



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator (60 Hz)
 Target: 150 kWe Standby Market

PowerTech E™ 6.8L Engine

Model: **6068HF285**

216 hp (161 kW) Prime
237 hp (177 kW) Standby

[See Option Code Tables]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
216	161	237	177

Generator Efficiency %	Fan Power (6% of Standby)		Power Factor	Prime Rating ²		Standby Rating ^{1,2}		ISO 8528 G2 Block Load Capability
	hp	kW		kWe	kVA	kWe	kVA	
88-92	13.1	9.8	0.8	133-139	166-174	147-154	184-193	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.H₂O (3 kPa)
 Exhaust Back Pressure 30 in.H₂O (7.5 kPa)

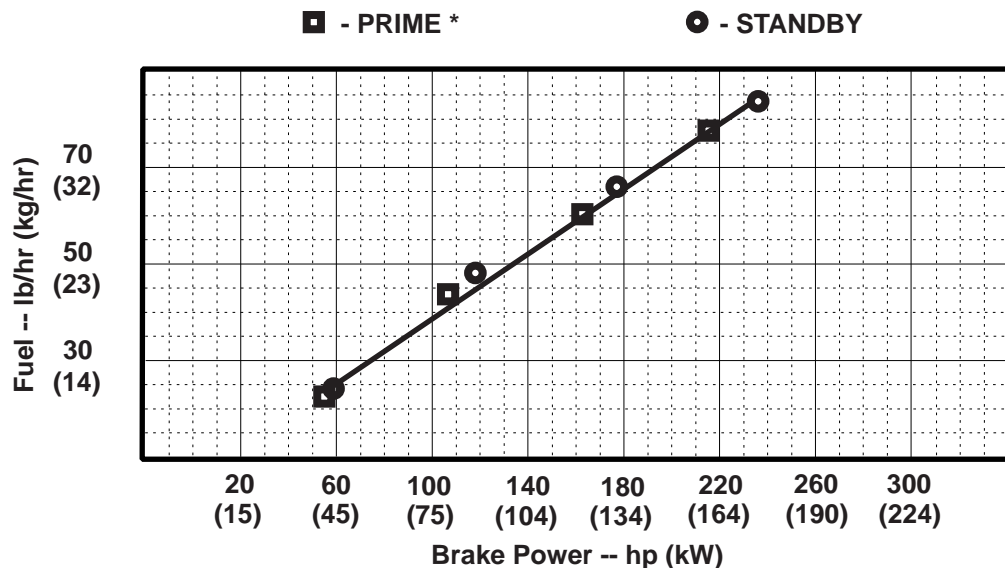
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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 = 0.85 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

Ref: Engine Emission Label

Vincent...
 22 June '07

* Revised Data

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 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. ³ (L)	415 (6.8)
Compression Ratio	19.0:1
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)	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) <u>Forward</u> <u>Rearward</u>	
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 ₂ O (kPa).....	25 (6.25)	
Clean Air Cleaner--in.H ₂ O (kPa).....	15 (3.75)	
Engine Air Flow--ft ³ /min (m ³ /min) ..	427 (12.1)*	448 (12.7)*
Air Cleaner Efficiency--%	99.9	

Charge Air Cooling System

Prime Standby

Air/Air Exchanger Heat Rejection--		
BTU/min (kW)	1508(26.5)	1708(30.0)*
Compress. Dischrg. Temp.(Rated)		
@ 77 °F (25°C) Amb. Air--°F (°C).....	346(175)	362(183)*
Press. Drop, thru CAC--in.H ₂ O (kPa)		
Max.	52 (13)	
Min.	None*	
Intake Manifold Pressure--psi (kPa) .	24 (164)*	26 (178)*
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).....	5009(88)	5407 (95)*
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 ³ /min (m ³ /min)	1104 (31.3)	1158(32.8)*
Exhaust Temperature--°F (°C)	981 (527)	981 (527)*
Max. Exhaust Restriction---in. H ₂ O (kPa)	30 (7.5)	
Min. Exhaust Restriction---in. H ₂ 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).....	187(84.7)	201(91.3)*
Fuel Consumption--lb/hr (kg/hr).....	78(35.3)	84 (38.1)*
Max. Fuel Inlet Temp.--°F (°C).....	176 (80)	
Fuel Temp. Rise, Inlt to Retr--°F (°C).....	73.1(41)	72(40)*
Max. Fuel Inlet Restriction--in. H ₂ O (kPa)	80 (20)	
Max. Fuel Inlet Pressure--in. H ₂ O (kPa)	NA (NA)	
Max. Fuel Return Pressure--in. H ₂ O (kPa).....	80 (20)	

Lubrication System

Prime Standby

Oil Press. at Rated Speed--psi (kPa).....	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 ₂ O (kPa).....	2 (0.5)	

Performance Data

Prime Standby

Rated Power--hp (kW)	216 (161)	237 (177)
Rated Speed--rpm	1800	1800
Low Idle Speed--rpm	1150	1150
Rated Torque--lb-ft (N•m).....	1151 (849)*	1266 (934)*
BMEP--psi (kPa)	228 (1569)*	250 (1726)*
Friction Power		
@ Rated Speed--hp (kW)	23 (17)	23 (17)
Altitude Capability--ft (m)	10,000(3050)	10,000(3050)
Ratio--Air : Fuel.....	24* : 1	23* : 1
Smoke @ Rated Speed--Bosch No.	0.85*	0.97*
Noise--dB(A) @ 1 m	89.8*	90.0*

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

Prime Standby

25 % Power	22.5 (10.2)	24.3 (11.0)
50 % Power	44.1 (20.0)	48.9 (22.2)*
75 % Power	60.2 (27.3)	66.6 (30.2)*
100 % Power	77.6 (35.2)	83.8 (38.0)

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

* Revised Data

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June 2007