



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

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

**PowerTech 3.0L Engine**

Model: **5030TF270**

**72 hp (54 kW) Prime**

**80 hp (60 kW) Standby**

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
72	54	80	60

Generator Efficiency <sup>1</sup> %	Fan Power		Power Factor	Prime Rating		Standby Rating <sup>2</sup>		4 sec Standby Block Load Capability <sup>3</sup>
	hp	kW		kW	kVA	kW	kVA	
88*	4.0*	3.0*	0.8	45	56*	50	63*	90%*

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 10% for 100% block load capability.\*

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)

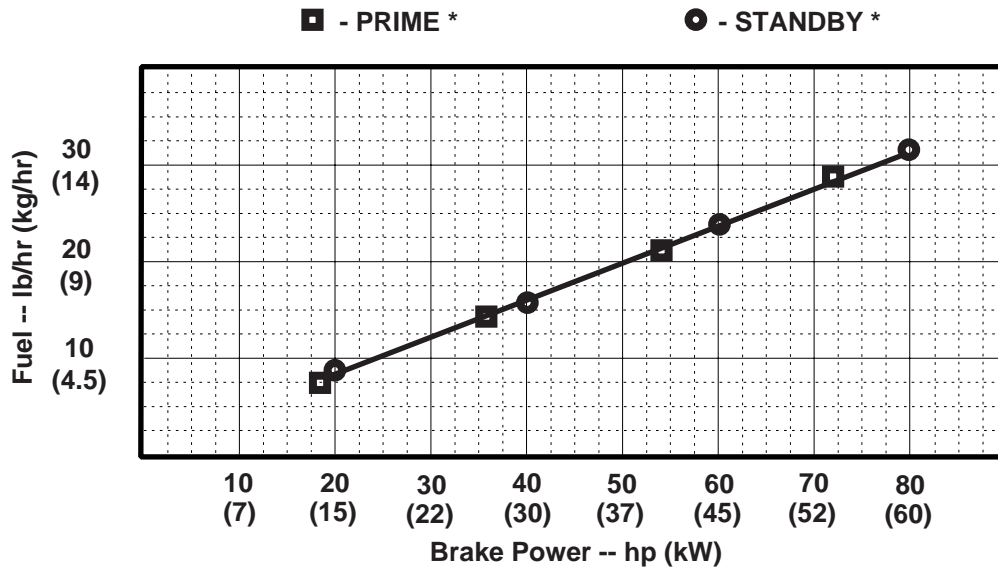
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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-2 Emission Certifications:

Certified by:

CARB; EPA

Ref: Engine Emission Label

*Brian L. Carlson*  
 13NOV03

\* Revised Data

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 November 2003

## Engine Specification Data

### General Data

Model .....5030TF270  
 Number of Cylinders ..... 5  
 Bore and Stroke--in.(mm)..... 3.4 x 4.1 (86 x 105)  
 Displacement--in.<sup>3</sup> (L) .....186 (3.05)  
 Compression Ratio .....20.5 : 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  
 Engine Crankcase Vent System ..... Open  
 Maximum Crankcase Pressure--in.H<sub>2</sub>O (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**

Maximum Allowable Temp Rise--Ambient Air to  
 Engine Inlet--°F (°C) ..... 15 (8) ..... 15 (8)  
 Maximum Air Intake Restriction  
 Dirty Air Cleaner--in.H<sub>2</sub>O (kPa).... 25 (6.25) ...25 (6.25)  
 Clean Air Cleaner--in.H<sub>2</sub>O (kPa)..... 12 (3) ..... 12 (3)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 162 (4.6)\* . 170 (4.8)\*  
 Intake Manifold Pressure--psi (kPa)....20 (137)\* .. 22 (155)\*

### Cooling System

**Prime   Standby**

Eng. Heat Rejection--BTU/min (kW) ..2100 (37) ..2265 (40)  
 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.H<sub>2</sub>O (kPa) .....28 (7) ..... 28 (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--ft<sup>3</sup>/min (m<sup>3</sup>/min)..... 413 (11.7) ...448(12.7)\*  
 Exhaust Temperature--°F (°C) .....963(517) ..1020(549)\*  
 Max. Allow. Back Press.--in.H<sub>2</sub>O (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).....28(12.8) ..32.0(14.3)\*  
 Maximum Fuel Transfer Pump Suction--  
 ft (m) fuel.....10(3.0) .... 10 (3.0)  
 Max. 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 (241) ..35 (239)\*  
 Oil Pressure at Low Idle--psi (kPa) ..... N/A ..... N/A\*  
 In Pan Oil Temperature--°F (°C) ..... 223 (106) .225 (107)\*

### Performance Data

**Prime   Standby**

Rated Power--hp (kW) ..... 72 (54) ..... 80 (60)  
 Rated Speed--rpm ..... 1800 ..... 1800  
 Low Idle Speed--rpm ..... N/A\* ..... N/A\*  
 BMEP--psi (kPa) .....171 (1176) 190 (1307)  
 Friction Power @ Rated Speed--hp (kW)12 (8.9) ...12(8.9)\*  
 Altitude Capability--ft (m) .....10,000 (3048)\*  
 Ratio--Air : Fuel..... 24.2:1\* ..... 22.7:1\*  
 Smoke @ Rated Speed--Bosch No. .... 1.4\* ..... 1.3  
 Noise--dB(A) @ 1 m ..... N/A ..... N/A

### Fuel Consumption -- lb/hr (kg/h)   **Prime\*   Standby\***

25 % Power ..... 7.1 (3.2) ..... 8.9 (4.0)  
 50 % Power ..... 14.2 (6.4) .... 15.6(7.1)  
 75 % Power .....21.2 (9.6) ... 23.3 (10.6)  
 100 % Power .....28.3 (12.8) ... 31.5 (14.3)

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

\* Revised Data  
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 November 2003