

Pursuant to the authority vested in the 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 ⁵
2019	KCEXH0408BAT	6.7	Diesel	Diesel	MHDD	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)						
6.7	See attachment for engine models and ratings						

¹ =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;
² 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;
³ L/M/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;
⁴ 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; IDU/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=snoke 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		NMHC+NOx		CO		PM		HCHO	
	FTP	SET	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	0.03	0.02	0.15	0.10	*	*	0.04	0.01	0.001	0.001	*	*
NTE	0.21		0.30		*		19.4		0.02		*	

⁴ g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; SET=Supplemental emissions testing; NTE=Not-to-Exceed; 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;

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 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 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	
	KCEXH0408BAT-011		TRACTOR / VOCATIONAL	
	FTP	SET	CH ₄	N ₂ O
STD	576	487	0.10	0.10
FCL	528	494	*	*
FEL	544	509	0.10	0.10
CERT	525	488	0.02	0.08

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

R/c

EO# : A-021-0691-1

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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
CEXH0408BAT	4660;FR94746	B6.7 360	360@2600	146	128	800@1800	148	90	SCR, PTOX, PC
CEXH0408BAT	4660;FR96706	B6.7 360ST	360@2600	146	128	800@1800	148	90	SCR, PTOX, PC
CEXH0408BAT	4660;FR94745	B6.7 340	340@2600	138	121	700@1600	134	73	SCR, PTOX, PC
CEXH0408BAT	4660;FR96705	B6.7 340ST	340@2600	138	121	700@1600	134	73	SCR, PTOX, PC
CEXH0408BAT	4660;FR94744	B6.7 325	315@2600	127	112	750@1800	143	87	SCR, PTOX, PC
CEXH0408BAT	4660;FR96704	B6.7 325ST	315@2600	127	112	750@1800	143	87	SCR, PTOX, PC
CEXH0408BAT	4660;FR94743	B6.7 300	300@2600	121	106	660@1600	125	67	SCR, PTOX, PC
CEXH0408BAT	4661;FR94749	B6.7 300	300@2600	121	106	660@1600	125	67	SCR, PTOX, PC
CEXH0408BAT	4660;FR94741	B6.7 280	270@2600	109	96	660@1600	125	67	SCR, PTOX, PC
CEXH0408BAT	4661;FR94742	B6.7 280	270@2600	109	96	660@1600	125	67	SCR, PTOX, PC
CEXH0408BAT	4569;FR94738	B6.7 260	250@2600	109	96	660@1600	122	66	SCR, PTOX, PC
CEXH0408BAT	4570;FR94739	B6.7 260	250@2600	109	96	660@1600	122	66	SCR, PTOX, PC
CEXH0408BAT	4569;FR94736	B6.7 250	245@2600	107	94	660@1600	122	66	SCR, PTOX, PC
CEXH0408BAT	4570;FR94737	B6.7 250	245@2600	107	94	660@1600	122	66	SCR, PTOX, PC
CEXH0408BAT	4569;FR94734	B6.7 240	235@2600	103	90	560@1600	104	56	SCR, PTOX, PC
CEXH0408BAT	4570;FR94735	B6.7 240	235@2600	103	90	560@1600	104	56	SCR, PTOX, PC
CEXH0408BAT	4569;FR94733	B6.7 220	215@2600	95	83	520@1600	97	52	SCR, PTOX, PC
CEXH0408BAT	4569;FR95098	B6.7 220	215@2600	95	83	600@1600	111	60	SCR, PTOX, PC
CEXH0408BAT	4570;FR94748	B6.7 220	215@2600	95	83	520@1600	97	52	SCR, PTOX, PC
CEXH0408BAT	4570;FR95099	B6.7 220	215@2600	95	83	600@1600	111	60	SCR, PTOX, PC
CEXH0408BAT	4569;FR94732	B6.7 200	195@2600	87	76	520@1600	97	52	SCR, PTOX, PC
CEXH0408BAT	4570;FR94747	B6.7 200	195@2600	87	76	520@1600	97	52	SCR, PTOX, PC
CEXH0408BAT	4660;FR94746	PX-7 360	360@2600	146	128	800@1800	148	90	SCR, PTOX, PC
CEXH0408BAT	4660;FR96706	PX-7 360ST	360@2600	146	128	800@1800	148	90	SCR, PTOX, PC
CEXH0408BAT	4660;FR94745	PX-7 340	340@2600	138	121	700@1600	134	73	SCR, PTOX, PC
CEXH0408BAT	4660;FR96705	PX-7 340ST	340@2600	138	121	700@1600	134	73	SCR, PTOX, PC
CEXH0408BAT	4660;FR94744	PX-7 325	315@2600	127	112	750@1800	143	87	SCR, PTOX, PC
CEXH0408BAT	4660;FR96704	PX-7 325ST	315@2600	127	112	750@1800	143	87	SCR, PTOX, PC

BDT, TC, CAC,
ECM, EGR, OC,
PTOX, SCR-U,
AMOX

R/K

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KCEXH0408BAT	4660;FR94741	PX-7 260 EV	270@2600	109	96	660@1600	125	67	SCRC, PTOX, PC
KCEXH0408BAT	4569;FR94738	PX-7 260 EV	250@2600	109	96	660@1600	122	66	SCRC, PTOX, PC
KCEXH0408BAT									

DDI, TC, CAC,
ECM, EGR,
OC, PTOX, SCA-U,
Amax