



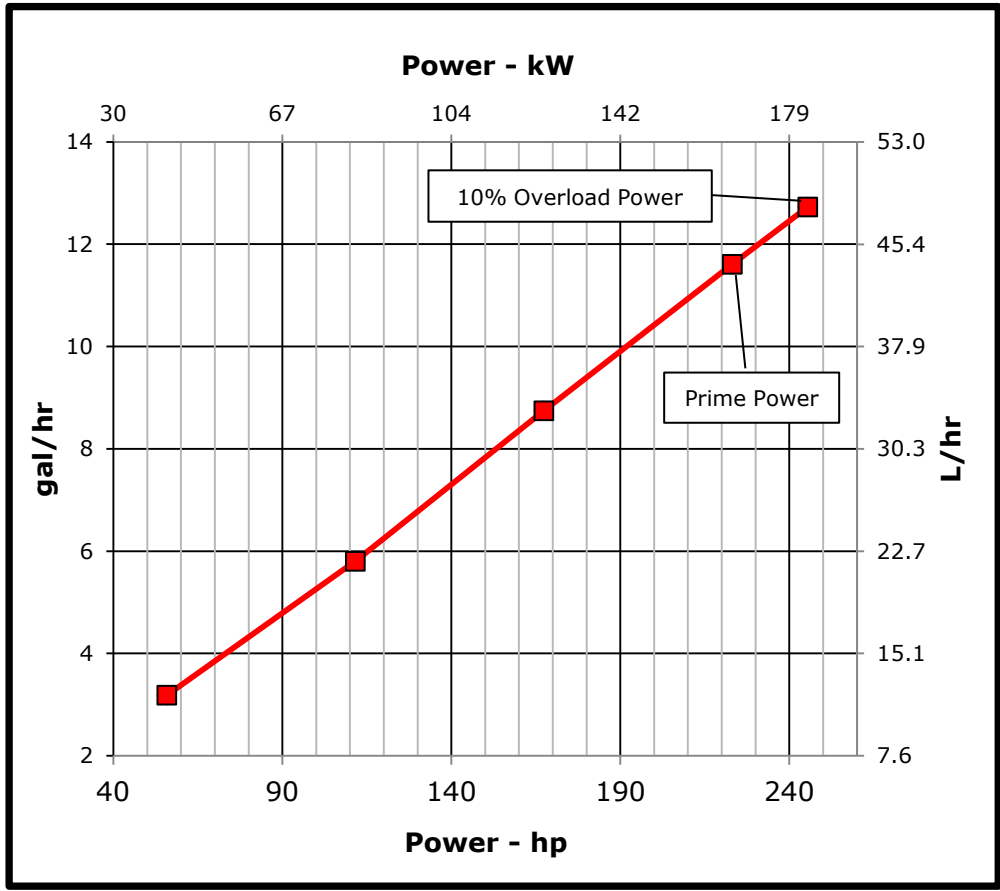
JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: **60 Hz - 223hp (166kW) @ 1800 RPM**
 Application: **Marine**

PowerTech™ 6.8L Engine
Model: 6068AFM75

Generator Efficiency (%)	Power Factor	Calculated Gen-Set Rating		Prime Power	10% Overload Power
		kW	kVA	hp (kW)	hp (kW)
88-92	0.8	146-153	183-191	223 (166)	245 (183)



REFERENCE CONDITIONS

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

Rated speed and power
 Gross power guaranteed within ±5% at SAE J1995 and ISO 3046
 11995 and ISO 3046 conditions:
 77 °F (25 °C) air inlet temperature
 29.31 in.Hg (99 kPa) barometric pressure
 104 °F (40 °C) fuel inlet temperature
 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Ambient air temperature is defined to be the temperature of ambient air close to operating vessel that is not influenced in any manner by operating characteristics of the vessel (free field temp).

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 from currently available data. Subject to manufacturing and measurement variations and to change without notice.
 Actual performance is subject to application and operation conditions outside of John Deere control.

Notes:
Marine Generator: The Marine generator engine rating is the power available under normal varying electrical load factors for an unlimited number of hours per year in commercial applications.
 This rating incorporates a 10% overload capability, and conforms to ISO 8528 prime power. Average load over a 24-hour period shall not exceed 67% of the prime rating, of which no more than 2 hours are between 100% and 110% of the prime rating.
 The marine generator rating is restricted to generator applications only. The criteria used to establish marine generator application ratings are the same used to establish industrial prime power generator application ratings

Designed/Calibrated to meet:	Certified by:
<ul style="list-style-type: none"> EPA Commercial Marine Tier 2 IMO MARPOL Annex VI Compliant 	
Ref: Engine Emission Label	5-Mar-12

Performance Curve: 6068AFM75_E

All values at rated speed, power, and standard conditions, per SAE J1995 unless otherwise noted.

Engine Installation Criteria

General Data

Model	6068AFM75		
Number of Cylinders	6		
Bore	107 mm	4.21 in	
Stroke	127 mm	5.00 in	
Displacement	6.8 L	415 in ³	
Compression Ratio	16.7:1		
Valves per Cylinder, Intake/Exhaust	2/2		
Combustion System	Direct injection		
Firing Order	1-5-3-6-2-4		
Engine Type	In line, 4 Cycle		
Aspiration	Turbocharged and Aftercooled		
Aftercooling System	Engine coolant		
Engine Crankcase Vent System	Closed		

Cooling System*

Engine Coolant Heat Rejection**	174 kW	9904 BTU/min	
Max. Pressure Drop Across Keel Cooler	40 kPa	6 psi	
Coolant Flow	240 L/min	63.4 gal/min	
Thermostat Start to Open	82 80 °C	180 °F	
Thermostat Fully Open	94 91 °C	202 °F	
Engine Coolant Capacity, HE	L	gal	
Engine Coolant Capacity, KC	L	gal	
Min. Coolant Fill Rate	12 L/min	3.2 gal/min	
Min. Pressure Cap	110.3 kPa	16 psi	
Min. Pump Inlet Pressure	30 kPa	4.4 psi	
Max. External Coolant Restriction	40 kPa	5.8 psi	
Normal Operation Max Top Tank Temperature	100 °C	212 °F	
≤ 5% of Total Operating Time Top Tank Temperature	100-110 °C	212-230 °F	
Absolute Max Top Tank Temperature	110 °C	230 °F	
Recommended Fuel Cooler	9 kW	500 BTU/min	
Engine Radiated Heat	22 kW	1254 BTU/min	

* The cooling system should be capable of typical at ambient up to the maximum conditions in which the vessel will operate.

Typical operation is defined as the average load sustainable in the vessel over 10 min.

** Reference 32 °C Sea Water Temperature

Physical Data

Length to rear face of block	1034 mm	40.7 in
Length maximum	1352 mm	53.2 in
Width maximum	854 mm	33.6 in
Height, crank centerline to top	646 mm	25.4 in
Height, crank centerline to bottom	266 mm	10.5 in
Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics)	812 kg	1790 lb
Center of Gravity Location, X-axis From Rear Face of Block	384 mm	15.1 in
Center of Gravity Location, Y-axis Right of Crankshaft	15 mm	0.6 in
Center of Gravity Location, Z-axis Above Crankshaft	183 mm	7.2 in
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 Nm	600 lb-ft
Thrust Bearing Load Limit, Forward Continuous	2.2 kN	495 lbf
Thrust Bearing Load Limit, Forward Intermittent	4 kN	899 lbf
Thrust Bearing Load Limit, Rearward Continuous	1 kN	225 lbf
Thrust Bearing Load Limit, Rearward Intermittent	2 kN	450 lbf

Electrical System

Min. Recommended Battery Capacity, 12V @32 °F (0 °C)	925 amps
Min. Recommended Battery Capacity, 24V @32 °F (0 °C)	625 amps
Starter Rolling Current, 12V @32 °F (0 °C)	920 amps
Starter Rolling Current, 24V @32 °F (0 °C)	600 amps
Min. Voltage at ECU during Cranking, 12V	6 volts
Min. Voltage at ECU during Cranking, 24V	10 volts
Max. Allowable Start Circuit Resistance, 12V	0.002 ohms
Max. Allowable Start Circuit Resistance, 24V	0.0012 ohms
Recommended Starter Cable, 12V 100"	#00
Recommended Starter Cable, 24V 100"	#2
Recommended Starter Cable, 12V 200"	#0000 or 2#00
Recommended Starter Cable, 24V 200"	#0
Electrical Component Maximum Temperature Limit	125 °C 257 °F

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Engine Installation Criteria

Fuel System

ECU Description	L14		
Fuel Injection Pump	HPCR		
Governor Type	Electronic		
Volumetric Fuel Consumption, Prime	43.9 L/hr	11.6 gal/hr	
Mass Fuel Consumption, Prime	37.3 kg/hr	82 lb/hr	
Total Fuel Volumetric Flow	162 L/hr	42.8 gal/hr	
Total Fuel Mass Flow	138 kg/hr	304 lb/hr	
Max. Fuel Inlet Restriction*	20 kPa	80 in.H2O	
Max. Fuel Inlet Pressure	20 kPa	80 in.H2O	
Max Fuel Return Pressure	20 kPa	80 in.H2O	
Max. Fuel Height Above Transfer Pump	2.4 m	7.9 ft	
Max. Leak-off Return Height	2.4 m	7.9 ft	
Max. Fuel Inlet Height Above Fuel Tank Supply	2.4 m	7.9 ft	
Normal Operation Fuel Temperature	40 °C	104 °F	
Max. Fuel Inlet Temperature	100 °C	212 °F	
Min. Recommended Fuel Line Inside Diameter	18.2 mm	0.72 in	
Min. Recommended Fuel Line Size	5 (-) AN		
Primary Fuel Filter	10 mic		
Secondary Fuel Filter	2 mic		

Lubrication System

Oil Pressure at 1800 RPM**	299 kPa	43 psi	
Max. Crankcase Pressure	2 kPa	8 in.H2O	
Maximum Installed Angle, Front Down	0 deg		
Maximum Installed Angle, Front Up	12 deg		
Engine Angularity Limits Any Direction, Continuous***	25 deg		
Engine Angularity Limits Any Direction, Intermittent***	35 deg		

* With clean filters

** With John Deere Plus-50 II™ 15w-40, not applicable with break in oil.

*** With 19BP option

Air Intake System

Engine Air Flow	15.4 m ³ /min	545 ft ³ /min
Intake Manifold Pressure	237 kPa	34.4 psi
Manifold Air Temperature	98 °C	208 °F
Maximum Manifold Air Temperature	130 °C	266 °F
Max. Allowable Temperature Rise, Ambient Air to Engine Inlet	17 °C	30 °F
Max. Air Intake Restriction, Clean Air Cleaner	3 kPa	12 in.H2O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25 in.H2O
Min. Ventilation Area	0.095 m ²	147 in ²

Performance Data

Prime Power	166 kW	223 hp
10% Overload Power	183 kW	245 hp
Rated Speed	1800 RPM	
Low Idle Speed	1800 RPM	
Prime Torque	883 Nm	651 lb-ft
BMEP, Prime	1631 kPa	236 psi
Rated Pferdestärke, Prime (metric hp)	226 ps	
Front Drive Capacity, Intermittent	900 Nm	664 lb-ft
Front Drive Capacity, Continuous	900 Nm	664 lb-ft
Software and Label Convertible to 50 Hz?	YES	

Exhaust System

Exhaust Flow	32.52 m ³ /min	1148 ft ³ /min
Exhaust Flow @ gas STP	15.1 m ³ /min	533 ft ³ /min
Exhaust Temperature	375 °C	707 °F
Max. Allowable Exhaust Restriction	7.5 kPa	30 in.H2O
Max. Shear on Turbocharger Exhaust Outlet	11 kg	24.3 lb
Max. Bending Moment on Turbocharger Exhaust Outlet	7 Nm	15.4 lb-ft
Min. Exhaust Pipe Diameter, Dry	101.6 mm	4.0 in
Min. Exhaust Pipe Diameter, Wet	127.0 mm	5.0 in

Performance Curve: 6068AFM75_E

All values at rated speed and power at standard conditions per SAE J1995 unless otherwise noted.

Engine Installation Criteria

Engine Performance Data Table

Engine Power	Crank Power		Crank Torque		Fuel Consumption		BSFC
	kW	hp	Nm	lb-ft	L/hr	gal/hr	
25%	41.6	55.8	220.7	162.8	12.1	3.2	246.3
50%	83.2	111.6	441.4	325.5	22.0	5.8	224.4
75%	124.8	167.4	662.1	488.3	33.1	8.7	225.4
100%	166.4	223.1	882.8	651.1	43.9	11.6	224.4
110%	183.0	245.5	971.0	716.2	48.2	12.7	223.7

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