BI-PHASE TECHNOLOGIES LLC

EXECUTIVE ORDER A-360-0018 New On-Road Heavy-Duty Engines Page 1 of 1 Pages

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-02-003;

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	ENGINE FAN	ENGINE FAMILY		FUEL TYPE 1	STANDARDS & TEST	INTENDED SERVICE	ECS & SPECIAL FEATURES 3	DIAGNOSTIC 6			
YEAR	YEAR		SIZES (L)		PROCEDURE	CLASS 2	TWC, HO2S(2), SFI	N/A			
2012	CBPTE06.0	G12	6.0	LPG	Otto	HDO	1440, 11020(2), 011	14//3			
PRIMARY ENGINE'S IDLE EMISSIONS CONTROL 5 ADDITIONAL IDLE EMISSIONS CONTROL							NTROL 5				
N/A N/A											
ENGINE (L) ENGINE MODELS / CODES (rated power, in hp)											
6.0					GM 6.0 / 1 (30	0)					
• most cool	inable: C\AMB=ases	a vehicle :	voight ratios: 12 CC	P www-Title 12 California Code o	f Postulations Sact	ion w/7: 40 CE	R 86.abc=Title 40, Code of Federal Regulation	s Section 86 and			
	icable; GvvvR=gros ≔horsepower; kw=k			R xyz= fille 13, California Code o	Regulations, Sect	1011 XYZ, 40 CF	K 66.abc - Title 40, Code of Federal Regulation	15, 36011011 00.400,			
				ied petroleum gas; E85=85% eth	anoi fuel; MF=mult	i fuel a.k.a. BF	=bi fuel; DF=dual fuel; FF=flexible fuel;				
				irban bus; HDO=heavy duty Otto;							
up catalyst NOS=nitro injection; T ECM/PCM	; DPF=diesel particu gen oxide sensor; TE rC/SC=turbo/ super i =engine/powertrain d	ilate filter; BI=throttle charger; (control mo	PTOX=periodic trap body fuel injection; CAC=charge air cool- dule; EM=engine mo	o oxidizer, HO2S/O2S=heated/ox SFI/MFI=sequential/multi port fuel er; EGR / EGR-C=exhaust gas re odification; 2 (prefix)=parallel; (2	ygen sensor; HAF: l injection; DGI=din ecirculation / cooled t) (suffix)=in series	S/AFS=heated/a ect gasoline inje EGR; PAIR/A	ctive catalytic reduction – urea / – ammonia; V air-fuel-ratio sensor (a.k.a., universal or linear o ection; GCARB=gaseous carburetor; IDI/DDI= IR=pulsed/secondary air injection; SPL=smoki	oxygen sensor); :indirect/direct diese e puff limiter;			
ESS=er	ngine shutdown syst :R 1956.8(a)(6)(D); I	em (per 1: E xempt =6	3 CCR 1956.8(a)(6)(exempted per 13 CCF	A)(1); 30g =30 g/hr NOx (per 13 C R 1956.8(a)(6)(B) or for CNG/LNG	CCR 1956.8(a)(6)(C fuel systems; N/A); APS =interna =not applicable	al combustion auxiliary power system; ALT=al e(e.g., Otto engines and vehicles);	ternative method			
				971); OBD=on-board diagnostic s			,				

Following are: 1) the FTP exhaust emission standards, or family emission limit(s) as applicable, under 13 CCR 1956.8; 2) the EURO 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, EURO 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.).

in	NMHC		NOx		NMHC+NOx		со		PM		нсно	
g/bhp-hr	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
STD	0.14	٠	0.20	•	•	*	15.5	•	0.01	•	0.050	*
FEL	*	•	*	٠	•	•	*	*	*	•	•	•
CERT	0.08	*	0.14	•	•	*	6.6	•	0.006	•	0.0006	•
NTE	•				•		•		•		•	

4. g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; EURO=Euro III European Steady-State Cycle, including RMCSET=ram mode cycle 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; (Rev.: 2007-02-26)

BE IT FURTHER RESOLVED: Certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(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: For the listed engine models the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR 1965 (emission control labels) 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.

Executed at El Monte, California on this day of October 2011.

Annette Hebert, Chief

Mobile Source Operations Division

Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine M odel	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)			9.Emission Control ueDevice Per SAE J1930
CBPTE06.0LPG	1	6m 6.0	300@4400			360@4000			
		-Isuzu NPR-HD			ria sid filada supus para saara a phantana dalah sisus di Tabbah dalah pununsaka dar				TUC, HO2S(2), SEI
		GMC NPR+HD	ng punggan an si a na ing ing ang ang ang ang ang ang ang ang ang a					iya kakasan in wana aan Affac Piligarina kashini ku waka kinaka da aan ahaa waa waa waa waa ka	
		Chevy NPR-HD					No. dans 1. of 15 million and 16 mil		aughteide gegen Machalle (- 7777) ann an e ire ein seisen gezeicht der eine geseichte der eine der eine der eine
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		Chevy G4500					entens - nema@@lechdo.com/proposal portroller town can (1) - h. c. com/proposal	nagonizacio de actorio e de Santonia major y la della calenda proportio de la composicio de la composicio de la composicio del	
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