



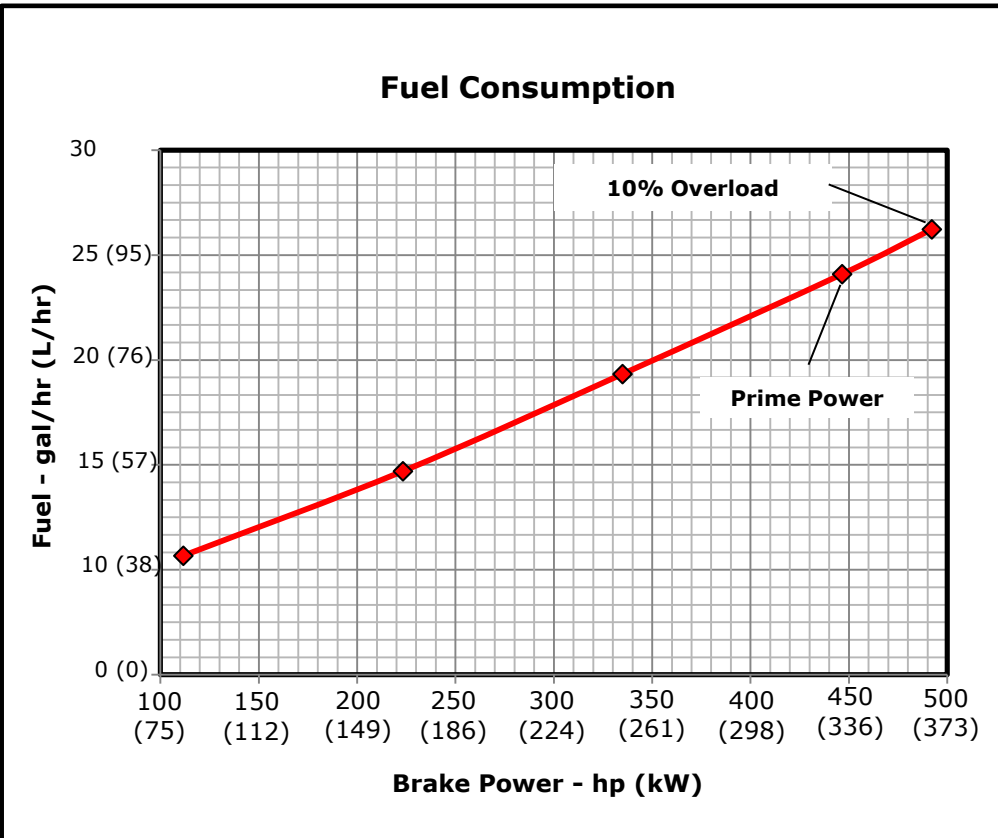
JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Marine
 Application: Generator (60 Hz)
 Prime Power

PowerTech™ 13.5L Engine
Model: 6135AFM75
 446 hp @ 1800 RPM
 333 kW @ 1800 RPM
 See Option Code Table

Generator Efficiency (%)	Power Factor	Calculated Gen-Set Rating		Prime Power	10% Overload Power
		kW	kVA	hp (kW)	hp (kW)
88-92	0.8	293-306	366-383	446 (333)	492 (367)



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
 J1995 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 	PRELIMINARY
Ref: Engine Emission Label	12-Oct-11
	Adam Paull

Performance Curve: 6135AFM75_E

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

Engine Installation Criteria

General Data

Model	6135AFM75	
Number of Cylinders	6	
Bore	132 mm	5.2 in
Stroke	165 mm	5.2 in
Displacement	13.5 L	824 in ³
Compression Ratio	15.3:1	
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**	390 kW	22199 BTU/min
Max. Pressure Drop Across Keel Cooler	40 kPa	5.8 psi
Coolant Flow	346.4 L/min	91.5 gal/min
Thermostat Start to Open	80 °C	176 °F
Thermostat Fully Open	91 °C	197 °F
Engine Coolant Capacity, HE	L	gal
Engine Coolant Capacity, KC	L	gal
Min. Coolant Fill Rate	12 L/min	3 gal/min
Min. Pressure Cap	110 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	100-105 °C	212-221 °F
Absolute Max Top Tank Temperature	105 °C	221 °F
Recommended Fuel Cooler	kW	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	1800 mm	70.9 in
Width	1075 mm	42.3
Height, crank centerline to top	806 mm	31.7
Height, crank centerline to bottom	360 mm	14.2 in
Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics)	1497 kg	3300 lb
Center of Gravity Location, X-axis From Rear	mm	in
Face of Block		
Center of Gravity Location, Y-axis Right of Crankshaft	mm	in
Center of Gravity Location, Z-axis Above Crankshaft	mm	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	5.4 kN	1214 lbf
Thrust Bearing Load Limit, Forward Intermittent	8.1 kN	1821 lbf
Thrust Bearing Load Limit, Rearward Continuous	2.5 kN	562 lbf
Thrust Bearing Load Limit, Rearward Intermittent	4 kN	899 lbf

Electrical System

Min. Recommended Battery Capacity, 12V @32 °F (0 °C)	1900 amps
Min. Recommended Battery Capacity, 24V @32 °F (0 °C)	925 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	0.0012 ohms
Max. Allowable Start Circuit Resistance, 24V	0.002 ohms
Recommended Starter Cable, 12V 100"	#000
Recommended Starter Cable, 24V 100"	#1
Recommended Starter Cable, 12V 200"	2 #000
Recommended Starter Cable, 24V 200"	#000
Electrical Component Maximum Temperature Limit	125 °C 257 °F

Performance Curve: 6135AFM75_E

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Engine Installation Criteria

Fuel System

ECU Description	L15	
Fuel Injection Pump	Unit Injection	
Governor Type	Electronic	
Volumetric Fuel Consumption, Prime	86.7 L/hr	22.9 gal/hr
Mass Fuel Consumption, Prime	73.7 kg/hr	162.5 lb/hr
Total Fuel Volumetric Flow	417 L/hr	110 gal/hr
Total Fuel Mass Flow	355 kg/hr	782.6 lb/hr
Max. Fuel Inlet Restriction*	30 kPa	120 in.H ₂ O
Max. Fuel Inlet Pressure	24 kPa	96 in.H ₂ O
Max. Fuel Height Above Transfer Pump	2.87 m	9.4 ft
Max Fuel Return Pressure	35 kPa	140.5 in.H ₂ O
Max. Leak-off Return Height	3.5 m	11.5 ft
Normal Operation Fuel Temperature	40 °C	104 °F
Max. Fuel Inlet Temperature	80 °C	176 °F
Min. Recommended Fuel Line Inside Diameter	11 mm	0.43 in
Min. Recommended Fuel Line Size	-7	
Primary Fuel Filter	10 mic	
Secondary Fuel Filter	2 mic	

Lubrication System

Oil Pressure at 1800 RPM	260 kPa	37.7 psi
Max. Crankcase Pressure	2 kPa	8 in.H ₂ O
Maximum Installed Angle, Front Down	0 deg	
Maximum Installed Angle, Front Up	12 deg	
Engine Angularity Limits Any Direction, Continuous	20 deg	
Engine Angularity Limits Any Direction, Intermittent	30 deg	

* With clean filters

Air Intake System

Engine Air Flow	30 m ³ /min	1059 ft ³ /min
Intake Manifold Pressure	249 kPa	36 psi
Manifold Air Temperature	99 °C	210 °F
Maximum Manifold Air Temperature	130 °C	266 °F
Max. Allowable Temperature Rise, Ambient	17 °C	30 °F
Air to Engine Inlet		
Max. Air Intake Restriction, Clean Air Cleaner	3 kPa	12 in.H ₂ O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25 in.H ₂ O
Min. Ventilation Area	0.185 m ²	286 in ²

Performance Data

Prime Power	333 kW	446 hp
10% Overload Power	367 kW	492 hp
Rated Speed	1800 RPM	
Low Idle Speed	1800 RPM	
Prime Torque	1767 Nm	1303 lb-ft
BMEP, Prime	1645 kPa	239 psi
Rated Pferdestärke, Prime	453.8 ps	
Front Drive Capacity, Intermittent	644 Nm	475 lb-ft
Front Drive Capacity, Continuous	542 Nm	400 lb-ft
Software and Label Convertible to 50 Hz?	YES	

Exhaust System

Exhaust Flow	69.3 m ³ /min	2447.3 ft ³ /min
Exhaust Flow @ gas STP	31.8 m ³ /min	1123 ft ³ /min
Exhaust Temperature	426 °C	799 °F
Max. Allowable Exhaust Restriction	7.5 kPa	30 in.H ₂ O
Max. Shear on Turbocharger Exhaust Outlet	11 kg	24 lb
Max. Bending Moment on Turbocharger Exhaust Outlet	7 Nm	5.2 lb-ft
Min. Exhaust Pipe Diameter, Dry	127 mm	5 in
Min. Exhaust Pipe Diameter, Wet	139.7 mm	5.5 in

Performance Curve: 6135AFM75_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%	83.3	111.6	441.7	325.7	25.8	6.8	263.0
50%	166.5	223.3	883.3	651.5	44.0	11.6	224.8
75%	249.8	334.9	1325.0	977.2	65.1	17.2	221.5
100%	333.0	446.6	1766.6	1303.0	86.7	22.9	221.3
110%	367.0	492.1	1947.0	1436.0	96.4	25.5	223.3

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