



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator
 250 kWe Standby Market
 1800 RPM (60 Hz)

PowerTech™ E 9L Engine
Model: 6090HF484
 JD Electronic Control

346 hp (258 kW) Prime
 385 hp (287 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
346	258	385	287

Generator Efficiency %	Fan Power (% of Standby)		Power Factor	Prime Rating		Standby Rating		ISO 8528 G2 Block Load Capability
	hp	kW		kWe	kVA	kWe	kVA	
90-94	23.1	17.2	0.8	221-231	276-288	243-254	304-317	NA

Note 1: Based on nominal engine power.

STANDARD CONDITIONS

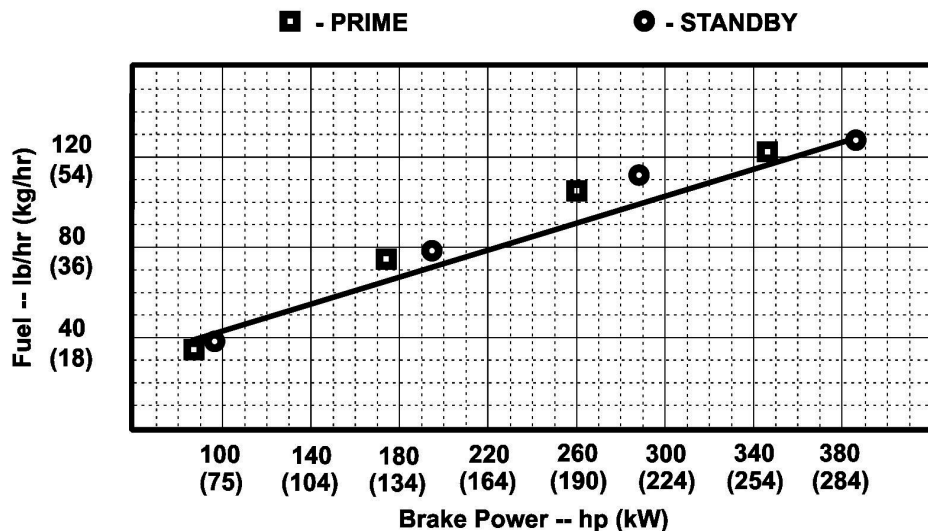
Air Intake Restriction.....12 in.H₂O (3 kPa)
 Exhaust Back Pressure.....30 in.H₂O (7.5 kPa)

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 = 0.85kg
 Torque: N·m = lb-ft x 1.356

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

Notes:



Designed/Calibrated to meet:	Certified by:
<ul style="list-style-type: none"> • CARB • EPA 	<i>Vincenzo Ferraro</i> 02-25-'08
Ref: Engine Emission Label	

Performance Curve: 6090HF484_B_S0_R0

Engine Installation Criteria

General Data

Model	6090HF484	
Number of Cylinders	6	
Bore	118.4 mm	4.7 in.
Stroke	136.0 mm	5.4 in.
Displacement	9 L	549 in. ³
Compression Ratio	16.0 : 1	
Valves per Cylinder, Intake/Exhaust	2/2	
Firing Order	1-5-3-6-2-4	
Combustion System	HPCR	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Charge Air Cooling System	Air-to-Air	
Engine Crankcase Vent System	Open	

Physical Data

Length	1208 mm	47.6 in.
Width	630 mm	24.8 in.
Height	1113 mm	43.8 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	901 kg	1986 lb
Center of Gravity Location, X-axis From Rear Face of Block	434.4 mm	17.1 in.
Center of Gravity Location, Y-axis Right of Crankshaft	2.24 mm	0.1 in.
Center of Gravity Location, Z-axis Above Crankshaft	201.4 mm	7.9 in.
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 N·m	600 lb-ft
Thrust Bearing Load Limit Forward, Intermittent	13000 N	2923 lb
Thrust Bearing Load Limit Forward, Continuous	8600 N	1933 lb
Thrust Bearing Load Limit Rearward, Intermittent	6000 N	1349 lb
Thrust Bearing Load Limit Rearward, Continuous	4000 N	899 lb
Max. Continuous Damper Temp	82 °C	180 °F
Max. Torsional Vibration, Front of Crank	0.25 DDA	

Electrical System

Recommended Battery Capacity, 12V @32 °F (0 °C)	1100 amps	
Recommended Battery Capacity, 24V @32 °F (0 °C)	750 amps	
Starter Rolling Current, 12V @32 °F (0 °C)	920 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	600 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	1300 amps	
Starter Rolling Current, 24V @-22 °F (-30 °C)	700 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Allowable Start Circuit Resistance, 24V	0.002 Ohm	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. Voltage From Engine to Crankshaft, 12V	0.15 volts	
Max. Voltage From Engine to Crankshaft, 24V	0.15 volts	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	NA	
Max. Harness Temperature	125 °C	257 °F

Performance Curve: 6090HF484_B_S0_R0

Engine Installation Criteria

Charge Air Cooling System

Air-to-Air Heat Rejection, Prime	68.0 kW	3871 BTU/min
Air-to-Air Heat Rejection, Standby	70.5 kW	4013 BTU/min
Intake Manifold Pressure, Prime	222 kPa	32.2 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air, Prime	204 °C	399 °F
Intake Manifold Pressure, Standby	226 kPa	32.8 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air, Standby	209 °C	408 °F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barometric pressure, Prime	227 °C	441 °F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barometric pressure, Standby	234 °C	453 °F
Intake Manifold Temperature at which Power De-rate Occurs	88 °C	190 °F
Max. Pressure Drop through CAC	13 kPa	52.0 in. H ₂ O
Min. Pressure Drop through CAC		NA
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Prime	45 °C	113 °F
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Standby	45 °C	113 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Prime		NA
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Standby		NA

Cooling System

Max. Water Pump Inlet Restriction	-30 kPa	-4.4 psi
Engine Heat Rejection, Prime	96 kW	5464 BTU/min
Engine Heat Rejection, Standby	97 kW	5521 BTU/min
Coolant Flow	280 L/min	74 gal/min
Thermostat Start to Open	82 °C	180 °F
Thermostat Fully Open	94 °C	201 °F
Engine Coolant Capacity	16 Liter	16.9 quart
Min. Pressure Cap	100 kPa	15 psi
Min. Pump Inlet Pressure	30 kPa	4.4 psi
Max. External Coolant Restriction	14 kPa	2 psi
Max. Top Tank Temperature Prime	110 °C	230 °F
Max. Top Tank Temperature Standby	110 °C	230 °F
Min. Limiting Ambient Temperature, Standby	47 °C	116.6 °F
Min. Limiting Ambient Temperature, Prime	47 °C	116.6 °F
Min. Coolant Fill Rate	12 L/min	3.2 gal/min

Exhaust System

Exhaust Flow, Prime	53.7 m ³ /min	1896 ft. ³ /min
Exhaust Flow, Standby	54.1 m ³ /min	1911 ft. ³ /min
Exhaust Temperature, Prime	623 °C	1153 °F
Exhaust Temperature, Standby	625 °C	1157 °F
Max. Allowable Exhaust Restriction	7.5 kPa	30 in. H ₂ O
Min. Allowable Exhaust Restriction		NA
Max. Bending Moment on Turbo Outlet	7.0 N·m	5.2 lb·ft
Max. Shear on Turbine Outlet	11 kg	24 lb

Performance Curve: 6090HF484_B_S0_R0

Engine Installation Criteria

Fuel System

ECU Description	L14 Controller	
Fuel Injection Pump	Denso HP4	
Governor Type	Electronic	
Total Fuel Flow, Prime	204 kg/hr	450 lb/hr
Total Fuel Flow, Standby	204 kg/hr	450 lb/hr
Fuel Consumption, Prime	54.7 kg/hr	121 lb/hr
Fuel Consumption, Standby	58.1 kg/hr	128 lb/hr
Fuel Temperature Rise, Inlet to Return Prime	36 °C	97 °F
Fuel Temperature Rise, Inlet to Return Standby	38 °C	100 °F
Max. Fuel Inlet Restriction	20 kPa	80 in. H ₂ O
Max. Fuel Inlet Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Return Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Inlet Temperature	80 °C	176 °F

Lubrication System

Oil Pressure at Rated Speed	260 kPa	38 psi
Oil Pressure at Low Idle	190 kPa	28 psi
Max. Oil Carryover in Blow-By	3 g/hr	0.007 lb/hr
Max. Airflow in Blow-By	40 L/min	10.6 gal/min
Max. Crankcase Pressure	0.5 kPa	2 in. H ₂ O

Air Intake System

Engine Air Flow, Prime	22.9 m ³ /min	809 ft. ³ /min
Engine Air Flow, Standby	23.0 m ³ /min	812 ft. ³ /min
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8 Δ°C	15 Δ°F
Max. Air Intake Restriction, Clean Air Cleaner	3.75 kPa	15.0 in. H ₂ O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25.0 in. H ₂ O
Air Cleaner Efficiency	99.9 %	

Performance Data

Rated Power, Prime	258 kW	346 HP
Rated Power, Standby	287 kW	385 HP
Rated Speed	1800 rpm	
Low Idle Speed	1000 rpm	
Rated Torque, Prime	1858 N·m	1370 lb-ft
Rated Torque, Standby	2064 N·m	1522 lb-ft
BMEP, Prime	1913 kPa	277 psi
BMEP, Standby	2126 kPa	308 psi
Altitude Capability, Prime	648 m	2125 ft
Altitude Capability, Standby	648 m	2125 ft
Friction Power @Rated Speed	24 kW	32 HP
Air:Fuel Ratio, Prime	28.7:1	
Air:Fuel Ratio, Standby	27.2:1	
Smoke @Rated Speed Prime	0.63	Bosch No.
Smoke @Rated Speed Standby	0.34	Bosch No.
Noise @1 m Prime	91.0 dB(A)	
Noise @1 m Standby	91.1 dB(A)	

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	37.3	16.9	39.5	17.9
50 % Power	74.5	33.8	79.1	35.9
75 % Power	104.9	47.6	111.6	50.6
100 % Power	120.6	54.7	128.1	58.1

Performance Curve: 6090HF484_B_S0_R0