

## FPT INDUSTRIAL S.p.A.

EXECUTIVE ORDER U-R-015-0420 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in California 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-19-095;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems 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<br>YEAR | ENGINE FAMILY  | DISPLACEMENT (liters)                    | FUEL TYPE   | USEFUL LIF<br>(hours) |  |  |  |
|---------------|--|--|---|-----------------------|--|--|--|
| 2020          | LFPXL08.7T4X   | 8.7                                      | Diesel  | 8000                  |  |  |  |
| SPECIAL       | FEATURES & EMISSION  | CONTROL SYSTEMS                          | TYPICAL EQUIPMENT   | APPLICATION           |  |  |  |
| Turboch       | ic Direct Injection, Engli<br>arger, Charge Air Coole<br>st, Selective Catalystic F<br>Ammonia Oxidation ( | r, Diesel Oxidation<br>Reduction – Urea, | Loader, Tractor, Generator Set, and Other Industrial<br>Equipment |                       |  |  |  |

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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):

| POWER<br>CLASS | EMISSION<br>STANDARD<br>CATEGORY |      |       | E)   | (HAUST (g/kw-h | OPACITY (%) |      |       |     |      |
|----------------|----------------------------------|------|-------|------|----------------|-------------|------|-------|-----|------|
|                |                                  |      | NMHC  | NOx  | NMHC+NOx       | СО          | PM   | ACCEL | LUG | PEAK |
| 130 ≤ kW ≤ 560 | Tier 4 Final                     | STD  | 0.19  | 0.40 | N/A            | 3.5         | 0.02 | N/A   | N/A | N/A  |
|                |                                  | FEL  | N/A   | 0.35 | N/A            | N/A         | N/A  | N/A   | N/A | N/A  |
|                |                                  | CERT | 0.000 | 0.30 | -              | 0.00        | 0.02 |       | _   | _    |

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

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

27#

\_ day of September 2019.

Allen Lyons, Chief

Emissions Certification and Compliance Division

## Engine Model Summary Template EO#: U-R-015-0420

EO#: U-R-015-0420 Attachment: 1 of 1

Date: 5/28/20 4.Fuel Rate: 5.Fuel Rate:

| Engine Family | 1.Engine Code | 2.Engine Model | 3.BHP@RPM<br>(SAE Gross) | 4.Fuel Rate:<br>mm/stroke @ peak H<br>(for diesel only) | 5.Fuel Rate: | 6.Torque @ RPM<br>(SEA Gross) | 7.Fuel Rate:<br>mm/stroke@peak<br>torque |     | 9.Emission Control<br>Device Per SAE J1930 |  |
|---------------|---------------|----------------|--------------------------|---|--------------|-------------------------------|--|-----|--|--|
| LFPXL08.7T4X  | F2CFE613A*B   | F2CFE613A*B    | 409 @ 2100               | 199   | N/A          | 1333 @ 1500                   | 248                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613K*B   | F2CFE613K*B    | 413@ 2100                | 200   | N/A          | 1333 @ 1500                   | 249                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613B*B   | F2CFE613B*B    | 382 @ 2100               | 188   | N/A          | 1241 @ 1500                   | 224                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613C*B   | F2CFE613C*B    | 355 @ 2100               | 175   | N/A          | 1200 @ 1500                   | 217                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613E*B   | F2CFE613E*B    | 328 @ 2100               | 155   | N/A          | 1119 @ 1500                   | 212                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613F*B   | F2CFE613F*B    | 302 @ 2100               | 140   | N/A          | 1000 @ 1500                   | 191                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613L*B   | F2CFE613L*B    | 369 @ 2000               | 181   | N/A          | 1241@1500                     | 230                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613J*B   | F2CFE613J*B    | 390 @ 2200               | 168   | N/A          | 1263 @ 1500                   | 225                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
|               |               |                |                          |   |              |                               |  |     |  |  |
| LFPXL08.7T4X  | F2CFE615D*B   | F2CFE615D*B    | 348 @ 1800               | 198   | N/A          | 1022 @1800                    | 198                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE615C*B   | F2CFE615C*B    | 378 @ 1800               | 213   | N/A          | 1108 @1800                    | 213                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE615B*B   | F2CFE615B*B    | 414 @ 1800               | 236   | N/A          | 1215 @1800                    | 236                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE615A*B   | F2CFE615A*B    | 442 @ 1800               | 253   | N/A          | 1296 @1800                    | 253                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE613D*B   | F2CFE613D*B    | 335 @ 2200               | 156   | N/A          | 1148 @ 1500                   | 211                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |
| LFPXL08.7T4X  | F2CFE614T*B   | F2CFE614T*B    | 281 @ 2000               | 143 Ne  | ew N/A       | 1042 @ 1500                   | 198                                      | N/A | DDI ECM TC CAC DOC<br>SCR-u AMOX           |  |