--	0.4	999.9	Pass
Fed	150,000 miles	Other	NMOG	0.0118	--	1.03	--	0.0027	--	0.014	999.999	Pass
Fed	150,000 miles	Other	NOX	0.0226	--	--	--	0.0006	--	0.023	999.999	Pass
Fed	150,000 miles	Other	PM	0.0020	--	--	--	0.0000	--	0.002	0.006	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093005**	**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	12/04/2025	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	60
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4145	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)	0.0070526	--
CO (Carbon Monoxide)	0.217125	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.0977615	--
DT-EER (Drive Trace Energy Economy Rating)	0.1250641	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.1606848	--
MFR FE (Manufacturer Fuel Economy)	11.6	11.6
NOX (Nitrogen Oxide)	0.0208309	--
HC-NM (Non-methane Hydrocarbon)	0.0008455	--
NMOG (Non-methane organic gases)	0.0008709	--
HC-TOTAL (Total Hydrocarbon)	0.0076086	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	748	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	747.8032836	--

Manufacturer Test Comments 04_SC03_9020494_00_EDV_X7 M60i xDrive_A_ETW-6000_RG20_Sport_S

Certification Summary Information Report

Test Group VBMXT04.4S68 **Evaporative/Refueling Family** VBMXR0180G05

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Other	CO	0.22	--	--	--	0.07	--	0.3	999.9	Pass
Fed	150,000 miles	Other	NMOG	0.0009	--	1.03	--	0.0027	--	0.004	999.999	Pass
Fed	150,000 miles	Other	NOX	0.0208	--	--	--	0.0006	--	0.021	999.999	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Emission Data Vehicle Information

Vehicle ID / Configuration	9020494 / 2	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	VBMXT04.4S68	**Original Evaporative/Refueling Family**	VBMXR0180G05
Original Test Vehicle Model Year	2027		

Vehicle Model

Represented Test Vehicle Make	BMW	**Represented Test Vehicle Model**	X7 M60i xDrive

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Electric Motor	Electricity
2	Combustion Engine	Gasoline

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	No		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	1
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	S68B44T0G05X	**Rated Horsepower**	523
Displacement (liters)	4.4		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	2	**Air Aspiration Device Configuration**	Parallel
Charge Air Cooler Type	Liquid	**Drive Mode While Testing**	All Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	5895	**Equivalent Test Weight (pounds)**	6000
GVWR (lbs)	7319	**N/V Ratio**	24.5
Axle Ratio	3.38		
Transmission Type	Semi-Automatic	**# of Transmission Gears**	8
Transmission Lockup	Yes	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Dynamometer Coefficients:

Coefficient Category	Target Coefficients A (lbf)	Target Coefficients B (lbf/mph)	Target Coefficients C (lbf/mph**2)	Set Coefficients A (lbf)	Set Coefficients B (lbf/mph)	Set Coefficients C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	82.6	-0.368	0.03556	19.2	0.132	0.02876	20.4
US06	82.6	-0.368	0.03556	19.2	0.132	0.02876	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments vi_9020494_02_FEDV_X7 M60i xDrive_A_ETW-6000_RG22_default mode_D

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093014**	**Test Procedure**	**31 - Federal fuel 3-day exhaust**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	10/29/2025	**Fuel**	Gasoline
Fuel Batch ID	T2/E0	**Fuel Calibration Number**	57
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3765	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)	494.5959777	--
FE BAG 1 (Bag 1 Fuel Economy)	17.7	17.7
CO2 BAG 2 (Bag 2 Carbon Dioxide)	452.1950378	--
FE BAG 2 (Bag 2 Fuel Economy)	19.4	19.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	405.610382	--
FE BAG 3 (Bag 3 Fuel Economy)	21.6	21.6
CO2 BAG 4 (Bag 4 Carbon Dioxide)	444.4973754	--
FE BAG 4 (Bag 4 Fuel Economy)	19.7	19.7
METHANE (CH4 - Methane)	0.0020713	--
CO (Carbon Monoxide)	0.1564885	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.47	--
DT-EER (Drive Trace Energy Economy Rating)	-0.246	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.63	--
MFR FE (Manufacturer Fuel Economy)	19.97	19.97
NOX (Nitrogen Oxide)	0.0285093	--
N2O (Nitrous Oxide)	0.0014777	--
HC-NM (Non-methane Hydrocarbon)	0.0064873	--
NMOG (Non-methane organic gases)	0.0066832	--
HC-TOTAL (Total Hydrocarbon)	0.0084672	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	446	439

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	438.5294	--

Manufacturer Test Comments 01_FTP_9020494_02_FEDV_X7 M60i xDrive_A_ETW-6000_RG22_default mode_D; Official test results are determined using S-factor correction according to SAE J1772, FEB 2023.; The following S-factors were applied: S-UDDS1 = 3.1 ; S-UDDS2, HWFE = 2.7; Unadjusted results for MFR FE = 19.6 MPG and CO2 = 445.8961 g/mi

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Other	CREE	439	--	--	--	0.1	--	439	--	--
Fed	120,000 miles	Other	METHANE	0.0021	--	--	--	0.0044	--	0.006	0.030	Pass
Fed	120,000 miles	Other	N2O	0.0015	--	--	--	0.0003	--	0.002	0.010	Pass
Fed	150,000 miles	Other	CO	0.16	--	--	--	0.07	--	0.2	1.7	Pass
Fed	150,000 miles	Other	NMOG	0.0067	--	1.10	--	0.0027	--	0.009	999.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0352	--	--	--	--	--	0.038	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0285	--	--	--	0.0006	--	0.029	999.999	Pass

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

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**VBMX10093015**	**Test Procedure**	**3 - HWFE**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	10/29/2025	**Fuel**	Gasoline
Fuel Batch ID	T2/E0	**Fuel Calibration Number**	57
Vehicle Class	LDV/Passenger Car	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3789	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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	--
CO (Carbon Monoxide)	0.0919381	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.6477195	--
DT-EER (Drive Trace Energy Economy Rating)	-0.2493052	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.6164937	--
MFR FE (Manufacturer Fuel Economy)	27.67	27.67
NOX (Nitrogen Oxide)	0.0031797	--
HC-NM (Non-methane Hydrocarbon)	0.0002585	--
NMOG (Non-methane organic gases)	0.0002663	--
HC-TOTAL (Total Hydrocarbon)	0.000104	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	317	316

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	315.9871	--

Manufacturer Test Comments 02_HWFET_9020494_02_FEDV_X7 M60i xDrive_A_ETW-6000_RG22_default mode_D; Official test results are determined using S-factor correction according to SAE J1772, FEB 2023.; The following S-factors were applied: S-UDDS1 = 3.1 ; S-UDDS2, HWFE = 2.7; Unadjusted results for MFR FE = 27.6 MPG and CO2 = 316.7957 g/mi

Certification Summary Information Report

Test Group VBMXT04.4S68 **Evaporative/Refueling Family** VBMXR0180G05

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Other	CREE	316	--	--	--	0.1	--	316	--	--
Fed	150,000 miles	Other	NMOG	0.0003	--	1.03	--	0.0027	--	0.003	999.999	Pass
Fed	150,000 miles	Other	NMOG+NOX	0.0035	--	--	--	--	--	0.007	0.070	Pass
Fed	150,000 miles	Other	NOX	0.0032	--	--	--	0.0006	--	0.004	999.999	Pass

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

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Emission Data Vehicle Information

Vehicle ID / Configuration	L084470 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	MBMXT03.0G0X	**Original Evaporative/Refueling Family**	MBMXR0180G05
Original Test Vehicle Model Year	2021		

Vehicle Model

Represented Test Vehicle Make	BMW	**Represented Test Vehicle Model**	X7 xDrive40i

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline
2	Electric Motor	Electricity

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	No		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	1
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	B58B30M1G07X1	**Rated Horsepower**	335
Displacement (liters)	3		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	1	**Air Aspiration Device Configuration**	Single
Charge Air Cooler Type	Air	**Drive Mode While Testing**	All Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	5456	**Equivalent Test Weight (pounds)**	6000
GVWR (lbs)	7022	**N/V Ratio**	27.6
Axle Ratio	3.63		
Transmission Type	Semi-Automatic	**# of Transmission Gears**	8
Transmission Lockup	Yes	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Dynamometer Coefficients:

Coefficient Category	Target Coefficients A (lbf)	Target Coefficients B (lbf/mph)	Target Coefficients C (lbf/mph**2)	Set Coefficients A (lbf)	Set Coefficients B (lbf/mph)	Set Coefficients C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	67.3	-0.318	0.03447	13.1	-0.318	0.03447	18.3
Cold CO	0	0	0	0	0	0	N/A
US06	67.3	-0.318	0.03447	13.1	-0.318	0.03447	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments EVAP EDV X7 xDrive40i, AT, MY21

Test #	**MBMX10064376**	**Test Procedure**	**23 - 2-day evap**
Exhaust Test # for this Evap Test	MBMX10064375	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/10/2020	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	14
Vehicle Class	N/A	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6778	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)
HC-TOTAL (Total Hydrocarbon)	0.18155	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.196074	--

Manufacturer Test Comments EVAP EDV - 2Day, X7 xDrive40i

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	0.1961	0.0594	0.256	0.500	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**MBMX10064490**	**Test Procedure**	**34 - Federal fuel 3-day evap**
Exhaust Test # for this Evap Test	MBMX10064489	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	04/02/2020	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	14
Vehicle Class	N/A	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6850	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)
HC-TOTAL (Total Hydrocarbon)	0.170407	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.184039	--

Manufacturer Test Comments EVAP EDV - 3Day, X7 xDrive40i, MY21

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	0.1840	0.0000	0.184	0.500	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**MBMX10063966**	**Test Procedure**	**24 - Federal fuel refueling test (ORVR)**
Exhaust Test # for this Evap Test	MBMX10063963	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/05/2020	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	14
Vehicle Class	N/A	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6721	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)
HC (Hydrocarbon for Running Loss and ORVR)	0.0429	--

Manufacturer Test Comments EVAP EDV, ORVR, X7 xDrive40i, MY21

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC	0.043	0.011	0.05	0.20	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**MBMX10064491**	**Test Procedure**	**32 - Federal Fuel Running Loss**
Exhaust Test # for this Evap Test	MBMX10064489	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	04/02/2020	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	14
Vehicle Class	N/A	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6850	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)
HC (Hydrocarbon for Running Loss and ORVR)	0.011978	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.012937	--

Manufacturer Test Comments EVAP EDV - RL, X7 xDrive40i, MY21

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	0.013	0.000	0.01	0.05	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**MBMX10063967**	**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	02/27/2020	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	14
Vehicle Class	N/A	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6703	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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)
HC-TOTAL (Total Hydrocarbon)	0.00987	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.01066	--

Manufacturer Test Comments EVAP EDV, Bleed, X7 xDrive40i, MY21

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	0.0107	0.0000	0.011	0.020	Pass

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Test #	**MBMX10064377**	**Test Procedure**	**67 - Leak Test - Port Near Canister**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	02/21/2020	**Fuel**	Gasoline
Fuel Batch ID	T10/87	**Fuel Calibration Number**	14
Vehicle Class	N/A	**DF Type**	Mfr. Determined
Verify Test Lab ID	EETZ Emissions Lab		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	6703	**Odometer Units**	K
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
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
LEAK-DIA (Effective Leak Diameter (inches))	0.011	--

Manufacturer Test Comments EDV Evap Leak Test X7 xDrive40i

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	LEAK-DIA	0.011	0.000	0.01	0.02	Pass

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05

Fuel Properties

Fuel Batch ID	**T10/87**	**Fuel Calibration Number**	**60**
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	04/15/2025
Fuel Batch Calibration Effective Date	07/31/2025	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.827	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.746
Fuel Ethanol Volume Percent (%)	9.7	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.82	**Fuel Carbon Mass Fraction (E10)**	0.827
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	**Weight Fraction CO2**	--

Fuel Batch ID	**T10/87**	**Fuel Calibration Number**	**14**
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	10/09/2019
Fuel Batch Calibration Effective Date	10/23/2019	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.826	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.742
Fuel Ethanol Volume Percent (%)	9.4	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18220
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.826	**Weight Fraction CO2**	--

Fuel Batch ID	**COE10**	**Fuel Calibration Number**	**61**
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	**Fuel Batch Calibration Date**	10/25/2024
Fuel Batch Calibration Effective Date	10/24/2025	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.827	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.743
Fuel Ethanol Volume Percent (%)	9.5	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.92	**Fuel Carbon Mass Fraction (E10)**	0.827
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	**Weight Fraction CO2**	--

Fuel Batch ID	**T2/E0**	**Fuel Calibration Number**	**57**
Test Fuel Type	61 - Tier 2 Cert Gasoline	**Fuel Batch Calibration Date**	11/26/2024
Fuel Batch Calibration Effective Date	12/11/2024	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05
Exhaust Carbon Weight Fraction	0.862	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.737
Fuel Ethanol Volume Percent (%)	--	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18727
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.862	**Weight Fraction CO2**	--

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Consolidated List of Standards

Exhaust Standards

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

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CREE	--	--	--	--	--	--	0.1	999
120,000 miles	METHANE	--	--	--	--	--	--	0.0044	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0003	0.010
150,000 miles	CO	--	--	--	--	--	--	0.07	1.7
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0027	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.070
150,000 miles	NOX	--	--	--	--	--	--	0.0006	999.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Other
Fuel	Gasoline	**Test Procedure**	SC03

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.07	999.9
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0027	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.0006	999.999

Certification Summary Information Report

Test Group VBMXT04.4S68 **Evaporative/Refueling Family** VBMXR0180G05

Cert Region Federal **Cert/In-Use Code** Cert
Vehicle Class LDV/Passenger Car **Standard Level** Other
Fuel Gasoline **Test Procedure** US06

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.07	999.9
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0027	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.0006	999.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Cert Region Federal **Cert/In-Use Code** Cert
Vehicle Class LDV/Passenger Car **Standard Level** Other
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
120,000 miles	CREE	--	--	--	--	--	--	0.1	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0027	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0000	0.070
150,000 miles	NOX	--	--	--	--	--	--	0.0006	999.999

Cert Region Federal **Cert/In-Use Code** Cert
Vehicle Class LDV/Passenger Car **Standard Level** Other
Fuel Gasoline **Test Procedure** Cold CO

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.02	12.5
120,000 miles	HC-NM	--	--	--	--	--	--	0.00	0.5

Evaporative/Refueling Standards

Evaporative/Refueling Family VBMXR0180G05 **Cert Region** Federal
Cert/In-Use Code Cert **Standard Level** Federal Tier 3 Evap
Test Procedure Leak Test - Port Near Canister

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

Evaporative/Refueling Family VBMXR0180G05 **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	--	0.500	0.0000

Evaporative/Refueling Family VBMXR0180G05 **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	--	0.20	0.011

Evaporative/Refueling Family VBMXR0180G05 **Cert Region** Federal
Cert/In-Use Code Cert **Standard Level** Federal Tier 3 Evap
Test Procedure Evap Canister Bleed Test

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.020	0.0000

Evaporative/Refueling Family VBMXR0180G05 **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

Evaporative/Refueling Family VBMXR0180G05 **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	--	0.500	0.0594

Certification Summary Information Report

Test Group	VBMXT04.4S68	Evaporative/Refueling Family	VBMXR0180G05

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

Certification Region

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05
CA	California + CAA Section 177 states	FA	Federal
Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	T3B160	Federal Tier 3 Bin 160
B2	Federal Tier 2 Bin 2	T3B125	Federal Tier 3 Bin 125
B3	Federal Tier 2 Bin 3	T3B110	Federal Tier 3 Transitional Bin 110
B4	Federal Tier 2 Bin 4	T3B85	Federal Tier 3 Transitional Bin 85
B5	Federal Tier 2 Bin 5	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
B6	Federal Tier 2 Bin 6	T3B70	Federal Tier 3 Bin 70
B7	Federal Tier 2 Bin 7	T3B50	Federal Tier 3 Bin 50
B8	Federal Tier 2 Bin 8	T3B30	Federal Tier 3 Bin 30
B9	Federal Tier 2 Bin 9	T3B20	Federal Tier 3 Bin 20
B10	Federal Tier 2 Bin 10	T3B0	Federal Tier 3 Bin 0
B11	Federal Tier 2 Bin 11	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2	California LEV-II LEV	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2OP	California LEV-II LEV Optional	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
U2	California LEV-II ULEV	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
S2	California LEV-II SULEV	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
ZEV	California ZEV	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
OT	Other	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
T1	Federal Tier 1	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
PZEV	California PZEV	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L2LEV160	California LEV-II LEV160	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L2ULEV125	California LEV-II ULEV125	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L2SULEV30	California LEV-II SULEV30	HDV3B0	Federal Tier 3 HD Class 3 Bin 0
L2LEV395	California LEV-II LEV395	L4SULEV100	California LEV-IV SULEV100
L2ULEV340	California LEV-II ULEV340	L4SULEV125	California LEV-IV SULEV125
L2LEV630	California LEV-II LEV630	L4SULEV15	California LEV-IV SULEV15
L2ULEV570	California LEV-II ULEV570	L4SULEV150	California LEV-IV SULEV150
L3LEV160	California LEV-III LEV160	L4SULEV170	California LEV-IV SULEV170
L3ULEV125	California LEV-III ULEV125	L4SULEV175	California LEV-IV SULEV175
L3ULEV70	California LEV-III ULEV70	L4SULEV20	California LEV-IV SULEV20
L3ULEV50	California LEV-III ULEV50	L4SULEV200	California LEV-IV SULEV200
L3SULEV30	California LEV-III SULEV30	L4SULEV230	California LEV-IV SULEV230
L3SULEV20	California LEV-III SULEV20	L4SULEV25	California LEV-IV SULEV25
L3LEV395	California LEV-III LEV395	L4SULEV30	California LEV-IV SULEV30
L3ULEV340	California LEV-III ULEV340	L4SULEV75	California LEV-IV SULEV75
L3ULEV250	California LEV-III ULEV250	L4SULEV85	California LEV-IV SULEV85
L3ULEV200	California LEV-III ULEV200	L4ULEV125	California LEV-IV ULEV125

Certification Summary Information Report

Test Group	VBMXT04.4S68	**Evaporative/Refueling Family**	VBMXR0180G05
L3SULEV170	California LEV-III SULEV170	L4ULEV200	California LEV-IV ULEV200
L3SULEV150	California LEV-III SULEV150	L4ULEV250	California LEV-IV ULEV250
L3LEV630	California LEV-III LEV630	L4ULEV270	California LEV-IV ULEV270
L3ULEV570	California LEV-III ULEV570	L4ULEV40	California LEV-IV ULEV40
L3ULEV400	California LEV-III ULEV400	L4ULEV400	California LEV-IV ULEV400
L3ULEV270	California LEV-III ULEV270	L4ULEV50	California LEV-IV ULEV50
L3SULEV230	California LEV-III SULEV230	L4ULEV60	California LEV-IV ULEV60
L3SULEV200	California LEV-III SULEV200	L4ULEV70	California LEV-IV ULEV70

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		

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