



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Generator (60 Hz)  
 Target: 185 kWe Standby Market

**PowerTech Plus™ 6.8L Engine**  
 Model: **6068HF485**

**258 hp (193 kW) Prime**  
**284 hp (212 kW) Standby**

[See Option Code Tables]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
258	193	284	212

Generator Efficiency %	Fan Power (6% of Standby)		Power Factor	Prime Rating <sup>2</sup>		Standby Rating <sub>1,2</sub>		ISO 8528 G2 Block Load Capability
	hp	kW		kWe	kVA	kWe	kVA	
88-92	8.7	6.5	0.8	164-171	205-214	181-189	226-236	100%

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.H<sub>2</sub>O (3 kPa)  
 Exhaust Back Pressure ..... 30 in.H<sub>2</sub>O (7.5 kPa)

Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

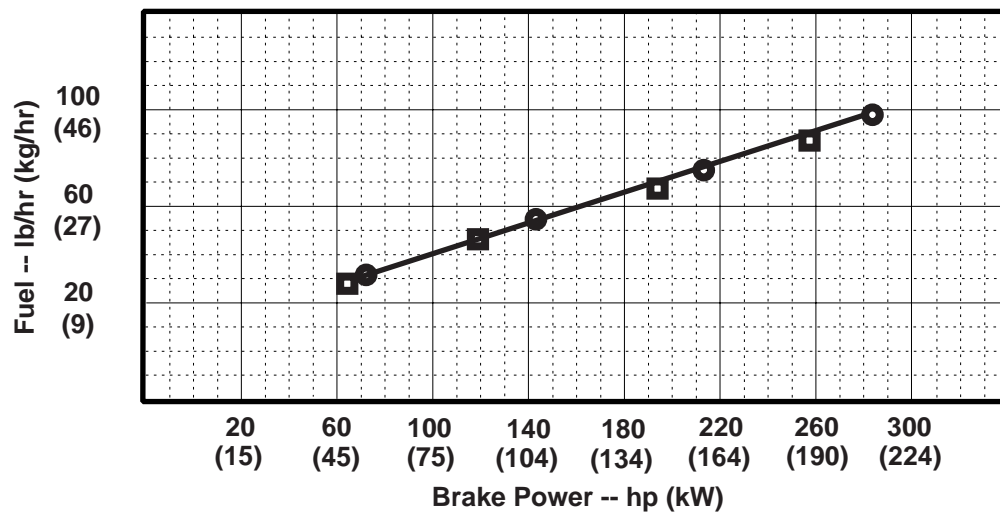
- 77 °F (25 °C) air inlet temperature
- 29.31 in.Hg (99 kPa) barometer
- 104 °F (40 °C) fuel inlet temperature
- 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:

- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
- Torque: N•m = lb-ft x 1.356

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

■ - PRIME                      ● - STANDBY



Notes:

All OEM Gen Set Engine Applications must be pre-screened for torsional vibration compatibility with the respective alternator end hardware.

OEM Engine Application Engineering will perform this computer-based analysis work upon request.

Tier-3 Emission Certifications:

Certified by:

CARB; EPA

Ref: Engine Emission Label

*Vincent Pando*  
 22 June '07

\* Revised Data

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 June 2007

## Engine Installation Criteria

### General Data

Model ..... 6068HF485  
 Number of Cylinders ..... 6  
 Bore and Stroke--in. (mm)..... 4.19 x 5.00 (106 x 127)  
 Displacement--in.<sup>3</sup> (L) ..... 415 (6.8)  
 Compression Ratio ..... 17.0 : 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  
 Charge Air Cooling System ..... Air-to-Air  
 Engine Crankcase Vent System ..... Open

### Physical Data

Length--in. (mm) ..... 45.7\* (1161\*)  
 Width--in. (mm) ..... 24.3\* (616\*)  
 Height--in. (mm) ..... 44.4\* (1128\*)  
 Weight, with oil--lb (kg)..... 1495 (678)  
 (Includes flywheel hsg., flywheel & electrics)  
 Center of Gravity Location  
     From Rear Face of Block (X-axis)--in. (mm) .15.5 (394)  
     Right of Crankshaft (Y-axis)--in. (mm) ..... -0.1 (-2.24)  
     Above Crankshaft (Z-axis)--in. (mm) ..... 7.4 (189)  
 Max. Allow. Static Bending Moment at Rear  
     Face of Flywhl Hsg w/ 5-G Load--lb-ft (N\*m) .. 600 (814)  
 Thrust Bearing Load Limit --lb (N) Forward Rearward  
     Intermittent..... 899 (4000)..... 450 (2000)  
     Continuous ..... 495 (2200)..... 225 (1000)  
 Max. Front of Crank. Torsional Vibration--DDA ..... 0.25  
 Max. Continuous Damper Temp--°F (°C) ..... 180 (82)

### Electrical System

**12 Volt      24 Volt**

Min. Battery Capacity (CCA)--amp..... 800 ..... 570  
 Max. Allow. Start. Circ't Resist.--Ohm.. 0.0012 ..... 0.002  
 Starter Rolling Current:  
     At 32 °F ( 0 °C)--amp ..... 920 ..... 600  
     At -22 °F (-30 °C)--amp ..... 1300 ..... 700  
 Min. Volts at ECU while Cranking--volts..... 6 ..... 10  
 Max. ECU Temperature--°F (°C) ..... 221 (105)  
 Max. VTG Actuator Surface Temp.--°F (°C) ... 356 (180)  
 Max. Harness Temperature--°F (°C) ..... 248 (120)  
 Maximum Voltage From Engine Crankshaft/  
     Generator Shaft to Ground--VAC ..... 0.15 ..... 0.15

### Air System

**Prime      Standby**

Max. Allowable Temp Rise--Ambient Air to  
     Engine Inlet--°F (°C)..... 15 (8)  
 Maximum Air Intake Restriction  
     Dirty Air Cleaner--in.H<sub>2</sub>O (kPa)..... 25 (6.25)  
     Clean Air Cleaner--in.H<sub>2</sub>O (kPa) ..... 15 (3.75)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) .... 512 (14.5) .. 563 (15.9)  
 Air Cleaner Efficiency--% ..... 99.9

### Charge Air Cooling System

**Prime      Standby**

Air/Air Exchanger Heat Rejection--  
 BTU/min (kW) ..... 2328(40.9) ... 2864(50.3)  
 Compress. Dischrg. Temp.(Rated)  
     @ 77 °F (25°C) Amb. Air--°F (°C) 383(195) .... 413(212)  
 Compress. Dischrg. Temp.(Max.)  
     @ 47°C amb. and  
     80 kPa bar.--°F (°C) ..... 464(240) .... 500(260)  
 Press. Drop, thru CAC--in.H<sub>2</sub>O (kPa)  
     Max. .... 64 (16)  
     Min. .... 32 (8)  
 Intake Manifold Pressure--psi (kPa) ... 27 (186) ..... 31 (215)  
 CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)  
     Max. .... 140 (60)  
     Min. .... 118 (48)  
 CAC Out Temp @ any Ambient--°F (°C)  
     Max. .... 190 (88) ..... 190 (88)

### Cooling System

**Prime      Standby**

Engine Heat Reject.--BTU/min (kW). 4736(83.2) ... 5175(90.9)  
 Coolant Flow--gal/min (L/min)..... 63 (240)  
 Thermostat Start to Open--°F (°C) ..... 180 (82)  
 Thermostat Fully Open--°F (°C) ..... 203 (95)  
 Engine Coolant Capacity--qt (L) ..... 13 (11.9)  
 Min. Pressure Cap--psi (kPa) ..... 14.5 (100)  
 Max. Top Tank Temp--°F (°C) ..... 230 (110)  
 Min. Coolant Fill Rate--gal/min (L/min) ..... 3 (11)  
 Min. Air-to-Boil Temperature--°F (°C) . 117 (47) .... 104 (40)\*  
 Min. Pump Inlet Pressure--psi (kPa)..... 4.4 (30)

### Exhaust System

**Prime      Standby**

Exhaust Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min)..... 1234 (34.9) 1335 (37.8)  
 Exhaust Temperature--°F (°C) ..... 881 (471) ... 860 (460)  
 Max. Exhaust Restriction---in. H<sub>2</sub>O (kPa) ..... 40 (10)\*  
 Min. Exhaust Restriction---in. H<sub>2</sub>O (kPa)..... 16 (4)\*  
 Max. Bend. Moment, Turbo Out.--lb-ft (N\*m) ..... 5.2 (7.0)  
 Max. Shear on Turbo Outlet--lb (kg) ..... 24 (11)

### Fuel System

**Prime      Standby**

ECU Description ..... L14 Controller  
 Fuel System Description ..... HPCR  
 Fuel Injection Pump ..... Denso HP3  
 Governor Type ..... Electronic  
 Total Fuel Flow--lb/hr (kg/hr)..... 212 (96.0) .. 238 (108.0)  
 Fuel Consumption--lb/hr (kg/hr)..... 87 (40) ..... 99 (44.9)  
 Max. Fuel Inlet Temp.--°F (°C) ..... 176 (80)  
 Fuel Temp. Rise, Inlt to Retr--°F (°C) 94.7(53) ..... 98.1(55)  
 Max. Fuel Inlet Restriction--in. H<sub>2</sub>O (kPa) ..... 80 (20)  
 Max. Fuel Inlet Pressure--in. H<sub>2</sub>O (kPa) ..... NA (NA)  
 Max. Fuel Return Pressure--in. H<sub>2</sub>O (kPa) ..... 80 (20)

### Lubrication System

**Prime      Standby**

Oil Press. at Rated Speed--psi (kPa). 44 (300) ..... 44 (300)  
 Oil Pressure at Low Idle--psi (kPa) ..... 15 (105)  
 Max. Oil Carryover in Blow-by--lb/hr (g/hr) ..... 0.002 (1.0)  
 Max. Airflow in Blow-by--gal/min (l/min)..... 34 (130)  
 Max. Crankcase Pressure--in. H<sub>2</sub>O (kPa)..... 2 (0.5)

### Performance Data

**Prime      Standby**

Rated Power--hp (kW) ..... 258 (193)..... 284 (212)  
 Rated Speed--rpm ..... 1800 ..... 1800  
 Low Idle Speed--rpm ..... 1150 ..... 1150  
 Rated Torque--lb-ft (N\*m)..... 1386 (1022).. 1525 (1125)  
 BMEP--psi (kPa) ..... 274 (1889).... 456 (3141)  
 Friction Power  
     @ Rated Speed--hp (kW) ..... 17 (13)..... 17 (13)  
 Altitude Capability--ft (m) ..... 10,000 (3000).. 7500 (2286)  
 Ratio--Air : Fuel..... 25.0 : 1 ..... 25.0 : 1  
 Smoke @ Rated Speed--Bosch No. .... 0.08 ..... 0.06  
 Noise--dB(A) @ 1 m ..... 89.0\* ..... 89.0\*

### Fuel Consumption -- lb/hr (kg/h)

**Prime      Standby**

25 % Power ..... 28.7 (13.0) ..... 30.4 (13.8)  
 50 % Power ..... 47.8 (21.7) ..... 52.4 (23.8)  
 75 % Power ..... 68.3 (31.0) ..... 75.0 (34.0)  
 100 % Power ..... 88.2 (40.0) ..... 99.1 (44.9)

All values at rated speed and power with standard options unless otherwise noted.

\* Revised Data

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 June 2007