



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator (60 Hz)
 Target: 350 kWe Standby Market

PowerTech Plus™ 13.5 L Engine
 Model: **6135HF485**

489 hp (365 kW) Prime
538 hp (401 kW) Standby

[See Option Code Tables]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
489	365	538	401

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	30	22.06	0.8	310-324	388-405	341-356	426-445	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:

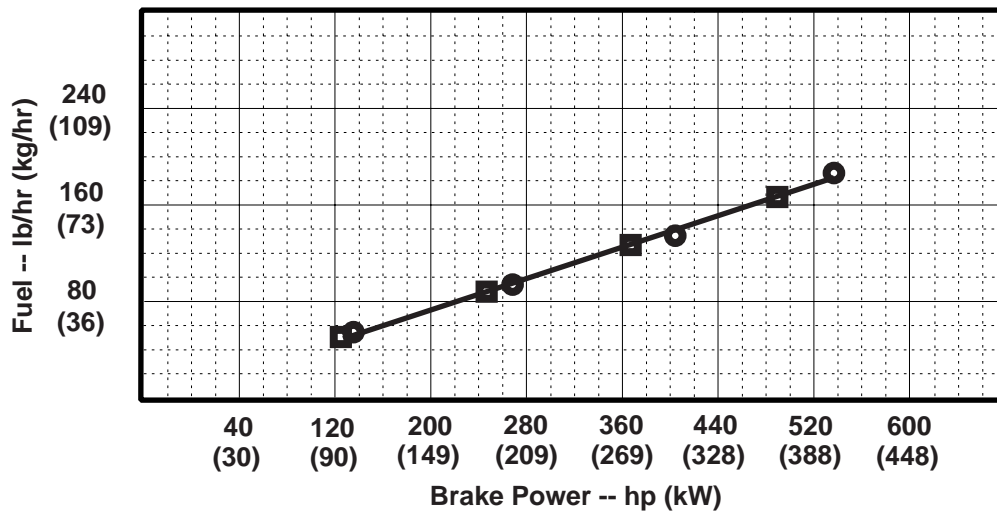
- 77 °F (25 °C) air inlet temperature
- 29.31 in.Hg (99 kPa) barometer
- 104 °F (40 °C) fuel inlet temperature
- 0.853 fuel specific gravity @ 60 °F (15.5 °C)

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.

■ - PRIME ● - STANDBY



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) Forward Rearward
 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.H₂O (kPa)..... 25 (6.25)
 Clean Air Cleaner--in.H₂O (kPa)..... 15 (3.75)
 Engine Air Flow--ft³/min (m³/min) .. 1059 (30.0) . 1165(33.0)
 Air Cleaner Efficiency--%99.9

Charge Air Cooling System

Prime Standby

Air/Air Exchanger Heat Rejection--
 BTU/min (kW)5237 (92) .. 6033(106)
 Compress. Dischrg. Temp.(Rated)
 @ 77 °F (25°C) Amb. Air--°F (°C) . 424(218) 441(227)
 Compress. Dischrg. Temp.(Max.)
 @ 50°C amb. and
 80 kPa bar.--°F (°C)513(267) 529(276)
 Press. Drop. thru CAC--in.H₂O (kPa)
 Max.64 (16)
 Min.32 (8)
 Intake Manifold Press.--psi (kPa).....34(233) 36(247)
 CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)
 Max.127 (53) 127 (53)
 Min.NA .. 115 (46.1)
 CAC Out Temp @ any Ambient--°F (°C)
 Max.190 (88)

Cooling System

Prime Standby

Engine Heat Reject.--BTU/min (kW)10359 (182) ...11042(194)
 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--ft³/min (m³/min).....2295 (65) ... 2649 (75)
 Exhaust Temperature--°F (°C)783 (417) .. 835 (446)
 Max. Exhaust Restriction----in. H₂O (kPa)40 (10)
 Min. Exhaust Restriction----in. H₂O (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 DescriptionL15 Controller
 Fuel Injection Pump Unit Injection
 Governor Type..... Electronic
 Total Fuel Flow--lb/hr (kg/hr).....322 (146) 337 (153)
 Fuel Consumption--lb/hr (kg/hr).....172 (78) 187 (85)
 Max. Fuel Inlet Temp.--°F (°C).....212 (100)
 Fuel Temp. Rise, Inlt to Retr--°F (°C)106.2 (59) 99 (55)
 Max. Fuel Inlet Restriction--in. H₂O (kPa)40 (10)
 Max. Fuel Inlet Pressure--in. H₂O (kPa)96 (24)
 Max. Fuel Return Pressure--in. H₂O (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. H₂O (kPa).....2 (0.5)

Performance Data

Prime Standby

Rated Power--hp (kW)489 (365)..... 538 (401)
 Rated Speed--rpm 1800..... 1800
 Low Idle Speed--rpm 900..... 900
 Rated Torque--lb-ft (N*m).....2625 (1936).. 2884 (2127)
 BMEP--psi (kPa)261 (1802).... 287 (1980)
 Friction Power @ Rated Speed--hp (kW) 56 (41)
 Altitude Capability--ft (m) 10,000 (3048)
 Ratio--Air : Fuel..... 26 : 1 25.5 : 1
 Smoke @ Rated Speed--Bosch No.0.3..... 0.1
 Noise--dB(A) @ 1 m 98.1* 98.5*

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

Prime Standby

25 % Power50.7 (23.0)..... 57.3 (26)
 50 % Power88.8 (40.3)..... 97.0 (44)
 75 % Power123.5 (56.0) 136.7 (62)
 100 % Power164.9 (74.8) 187.4 (85)

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

* Revised Data

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