



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Marine  
 Application: Generator  
 Prime Power

**POWERTECH 12.5 L Engine**  
 Model: **6125AFM75**

**402 hp (300 kW) @ 1800 rpm**  
**N/A @ 1500 rpm**

Speed rpm (Hz)	Generator Efficiency %	Keel Cooled		Power Factor	Calculated Gen-Set Rating	
		(no fan)			kW	kVA
1500 (50)	-----	--	--	---	-----	-----
1800 (60)	88-92	--	--	0.8	264-276	330-345

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)

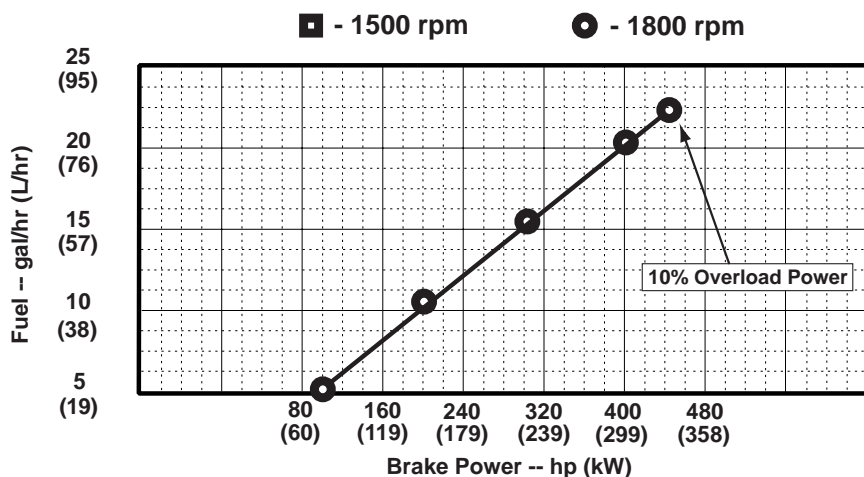
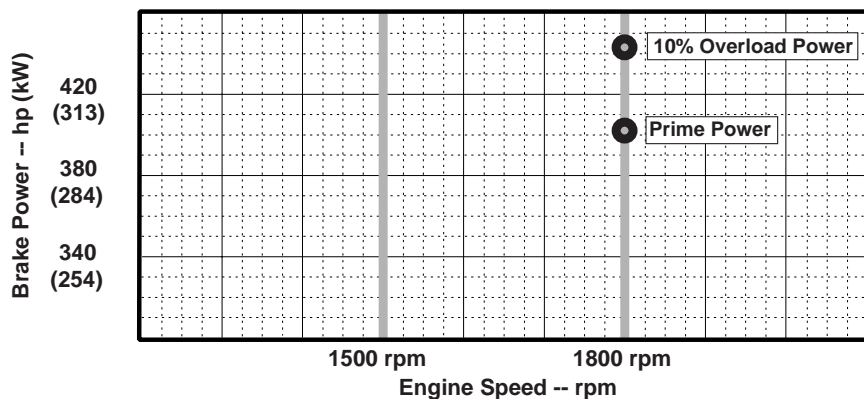
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 8665 conditions:

- 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>	N/A
Ref: Engine Emission Label	Ref: Engine Emission Label

Certified by:

*NEAL CLEPER 27 Apr 2004*

\* Revised Data  
 Curve 6125AFM75402MG ..... Sheet 1 of 2  
 April 2004

## Engine Specification Data

### General Data

Model .....	6125AFM75
Number of Cylinders .....	6
Bore and Stroke--in.(mm).....	5.00 x 6.50 (127 x 165)
Displacement--in <sup>3</sup> (L) .....	.766 (12.5)
Compression Ratio .....	17.0 : 1
Valves per Cylinder -- Intake / Exhaust .....	2 / 2
Firing Order.....	1-5-3-6-2-4
Combustion System.....	Unit Injection
Engine Type .....	In-line, 4-Cycle
Aspiration .....	Turbocharged
Charge Air Cooling System.....	Engine Coolant
Engine Crankcase Vent System .....	Open
Max. Crankcase Pressure--in. H <sub>2</sub> O (kPa) .....	2 (0.5)

### Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)

Length--in.(mm) .....	56.1 (1426)
Width--in.(mm) .....	33.5 (850)
Height, Crank Center to Top--in. (mm).....	30.5 (774)
Height, Crank Center to Bottom--in. (mm) .....	14.3 (364)
Weight, dry--lb (kg).....	3142 (1425)
Center of Gravity Location	
From Rear Face of Block (X-axis)--in. (mm) 20.9* (530*)	
Right of Crankshaft (Y-axis)--in. (mm).....	0.45* (12*)
Above Crankshaft (Z-axis)--in. (mm).....	9.4* (240*)
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) .....	1835 (8162)
Maximum Installed 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> ) .....	242(0.156)
Max. Allow. Temp Rise, Ambient Air to	
Engine Inlet--°F (°C).....	30 (17)
Engine Air Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min) ..	897 (25.4)
Intake Manifold Press.--psi (kPa) .....	25 (172)
Maximum Air Intake Restriction	
Dirty Air Cleaner--in. H <sub>2</sub> O (kPa) ...	25 (6.25)
Clean Air Cleaner--in. H <sub>2</sub> O (kPa) ...	12 (3.0)

### Cooling System

**1800 rpm    1500 rpm**

Eng. Heat Reject.--BTU/min (kW). 18,044(317).....	
Eng. Radiat. Heat--BTU/min (kW) ..	2231(39.2)
Coolant Flow--gal/min (L/min).....	90 (339)
Min. Coolant Fill Rate--gal/min (L/min) ...	3 (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. Press.--in. H <sub>2</sub> O (kPa)00 (00)	
Rec'd. Pressure Cap--psi (kPa) .....	15 (100)
Max. Pres. Drop	
Across Keel Cooler--psi (kPa).....	4 (30)
Engine Coolant Capacity--qt (L) .....	38 (36)

### Electrical System

**12 Volts    24 Volts**

Recommended Battery Capacity	
CCA @ 32 °F (0 °C)--amp .....	1800            900
Max. Starting Circuit Resist.--Ohm .....	0.001            0.002
Starter Rolling Current	
@ 32 °F ( 0 °C)--amp .....	1280            600

### Exhaust System

**1800 rpm    1500 rpm**

Exhaust Temperature--°F (°C) .....	743 (395)
Exhaust Gas Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min) 2013 (57).....	
Min. Exhaust Pipe Dia. Dry--in. (mm) 5.0 (125).....	
Min. Exhaust Pipe Dia. Wet--in. (mm)6.0 (150).....	
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 .....	Unit Injectors
Governor Type .....	Electronic
Governor Regulation.....	Isochronous or Droop
Total Fuel Flow--lb/hr (kg/hr) .....	252 (114.3)
Total Fuel Flow--gal/hr (L/hr).....	35 (134)
Min. Rec'd. Fuel Line ID--in. (mm).....	0.25 (6.5)
Min. Rec'd. Fuel Line Size .....	5
Fuel Cons. 'Prime' --lb/hr (kg/hr) ...	145.5(66.0)
Fuel Cons. 'Prime' --gal/hr (L/hr) ...	20.5 (77.6)
Max Leak-off Line Press.--psi (kPa) .....	12 (80)
Max. Fuel Trans. Pump Suction--ft (m).....	10 (3.0)
Max. Fuel Inlet Restrict.--in. H <sub>2</sub> O (kPa) ....	-120 (-30)
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. --°F (°C) .....	194 (90)
Fuel Filter @ 98% Efficiency--Microns.....	2

### Lubrication System

**1800 rpm    1500 rpm**

Oil Press. at Rated Speed--psi (kPa) ..	40 (275)
Oil Press. at 1100 rpm Idle--psi (kPa) ..	20 (138)

### Sea Water System

**1800 rpm    1500 rpm**

Pump Flow--gal/min (L/min).....	83 (314)
Max. Inlet Restrict.--in. H <sub>2</sub> O (kPa) ....	120 (30)
Max. Outlet Pressure--psi (kPa) .....	20 (140)
Max. Suction Lift--ft (m) .....	10 (3)

### Performance Data

**1800 rpm    1500 rpm**

Rated 'Prime' Power--hp (kW) .....	402 (300)
10% Overload Eng. Pow.--hp (kW) 443 (330).....	
Low Idle Speed--rpm .....	1000
Rated Torque--ft-lb (N*m).....	1174 (1592)
BMEP--psi (kPa) .....	231 (1593)
Friction Power	
@ Rated Speed--hp (kW) .....	31 (22.8)
Smoke @ Rated Speed--Bosch No. ....	<1.3

### Fuel Consumption

**1800 rpm    1500 rpm**

Prime:	
25 % Power-- gal/hr (L/hr) ....	5.1 (19.1)
50 % Power-- gal/hr (L/hr) ..	10.7 (40.4)
75 % Power-- gal/hr (L/hr) ..	15.5 (58.8)
100 % Power-- gal/hr (L/hr) ..	20.5 (77.6)
10% Overload Power-- gal/hr (L/hr)22.4(84.9).....	

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

\* Revised Data  
Curve 6125AFM75402MG ..... Sheet 2 of 2  
April 2004