

DATA SHEET

DIESEL GENERATOR 220KW

MODEL#FDK-CD275/H1

50HZ/1500RPM

CUMMINS MODEL: 6LTAA8.9G2



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-CD220/H1
Prime Power	200KW/250KVA
Standby Power	220KW/275KVA
Output Frequency / Rated speed	50Hz/1500rpm
Rated Voltage	230V/400V

Engine Make	Cummins
Engine Model	6LTAA8.9G2
Alternator model	Stamford UC DI274K
Control System	DSE6020
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	6LTAA8.9G2
Engine Manufacturer	Cummins (China Dongfeng)
Cylinder quantity	6
Cylinder Arrangement	Not available
Cycle	Not available

Aspiration	Turbo-charged
Bore x Stroke (mm x mm)	114×135
Displacement	8.9L
Compression Ratio	16.5:1
Prime power / Speed (KW/RPM)	220/1500
Standby power/ Speed (KW/RPM)	240/1500



Speed governor	GAC
Piston Speed	7.25m/s
Friction Energy Output	26kw
Total Lubrication System Capacity (L)	27.6
Coolant Capacity (L)	11.1

Fuel Consumption at 100% load (g/KWh)	197 at 1500rpm
Starter motor	DC24V
Alternator	DC24V
Low idle	850-950rpm

Alternator Specifications

Alternator model	UCDI274K
Alternator manufacturer	STAMFORD
Exciter type	Single bearing, Brushless, Self-excited
Rated output prime power	250KVA
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 DSE6020 (DETAILED in INSTRUCTION)

DSE6020 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: L×W×H (mm)	2650×960×1630
Weight (kg)	2000

Soundproof Version

Overall Size: L×W×H (mm)	3600×1330×1065
Weight (kg)	2500

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 Technical Operations



ENGINE MODEL: 6LTAA8.9-G2
CURVE & DATASHEET: FR92516
FR92996

REV 00 15APR2009



Generator Engine Performance Data

DONGFENG CUMMINS ENGINE Co.,LTD

Xiangfan, Hubei Province, China
<http://www.dcec.com.cn>

Basic Engine Model:

6LTAA8.9-G2

**FR92516
FR92996**

**FR92516 @ 1500 RPM &1800RPM
FR92996 @ 1500 RPM &1800RPM**

**Configuration
D563015GX03**

**CPL Code
CPL: 3079**

**Revision
2009-4-15**

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:	MEP STAGE II	Fuel System:	FR92516: BYC P7100/GAC FR92996: BYC P7100/SEGMA
Governor Regulation:	≤3%		

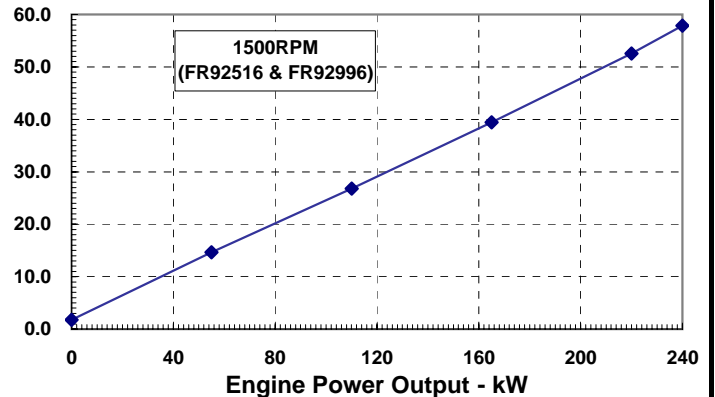
All data is based on the engine operating with fuel system, water pump, and 10 in H₂O (2.488 kPa) inlet air restriction with 5.98 in (152mm) inner diameter, and with 2.01 in Hg (7 kPa) exhaust restriction with 4.02 in (102 mm) inner diameter; not included are alternator, fan, optional equipment and driven 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 RPM	Standby Power		Prime Power		Continuous Power	
	kW	HP	kW	HP	kW	HP
1500	240	322	220	295	180	241
1800	258	346	235	315	190	255

Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	240	322	199	58
PRIME POWER				
100	220	295	197	53
75	165	221	197	39
50	110	147	201	27
25	55	74	220	15
CONTINUOUS POWER				
100	180	241	196	43

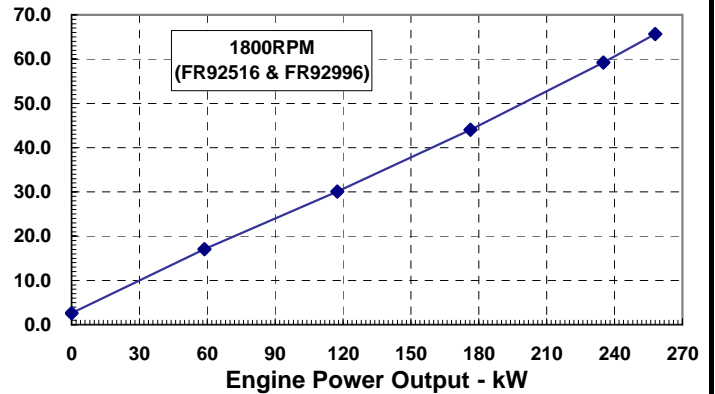
Litre/hour



Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	258	346	210	66
PRIME POWER				
100	235	315	208	59
75	176	236	206	44
50	118	157	211	30
25	59	79	240	17
CONTINUOUS POWER				
100	190	255	206	47

Litre/hour



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 [80 m (263 ft.) altitude], 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 2200 m (7218ft.) altitude.

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 Front Face of Block.....	-mm	427
Center of Gravity above Crankshaft Centerline.....	-mm	163
Engine Idle Speed.....	-RPM	800-1000
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	6
— Clean Element.....	-kPa	4

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	8.5
— 1800RPM.....	-kPa	13.5
Maximum Intake Manifold Temperature Differential (Ambient to IMT) (IMTD).....	-°C	50
Maximum Intake Manifold Temperature for engine protection (Warning Threshold).....	-°C	93

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	20.3
Maximum Fuel Flow on the Supply Side of the Fuel Pump.....	-litre/hr	83
Maximum Fuel Inlet Temperature.....	-°C	70
Total Drain Flow (constant for all loads).....	-litre/hr	30

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 - 93
Minimum Pressure Cap.....	-kPa	103
Maximum Top Tank Temperature for Standby / Prime Power.....	-°C	110 / 104

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement).....	-volt	12V	24V
Battery Charging System, Negative Ground.....	-ampere	100	70
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	6.0
—Weight-Specific HC.....	g/kW.h	1.0
—Weight-Specific CO.....	g/kW.h	3.5
—Weight-Specific Particulates.....	g/kW.h	0.2

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

—Weight-Specific NOx.....	g/kW.h	6.0
—Weight-Specific HC.....	g/kW.h	1.0
—Weight-Specific CO.....	g/kW.h	3.5
—Weight-Specific Particulates.....	g/kW.h	0.2

Fuel Rating Option used for these Data: **FR92516** and **FR92996**

	STANDBY POWER		PRIME POWER		
	1800	1500	1800	1500	
Governed Engine Speed.....	-rpm	800 - 1000	800 - 1000	800 - 1000	
Engine Idle Speed.....	-rpm	800 - 1000	800 - 1000	800 - 1000	
Gross Engine Power Output.....	-kW	258	240	235	220
Piston Speed.....	-m/s	8.7	7.3	8.7	7.3
Friction Horsepower.....	-kW	35	26	35	26
Engine Water Flow to Engine:.....	-litre/sec.	4.0	3.3	4.0	3.3
Intake Air Flow.....	-litre/sec.	286	254	280	248
Exhaust Gas Temperature.....	-°C	520	470	500	430
Exhaust Gas Flow.....	-litre/sec.	762	634	726	584
Radiated Heat to Ambient.....	-kW	30	23	26	22
Heat Rejection to Coolant.....	-kW	110	105	102	95
Heat Rejection to Fuel.....	-kW	1.1	1.1	1.1	1.1
Turbocharger Compressor Outlet Pressure.....	-kPa	185	170	183	165
Turbocharger Compressor Outlet Temperature.....	-°C	174	165	165	155

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.