

DATA SHEET

DIESEL GENERATOR 22KW
 MODEL#FDK-CD22/H1
 50HZ/1500RPM
 CUMMINS MODEL: 4B3.9G2



General Features:

- ♦ All qualified generator sets are subjected to a comprehensive performance test which includes 50% load, 70% load, 100% load, 110% load and to check, verify that all control systems, alarm and shut-down protection.
- ♦ Equipped with battery charger and 24V high performance maintenance-free lead-acid starting batteries and connecting cables.
- ♦ Stainless galvanized zinc plates with strong corrosion-proof.
- ♦ Vibration isolators between the engine/alternator and base frame.
- ♦ Equipped with industrial silencer and flexible exhaust hose.
- ♦ Designed to comply with ISO8528/GB2820.
- ♦ Powered by Cummins engine and coupled with Stamford alternator.
- ♦ Water jacket preheater, oil heater and double air cleaner, etc. are available.

FDK Diesel Generator Set Data

Genset Model	FDK-CD22/H1
Prime Power	20KW/25KVA
Standby Power	22KW/28KVA
Output Frequency / Rated speed	50Hz/1500rpm
Rated Voltage	230V/400V

Engine Make	Cummins
Engine Model	4B3.9G2
Alternator model	Stamford PI142D
Control System	DSE7320
Phase	Three

(1) **Prime power:** The rating is available for an unlimited of annual operating hours in variable load applications, in accordance with ISO8528-1.A 10% overload is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046-1.

(2) **Standby power:** The rating is applicable for supplying emergency power in variable load applications for up to 200 hours per year in accordance with ISO8528-1. Overload is not allowed.

(3) **Rated voltage:** available with customer requirement.

Engine Specifications (DETAILED in APPENDIX)

Engine Model	4B3.9G2
Engine Manufacturer	Cummins (China Dongfeng)
Cylinder quantity	4
Cylinder Arrangement	Vertical in-line
Cycle	Four stroke

Aspiration	Naturally
Bore x Stroke (mm x mm)	102x120
Displacement	3.9L
Compression Ratio	16.5:1
Prime power / Speed (KW/RPM)	24/1500
Standby power/ Speed (KW/RPM)	27/1500



Speed governor	Electrical
Piston Speed	6.0m/s
Friction Energy Output	8.2kw
Total Lubrication System Capacity (L)	10.9
Coolant Capacity (L)	7.2

Fuel Consumption at 100% load (g/KWh)	228 at 1500rpm
Starter motor	DC24V
Alternator	DC24V
Low idle	950-1050rpm

Alternator Specifications

Alternator model	PI142D
Alternator manufacturer	STAMFORD
Exciter type	Single bearing, Brushless, Self-excited
Rated output prime power	25 KVA
Rated speed	1500 rpm
Rated frequency	50Hz

Number of phase	3
Rated voltage	400V (Available with custom requirements)
Power factor	0.8
Voltage regulation NL-FL	≤±1%
Insulation grade	H
Protection grade	IP23

Alternator option: Leroy Somer, MECC, Marathon, Engga, Faraday

Control System DSE7320 (DETAILED in INSTRUCTION)

DSE7320 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains are abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.

FEATURES

- Microprocessor control, with high stability and credibility.
- Monitoring and measuring operational parameters of the mains supply and genset.
- Indicating operation status, fault conditions, all parameters and alarms.
- Multiple protections; multiple parameters display, like pressure, temp. etc.
- Manual, automatic and remote work mode selectable.
- Real time clock for time and date display, overall runtime display, 250 log entries.
- Overall power output display.
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- Communication with PC via RS485 OR RS232 interface, using MODBUS protocol.

Soundproof Enclosure Specification

FDK silent generator is designed by professional acoustic engineers based on years of experience. Now we can make the noise of the generator less than 80-85dB(A) at 1m, or 70-75dB(A) at 7m, 60-65dB(A) at 15m.

FEATURES

- Multi-way air intake and exhaust guarantee the power performance of the generator.
- Large-scale impedance combined type silencer effectively reduce noise of the generator.
- Internal high performance rubber damper and flexible materials reduce vibration.
- Base mounted fuel tank supports the generator running for 8 hours.



Optional

Generator set	Alternator	Low environment Temp	ATS
<input type="checkbox"/> Open generator set <input type="checkbox"/> Silent generator set <input type="checkbox"/> Trailer generator set <input type="checkbox"/> ABB MCCB circuit breaker	<input type="checkbox"/> Stamford <input type="checkbox"/> Marathon <input type="checkbox"/> Mecc Alte <input type="checkbox"/> Leroy Somer <input type="checkbox"/> Farady <input type="checkbox"/> Engga	<input type="checkbox"/> Water heater <input type="checkbox"/> Oil heater <input type="checkbox"/> Battery heater	<input type="checkbox"/> CHINT <input type="checkbox"/> SCHNEIDER <input type="checkbox"/> ABB
Fuel system	Control system	Voltage	Synchronized system
<input type="checkbox"/> 12hrs base tank <input type="checkbox"/> 24hrs base tank <input type="checkbox"/> Dual wall base fuel tank <input type="checkbox"/> Outside fuel tank	<input type="checkbox"/> AMF function <input type="checkbox"/> ATS control cabinet <input type="checkbox"/> DSE7320 <input type="checkbox"/> DSE7510 <input type="checkbox"/> GU620A	<input type="checkbox"/> 415/240V <input type="checkbox"/> 400/230V <input type="checkbox"/> 380/220V <input type="checkbox"/> 220/127V <input type="checkbox"/> 200/115V	<input type="checkbox"/> CHINT Cabinet <input type="checkbox"/> SCHNEIDER Cabinet <input type="checkbox"/> DSE8610 Module <input type="checkbox"/> COMAQ Module <input type="checkbox"/> DEIF Module

Dimension & Weight

Open

Overall Size: LxWxH (mm)	1800x740x1300
Weight (kg)	800

Soundproof Version

Overall Size: LxWxH (mm)	2500x1000x1400
Weight (kg)	1300

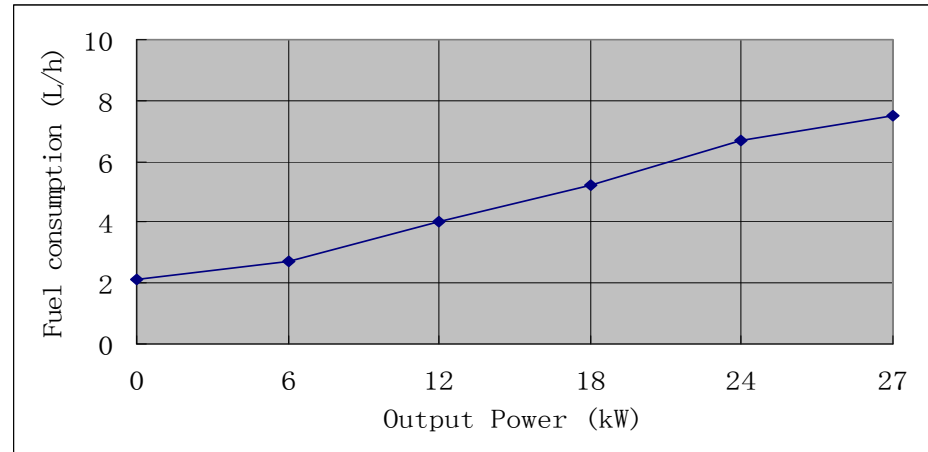
Sales Promises

- ◆ FDK provides a full line of brand new and high quality products. Each and every unit is strictly factory tested before shipment.
- ◆ Quality warranty is according to our standard conditions: 12 months from BL date or 1000 running hours, whichever comes first.
- ◆ Service and parts are available from FDK or distributors in your location.
- ◆ FDK guarantee use **BRAND NEW & GENUINE MACHINE.**

DONGFENG CUMMINS ENGINE Co., Ltd. XiangFan HuBei P.R.CHINA ENGINE DATASHEET—for G-drive		ENGINE MODEL 4B3.9-G2		PERFORMANCE CURVE FR L002	
		ENGINE FAMILY D38	CPL PP L004	2006/04	
Displacement	3.9 L	Air intake way	Natural		
Cylinder bore	102 mm	Cylinder quantity	4		
Stroke	120 mm				
Fuel system	A pump _ GAC governor/ BYC ASIMCO				
				kW(BHP)	@RPM
				24(32)	1500
				Speed-droop	5%
Engine testing with fuel system, water pump and oil pump, without air compressor, alternator, fan, other options and driving accessory. Testing condition: air intake resistance 250 mmHg, exhaust back pressure 50 mmHg.					

Engine Speed-RPM	Standby Power		Base Output Power		Continuous Power	
	kW	HP	kW	HP	kW	HP
1500	27	36	24	32	N/A	N/A

Output Power			Fuel consumption	
%	kW	HP	g/kW.h	L/h
Standby Power				
100	27	36	228	7.5
Base Output Power				
100	24	32	229	6.7
75	18	24	240	5.2
50	12	16	275	4.0
25	6	8	374	2.7
Continuous Power				
N/A	N/A	N/A	N/A	N/A



	DONGFENG CUMMINS ENGINE Co., Ltd. XiangFan HuBei P.R.CHINA ENGINE DATASHEET—for G-drive	ENGINE MODEL 4B3.9-G2		PERFORMANCE CURVE FR L002
		ENGINE FAMILY D38	CPL PP L004	2006/04

Typical engine data

Net weight	kg	308
Rotate part instantaneous inertia _ without flywheel	kg.m ²	0.143
Distance between gravity center and rear surface of cylinder block	mm	373
Distance between gravity center and center line above of crankshaft	mm	163

Engine installation

Static bent torque permitted—rear surface of cylinder block	N.m	1356
Static bent torque permitted—front surface of cylinder block	N.m	435
Static bent torque permitted—flank surface of cylinder block	N.m	365

Exhaust system

Max. back pressure	mmHg	76
Diameter of exhaust pipe recommended	mm	75

Air intake system

Max. air intake resistance		
Dirty filter	mmH ₂ O	508
Normal air cleaner and clean filter	mmH ₂ O	254
Heavy duty cleaner and clean filter	mmH ₂ O	305
Diameter of intake pipe recommended	mm	75

Lubrication system

Normal oil pressure range

Low idle	kPa	207
Rated speed	kPa	345
Max. oil temperature permitted in oil pan	°C	121
Oil pan capacity (Max _ Min)	L	9.5_8.5
Lubrication system Min. capacity (oil pan + oil filter)	L	10.9
Usage inclining degree permitted (any direction)	°	40

Fuel system

Fuel injection pump model	BYC	A pump with GAC governor
Max. fuel input resistance of transfer pump	mmHg	102
Max. overflow fuel resistance at overflow pipe of injector	mmHg	508
Total fuel overflow amount	L/h	30

Cooling system

Coolant capacity-engine only	L	7.2
Max. coolant cycling resistance exterior engine	kPa	28
Thermostat adjusting temperature (range)	°C	82_95
Min. opening pressure of radiator cap	kPa	69
Max. coolant temperature permitted _ Standby Power/Base output Power	°C	104/100

Electric system

Starter	12V	24V
Battery charging system	63A	40A
Max. starting circuit resistance	0.00075Ω	0.002Ω
Min. battery capacity_ -12°C (CCA: Cold Cranking Ampere)	625CCA	312CCA

Technical data _ under standard fuel delivery rate FR L002

	Base output Power	Standby Power
Engine speed _ RPM	1500	1500
Output Power _ kW	24	27

Torque _ Nm	153	172
Low idle _ RPM	950-1050	950-1050
Friction energy output _ kW	8.2	8.2
Piston speed _ m/s	6.0	6.0
Engine coolant flow _ L/sec	2.2	2.2
Air intake flow _ L/sec	32.8	32.9
Exhaust flow _ L/sec	67.5	71.1
Exhaust temperature _ °C	380	410
Environment energy output _ kW	N/A	N/A
Coolant energy output _ kW	25.9	29
Fuel energy output _ kW	N/A	N/A

All data's error within $\pm 5\%$.

Excuse for none notice anymore in case of data changed

DONGFENG CUMMINS ENGINE Co., Ltd.