



California Environmental Protection Agency

**AIR RESOURCES BOARD**

**CUMMINS, INC.**

**EXECUTIVE ORDER A-021-0441**  
New On-Road Heavy-Duty Engines

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>
			Diesel				
2007	7CEXH0661MAY	10.8	Diesel		Diesel	HHDD	ECM, EGR, OC, PTOX, TC, CAC, DDI
ENGINE (L)		ENGINE MODELS / CODES (rated power, in hp)					
10.8		See Attachment					
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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;  
<sup>2</sup> L=liter; hp=horsepower; kw=kilowatt;  
<sup>3</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>2</sup> LM/H HHDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;  
<sup>3</sup> ECS=emission control system; TWC/OC=three-way/oxidizing catalyst; 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/MPFI=sequential/multi port fuel injection; DGI=direct gasoline injection; GCARB=gaseous carburetor; ID/DDI=indirect/direct diesel injection; TC/SC=turbo/super charger; CAC=charge air cooler; EGR=exhaust gas recirculation; 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; (2006dec22)

Following are: 1) the FTP exhaust emission standards, or family emission limit(s) as applicable, under 13 CCR 1956.1 (urban bus) or 13 CCR 1956.8 (other than urban bus); 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, in g/bhp-hr, 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 1956.1 or 13 CCR 1956.8 are in parentheses.)

	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	*	*	*	*	2.5	2.5	*	*	*	*	*	*
CERT	0.01	0.01	*	*	2.30	2.20	0.06	0.00	0.001	0.00	*	*
NTE	0.21		*		3.75		19.375		0.015		*	

<sup>1</sup> g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; EURO=Euro III European Steady-State Cycle; 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;

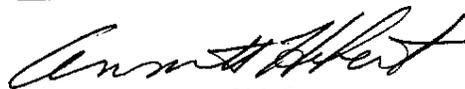
**BE IT FURTHER RESOLVED:** Certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, 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:** 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 26 day of January 2007.

  
**Annette Hebert, Chief**  
**Mobile Source Operations Division**

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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 <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 torque	9.Emission Control Devices Per SAE J1931
7CEXH0661MAY	1545;FR20128	ISM 330ST	370@1800	215	131	1350@1200	267	108	PTOX, PCM,
7CEXH0661MAY	1545;FR20130	ISM 330ST	370@1800	215	131	1350@1200	267	108	PTOX, PCM,
7CEXH0661MAY	1545;FR20129	ISM 330	340@1800	201	122	1250@1200	246	100	PTOX, PCM,
7CEXH0661MAY	1545;FR20131	ISM 310	320@1800	193	117	1150@1200	225	91	PTOX, PCM,
7CEXH0661MAY	1545;FR20132	ISM 280	320@1800	193	117	1150@1200	225	91	PTOX, PCM,
7CEXH0661MAY	1545;FR20133	ISM 320V	320@1800	193	117	1150@1200	225	91	PTOX, PCM,
7CEXH0661MAY	2730;FR20128	ISM 330ST	370@1800	215	131	1350@1200	267	108	PTOX, PCM,
7CEXH0661MAY	2730;FR20129	ISM 330	340@1800	201	122	1250@1200	246	100	PTOX, PCM,
7CEXH0661MAY	2730;FR20131	ISM 310	320@1800	193	117	1150@1200	225	91	PTOX, PCM,
7CEXH0661MAY	2730;FR20132	ISM 280	320@1800	193	117	1150@1200	225	91	PTOX, PCM,
7CEXH0661MAY	2730;FR20133	ISM 320V	320@1800	193	117	1150@1200	225	91	PTOX, PCM,

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ATTACHMENT