

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code (HSC) Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order (EO) G-02-003; and

Pursuant to the December 15, 1998 Settlement Agreement (SA) between ARB and the manufacturer, and any modifications thereof to the Settlement Agreement;

**IT IS ORDERED AND RESOLVED:** That 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 SIZE (liter)	FUEL TYPE (CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas)	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS (L/M/H HDD=light/medium/heavy heavy-duty [H] diesel; U=urban bus; HDO=HD Otto)
2004	4CEXH0012XAJ	14.9	Diesel	Diesel	HHDD
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>		<b>ENGINE MODELS / CODES (rated power in horsepower, hp)</b>			
PCM, EGR, DDI, TC, CAC		SEE ATTACHMENT			
GVWR=gross vehicle weight rating; TWC/OC=three-way/oxidizing catalyst; WU (prefix)=warm-up cat.; O2S=oxygen sensor; HO2S=heated O2S; TBI=throttle body fuel injection; MPI=multi port fuel injection; SPI=sequential MPI; DI/DI=direct/indirect diesel injection; TC/SC=turbo/super charger; CAC=charge air cooler; EGR=exhaust gas recirculation; AIR=secondary air injection; PAIR=pulsed AIR; SPL=smoke puff limiter; ECM/PCM=engine/powertrain control module; EM=engine modification; (2) (suffix)=in series; HC=hydrocarbon; NMHC=non-methane HC; NOx=oxides of nitrogen; CO=carbon monoxide; PM=particulate matter; HCHO=formaldehyde; g/bhp-hr=grams per brake horsepower-hour					

The following are the exhaust emission standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT), in g/bhp-hr, for this engine family under the "Federal Test Procedure" (FTP) (Title 13, California Code of Regulations, (13 CCR) Section 1956.1 (urban bus) or 1956.8 (other than urban bus)), and under the "Euro III Test Procedure" (EURO) in the Settlement Agreement, including EURO's "Not-to-Exceed" standard(s). "Diesel" CO certification compliance may have been demonstrated pursuant to Code of Federal Regulations, Title 40, Part 86, Subpart A, Section 86.091-23(c)(2)(i) 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 Section 1956.1 or 1956.8 are in parentheses.)

* = not applicable	EURO'S NTE NMHC: 0.625 NOx: * NMHC+NOx: 3.0 PM: 0.125													
	HC		NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
(DIRECT) STD	*	*	0.5	0.5	*	*	*	*	15.5	15.5	0.10	0.10	*	*
AVERAGE STD	*	*	*	*	*	*	*	*	*	*	*	*	*	*
FEL	*	*	*	*	*	*	2.4	2.4	*	*	*	*	*	*
CERT	*	*	0.2	0.1	*	*	2.3	2.2	0.8	0.4	0.08	0.08	*	*

**BE IT FURTHER RESOLVED:** That 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:** That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR Sections 1965 (emission control labels), and 2035 et seq. (emission control warranty).

**BE IT FURTHER RESOLVED:** That the listed engine models are conditionally certified subject to the following conditions: (1) The SA is in effect; (2) The manufacturer is in compliance with all applicable certification requirements of the SA and any modifications thereof.

Engines certified under this Executive Order shall conform to all applicable California emission regulations and all requirements under the Settlement Agreement and any modifications thereof. The Bureau of Automotive Repair will be notified by copy of this Executive Order.

This Executive Order hereby supersedes Executive Order A-021-0370 dated January 13, 2004.

Executed at El Monte, California on this 26<sup>TH</sup> day of October 2004.

Allen Lyons, Chief  
 Mobile Source Operations Division

**Engine Model Summary Form \* Attachment \***

A-021-0370-1

\* Attachment \*

A-021-0370-1

Manufacturer: Cummins Inc.  
 Engine category: On-highway HDDE  
 EPA Engine Family: 4CEXH0912XAJ  
 Mfr Family Name: 103J  
 Process Code: Running Change

1. Engine Code	2. Engine Model	3. BHP@RPM (SAE Gross)	4. Fuel Rate: (lbs/hr) @ peak HP (for diesel only)	5. Fuel Rate: (mm <sup>3</sup> /stroke) @ 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 Device Per SAE J1930
8287;FR10494	ISX 450	450@1800	281	170	1650@1200	328	133	PCM, EGR, TC, CAC, DDI
8287;FR10476	ISX 450ST	450@1800	281	170	1450@1200	284	115	PCM, EGR, TC,
8287;FR10495	ISX 435	435@1800	265	161	1650@1200	328	133	PCM, EGR, TC,
8287;FR10473	ISX 435ST	435@1800	365	161	1450@1200	284	115	PCM, EGR, TC,
8287;FR10496	ISX 400	400@1800	245	149	1650@1200	328	133	PCM, EGR, TC,
8287;FR10472	ISX 400ST	400@1800	245	149	1450@1200	284	115	PCM, EGR, TC,
8287;FR10498	ISX 450	450@1800	281	170	1550@1200	308	125	PCM, EGR, TC,
8287;FR10499	ISX 400	408@1800	245	149	1550@1200	308	125	PCM, EGR, TC,
8287;FR10501	ISX 400	408@1800	245	149	1450@1200	284	115	PCM, EGR, TC,
8287;FR10503	ISX 385ST	408@1800	245	149	1450@1200	284	115	PCM, EGR, TC,
8287;FR10504	ISX 465V	450@1800	281	170	1650@1200	328	135	PCM, EGR, TC,
8287;FR10505	ISX 435V	425@1800	256	156	1450@1200	284	115	PCM, EGR, TC,
8520;FR10494	ISX 450	450@1800	273	166	1650@1200	336	136	PCM, EGR, TC,
8520;FR10498	ISX 450	450@1800	273	166	1550@1200	306	124	PCM, EGR, TC,
8520;FR10495	ISX 435	435@1800	262	159	1650@1200	336	136	PCM, EGR, TC,
8520;FR10496	ISX 400	408@1800	244	148	1650@1200	336	136	PCM, EGR, TC,
8520;FR10499	ISX 400	408@1800	244	148	1550@1200	306	124	PCM, EGR, TC,
8520;FR10501	ISX 400	425@1800	255	155	1450@1200	282	114	PCM, EGR, TC,
8520;FR10476	ISX 450ST	450@1800	273	166	1450@1200	282	114	PCM, EGR, TC,
8520;FR10473	ISX 435ST	435@1800	262	159	1450@1200	282	114	PCM, EGR, TC,
8520;FR10472	ISX 400ST	408@1800	244	148	1450@1200	282	114	PCM, EGR, TC,
8520;FR10503	ISX 385ST	408@1800	244	148	1450@1200	282	114	PCM, EGR, TC,
8520;FR10504	ISX 465V	450@1800	273	166	1650@1200	336	136	PCM, EGR, TC,
8520;FR10505	ISX 435V	425@1800	255	155	1450@1200	282	114	PCM, EGR, TC,

new models added  
CPL