

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-2-74  
Relating to Certification of New Off-Road Compression-Ignition Equipment Engines

CUMMINS ENGINE COMPANY, 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: Crane, Loader, Tractor, Dozer, Pump, Compressor and Generator

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>
1CEXL0359AAA	5.9	8000	Direct Diesel Injection Turbocharger Charge Air Cooler

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 and certification values for total hydrocarbons (THC), 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, 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>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
75≤KW<130	Tier 1	Standard Certification	N/A	N/A	9.2	N/A	20	15	50
			--	--	7.6	--	3	4	5

BE IT FURTHER RESOLVED: That the listed engine models with rated power equal to or greater than 19 KW but less than 130 KW are **conditionally certified** to, and shall be required to comply with, all amendments to Title 13, California Code of Regulations, 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" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year;
- the Board's amended emission control system warranty provisions (Title 13, California Code of Regulations, 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 conditional certification herein of the listed engine models with rated power equal to or greater than 19 KW but less than 130 KW shall be deemed null and void.

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 22<sup>nd</sup> day of December 2000.

  
for

R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

Manufacturer: **Cummins Engine Company**  
 Engine category: **Nonroad Over 50 Hp**  
 EPA Engine Family: **1CEXL0359AAA**  
 Mfr Family Name: **A402**  
 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
1948;FR90285	B5.9-C	155@2100	83	59.1	440@1600	89	47.8	DDI, TC, CAC
1948;FR90026	B5.9-C	165@2500	80	67.7	440@1600	89	47.8	TC
1948;FR90058	B5.9-C	152@2500	74	62.6	414@1600	83	44.6	TC
1948;FR90377	B5.9-C	152@2500	74	62.6	414@1600	83	44.6	TC
1948;FR90305	B5.9-C	151@2400	76	61.7	414@1600	84	45.2	TC
1948;FR90059	B5.9-C	148@2200	76	56.2	440@1600	89	47.9	TC
1948;FR90342	B5.9-C	148@2200	76	56.2	440@1600	89	47.9	TC
1948;FR90692	B5.9-C	156@2200	78	58.1	449@1600	82	44.3	TC
1948;FR90799	B5.9-C	152 @ 2500	73	61.7	414 @ 1600	84	45.2	TC
2071;FR90139	B5.9-C	145@2100	75	53.2	440@1600	84	45.5	TC
2071;FR90060	B5.9-C	140@2000	76	51.2	416@1600	82	44.2	TC
2071;FR90194	B5.9-C	137@2000	74	50.1	440@1600	87	46.9	TC
2071;FR90299	B5.9-C	135@2200	70	52.1	419@1600	83	44.7	TC
2071;FR90061	B5.9-C	135@2200	70	52.1	419@1600	83	44.7	TC
2071;FR90286	B5.9-C	135@2200	69	50.8	419@1500	83	42	TC
2071;FR90138	B5.9-C	135@2100	70	49.5	419@1500	82	41.6	TC
2071;FR90322	B5.9-C	135@2100	69	48.5	419@1500	81	40.8	TC
2071;FR90063	B5.9-C	130@2200	67	50	388@1600	78	42.2	TC
2071;FR90137	B5.9-C	126@2100	66	46.9	388@1600	76	40.9	TC
2071;FR90064	B5.9-C	120@2200	61	45.4	372@1600	73	39.1	TC
2071;FR90298	B5.9-C	120@2200	61	45.4	372@1600	73	39.1	TC
2071;FR90103	B5.9-C	118@2400	58	46.6	312@1600	63	33.2	TC
2071;FR90066	B5.9-C	110@2200	57	42.6	341@1600	67	36.2	TC
2071;FR90297	B5.9-C	110@2200	57	42.6	341@1600	67	36.2	TC
2071;FR90296	B5.9-C	101@2200	53	39.6	313@1500	60	30.6	TC
2071;FR90324	B5.9-C	145@2100	75	53.3	440@1600	85	45.6	TC
2071;FR90560	B5.9-C	143@2200	71	53	444@1500	87	44	TC

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2071;FR9036	B5.9-C	120@2200	62	7	372@1600	73	39.1	TC
2071;FR9020	B5.9-C	97@2200	51	31.9	267@1700	53	30.3	
2071;FR90627	B5.9-C	135@2400	64	51.7	364@1600	75	40.2	
2071;FR90628	B5.9-C	130@2500	64	53.6	368@1600	73	39.4	
2071;FR90773	B5.9-C	139 @ 2400	69	55.8	373 @ 1600	73	39.6	
2071;FR90764	B5.9-C	135@2100	69	48.5	419@1500	81	40.8	
2071;FR90774	B5.9-C	128@2400	62	50.3	362@1500	69	35.1	
2071;FR90813	B5.9-C	120@2200	62	45.9	376@1600	75	40.6	
1902;FR90005	B5.9-C	110@2400	55	44.6	340@1300	69	30.4	
2146;FR90424	B5.9-C	136@2000	74	50	412@1350	84	38.1	
2146;FR90445	B5.9-C	135@2400	68	54.8	366@1600	72	38.8	
2508;FR90500	B5.9-C	126@2250	62	47.3	308@1600	56	33.3	
2550;FR90443	B5.9-C	146@2200	75	54.5	424@1350	87	39.4	
2604;FR90555	B5.9-C	111 @ 2400	53	43.2	309 @ 1600	60	32.3	
2604;FR90556	B5.9-C	145 @ 2500	68	57.4	391 @ 1600	77	41.4	
2372;FR90355	6BT5.9-G4	140@1800	83	50.2				
2372;FR90354	6BT5.9-G4	120@1500	86	43.6				
2530;FR90488	6BT5.9-G6	170 @ 1800	100	60.5				
2530;FR90489	6BT5.9-G6	143 @ 1500	102	51.7				
2530;FR90490	6BT5.9-G5	135 @ 1800	78	47.3				
2530;FR90491	6BT5.9-G5	115 @ 1500	78	39.6				

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