



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
Application: Generator
300 kWe Market
1800 RPM (60 Hz)

PowerTech™ PSX 13.5L Engine
Model: 6135HFG95
JD Electronic Control

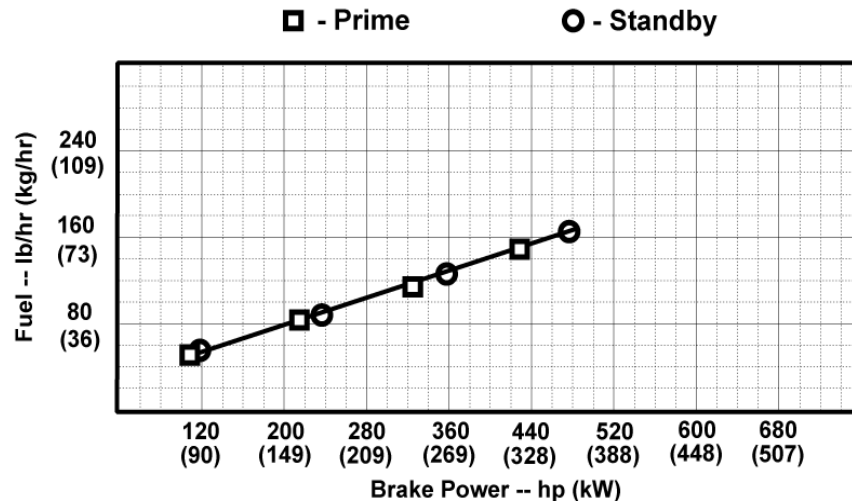
429 hp (320 kW) Prime
477 hp (356 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
429	320	477	356

Generator Efficiency %	Fan Power (% of Standby)		Power Factor	Prime Rating		Standby Rating	
	hp	kW		kWe	kVA	kWe	kVA
90-94	28.7	21.4	0.8	274-286	342-357	301-315	376-393

Note 1: Based on nominal engine power.

Note 2: kWe / kVA rating assumes 90% efficiency. Generator Efficiency % will vary.



STANDARD CONDITIONS

Air Intake Restriction.....12 in.H₂O (3 kPa)
Exhaust Back Pressure.....60 in.H₂O (15 kPa)

Gross power guaranteed within + or - 5% at SAE

J1995 and ISO 3046 conditions:

77 °F (25 °C) air inlet temperature

29.31 in.Hg (99 kPa) barometer

104 °F (40 °C) fuel inlet temperature

0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:

Power: kW = hp x 0.746

Fuel: 1 gal = 7.1 lb, 1 L = 0.85kg

Torque: N·m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes: 1) This Performance Curve provides installation requirements necessary for the engine to emit at its certified emission levels. For additional information necessary to meet applicable regulatory requirements, refer to the John Deere Emissions-related Installation Instructions (AG01):

<https://power.deere.com/wps/myportal/jdps/products/engines/appguidelines>.

2) A crankshaft Torsional Vibration Analysis is required on all Gen Set applications.

Designed/Calibrated to meet:

- CARB
- EPA Interim Tier 4

Ref: Engine Emission Label

Certified by:

[Signature]
4 May 2012

Performance Curve: 6135HFG95_C

Engine Installation Criteria

General Data

Model	6135HFG95	
Number of Cylinders	6	
Bore	132 mm	5.2 in.
Stroke	165 mm	6.5 in.
Displacement	13.5 L	824 in. ³
Compression Ratio	15.3 : 1	
Valves per Cylinder, Intake/Exhaust	2 / 2	
Firing Order	1-5-3-6-2-4	
Combustion System	Unit Injection	
Engine Type	In-line, 4 Cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Engine Crankcase Vent System	Open	

Physical Data

Length	1544.2 mm	60.8 in.
Width	962.3 mm	37.9 in.
Height	1547.9 mm	60.9 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	1678 kg	3699 lb
Center of Gravity Location, X-axis From Rear Face of Block	558.8 mm	22.0 in.
Center of Gravity Location, Y-axis Right of Crankshaft	2 mm	0.1 in.
Center of Gravity Location, Z-axis Above Crankshaft	340.6 mm	13.4 in.
Max. Bending Moment about Main Bearings Front and Rear	620 N·m	457 lb-ft
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 N·m	600 lb-ft
Thrust Bearing Load Limit Forward, Intermittent	8100 N	1821 lb
Thrust Bearing Load Limit Forward, Continuous	5400 N	1214 lb
Thrust Bearing Load Limit Rearward, Intermittent	4000 N	899 lb
Thrust Bearing Load Limit Rearward, Continuous	2500 N	562 lb
Max. Continuous Damper Temp	105 °C	221 °F
Max. ECU Vibration, All Axis	9.00 DDA	
Max. Torsional Vibration, Front of Crank	0.25 DDA	

Electrical System

Min. Instantaneous Cranking	50 rpm	
Min. Steady State Cranking	120 rpm	
Starter Rolling Current, 12V @32 °F (0 °C)	700 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	400 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	1100 amps	
Starter Rolling Current, 24V @-22 °F (-30 °C)	550 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Voltage Drop, Battery to Starter	0.8 volts	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. Allowable Start Circuit Resistance, 24V	0.002 Ohm	
Max. Voltage From Engine to Crankshaft, 12V	0.15 volts	
Max. Voltage From Engine to Crankshaft, 24V	0.15 volts	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	180 °C	356 °F
Max. Air Throttle Electrical Actuator Temperature	125 °C	257 °F
Max. Harness Temperature	125 °C	257 °F
Max. Alternator Temperature	105 °C	221 °F
Max. Starter Temperature	120 °C	248 °F
Max. Temperature, All Other Electronics	125 °C	257 °F

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Engine Installation Criteria

Charge Air Cooling System

Air-to-Air Heat Rejection	76.9 kW	4377 BTU/min
Intake Manifold Pressure	239.0 kPa	34.7 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air	211.0 °C	412 °F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure	236 °C	457 °F
Max. Temperature Out of Charge Air Cooler @All Ambient Conditions	88 °C	190 °F
Intake Manifold Temperature at which Power De-rate Occurs	121.5 °C	251 °F
Intake Manifold Temperature at which Severe Power De-rate Occurs	123 °C	253.4 °F
Max. CAC System Volume	40.5 Liter	43 quart
Max. Pressure Drop through CAC	16 kPa	64.0 in. H ₂ O
Min. Pressure Drop through CAC	8 kPa	32.0 in. H ₂ O
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	52 °C	126 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	43.1 °C	110 °F
Max. Bending Moment on Compressor Outlet	6 N·m	4 lb-ft
Max. Shear on Compressor Outlet	4 kg	9 lb

Cooling System

Engine Heat Rejection	243.8 kW	13877 BTU/min
Coolant Flow @10 kPa External Restriction	774 L/min	204 gal/min
Coolant Flow @40 kPa External Restriction	726 L/min	192 gal/min
Thermostat Start to Open	85 °C	185 °F
Thermostat Fully Open	97 °C	207 °F
Engine Coolant Capacity	25 Liter	26.4 quart
Min. Coolant Fill Rate	12 L/min	3.2 gal/min
Max. Water Pump Inlet Pressure	235 kPaa	34 psia
Min. Pump Inlet Pressure @203°F (95°C) Coolant	110 kPaa	16 psia
Min. Pump Inlet Pressure @Max. Top Tank Temperature	157 kPaa	23 psia
Max. External Coolant Restriction	85 kPa	12 psi
Max. Top Tank Temperature	108 °C	226 °F
Max. Top Tank Temperature 95% of Operating Hours	103 °C	217 °F
Min. Limiting Ambient Temperature	47 °C	117 °F

Exhaust System

Exhaust Flow	47.3 m³/min	1670 ft.³/min
Exhaust Temperature	373.8 °C	705 °F
Max. Allowable Exhaust Restriction	17 kPa	68 in. H ₂ O
Max. Bending Moment on Turbo Outlet	8.8 N·m	6.5 lb-ft
Max. Shear on Turbine Outlet	6 kg	13 lb
Exhaust Filter Size		8
Exhaust Filter Pressure Drop (Clean)	5.88 kPa	24 in. H ₂ O
Min. Mixing Length, Outlet to Exhaust Filter	500 mm	20 in.
Max. Bending Moment on Exhaust Filter Inlet	180 N·m	133 lb-ft
Max. Bending Moment on Exhaust Filter Outlet	180 N·m	133 lb-ft
Max. Exhaust Leakage Rate, Engine to Exhaust Filter @30kPa	5 L/min	1.3 gal/min
Max. Temperature Drop, Engine to Exhaust Filter	30 °C	86 °F

Fuel System

ECU Description	L22 Controller	
Fuel Injection Pump	Unit Injection	
Governor Type	Electronic	
Total Fuel Flow	239.616 kg/hr	528 lb/hr
Fuel Consumption, Prime	67.9 kg/hr	150 lb/hr
Fuel Consumption, Standby	74.6 kg/hr	164 lb/hr
Fuel Temperature Rise, Inlet to Return	55 Δ°C	99 Δ°F
Min. Fuel Inlet Pressure	-30 kPa	-120 in. H ₂ O
Max. Fuel Inlet Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Return Pressure	35 kPa	140 in. H ₂ O
Min. Fuel Return Pressure	0 kPa	0 in. H ₂ O
Max. Fuel Inlet Temperature	65 °C	149 °F
Fuel Filter @98% Efficiency	2 mic	

Lubrication System

Oil Pressure at Rated Speed	400 kPa	58 psi
Max. In-Pan Oil Temperature	138 °C	280 °F
Max. Crankcase Pressure	2 kPa	8 in. H ₂ O

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Engine Installation Criteria

Air Intake System

Engine Air Flow	24.3 m³/min	858 ft.³/min
Air Mass Flow	1636.0 kg/hr	3607 lb/hr
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8 Δ°C	15 Δ°F
Max. Air Intake Restriction, Clean Air Cleaner	3.75 kPa	15.0 in. H ₂ O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25.0 in. H ₂ O
Air Cleaner Efficiency	99.9 %	

Performance Data

Rated Power, Prime	429 HP	320 kW
Rated Power, Standby	477 HP	356 kW
Rated Speed	1800 rpm	
Rated Torque, Prime	1701 N·m	1255 lb-ft
Rated Torque, Standby	1890 N·m	1394 lb-ft
BMEP, Prime	1574 kPa	228 psi
BMEP, Standby	1752 kPa	254 psi
Altitude Capability, Prime	3314 m	10872 ft
Altitude Capability, Standby	3083 m	10114 ft
Friction Power @Rated Speed	48 kW	64 HP
Air:Fuel Ratio, Prime	21.8 : 1	
Air:Fuel Ratio, Standby	22.2 : 1	
Noise @1 m Prime	100.6 dB(A)	
Noise @1 m Standby	101.1 dB(A)	
0-100% Standby Load Acceptance	4.85 sec	
Load Acceptance, ISO 8528-5	G3	

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	50.3	22.8	53.2	24.1
50 % Power	81.1	36.8	88.7	40.2
75 % Power	114.2	51.8	125.4	56.9
100 % Power	148.8	67.5	164.0	74.4

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