



**JOHN DEERE**

## ENGINE PERFORMANCE CURVE

Rating: Gross power  
 Application: Generator  
 1500 RPM (50 Hz)

**PowerTech™ EWX 2.9L Engine**  
**Model: 3029HP530**  
 67 hp 50 kW Prime  
 74 hp 55 kW Standby

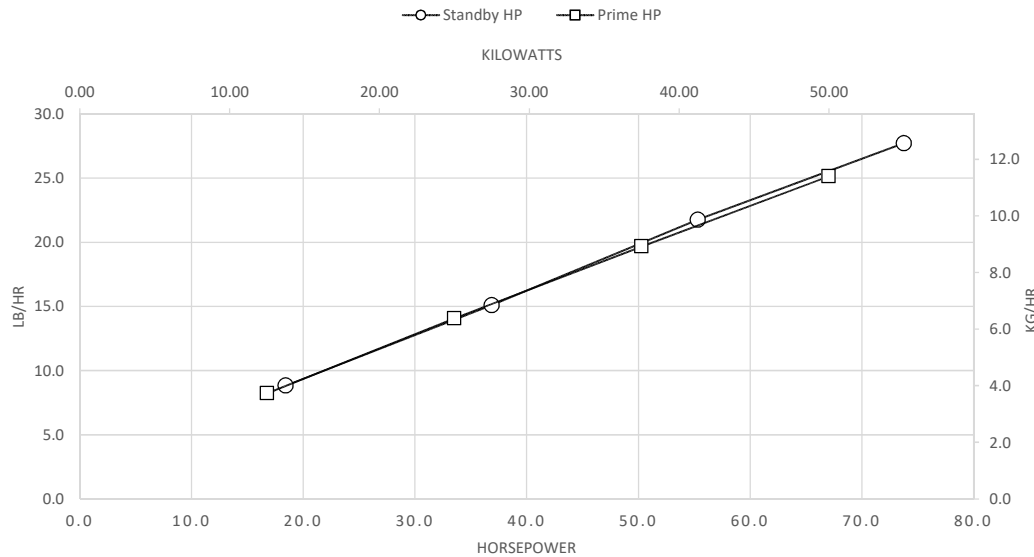
Dual-freq. Partner 3029HP530 F

Nominal Engine Power @ 1500 RPM			
Prime		Standby	
HP	kW	HP	kW
67	50	74	55

Generator Efficiency %	Fan power (% of Standby)		Power Factor	Prime Rating		Standby Rating	
	hp	kW		kWe	kVA	kWe	kVA
88-92	3.0	2.2	0.8	42-44	53-55	46-49	58-61

Note 1: Based on nominal engine power; Fan Power is 4% of Standby Power.

### STANDBY VS PRIME



### STANDARD CONDITIONS

Air Intake Restriction = 12in.H2O (3kPa)  
 Exhaust Back Pressure = 14 in.H2O (3.6kPa)  
**Gross Power Guaranteed within + or - 5% at SAEJ1995 and ISO 3046 conditions:**  
 Air Inlet Temperature = 77°F (25°C)  
 Barometer = 29.31 in.Hg (99 kPa)  
 Fuel Inlet Temperature = 104°F (40°C)  
 Fuel Specific Gravity @ 60 °F (15.5 °C) = 0.853

#### 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: 1) This Performance Curve provides installation requirements necessary for the engine to emit at its certified emission levels. For additional information necessary to meet applicable regulatory requirements, refer to the John Deere Emissions-related Installation Instructions (AG01): <https://power.deere.com/wps/myportal/jdps/products/engines/apguidelines>.  
 2) A crankshaft Torsional Vibration Analysis is required on all Gen Set.

Designed/Calibrated to meet:

Certified By:

EU Stage V

Advanced

Ref: Engine Emission Label

20-Mar-19

Performance Curve: 3029HP530\_G

## Engine Installation Criteria

Engine Model	3029HP530	
Number of Cylinders	3	
Bore	107 mm	4.2 in.
Stroke	110 mm	4.3 in.
Displacement	2.9 L	177 in. <sup>3</sup>
Compression Ratio	16.9	
Valves per Cylinder, Intake/Exhaust	1 \ 1	
Firing Order	1-2-3	
Combustion System	HPCR	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged & air-to-air aftercooled	
Engine Crankcase Vent System	Open	

### Physical Data

Length	715 mm	28.1 in.
Width	596 mm	23.5 in.
Height	956 mm	37.6 in.
Weight, with oil&no coolant (Includes engine, flywheel housing, flywheel&electrics)	400 kg	881.8 lb
Center of Gravity Location, X-axis From Rear Face of Block	184.05 mm	7.2 in.
Center of Gravity Location, Y-axis Right of Crankshaft	7.61 mm	0.3 in.
Center of Gravity Location, Z-axis Above Crankshaft	147.23 mm	5.8 in.
Max. Bending Moment about Main Bearings Front and Rear	530 N·m	391 lb-ft
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	4000 N	899 lb
Thrust Bearing Load Limit Forward, Continuous	2200 N	495 lb
Thrust Bearing Load Limit Rearward, Intermittent	2000 N	450 lb
Thrust Bearing Load Limit Rearward, Continuous	1100 N	247 lb
Max. Continuous Damper Temp	#N/A °C	#N/A °F
Max. ECU Vibration, All Axis	9.00 gRMS	
Max. Torisonal Vibration, Front of Crank	0.30 DDA	
Max. Engine Torisonal Vibration in Overspeed	0.40 DDA	

### Electrical System

Min. Instantaneous Cranking	50 rpm	
Mn. Steady State Cranking	120 rpm	
Starter Rolling Current, 12V @32 °F (0 °C)	450 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	250 amps	
Starter Rolling Current, 12V @-22 °F (-30°C)	700 amps	
Starter Rolling Current, 24V @-22 °F (-30°C)	400 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Voltage Drop, Battery to Starter	0.8 volts	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. Allowable Start Circuit Resistance, 24V	0.0020 Ohm	
Max. Voltage From Engine to Crankshaft, 12V	15 volts	
Max. Voltage From Engine to Crankshaft, 24V	30 volts	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	#N/A °C	#N/A °F
Max. Air Throttle Electrical Actuator Temperature	#N/A °C	#N/A °F
Max. Harness Temperature	125 °C	257 °F
Max. Alternator Temperature	105 °C	221 °F
Max. Starter Temperature	120 °C	248 °F
Max. Temperature, All Other Electronics	125 °C	257 °F

Performance Curve: 3029HP530

## Engine Installation Criteria

### Charge Air Cooling System

Air-to-Air Heat Rejection	9.1 kW	518 BTU/min
Compressor Discharge Temperature @ 77°F(25°C) Ambient Air	156 °C	314 °F
Intake Manifold Pressure	128 kPa	18.6 psi
Compressor Discharge Temperature @ 117°F(47°C) 80 kPa Barometric pressure	#N/A °C	#N/A °F
Max. Temperature Out of Charge Air Cooler @ All Ambient Conditions	88 °C	190 °F
Max. CAC System Volume	9.0 L	10 Qt.
Max. Pressure Drop through CAC	8.5 kPa	34 in. H <sub>2</sub> O
Min. Pressure Drop through CAC	4.0 kPa	16 in. H <sub>2</sub> O
Max. Temperature Out of Charge Air Cooler 77°F (25°C) Ambient Air	50 °C	122 °F
Min. Temperature Out of Charge Air Cooler 77°F (25°C) Ambient Air	36 °C	97 °F
Max. Bending Moment on Compressor Outlet	0.0 N·m	0.0 lb-ft
Max. Shear on Compressor Outlet	0.0 kg	0.0 lb

### Cooling System

Engine Heat Rejection	28.2 kW	1603.7 BTU/min
Coolant Flow @ 10 kPa External Restriction	82 L/min	22 gal/min
Coolant Flow @ 40 kPa External Restriction	54 L/min	14 gal/min
Thermostat Start to Open	83 °C	181 °F
Thermostat Fully Open	95 °C	203 °F
Engine Coolant Capacity	5.0 Liter	5.3 quart
Min. Coolant Fill Rate	12 L/min	3.2 gal/min
Max. Water Pump Inlet Pressure	235 kPa	34 psia
Min. Pump Inlet Pressure @ 203°F (95°C) Coolant	103 kPa	15 psia
Min. Pump Inlet Pressure @ Max. Top Tank temperature	148 kPa	21 psia
Min. External Coolant Restriction	#N/A kPa	#N/A psi
Max. External Coolant Restriction	40 kPa	6 psi
Max. Top Tank Temperature	113 °C	235 °F
Max. Top Tank temperature 95% of Operating Hours	103 °C	217 °F

### Exhaust System

Exhaust Flow	11.4 m <sup>3</sup> /min	403 ft <sup>3</sup> /min
Exhaust Temperature	541 °C	1006 °F
Max. Allowable Exhaust Restriction	8 kPa	30 in. H <sub>2</sub> O
Max. Bending Moment on Turbo Outlet	1.3 N·m	1.0 lb-ft
Max. Shear on Turbine Outlet	10.0 kg	22.0 lb
Exhaust Filter Size	2-DOC/DPF	
Exhaust Filter Pressure Drop (Clean)	3 kPa	14 in. H <sub>2</sub> O
Min. Mixing Length, Outlet to Exhaust Filter	#N/A	
Max. Bending Moment on Exhaust Filter Inlet	25 N·m	18 lb-ft
Max. Bending Moment on Exhaust Filter Outlet	25 N·m	18 lb-ft
Max. Exhaust Leakage Rate, Engine to Exhaust Filter @30kPa	5.0 L/min	1.3 gal/min
Max. Temperature Drop, Engine to exhaust Filter	30 Δ°C	54 Δ°F

### Fuel System

ECU Description	L23 Controller	
Fuel Injection Pump	Denso HP3	
Governor Type	Electronic	
Total Fuel Flow	25 kg/hr	55 lb/hr
Fuel Consumption, Prime	11 kg/hr	25 lb/hr
Fuel Consumption, Standby	13 kg/hr	28 lb/hr
Fuel Temperature Rise, Inlet to Return	35 Δ°C	63 Δ°F
Min. Fuel Inlet Pressure	-30 kPa	-121 in. H <sub>2</sub> O
Max. Fuel Inlet Pressure	20 kPa	80 in. H <sub>2</sub> O
Max. Fuel Return Pressure	20 kPa	80 in. H <sub>2</sub> O
Min. Fuel Return Pressure	0 kPa	0 in. H <sub>2</sub> O
Max. Fuel Inlet Temperature	75 °C	167 °F
Fuel Filter @98% Efficiency	5.0 mic	

### Lubrication System

Oil Pressure at Rated Speed	310 kPa	45 psi
Oil Pressure at Low Idle	300 kPa	44 psi
Max. In-Pan Oil Temperature	135 °C	275 °F
Max. Crankcase Pressure	3 kPa	12 in. H <sub>2</sub> O

Performance Curve: 3029HP530

## Engine Installation Criteria

### Air Intake System

Engine Air Flow	4.3 m <sup>3</sup> /min	152 ft. <sup>3</sup> /min
Air Mass Flow	298 kg/hr	657 lb/hr
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8 Δ°C	15 Δ°F
Max. Air Intake Restriction, Clean Air Clearer	3.00 kPa	12 in. H <sub>2</sub> O
Max. Air Intake Restriction, Dirty Air Clearer	6.25 kPa	25 in. H <sub>2</sub> O
Air Cleaner Efficiency		99.9 %

### Performance Data

Rated Power, Prime	50 kW	67 HP
Rated Power, Standby	55 kW	74 HP
Rated Speed		1500 rpm
Low Idle Speed		1200 rpm
Rated Torque, Prime	318 N·m	235 lb-ft
Rated Torque, Standby	350 N·m	258 lb-ft
BMEP, Prime	1379 kPa	200 psi
BMEP, Standby	1517 kPa	220 psi
Altitude Capability, Prime	2438 m	8000 ft
Altitude Capability, Standby	1280 m	4200 ft
Friction Power @Rated Speed	7.7 kW	10 HP
Air: Fuel Ratio, Prime		25.5 : 1
Air: Fuel Ratio, Standby		23.5 : 1
Noise @1 m Prime		87.0 dB(A)
Noise @1 m Standby		87 dB(A)
0-100% Standby Load Acceptance		2.6 sec
Load Acceptance, ISO 8528-5		G3

Fuel Consumption	Prime		Standby	
	kg/h	lb/hr	kg/h	lb/hr
25 % Power	3.7	8.2	4.0	8.8
50 % Power	6.4	14.1	6.8	15.1
75 % Power	8.9	19.7	9.9	21.7
100 % Power	11.4	25.1	12.6	27.7

### DEF Data

Rating	Engine Speed	DEF Consumption*		Percent of Diesel Consumption**
	RPM	g/kWh	lb/hp-hr	%
Standby	1500	#N/A	#N/A	#N/A
Prime	1500	#N/A	#N/A	#N/A

\*DEF conversion factor: 1.087 kg/l (9.071 lb/gal)

\*\*Percent of diesel consumption by volume at 100% power

Performance Curve: 3029HP530