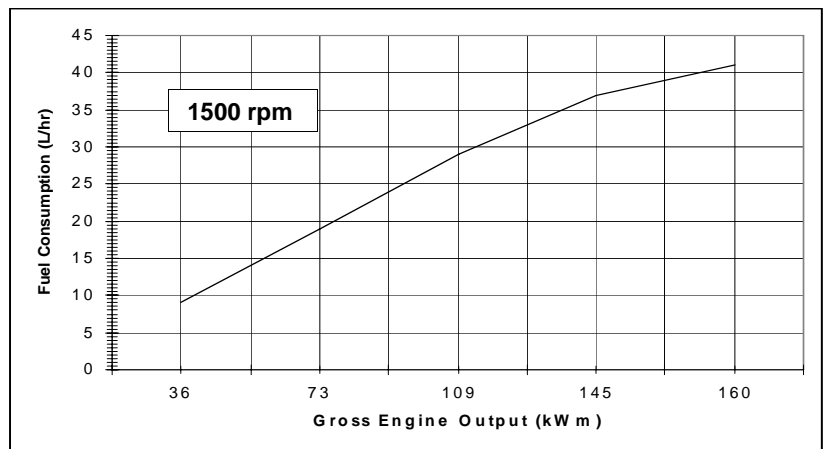
	Cummins Inc. Columbus, Indiana 47202-3005	Basic Engine Model: 6BTAA5.9-G5	Curve Number: FR-92891	G-DRIVE B5.9 1
	Engine Data Sheet	Engine Critical Parts List: CPL: 3239	Date: 04Mar09	
Displacement : 5.9 litre (360 in³)		Bore : 102mm (4.02 in.) Stroke : 120 mm (4.72 in.)		
No. of Cylinders : 6		Aspiration : Turbocharged and Air to Air Aftercooled		

Engine Speed rpm	Standby Power		Prime Power		Continuous Power	
	kWm	hp	kWm	hp	kWm	hp
1500	160	215	145	195	101	135

Engine Performance Data @ 1500 rpm

litre/hour

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	hp	kg/ kWm-h	lb/ hp-h	litre/ hour	US gal/ hour
STANDBY POWER						
100	160	215	0.219	0.360	41	10.9
PRIME POWER						
100	145	195	0.218	0.358	37	9.8
75	109	146	0.222	0.366	29	7.5
50	73	98	0.222	0.365	19	5.0
25	36	49	0.220	0.362	9	2.5
CONTINUOUS POWER						
100	101	135	0.220	0.362	26	6.9



CONVERSIONS: (litres = US Gal x 3.785) (US Gal = litres 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 H₂O air intake restriction and 2 in Hg exhaust back pressure.

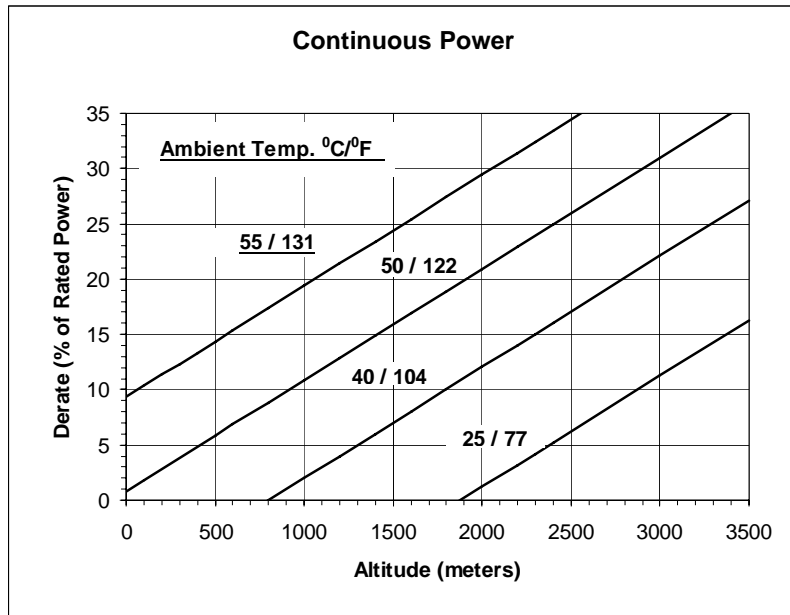
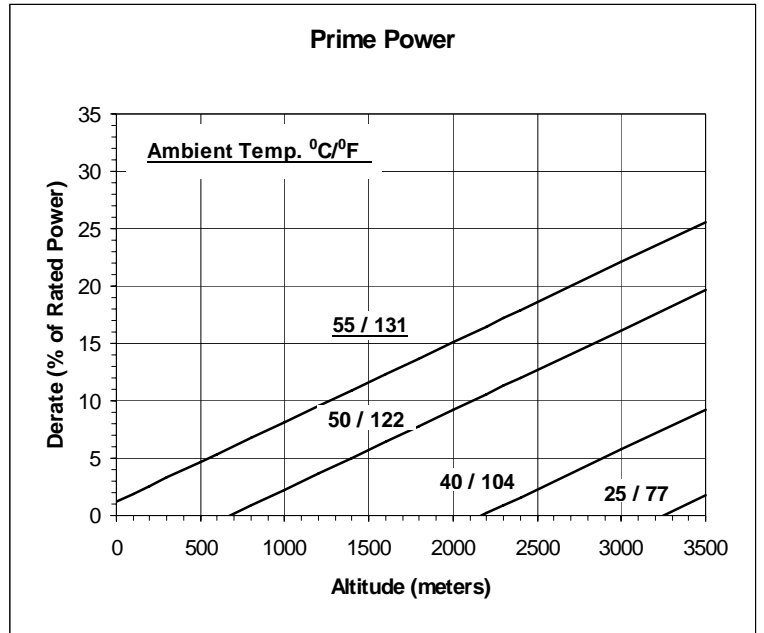
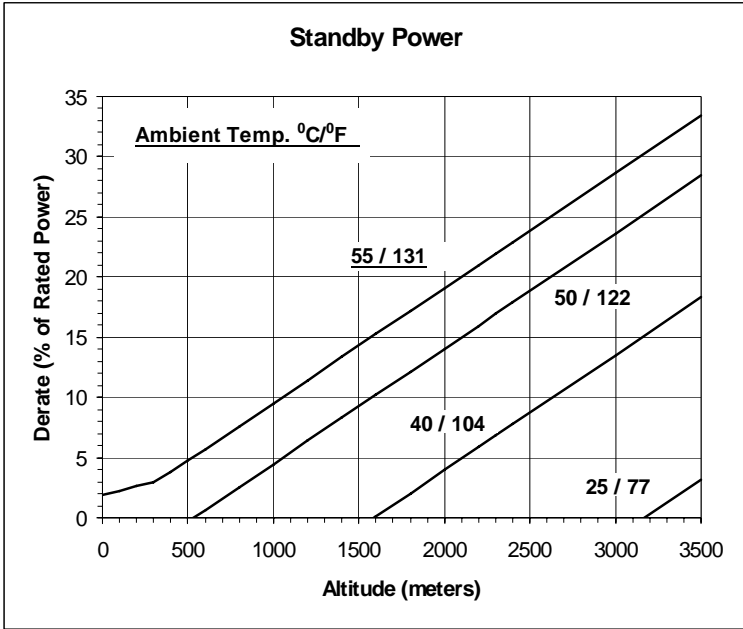
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/litre (7.1 lbs/US gal). Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

Data Status: Limited Production

Data Tolerance: ± 5%

Chief Engineer:

1500 RPM Power Derate Curves



Operation At Elevated Temperature And Altitude:

For **Standby Operation** above these conditions, derate by an additional 3% per 300 m (1000 ft), and 10% per 10 °C (18 °F).

For **Prime Operation** above these conditions, derate by an additional 2% per 300 m (1000 ft), and 12% per 10 °C (18 °F).

For **Continuous Operation** above these conditions, derate by an additional 3% per 300 m (1000 ft), and 17% per 10 °C (18 °F).

Cummins Inc.

Engine Data Sheet

ENGINE MODEL : 6BTA5.9-G5

 DATA SHEET : DS-92891
 CONFIGURATION NUMBER : D403091GX02 DATE :04Mar09
 PERFORMANCE CURVE : FR-92891
INSTALLATION DIAGRAM

- Fan to Flywheel: 0100-4216

CPL NUMBER

- Engine Critical Parts List: 3239

GENERAL ENGINE DATA

Type	Inline 6-Cylinder Diesel
Aspiration	Turbocharged and Charge Air Cooled
Bore x Stroke	4.02 x 4.72 (102 X 120)
Displacement.....	360 (5.9)
Compression Ratio.....	16.5 :1
Dry Weight (Approximate), Fan to Flywheel Engine.....	886 (402)
Wet Weight (Approximate), Fan to Flywheel Engine.....	939 (426)
Moment of Inertia of Rotating Components	
• with FW 9017 Flywheel	5 (0.6)
• with FW 9134 Flywheel	11 (1.2)
Center of Gravity from Rear Face of Block.....	21.4 (544)
Center of Gravity Above Crankshaft Centerline	6.1 (155)
Maximum Static Loading at Rear Main Bearing.....	TBD TBD

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block	996 (1350)
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EXHAUST SYSTEM

Maximum Back Pressure.....	3 (10.25)
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AIR INDUCTION SYSTEM

Maximum Intake Air Restriction:	
• with Dirty Filter Element.....	25 (6)
• with Clean Filter Element.....	15 (4)

COOLING SYSTEM**Jacket Water Circuit Requirements**

Coolant Capacity — Engine Only	2.4 (9.1)
Maximum Static Head of Coolant Above Engine Crank Centerline	46 (14)
Standard Thermostat (Modulating) Range	183-203 (84-95)
Minimum Pressure Cap	7 (48)
Maximum Top Tank Temperature for Standby / Prime Power	212 (100)
Maximum Coolant Friction Head External to Engine	4 (28)

Charge Air Cooler Requirements

Maximum Temp. Rise Between Engine Air Intake and Aftercooler Air Outlet- 1500/1800 rpm — °F (°C)	116 (47)
Maximum Air Pressure Drop from Turbo Air outlet to Intake Manifold - 1500/1800 rpm . — in Hg (kPa)	3 (10)
Maximum Intake Manifold Temperature @ 77 °F (25 °C) ambient - 1500/1800 rpm	122 (50)
Maximum Compressor Outlet Temperature	404 (207)
Maximum Intake Manifold Temperature for engine protection (Shut Down Threshold)	207 (97)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed (minimum).....	10 (69)
@ Governed Speed	30-50 (207-345)
Maximum Oil Temperature.....	250 (121)
Oil Capacity with OP 9006 Oil Pan : Low - High	3-3.8 (11.5 -14.3)
Total System Capacity (With Combo Filters).....	4.3 (16.4)

FUEL SYSTEM

Type Injection System.....	Bosch Mechanical
Maximum Restriction at Lift Pump(clean/dirty filter)..... — in Hg (kPa)	4/8 (13.5/27)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head) — in Hg (kPa)	2.5 (8.4)
Maximum Fuel Flow to Injector Pump — US gph (litre/hr)	11.9 (45)
Maximum Return Fuel Flow — US gph (litre/hr)	TBD (TBD)
Maximum Fuel Inlet Temperature — °F (°C)	160 (71)

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement)..... — volt	12
Battery Charging System, Negative Ground..... — ampere	55
Maximum Allowable Resistance of Cranking Circuit..... — ohm	0.002
Minimum Recommended Battery Capacity	
• Cold Soak @ -18 °C to 0 °C (0 °F to 32 °F)..... — °F CCA	950

COLD START CAPABILITY

Minimum Ambient Temperature for Cold Start with 1500 watt Coolant Heater to Rated Speed — °F (°C)	5 (-15)
Minimum Ambient Temperature for Unaided Cold Start to Idle Speed..... — °F (°C)	23 (-5)
Minimum Ambient Temperature for NFPA 110 Cold Start (90° F Minimum Coolant Temperature)..... — °F (°C)	TBD TBD

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%
Air Intake Restriction : 381 mm H ₂ O (15 in H ₂ O)	Exhaust Restriction : 6.7 kPa (2 in Hg)

Steady State Stability Band at any Constant Load — %	+/- 0.86
Estimated Free Field Sound Pressure Level of a Typical Generator Set;	
Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); @1800 rpm — dBA	TBD
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°..... — dBA	TBD

Governed Engine Speed..... rpm	
Engine Idle Speed..... rpm	
Gross Engine Power Output..... hp (kW)	
Brake Mean Effective Pressure..... psi (kPa)	
Piston Speed..... ft/min (m/s)	
Friction Horsepower..... hp (kW)	
Engine Water Flow at Stated Friction Head External to Engine:	
• 2.5 psi Friction Head..... US gpm (litre/min)	
• Maximum Friction Head..... US gpm (litre/min)	

Engine Data

Intake Air Flow..... cfm (litre/s)	
Exhaust Gas Temperature °F (°C)	
Exhaust Gas Flow..... cfm (litre/s)	
Air to Fuel Ratio..... air : fuel	
Radiated Heat to Ambient BTU/min (kW)	
Heat Rejection to Jacket Coolant..... BTU/min (kW)	
Heat Rejection to Exhaust..... BTU/min (kW)	
Heat Rejected to Fuel..... BTU/min (kW)	
Charge Air Cooler Heat Rejection..... BTU/min (kW)	
Turbocharger Compressor Outlet Pressure psi (kPa)	
Turbocharger Compressor Outlet Temperature °F (°C)	

	STANDBY POWER		PRIME POWER	
	60 hz	50 hz	60 hz	50 hz
		1500		1500
		1494-1507		1494-1507
		215 (160)		195 (145)
		316 (2178)		288 (1972)
		1181 (6)		1181 (6)
		NA		NA
		7.5 (28.6)		7.5 (28.6)
		NA		NA
		439 (207)		417 (197)
		991 (533)		963 (517)
		1146 (541)		1102 (520)
		24.2 : 1		25.4 : 1
		967 (17)		910 (16)
		3128 (55)		2900 (51)
		15810 (278)		13762 (242)
		NA		NA
		2673 (47)		1649 (29)
		32.6 (225)		30 (207)
		405 (207)		381 (194)

- N.A.** - Not Available
NA - Not Applicable to this Engine
TBD - To Be Determined

*This is the maximum heat rejection to fuel, which is at low load.

ENGINE MODEL : 6BTA5.9-G5
DATA SHEET : DS-92891
DATE : 04Mar 09
CURVE NO. : FR-92891