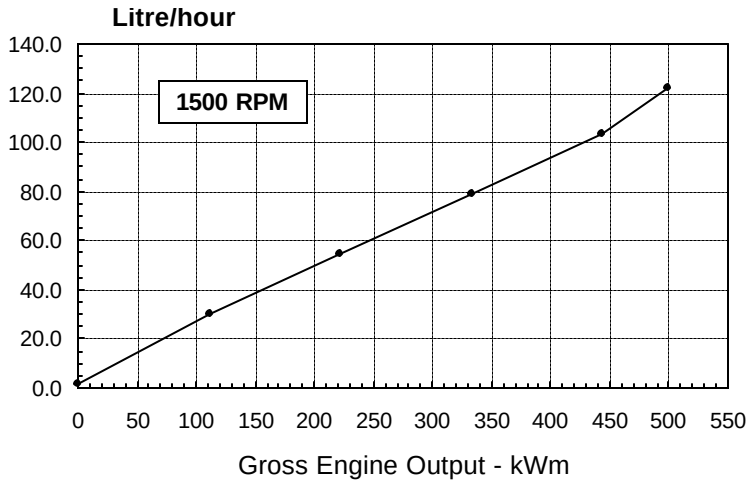
Cummins Inc. Columbus, Indiana 47201 **Engine Data Sheet**	Basic Engine Model: **QSX15-G8**	Curve Number: **FR-10401**	*G-DRIVE* **QSX** **1**
	Engine Critical Parts List: **CPL: 8081**	Date: **14Jan05**	

Displacement : **15** liter (**912** in^3)	Bore : **137** mm (**5.39** in.) Stroke : **169** mm (**6.65** in.)
No. of Cylinders : **6**	Aspiration : **Turbocharged and Charge Air Cooled**

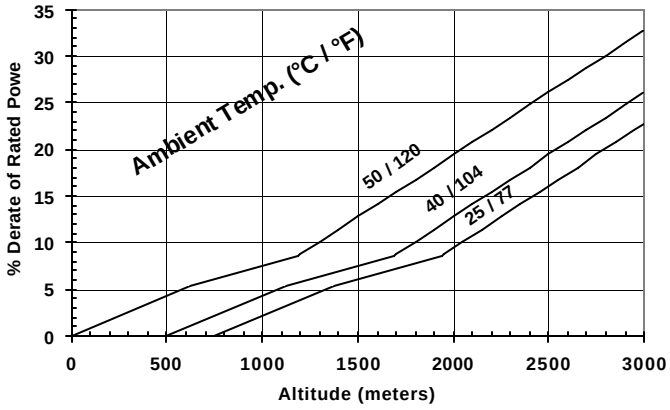
Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kWm	BHP	kWm	BHP	kWm	BHP
1500	500	670	444	595	317	425
1800	455	610	414	555	295	395

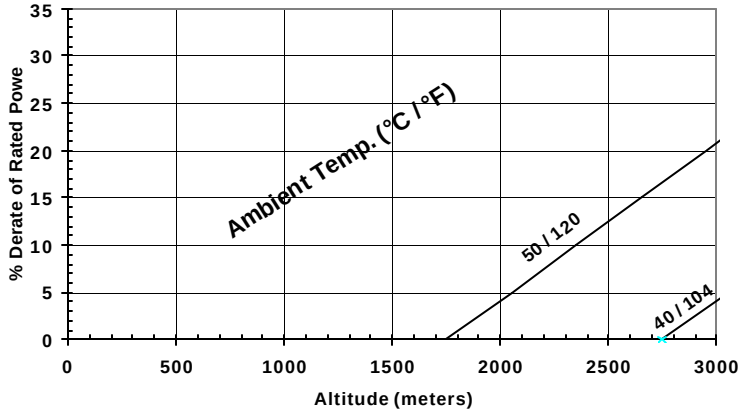
Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm·h	lb/ BHP·h	liter/ hour	U.S. Gal/ hour
STANDBY POWER						
100	500	670	0.209	0.343	123	32.4
PRIME POWER						
100	444	595	0.198	0.326	103	27.3
75	333	446	0.201	0.331	78.7	20.8
50	222	298	0.210	0.345	54.7	14.5
25	111	149	0.232	0.382	30.3	8.0
CONTINUOUS POWER						
100	317	425	0.203	0.334	75.7	20.0



Power Derate Curves:





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^o C (18^o F).

CONVERSIONS:(Liters = U.S. Gal x 3.785) (U.S.Gal = Liters x 0.2642)

Data Subject to Change Without Notice

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.

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_20 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/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.

Data Status: Limited Production

Data Tolerance: ± 5%

Chief Engineer: D K. Trueblood

Cummins Inc.	Basic Engine Model: QSX15-G8	Curve Number: FR-10401
Columbus, Indiana 47201	Engine Critical Parts List: CPL: 8081	Date: 14Jan05
Engine Data Sheet		

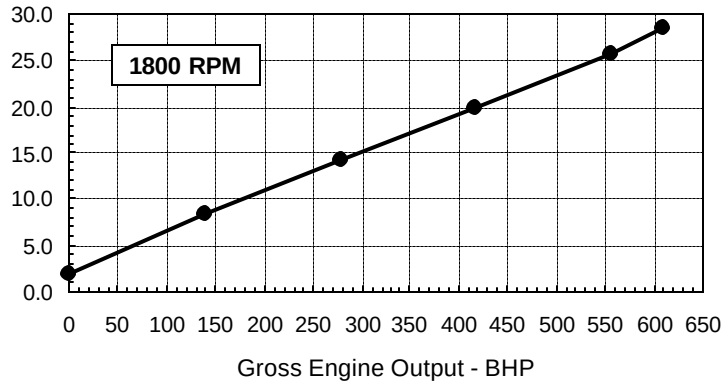
Displacement : **15** liter (**912** in^3)	Bore : **137** mm (**5.39** in.) Stroke : **169** mm (**6.65** in.)
No. of Cylinders : **6**	Aspiration : **Turbocharged and Charge Air Cooled**

Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kWm	BHP	kWm	BHP	kWm	BHP
1500	500	670	444	595	317	425
1800	455	610	414	555	295	395

Engine Performance Data @ 1800 RPM

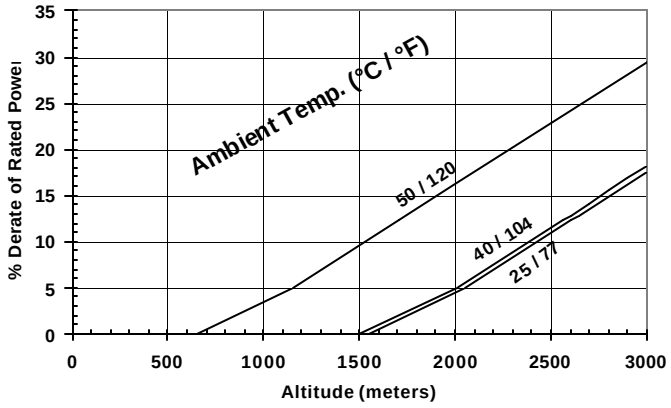
OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm·h	lb/ BHP·h	liter/ hour	U.S. Gal/ hour
STANDBY POWER						
100	455	610	0.201	0.330	107	28.4
PRIME POWER						
100	414	555	0.201	0.330	97.6	25.8
75	311	416	0.206	0.339	75.2	19.9
50	207	278	0.219	0.361	53.4	14.1
25	104	139	0.261	0.430	31.8	8.4
CONTINUOUS POWER						
100	295	395	0.209	0.343	72.2	19.1

U.S. Gallons / hour

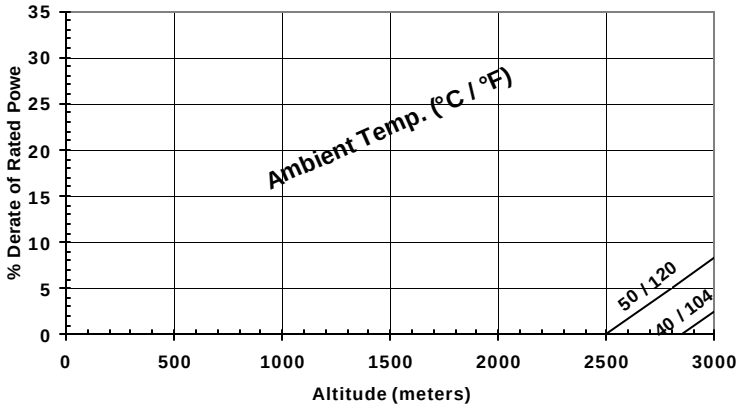


Power Derate Curves:

Standby / Prime Power



Continuous Power



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^o C (18^o F).

CONVERSIONS:(Liters = U.S. Gal x 3.785) (U.S.Gal = Liters x 0.2642)

Data Subject to Change Without Notice

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.

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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_20 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/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.

Data Status: Limited Production

Data Tolerance: ± 5%

Chief Engineer: D K. Trueblood

Cummins Inc.
Engine Data Sheet

ENGINE MODEL :QSX15-G8 **CONFIGURATION NUMBER :** D103003GX03

DATA SHEET : DS-10401
DATE : 14Jan05
PERFORMANCE CURVE : FR-10401

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	— in x in (mm x mm)	5.39 x 6.65 (137 x 169)	
Displacement	— in^3 (liter)	912 (15)	
Compression Ratio		17 : 1	
Dry Weight	— lb (kg)	3020	(1370)
Wet Weight	— lb (kg)	3250	(1475)
Moment of Inertia of Rotating Components			
• with FW 1022 Flywheel	— $lb_m \cdot ft^2$ ($kg \cdot m^2$)	106.7	(4.5)
• with FW 1025 Flywheel	— $lb_m \cdot ft^2$ ($kg \cdot m^2$)	192.0	(8.1)
Center of Gravity from Front Face of Block	— in (mm)	19	(483)
Center of Gravity above Crankshaft Centerline	— in (mm)	10	(255)
Maximum Static Loading at Rear Main Bearing	— lb (kg)	5400	(2450)

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block	— lb • ft (N • m)	1500	(2034)

EXHAUST SYSTEM

Maximum Back Pressure at Standby Power Rating	— in Hg (mm Hg)	3	(76)
Maximum Bending Moment to the Turbo Flange	— lb • ft (N • m)	11	(15)

AIR INDUCTION SYSTEM

MaximumTemperature Rise Between Engine Air Inlet and Intake Manifold	— °F (°C)	43	(24)
Maximum Intake Air Restriction Including Air Filter Plumbing			
• with Dirty Filter Element	— in H_2O (mm H_2O)	25	(635)
• with Clean Filter Element	— in H_2O (mm H_2O)	15	(381)
Maximum Allowable Pressure Drop from Turbo Outlet to Intake Manifold	— in Hg (mm Hg)	4	(102)

COOLING SYSTEM

Coolant Capacity — Engine Only	— US qt (liter)	25	(24)
Maximum Coolant Friction Head External to Engine — 1800 rpm	— psi (kPa)	10	(69)
— 1500 rpm	— psi (kPa)	8	(55)
Maximum Static Head of Coolant Above Engine Crank Centerline	— ft (m)	46	(14)
Standard Thermostat (Modulating) Range	— °F (°C)	180 - 200	(82 - 93)
Minimum Pressure Cap	— psi (kPa)	10	(70)
Maximum Top Tank Temperature for Standby / Prime Power	— °F (°C)	230 / 220	(110 / 104)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed (Minimum)	— psi (kPa)	20	(138)
@ Pressure Range — Cold	— psi (kPa)	Up to 130	(Up to 900)
— Warm	— psi (kPa)	35 - 40	(242 - 276)
Maximum Oil Temperature	— °F (°C)	250	(121)
Oil Capacity with OP 1493 Oil Pan : High - Low	— US gal (liter)	22 - 19	(83 - 72)
Total System Capacity (Including Filter)	— US gal (liter)	24	(91)
Angularity of OP 1493 Oil Pan — Front Down		5°	
— Front Up		15°	
— Side to Side		15°	

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 — 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)	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 @ 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 NFPA 110 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 / 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

	STANDBY				**PRIME POWER**			
	60 hz		***50 hz***		***60 hz***		***50 hz***	
Governed Engine Speed — rpm	1800		1500		1800		1500	
Engine Idle Speed — rpm	675 - 775		675 - 775		675 - 775		675 - 775	
Gross Engine Power Output — BHP (kW_m)	610	(455)	670	(59)	555	(414)	595	(444)
Brake Mean Effective Pressure — psi (kPa)	293	(2020)	388	(2675)	267	(1840)	344	(2371)
Piston Speed — ft / min (m / s)	1995	(10.1)	1663	(8.4)	1995	(10.1)	1663	(8.4)
Friction Horsepower — HP (kW_m)	70	(52)	50	(37)	70	(52)	50	(37)
Engine Water Flow at Stated Friction Head External to Engine:								
• 3 psi Friction Head — US gpm (liter / s)	105	(6.6)	84	(5.3)	105	(6.6)	84	(5.3)
• Maximum Friction Head — US gpm (liter / s)	87	(5.5)	68	(4.3)	87	(5.5)	68	(4.3)
Turbo Compressor Outlet Pressure — psi (kPa)	34	(236)	40	(272)	33	(228)	35	(246)
Turbo Compressor Outlet Temperature — °F (°C)	407	(208)	437	(225)	385	(196)	401	(205)
Intake Air Flow — cfm (liter / s)	1290	(608)	1280	(605)	1260	(595)	1150	(540)
Exhaust Gas Temperature — °F (°C)	830	(443)	960	(515)	815	(435)	910	(488)
Exhaust Gas Flow — cfm (liter / s)	3200	(1510)	2900	(1370)	2905	(1370)	2660	(1255)
Air-to-Fuel Ratio — air : fuel	28.5 : 1		24.4 : 1		29.9 : 1		25.5 : 1	
Radiated Heat to Ambient — BTU / min (kW_m)	2050	(36)	2260	(40)	2090	(37)	1880	(33)
Heat Rejection to Coolant — BTU / min (kW_m)	7365	(130)	9500	(167)	6930	(122)	8000	(141)
Heat Rejection to Exhaust — BTU / min (kW_m)	18700	(329)	22200	(390)	17200	(302)	18700	(329)
Heat Rejection to Fuel * — BTU / min (kW_m)	450	(8)	450	(8)	450	(8)	450	(8)
Heat Rejection to Aftercooler — BTU / min (kW_m)	6200	(109)	7200	(126)	5480	(96)	5700	(100)

* 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-G8**
DATA SHEET : DS-10401
DATE : 14Jan05
CURVE NO. : FR-10401

Cummins Inc. Columbus, Indiana 47202-3005

• Limited Production •