

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 on-road motor vehicles with a manufacturer's GVWR over 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	ENGINE SIZES (L)	FUEL TYPE ¹	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS ²	ECS & SPECIAL FEATURES ³	DIAGNOSTIC ⁶
2020	LCEXH0912XAX	14.9	Diesel	Diesel	HHDD	DDI, TC, CAC, ECM, EGR, OC, PTOX, SCR-U, AMOX	OBD(\$)
PRIMARY ENGINE'S IDLE EMISSIONS CONTROL ⁵		ADDITIONAL IDLE EMISSIONS CONTROL ⁵					
30g		N/A					
ENGINE (L)	ENGINE MODELS / CODES (rated power, in hp)						
14.9	See attachment for engine models and ratings						
[*] =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, hr=hour; ¹ CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas; E85=85% ethanol fuel; MF=multi fuel a.k.a. BF=bi fuel; DF=dual fuel; FF=flexible fuel; ² L/M/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto; 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/O2S=heated/oxygen sensor; HAFS/AFS=heated/air-fuel-ratio sensor (a.k.a., universal or linear oxygen sensor); TBI=throttle body fuel injection; SF/MFI=sequential/multi port fuel injection; DGI=direct gasoline injection; GCARB=gaseous carburetor; IDI/DDI=indirect/direct diesel injection; TC/SC=turbo/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; ⁵ ESS=engine shutdown system (per 13 CCR 1956.8(a)(6)(A)(1); 30g=30 g/hr NOx (per 13 CCR 1956.8(a)(6)(C); APS =internal combustion auxiliary power system; ALT=alternative method (per 13 CCR 1956.8(a)(6)(D); Exempt=exempted per 13 CCR 1956.8(a)(6)(B) or for CNG/LNG fuel systems; N/A=not applicable (e.g., Otto engines and vehicles); ⁶ EMD=engine manufacturer diagnostic system (13 CCR 1971); OBD(F) / (P) / (\$) =full / partial / partial with a fine / on-board diagnostic.;							

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, 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. (For flexible- and dual-fueled engines, the CERT values in brackets [] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR 1956.8 are in parentheses.). ⁴

in g/bhp-hr	NMHC		NOx		CO		PM		HCHO	
	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET
STD	0.14	0.14	0.20	0.20	15.5	15.5	0.01	0.01	*	*
CERT	0.000	0.000	0.17	0.17	0.1	0.00	0.003	0.003	*	*
NTE	0.21		0.30		19.4		0.02		*	

BE IT 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 Diesel-Engines and Vehicles" (HDDE Test Procedures) adopted December 12, 2002, as last amended April 18, 2019 using the 2014 model year National Heavy-Duty Engine and Vehicle Greenhouse Gas Program as specified in Section 1036.108 of the HDDE 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.

In g/bhp-hr	EPA CERTIFICATE OF CONFORMITY				PRIMARY INTENDED SERVICE CLASS	
	LCEXH0912XAX-011				TRACTOR / VOCATIONAL	
	CO ₂				CH ₄	N ₂ O
	FTP	SET				
STD	555	460		0.10	0.10	
FCL	543	478		*	*	
FEL	559	492		0.10	0.10	
CERT	527	467		0.02	0.10	

⁴ 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; FCL=family certification level; CERT=certification level; CO₂=carbon dioxide; CH₄=methane; N₂O=nitrous oxide; VOCATIONAL=vocational engine; TRACTOR=tractor engine

BE IT FURTHER RESOLVED: Certification to the FEL(s) / FCL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) / FCL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

BE IT FURTHER RESOLVED: Except in vehicle applications exempted per 13 CCR 1956.8(a)(6)(B), engines in this engine family certified under 13 CCR 1956.8(a)(6)(C) [30 g/hr NO_x] and section 35.B.4 of the incorporated "California Exhaust Emissions Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" (HDDE Test Procedures) adopted December 12, 2002, as last amended April 18, 2019, shall be provided with an approved "Certified Clean Idle" label that shall be affixed to the vehicle into which the engine is installed.

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 1971.1 (on-board diagnostic, full or partial compliance) and 13 CCR 2035 et seq. (emission control warranty).

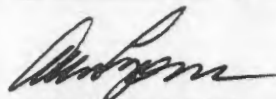
BE IT FURTHER RESOLVED: That the manufacturer has elected to include engine models in this engine family which are identified for "emergency vehicle use only". These "emergency vehicle use only" engines are exempt from requirements imposed pursuant to California law and the regulations adopted pursuant thereto for motor vehicle pollution control devices per California Vehicle Code Section 27156.2. The manufacturer must clearly label these engines for "emergency vehicle use only" on the engines' emission control label.

BE IT FURTHER RESOLVED: The listed engine models are conditionally certified in accordance with 13 CCR Section 1971.1(k) (deficiency and fines provisions for certification of malfunction and diagnostic system) because the heavy-duty on-board diagnostic (HD OBD) system of the listed engine models has been determined to have six deficiencies. The listed engine models are approved subject to the manufacturer paying a fine of \$125 per engine for the third through sixth deficiencies in the listed engine family that is produced and delivered for sale in California. On a quarterly basis, the manufacturer shall submit to California Air Resources Board reports of the number of engines produced and delivered for sale in California and pay the full fine owed for that quarter pursuant to this conditional certification. Payment shall be made payable to the State Treasurer for deposit in the Air Pollution Control Fund no later than thirty (30) days after the end of each calendar quarter during the 2020 model-year production period. Failure to pay the quarterly fine, in full, in the time provided, may be cause for the Executive Officer to rescind this conditional certification, effective from the start of the quarter in question, in which case all engines covered under this conditional certification for that quarter and all future quarters would be deemed uncertified and subject to a civil penalty of up to \$37,500 per engine pursuant to HSC Section 43154.

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.

Executed at El Monte, California on this 11TH day of December 2019.



Allen Lyons, Chief
Emissions Certification and Compliance Division

EO #: A-021-0717

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8/30/2019

Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
.CEXH0912XAX	4343;FR11348	X15 485	492@1877	262	166	1650@1150	293	114	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11349	X15 485	492@1877	262	166	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11351	X15 505	512@1877	274	173	1650@1150	293	114	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11352	X15 505	512@1877	274	173	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11354	X15 525	534@1877	287	181	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11355	X15 565	580@1877	316	200	1850@1150	337	131	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11356	X15 565V	576@1877	313	198	2050@1150	370	143	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11885	X15 555V	563@1877	309	196	1850@1150	336	131	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11934	X15 565V	580@1877	316	200	1850@1150	337	131	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11935	X15 605V	605@1877	333	211	1850@1150	337	131	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11936	X15 605V	605@1877	333	211	2050@1150	370	143	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11940	X15 565RV	540@1966	284	188	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11941	X15 605RV	578@1966	307	203	1950@1150	349	135	DDI,TC,CAC,ECM,E
	Emergency	Vehicle	Models	Below					
.CEXH0912XAX	4343;FR11937	X15 505EV	474@1966	247	164	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11938	X15 565EV	540@1966	284	188	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11886	X15 600EV	578@1966	307	203	1850@1150	330	128	DDI,TC,CAC,ECM,E
.CEXH0912XAX	4343;FR11939	X15 605EV	605@1877	333	211	2050@1150	370	143	DDI,TC,CAC,ECM,E

DDI,TC,CAC,
ECM, EGR,
P TOX, SCR-4,
OC, Amox