



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator (60 Hz)
 Target: 400 kWe Standby Market

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

561 hp (419 kW) Prime
617 hp (460 kW) Standby

[See Option Code Tables]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
561	419	617	460

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	
92-94	34	25.3	0.8	364-372	455-465	400-409	500-511	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:

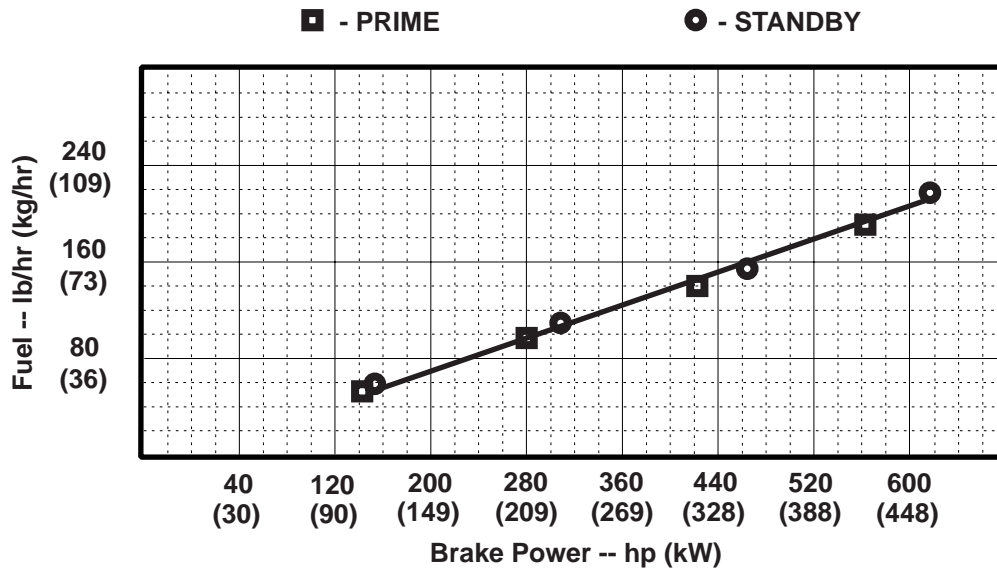
- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
- Torque: N•m = lb-ft x 1.356

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

Ref: Engine Emission Label

Brian L. Carlson
 3 OCT 06

* Revised Data

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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)
Continuous1214 (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) .. 1130 (32.0) .1201(34.0)
Air Cleaner Efficiency--%99.9

Engine Installation Criteria

Charge Air Cooling System

Prime Standby

Air/Air Exchanger Heat Rejection--
BTU/min (kW)6660(117) ..6944(122)
Compress. Dischrg. Temp.(Rated)
@ 77 °F (25°C) Amb. Air--°F (°C) 451 (233) 468 (242)
Compress. Dischrg. Temp.(Max.)
@ 50°C amb. and
80 kPa bar.--°F (°C)540 (282) ... 556 (291)
Press. Drop, thru CAC--in.H₂O (kPa)
Max.64 (16)
Min.32 (8)
Intake Manifold Press.--psi (kPa).....40 (276) 42 (287)
CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)
Max.127 (53) 127 (53)
Min.NA... 119(48.5)
CAC Out Temp @ any Ambient--°F (°C)
Max.190 (88)

Cooling System

Prime Standby

Engine Heat Reject.--BTU/min (kW).11953(210) .. 13148(231)
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).....2578 (73) ... 2860 (81)
Exhaust Temperature--°F (°C)801 (427) ... 880 (471)
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)344 (156.0) .. 367 (166.4)
Fuel Consumption--lb/hr (kg/hr)194 (88) 217 (98)
Max. Fuel Inlet Temp.--°F (°C)212 (100)
Fuel Temp. Rise, Inlt to Retr--°F (°C)100.8 (56) ... 100.8 (56)
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)561 (419)..... 617 (460)
Rated Speed--rpm 1800..... 1800
Low Idle Speed--rpm 900..... 900
Rated Torque--lb-ft (N*m)..... 3011 (2221) .. 3309 (2440)
BMEP--psi (kPa)300 (2067).... 329 (2272)
Friction Power @ Rated Speed--hp (kW) 56 (41)
Altitude Capability--ft (m) 10,000 (3048)
Ratio--Air : Fuel..... 24.5 : 1 23.4 : 1
Smoke @ Rated Speed--Bosch No.0.110.11
Noise--dB(A) @ 1 m 98.7* 98.9*

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

Prime Standby

25 % Power55.3 (25.1) 59.5 (27.0)
50 % Power97.2 (44.1) 108.0 (49.0)
75 % Power140.2 (63.6) 156.5 (71.0)
100 % Power189.2 (85.8) 216.9 (98.0)

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

* Revised Data
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