



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator (60 Hz)
 Target: 300 kWe Standby Market

PowerTech Plus™ 13.5 L Engine

Model: 6135HF485

416 hp (311 kW) Prime
463 hp (345 kW) Standby

[See Option Code Tables]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
416	311	463	345

Generator Efficiency %	Fan Power (6% of Standby)		Power Factor	Prime Rating		Standby Rating ¹		ISO 8528 G2 Block Load Capability
	hp	kW		kWe	kVA	kWe	kVA	
90-94	25	18.98	0.8	264-276	330-345	293-306	367-383	100%

Note 1: Based on nominal engine power.

STANDARD CONDITIONS

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:

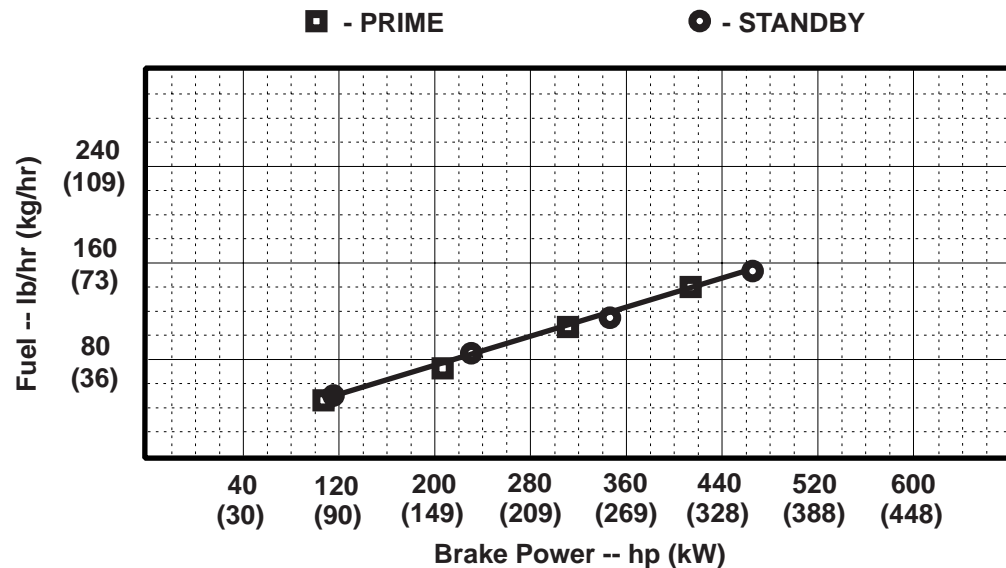
- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
- Torque: N•m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes:

All OEM Gen Set Engine Applications must be pre-screened for torsional vibration compatibility with the respective alternator end hardware.

OEM Engine Application Engineering will perform this computer-based analysis work upon request.



Tier-3 Emission Certifications:	Certified by:
CARB; EPA	<i>Brian L. Carlson</i>
Ref: Engine Emission Label	3 OCT 06

* Revised Data
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 October 2006

Engine Installation Criteria

General Data

Model	6135HF485
Number of Cylinders	6
Bore and Stroke--in. (mm).....	5.20 (132) x 6.50 (165)
Displacement--in. ³ (L)	824 (13.5)
Compression Ratio	16.0 : 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.....	Air-to-Air
Engine Crankcase Vent System	Open

Physical Data

Length--in. (mm)	52.5 (1334)
Width--in. (mm)	33.7 (855)
Height--in. (mm)	59.5 (1512)
Weight, dry--lb (kg)	3292 (1493)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in. (mm)	20.0 (507)
Right of Crankshaft (Y-axis)--in. (mm).....	0.1 (2)
Above Crankshaft (Z-axis)--in. (mm)	8.1 (206)
Maximum Allowable Static Bending Moment at Rear Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m)	600 (814)
Thrust Bearing Load Limit --lb (N) <u>Forward</u> <u>Rearward</u>	
Intermittent.....	1821 (8100).....899 (4000)
Continuous	1214 (5400).....562 (2500)
Max. Continuous Damper Temp--°F (°C)	180 (82)

Electrical System

12 Volt 24 Volt

Min. Battery Capacity (CCA)--amp.....	1900.....	925
Max. Allow. Starting Circuit Resist.--Ohm	0.0012.....	0.002
Starter Rolling Current		
At 32 °F (0 °C)--amp	920.....	600
At -22 °F (-30 °C)--amp.....	1300.....	700
Min. Voltage at ECU during Cranking--volts.....	6.....	10
Maximum ECU Temperature--°F (°C)	221 (105)	
Max. VTG Actuator Surface Temp.--°F (°C)	356 (180)	
Maximum Harness Temperature--°F (°C)	257 (125)	
Maximum Voltage From Engine Crankshaft/Generator Shaft to Ground--VAC*	0.15*.....	0.15*

Air System

Prime Standby

Max. Allowable Temp Rise--Ambient Air to Engine Inlet--°F (°C).....	15 (8)
Maximum Air Intake Restriction	
Dirty Air Cleaner--in.H ₂ O (kPa).....	25 (6.25)
Clean Air Cleaner--in.H ₂ O (kPa).....	15 (3.75)
Engine Air Flow--ft ³ /min (m ³ /min)	918 (26.0).....953(27.0)
Air Cleaner Efficiency--%	99.9

Charge Air Cooling System

Prime Standby

Air/Air Exchanger Heat Rejection--BTU/min (kW)	4155 (73) ...	4383 (77)
Compress. Dischrg. Temp.(Rated) @ 77 °F (25°C) Amb. Air--°F (°C)	392 (200)	401 (205)
Compress. Dischrg. Temp.(Max.) @ 50°C amb. and 80 kPa bar.--°F (°C)	480 (249) ...	489 (254)
Press. Drop. thru CAC--in.H ₂ O (kPa)		
Max.	64 (16)	
Min.	32 (8)	
Intake Manifold Press.--psi (kPa).....	30 (207)	31 (214)
CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)	127 (53)	127 (53)
Max.	127 (53)	127 (53)
Min.	NA ..	110 (43.6)
CAC Out Temp @ any Ambient--°F (°C)		
Max.	190 (88)	

Cooling System

Prime Standby

Engine Heat Reject.--BTU/min (kW). ..	9847 (173) ..	10189(179)
Coolant Flow--gal/min (L/min).....	124 (470)	
Thermostat Start to Open--°F (°C)	180 (82)	
Thermostat Fully Open--°F (°C).....	198 (92)	
Engine Coolant Capacity--qt (L)	19 (18)	
Min. Pressure Cap--psi (kPa)	14.5 (100)	
Max. Top Tank Temp--°F (°C)	221 (105)	
Min. Coolant Fill Rate--gal/min (L/min)	3 (12)	
Min. Air-to-Boil Temperature--°F (°C)	117 (47)	
Min. Pump Inlet Pressure--psi (kPa).....	4.4 (30)	

Exhaust System

Prime Standby

Exhaust Flow--ft ³ /min (m ³ /min).....	1978 (56) ...	2084 (59)
Exhaust Temperature--°F (°C)	743 (395) ...	756 (402)
Max. Exhaust Restriction----in. H ₂ O (kPa)	40 (10)	
Min. Exhaust Restriction----in. H ₂ O (kPa).....	16 (4)	
Max. Bend. Moment, Turbo Out.--lb-ft (N•m) ..	5.2 (7.0)	
Max. Shear on Turbo Outlet--lb (kg)	24 (11)	

Fuel System

Prime Standby

ECU Description	L15 Controller	
Fuel Injection Pump	Unit Injection	
Governor Type.....	Electronic	
Total Fuel Flow--lb/hr (kg/hr).....	288 (130.7)	304 (138)
Fuel Consumption--lb/hr (kg/hr).....	140 (63.7)	157 (71)
Max. Fuel Inlet Temp.--°F (°C).....	212 (100)	
Fuel Temp. Rise, Inlt to Retr--°F (°C).....	111.6 (62).....	113.4 (63)
Max. Fuel Inlet Restriction--in. H ₂ O (kPa)	40 (10)	
Max. Fuel Inlet Pressure--in. H ₂ O (kPa)	96 (24)	
Max. Fuel Return Pressure--in. H ₂ O (kPa)	140 (35)	

Lubrication System

Prime Standby

Oil Press. at Rated Speed--psi (kPa).....	42 (287)
Oil Pressure at Low Idle--psi (kPa)	20 (138)
Max. Oil Carryover in Blow-by--lb/hr (g/hr) ...	0.007 (3)
Max. Airflow in Blow-by--gal/min (l/min).....	79 (300)
Max. Crankcase Pressure--in. H ₂ O (kPa).....	2 (0.5)

Performance Data

Prime Standby

Rated Power--hp (kW)	416 (311).....	463 (345)
Rated Speed--rpm	1800.....	1800
Low Idle Speed--rpm	900.....	900
Rated Torque--lb-ft (N•m).....	2233 (1647) ..	2481 (1830)
BMEP--psi (kPa)	238 (1639).....	247 (1704)
Friction Power @ Rated Speed--hp (kW)	56 (41)	
Altitude Capability--ft (m)	10,000 (3048)	
Ratio--Air : Fuel.....	25 : 1.....	25 : 1
Smoke @ Rated Speed--Bosch No.	0.35.....	0.35
Noise--dB(A) @ 1 m	96.8*.....	97.7*

Fuel Consumption -- lb/hr (kg/h)

Prime Standby

25 % Power	48.5 (22.0).....	50.7 (23.0)
50 % Power	77.2 (35.0).....	83.8 (38.0)
75 % Power	106.7 (48.4)	117.9 (53.5)
100 % Power	140.4 (63.7)	156.5 (71.0)

All values at rated speed and power with standard options unless otherwise noted.

* Revised Data

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October 2006