



JOHN DEERE

ENGINE PERFORMANCE CURVE

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

PowerTech 3.0L Engine
 Model: **5030HF270**

87 hp (65 kW) Prime
96 hp (72 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
87	65	96	72

Generator Efficiency ¹ %	Fan Power		Power Factor	Prime Rating		Standby Rating ²		4 sec Standby Block Load Capability ³
	hp	kW		kW	kVA	kW	kVA	
88*	4.8*	3.6*	0.8	54*	68	60	75	87%*

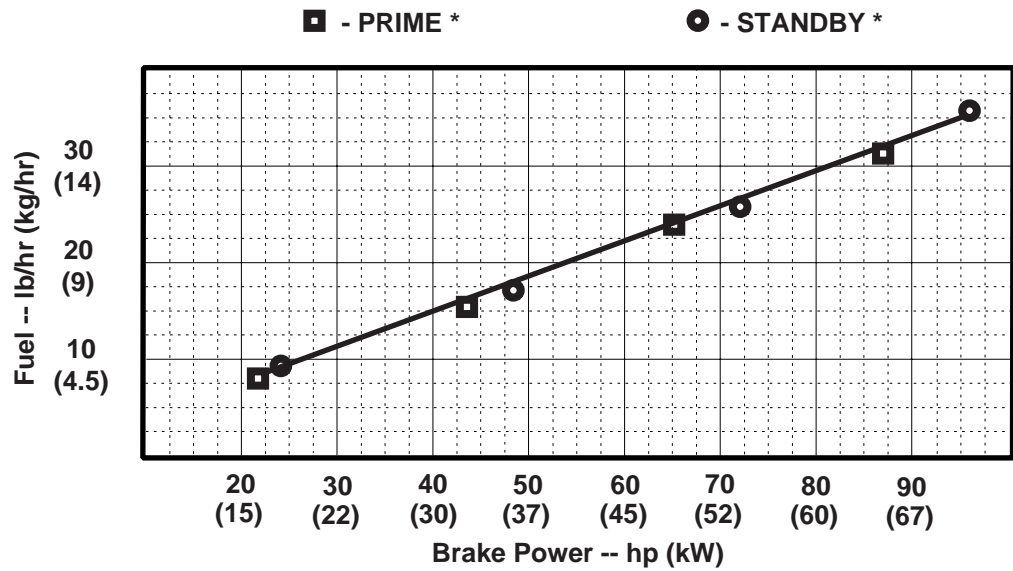
Note 1: Est. min. generator efficiency, with 5% fan power loss, to achieve Prime kVA (1500 rpm) / Standby kWe (1800 rpm).
 Note 2: Based on nominal engine power.
 Note 3: Results may vary by alternator and voltage regulator selection. Derate 13%* for 100% block load capability.

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-2 Emission Certifications:	Certified by:
CARB; EPA Ref: Engine Emission Label	<i>Brian L. Carlson</i> 13 NOV 03

* Revised Data
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Engine Specification Data

General Data

Model 5030HF270
 Number of Cylinders 5
 Bore and Stroke--in.(mm)..... 3.4 x 4.1 (86 x 105)
 Displacement--in.³ (L) 186 (3.05)
 Compression Ratio 18.0 : 1
 Valves per Cylinder--Intake/Exhaust 1 / 1
 Firing Order 1-2-4-5-3
 Combustion System Direct Injection
 Engine Type In-line, 4-Cycle
 Aspiration Turbocharged
 Charge Air Cooling System Air-to-Air
 Engine Crankcase Vent System Open
 Maximum Crankcase Pressure--in.H₂O (kPa) 2 (0.5)

Physical Data

Length--in.(mm) 31.5 (799)
 Width--in.(mm) 22.3 (566)
 Height--in.(mm) 31.5 (800)
 Weight, dry--lb (kg)..... 633 (287)
 (Includes flywheel housing, flywheel & electrics)
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in.(mm) 9.5 (241)
 Right of Crankshaft (Y-axis)--in.(mm) 0.5 (12)
 Above Crankshaft (Z-axis)--in.(mm) 4.9 (124)
 Max. Allow. Static Bending Moment at Rear
 Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m) 369 (500)
 Thrust Bearing Load Limit (Forward)
 Continuous--lb (N) 1147 (5100)
 Intermittent--lb (N) 629 (2800)

Air System

Prime Standby

Max. Allowable Temp Rise--Ambient Air to
 Engine Inlet--°F (°C)..... 15 (8) 15 (8)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in.H₂O (kPa) ... 25 (6.25) 25 (6.25)
 Clean Air Cleaner--in.H₂O (kPa) 12 (3) 12 (3)
 Engine Air Flow--ft³/min (m³/min) 180 (5.1) .. 191 (5.4)*
 Intake Manifold Pressure--psi (kPa)..... 18 (123) ... 20 (139)*
 Compress. Discharge Temp--°F (°C) 284(140) . 309 (154)*
 Max. Press. Drop Through
 Charge Air Cooler--in.H₂O (kPa) ... 48 (12) 52 (13)
 Max. Temp. Out of Charge Air Cooler @
 77°F (25°C) Ambient Air--°F (°C) 131 (55) 140 (60)

Cooling System

Prime Standby

Engine Heat Reject.--BTU/min (kW) .. 1844(32) 2009(35)
 Air/Air Exchanger Heat Rejection--
 BTU/min (kW) 416 (7.3) 490 (8.6)
 Coolant Flow--gal/min (L/min)..... 27(104)* 27(104)*
 Thermostat Start to Open--°F (°C) 180 (82) 180 (82)
 Thermostat Fully Open--°F (°C)..... 201 (94) 201 (94)
 Maximum Water Pump
 Inlet Restriction--in.H₂O (kPa) 27 (7) 27 (7)
 Engine Coolant Capacity--qt (L) 3.1 (2.9) 3.1 (2.9)
 Recm'd Pressure Cap--psi (kPa) 10 (69) 10 (69)
 Max. Top Tank Temp--°F (°C) 221 (105)* .. 221 (105)*
 Min. Coolant Fill Rate--gal/min (L/min) 2.5 (9.5) 2.5 (9.5)
 Min. Air-to-Boil Temperature--°F (°C) . 117 (47) 117 (47)

Electrical System

12 Volt 24 Volt

Rec'md. Battery Capacity (CCA)--amp 750 N/A
 Max. Allow. Starting Circuit Resist.--Ohm ... 0.0012 N/A
 Starter Rolling Current
 At 32 °F (0 °C)--amp 290 N/A
 At -22 °F (-30 °C)--amp 370 N/A
 Maximum Voltage From Engine Crankshaft/
 Generator Shaft to Ground--VAC* 0.15* 0.15*

Exhaust System

Prime Standby

Exhaust Flow--ft³/min (m³/min)..... 459(13.0) .. 501(14.2)*
 Exhaust Temperature--°F (°C) 954(512) . 1011(544)*
 Maximum Allowable Back
 Pressure--in.H₂O (kPa) 30 (7.5) 30 (7.5)

Fuel System

Prime Standby

Fuel Injection Pump (Stanadyne)..... Unit Pump
 Governor Regulation..... 0% 0%
 Governor Type Electrical ... Electrical
 Total Fuel Flow--lb/hr (kg/hr) 185 (84) 185 (84)
 Fuel Consumption--lb/hr (kg/hr)..... 31.7 (14.4) .. 35.6 (16.1)*
 Maximum Fuel Transfer Pump
 Suction--ft (m) fuel 10 (3.0) 10 (3.0)
 Maximum Fuel Inlet Temp.--°F (°C) 185 (85) 185 (85)*
 Fuel Filter Micron Size @ 98 % Efficiency.. 5 5

Lubrication System

Prime Standby

Oil Pressure
 at Rated Speed--psi (kPa) 35 (243) 35 (241)*
 Oil Pressure at Low Idle--psi (kPa) N/A N/A
 In Pan Oil Temperature--°F (°C) 230 (110) .. 234 (112)*

Performance Data

Prime Standby

Rated Power--hp (kW) 87 (65) 96 (72)
 Rated Speed--rpm 1800 1800
 Low Idle Speed--rpm N/A* N/A*
 BMEP--psi (kPa) 205 (1412) 228 (1569)
 Friction Power
 @ Rated Speed--hp (kW) 12 (8.9)* 12 (8.9)*
 Altitude Capability--ft (m) 10,000 (3048)*
 Ratio--Air : Fuel 24.3:1* 23.0:1
 Smoke @ Rated Speed--Bosch No. 2.0* 2.5*
 Noise--dB(A) @ 1 m N/A N/A

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

Prime* Standby*

25 % Power 7.9 (3.6) 9.7 (4.4)
 50 % Power 15.9 (7.2) 17.2 (7.8)
 75 % Power 23.8 (10.8) ... 25.6 (11.6)
 100 % Power 31.7 (14.4) ... 35.5 (16.1)

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

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