



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Generator (60 Hz)  
 Target: 125 kWe Standby Market

**PowerTech E™ 6.8L Engine**  
 Model: **6068HF285**

**180 hp (134 kW) Prime**  
**197 hp (147 kW) Standby**

[See Option Code Tables]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
180	134	197	147

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	10.9	8.1	0.8	111-116	139-145	122-128	153-160	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:

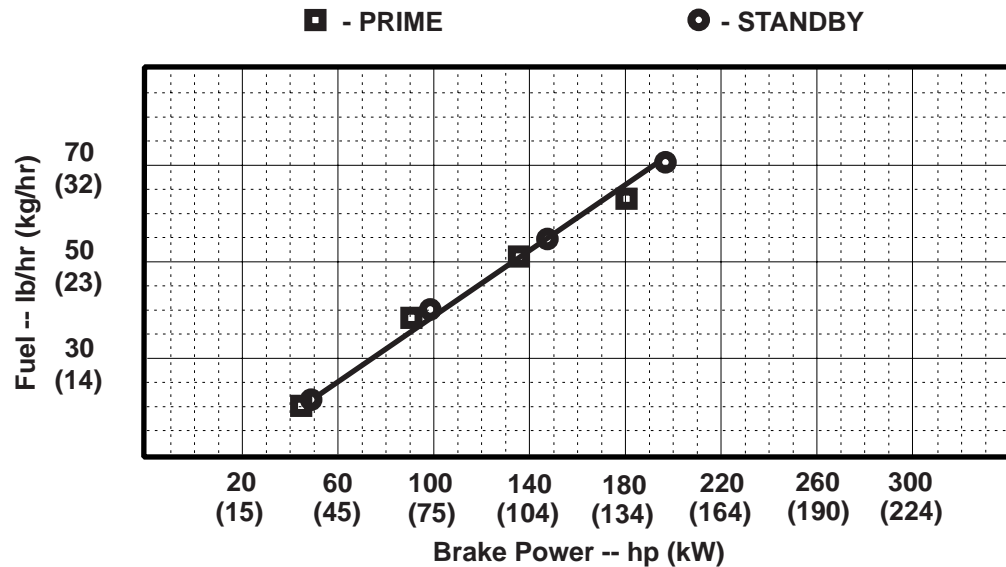
- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
- Torque: N•m = lb-ft x 1.356

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

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	<i>Vincent Pando</i>
Ref: Engine Emission Label	22 June '07

\* Revised Data  
 Curve 6068HF2851800197 ..... Sheet 1 of 2  
 June 2007

## Engine Installation Criteria

### General Data

Model ..... 6068HF285  
 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 ..... 19.0:1  
 Valves per Cylinder--Intake/Exhaust ..... 1 / 1  
 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) .....44.2 (1123)  
 Width--in. (mm) .....25.9 (657)  
 Height--in. (mm) .....40.8 (1036)  
 Weight, with oil--lb (kg).....1340 (608)  
 (Includes flywheel hsg., flywheel & electrics)  
 Center of Gravity Location (Estimated based on Tier 2)  
     From Rear Face of Block (X-axis)--in. (mm) ..14.5 (369)  
     Right of Crankshaft (Y-axis)--in. (mm) .....0.1 (3)  
     Above Crankshaft (Z-axis)--in. (mm) .....6.1 (154)  
 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. 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) .... 388 (11.0) .. 410 (11.6)  
 Air Cleaner Efficiency--% .....99.9

### Charge Air Cooling System

**Prime      Standby**

Air/Air Exchanger Heat Rejection--  
 BTU/min (kW) ..... 1042(18.3) .. 1229 (21.6)  
 Compress. Dischrg. Temp.(Rated)  
     @ 77 °F (25°C) Amb. Air--°F (°C) 300(149) .... 324(162)  
 Compress. Dischrg. Temp.(Max.)  
     @ 47°C amb. and  
     80 kPa bar.--°F (°C) .....NA (NA) ..... NA (NA)  
 Press. Drop, thru CAC--in.H<sub>2</sub>O (kPa)  
     Max. ....52 (13)  
     Min. ....32 (8)  
 Intake Manifold Pressure--psi (kPa) .... 19(128) ..... 21 (143)  
 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)

### Cooling System

**Prime      Standby**

Engine Heat Reject.--BTU/min (kW) .... NA(NA) .. 4758 (83.6)  
 Coolant Flow--gal/min (L/min).....48(180) ..... 48(180)  
 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)  
 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).....964 (27.3) .1031(29.2)  
 Exhaust Temperature--°F (°C) .....916(491) ... 945 (507)  
 Max. Exhaust Restriction----in. H<sub>2</sub>O (kPa) .....30 (7.5)  
 Min. Exhaust Restriction----in. H<sub>2</sub>O (kPa) .....None  
 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 .....L16 Controller  
 Fuel Injection Pump .....Denso HP3  
 Governor Type ..... Electronic  
 Total Fuel Flow--lb/hr (kg/hr)..... 153(69.4) ..... 168(76.3)  
 Fuel Consumption--lb/hr (kg/hr) .....64(28.9) ..... 70 (31.8)  
 Max. Fuel Inlet Temp.--°F (°C) ..... 176 (80)  
 Fuel Temp. Rise, Inlt to Retr--°F (°C) 72(40) ..... 79.2(44)  
 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)  
 Min. Oil Pressure--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) ..... 180 (134)..... 197 (147)  
 Rated Speed--rpm ..... 1800..... 1800  
 Low Idle Speed--rpm ..... 1150.....1150  
 Rated Torque--lb-ft (N•m)..... 1157 (853)..... 1273 (939)  
 BMEP--psi (kPa) ..... 229 (1577)..... 252 (1735)  
 Friction Power  
     @ Rated Speed--hp (kW) ..... 23 (17)..... 23 (17)  
 Altitude Capability--ft (m) ..... 10,000(3050) ..10,000(3050)  
 Ratio--Air : Fuel..... 25 : 1 ..... 24 : 1  
 Smoke @ Rated Speed--Bosch No. .... 0.7 ..... 1.2  
 Noise--dB(A) @ 1 m ..... 88.4 ..... 88.8

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

**Prime      Standby**

25 % Power .....20.0 (9.1) ..... 21.6 (9.8)  
 50 % Power .....38.1 (17.3) ..... 40.8 (18.5)  
 75 % Power .....51.0 (23.1) ..... 55.1 (25.0)  
 100 % Power .....63.7 (28.9) ..... 70.5 (32.0)

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

\* Revised Data

Curve 6068HF2851800197 ..... Sheet 2 of 2  
 June 2007