State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-21-300
Relating to Certification of New Heavy-Duty Engines and Vehicles

CUMMINS ENGINE COMPANY, INC.

Pursuant to the authority vested in the Air Resources Board at Sections 43100, 43101, and 43102 of the Health and Safety Code; and

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

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and Cummins Engine Company, Inc. and any modifications to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the following engines and emission control systems produced by the manufacturer are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Model Year: 2001

Fuel Type: Diesel

| | Displacement | | Exhaust Emission Control |
|---|---|---|---|
| Engine Family | Liters | Cubic Inches | Systems and Special Features |
| 1CEXH0912XAD | 14.9 | 912 | Turbocharger<br>Charge Air Cooler<br>Powertrain Control Module<br>Direct Diesel Injection |

Engine models and codes are listed on the attachments.

BE IT ORDERED AND RESOLVED: That the following are the certification exhaust emission standards (Title 13, California Code of Regulations, Section 1956.8) and certification emission levels for this engine family in grams per brake horsepower-hour (g/bhp-hr) under the Federal Test Procedure ("FTP"):

| | Total Hydrocarbons | Carbon Monoxide | Nitrogen Oxides | Particulate Matter |
|---|---|---|---|---|
| Standards | 1.3 | 15.5 | 4.0 | 0.10 |
| Certification | 0.1 | 0.5 | 3.8 | 0.08 |

BE IT FURTHER RESOLVED: That pursuant to the Settlement Agreement and any modifications thereof, the aforementioned engine family is also subject to emission standards under the EURO III tests in the Settlement Agreement, including a "Not-to-Exceed" nitrogen oxides emission standard of 7.0 g/bhp-hr. The following are the emission standards and certification levels, in g/bhp-hr, under the EURO III tests:

| | Total Hydrocarbons | Carbon Monoxide | Nitrogen Oxides | Particulate Matter |
|---|---|---|---|---|
| Standards | 1.3 | 15.5 | 6.0 | 0.10 |
| Certification | 0.1 | 0.3 | 5.9 | 0.06 |

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2035 *et seq.*).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. The Settlement Agreement is in effect.
2. The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement.

Engines certified under this Executive Order must conform to all applicable California emission regulations and to all applicable terms and conditions of the Settlement Agreement.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 22nd day of December 2000.

Duc Nguyen
FOR
R. B. Summerfield, Chief
Mobile Source Operations Division

# Engine Model Summary Form

Manufacturer: **Cummins Engine Company, Inc.**

Engine category: **On-highway HDDE**

EPA Engine Family: **1CEXH0912XAD**

Mfr Family Name: **103D**

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 |
|---|---|---|---|---|---|---|---|---|
| 2628;FR10193 | ISX 450 | 458@1700 | 253 | 145 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 2628;FR10230 | ISX 450 | 458@1700 | 253 | 145 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 2628;FR10229 | ISX 450ST2 | 458@1700 | 253 | 145 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 2628;FR10231 | ISX 400 | 425@1700 | 235 | 135 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 2628;FR10232 | ISX 400 | 425@1700 | 235 | 135 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 2628;FR10191 | ISX 400 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 2628;FR10190 | ISX 400ST2 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 2631;FR10193 | ISX 450 | 458@1700 | 253 | 145 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 2631;FR10230 | ISX 450 | 458@1700 | 253 | 145 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 2631;FR10229 | ISX 450ST2 | 458@1700 | 253 | 145 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 2631;FR10231 | ISX 400 | 425@1700 | 235 | 135 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 2631;FR10232 | ISX 400 | 425@1700 | 235 | 135 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 2631;FR10191 | ISX 400 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 2631;FR10190 | ISX 400ST2 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 8046;FR10193 | ISX 450 | 458@1700 | 253 | 145 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 8046;FR10230 | ISX 450 | 458@1700 | 253 | 145 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 8046;FR10229 | ISX 450ST2 | 458@1700 | 253 | 145 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 8046;FR10231 | ISX 400 | 425@1700 | 235 | 135 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 8046;FR10232 | ISX 400 | 425@1700 | 235 | 135 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 8046;FR10191 | ISX 400 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 8046;FR10190 | ISX 400ST2 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 8047;FR10193 | ISX 450 | 458@1700 | 253 | 145 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 8047;FR10230 | ISX 450 | 458@1700 | 253 | 145 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 8047;FR10229 | ISX 450ST2 | 458@1700 | 253 | 145 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 8047;FR10231 | ISX 400 | 425@1700 | 235 | 135 | 1650@1200 | 289 | 117 | PCM, TC, CAC |
| 8047;FR10232 | ISX 400 | 425@1700 | 235 | 135 | 1550@1200 | 271 | 110 | PCM, TC, CAC |
| 8047;FR10191 | ISX 400 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |
| 8047;FR10190 | ISX 400ST2 | 425@1700 | 235 | 135 | 1450@1200 | 253 | 102 | PCM, TC, CAC |

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ATTACHMENT

A-21-300