| California Environmental Protection Agency AIR RESOURCES BOARD | DEUTZ AG | EXECUTIVE ORDER U-R-013-0122 New Off-Road Compression-Ignition Engines |
|---|---|---|

Pursuant to the authority vested in the Air Resources 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-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engines and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

| MODEL YEAR | ENGINE FAMILY | DISPLACEMENT (liters) | FUEL TYPE | USEFUL LIFE (hours) |
|---|---|---|---|---|
| 2004 | 4DZXL03.1041 | 1.555, 2.332, 3.109 | Diesel | 5000 |

| SPECIAL FEATURES & EMISSION CONTROL SYSTEMS | TYPICAL EQUIPMENT APPLICATION |
|---|---|
| Direct Diesel Injection | Loader, Pump |

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

| RATED POWER CLASS | EMISSION STANDARD CATEGORY | | EXHAUST (g/kW-hr) | | | | | OPACITY (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | HC | NOx | NMHC+NOx | CO | PM | ACCEL | LUG | PEAK |
| 19 ≤ kW < 37 | Tier 2 | STD | N/A | N/A | 7.5 | 5.5 | .60 | 20 | 15 | 50 |
| | | CERT | - | - | 6.4 | 2.7 | .21 | 2 | 3 | 3 |

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

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

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 12TH day of November 2003.

Allen Lyons, Chief
Mobile Source Operations Division

Attachment 1 of 2

Manufacturer: DEUTZ AG
Engine Category: Nonroad CI
EPA Family Name: DZXL03.1041
Mfr. Family Name: F2/3/4L/M2011
Process Code: New Submission

# ENGINE MODEL SUMMARY FORM

U-R-013-0122

| 1. Engine code | 2. Engine Model | 3. BHP@ | RPM | 4. Fuel Rate @ Rated Power (mm3/stroke) | 5. Fuel Rate (lbs./hr) Rated Power | 6. Peak Torque (Nm) @ RPM | | 7. Peak Torque (mm³/stroke) | 8. Fuel Rate (lbs./hr) @ Peak Torque | 9. Emission Control Device (SAE J1930) |
|---|---|---|---|---|---|---|---|---|---|---|
| DE15,8 | F2M2011 | 20 | 1800 | 40.0 | 7 | n.a. | n.a. | n.a. | n.a. | EM |
| CE20A | F2M2011 | 27 | 2300 | 43.0 | 9 | 88 | 1700 | 43.0 | 7 | EM |
| CE21A | F2M2011 | 28 | 2500 | 42.0 | 10 | 88 | 1700 | 43.0 | 7 | EM |
| CE21,7A | F2M2011 | 29 | 2600 | 43.0 | 10 | 88 | 1700 | 43.0 | 7 | EM |
| CE21/1A | F2M2011 | 28 | 2300 | 45.0 | 10 | 93 | 1700 | 47.0 | 8 | EM |
| CE22,2A | F2M2011 | 30 | 2500 | 46.0 | 10 | 93 | 1700 | 47.0 | 8 | EM |
| CE23A | F2M2011 | 31 | 2800 | 45.0 | 11 | 88 | 1700 | 43.0 | 7 | EM |
| CE23/1A | F2M2011 | 31 | 2600 | 46.5 | 11 | 93 | 1700 | 47.0 | 8 | EM |
| CE23,5A | F2M2011 | 31 | 2800 | 48.0 | 11 | 93 | 1700 | 47.0 | 8 | EM |
| CE23,3A | F2M2011 | 31 | 2750 | 46.0 | 11 | 93 | 1700 | 47.0 | 8 | EM |
| CE21,6A | F2M2011 | 29 | 2400 | 44.0 | 10 | 93 | 1700 | 47.0 | 8 | EM |
| DE15,1 | F2L2011 | 20 | 1800 | 39.0 | 7 | n.a. | n.a. | n.a. | n.a. | EM |
| CE19,1A | F2L2011 | 26 | 2300 | 40.5 | 9 | 86 | 1700 | 42.0 | 7 | EM |
| CE20,1A | F2L2011 | 27 | 2300 | 43.0 | 9 | 90 | 1700 | 44.0 | 8 | EM |
| CE20,2A | F2L2011 | 27 | 2500 | 40.5 | 9 | 86 | 1700 | 42.0 | 7 | EM |
| CE20,9A | F2L2011 | 28 | 2600 | 41.0 | 10 | 86 | 1700 | 42.0 | 7 | EM |
| CE21,3A | F2L2011 | 29 | 2500 | 43.0 | 10 | 90 | 1700 | 44.0 | 8 | EM |
| CE21,8A | F2L2011 | 29 | 2800 | 41.0 | 10 | 86 | 1700 | 42.0 | 7 | EM |
| CE22,2/A | F2L2011 | 29 | 2600 | 44.0 | 10 | 90 | 1700 | 44.0 | 8 | EM |
| CE22,5A | F2L2011 | 30 | 2800 | 43.0 | 11 | 88 | 1700 | 43.0 | 7 | EM |
| DE20,9 | F3L2011 | 28 | 1800 | 37.0 | 10 | n.a. | n.a. | n.a. | n.a. | EM |
| DE23,8 | F3L2011 | 32 | 1800 | 43.0 | 11 | n.a. | n.a. | n.a. | n.a. | EM |
| DE26,5/1 | F3L2011 | 36 | 1800 | 47.5 | 12 | n.a. | n.a. | n.a. | n.a. | EM |
| DE21,5 | F3M2011 | 28 | 1800 | 37.0 | 10 | n.a. | n.a. | n.a. | n.a. | EM |
| DE24,5 | F3M2011 | 32 | 1800 | 43.0 | 11 | n.a. | n.a. | n.a. | n.a. | EM |
| CE29,3A | F3L2011 | 39 | 2300 | 42.0 | 14 | 130 | 1700 | 43.5 | 11 | EM |
| CE30,9A | F3L2011 | 41 | 2300 | 43.0 | 14 | 137 | 1700 | 46.0 | 11 | EM |
| CE31,1A | F3L2011 | 42 | 2500 | 42.0 | 15 | 130 | 1700 | 43.5 | 11 | EM |
| CE32,2A | F3L2011 | 43 | 2600 | 42.0 | 15 | 130 | 1700 | 43.5 | 11 | EM |
| CE32,8/A | F3L2011 | 44 | 2500 | 44.0 | 15 | 137 | 1700 | 46.0 | 11 | EM |
| CE33,9A | F3L2011 | 45 | 2600 | 44.0 | 16 | 137 | 1700 | 46.0 | 11 | EM |
| CE34A | F3L2011 | 46 | 2800 | 42.0 | 16 | 130 | 1700 | 43.5 | 11 | EM |
| CE35,8A | F3L2011 | 48 | 2800 | 44.0 | 17 | 137 | 1700 | 45.5 | 11 | EM |
| CE29,9A | F3M2011 | 40 | 2300 | 43.0 | 14 | 133 | 1700 | 44.5 | 11 | EM |

Attachment 2 of 2

Manufacturer: DEUTZ AG
Engine Category: Nonroad CI
EPA Family Name: 4DZXL03.1041
Mfr. Family Name: F2/3/4L/M2011
Process Code: New Submission

# ENGINE MODEL SUMMARY FORM

U-R-013-0122

| 1. Engine code | 2. Engine Model | 3. BHP@ | RPM | 4. Fuel Rate @ Rated Power (mm3/stroke) | 5. Fuel Rate (lbs./hr) Rated Power | 6. Peak Torque (Nm) @ RPM | | 7. Peak Torque (mm³/stroke) | 8. Fuel Rate (lbs./hr) @ Peak Torque | 9. Emission Control Device (SAE J1930) |
|---|---|---|---|---|---|---|---|---|---|---|
| CE31,5A | F3M2011 | 42 | 2300 | 45.0 | 15 | 137 | 1700 | 45.5 | 11 | EM |
| CE31,8A | F3M2011 | 43 | 2500 | 43.0 | 15 | 133 | 1700 | 44.5 | 11 | EM |
| CE32,5/A | F3M2011 | 44 | 2400 | 44.0 | 15 | 140 | 1700 | 46.0 | 12 | EM |
| CE32,8A | F3M2011 | 44 | 2600 | 43.0 | 15 | 133 | 1700 | 44.5 | 11 | EM |
| CE33,5A | F3M2011 | 45 | 2500 | 45.0 | 16 | 140 | 1700 | 46.0 | 12 | EM |
| CE34,5A | F3M2011 | 46 | 2600 | 45.0 | 16 | 140 | 1700 | 46.0 | 12 | EM |
| CE34,7A | F3M2011 | 46 | 2800 | 43.0 | 16 | 133 | 1700 | 44.5 | 11 | EM |
| CE36,5A | F3M2011 | 49 | 2800 | 45.0 | 17 | 140 | 1700 | 46.0 | 12 | EM |
| CE35,5A | F3M2011 | 48 | 2700 | 44.0 | 17 | 140 | 1700 | 46.0 | 12 | EM |
| DE28,7 | F4L2011 | 38 | 1800 | 36.0 | 13 | n.a. | n.a. | n.a. | n.a. | EM |
| DE34,5 | F4L2011 | 46 | 1800 | 44.5 | 16 | n.a. | n.a. | n.a. | n.a. | EM |
| DE29,4 | F4M2011 | 38 | 1800 | 36.5 | 13 | n.a. | n.a. | n.a. | n.a. | EM |
| DE35,2 | F4M2011 | 46 | 1800 | 45.0 | 16 | n.a. | n.a. | n.a. | n.a. | EM |
| DE36 | F4L2011 | 48 | 1800 | 47.0 | 17 | n.a. | n.a. | n.a. | n.a. | EM |