

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 YEAR	ENGINE FAMILY	ENGINE SIZES (L)	FUEL TYPE <sup>1</sup>	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS <sup>2</sup>	ECS & SPECIAL FEATURES <sup>3</sup>	IDLING EMISSIONS <sup>5</sup> CONTROL
						DDI, TC, CAC, ECM, EGR, OC, PTOX	30g
2008	BCEXH0408BAC	6.7	Diesel	Diesel	MHDD		
<b>ENGINE (L)</b>							
<b>ENGINE MODELS / CODES (rated power, in hp)</b>							
6.7 See attachment for engine models and ratings							
*							
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<sup>1</sup> \* = 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;  
<sup>2</sup> 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;  
<sup>3</sup> L/M/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;  
<sup>4</sup> 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;  
<sup>5</sup> 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); 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); (Rev.: 2007-12-20)

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 g/bhp-hr	NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
STD	0.14	0.14	*	*	*	*	15.5	15.5	0.01	0.01	*	*
FEL	*	*	1.95	1.95	1.9	1.9	*	*	*	*	*	*
CERT	0.000	0.000	1.61	1.79	1.6	1.8	0.01	0.00	0.001	0.000	*	*
NTE	0.21		2.44		2.4		19.4		0.02		*	

<sup>4</sup> 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;

**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:** 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 Sep. 1, 2006, 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:** The listed engine models have been certified to the split engine family standards under 13 CCR 1956.8(b) [diesel engines] or 13 CCR 1956.8(d) [Otto engines] and the incorporated 40 CFR 86.007-15(m)(9).

**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 18<sup>th</sup> day of January 2008.

  
 Annette Hebert, Chief  
 Mobile Source Operations Division

# Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm <sup>3</sup> /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 <sup>3</sup> /stroke@peak torque	8.Fuel Rate: (lbs/hr)/@peak torqueDevice Per SAE J1930	9.Emission Control
8CEXH0408BAC	1388;FR91662	ISB 350	350@2522	156	133	750@1800	151	92	PTOX, PCM,
8CEXH0408BAC	1388;FR91661	ISB 340	340@2743	149	138	660@1600	133	72	PTOX, PCM,
8CEXH0408BAC	1388;FR91660	ISB 325	325@2500	149	126	750@1800	152	92	PTOX, PCM,
8CEXH0408BAC	0279;FR91659	ISB 300	300@2564	138	119	620@1600	126	68	PTOX, PCM,
8CEXH0408BAC	0279;FR91658	ISB 280	280@2500	132	111	660@1600	133	72	PTOX, PCM,
8CEXH0408BAC	0279;FR91657	ISB 260	260@2500	123	104	620@1600	126	68	PTOX, PCM,
8CEXH0408BAC	0279;FR91666	ISB 240	240@2500	115	97	620@1600	126	68	PTOX, PCM,
8CEXH0408BAC	0914;FR92012	ISB 280	280@2500	132	111	660@1600	133	72	PTOX, PCM,
8CEXH0408BAC	0914;FR92011	ISB 260	260@2500	123	104	620@1600	126	68	PTOX, PCM,
8CEXH0408BAC	0914;FR92167	ISB 240	240@2500	115	97	620@1600	126	68	PTOX, PCM,
8CEXH0408BAC	0914;FR92021	ISB 240	240@2500	115	97	540@1600	113	61	PTOX, PCM,
8CEXH0408BAC	0279;FR92020	ISB 240	240@2500	115	97	560@1600	113	61	PTOX, PCM,
8CEXH0408BAC	0279;FR91656	ISB 220	220@2500	107	90	520@1600	106	57	PTOX, PCM,
8CEXH0408BAC	0279;FR91655	ISB 220	200@2400	103	83	520@1600	106	57	PTOX, PCM,

ATTACHMENT

A-021-0463

DDI, TC, CAC, ECM  
EGR, OC, PTOX  
FM are models