

## **GENERAL MOTORS LLC**

**EXECUTIVE ORDER A-006-2248-1** New Engines for Diesel or Incomplete Medium-Duty Vehicles Page 1 of 2

Pursuant to the authority vested in California Air Resources Board by Health and Safety Code Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-19-095;

IT IS ORDERED AND RESOLVED: The engine and emission control systems produced by the manufacturer are certified as described below for use in diesel or incomplete medium-duty vehicles with a manufacturer's GVWR from 10,001 to 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL		I EMISSION		LOTANDADDA				mo grantou.	
YEAR	ENGINE FAMILY	STD CATEGORY <sup>2</sup>	FUEL TYPE 1	& TEST PROCEDURE	ENGINE SIZES (L)	ECS & SPECIAL FEATURE	:S <sup>3</sup>	OBD COMPLIANCE	
2020	LGMXE06.6001	ULEV	Gasoline	Otto	6.6	2TWC 2HO2S(2) DGI	2TWC, 2HO2S(2), DGI		
	ENGINE	OBD(F)							
ENGINE MODELS / CODES (rated power, in hp)								OBD	
								COMPLIANCE	
L8T / 70 (350)								OBD(F)	
*								*	
* = not applicable: GWR=gross vehicle weight rating: 12 CCP pg=Title 12 Cd/drain Oct   CD									

=not applicable; GVWR=gross vehicle weight rating; 13 CCR xyz=Title 13, California Code of Regulations, Section xyz; 40 CFR 86.abc=Title 40, Code of Federal Regulations, Section 86.abc; L=liter; hp=horsepower; kw=kilowatt;

CNG/LNG=compressed/liquefied natural gas; LPG=fiquefied petroleum gas; E85=85% ethanol fuel; MF=multi fuel a.k.a BF=bi fuel; DF=dual fuel; FF=flexible fuel;

SULEY / ULEY / LEV=super ultra / ultra / low emission vehicle

SOLEY / ULEY / LEV=super utra / utra / low emission venice;

3 ECS=emission control system; TWC/OC=three-way/oxidizing catalyst; NAC=NOx adsorption catalyst; SCR-U/SCR-N=selective catalytic reduction – urea / -- ammonia; WU (prefix)=warm-up catalyst; DPF=diesel particulate filter; PTOX=periodic trap oxidizer; HO2S/OZS=heated/oxygen sensor; HAFS/AFS=heated/air-fuel-ratio sensor (a.k.a., universal or linear oxygen sensor); WR-HO2S=wide range oxygen sensor; TBI=throttle body fuel injection; SFI/MFI=sequential/multi port fuel injection; DIG=direct gasoline injection; GCARB=gaseous carburetor; IDI/DDI=indirect/direct diesel injection; TC/SC=turbol super charger; CAC=charge air cooler; EGR / EGR-C=exhaust gas recirculation / cooled EGR; PAIR/AIR=pulsed/secondary air injection; SPL=smoke puff limiter; ECM/PCM=engine/powertrain control module; EM=engine modification; 2 (prefix)=parallel; (2) (suffix)=in series;

Following are: 1) the FTP exhaust emission standards or family emission limit(s) as applicable under 13 CCR 1956.8; 2) the SET and NTE limits under the applicable California exhaust emission standards and test procedures for heavy-duty diesel engines and vehicles (Test Procedures); and 3) the corresponding certification levels, in g/bhp-hr, for this engine family. "Diesel" CO, SET and NTE certification compliance may have been demonstrated by the manufacturer as provided under the applicable Test Procedures in lieu of testing. (Fordual-and flexible-fueled engines, the CERT values in brackets [] are those when tested on conventional test fuel.)

	NMHC		NOx		NMHC+NOx		CO		PM		нсно	
	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET
STD	0.14	*	0.20	*	*	*	14.4	*	0.01	*	0.01	*
FEL	*	*	0.12	*	*	*	*	*	*	*	*	*
CERT	0.06	*	0.05	*	*	*	1.7	*	0.002	*	0.000	*
NTE	*		*		*		*		*		*	

<sup>4</sup> g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; SET=supplemental emissions testing; NTE=Not-to-Exceed emission limit; STD=standard or emission test cap; FEL=family emission limit; CERT=certification level; NMHC/HC=non-methane/hydrocarbon; NOx=oxides of nitrogen; CO=carbon monoxide; PM=particulate matter; HCHO=formaldehyde;

BEIT FURTHER RESOLVED: The manufacturer has demonstrated compliance with the Greenhouse Gas Emission Standards as specified in Title 13 CCR 1956.8 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy Duty Otto Cycle Engines and Vehicles" (HDOE Test Procedures) adopted December 27, 2000, as last amended December 19, 2018 using the 2014 model year National Heavy-Duty Engine and Vehicle Greenhouse Gas Program as specified in Section 1036.108 of the HDOE Test Procedures. The manufacturer has submitted the required information and therefore has met the criteria necessary to receive a California Executive Order based on the Environmental Protection Agency's Certificate of Conformity for the above listed engine family.

	EPA CERTIFICATE	OF CONFORMITY	PRIMARY INTENDED SERVICE CLASS				
	LGMXE06.	6001-002	Vocational				
In	CC	2		1			
g/bhp-hr	FTP	SET	CH₄	N₂O			
STD	627	*	0.10	0.10			
FCL	627	*	*	*			
FEL	646	*	*	*			
CERT	606	*	0.04	0.00			

g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; SET=Supplemental emissions testing; STD = standard or emission test cap; FEL=family emission limit; /OCATIONAL=vocational engine; TRACTOR=tractor engine FCL=family certification level; CERT=certification level; CO2=carbon dioxide; VOCATIONAL=vocational engine; N2O=nitrous oxide



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**BE IT FURTHER RESOLVED:** The listed engine models have been certified to the optional emission standards and test procedures in 13 CCR 1956.8 applicable to diesel or incomplete medium-duty vehicles with a GVWR from 10,001 to 14,000 pounds and, therefore, shall be subject to 13 CCR 2139(c) (in-use testing of engines certified for use in diesel or incomplete medium-duty vehicles with a 10,001-14,000 pounds GVWR).

**BE IT FURTHER RESOLVED:** For the listed engine models the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR 1965 (emission control labels), 13 CCR 1968.2 (on-board diagnostic, full or partial compliance), and 13 CCR 2035 et seq. (emission control warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

This Executive Order hereby supersedes Executive Order A-006-2248 dated June 10, 2020.

day of June 2020.

Allen Lyons, Chief

Emissions Certification and Compliance Division