

EXHAUST EMISSION DATA SHEET

MQ POWER GENERATOR SET

Model: DCA45SSIU4F



The engine used in this generator set is certified to comply with United States EPA Tier 4 and CARB Mobile Off-Highway emission regulations.

ENGINE DATA

| | |
|---|---|
| Manufacturer: ISUZU | Bore: 3.35 in. (85 mm) |
| Model: 4LE2X | Stroke: 3.78 in. (96 mm) |
| Type: 4-Cycle, In-line, 4-Cylinder, Diesel | Displacement: 134 cid (2.2 liters) |
| Aspiration: Turbocharger, Charge Air Cooler, EMC, EGR, DOC | Compression Ratio: 17.6:1 |

PERFORMANCE DATA

| | |
|---|------|
| SAE Gross HP @ 1800 RPM (60 Hz) | 65.7 |
| Rated Load Fuel Consumption (gal/Hr) | 2.93 |
| Rated Load Exhaust Gas Flow (cfm) | 237 |
| Rated Load Exhaust Gas Temperature (°F) | 1078 |

United States EPA - Mobile Off-Highway Tier 4 Limits - 25.0 ≤ ~ <75.0 BHP

| Criteria Pollutant | Emission Requirements | | Certified Engine Emissions | |
|--|-----------------------|-----------|----------------------------|-----------|
| NOx (Oxides of Nitrogen as NO ₂) | N/A | gr/bhp-hr | N/A | gr/bhp-hr |
| HC (Total Unburned Hydrocarbons) | N/A | gr/bhp-hr | N/A | gr/bhp-hr |
| NOx + HC (Combined) | N/A | gr/bhp-hr | N/A | gr/bhp-hr |
| CO (Carbon Monoxide) | 3.73 | gr/bhp-hr | 0.01 | gr/bhp-hr |
| PM (Particulate Matter) | .022 | gr/bhp-hr | 0.022 | gr/bhp-hr |
| NMHC (Non-Methane Hydrocarbons) | N/A | gr/bhp-hr | N/A | gr/bhp-hr |
| NMHC + NOx | 3.50 | gr/bhp-hr | 2.39 | gr/bhp-hr |

| | |
|---------------------------------|------------------|
| EPA Engine Family: | ESZXL02.2PXB |
| EPA Certificate of Conformance: | ESZXL02.2PXB-002 |
| ARB Executive Order: | U-R-006-0385 |
| Effective Date: | Model Year 2013 |

Note: Engine operation with excessive air intake or exhaust restriction beyond factory published maximum limits, or with improper service maintenance, may result in higher emission levels.

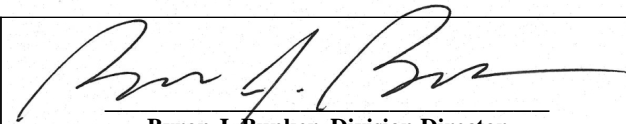


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2014 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Isuzu Motors Limited
(U.S. Manufacturer or Importer)
Certificate Number: ESZXL02.2PXB-002

Effective Date:
05/23/2013
Expiration Date:
12/31/2014


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
05/23/2013
Revision Date:
N/A

Model Year: 2014
Manufacturer Type: Original Engine Manufacturer
Engine Family: ESZXL02.2PXB

Mobile/Stationary Indicator: Mobile
Emissions Power Category: 37<=kW<56
Fuel Type: Diesel
After Treatment Devices: Diesel Oxidation Catalyst
Non-after Treatment Devices: Electronic/Electric EGR - Cooled, Electronic Control, Engine Design Modification

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 1039, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 1039 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 1039.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 1039. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 1039.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

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 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 YEAR | ENGINE FAMILY | DISPLACEMENT (liters) | FUEL TYPE | USEFUL LIFE (hours) |
|---|---------------|-----------------------|-------------------------------|---------------------|
| 2014 | ESZXL02.2PXB | 2.2 | Diesel | 8000 |
| SPECIAL FEATURES & EMISSION CONTROL SYSTEMS | | | TYPICAL EQUIPMENT APPLICATION | |
| Electronic Control Module, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Turbocharger, Charge Air Cooler, Electronic Direct Injection | | | Generator Set | |

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, 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):

| RATED POWER CLASS | EMISSION STANDARD CATEGORY | | EXHAUST (g/kW-hr) | | | | | OPACITY (%) | | |
|-------------------|----------------------------|--------------|-------------------|-----|----------|------|------|-------------|-----|------|
| | | | NMHC | NOx | NMHC+NOx | CO | PM | ACCEL | LUG | PEAK |
| 19 ≤ kW < 56 | Tier 4 Final | OPTIONAL STD | N/A | N/A | 4.7 | 5.0 | 0.03 | N/A | N/A | N/A |
| | | CERT | -- | -- | 3.2 | 0.02 | 0.03 | -- | -- | -- |

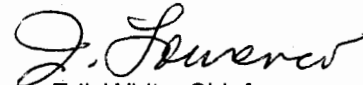
BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has complied with the more stringent set of standards from the various power categories in conformance with Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" adopted October 20, 2005.

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 26th day of April 2013.


 Erik White, Chief
 Mobile Source Operations Division

DATE:

ATTACHMENT
Engine Model Summary Template

| Engine Family | Engine Code | Engine Model | BHP@RPM (SAE Gross) | Fuel Rate: mm/stroke @ peak HP (for diesel only) | Fuel Rate: lbs/hr @ peak HP (for diesels only) | Torque @ RPM (SEA Gross) | Fuel Rate: mm/stroke @peak torque | Fuel Rate: lbs/hr @peak torque | Emission Control Device Per SAE J1930 |
|---------------|------------------|--------------|------------------------|---|---|-----------------------------|---|--------------------------------------|--|
| ESZXL02.2PXB | 4LE2XDPBA -01 | BP-4LE2X | 65.7@1800 | 56.1@1800 | 22.4@1800 | | | | ECM, EM, EGR,DOC, TC, CAC, DFI |
| ESZXL02.2PXB | 4LE2XDPBB -01 | BP-4LE2X | 65.7@1800 | 56.1@1800 | 22.4@1800 | | | | ECM, EM, EGR,DOC, TC, CAC, DFI |