



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Marine  
 Application: Generator  
 Prime Power

**POWERTECH 8.1 L Engine**

Model: **6081AFM75**

**261 hp (195 kW) @ 1800 rpm**  
**217 hp (162 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	142-149	178-186
1800 (60)	88-92	--	--	0.8	171-179	214-224

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)

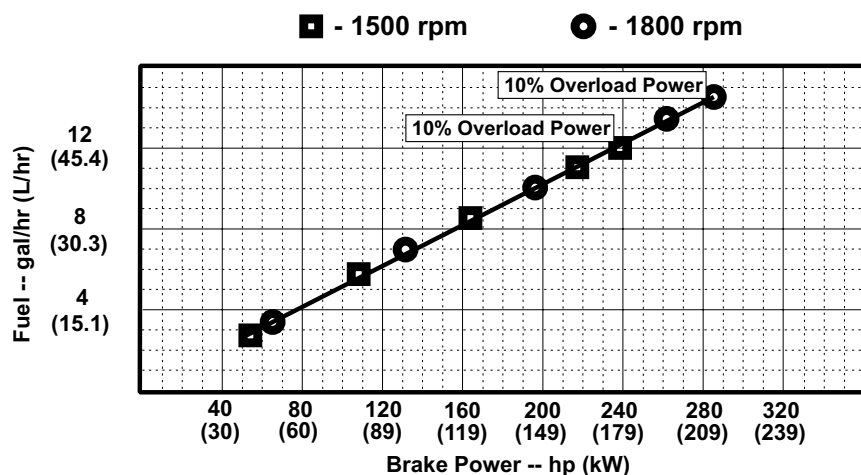
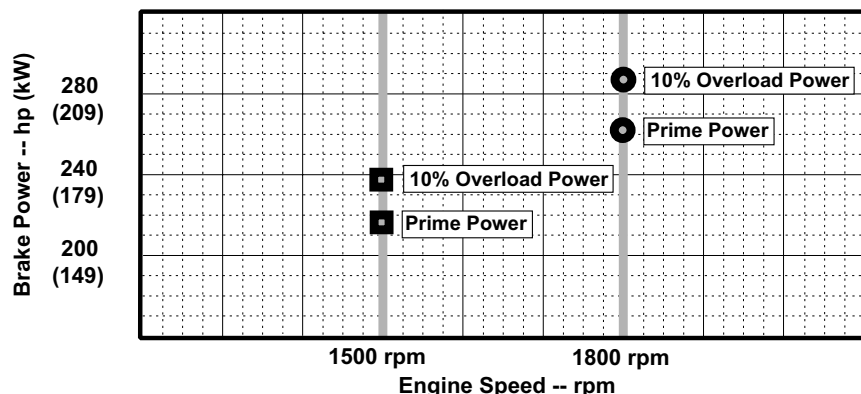
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 8665 conditions:

- 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 CLEPER 6 MAY 2004*

\* Revised Data  
 Curve 6081AFM75261MG ..... Sheet 1 of 2  
 May 2004

## Engine Specification Data

### General Data

Model ..... 6081AFM75  
 Number of Cylinders ..... 6  
 Bore and Stroke--in. (mm)..... 4.6 x 5.1 (116 x 129)  
 Displacement--in.<sup>3</sup> (L) .....497 (8.1)  
 Compression Ratio ..... 15.7 : 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 & Aftercooled  
 Aftercooler..... Engine Coolant  
 Engine Crankcase Vent System ..... Open  
 Max. Crankcase Pressure--in. H<sub>2</sub>O (kPa) .....2 (0.5)

### Physical Data

Length--in. (mm) .....51.1 (1299)  
 Width--in. (mm) .....31.0 (787)  
 Height, Crank Center to Top--in. (mm) .....27.0 (687)  
 Height, Crank Center to Bottom--in. (mm) ..... 12.5 (318)  
 Weight, dry--lb (kg).....1881 (853)  
 (Includes flywheel housing, flywheel & electrics)  
 Center of Gravity Location From  
 Rear Face of Block (X-axis)--in. (mm) .....21.5 (546)  
 Right of Crankshaft (Y-axis)--in. (mm) ..... -3.5 (-87.9)  
 Above Crankshaft (Z-axis)--in. (mm) .....7.0 (179)  
 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) ..1950 (8673)  
 Maximum Installation Angle  
 Front up--degrees ..... 12  
 Front down--degrees.....0

### Air System

**1800 rpm 1500 rpm**

Min. Ventilation Area--in.<sup>2</sup> (m<sup>2</sup>) .....149(0.096) .. 110(0.071)  
 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) ...554 (15.7) ... 410 (11.6)  
 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)....23 (159) .....18 (121)

### Cooling System

**1800 rpm 1500 rpm**

Eng. Heat Reject--BTU/min (kW)....9619(169) .. 9392(165)  
 Eng. Radiated Heat--BTU/min (kW)1446(25.4) . 1201(21.1)  
 Coolant Flow--gal/min (L/min).....57 (216) ..... 48 (180)  
 Min. Coolant Fill Rate--gal/min (L/min) .....3.2 (12)  
 Thermostat Start to Open--°F (°C) ..... 160 (71)  
 Thermostat Fully Open--°F (°C).....183 (84)  
 Maximum Top Tank Temp--°F (°C) .....212 (100)  
 Minimum Sea Water-to-Boil--°F (°C) .....90 (32)  
 Min. Water Pump In. Restrict.--in. H<sub>2</sub>O (kPa) 00 (00)  
 Rec'd. Pressure Cap--psi (kPa) .....15 (100)  
 Max. Pressure Drop  
 Across Keel Cooler--psi (kPa).....4 (30) ..... 3 (20)  
 Engine Coolant Capacity--qt (L) .....38 (36) ..... 38 (36)

### 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 ..... 950 ..... 600

### Exhaust System

**1800 rpm 1500 rpm**

Exhaust Gas Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min)1314 (37.2).. 1035 (29)  
 Exhaust Temperature--°F (°C) .....817 (436) .. 896 (480)  
 Min. Exhaust Pipe Dia. Dry--in. (mm) 4.5 (115) .... 4.0 (100)  
 Min. Exhaust Pipe Dia. Wet--in. (mm)5.0 (125) .... 4.5 (115)  
 Max. Allow. Back Press.--in. H<sub>2</sub>O (kPa).....30 (7.5)  
 Max. Weight on Turbo--lb (kg) .....55 (25.0)

### Fuel System

**1800 rpm 1500 rpm**

Fuel Injection Pump--Denso ..... HPCR  
 Governor Type ..... Electronic  
 Governor Regulation..... Isochronous or Droop  
 Total Fuel Flow--lb/hr (kg/hr).....608 (276) .... 507 (230)  
 Total Fuel Flow--gal/hr (L/hr).....86 (325) ..... 71 (271)  
 Min. Rec'd. Fuel Line ID--in. (mm) 0.38 (10.0) .... 0.35 (9.0)  
 Min. Rec'd. Fuel Line Size ..... -7 ..... -6  
 Fuel Cons. 'Prime' --lb/hr (kg/hr)....94.3 (42.8) .. 78.1 (35.4)  
 Fuel Cons. 'Prime' --gal/hr (L/hr) ...13.3 (50.3) .. 11.0 (41.7)  
 Max Leak-off Line Press.--psi (kPa) .....9 (60)  
 Max. Fuel Trans. Pump Suction--ft (m) ..... 10 (3.0)  
 Max. Fuel Inlet Restrict.--in. H<sub>2</sub>O (kPa) . -120 (-30.0)  
 Max. Fuel Ht. Above Inj.Pump--ft (m) ..... 10 (3.0)  
 Max Leak-off Return Height--ft (m) .....8 (2.5)  
 Max. Fuel Inlet Temp. (w/o derate)--°F (°C) .149 (65)  
 Fuel Filter @ 98% Efficiency--Microns..... 2

### Lubrication System

**1800 rpm 1500 rpm**

Oil Press. at Rated Speed--psi (kPa)..44 (305) ..... 41 (280)  
 Oil Pressure at Low Idle--psi (kPa) .....36 (250) ..... 36 (250)

### Sea Water System

**1800 rpm 1500 rpm**

Seawater Pump Flow--gal/min (L/min)43 (163) ..... 36 (136)  
 Max. Inlet Restriction--in. H<sub>2</sub>O (kPa) ..120 (30) ..... 120 (30)  
 Max. Outlet Press--psi (kPa).....20 (140) ..... 20 (140)  
 Max. Suction Lift--ft (m) .....10 (3.0) ..... 10 (3.0)

### Performance Data

**1800 rpm 1500 rpm**

Performance Option Codes ..... 722C/722D. 721C/721D  
 Rated 'Prime' Power--hp (kW) .....261 (195) ..... 217 (162)  
 10% Overload Eng. Power--hp (kW)287 (214) .... 239 (178)  
 Low Idle Speed--rpm ..... 1100 ..... 1100  
 Rated Torque--ft-lb (N•m).....761 (1032) .. 760 (1030)  
 BMEP--psi (kPa) .....231 (1594) .. 231 (1594)  
 Friction Power @ Rated Spd.--hp (kW)28 (21) ..... 21 (16)  
 Smoke @ Rated Speed--Bosch No. ....<1.1 ..... <1.1

### Fuel Consumption

**1800 rpm 1500 rpm**

Prime:  
 25 % Power-- gal/hr (L/hr) .....3.3 (12.5) .... 2.7 (10.3)  
 50 % Power-- gal/hr (L/hr) ..... 7.0 (26.3) .... 5.8 (22.1)  
 75 % Power-- gal/hr (L/hr) ... 10.2 (38.7) .... 8.4 (31.8)  
 100 % Power-- gal/hr (L/hr) ... 13.3 (50.3) .. 11.0 (41.7)  
 10% Overload Power-- gal/hr (L/hr)14.5 (54.8) . 12.0 (45.5)

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

\* Revised Data  
 Curve 6081AFM75261MG ..... Sheet 2 of 2  
 May 2004