FDK ENERGY
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DATA SHEET

DIESEL GENERATOR 140KW
MODEL#FDK-CD175/H1
50HZ/1500RPM
CUMMINS MODEL: 6CTA8.3G2

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-CD132/H1	Engine Make	Cummins
Prime Power	128KW/160KVA	Engine Model	6CTA8.3G2
Standby Power	140KW/175KVA	Alternator model	Stamford UCI274F
Output Frequency / Rated speed	50Hz/1500rpm	Control System	DSE6020
Rated Voltage	230V/400V	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	6CTA8.3G2	Aspiration	Turbo-charged
Engine Manufacturer	Cummins (China Dongfeng)	Bore x Stroke (mm x mm)	114×135
		Displacement	8.3L
Cylinder quantity	6	Compression Ratio	16.5:1
Cylinder Arrangement	Not available	Prime power / Speed (KW/RPM)	163/1500
Cycle	Not available	Standby power/ Speed (KW/RPM)	180/1500

CE ISO9001:2008

Speed governor	GAC	Fuel Consumption at 100% load (g/KWh)	210 at 1500rpm
Piston Speed	6.8m/s	Starter motor	DC24V
Friction Energy Output	17kw	Alternator	DC24V
Total Lubrication System Capacity (L)	23.8	Low idle	750-950rpm
Coolant Capacity (L)	12.3		

Alternator Specifications

Alternator model	UCI274F	Number of phase	3
Alternator manufacturer	STAMFORD	Rated voltage	400V (Available with custom requirements)
Exciter type	Single bearing, Brushless, Self-excited	Power factor	0.8
Rated output prime power	160 KVA	Voltage regulation NL-FL	≤±1%
Rated speed	1500 rpm	Insulation grade	H
Rated frequency	50Hz	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
☐ Open generator set	☐ Stamford	☐ Water heater	☐ CHINT
☐ Silent generator set	☐ Marathon	☐ Oil heater	☐ SCHNEIDER
☐ Trailer generator set	☐ Mecc Alte	☐ Battery heater	☐ ABB
☐ ABB MCCB circuit breaker	☐ Leroy Somer		
	☐ Farady		
	☐ Engga		
Fuel system	**Control system**	**Voltage**	**Synchronized system**
☐ 12hrs base tank	☐ AMF function	☐ 415/240V	☐ CHINT Cabinet
☐ 24hrs base tank	☐ ATS control cabinet	☐ 400/230V	☐ SCHNEIDER Cabinet
☐ Dual wall base fuel tank	☐ DSE7320	☐ 380/220V	☐ DSE8610 Module
☐ Outside fuel tank	☐ DSE7510	☐ 220/127V	☐ COMAQ Module
	☐ GU620A	☐ 200/115V	☐ DEIF Module

Dimension & Weight

Open

Overall Size: L×W×H (mm)	2450×810×1450
Weight (kg)	1400

Soundproof Version

Overall Size: L×W×H (mm)	3200×1150×1800
Weight (kg)	1800

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

Techical Operations

ENGINE MODEL： 6CTA8.3-G2

CURVE & DATASHEET： FR91961
FR92995
FR91651

REV 01 15APR2009

Generator Engine Performance Data	Basic Engine Model:	FR91961 @ 1500 RPM &1800RPM FR92995 @ 1500 RPM &1800RPM FR91651 @ 1500 RPM &1800RPM		
DONGFENG CUMMINS ENGINE Co.,LTD Xiangfan, Hubei Province, China http://www.dcec.com.cn	**6CTA8.3-G2** **FR91961** **FR92995** **FR91651**	**Configuration**	**CPL Code**	**Revision**
		D413059GX03	**CPL: 1786**	**2009-4-15**

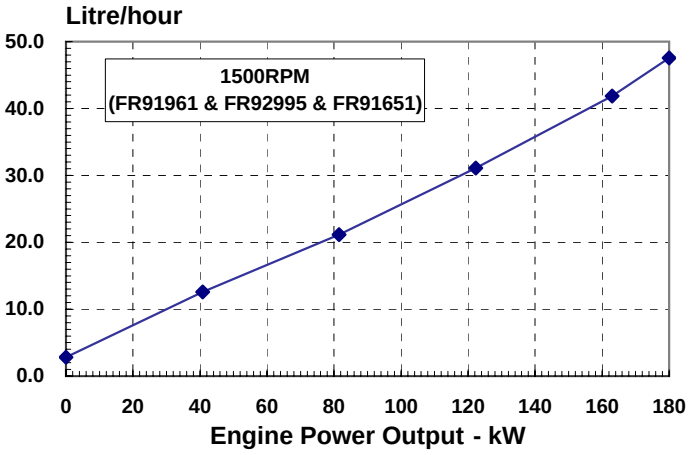
Compression Ratio:	**17.3:1**	Aspiration:	**Turbocharged & Aftercooled**
Bore:	**114 mm**	Displacement:	**8.3 L**
Storke:	**135 mm**	No. of Cylinders:	**6**
Emission Certification:	**MEP STAGE I**	Fuel System:	**FR91961: BYC PB/GAC**
Governor Regulation:	**⩽3%**		**FR92995: BYC PB/SEGMA**
			FR91651: BYC PB/FORTRUST

All data is based on the engine operating with fuel system, water pump, and 10 in H_2O (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	Standby Power		Prime Power		Continuous Power	
RPM	kW	HP	kW	HP	kW	HP
1500	180	241	163	218	133	178
1800	187	251	170	228	TBD	TBD

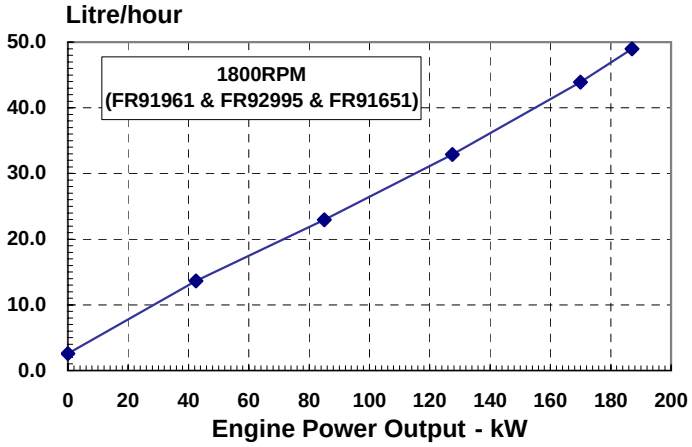
Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	180	241	218	48
PRIME POWER				
100	163	218	212	42
75	122	164	210	31
50	82	109	214	21
25	41	55	255	13
CONTINUOUS POWER				
100	133	178	211	34



Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	187	251	216	49
PRIME POWER				
100	170	228	213	44
75	128	171	213	33
50	85	114	223	23
25	43	57	265	14
CONTINUOUS POWER				
TBD	TBD	TBD	TBD	TBD



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	637
Mass Moment of Inertia of Rotating Components (No Flywheel)	-kg·m^2	0.37
Center of Gravity from Front Face of Block	-mm	427
Center of Gravity above Crankshaft Centerline	-mm	163
Crankshaft Thrust Bearing Load Limit		
—Maximum Intermittent	-N	5338
—Maximum Continuous	-N	2670

ENGINE MOUNTING

Maximum (Static) Bending Moment at Front Support Mounting Surface	-N.m	495
Maximum (Static) Bending Moment at Side Pad Mounting Surface	-N.m	250
Maximum (Static) Bending Moment at Rear Face of Block	-N.m	1356
Moment of Inertia of Complete Engine		
— Roll Axis	-kg·m^2	29.8
— Pitch Axis	-kg·m^2	76.8
— Yaw Axis	-kg·m^2	66.9

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	14
Exhaust Manifold Insulation Acceptable	-Yes/No	No
Turbocharger Insulation Acceptable	-Yes/No	No

AIR INTAKE SYSTEM

Maximum Intake Air Restriction with Heavy Duty Air Cleaner		
— Dirty Element	-kPa	6
— Clean Element	-kPa	4
Minimum Dirt Holding Capacity with Heavy Duty Air Cleaner	-g/cfm	25
Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger	-℃	17
Recommended intake piping size (inner diameter)	-mm	75

LUBRICATION SYSTEM

Minimum Engine Oil Pressure for Engine Protection Devices:		
-Idle Speed	-kPa	103
-Governed Speed	-kPa	276 - 414
Maximum Oil Temperature	-℃	121
Minimum Required Lube System Capacity - Sump plus Filters	-litre	27.6
Angularity of Standard Oil Pan: (Values stated are for intermittent operation only):		
— Front Down	- º	45
— Front Up	- º	45
— Side to Side	- º	45

FUEL SYSTEM

Type Injection System		BYC PB Direct Injection
Maximum Restriction at Lift Pump	-kPa	27
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)	-kPa	33.7
Maximum Fuel Inlet Temperature	-℃	71
Maximum Fuel Flow on the Supply Side of the Fuel Pump	-kg/hr	193

COOLING SYSTEM

Coolant Capacity - Engine Only	-litre	12.3
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	-℃	82 - 95
Minimum Pressure Cap	-kPa	69
Maximum Top Tank Temperature for Standby / Prime Power	-℃	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	0.00075	0.002
Minimum Recommended Battery Capacity			
—Cold Soak @ 10 °F (-12 °C) and Above……	-0°F CCA	TBD	

EMISSIONS

Gaseous Emissions per GB 20891-2007, at 1500rpm：		
—Weight-Specific NOx……	g/kW.h	9.2
—Weight-Specific HC……	g/kW.h	1.3
—Weight-Specific CO……	g/kW.h	5.0
—Weight-Specific Particulates……	g/kW.h	0.54
Gaseous Emissions per GB 20891-2007, at 1800rpm：		
—Weight-Specific NOx……	g/kW.h	9.2
—Weight-Specific HC……	g/kW.h	1.3
—Weight-Specific CO……	g/kW.h	5.0
—Weight-Specific Particulates……	g/kW.h	0.54

Fuel Rating Option used for these Data: **FR91961, FR91651** and **FR92995**

	STANDBY POWER		PRIME POWER	
Governed Engine Speed…… -rpm	1800	1500	1800	1500
Engine Idle Speed…… -rpm	700 - 900	700 - 900	700 - 900	700 - 900
Gross Engine Power Output…… -kW	187	180	170	163
Piston Speed..... -m/s	8.1	6.8	8.1	6.8
Friction Horsepower…… -kW	22	17	22	17
Engine Water Flow to Engine:…… -litre/sec.	4	3.3	4	3.3
Intake Air Flow…… -litre/sec.	237	206	226	192
Exhaust Gas Flow…… -litre/sec.	654	578	586	521
Exhaust Gas Temperature…… -℃	550	563	500	536
Air to Fuel Ratio…… -air:fuel	27.5 : 1	22.5 : 1	29.0 : 1	24.5 : 1
Radiated Heat to Ambient…… -kW	33	26	29	24
Heat Rejection to Coolant…… -kW	117	95	107	83
Heat Rejection to Exhaust…… -kW	180	139	157	123

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.