



**JOHN DEERE**

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Generator  
 30 kVA Prime Market; Dual Frequency  
 1800 RPM (60 Hz)

**PowerTech™ M 2.9L Engine  
 Model: 3029TFG80**

42 hp (31 kW) Prime  
 47 hp (35 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
42	31	47	35

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	25-27	32-34	28-30	35-37

Note 1: Based on nominal engine power.

Note 2: kWe / kVA rating assumes 90% efficiency. Generator Efficiency % will vary.

**STANDARD CONDITIONS**

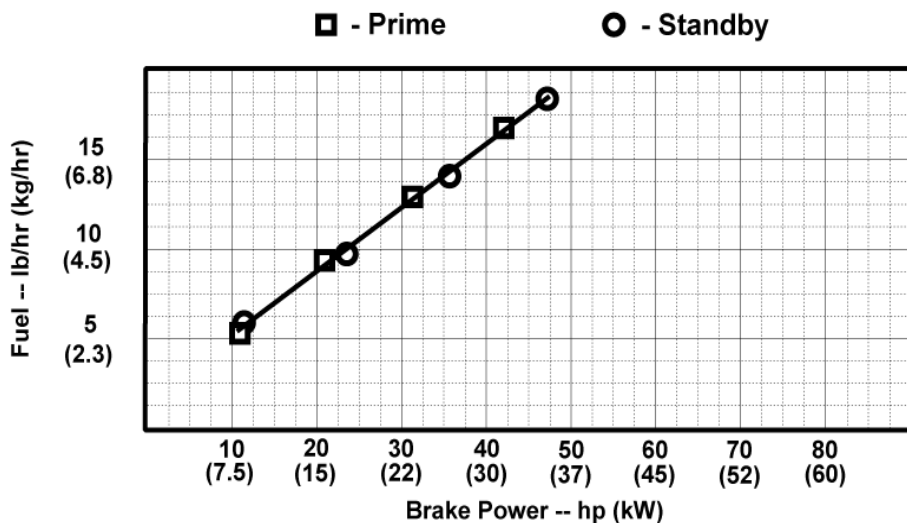
Air Intake Restriction.....12 in.H<sub>2</sub>O (3 kPa)  
 Exhaust Back Pressure.....60 in.H<sub>2</sub>O (15 kPa)

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"> <li>EPA Interim Tier 4</li> <li>EU Stage III A</li> </ul>	
Ref: Engine Emission Label	

Performance Curve: 3029TFG80\_U80\_A18

## Engine Installation Criteria

### General Data

Model	3029TFG80	
Number of Cylinders	3	
Bore	106 mm	4.2 in.
Stroke	110 mm	4.3 in.
Displacement	2.9 L	177 in. <sup>3</sup>
Compression Ratio	17.2 : 1	
Valves per Cylinder, Intake/Exhaust	1 / 1	
Firing Order	1-2-3	
Combustion System	Direct injection	
Engine Type	In-line, 4-cycle	
Aspiration	Turbocharged	
Engine Crankcase Vent System	Open	

### Physical Data

Length	717 mm	28.2 in.
Width	529 mm	20.8 in.
Height	961 mm	37.8 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	316 kg	697 lb
Center of Gravity Location, X-axis From Rear Face of Block	253 mm	10.0 in.
Center of Gravity Location, Y-axis Right of Crankshaft	9 mm	0.4 in.
Center of Gravity Location, Z-axis Above Crankshaft	143 mm	5.6 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	4003 N	900 lb
Thrust Bearing Load Limit Forward, Continuous	2224 N	500 lb
Thrust Bearing Load Limit Rearward, Intermittent	2000 N	450 lb
Thrust Bearing Load Limit Rearward, Continuous	1000 N	225 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)	640 amps	
Recommended Battery Capacity, 24V @32 °F (0 °C)	570 amps	
Starter Rolling Current, 12V @32 °F (0 °C)	640 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	570 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	1000 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, 12V	0.0012 Ohm	
Max. Allowable Start Circuit Resistance, 24V	0.002 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. Alternator Temperature	120 °C	248 °F
Max. Starter Temperature	120 °C	248 °F
Max. Temperature, All Other Electronics	125 °C	257 °F

### Cooling System

Engine Heat Rejection	20.1 kW	1144 BTU/min
Engine Radiated Heat	kW	
Coolant Flow	110 L/min	29 gal/min
Thermostat Start to Open	82 °C	180 °F
Thermostat Fully Open	94 °C	201 °F
Engine Coolant Capacity	5.7 Liter	6.0 quart
Min. Coolant Fill Rate	11 L/min	2.9 gal/min
Min. Pressure Cap	70 kPa	10 psi
Min. Pump Inlet Pressure @203°F (95°C) Coolant	30 kPa	4 psia
Max. External Coolant Restriction	40 kPa	6 psi
Max. Top Tank Temperature	105 °C	221 °F
Max. Top Tank Temperature 95% of Operating Hours	100 °C	212 °F
Min. Limiting Ambient Temperature	47 °C	117 °F

Performance Curve: 3029TFG80\_U80\_A18

## Engine Installation Criteria

### Exhaust System

Exhaust Flow	8.3 m <sup>3</sup> /min	293 ft. <sup>3</sup> /min
Exhaust Temperature	580 °C	1076 °F
Max. Allowable Exhaust Restriction	7.5 kPa	30 in. H <sub>2</sub> O
Max. Bending Moment on Turbo Outlet	7.0 N-m	5.2 lb-ft
Max. Shear on Turbine Outlet	11 kg	24 lb

### Fuel System

ECU Description	NA	
Fuel Injection Pump	Stanadyne DB2	
Governor Type	Mechanical	
Governor Regulation	3-5	
Total Fuel Flow	95 kg/hr	209 lb/hr
Fuel Consumption	8.4 kg/hr	18.5 lb/hr
Fuel Temperature Rise, Inlet to Return	17.8 Δ°C	32 Δ°F
Max. Fuel Inlet Restriction	20 kPa	80 in. H <sub>2</sub> O
Min. Fuel Inlet Pressure	7.6 kPa	30 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
Max. Fuel Inlet Temperature	80 °C	176 °F
Fuel Filter @98% Efficiency	8 mic	

### Lubrication System

Oil Pressure at Rated Speed	328 kPa	48 psi
Oil Pressure at Low Idle	NA	
Max. Oil Carryover in Blow-By	NA	
Max. Airflow in Blow-By	NA	
Max. Crankcase Pressure	0.5 kPa	2 in. H <sub>2</sub> O

### Air Intake System

Engine Air Flow	3.6 m <sup>3</sup> /min	127 ft. <sup>3</sup> /min
Air Mass Flow	252 kg/hr	556 lb/hr
Intake Manifold Pressure	74.8 kPa	10.8 psi
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 <sub>2</sub> O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25.0 in. H <sub>2</sub> O
Air Cleaner Efficiency	99.9 %	

### Performance Data

Rated Power, Prime	31 kW	42 HP
Rated Power, Standby	35 kW	47 HP
Rated Speed	1800 rpm	
Rated Torque, Prime	164.5 N-m	121 lb-ft
Rated Torque, Standby	185.7 N-m	137 lb-ft
BMEP, Prime	714 kPa	104 psi
Altitude Capability	3000 m	9843 ft
Friction Power @Rated Speed	16 kW	21 HP
Air:Fuel Ratio	29.5 : 1	
Smoke @Rated Speed	Bosch No.	
Noise @1 m	92.5 dB(A)	
0-100% Standby Load Acceptance	0.6 sec	
Load Acceptance, ISO 8528-5	G3	

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	5.5	2.5	6.0	2.7
50 % Power	9.0	4.1	9.7	4.4
75 % Power	13.0	5.9	14.1	6.4
100 % Power	16.8	7.6	18.5	8.4

Performance Curve: 3029TFG80\_U80\_A18