



JOHN DEERE

ENGINE PERFORMANCE CURVE

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

PowerTech™ 3.0L Engine

Model: **5030HF285**

87 hp (65 kW) Prime

96 hp (72 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
87	65	96	72

Generator Efficiency ¹ %	Fan Power		Power Factor	Prime Rating		Standby Rating ²		ISO 8528 G2 Block Load Capability ³
	hp	kW		kW	kVA	kW	kVA	
88-92	4.8	3.6	0.8	54-56	68-70	60-63	75-79	NA

Note 1: Est. min. generator efficiency, with 5% fan power loss, to achieve Prime kVA (1500 rpm) / Standby kWe (1800 rpm).
 Note 2: Based on nominal engine power.
 Note 3: Results may vary by alternator and voltage regulator selection.

Air Intake Restriction 12 in.H₂O (3 kPa)
 Exhaust Back Pressure 30 in.H₂O (7.5 kPa)

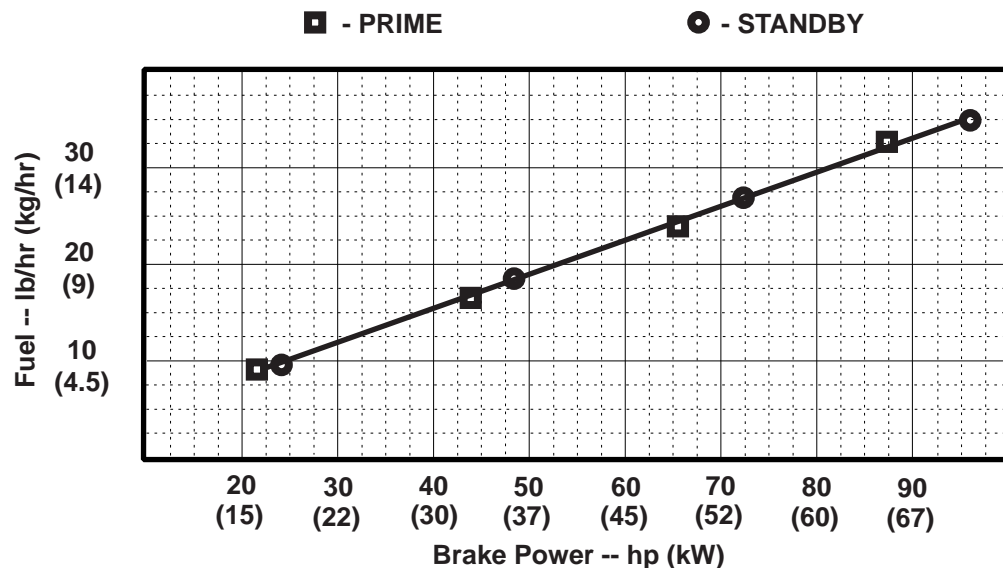
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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

Vincenzo Perduca
 11-28-2007

* Revised Data

Curve 5030HF285180096 Sheet 1 of 2
 November 2007

Engine Installation Criteria

General Data

Model	5030HF285
Number of Cylinders	5
Bore and Stroke--in.(mm).....	3.4 x 4.1 (86 x 105)
Displacement--in. ³ (L)	186 (3.05)
Compression Ratio	18.2 : 1
Valves per Cylinder--Intake/Exhaust	1 / 1
Firing Order	1-2-4-5-3
Combustion System	Direct 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)	31.5 (799)
Width--in.(mm)	22.3 (566)
Height--in.(mm)	31.5 (800)
Weight, dry--lb (kg).....	633(287)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in.(mm)	9.5 (241)
Right of Crankshaft (Y-axis)--in.(mm)	0.5 (12)
Above Crankshaft (Z-axis)--in.(mm)	4.9 (124)
Max. Allow. Static Bending Moment at Rear	
Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m)	369 (500)
Thrust Bearing Load Limit --lb (N) <u>Forward</u> <u>Rearward</u>	
Intermittent.....	629 (2800) 180 (800)
Continuous	1147 (5100) 337 (1500)
Max. Front of Crank. Torsional Vibration--DDA.....	0.25
Max. Cont. Damper Temp--°F (°C)	180 (82)

Electrical System

12 Volt 24 Volt

Rec'md. Battery Capacity (CCA)--amp	750	500
Max. Allow. Starting Circuit Resist.--Ohm ..	0.0012	0.002
Starter Rolling Current		
At 32 °F (0 °C)--amp	290	310
At -22 °F (-30 °C)--amp	370	340
Min. Volts at ECU while Cranking--volts.....	6	10
Max. ECU Temp.--°F (°C)	221 (105)	
Max. Harness Temp.--°F (°C).....	257 (125)	

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).....	12 (3)	
Engine Air Flow--ft ³ /min (m ³ /min)	179 (5.1)	186 (5.3)
Air Cleaner Efficiency--%	99.9	

Charge Air Cooling System

Prime Standby

Air/Air Exchanger Heat Rejection--		
BTU/min (kW)	598 (10.5)	723 (12.7)
Compress. Dischrg. Temp.(Rated)		
@ 77°F (25°C) Amb. Air--°F (°C)....	333(167)	351(177)
Compress. Dischrg. Temp.(Max.)		
@ 47°C amb. and		
80 kPa bar.--°F (°C)	NA (NA)	NA (NA)
Press. Drop, thru CAC--in.H ₂ O (kPa)		
Max.	52 (13)	
Min.	28 (7)	
Intake Manifold Pressure--psi (kPa)	20(140)	22(154)
CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)		
Max.	140 (60)	
Min.	118 (48)	
CAC Out Temp @ any Ambient--°F (°C)		
Max.	190 (88)	

Cooling System

Prime Standby

Engine Heat Reject.--BTU/min (kW). 2430(42.7) ...	2590(45.5)	
Coolant Flow--gal/min (L/min).....	26 (100)	
Thermostat Start to Open--°F (°C)	192 (89)	
Thermostat Fully Open--°F (°C).....	212 (100)	
Engine Coolant Capacity--qt (L)	2.7 (2.6)	
Min. Pressure Cap--psi (kPa)	14.9 (103)	
Max. Top Tank Temp--°F (°C)	230 (110)	
Min. Coolant Fill Rate--gal/min (L/min)	3(9.5)	
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).....	459(13.0)	484(13.7)
Exhaust Temperature--°F (°C)	941(505)	972(522)
Max. Exhaust Restriction---in. H ₂ O (kPa)	30 (7.5)	
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	L18 Controller	
Fuel Injection Pump	Denso HP3	
Governor Type	Electronic	
Total Fuel Flow--lb/hr (kg/hr).....	154 (70.0)	
Fuel Consumption--lb/hr (kg/hr).....	33 (15)	35 (16)
Max. Fuel Inlet Temp.--°F (°C).....	176 (80)	
Fuel Temp. Rise, Inlt to Retrn--°F (°C)	54(30)	
Max. Fuel Inlet Restriction--in. H ₂ O (kPa)	120 (30)	
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).....	41 (280)	
Min. Oil Pressure--psi (kPa).....	36 (250)	
Max. Oil Carryover in Blow-by--lb/hr (g/hr)	0.002 (1.0)	
Max. Airflow in Blow-by--gal/min (l/min).....	12 (45)	
Max. Crankcase Pressure--in. H ₂ O (kPa).....	2 (0.5)	

Performance Data

Prime Standby

Rated Power--hp (kW)	87 (65).....	96 (72)
Rated Speed--rpm	1800	
Low Idle Speed--rpm	1150	
BMEP--psi (kPa)	211 (1455).....	226 (1557)
Friction Power		
@ Rated Speed--hp (kW)	12 (9)	
Altitude Capability--ft (m)	10,000 (3050)	
Ratio--Air : Fuel.....	22.7 : 1	21.3 : 1
Smoke @ Rated Speed--Bosch No.	1.96.....	2.42
Noise--dB(A) @ 1 m	84.7.....	86.0

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

Prime Standby

25 % Power	9.0 (4.1)	9.5 (4.3)
50 % Power	16.3 (7.4)	18.0 (8.2)
75 % Power	24.1 (10.9)	26.7 (12.1)
100 % Power	32.6 (14.8)	35.4 (16.0)

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

* Revised Data
Curve 5030HF285180096..... Sheet 2 of 2
November 2007