DCEC CUMMINS ENGINE Co.,LTD Generator Engine Performance Data	Basic Engine Model: **6BTAA5.9-G12** **FR94438**	**140kW@1500rpm** **150kW@1800rpm**		
		Configuration **D403076GX03**	**CPL Code** **4283**	**Revision** **2014/5/20**

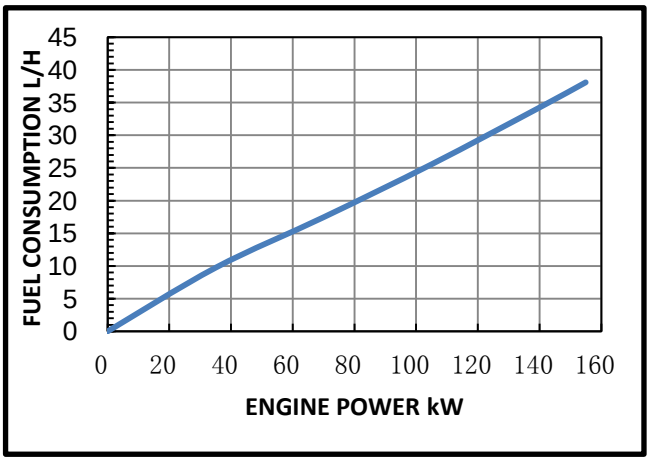
Compression Ratio:	**17.3:1**	Aspiration:	**Turbocharged & Charge Air Cooled**
Bore:	**102 mm**	Displacement:	**5.9 L**
Storke:	**120 mm**	No. of Cylinders:	**6**
Emission Certification:		Fuel System:	**BYC P7100/Electronic Governor**
Governor Regulation:	**≤5%**		

All data is based on the engine operating with fuel system, water pump, and 14.85 in H_2O (3.7 kPa) inlet air restriction , and with 2.95 in Hg (10 kPa) exhaust restriction ; not included are alternator,fan, optional equipment and driven components.

Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kW	HP	kW	HP	kW	HP
1500	155	207	140	187		
1800	165	220	150	200		

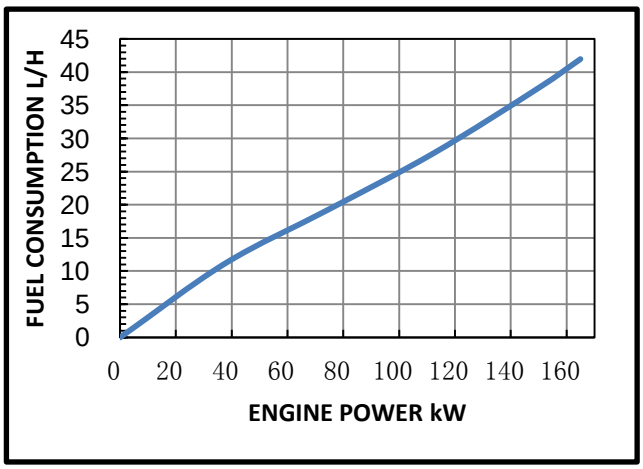
Engine Performance Date @ 1500RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	155	207	204	38
PRIME POWER				
100	140	187	203	34
75	105	140	202	26
50	70	93	207	17
25	35	47	231	10
CONTINUOUS POWER				



Engine Performance Date @ 1800RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	165	220	211	42
PRIME POWER				
100	150	200	208	38
75	112.5	150	205	28
50	75	100	214	19
25	37.5	50	246	11
CONTINUOUS POWER				



Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with GB/T18297 conditions of 100kPa (29.53 in. Hg) barometric pressure , 25°C (77°F) inlet air temperature, and 1 kPa (0.30 in. Hg) water vapor pressure with No.0 diesel fuel. The engine may be operated without changing the fuel setting up to 1600 m (5250ft.) altitude.

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 (dry)	-kg	413
Mass Moment of Inertia of Rotating Components (No Flywheel)	-kg·m^2	0.25
Center of Gravity from Front Face of Block	-mm	391
Center of Gravity above Crankshaft Centerline	-mm	140

ENGINE MOUNTING

Maximum (Static) Bending Moment at Front Support Mounting Surface	-N.m	435
Maximum (Static) Bending Moment at Side Pad Mounting Surface	-N.m	TBD
Maximum (Static) Bending Moment at Rear Face of Block	-N.m	1356
Moment of Inertia of Complete Engine		
— Roll Axis	-kg·m^2	14.8
— Pitch Axis	-kg·m^2	36.9
— Yaw Axis	-kg·m^2	31.9

EXHAUST SYSTEM

Maximum Back Pressure	-kPa	10
Exhaust Pipe Size Normally Acceptable	-mm	75
Maximum Static Supported Weight at the Turbocharger Outlet Flange	-N.m	13.5
Exhaust Manifold Insulation Acceptable	-Yes/No	No
Turbocharger Insulation Acceptable	-Yes/No	No

CHARGE AIR COOLING SYSTEM

Maximum allowable pressure drop across charge air cooler and OEM CAC piping(IMPD):	-kPa	13
Maximum Intake Manifold Temperature Differential (Ambient to IMT) (IMTD)	-˚C	25
Intake manifold temperature for Fan-ON	-˚C	50
Intake manifold air temperature derate/alarm temperature	-˚C	58

AIR INTAKE SYSTEM

Maximum Intake Air Restriction with Heavy Duty Air Cleaner		
— Clean Element	-kPa	3.7
— Dirty Element	-kPa	6.2
Minimum Dirt Holding Capacity with Heavy Duty Air Cleaner	-g/cfm	53
Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger	-˚C	17
Recommended intake piping size (inner diameter)	-mm	76

LUBRICATION SYSTEM

Normal Operating Oil Pressure Range		
— minimum low idle	-kPa	207
—maximum rated speed	-kPa	345
Maximum Oil Temperature	-˚C	121
Oil Capacity with OP 9006 Oil Pan:High-Low	-litre	14.2-12.3
Minimum Required Lube System Capacity - Sump plus Filters	-litre	16.4
Angularity of Standard Oil Pan: (Values stated are for intermittent operation only):		
— Front Down	- º	40
— Front Up	- º	40
— Side to Side	- º	40

FUEL SYSTEM

Type Injection System		BYC P7100
Maximum Restriction at Lift Pump	-kPa	13.6
Maximum Restriction at the Supply Side of the injector	-kPa	67.7
Total Drain Flow(constant for all loads)	-litre/hr	30

COOLING SYSTEM

Coolant Capacity-Engine Only	-litre	10
Maximum Coolant Friction Head Extemal to Engine		
-1800rpm	-kPa	35
-1500rpm	-kPa	28
Maximum Static Head of Coolant Above Engine Crank Centerline	-m	14
Standard Thermostat (Modulating) Range	-℃	82-95
Minmum Pressure Cap	-kPa	69
Maximum Top Tank Temperature for Standby/Prime Power	-℃	104/100

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty,Positive Engagement)	-volt	24V
Battery Charging System,Negative Ground	-ampere	40
Maximum Allowable Resistance of Cranking Circuit	-ohm	0.002
Minimum Recommended Battery Capacity		
-Cold Soal @ 10°F（-12℃）and Above	-0°F CCA	400

EMISSIONS

Gaseous Emissions per GB 20891-2007,Rated Speed@1500:

—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,Rated Speed@1800:

—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: **FR94438**

	STANDBY POWER		PRIME POWER	
Governed Engine Speed -rpm	1800	1500	1800	1500
Engine Idle Speed -rpm	750-850	750-850	750-850	750-850
Gross Engine Power Output -kW	165	155	150	140
Piston Speed -m/s	7.2	6	7.2	6
Friction Horsepower -kW	16.4	12.7	16.4	12.7
Engine Water Flow to Engine -litre/sec.	2.4	2.0	2.4	2
Intake Air Flow -litre/sec.	196	150	182	137
Exhaust Gas Flow -litre/sec.	438	357	398	321
Exhaust Gas Temperature -℃	458	507	445	495
Radiated Heat to Ambient -kW	21	19	19	17
Heat Rejection to Coolant -kW	62	58	58	57
Heat Rejection to Exhaust -kW	140	125	125	113

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.