

Cummins Technical Operations

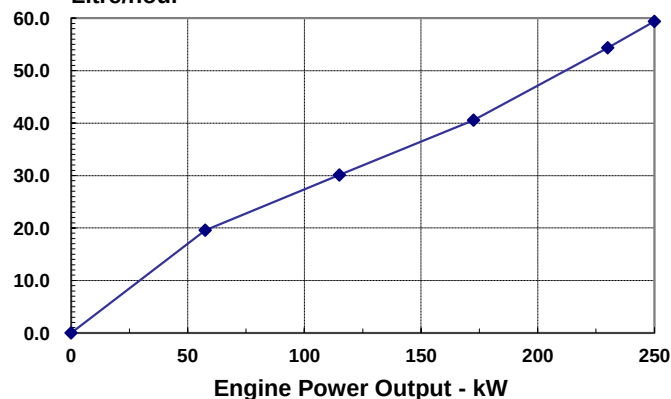


ENGINE MODEL: 6LTAA8.9-G3
Used for 263kVA generator

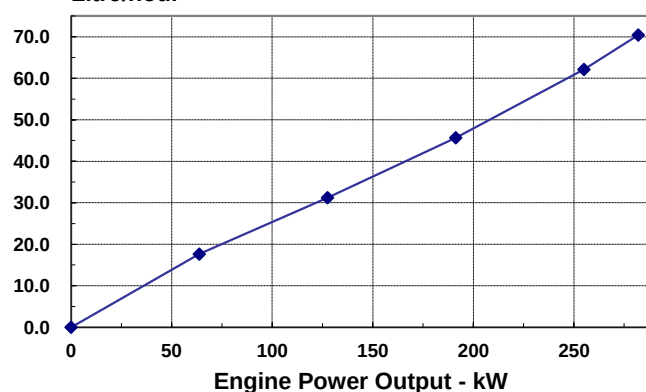
REV 00 MAY2014

				Generator Engine Performance Data				Basic Engine Model: 6LTAA8.9-G3 FR94652				FR94652 @ 1500 RPM &1800RPM							
								Configuration D563015GX03				CPL Code CPL: 3076				Revision 2013/11/30			
Compression Ratio:				16.6:1				Aspiration:				Turbocharged and Charge Air Cooled							
Bore:				114 mm				Displacement:				8.9 L							
Stroke:				145 mm				No. of Cylinders:				6							
Emission Certification:				None				Fuel System:				BYC P7100/Electronic Governor							
Governor Regulation:				≤5%															
All data is based on the engine operating with fuel system, water pump, and 14.5 in H ₂ O (3.7 kPa) inlet air restriction with 5.98 in (152mm) inner diameter, and with 2.95 in Hg (10 kPa) exhaust restriction with 4.02 in (102 mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.																			
Engine Speed		Standby Power				Prime Power				Continuous Power									
RPM		kW		HP		kW		HP		kW		HP							
1500		250		335		230		308		none		none							
1800		282		378		255		342		none		none							
Engine Performance Data @ 1500 RPM																			
OUTPUT POWER						FUEL CONSUMPTION													
%		kW		HP		g/kW.h		L/h											
STANDBY POWER																			
100		250		335		196		59											
PRIME POWER																			
100		230		308		195		54											
75		173		231		194		41											
50		115		154		216		30											
25		58		77		281		20											
CONTINUOUS POWER																			
Engine Performance Data @ 1800 RPM																			
OUTPUT POWER						FUEL CONSUMPTION													
%		kW		HP		g/kW.h		L/h											
STANDBY POWER																			
100		282		378		206		70											
PRIME POWER																			
100		255		342		201		62											
75		191		256		197		46											
50		128		171		202		31											
25		64		85		228		18											
CONTINUOUS POWER																			
Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with GB/T18297 conditions of 100kPa (29.61 in. Hg) barometric pressure , 25°C (77°F) inlet air temperature, and 1 kPa (0.30 in. Hg) water vapor pressure.																			

Litre/hour



Litre/hour



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.

Above Source From CUMMINS AEB 26.02

GENERAL ENGINE DATA

Approximate Engine Weight (wet).....	-kg	650
Mass Moment of Inertia of Rotating Components (No Flywheel).....	-kg·m ²	0.72
Center of Gravity from Rear Face of Block.....	-mm	427
Center of Gravity above Crankshaft Centerline.....	-mm	163
Engine Idle Speed.....	-RPM	900-1100
Fire Order.....		1-5-3-6-2-4

ENGINE MOUNTING

Maximum (Static) Bending Moment at Rear Face of Block.....	-N.m	1356
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EXHAUST SYSTEM

Maximum Back Pressure.....	-kPa	10
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AIR INTAKE SYSTEM

Maximum Intake Air Restriction with Heavy Duty Air Cleaner		
— Dirty Element.....	-kPa	3.7
— Clean Element.....	-kPa	6.2

CHARGE AIR COOLING SYSTEM

Maximum Temp. Rise Between Engine Air Intake and Intake Manifold	-°C	25
Maximum Air Pressure Drop from Turbo Air outlet to Intake Manifold		
— 1500RPM.....	-kPa	13
— 1800RPM.....	-kPa	13
Maximum Intake Manifold Temperature Differential (Ambient to IMT) (IMTD).....	-°C	50
Maximum Intake Manifold Temperature for engine protection (Warning Threshold).....	-°C	58

LUBRICATION SYSTEM

Minimum Engine Oil Pressure for Engine Protection Devices:		
— Idle Speed.....	-kPa	103
— Governed Speed.....	-kPa	276-414
Maximum Oil Temperature.....	-°C	121
Minimum Required Lube System Capacity - Sump plus Filters.....	-litre	27.6

FUEL SYSTEM

Type Injection System.....	BYC P7100 Direct Injection	
Maximum Restriction at Lift Pump.....	-kPa	13.6
Maximum Fuel Flow on the Supply Side of the Fuel Pump.....	-litre/hr	208
Maximum Fuel Inlet Temperature.....	-°C	42
Maximum Allowable Head on Injector Return Line.....	-kPa	33.9

COOLING SYSTEM

Coolant Capacity - Engine Only.....	-litre	11.1
Maximum Coolant Friction Head External to Engine..		
-1800 rpm.....	-kPa	35
-1500 rpm.....	-kPa	28
Maximum Static Head of Coolant Above Engine Crank Centerline.....	-m	18.3
Standard Thermostat (Modulating) Range.....	-°C	82 - 95
Minimum Pressure Cap.....	-kPa	103
Maximum Top Tank Temperature for Standby / Prime Power.....	-°C	104 / 100

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement).....	-volt	12V	24V
Battery Charging System, Negative Ground.....	-ampere	63	40
Maximum Allowable Resistance of Cranking Circuit.....	-ohm	0.001	0.002
Minimum Recommended Battery Capacity			
—Cold Soak @ 0 to 32-F (-18 to 0-C).....	-0°F CCA	1500	(750)

EMISSIONS

Gaseous Emissions per GB 20891-2007, at 1500rpm:

—Weight-Specific NOx.....	g/kW.h
—Weight-Specific HC.....	g/kW.h
—Weight-Specific CO.....	g/kW.h
—Weight-Specific Particulates.....	g/kW.h

Gaseous Emissions per GB 20891-2007, at 1800rpm:

—Weight-Specific NOx.....	g/kW.h
—Weight-Specific HC.....	g/kW.h
—Weight-Specific CO.....	g/kW.h
—Weight-Specific Particulates.....	g/kW.h

Fuel Rating Option used for these Data: **FR94652**

Governed Engine Speed.....	-rpm
Engine Idle Speed.....	-rpm
Gross Engine Power Output.....	-kW
Piston Speed.....	-m/s
Friction Horsepower.....	-kW
Engine Water Flow to Engine:.....	-litre/sec.
Intake Air Flow.....	-litre/sec.
Exhaust Gas Flow.....	-litre/sec.
Exhaust Gas Temperature.....	-°C
Air to Fuel Ratio.....	-air:fuel
Radiated Heat to Ambient.....	-kW
Heat Rejection to Coolant.....	-kW
Heat Rejection to Fuel.....	-kW

STANDBY POWER		PRIME POWER	
1800	1500	1800	1500
900 - 1100	900 - 1100	900 - 1100	900 - 1100
282	250	255	230
8.7	7.3	8.7	7.3
35	26	35	26
4	3.3	4	3.3
315	235	292	216
838	643	735	584
520	542	477	533
25.1 : 1	22.2 : 1	26.4 : 1	22.3 : 1
TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD

ALL DATA CERTIFIED WITHIN 5%

TBD = To Be Decided

N/A = Not Applicable

N.A. = Not Available

All data is subject to change without notice, sorry for inform.

Dongfeng Cummins Engine Co., Ltd.