Dongfeng Cummins engine

Performance parameter table

engine model:4B3.9-G12

Performance curve number:FR96598

Version00 2018Year5moon

Engine performance data sheet for generator sets Dongfeng Cummins Engine Co., Ltd. Xiangfan, Hubei, China http://www.dcec.com.cn	engine model **4B3.9-G12** **FR96598**	**FR96598 @ 1500RPM &1800RPM**	
		Engine configuration number **D381004GX02**	Performance Control Part Number **CPL: 5357**	release date **2018/5/15**

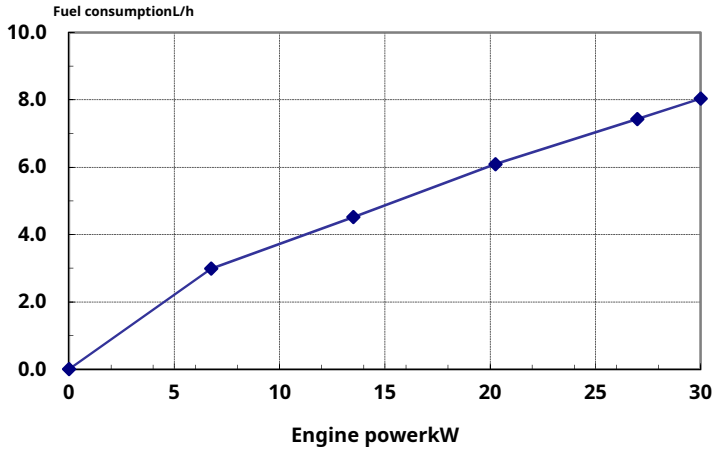
Compression ratio:	**18.0:1**	Inhalation method:	**inhale naturally**
Bore size:	**102 mm**	Displacement:	**3.9L**
stroke:	**120mm**	Number of cylinders:	**4**
Emission control:		Fuel System:	**WeifuAPump/Electronic Speed Regulator**
Adjustment rate:	**≤3%**		

The engine is tested with a fuel system, water pump, and oil pump, but without an air compressor, generator, fan, optional parts, and driving parts; the test conditions are intake resistance3.4kPa,exhaust resistance10kPa.

Engine speed	Standby power		Basic output power		Continuous power	
RPM	kW	HP	kW	HP	kW	HP
1500	30	40	27	36	To be determined	To be determined
1800	36	48	33	44	To be determined	To be determined

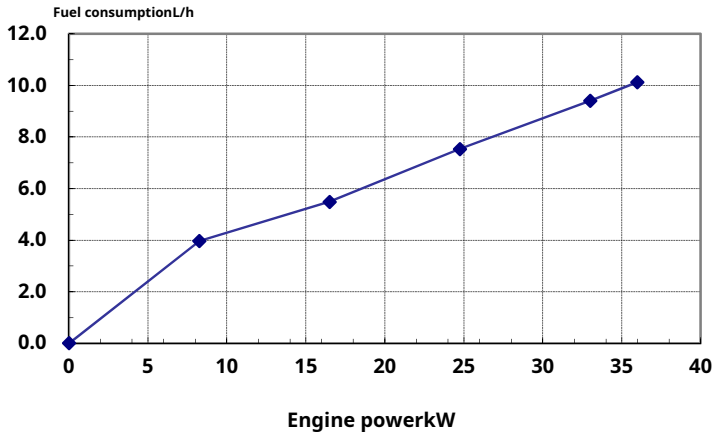
1500rpmEngine performance data

Output Power			Fuel consumption	
%	kW	HP	g/kW.h	L/h
Standby power				
100	30	41	221	8.0
Basic output power				
100	27	37	227	7.4
75	20	28	248	6.1
50	14	18	276	4.5
25	7	9	365	3.0
Continuous power				
To be determined	To be determined	To be determined	To be determined	To be determined



1800rpmEngine performance data

Output Power			Fuel consumption	
%	kW	HP	g/kW.h	L/h
Standby power				
100	36	49	232	10.1
Basic output power				
100	33	45	235	9.4
75	25	34	251	7.5
50	17	twenty two	274	5.5
25	8	11	396	4.0
Continuous power				
To be determined	To be determined	To be determined	To be determined	To be determined



Performance data at atmospheric pressure are100kPa, the intake air temperature is25degrees Celsius, altitude is80m, the water vapor partial pressure is1kPa, use standard0#Under diesel, follow GB/T18297 experimental conditions were obtained.

Engine Power Application Guide for Generator Sets

This guide is intended to guide the selection of alternator set engines for installation in suitable power applications. The genset engines in this guide are not suitable for variable speed DC genset applications.

Standby power (STANDBY POWER RATING)—— Only used in emergency power stations to provide emergency power. Do not have super load capacity. The cumulative operating time per year does not exceed 200 hours And the average load does not exceed 80% of the reserve power. of which are in preparation Power point operation shall not exceed 25 hours per year.

CONTINUOUS POWER RATING—

— For supplying public power. Maintain a constant 100% every year It can run without time limit on continuous power load. Does not have overload capability force.

PRIME POWER RATING——Used to provide electricity as a replacement for commercial electricity. Applies to the following two Categories:

UNLIMITED TIME RUNNING PRIME POWER

Unlimited time per year under variable load run. During any continuous 250-hour operating period, The average load of the variable load does not exceed 70% of the usual power .

The annual operating time under 100% common power conditions does not exceed After 500 hours.

Overtime is allowed during any consecutive 12-hour operating period. Run at 10% load for 1 hour. 10% power overload per year Running time must not exceed 25 hours.

Limited time operation of common power (LIMITED TIME RUNNING PRIME POWER)

per year for a limited time under constant load run. The engine operates under a load not exceeding the usual power. Possible operating hours 750 per year. The service life of any engine Life will be reduced when running under constant high load. Per year Constant load operation exceeding 750 hours should use sustained Continuous power model.

The above information comes from CUMMINS AEB26.02

Typical engine data

Dry weight (with flywheel and alternator, without starter and air compressor)	-kg		308
Instantaneous inertia of rotating parts (no flywheel)	-kg·m2		0.143
The distance between the center of gravity and the rear end face of the cylinder	-mm		373
Distance between the center of gravity and the crankshaft centerline (above the crankshaft)	-mm		163
low idle	-RPM firing order		900-1100
1-3-4-2			

Engine installation

The rear end face of the cylinder allows large (static) bending moments	-Nm		1356

Exhaust system

Large exhaust back pressure	-kPa		10

air intake system

Large allowable air intake resistance (use heavy-duty air filter)

- Clean filter element	-kPa		3.7
- Dirty filter element	-kPa		6.2

Fuel System

Fuel pump system type	WeifuAInline pump		
Large oil pump inlet resistance	- kPa		13.6
The fuel return pipe of the injector has large oil return resistance	-kPa		67.7
Large fuel return flow	- litre/hr		30

Lubrication system

Normal operating oil pressure range

- low idle speed	Small oil pressure	- kPa	207
- Rated points	High oil pressure	- kPa	345

Large oil pan oil temperature	-℃ Small	121
capacity of lubrication system (oil pan + oil filter)	-litre	10.9

cooling system

Engine coolant volume (engine only)	-litre Static height	7.2
of coolant above the centerline of the engine crankshaft	-m	14
Thermostat standard adjustment temperature (range)	-℃	83-95
Small pressure cap pressure	-kPa High engine	69
coolant temperature at standby/rated power	-℃	110/104

Large engine external cooling cycle resistance	- 1800 rpm	-kPa	35
	- 1500 rpm	-kPa	28

Electrical system

starter	-volt Battery Charging	12V	24V
System (Negative Ground)	-ampere	63	40
Large starting circuit resistance	-ohm Small battery	0.00075	0.002
capacity			
- 12℃ is cold enough0℃	- 0°F CCA	625	312)

Each data applies standard fuel supply rate:**FR96598**

	Standby power		rated power	
Engine speed.....-rpm low idle speed	1800	1500	1800	1500
..... -rpm Output Power	900-1100	900-1100	900-1100	900-1100
.....-kW Piston speed.....	36	30	33	27
.....-m/s friction loss power	7.2	6.0	7.2	6.0
.....-kW Engine coolant flow	8.2	8.2	8.2	8.2
.....-litre/sec. Intake air flow	2.8	2.2	2.8	2.2
..... - liter/sec.	43	34.5	43	34.8
Exhaust flow..... - liter/sec.	81.9	76.5	78.5	72.5
Exhaust gas temperature.....-℃	370	420	340	390
Ambient heat loss work (dry manifold)..... -kW	To be determined	To be determined	To be determined	To be determined
Coolant heat loss work (dry manifold)..... -kW	35	29	32	25.9
Exhaust heat loss work..... - kW	To be determined	To be determined	To be determined	To be determined

The fluctuation range of all data is±5%

Data is subject to change without prior notice

Dongfeng Cummins Engine Co., Ltd.