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-14-012;

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]
2016	GCEXH0729XAE	11.9	Diesel	Diesel	HHDD-UB	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)
11.9	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; SFI/MFI=sequential/multi port fuel injection; DGI=direct gasoline injection; GCA/RB=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		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	*	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*
CERT	0.03	0.02	0.19	0.07	*	*	1.2	0.6	0.001	0.002	*	*
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 Dec. 12, 2002, as last amended Oct. 21, 2014 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.

	EPA CERTIFICATE OF CONFORMITY		PRIMARY INTENDED SERVICE CLASS	
	CEX-ONHWY-16-11		TRACTOR / VOCATIONAL	
In g/bhp-hr	CO_2		CH_4	N_2O
	FTP	SET		
STD	555	460	0.10	0.10
FCL	579	489	*	*
FEL	596	504	*	0.12
CERT	579	489	0.02	0.07

[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; CO_2=carbon dioxide; CH_4=methane; N_2O=nitrous oxide; VOCATIONAL=vocational engine; TRACTOR=tractor engine

BE IT FURTHER RESOLVED: That the listed engine family is certified to the Alternate Phase-in CO_2 Emission Standards as specified in 13 CCR 1956.8 and section 40 CFR 1036.150 (e) as incorporated in the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy Duty Diesel-Engines and Vehicles" adopted Dec. 12, 2002, as last amended Oct. 21, 2014.

SUPERSEDED

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 NOx] 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 Dec. 12, 2002, as last amended Apr. 18, 2013, 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 fifteen deficiencies. The listed engine models are approved subject to the manufacturer paying a fine of $500 per engine for the third through fifteenth deficiencies in the listed engine family that is produced and delivered for sale in California. On a quarterly basis, the manufacturer shall submit to the 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 2016 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 $5000 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 2nd day of December 2015.

M. Tuente

FOR Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

SUPERSEDED

EO#: A-021-0644

Attachment: Page 1 of 2

Engine Model Summary Template

11-10-15

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
GCEXH0729XAE	4591;FR20640	ISX12 425ST	413@1977	220	147	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20642	ISX12 425	413@1977	220	147	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20645	ISX12 400ST	392@1977	209	139	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20647	ISX12 400	392@1977	209	139	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20633	ISX12 500V	479@1977	259	173	1645@1200	313	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20634	ISX12 450V	432@1977	231	154	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20636	ISX12 450V	432@1977	231	154	1550@1200	293	118	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20643	ISX12 425V	413@1977	220	147	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20639	ISX12 425V	413@1977	220	147	1550@1200	293	118	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20646	ISX12 400V	392@1977	209	139	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20632	ISX12 500 RV	479@1977	259	173	1645@1200	313	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20635	ISX12 450 MC	432@1977	231	154	1550@1200	293	118	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20641	ISX12 425 MC	413@1977	220	147	1650@1200	314	127	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20644	ISX12 425 MC	413@1977	220	147	1450@1200	272	110	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20652	ISX12 370	379@1977	202	135	1450@1200	272	110	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20654	ISX12 370	379@1977	202	135	1350@1200	252	102	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20655	ISX12 350ST	360@1977	192	128	1450@1200	272	110	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20657	ISX12 350	360@1977	192	128	1350@1200	252	102	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20659	ISX12 330ST	341@1977	183	122	1350@1200	252	102	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20661	ISX12 330	341@1977	183	122	1350@1200	252	102	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20660	ISX12 330	341@1977	183	122	1250@1200	233	94	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20663	ISX12 310	315@1977	166	111	1150@1200	214	87	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20650	ISX12 385V	379@1977	202	135	1450@1200	272	110	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20651	ISX12 385V	379@1977	202	135	1350@1200	252	102	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20656	ISX12 350V	341@1977	183	122	1450@1200	272	110	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20658	ISX12 350V	341@1977	183	122	1350@1200	252	102	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20662	ISX12 320V	315@1977	166	111	1150@1200	214	87	SCRC, PTOX, PC
GCEXH0729XAE	4591;FR20664	ISX12 385R	379@1977	202	135	1450@1200	272	110	SCRC, PTOX, PC

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

SUPERSEDED

EO#: A-021-0644

Attachment: Page 2 of 2

11-10-15

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
GCEXH0729XAE	4591;FR20665	ISX12 385R	379@1977	202	135	1350@1200	252	102	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20666	ISX12 350R	341@1977	183	122	1450@1200	272	110	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20667	ISX12 350R	341@1977	183	122	1350@1200	252	102	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20668	ISX12 330R	341@1977	183	122	1250@1200	233	94	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20669	ISX12 320R	315@1977	166	111	1150@1200	214	87	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20718	ISX12 425ST2	413@1977	220	147	1650@1200	267	127	~~SCRC, PTOX, PC~~
GCEXH0729XAE	Emergency	Vehicle	Engine	Ratings	Below				
GCEXH0729XAE	4591;FR20631	ISX12 500EV	479@1977	259	173	1645@1200	313	127	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20637	ISX12 450EV	432@1977	231	154	1550@1200	293	118	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20638	ISX12 425EV	413@1977	220	147	1550@1200	293	118	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20648	ISX12 400EV	388@1977	207	138	1550@1200	293	118	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20649	ISX12 400EV	388@1977	207	138	1450@1200	272	110	~~SCRC, PTOX, PC~~
GCEXH0729XAE	4591;FR20653	ISX12 370EV	379@1977	202	135	1450@1200	272	110	~~SCRC, PTOX, PC~~
GCEXH0729XAE	Urban Bus	Ratings	Below						
GCEXH0729XAE	4592;FR20670	ISX12 385CC	379@1977	202	135	1450@1200	272	110	~~SCRC, PTOX, PC~~

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

SUPERSEDED