



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Marine  
 Application: Generator  
 Prime Power

**POWERTECH 6.8 L Engine**  
 Model: **6068TFM76**

**148 hp (110 kW) @ 1800 rpm**  
**119 hp (89 kW) @ 1500 rpm**

Speed rpm (Hz)	Generator Efficiency %	Keel Cooled		Power Factor	Calculated Gen-Set Rating	
		(no fan)			kW	kVA
1500 (50)	88-92	--	--	0.8	78-82	98-103
1800 (60)	88-92	--	--	0.8	97-101	121-126

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)

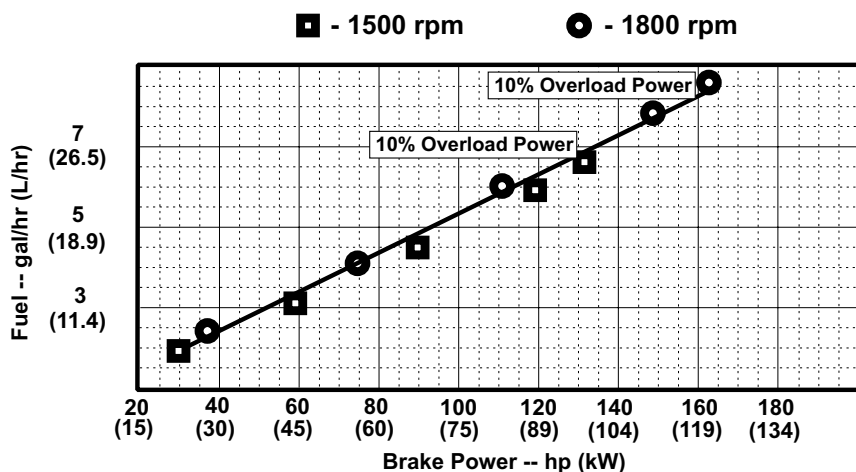
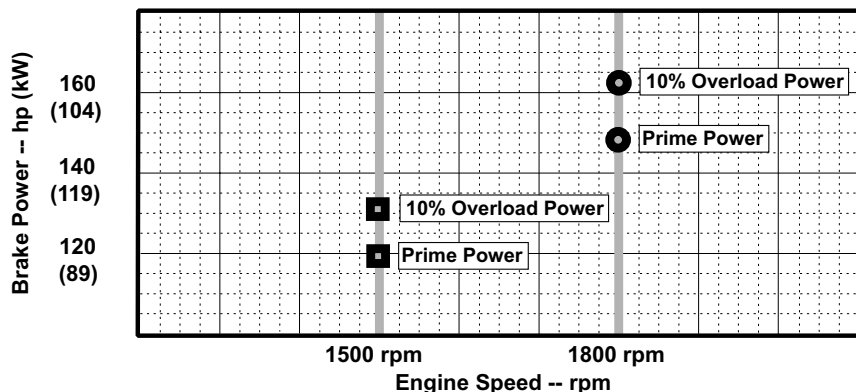
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 8665 conditions:

- 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:

1800 RPM Emission Certifications:	1500 RPM Emission Certifications:
<ul style="list-style-type: none"> <li>• EPA Commercial Marine (40 CFR Part 94)</li> <li>• IMO Annex VI</li> </ul>	<ul style="list-style-type: none"> <li>• IMO Annex VI</li> </ul>
Ref: Engine Emission Label	Ref: Engine Emission Label

Certified by:

*NEAL CEEPER 1 Apr 2004*

\* Revised Data  
 Curve 6068TFM76148MG ..... Sheet 1 of 2  
 April 2004

## Engine Specification Data

### General Data

Model .....6068TFM76  
 Number of Cylinders ..... 6  
 Bore and Stroke--in. (mm)..... 4.2 x 5.0 (107 x 127)  
 Displacement--in.<sup>3</sup> (L) .....415 (6.8)  
 Compression Ratio ..... 17.0 : 1  
 Valves per Cylinder--Intake/Exhaust..... 1 / 1  
 Firing Order..... 1-5-3-6-2-4  
 Combustion System..... Direct Injection  
 Engine Type ..... In-line, 4-Cycle  
 Aspiration ..... Turbocharged  
 Engine Crankcase Vent System ..... Open  
 Max. Crankcase Pressure--in. H<sub>2</sub>O (kPa) .....2 (0.5)

### Physical Data

Length--in. (mm) .....44.9 (1141)  
 Width--in. (mm) .....27.7 (703)  
 Height, Crank Center to Top--in. (mm).....24.4 (620)  
 Height, Crank Center to Bottom--in. (mm) .....10.3 (262)  
 Weight, dry--lb (kg).....1301 (590)  
 (Includes flywheel housing, flywheel & electrics)  
 Center of Gravity Location From  
     Rear Face of Block (X-axis)--in. (mm) ..... 16.9 (430)  
     Right of Crankshaft (Y-axis)--in. (mm)..... -1.0 (-25)  
     Above Crankshaft (Z-axis)--in. (mm).....7.9 (200)  
 Max. Allow. Static Bending Moment at Rear Face  
     of Flywhl Hsg w/ 5-G Load--lb-ft (N•m) .....600 (814)  
     Thrust Brng. Load Limit (Forward)--lb (N)....900 (4003)  
 Maximum Installation Angle  
     Front up--degrees ..... 15  
     Front down--degrees.....0

### Air System

**1800 rpm 1500 rpm**

Min. Ventilation Area--in.<sup>2</sup> (m<sup>2</sup>) .....102(0.066) ....65(0.042)  
 Maximum Allowable Air Temperature Rise,  
     Ambient to Engine Inlet--°F (°C) .....30 (17) .....30 (17)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ...378 (10.7) .....244 (6.9)  
 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 (3.0) ..... 12 (3.0)  
 Intake Manifold Pressure--psi (kPa)....22 (150) ..... 11 (75)

### Cooling System

**1800 rpm 1500 rpm**

Eng. Heat Reject--BTU/min (kW)...5863 (103) ... 4554 (80)  
 Eng. Radiated Heat--BTU/min (kW) 848 (14.9) .. 638 (11.2)  
 Coolant Flow--gal/min (L/min).....33 (125) ..... 31 (116)  
 Min. Coolant Fill Rate--gal/min (L/min) .....3.2 (12)  
 Thermostat Start to Open--°F (°C) ..... 180 (82)  
 Thermostat Fully Open--°F (°C).....203 (95)  
 Maximum Top Tank Temp--°F (°C) .....212 (100)  
 Minimum Sea Water-to-Boil--°F (°C) .....90 (32)  
 Min. Water Pump In. Press.--in. H<sub>2</sub>O (kPa) ...00 (00)  
 Rec'd. Pressure Cap--psi (kPa) .....10 (70)  
 Max. Pressure Drop  
     Across Keel Cooler--psi (kPa).....4 (30) ..... 3 (20)  
 Engine Coolant Capacity--qt (L) .....32 (30) ..... 32 (30)

### Electrical System

**12 Volts 24 Volts**

Recommended Battery Capacity  
     CCA @ 32 °F (0 °C)--amp ..... 800 ..... 570  
 Max. Starting Circuit Resist.--Ohm ..... 0.0012 ..... 0.002  
 Starter Rolling Current  
     @ 32 °F ( 0 °C)--amp .....920 ..... 600

### Exhaust System

**1800 rpm 1500 rpm**

Exhaust Gas Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ...848 (24) ..... 558 (16)  
 Exhaust Temperature--°F (°C) .....745 (396) ... 772 (411)  
 Min. Exhaust Pipe Dia. Dry--in. (mm) ..3.0 (75) ..... 2.5 (65)  
 Min. Exhaust Pipe Dia. Wet--in. (mm) ..3.5 (90) ..... 3.0 (75)  
 Max. Allow. Back Press.--in. H<sub>2</sub>O (kPa).....30 (7.5)  
 Max. Weight on Turbo--lb (kg) .....26.5 (12.0)

### Fuel System

**1800 rpm 1500 rpm**

Fuel Injection Pump--Stanadyne..... DE-10  
 Governor Type ..... Electronic  
 Governor Regulation--percent ..... 0 to 5 ..... 0 to 6  
 Total Fuel Flow--lb/hr (kg/hr).....212 (96) ..... 205 (93)  
 Total Fuel Flow--gal/hr (L/hr)..... 30 (113) ..... 29 (109)  
 Min. Rec'd. Fuel Line ID--in. (mm).....0.25 (6)  
 Min. Rec'd. Fuel Line Size ..... -5  
 Fuel Cons. 'Prime' --lb/hr (kg/hr).....55.1 (25) .. 41.7 (18.9)  
 Fuel Cons. 'Prime' --gal/hr (L/hr) .....7.8 (29.4) .... 5.9 (22.2)  
 Max Leak-off Line Press.--psi (kPa) .....3 (20)  
 Max Leak-off Return Height--ft (m) .....8 (2.5)  
 Max. Fuel Trans. Pump Suction--ft (m)..... 10 (3.0)  
 Max. Fuel Ht. Above Inj.Pump--ft (m) .....10 (3.0)  
 Max. Fuel Inlet Temp. w/o derate--°F (°C) .212 (100)  
 Fuel Filter @ 98% Efficiency--Microns..... 2

### Lubrication System

**1800 rpm 1500 rpm**

Oil Press. at Rated Speed--psi (kPa)..50 (345) ..... 45 (311)  
 Oil Pressure at Low Idle--psi (kPa) .....15 (105) ..... 15 (105)

### Sea Water System

**1800 rpm 1500 rpm**

Sea Water Pump Flow--gal/min (L/min)22 (84) ..... 18 (70)  
 Max. Inlet Restriction--in. H<sub>2</sub>O (kPa) ..120 (30) ..... 100 (25)  
 Max. Outlet Press--psi (kPa).....20 (135) .....20 (135)  
 Max. Suction Lift--ft (m) .....10 (3.0) ..... 10 (3.0)

### Performance Data

**1800 rpm 1500 rpm**

Rated 'Prime' Power--hp (kW) ..... 148 (110) ..... 119 (89)  
 10% Overload Engine Power--hp (kW)162 (121) .. 131 (98)  
 Low Idle Speed--rpm ..... 1150 .....1150  
 Rated Torque--ft-lb (N•m).....431 (584).... 418 (567)  
 BMEP--psi (kPa) ..... 157 (1080) .. 152 (1049)  
 Friction Power @ Rated Speed--hp (kW)23 (17)..... 17 (13)  
 Smoke @ Rated Speed--Bosch No. ....<1.9..... <1.8

### Fuel Consumption

**1800 rpm 1500 rpm**

Prime:  
     25 % Power-- gal/hr (L/hr) .....2.4 (9.2) ..... 1.8 (6.7)  
     50 % Power-- gal/hr (L/hr) .....4.1 (15.5) ..... 3.1 (11.8)  
     75 % Power-- gal/hr (L/hr) .....6.0 (22.9) ..... 4.5 (16.9)  
     100 % Power-- gal/hr (L/hr) ..... 7.8 (29.4) .....5.9 (22.4)  
 10% Overload Power-- gal/hr (L/hr) .8.6 (32.7) .... 6.6 (25.0)

Data based on keel-cooled engine.  
 All values at rated speed and power with standard options unless otherwise noted.

\* Revised Data  
 Curve 6068TFM76148MG ..... Sheet 2 of 2  
 April 2004