



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:

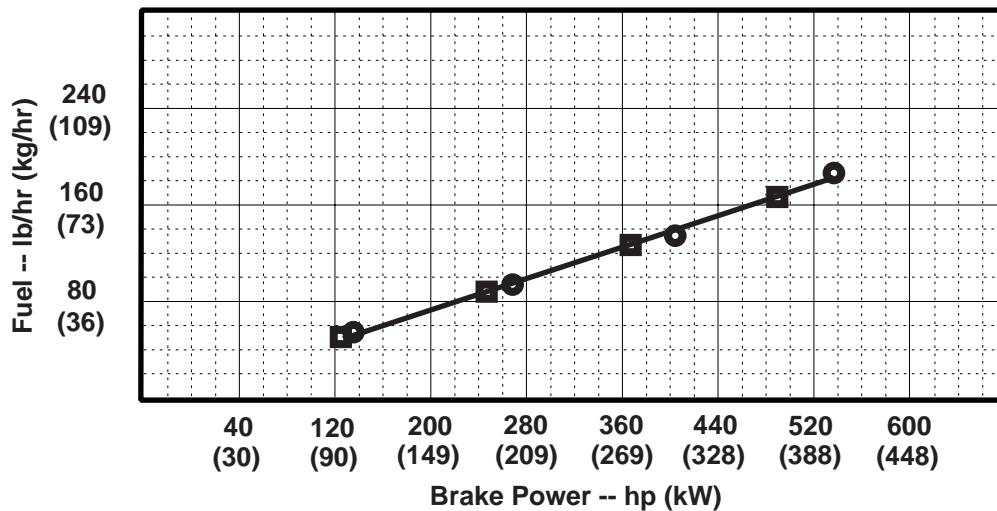
- 77 °F (25 °C) air inlet temperature
- 29.31 in.Hg (99 kPa) barometer
- 104 °F (40 °C) fuel inlet temperature
- 0.853 fuel specific gravity @ 60 °F (15.5 °C)

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
 Curve 6135HF4851800538 Sheet 1 of 2
 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.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) ..	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.H ₂ O (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--ft ³ /min (m ³ /min).....	2295 (65)	2649 (75)
Exhaust Temperature--°F (°C)	783 (417)	835 (446)
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).....	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. 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)	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	NA	NA

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

Prime **Standby**

25 % Power	50.7 (23.0)	57.3 (26)
50 % Power	88.8 (40.3)	97.0 (44)
75 % Power	123.5 (56.0)	136.7 (62)
100 % Power	164.9 (74.8)	187.4 (85)

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

* Revised Data
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October 2006