California Environmental Protection Agency AIR RESOURCES BOARD	CUMMINS, INC.	EXECUTIVE ORDER A-021-0385-1 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 [1]	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS [2]	ECS & SPECIAL FEATURES [3]
2005	5CEXH0661MAU	10.8	Diesel	Diesel	HHDD	PCM, EGR, DDI, TC, CAC

ENGINE (L)	ENGINE MODELS / CODES (rated power, in hp)
10.8	See Attachment
*	*
*	*
*	*

* =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;
[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; **WU (prefix)** =warm-up catalyst; **DPF**=diesel particulate filter; **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; **GCARB**=gaseous carburetor; **IDI/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; **(2004may26)**

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.) [4]

	NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
STD	0.5	0.5	*	*	*	*	15.5	15.5	0.10	0.10	*	*
FEL	*	*	*	*	2.4	2.4	*	*	*	*	*	*
CERT	0.2	0.1	*	*	2.0	2.1	0.8	0.4	0.10	0.08	*	*
NTE	0.625		*		3.0		19.375		0.125		*	

[4] **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.

This Executive Order hereby supersedes Executive Order A-021-0385 dated December 20, 2004.

Executed at El Monte, California on this 24th day of December 2004.

Raphael Susnowitz

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model S mmary Form

A-021-0385-1

Attachment

Manufacturer: **Cummins Inc.**

Engine category: **On-highway HDDE**

EPA Engine Family: **5CEXH0661MAU**

Mfr Family Name: **353U**

Process Code: **New Submission**

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
8273;FR2961	ISM 330ST	370@1800	215	131	1250@1200	244	99	DDI, PCM, EGR, TC, CAC
8273;FR2985	ISM 380	380@1800	216	131	1200@1200	237	96	PCM, EGR, TC,
8273;FR2975	ISM 330	340@1800	199	121	1250@1200	244	99	PCM, EGR, TC,
8273;FR2976	ISM 310	319@1800	187	114	1150@1200	229	93	PCM, EGR, TC,
8273;FR2981	ISM 320V	320@1800	188	114	1150@1200	229	93	PCM, EGR, TC,
8273;FR2982	ISM 285V	320@1800	188	114	1150@1200	229	93	PCM, EGR, TC,
8273;FR2962	ISM 280	320@1800	188	114	1150@1200	229	93	PCM, EGR, TC,
8505;FR2961	ISM 330ST	370@1800	215	131	1250@1200	244	99	PCM, EGR, TC,
8505;FR2985	ISM 380	380@1800	216	131	1200@1200	237	96	PCM, EGR, TC,
8505;FR2975	ISM 330	340@1800	199	121	1250@1200	244	99	PCM, EGR, TC,
8505;FR2976	ISM 310	319@1800	187	114	1150@1200	229	93	PCM, EGR, TC,
8505;FR2981	ISM 320V	320@1800	188	114	1150@1200	229	93	PCM, EGR, TC,
8505;FR2982	ISM 285V	320@1800	188	114	1150@1200	229	93	PCM, EGR, TC,
8505;FR2962	ISM 280	320@1800	188	114	1150@1200	229	93	PCM, EGR, TC,
8540;FR20015	ISM 330	330@1800	203	123	1150@1200	230	93	PCM, EGR, TC,
8540;FR20016	ISM 280	291@1800	188	114	925@1200	188	76	PCM, EGR, TC,
8556;FR2961	ISM 330ST	370@1800	190	136	1250@1200	210	100	PCM, EGR, TC,
8556;FR2975	ISM 330	340@1800	178	127	1250@1200	210	100	PCM, EGR, TC,
8556;FR2976	ISM 310	320@1800	166	120	1150@1200	194	92	PCM, EGR, TC,
8556;FR2962	ISM 280	320@1800	166	120	1150@1200	194	92	PCM, EGR, TC,
8556;FR2981	ISM 320V	320@1800	166	120	1150@1200	194	92	PCM, EGR, TC,
8556;FR2982	ISM 285V	320@1800	166	120	1150@1200	194	92	PCM, EGR, TC,
8556;FR2985	ISM 380	380@1800	194	139	1200@1200	202	96	PCM, EGR, TC,

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