EXHAUST EMISSION DATA SHEET

MQ POWER GENERATOR SET





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:
 KUBOTA
 Bore:
 2.52 in.
 (64 mm)

 Model:
 Z482
 Stroke:
 2.68 in.
 (68 mm)

 Type:
 4-Cycle, In-Line, 2-Cylinder, Diesel
 Displacement:
 29.2 cid
 (0.479 liters)

Aspiration: Naturally Aspirated, Indirect Injection Compression Ratio: 23:1

PERFORMANCE DATA

SAE Gross HP @ 3600 RPM (60 Hz) Rated 12.3 Load Fuel Consumption (gal/Hr) Rated 0.69 Load Exhaust Gas Flow (cfm) Rated Load 66 Exhaust Gas Temperature (°F) 932

United States EPA - Mobile Off-Highway Tier 4 Limits -

0 ≤ ~ < 25 BHP

Criteria Pollutant	Emis	ssion Requirements	Certifie	d Engine Emissions
NOx (Oxides of Nitrogen as NO2)	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)	4.92	gr/bhp-hr	1.86	gr/bhp-hr
PM (Particulate Matter)	0.29	gr/bhp-hr	0.15	gr/bhp-hr
NMHC (Non-Methane Hydrocarbons)	N/A	gr/bhp-hr	N/A	gr/bhp-hr
NMHC + NOx	5.59	gr/bhp-hr	4.47	gr/bhp-hr

EPA Engine Family: PKBXL.719KCC

EPA Certificate of Conformance: PKBXL.719KCC-012

ARB Executive Order: U-R-025-1046

Effective Date: Model Year 2023

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.

Data And Specifications Subject To Change Without Notice Date: 2/13/2023



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 2023 MODEL YEAR CERTIFICATE OF CONFORMITY WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Kubota Corporation

(U.S. Manufacturer or Importer)

Certificate Number: PKBXL.719KCC-020

Effective Date: 08/17/2022

Expiration Date: 12/31/2023

Issue Date: 08/17/2022

 $\frac{Revision\ Date:}{N/A}$

Model Year: 2023

Manufacturer Type: Original Engine Manufacturer

Engine Family: PKBXL.719KCC

Mobile/Stationary Indicator: Mobile Emissions Power Category: 8<=kW<19

Fuel Type: Diesel

After Treatment Devices: No After Treatment Devices Installed **Non-after Treatment Devices:** Engine Design Modification

Byron J. Bunker, Division Director

Compliance Division

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.



KUBOTA CORPORATION

EXECUTIVE ORDER U-R-025-1046

New Off-Road Compression-Ignition Engines Page 1 of 1

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 YEAR	ENGINE FAMILY DISPLACEMENT (liters)		FUEL TYPE	USEFUL LIFE (hours)				
2023	PKBXL.719KCC	0.479, 0.719	Diesel	3000				
SPECIAL	. FEATURES & EMISSION (CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION					
	Indirect Diesel Inje	ection	Generator Set, Light Tower, Welder, A	uxiliary Power Unit				

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):

RATED POWER CLASS	EMISSION			ı	EXHAUST (g/kw-ł	nr)		OF	PACITY (%	(a)
	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
kW < 19	Tier 4 Final	STD	N/A	N/A	7.5	6.6	0.40	N/A	N/A	N/A
		CERT		-	6.0	2.5	0.21			

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).

BE IT FURTHER RESOLVED: That for the listed engine models which include engines from different power categories in the same engine family, the manufacturer is complying with the more stringent set of standards from the 8 ≤ kW < 19 power category in conformance with the incorporated Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part 1-D" adopted October 20, 2005 and last amended October 25, 2012.

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 on this 5th day of October 2022.

Robin U. Lang, Chief

Emissions Certification and Compliance Division

Attachment: Engine Models EO #: U-R-025-1046 Family: PKBXL.719KCC Attachment Last Revised: 9/22/2022

			- 6		Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power -		Peak Torque -	Peak Torque -	Peak Torque -	Peak Torque -				
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Fuel Units	Peak Torque	Units	Speed (rpm)	Fuel	Fuel Units	OBD	GHG	Special	Notes
	D722-D2-EF01		I-3	0.719	Liters	15.1	kilowatt	3600	15.2	mm3/stroke	40.1	N-m	3600	15.2	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF01		I-2	0.479	Liters	10.3	kilowatt	3600	15.4	mm3/stroke	27.3	N-m	3600	15.4	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF02		I-2	0.479	Liters	9.8	kilowatt	3600	15.2	mm3/stroke	26.0	N-m	3600	15.2	mm3/stroke	N/A	N/A	N/A	N/A
	Z482-D2-EF03		I-2	0.479	Liters	9.5	kilowatt	3600	14.7	mm3/stroke	25.2	N-m	3600	14.7	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF04		I-2	0.479	Liters	9.1	kilowatt	3600	14.2	mm3/stroke	24.1	N-m	3600	14.2	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF05		I-2	0.479	Liters	7.1	kilowatt	2600	14.3	mm3/stroke	26.1	N-m	2600	14.3	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF06		I-2	0.479	Liters	8.2	kilowatt	3000	14.6	mm3/stroke	26.1	N-m	3000	14.6	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF07		I-2	0.479	Liters	4.5	kilowatt	1800	13.6	mm3/stroke	23.9	N-m	1800	13.6	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF07e		I-2	0.479	Liters	4.5	kilowatt	1800	13.6	mm3/stroke	23.9	N-m	1800	13.6	mm3/stroke	N/A	N/A	N/A	N/A
Z482-D2-EF	Z482-D2-EF08		I-2	0.479	Liters	6.5	kilowatt	2400	14.0	mm3/stroke	25.9	N-m	2400	14.0	mm3/stroke	N/A	N/A	N/A	N/A
	1																		_
																	_		+
																	_	+	+
																	_		+
			_													_	_	_	+
-		-	+	-		+	+	+	-	+	+	-				+	+	+	+
-		-	+			-	+	+		+		-				+	+	+	+