



JOHN DEERE

ENGINE PERFORMANCE CURVE

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

PowerTech™ Plus 6.8L Engine
Model: 6068HFG85
 JD Electronic Control

287 hp (214 kW) Prime
 315 hp (235 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
287	214	315	235

Generator Efficiency %	Fan Power (% of Standby)		Power Factor	Prime Rating		Standby Rating		4 sec Standby Block Load Capability
	hp	kW		kWe	kVA	kWe	kVA	
88-92	18.9	14.1	0.8	176-184	220-230	194-203	243-254	80%

Note 1: Based on nominal engine power. Derate 20% for 100% block load capability.
 Note 2: kWe / kVA rating assumes 90% efficiency. "Generator Efficiency %" will vary.

STANDARD CONDITIONS

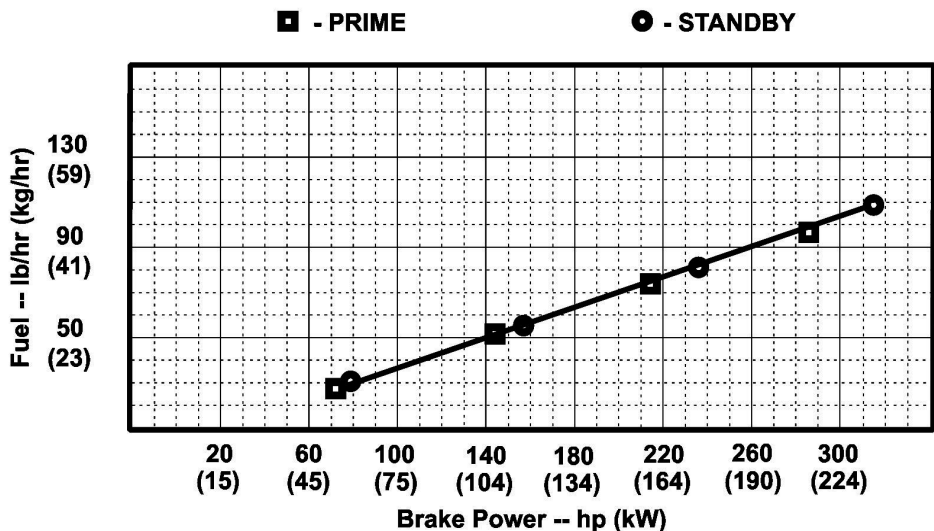
Air Intake Restriction.....12 in.H₂O (3 kPa)
 Exhaust Back Pressure.....30 in.H₂O (7.5 kPa)

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:
 Gen-set engine model 6068HFG85 was formerly 6068HF485. -----
 A crankshaft Torsional Vibration Analysis is required on all Gen Set applications.



Designed/Calibrated to meet:	Certified by:
<ul style="list-style-type: none"> CARB EPA 	 22 June '07
Ref: Engine Emission Label	

Performance Curve: 6068HFG85_T

Engine Installation Criteria

General Data

Model	6068HFG85	
Number of Cylinders	6	
Bore	106 mm	4.2 in.
Stroke	127 mm	5.0 in.
Displacement	6.8 L	415 in. ³
Compression Ratio	17.0:1	
Valves per Cylinder, Intake/Exhaust	2/2	
Firing Order	1-5-3-6-2-4	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Charge Air Cooling System	Air-to-Air	
Engine Crankcase Vent System	Open	

Physical Data

Length	1161 mm	45.7 in.
Width	616 mm	24.3 in.
Height	1128 mm	44.4 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	678 kg	1495 lb
Center of Gravity Location, X-axis From Rear Face of Block	395 mm	15.6 in.
Center of Gravity Location, Y-axis Right of Crankshaft	-2.24 mm	-0.1 in.
Center of Gravity Location, Z-axis Above Crankshaft	189 mm	7.4 in.
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	4000 N	899 lb
Thrust Bearing Load Limit Forward, Continuous	2200 N	495 lb
Thrust Bearing Load Limit Rearward, Intermittent	2000 N	450 lb
Thrust Bearing Load Limit Rearward, Continuous	1000 N	225 lb
Max. Continuous Damper Temp	82 °C	180 °F
Max. Torsional Vibration, Front of Crank	0.25 DDA	

Electrical System

Recommended Battery Capacity, 12V @32 °F (0 °C)	800 amps	
Recommended Battery Capacity, 24V @32 °F (0 °C)	570 amps	
Starter Rolling Current, 12V @32 °F (0 °C)	920 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	600 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	1300 amps	
Starter Rolling Current, 24V @-22 °F (-30 °C)	700 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. Allowable Start Circuit Resistance, 24V	0.002 Ohm	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	180 °C	356 °F
Max. Harness Temperature	120 °C	248 °F

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Charge Air Cooling System

Air-to-Air Heat Rejection, Prime	40.37 kW	2298 BTU/min
Air-to-Air Heat Rejection, Standby	57.34 kW	3264 BTU/min
Compressor Discharge Temperature @77°F(25°C) Ambient Air, Prime	185 °C	365 °F
Intake Manifold Pressure, Prime	188 kPa	27.3 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air, Standby	227 °C	441 °F
Intake Manifold Pressure, Standby	252 kPa	36.5 psi
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure, Prime	000 °C	32 °F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure, Standby	000 °C	32 °F
Intake Manifold Temperature at which Power De-rate Occurs	88 °C	190 °F
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	60 °C	140 °F
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Prime	52 °C	126 °F
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Standby	52 °C	126 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	48 °C	118 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Prime	43 °C	109 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Standby	43 °C	109 °F

Cooling System

Max. Water Pump Inlet Restriction	-30 kPa	-4.4 psi
Engine Heat Rejection, Prime	83.7 kW	4764 BTU/min
Engine Heat Rejection, Standby	94.9 kW	5402 BTU/min
Coolant Flow	265 L/min	70 gal/min
Thermostat Start to Open	82 °C	180 °F
Thermostat Fully Open	95 °C	203 °F
Engine Coolant Capacity	11.9 Liter	12.6 quart
Min. Pressure Cap	100 kPa	15 psi
Min. Pump Inlet Pressure	30 kPa	4.4 psi
Max. Top Tank Temperature Prime	100 °C	212 °F
Max. Top Tank Temperature Standby	100 °C	212 °F
Min. Limiting Ambient Temperature, Standby	40 °C	104 °F
Min. Limiting Ambient Temperature, Prime	47 °C	116.6 °F
Min. Coolant Fill Rate	11 L/min	2.9 gal/min

Exhaust System

Exhaust Flow, Prime	38.8 m ³ /min	1370 ft. ³ /min
Exhaust Flow, Standby	42.9 m ³ /min	1515 ft. ³ /min
Exhaust Temperature, Prime	528 °C	982 °F
Exhaust Temperature, Standby	485 °C	905 °F
Max. Allowable Exhaust Restriction	10 kPa	40 in. H ₂ O
Min. Allowable Exhaust Restriction	3 kPa	12 in. H ₂ O
Max. Bending Moment on Turbo Outlet	7 N-m	5.2 lb-ft
Max. Shear on Turbine Outlet	11 kg	24 lb

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Engine Installation Criteria

Fuel System

ECU Description	L14 Controller	
Fuel Injection Pump	Denso HP3	
Governor Type	Electronic	
Total Fuel Flow, Prime	73.1 kg/hr	161 lb/hr
Total Fuel Flow, Standby	78.7 kg/hr	174 lb/hr
Fuel Consumption, Prime	44 kg/hr	97 lb/hr
Fuel Consumption, Standby	50 kg/hr	110 lb/hr
Fuel Temperature Rise, Inlet to Return Prime	54 °C	129 °F
Fuel Temperature Rise, Inlet to Return Standby	56 °C	133 °F
Max. Fuel Inlet Restriction	20 kPa	80 in. H ₂ O
Max. Fuel Inlet Pressure	NA	
Max. Fuel Return Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Inlet Temperature	80 °C	176 °F

Lubrication System

Oil Pressure at Rated Speed, Prime	339 kPa	49 psi
Oil Pressure at Rated Speed, Standby	339 kPa	49 psi
Oil Pressure at Low Idle	105 kPa	15 psi
Max. Oil Carryover in Blow-By	1.0 g/hr	0.002 lb/hr
Max. Airflow in Blow-By	130 L/min	34.3 gal/min
Max. Crankcase Pressure	0.5 kPa	2 in. H ₂ O

Air Intake System

Engine Air Flow, Prime	14.7 m ³ /min	519 ft. ³ /min
Engine Air Flow, Standby	17.5 m ³ /min	618 ft. ³ /min
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	214 kW	287 HP
Rated Power, Standby	235 kW	315 HP
Rated Speed	1800 rpm	
Low Idle Speed	1150 rpm	
Rated Torque, Prime	1536 N·m	1133 lb-ft
Rated Torque, Standby	1690 N·m	1246 lb-ft
BMEP, Prime	2094 kPa	304 psi
BMEP, Standby	2304 kPa	334 psi
Altitude Capability, Prime	3048 m	10000 ft
Altitude Capability, Standby	3048 m	10000 ft
Friction Power @Rated Speed	18.7 kW	25 HP
Air:Fuel Ratio, Prime	23.0:1	
Air:Fuel Ratio, Standby	24.0:1	
Smoke @Rated Speed Prime	0.45	Bosch No.
Smoke @Rated Speed Standby	0.77	Bosch No.
Noise @1 m Prime	89.0 dB(A)	
Noise @1 m Standby	89.0 dB(A)	

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	27.8	12.6	30.2	13.7
50 % Power	51.4	23.3	56.2	25.5
75 % Power	73.2	33.2	80.5	36.5
100 % Power	97.2	44.1	109.8	49.8

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