	Cummins Inc. Columbus, Indiana 47201 Engine Data Sheet	Basic Engine Model: QSX15-G9 Nonroad 1	Curve Number: FR-10349	G-DRIVE QSX 1
		Engine Critical Parts List: CPL: 2900	Date: 30Oct01	
Displacement : 15 liter (912 in³)		Bore : 137 mm (5.39 in.) Stroke : 169 mm (6.65 in.)		
No. of Cylinders : 6		Aspiration : Turbocharged and Charge Air Cooled		

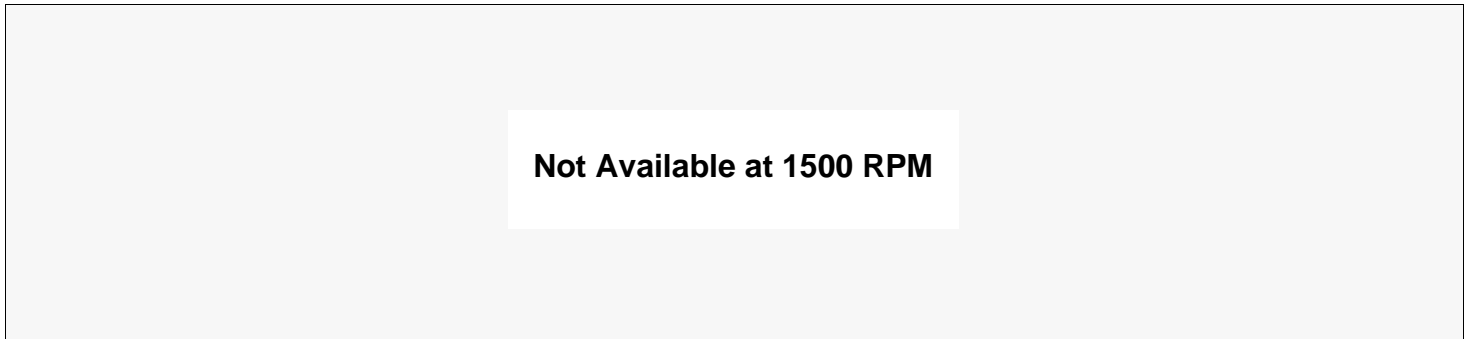
•• PRELIMINARY ••

Engine Speed RPM	Standby Power		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
1800	563	755	507	680	354	475

Para mas información visita: www.plantaselectricasdemexico.com

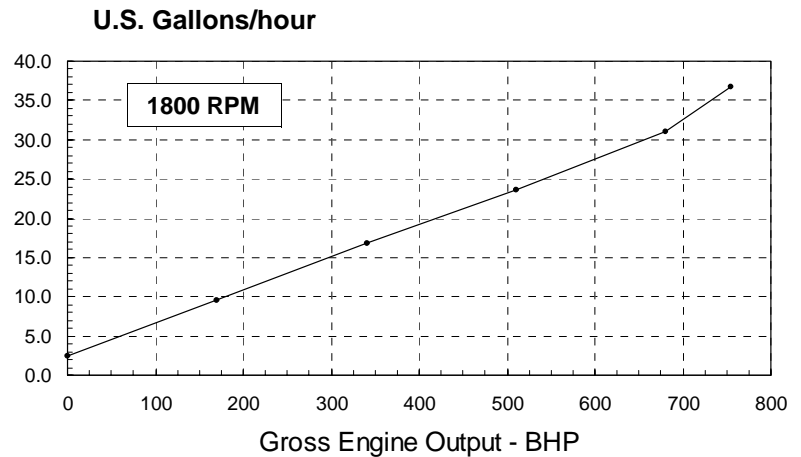
email: ventas@plantaselectricasdemexico.com

Engine Performance Data @ 1500 RPM



Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm-h	lb/ BHP-h	liter/ hour	U.S. Gal/ hour
STANDBY POWER						
100	563	755	0.210	0.345	138.8	36.7
PRIME POWER						
100	507	680	0.196	0.323	117.0	31.0
75	380	510	0.199	0.328	89.3	23.6
50	254	340	0.213	0.350	63.6	16.8
25	127	170	0.244	0.401	36.3	9.6
CONTINUOUS POWER						
100	354	475	0.201	0.331	83.6	22.1



CONVERSIONS: (liters = U.S. Gal x 3.785) (Engine kWm = BHP x 0.746) (U.S. Gal = liters x 0.2642) (Engine BHP = Engine kWm x 1.34)

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2. See reverse side for application rating guidelines.

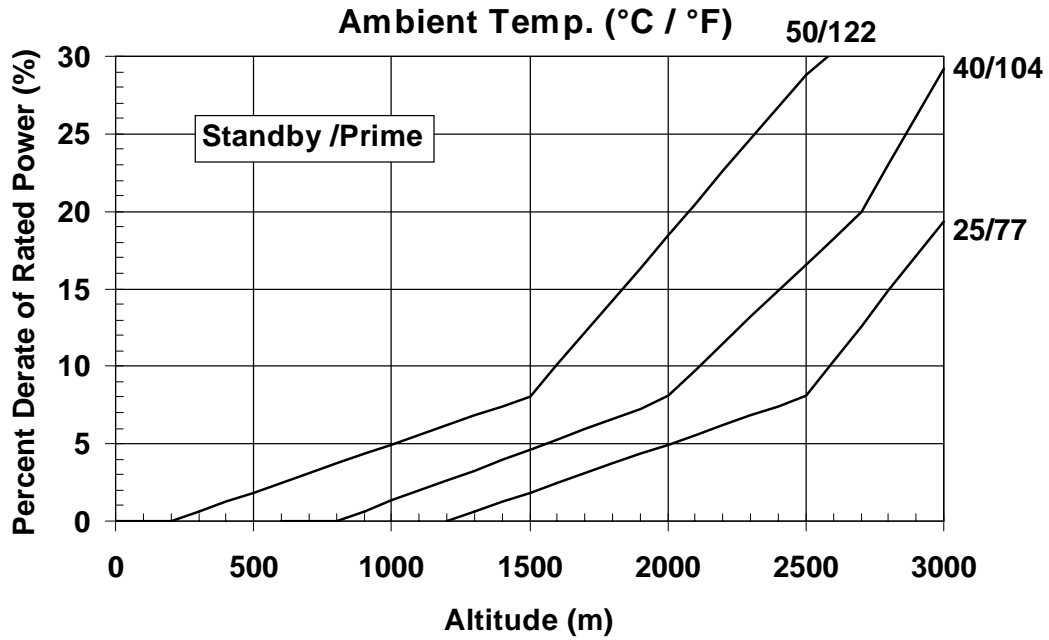
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/liter (7.1 lbs/U.S. gal).

Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

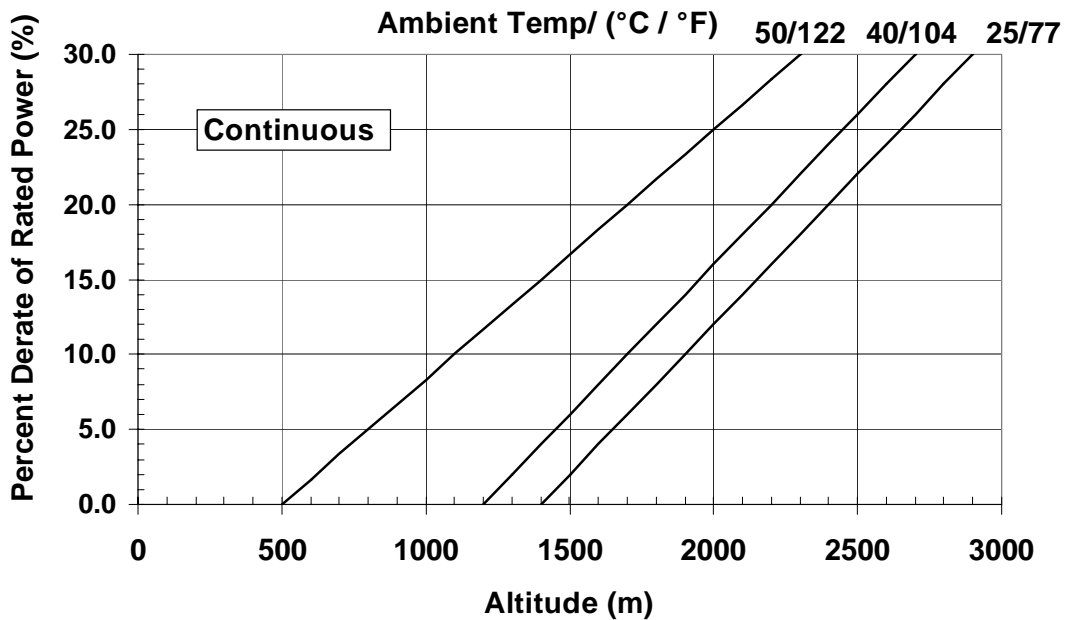
D.K. Trueblood

•• PRELIMINARY ••

Qsx15-G9 Nonroad 1 1800RPM



Qsx15-G9 Nonroad 1 1800 RPM



Note: Derates shown are based on 10 in H₂O air intake restriction and 2 in Hg exhaust

Reference Standards:

BS-5514 and DIN-6271 standards are based on ISO-3046.

Operation At Elevated Temperature And Altitude:

The engine may be operated at:

1800 RPM up to 800 m (2625 ft) and 40 °C (104 °F) without power deration.

POWER RATING APPLICATION GUIDELINES FOR GENERATOR DRIVE ENGINES

These guidelines have been formulated to ensure proper application of generator drive engines in A.C. generator set installations. Generator drive engines are not designed for and shall not be used in variable speed D.C. generator set applications.

STANDBY POWER RATING is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Standby Power rating.

This rating should be applied where reliable utility power is available. A standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating. Standby ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

CONTINUOUS POWER RATING is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

PRIME POWER RATING is applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

UNLIMITED TIME RUNNING PRIME POWER

Prime Power is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours.

The total operating time at 100% Prime Power shall not exceed 500 hours per year.

A 10% overload capability is available for a period of 1 hour within a 12 hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

LIMITED TIME RUNNING PRIME POWER

Prime Power is available for a limited number of hours in a non-variable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Prime Power rating should use the Continuous Power rating.

•• PRELIMINARY ••

Cummins Inc.
Engine Data Sheet

ENGINE MODEL : QSX15-G9 Nonroad 1

CONFIGURATION NUMBER : D103003GX03

DATA SHEET : DS-10349

DATE : 3Oct01

PERFORMANCE CURVE : FR-10349

INSTALLATION DIAGRAM

• Fan to Flywheel : 3170370

CPL NUMBER

• Engine Critical Parts List : 2900

GENERAL ENGINE DATA

Type	4 Cycle; In-line; 6-Cylinder Diesel
Aspiration	Turbocharged and Charge Air Cooled
Bore x Stroke	5.39 x 6.65 (137 x 169)
Displacement	912 (15)
Compression Ratio	17 : 1
Dry Weight	3020 (1370)
Wet Weight	3250 (1475)
Moment of Inertia of Rotating Components	
• with FW 1022 Flywheel	106.7 (4.5)
• with FW 1025 Flywheel	192.0 (8.1)
Center of Gravity from Front Face of Block	19 (483)
Center of Gravity above Crankshaft Centerline	10 (255)
Maximum Static Loading at Rear Main Bearing	5400 (2450)

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block	1500 (2034)
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EXHAUST SYSTEM

Maximum Back Pressure at Standby Power Rating	2 (51)
Maximum Bending Moment at the Turbo Flange	11 (15)

AIR INDUCTION SYSTEM

Maximum Temperature Rise Between Engine Air Inlet and Intake Manifold	43 (24)
Maximum Intake Air Restriction Including Air Filter Plumbing	
• with Dirty Filter Element	25 (635)
• with Clean Filter Element	15 (381)
Maximum Allowable Pressure Drop from Turbo Outlet to Intake Manifold	4 (102)

COOLING SYSTEM

Coolant Capacity — Engine Only	25 (24)
Maximum Coolant Friction Head External to Engine — 1800 rpm	10 (69)
Maximum Static Head of Coolant Above Engine Crank Centerline	46 (14)
Standard Thermostat (Modulating) Range	180 - 200 (82 - 93)
Minimum Pressure Cap	10 (70)
Maximum Top Tank Temperature for Standby / Prime Power	230 / 220 (110 / 104)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed (Minimum)	20 (138)
@ Pressure Range — Cold	Up to 130 (Up to 900)
— Warm	35 - 40 (242 - 276)
Maximum Oil Temperature	250 (121)
Oil Capacity with OP 1493 Oil Pan : High - Low	22 - 19 (83 - 72)
Total System Capacity (Including Filter)	24 (91)
Angularity of OP 1493 Oil Pan — Front Down	5°
— Front Up	5°
— Side to Side	5°

FUEL SYSTEM

Type Injection System.....		Cummins HPI-TP
Maximum Restriction at OEM Fuel Inlet Connection..... — in Hg (mm Hg)	5.0	(127)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)..... — in Hg (mm Hg)	6.5	(165)
Maximum Fuel Flow to Injection Pump..... — US gph (liter / hr)	112	(424)
Maximum Fuel Inlet Temperature..... — °F (°C)	160	(71)
Maximum Return Fuel Flow..... — US gph (liter / hr)	102	(386)
Maximum Return Fuel Temperature @ 160°F (71°C) Fuel Inlet Temperature..... — °F (°C)	230	(110)
Minimum Fuel Tank Vent Capability..... — cfm (liter / s)	1.2	(.55)

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement)..... — volt	24
Maximum Allowable Resistance of Cranking Circuit..... — ohm	0.002
Minimum Recommended Battery Capacity	
• Cold Soak @ 50 °F (10 °C) and Above..... — 0°F CCA	600
• Cold Soak @ 32 °F to 50 °F (0 °C to 10 °C)..... — 0°F CCA	640
• Cold Soak @ 0 °F to 32 °F (-18 °C to 0 °C)..... — 0°F CCA	900

COLD START CAPABILITY

Minimum Ambient Temperature for Cold Start with Coolant Heater to Rated Speed..... — °F (°C)	7	(-14)
Minimum Ambient Temperature for Unaided Cold Start to Low Idle Speed..... — °F (°C)	25	(-4)
Minimum Ambient Temperature for NFPA110 Cold Start (90°F minimum coolant temperature)..... — °F (°C)	32	(0)

PERFORMANCE DATA

- All data is based on:
- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
 - Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
 - ISO 3046, Part 1, Standard Reference Conditions of:

Barometric Pressure	: 100 kPa (29.53 in Hg)	Air Temperature	: 25 °C (77 °F)
Altitude	: 110 m (361 ft)	Relative Humidity	: 30%

Steady State Stability Band at any Constant Load..... — %	+/- 0.25%
Estimated Free Field Sound Pressure Level of a Typical Generator Set;	
Excludes Exhaust Noise; at Rated Load and 7.5 m (25 ft); 1800 rpm..... — dBA	89.3
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°; 1800 rpm, rated load..... — dBA	125.6

Governed Engine Speed..... — rpm	1800
Engine Idle Speed..... — rpm	675 - 775
Gross Engine Power Output..... — BHP (kW _m)	755 (563)
Brake Mean Effective Pressure..... — psi (kPa)	364 (2508)
Piston Speed..... — ft / min (m / s)	1995 (10.1)
Friction Horsepower..... — HP (kW _m)	70 (52)
Engine Coolant Flow at Stated Friction Head External to Engine:	
• 3 psi Friction Head..... — US gpm (liter / s)	105 (6.6)
• Maximum Friction Head..... — US gpm (liter / s)	87 (5.5)
Turbo Compressor Outlet Pressure..... — psi (kPa)	41.2 (284)
Turbo Compressor Outlet Temperature..... — °F (°C)	435 (224)
Intake Air Flow..... — cfm (liter / s)	1550 (732)
Exhaust Gas Temperature..... — °F (°C)	940 (503)
Exhaust Gas Flow..... — cfm (liter / s)	3845 (1815)
Air-to-Fuel Ratio..... — air : fuel	25.5 : 1
Radiated Heat to Ambient..... — BTU / min (kW _m)	2500 (44)
Heat Rejection to Coolant..... — BTU / min (kW _m)	11000 (193)
Heat Rejection to Exhaust..... — BTU / min (kW _m)	24600 (432)
Heat Rejection to Fuel *..... — BTU / min (kW _m)	450 (8)
Heat Rejection to Aftercooler..... — BTU / min (kW _m)	8900 (156)

STANDBY		PRIME POWER	
60 hz	50 hz	60 hz	50 hz
1800		1800	
675 - 775		675 - 775	
755 (563)		680 (507)	
364 (2508)		329 (2267)	
1995 (10.1)		1995 (10.1)	
70 (52)		70 (52)	
	Not Available at 1500 RPM (50 hz)		Not Available at 1500 RPM (50 hz)
105 (6.6)		105 (6.6)	
87 (5.5)		87 (5.5)	
41.2 (284)		33.0 (228)	
435 (224)		376 (191)	
1550 (732)		1310 (618)	
940 (503)		890 (476)	
3845 (1815)		3200 (1510)	
25.5 : 1		25.6 : 1	
2500 (44)		2200 (39)	
11000 (193)		9000 (158)	
24600 (432)		19500 (342)	
450 (8)		450 (8)	
8900 (156)		6300 (111)	

* Maximum heat rejection which occurs at rated speed, no load.

- N.A. - Data is Not Available
- N/A - Not Applicable to this Engine
- TBD - To Be Determined

● **PRELIMINARY** ●

ENGINE MODEL : QSX15-G9 Nonroad 1
 DATA SHEET : DS-10349
 DATE : 3Oct01
 CURVE NO. : FR-10349