

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-169

Relating to Certification of New Off-Road Compression-Ignition Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board (Board) by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and exhaust emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Loader, Tractor and Other Industrial Equipment

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
1CPXL07.2HSK	7.2	8000	Engine Control Module Turbocharger Charge Air Cooler Direct Diesel Injection

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards or family emission limits (FEL), as applicable, and certification values for hydrocarbons (HC), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, (13 CCR) Section 2423, as amended by Board approval on January 28, 2000):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>				<u>Smoke Opacity (%)</u>		
			<u>HC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
130≤KW<225	Tier 1	Standard	1.3	11.4	9.2	0.54	20	15	50
		FEL	N/A	N/A	6.0	N/A	N/A	N/A	N/A
		Certification	0.1	1.4	5.0	0.16	8	1	15

BE IT FURTHER RESOLVED: That the above-described certification is subject to the following terms, limitations and conditions:

The above family emission limit(s) (FELs) is an emission level declared by the manufacturer to serve for the averaging, banking and trading program and in lieu of an emission standard for certification. It represents the emission standard applicable to this engine family that must be applied when determining compliance of any model within this engine family pursuant to 13 CCR Section 2423(b)(2).

BE IT FURTHER RESOLVED: That, at the request of the manufacturer, the listed engine models are **conditionally certified** to, and shall be required to comply with, all amendments to 13 CCR Sections 2420 through 2427 adopted by the Board on January 28, 2000 at its hearing "TO CONSIDER AMENDMENTS TO OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS: 2000 AND LATER EMISSION STANDARDS, COMPLIANCE REQUIREMENTS AND TEST PROCEDURES." The listed engine models comply with all such amendments, including, but not limited to:

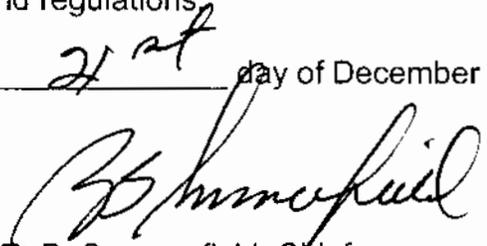
- the amended "Emission Control Labels—1996 and Later Off-Road Compression-Ignition Engines" (13 CCR Section 2424) for the aforementioned model year;
- the Board's amended emission control system warranty provisions (13 CCR Sections 2425 and 2426) for the listed engine models, as demonstrated by materials submitted by the manufacturer; and
- new California requirements for the Selective Enforcement Audit (SEA) for the listed engine models, as demonstrated by the manufacturer's submission of materials.

BE IT FURTHER RESOLVED: That the conditional certification described in the paragraph above is conditioned on the amendments being approved by the California Office of Administrative Law (OAL) pursuant to Government Code Section 11349.3, and where necessary, authorized by the Administrator of the U. S. Environmental Protection Agency (U.S. EPA) pursuant to Section 209(e)(2) of the Federal Clean Air Act. In the event that the OAL disapproves the amendments or the U.S. EPA decides not to authorize them, the ARB shall notify the manufacturer that the listed engine models must comply with the "California Exhaust Emission Standards and Test Procedures for 1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (13 CCR Sections 2420 through 2427) adopted on May 12, 1993, as applicable. Failure to demonstrate compliance within 45 days after notification by the Air Resources Board shall be cause for the Board to revoke the Executive Order and deem the listed engine models uncertified.

The conditional certification described herein is not conditioned on further U.S. EPA action on amendments determined by the Board to be within the scope of an existing U.S. EPA authorization.

Engines certified under this Executive Order must conform to the above requirements under Title 13, California Code of Regulations, Chapter 9, Article 4, and all other applicable California emission laws and regulations.

Executed at El Monte, California this 21<sup>st</sup> day of December 2000.

  
R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

ATT HIMENT

U-R-1-169

Manufacturer: CATERPILLAR INC.  
 Engine category: Nonroad Over 50 Hp  
 EPA Engine Family: 1CPXL07.2HSK  
 Mfr Family Name: NA  
 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
Note: Peak HP and Peak Torque		fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
1 - Cert Engine	3126	260 @ 2100	131	92.6	888 @ 1350	178	80.6	EM, DI, TC, ECM,
2	3126	200 @ 2100	103	72.5	700 @ 1350	137	62.3	EM, D <del>ICI</del> AC, ECM,
3	3126	225 @ 2500	101	84.6	644 @ 1500	128	64.4	EM, D <del>ICI</del> AC, ECM,
4	3126	250 @ 2100	128	90.2	860 @ 1350	169	76.9	EM, D <del>ICI</del> AC, ECM,
5	3126	250 @ 2100	109	91.8	716 @ 1500	141	71.0	EM, D <del>ICI</del> AC, ECM,
6	3126	275 @ 2400	123	99.5	825 @ 1500	160	80.9	EM, D <del>ICI</del> AC, ECM,
7	3126	175 @ 2500	81	67.9	501 @ 1500	97	49.1	EM, D <del>ICI</del> AC, ECM,
8	3126	200 @ 2500	90	75.8	573 @ 1500	110	55.7	EM, D <del>ICI</del> AC, ECM,
9	3126	187 @ 1800	115	69.4	701 @ 1400	138	65.2	EM, D <del>ICI</del> AC, ECM,

↑  
 DDI, TC, CAC, ECM