



**Cummins Inc.**  
Columbus, Indiana 47202-3005  
**Engine Data Sheet**

Basic Engine Model:  
**QSX15-G3**

Curve Number:  
**FR-10442**

**G-DRIVE  
QSX  
1**

Engine Critical Parts List:  
**CPL: 8081**

Date:  
**26Apr07**

Displacement : **15 liter (912 in<sup>3</sup>)**

Bore : **137 mm (5.39 in.)** Stroke : **169 mm (6.65 in.)**

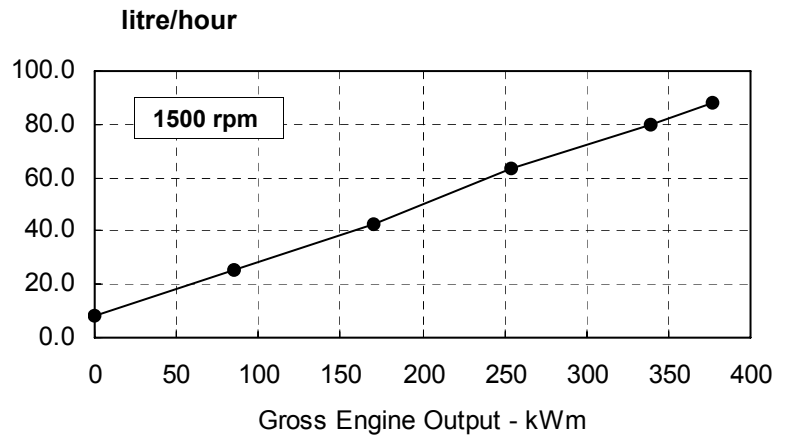
No. of Cylinders : **6**

Aspiration : **Turbocharged and Charge Air Cooled**

Engine Speed rpm	Standby Power		Prime Power		Continuous Power	
	kWm	hp	kWm	hp	kWm	hp
1500	377	505	339	455	239	320
1800	410	550	369	495	261	350

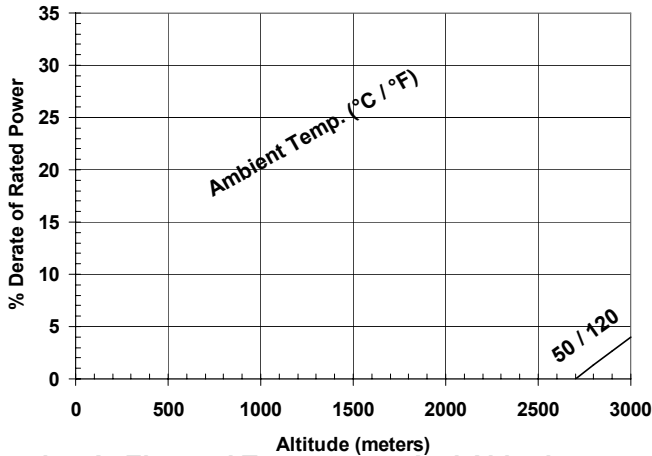
### Engine Performance Data @ 1500 rpm

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	hp	kg/ kWm·h	lb/ hp·h	liter/ hour	US gal/ hour
<b>STANDBY POWER</b>						
100	377	505	0.199	0.327	88.0	23.3
<b>PRIME POWER</b>						
100	339	455	0.201	0.330	80.0	21.1
75	254	341	0.211	0.347	63.1	16.7
50	170	228	0.215	0.353	42.8	11.3
25	85	114	0.255	0.420	25.5	6.7
<b>CONTINUOUS POWER</b>						
100	239	320	0.210	0.345	58.9	15.5

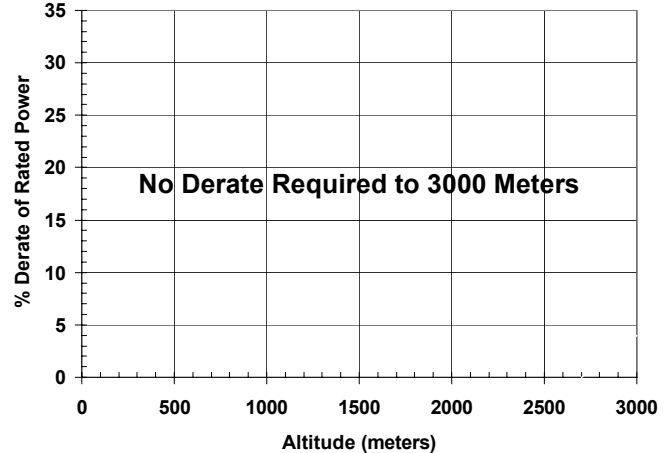


### Power Derate Curves:

**Standby / Prime Power**



**Continuous Power**



### Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 1.8% per 300 m (1000 ft), and 10% per 10 °C (18 °F).

### CONVERSIONS: (Liters = US Gal x 3.785) (USGal = Liters x 0.2642)

These guidelines have been formulated to ensure proper application of generator drive engines in A.C. generator set installations. **STANDBY POWER RATING:** 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. **PRIME POWER RATING:** 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:** Limited Time 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. **CONTINUOUS POWER RATING:** 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.

### Data Subject to Change Without Notice

Reference AEB 10.47 for determining Electrical Output.  
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. Derates shown are based on 15 in H<sub>2</sub>O air intake restriction and 2 in Hg exhaust back pressure.  
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/liter (7.1 lbs/US 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.

Data Status: Limited Production  
Data Tolerance: ± 5%

Chief Engineer: *C. J. Maister*



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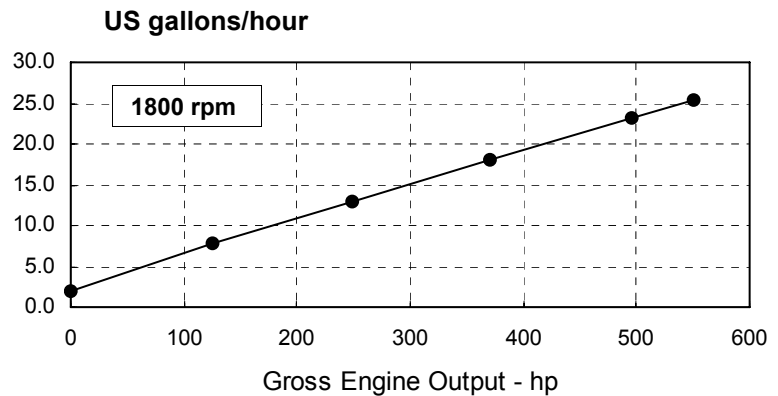
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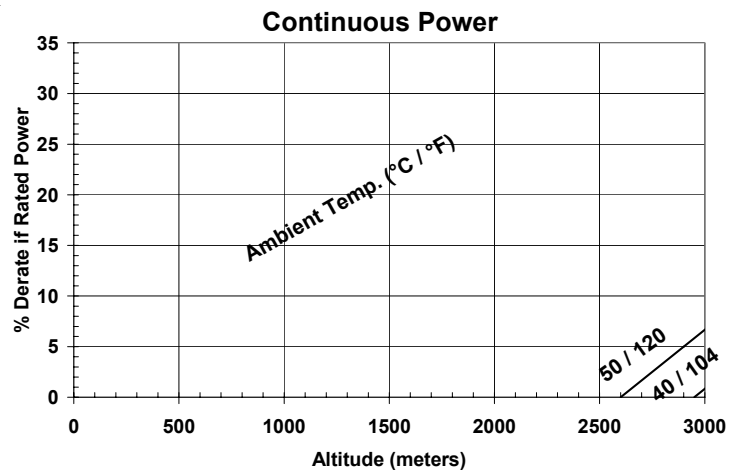
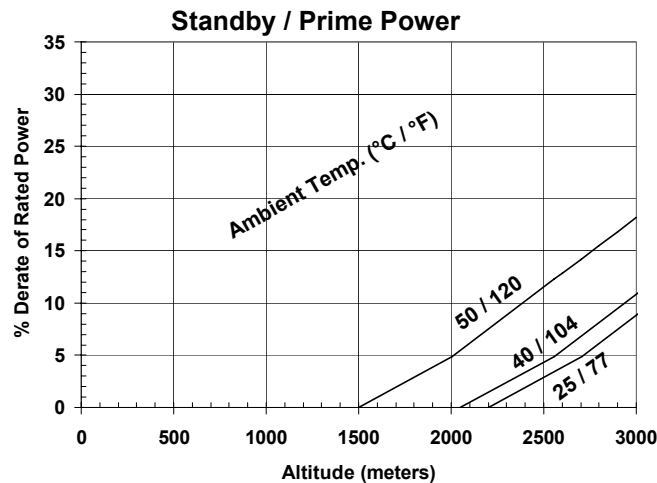
Engine Speed rpm	Standby Power		Prime Power		Continuous Power	
	kWm	hp	kWm	hp	kWm	hp
1500	377	505	339	455	239	320
1800	410	550	369	495	261	350

### Engine Performance Data @ 1800 rpm

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	hp	kg/ kWm·h	lb/ hp·h	liter/ hour	US gal/ hour
<b>STANDBY POWER</b>						
100	410	550	0.199	0.327	95.9	25.3
<b>PRIME POWER</b>						
100	369	495	0.202	0.332	87.6	23.1
75	277	371	0.209	0.344	68.1	18.0
50	185	248	0.225	0.370	48.8	12.9
25	92	124	0.277	0.455	30.0	7.9
<b>CONTINUOUS POWER</b>						
100	261	350	0.216	0.356	66.4	17.5



### Power Derate Curves:



### Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 3.5% per 300 m (1000 ft), and 9% per 10 °C (18 °F).

**CONVERSIONS:**(Liters = US Gal x 3.785) (USGal = Liters x 0.2642)

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Data Status: Limited Production

Data Tolerance: ± 5%

Chief Engineer:

# Cummins Inc.

## Engine Data Sheet

**ENGINE MODEL : QSX15-G3**

**CONFIGURATION NUMBER : D103003GX03**

**DATA SHEET : DS-10442**

**DATE : 26Apr07**

**PERFORMANCE CURVE : FR-10442**

**INSTALLATION DIAGRAM**

- Fan to Flywheel: 3170370

**CPL NUMBER**

- Engine Critical Parts List :8081

### 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 .....	3 (76)
Maximum Bending Moment to 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)
— 1500 rpm .....	8 (55)
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)

## FUEL SYSTEM

Type Injection System .....	Cummins HPI-TP
Maximum Restriction at OEM 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 .....	112 (424)
Maximum Fuel Inlet Temperature..... — °F (°C)	160 (71)
Maximum Return Fuel Flow .....	102 (386)
Maximum Return Fuel Temperature @ 160°F (71°C) Fuel Inlet Temperature .....	210 (99)
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 @ 0 °F to 32 °F (-18 °C to 0 °C)..... — °F CCA	1425

## COLD START CAPABILITY

Minimum Ambient Temperature for Cold Start with Coolant Heater to Rated Speed .....	7 (-14)
Minimum Ambient Temperature for Unaided Cold Start to Low Idle Speed.....	25 (-4)
Minimum Ambient Temperature for NFPA 110 Cold Start (90 °F minimum coolant temperature).....	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 / 1500 rpm .....	— dBA	89.0 / 89.5
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°; 1800 rpm / 1500 rpm .....	— dBA	125 / 123

Governed Engine Speed .....	rpm
Engine Idle Speed.....	rpm
Gross Engine Power Output.....	hp (kW <sub>m</sub> )
Brake Mean Effective Pressure.....	psi (kPa)
Piston Speed .....	ft/min (m/s)
Friction Horsepower.....	HP (kW <sub>m</sub> )
Engine Water Flow at Stated Friction Head External to Engine:	
• 3 psi Friction Head.....	US gpm (liter/s)
• Maximum Friction Head .....	US gpm (liter/s)
Turbo Compressor Outlet Pressure.....	psi (kPa)
Turbo Compressor Outlet Temperature .....	°F (°C)
Intake Air Flow .....	cfm (liter/s)
Exhaust Gas Temperature .....	°F (°C)
Exhaust Gas Flow .....	cfm (liter/s)
Air-to-Fuel Ratio .....	air : fuel
Radiated Heat to Ambient .....	BTU/min (kW <sub>m</sub> )
Heat Rejection to Coolant.....	BTU/min (kW <sub>m</sub> )
Heat Rejection to Exhaust.....	BTU/min (kW <sub>m</sub> )
Heat Rejection to Fuel *	BTU/min (kW <sub>m</sub> )
Heat Rejection to Aftercooler.....	BTU/min (kW <sub>m</sub> )

	<b>STANDBY</b>		<b>PRIME POWER</b>	
	<b>60 hz</b>	<b>50 hz</b>	<b>60 hz</b>	<b>50 hz</b>
	1800	1500	1800	1500
	675 - 775	675 - 775	675 - 775	675 - 775
	550 (410)	505 (377)	495 (369)	455 (339)
	264 (1820)	292 (2013)	238 (1640)	262 (1806)
	1995 (10.1)	1663 (8.4)	1995 (10.1)	1663 (8.4)
	70 (52)	50 (37)	70 (52)	50 (37)
	105 (6.6)	84 (5.3)	105 (6.6)	84 (5.3)
	87 (5.5)	68 (4.3)	87 (5.5)	68 (4.3)
	31 (214)	30 (207)	29 (200)	27 (185)
	380 (193)	351 (177)	360 (182)	328 (164)
	1280 (640)	1010 (475)	1210 (571)	935 (441)
	810 (432)	870 (466)	750 (400)	840 (449)
	3100 (1460)	2620 (1240)	2830 (1355)	2420 (1150)
	29.8 : 1	26.4 : 1	31.5 : 1	27.3 : 1
	2050 (36)	2000 (35)	1970 (35)	1960 (34)
	6700 (117)	6450 (113)	6310 (111)	6050 (106)
	17050 (300)	15500 (270)	15500 (272)	14300 (250)
	450 (8)	450 (8)	450 (8)	450 (8)
	5420 (95)	4220 (74)	4875 (86)	3675 (65)

\* 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

**ENGINE MODEL :** QSX15-G3  
**DATA SHEET :** DS-10442  
**DATE :** 26Apr07  
**CURVE NO. :** FR-10442

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