



ENGINE PERFORMANCE CURVE

POWERTECH 2.9L Engine
Model: 3029DFS29

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

36 hp (27 kW) Prime
41 hp (31 kW) Standby
 [Option 16LF]

Nominal Engine Power @ 1500 RPM			
Prime		Standby	
HP	kW	HP	kW
36	27	41	31

Generator Efficiency %	Fan Power		Power Factor	Prime Rating		Standby Rating ¹		4 sec Standby Block Load Capability
	hp	kW		kW	kVA	kW	kVA	
88-92	2.7*	2	0.8	22-23	28-29	26*-27*	32*-34*	100%*

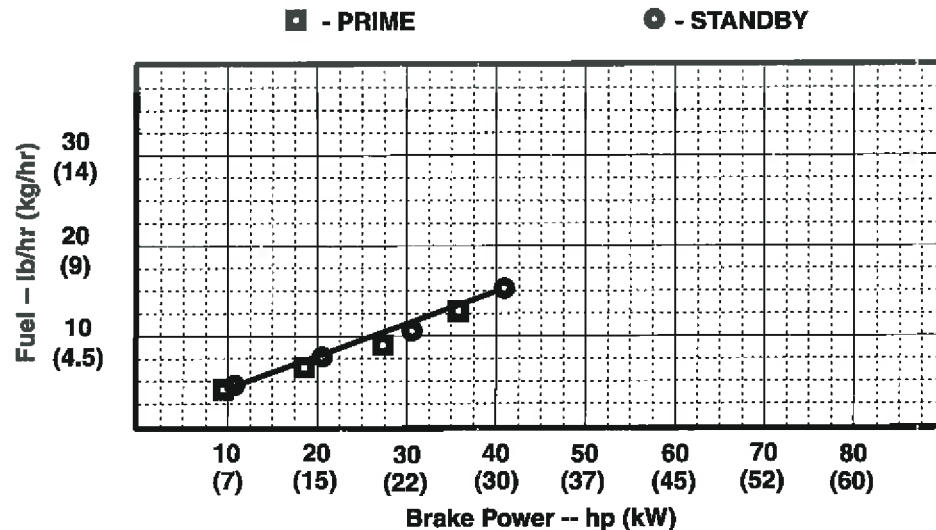
Note 1: Based on nominal engine power.*

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. *

Emission Certifications:	Certified by:
NONE	
Ref: Engine Emission Label	

* Revised Data
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 Sept 2014

Engine Specification Data

General Data

Model	3029DFS29
Number of Cylinders	3
Bore and Stroke--in.(mm).....	4.19 x 4.33 (106 x 110)
Displacement--in. ³ (L).....	179 (2.9)
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	Natural
Engine Crankcase Vent System	Open
Maximum Crankcase Pressure--in.H ₂ O (kPa).....	2 (0.5)

Physical Data

Length--in.(mm)	28.2 (716)
Width--in.(mm)	20.4 (519)
Height--in.(mm).....	32.2 (819)
Weight, dry--lb (kg).....	696 (316)
(Includes SAE 4 flywheel housing, RE28119 flywheel, starter and electrics.)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in.(mm)....	7.8 (198)
Right of Crankshaft (Y-axis)--in.(mm)	0.3 (10)
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) ...	600 (814)
Thrust Bearing Load Limit (Forward)	
Continuous--lb (N)	500 (2224)
Intermittent--lb (N).....	900 (4003)

Electrical System

Recommended Battery Capacity (CCA)	
12 Volt System--amp	640
24 Volt System--amp	570
Maximum Allowable Starting Circuit Resistance	
12 Volt System--Ohm.....	0.0012
24 Volt System--Ohm.....	0.002
Starter Rolling Current--12 Volt System	
At 32 °F (0 °C)--amp.....	780
At -22 °F (-30 °C)--amp	1000
Starter Rolling Current--24 Volt System	
At 32 °F (0 °C)--amp.....	600
At -22 °F (-30 °C)--amp	700

Air System

	<u>Prime</u>	<u>Standby</u>
Maximum Allowable Temp Rise--Ambient Air to		
Engine Inlet--°F (°C).....	15 (8)	15 (8)
Maximum Air Intake Restriction		
Dirty Air Cleaner--in.H ₂ O (kPa)	25 (6.25)	25 (6.25)
Clean Air Cleaner--in.H ₂ O (kPa)	12 (3)	12 (3)
Engine Air Flow--ft ³ /min (m ³ /min).....	61 (1.7)	66 (1.8)
Intake Manifold Pressure--psi (kPa) ...	Ambient	Ambient
Rec'd. Intake Pipe Dia--in.(mm).....	2.5 (63.5)	2.5 (63.5)

Exhaust System

	<u>Prime</u>	<u>Standby</u>
Exhaust Flow--ft ³ /min (m ³ /min).....	170 (4.7)	185 (5.2)
Exhaust Temperature--°F (°C)	1027(555)	1030(610)
Max. Allow. Back Press.--in.H ₂ O (kPa).30 (7.5)	30 (7.5)	30 (7.5)
Recm'd Exhaust Pipe Dia--in.(mm) ...	2.5 (63.5)	2.5 (63.5)

Cooling System

	<u>Prime</u>	<u>Standby</u>
Engine Heat Rejection--BTU/min (kW) 896(16) ...	1008(18)	1008(18)
Coolant Flow--gal/min (L/min).....	24 (91)	24 (91)
Thermostat Start to Open--°F (°C)	180 (82)	180 (82)
Thermostat Fully Open--°F (°C).....	202 (94)	202 (94)
Maximum Water Pump		
Inlet Restriction--in.H ₂ O (kPa).....	20 (5)	20 (5)
Engine Coolant Capacity--qt (L)	6 (5.7)	6 (5.7)
Recm'd Pressure Cap--psi (kPa)	10* (69*)	10* (69*)
Maximum Top Tank Temp--°F (°C)	221 (105)	221 (105)
Min. Coolant Fill Rate--gal/min (L/min) ...	3 (11)	3 (11)
Min. Air-to-Boil Temperature--°F (°C) ..	117 (47)	117 (47)

Fuel System

	<u>Prime</u>	<u>Standby</u>
Fuel Injection Pump	Stanadyne	Stanadyne
Governor Regulation.....	5 %	5 %
Governor Type	Mechanical	Mechanical
Total Fuel Flow--lb/hr (kg/hr).....	203 (92)	203 (92)
Fuel Consumption--lb/hr (kg/hr).....	12.8(5.8)	15.7(7.1)
Maximum Fuel Transfer Pump Suction--		
ft (m) fuel.....	3 (0.9)	3 (0.9)
Fuel Filter Micron Size @ 98 % Efficiency.....	8	8

Lubrication System

	<u>Prime</u>	<u>Standby</u>
Oil Pressure at Rated Speed--psi (kPa)50 (345) ...	50 (345)	50 (345)
Oil Pressure at Low Idle--psi (kPa)	15 (105)	15 (105)
In Pan Oil Temperature--°F (°C)	240 (115)	240 (115)
Oil Pan Capacity, High--qt (L)	5.3 (5)	5.3 (5)
Oil Pan Capacity, Low--qt (L).....	4.3 (4.1)	4.3 (4.1)
Total Engine Oil Cap. w/ Filters--qt (L)...	6.3 (6)	6.3 (6)
Engine Angularity Limits (Continuous)		
Any Direction--degrees.....	20	20

Performance Data

	<u>Prime</u>	<u>Standby</u>
Rated Power--hp (kW)	36 (27)	41 (31)
Rated Speed--rpm	1500	1500
Low Idle Speed--rpm	1400*	1400*
BMEP--psi (kPa)	106 (730)	121 (834)
Friction Power		
@ Rated Speed--hp (kW)	18 (13)	18 (13)
Altitude Capability--ft (m)	1000 (300)*	1000 (300)*
Ratio--Air : Fuel.....	21:1	20:1
Noise--dB(A) @ 1 m	91.1	91.8

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

	<u>Prime</u>	<u>Standby</u>
25 % Power	4.3 (1.9)	4.6 (2.1)
50 % Power	6.9 (3.1)	7.7 (3.5)
75 % Power	9.8 (4.4)	10.8 (4.9)
100 % Power	12.8 (5.8)	15.7 (7.1)

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

* Revised Data

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Sept 2014