

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-15-12

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

IVECO N.V.

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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 IVECO N.V., 1998 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Forage Harvester, Generating Set

Fuel Type: Diesel

| <u>Engine Family</u> | <u>Liters (Cubic Inches)</u> | <u>Exhaust Emission Control Systems and Special Features</u> |
|----------------------|------------------------------|--|
| WVEXL13.8DAR         | 13.8 (842)                   | Turbocharger<br>Smoke Puff Limiter<br>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 total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matters (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

| <u>Exhaust Emissions (g/bhp-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> |
| 1.0                                 | 8.5       | 6.9        | 0.4       | 20                         | 15         | 50          |

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

| <u>Engine Family</u> | <u>Exhaust Emission (g/bhp-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> |
| WVEXL13.8DAR         | 0.3                                | 1.0       | 4.3        | 0.2       | 20                         | 11         | 36          |

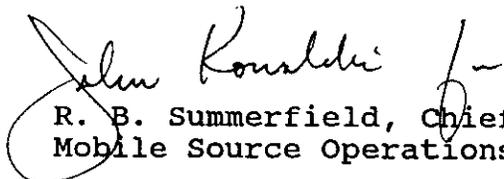
BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

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, Section 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 16<sup>th</sup> day of March 1998.

  
 R. B. Summerfield, Chief  
 Mobile Source Operations Division

1998 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY OFF-ROAD DIESEL ENGINES

E.O. # 4-2-15-12

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Manufacturer: IVECO N.V. Engine Family: WVEXL13.8DAR  
 Displacement: 13.798/841.98 Liters/Cubic Inches Eng. Config: I-6  
 All Codes in Eng Fam: CA      49S      50S X Cert Test Procedures: ARB      EPA X  
 Valves/Ports per Cylinder: 2 valves/cyl. Strokes per Combustion Cycle: 4-stroke  
 Maximum Rated Power: 493 HP (368 KW) @ 1950 RPM  
 Ignition: Compression      Compression with Glow Plug X Spark       
 Fuel Type(s): Dedicated X Flex-Fuel      Dual-Fuel      Diesel X M100      M85  
                   CNG      LNG      LPG      Other (specify)       
 Diesel Cert Fuel: 40 CFR 86.1313-94 X Other (specify)       
 Primary Service Equipment: Forage Harvester, Generating Set  
 Exhaust ECS (e.g., MFI, TC, CAC): SPL, TC, CAC  
 (use abbreviations per SAE J1930 JUN93)

| Engine Model<br>(Eng Code) | Rated HP<br>@ RPM | Fuel Rate<br>@ Rated HP<br>mm <sup>3</sup> / stroke<br>(lbs/hr) |
|----------------------------|-------------------|---|
| 8215.42.985                | 350@1950          | 202<br>(129.5)  |
| 8215.42.5985               | 493@1950          | 288<br>(186)  |
| 8215.42.5986               | 460@1800          | 282<br>(169.4)  |

Date Issued: December 8, 1997

Revisions:      |      |