# **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: JOHN DEERE (106 mm) Bore: 4.17 Model: 6068HFG05 Stroke: 5.0 in. (127 mm) Type: 4-Cycle, In-Line, 6-Cylinder, Diesel Displacement: 415 cid (6.8 liters)

Aspiration: Compression Ratio: 17.2:1

Turbocharger, ECM, EGR, DOC, SCR Electronic Direct

Injection, Charge Air Cooler

PERFORMANCE DATA

SAE Gross HP @ 1800 RPM (60 Hz) Rated 215 Load Fuel Consumption (gal/Hr) Rated 8.9 Load Exhaust Gas Flow (cfm) Rated Load 812 Exhaust Gas Temperature (°F) 685

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

174≤ ~ ≤751 BHP

Date: 05/5/2020

Criteria Pollutant	Emis	sion Requirements	Certifie	d Engine Emissions
NOx (Oxides of Nitrogen as NO2)	0.298	gr/bhp-hr	0.044	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)	2.609	gr/bhp-hr	0.007	gr/bhp-hr
PM (Particulate Matter)	0.014	gr/bhp-hr	0.014	gr/bhp-hr
NMHC (Non-Methane Hydrocarbons)	0.141	gr/bhp-hr	0.014	gr/bhp-hr
NMHC + NOx	N/A	gr/bhp-hr	N/A	gr/bhp-hr

**EPA Engine Family:** LJDXL06.8312 **EPA Certificate of Conformance:** LJDXL06.8312-015 ARB Executive Order: U-R-004-0584 Model Year 2020 **Effective Date:** 

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 2020 MODEL YEAR CERTIFICATE OF CONFORMITY WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Deere & Company

(U.S. Manufacturer or Importer)

Certificate Number: LJDXL06.8312-015

**Effective Date:** 07/08/2019

**Expiration Date:** 12/31/2020

Issue Date: 07/08/2019

> **Revision Date:** N/A

Model Year: 2020

Manufacturer Type: Original Engine Manufacturer

Engine Family: LJDXL06.8312

Mobile/Stationary Indicator: Both

Emissions Power Category: 130<=kW<=560

Fuel Type: Diesel

After Treatment Devices: Diesel Oxidation Catalyst, Ammonia Slip Catalyst, Selective Catalytic

Reduction

**Non-after Treatment Devices:** Electronic Control, Non-standard Non-After Treatment Device Installed, Electronic/Electric EGR - Cooled

Byron J. Bunker, Division Director

Compliance Division

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Parts 60 and 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 Parts 60 and 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 Parts 60 and 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 60 and 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 Parts 60 and 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 Parts 60 and 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.

The actual engine power may lie outside the limits of the Emissions Power Category shown above. See the certificate application for details.



#### **JOHN DEERE POWER SYSTEMS**

EXECUTIVE ORDER U-R-004-0584 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 YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)	
2020	LJDXL06.8312	6.8	Diesel	8000	
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT	APPLICATION	
Charge Air Cooler, Oxidation Catalyst, Electronic Direct Injection, Electronic Control Module, Exhaust Gas Recirculation, Turbocharger, Selective Catalytic Reduction-Urea, Ammonia Oxidation Catalyst			Pump, Compressor, Generator Set, Other Industrial 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):

RATED	EMISSION	EXHAUST (g/kw-hr)					OPACITY (%)			
POWER	STANDARD		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
		CERT	0.02	0.06		0.01	0.02	-		

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

Allen Jons, Chief

Emissions Certification and Compliance Division

day of December 2019.

E0#: U-R-004-0584
AHadmenr: Page 1. F1

8/30/19

### **Engine Model Summary Form**

Manufacturer: Engine category: John Deere Power Systems

Nonroad CI EPA Engine Family: LJDXL06.8312 Mfr Family Name: 350HCF Process Code: New Submission

				3. kW@RPN	A	4. Fuel Rate: mm/stroke@peak kW	5. Fuel Rate: (kg/hr)@peak kW
	1. Engine code	2. Engine	Model	(SAE Gross)	)	(for diesel only)	(for diesels only)
9	6068HFG05A	606	8	192@1800		# 13.50 1900 "	" 1000 gene
	6068HFG05B	606	8	160@1800		119.4@1800	32.9@1800
1	-8068HFG05C	606	8	165@1500	10/10	145.4@1500	3 483.4@1800
	6068HFG05D	606	8	160@1500		142.3@1500	32.6@1500
13	BOSSHFGOSA	606	8	24101800		180.4@1800	49.7@1800
	6068HFG06B	606	8	216@1800		159.8@1800	44@1800
Ħ	8088HFG08C	606	8	19701500	A	176.6@1500	40.5@1500
_	6068HPRNT7	606	8	248@1800		184.8@1800	50.8@1800
-	AND THE RESIDENCE OF STREET	NOT THE RESIDENCE				NUMBER OF STREET	P. S.

N	6. Torque (Nm) @RPM	7. Fuel Rate: mm/stroke@peak	8. Fuel Rate:
)	(SEA Gross)	torque	(kW/hr)@peak torque
#	1	1 /	1
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			X TOTAL
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9. Emission Control Device Per SAE J1930 EGR OC SCRONHOOD DE TO CACEOM FGR OC SCRC NH3OC DELTC CAC ECM TEGR OC BORC ÁMBOC DE TO DAC ECM EGR OC SCRC NH3OC DFI TC CAC ECM - BOR OC BORG SHOOT SFITTE CACECIA EGR OC SCRC NH3OC DFI TC CAC ECM EGR OC SCRC NHISOC DFITC CAC SCM EGR OC SCRC NH3OC DFI TC CAC ECM