



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Marine
 Application: Generator
 Prime Power

POWERTECH 8.1 L Engine

Model: **6081AFM01**

225 hp (168 kW) @ 1800 rpm
 [Option 1603 / 1604]

186 hp (139 kW) @ 1500 rpm
 [Option 1605 / 1606]

Speed rpm (Hz)	Generator Efficiency %	Keel Cooled		Power Factor	Calculated Gen-Set Rating	
		(no fan)			kW	kVA
1500 (50)	88-92	--	--	0.8	122-128	152-160
1800 (60)	88-92	--	--	0.8	148-154	185-192

Air Intake Restriction 12 in.H₂O (3 kPa)
 Exhaust Back Pressure 30 in.H₂O (7.5 kPa)

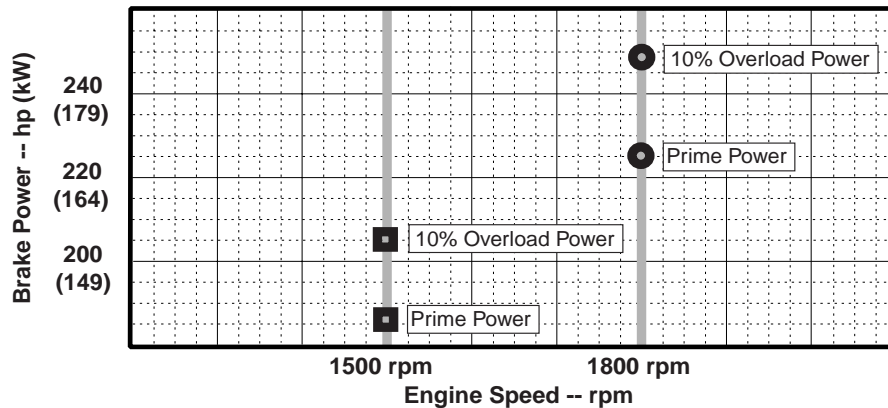
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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)

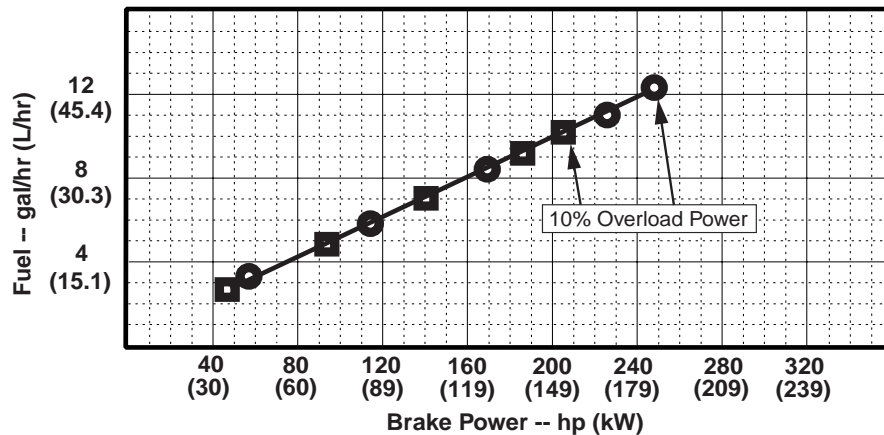
Conversion factors:

- 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.



■ - 1500 rpm ● - 1800 rpm



Notes:

Emission Certifications:

Certified by:

NONE

Ref: Engine Emission Label

Neal Reper
 21 July 2000

* Revised Data

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 July 2000

Engine Specification Data

General Data

Model	6081AFM01
Number of Cylinders	6
Bore and Stroke--in.(mm)	4.56 x 5.06 (116 x 129)
Displacement--in ³ (L)	496 (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
Charge Air Cooling System	Engine Coolant-to-Air

Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)	
Length--in.(mm)	51 (1299)
Width--in.(mm)	34 (856)
Height--in.(mm)	40 (1022)
Weight, dry--lb (kg)	1876 (853)
Center of Gravity Location	
From Rear Face of Block (X-axis)--in.(mm)	15.7 (399)
Right of Crankshaft (Y-axis)--in.(mm)	-1.1 (-29)
Above Crankshaft (Z-axis)--in.(mm)	7.4 (189)
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 (Forward)--lb (N)	1950 (8673)
Maximum Installed Angle	
Front Up--degrees	12
Front Down--degrees	0

Fuel System

1800 rpm 1500 rpm

Fuel Injection Pump--Stanadyne....	RB-P3000 . RB-P3000
Governor Type	Mech. Mech.
Governor Regulation	5 % 7 %
'Prime' Fuel Consump.--gal/hr (L/hr) .11 (41.8)	9.2 (35.0)
Total Fuel Flow--gal/hr (L/hr)	43.7(165.3)* . 35.9(135.9)*
Max. Leak-off Line Pressure--psi (kPa)..4 (28)	4 (28)
Max. Fuel Transfer Pump Suction--	
ft (m) fuel	10 (3) 10 (3)
Max. Fuel Height	
Above Inj.Pump--ft (m)	9 (2.7) 9 (2.7)
Fuel Filter @ 98% Efficiency--Microns	8 8

Lubrication System

1800 rpm 1500 rpm

Oil Press. at Rated Speed--psi (kPa)..50 (345)	50 (345)
Oil Pressure at Low Idle--psi (kPa)	15 (105) 15 (105)
In Pan Oil Temperature--°F (°C)	240 (115) ... 240 (115)
Oil Pan Capacity, High--qt (L)	32.8 (31) 32.8 (31)
Oil Pan Capacity, Low--qt (L)	31.7 (30) 31.7 (30)
Total Eng. Oil Cap. w/filters--qt (L)	33.8 (32) 33.8 (32)
Oper. Angularity Limit, Any Direction--deg... 30	30
Max. Crank. Pressure--in. H ₂ O (kPa)	2 (0.5) 2 (0.5)
Engine Crankcase Vent System	open open

Exhaust System

1800 rpm 1500 rpm

Exhaust Temperature--°F (°C)	721* (383)* ... 838 (448)
Exhaust Flow--ft ³ /min (m ³ /min)	1092 (30.9).. 881 (24.9)
Maximum Allowable Back Pressure--	
in. H ₂ O (kPa)	30 (7.5) 30 (7.5)
Maximum Weight on Turbo--lb (kg)	55 (25) 55 (25)
Rec'd. Min. Exhaust Outlet Diameter	
Dry--in. (mm)	4.0 (100) 4.0 (100)
Wet--in. (mm)	4.5 (114) 4.5 (114)

Cooling System

1800 rpm 1500 rpm

Eng. Heat Reject.--BTU/min (kW) .7100 (125)	5675(100)
Eng. Rad. Heat--BTU/min (kW) ...	1200 (21.1) ... 1010(17.7)
Coolant Flow--gal/min (L/min)	57 (216) 48 (180)
Min. Coolant Fill Rate--gal/min (L/min) ...	3 (11) 3 (11)
Thermostat Start to Open--°F (°C)	176 (80) 176 (80)
Thermostat Fully Open--°F (°C)	201 (94) 201 (94)
Maximum Top Tank Temp--°F (°C) ...	212 (100) .. 212 (100)
Minimum Water-to-Boil--°F (°C)	90 (32) 90 (32)
Min. Top Tank Press--in. H ₂ O (kPa)	24 (6) 24 (6)
Rec'd. Pressure Cap--psi (kPa)	10 (69) 10 (69)
Max. Pres. Drop	
Across Keel Cooler--psi (kPa)	6 (41) 6 (41)
Engine Coolant Capacity--qt (L)	26 (25) 26 (25)

Sea Water System

1800 rpm 1500 rpm

Pump Flow--gal/min(L/min)	43* (162*) . 36* (135*)
Max. Inlet Restrict.--in. H ₂ O (kPa)	120 (30) 120 (30)
Max. Outlet Press--psi (kPa)	24 (165) 24 (165)
Maximum Suction Lift--ft (m)	10 (3) 10 (3)

Air System

1800 rpm 1500 rpm

Min. Ventilation Area--in. ² (m ²)	134 (.086) 98 (.063)
Max. Allow. Temp Rise, Ambient Air to	
Engine Inlet--°F (°C)	30 (17) 30 (17)
Engine Air Flow--ft ³ /min (m ³ /min) ..	496 (14.1) ... 364 (10.3)
Intake Manifold Pressure--psi (kPa) ...	21 (43) 15 (31)
Maximum Air Intake Restriction	
Dirty Air Cleaner--in. H ₂ O (kPa)	25 (6.3) 25 (6.3)
Clean Air Cleaner--in. H ₂ O (kPa) ...	12 (3.0) 12 (3.0)

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

Performance Data

1800 rpm 1500 rpm

10% Overload Eng. Power--hp (kW) 248 (185) ...	205 (153)
Prime Engine Power--hp (kW)	225 (168) ... 186 (139)
Rated Torque--ft-lb (N*m)	657 (891) ... 652 (885)
Low Idle Speed--rpm	800 800
BMEP--psi (kPa)	200 (1377) .. 198 (1367)

Fuel Consumption

1800 rpm 1500 rpm

Prime:	
25 % Power-- gal/hr (L/hr)	3.4 (12.9) 2.7 (10.4)
50 % Power-- gal/hr (L/hr)	5.8 (22.0) 4.8 (18.2)
75 % Power-- gal/hr (L/hr)	8.4 (31.6) 7.0(26.5)
100 % Power-- gal/hr (L/hr) ...	11.0 (41.8) 9.2 (35.0)
10% Overload Pow.-- gal/hr (L/hr) 12.3 (46.4) ..	10.2 (38.7)

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

* Revised Data
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July 2000