

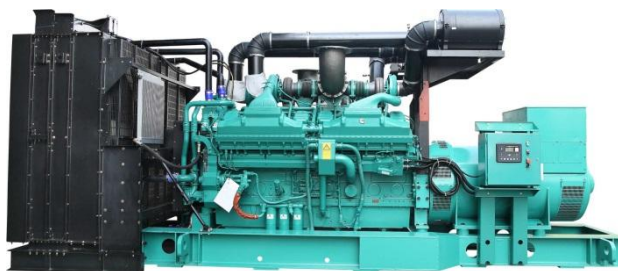
## DATA SHEET

DIESEL GENERATOR 880KW

MODEL#FDK-CC1100/H2

60HZ/1800RPM

CUMMINS MODEL: KTA38-G2A



### 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-CC1100/H1
Prime Power	800KW/1000KVA
Standby Power	880KW/1100KVA
Output Frequency / Rated speed	60Hz/1800rpm
Rated Voltage	277V/480V

Engine Make	Cummins CHINA
Engine Model	KTA38-G2A
Alternator model	Stamford HCI634H
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	KTA38-G2A
Engine Manufacturer	Cummins CHINA CCEC
Cylinder quantity	12
Cylinder Arrangement	60° Vee;
Cycle	4

Aspiration	Turbo-charged
Bore x Stroke (mm x mm)	159×159
Displacement	37.8L
Compression Ratio	14.5:1
Prime power / Speed (KW/RPM)	915kw/1800
Standby power/ Speed (KW/RPM)	1007kw/1800



Type Injection System	Direct Injection Cummins PT	Fuel Consumption at 100% load (L/HOUR)	225 at 1800rpm
Piston Speed	9.5m/s	Starter motor	24V
Friction Energy Output	127kw	Low idle	725-775pm
Total Lubrication System Capacity (L)	135	Coolant Capacity (L)	118

## Alternator Specifications

Alternator model	HCI634H	Number of phase	3
Alternator manufacturer	STAMFORD	Rated voltage	480V (Available with custom requirements)
Exciter type	Single bearing, Brushless, Self-excited	Power factor	0.8
Rated output prime power	1125KVA	Voltage regulation NL-FL	±1%
Rated speed	1800 rpm	Insulation grade	H
Rated frequency	60Hz	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: L×W×H (mm)	4100×1820×2300
Weight (kg)	8000

### Soundproof Version

Overall Size: L×W×H (mm)	20FT CONTAINER
Weight (kg)	12000

## 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.**





**Chongqing Cummins Engine Corp.**  
**Construction Engine**  
**Performance Curve**

ENGINE MODEL  
KTA38-G2A

CURVE NUMBER  
C-621-D

ENGINE FAMILY  
D23

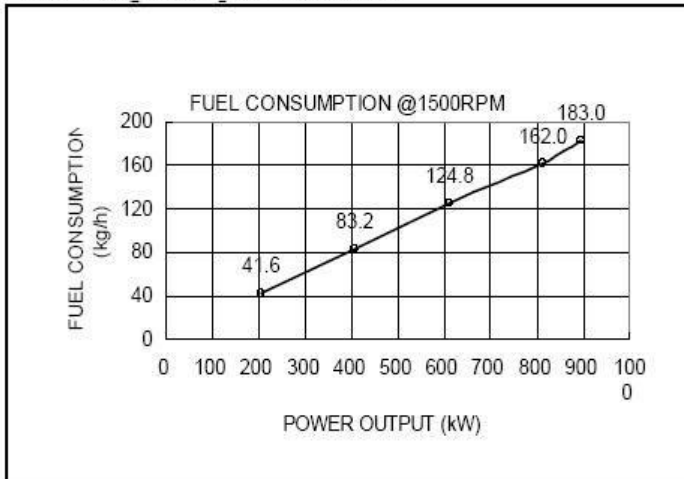
CPL NUMBER  
CQ609

DISPLACEMENT : 38L      ASPIRATION : Turbocharged & Aftercooled      Rating: BHP(KW) @ RPM  
 BORE : 159 mm      No.OF CYLINDERS : 12      1350(1007) @ 1800  
 STROCK : 159 mm      FUEL SYSTEM : PT-STC      1200 (895 ) @ 1500

All data is based on the engine operating with fuel system,water pump,lubricating oil pump,and 389 mm H2O (15in. H2O) inlet air restriction and with 50 mm Hg (2.9in.Hg) exhaust restriction; not included are alternator,fan,optional equipment and drive components.

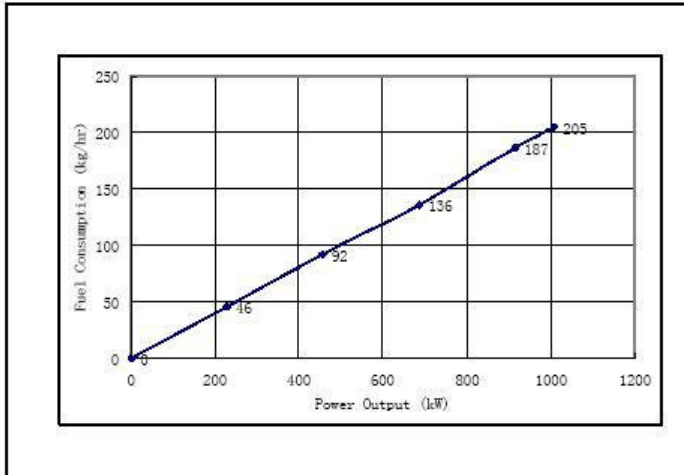
SPEED r/min	STANDBY		PRIME	
	BHP	kWm	BHP	kWm
1500	1200	895	1090	813
1800	1350	1007	1227	915

**FULE CONSUMPTION@1500RPM**



%	POWER		FULE CONSUMPTION	
	BHP	kWm	kg. /hr	L/hr
<b>STANDBY</b>				
110	1200	895	183	215
<b>PRIME</b>				
100	1090	813	162	191
75	818	610	125	147
50	546	407	83	98
25	272	203	42	49
0	0	0		

**FULE CONSUMPTION@1800RPM**



%	POWER		FULE CONSUMPTION	
	BHP	kWm	kg. /hr	L/hr
<b>STANDBY</b>				
110	1350	1007	205	247
<b>PRIME</b>				
100	1227	915	187	225
75	920	686	136	164
50	613	457	92	111
25	307	229	46	55
0	0	0		

**CONVERSIONS:** (Litres=U.S.Gal × 3.785) (kWm=BHP × 0.746) (U.S.Gal=Litres × 0.2642) (BHP=Engine kWm × 1.34)

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100kPa (29.53 inHg) barometric pressure [110m (361 ft) altitude], 25°C(77° F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2. See reverse side for application rating guidelines.

The fuel consumption data is based on No.2 diesel fuel weight at 0.85kg/litre (7.1lbs/U.S.Gal).

Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, option equipment and driven components.

**TECHNICAL DATA DEPT.**

**CERTIFIED WITHIN 5%**

**CHIEF ENGINEER**

## 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.

**Reference Standards:**

BS-5514 and DIN-6271 standards are based on ISO-3046.

**Operation At Elevated Temperature And Altitude:**

The engine may be operated at:

1800 RPM up to 5,000 ft (1525 m) and 104° F (40° C) without power deration.

1500 RPM up to 5,000 ft (1525 m) and 104° F (40° C) without power deration.

For sustained operation above these conditions, derate by 4% per 1,000 ft (300 m), and 1% per 10° F (2% per 11° C).



# Chongqing Cummins Engine Company Ltd.

## Construction Engine Data Sheet

**ENGINE MODEL : KTA38-G2A**

**REFERENCE INFORMATION :**

**CONFIGURATION: D233020DX02**

**CPL NUMBER: CQ609**

### GENERAL ENGINE DATA

Type.....	4 Cycle;V 60°;12 Cylinder
Aspiration .....	Turbocharged & Aftercooled
Bore - in.(mm) X Stroke - in.(mm).....	6.25 (159) X 6.25(159)
Displacement – cu in (litre).....	2300 (37.8)
Compression Ratio .....	14.5:1
<b>Dry Weight</b>	
Fan Hub to Flywheel Engine (Ref. Installation Diagram No. ) - lb.(kg).....	8200 (3723)
Radiator Cooled Engine (Ref. Installation Diagram No. ) - lb.(kg).....	8640(3923)
<b>Wet Weight</b>	
Fan Hub to Flywheel Engine (Ref. Installation Diagram No. ) - lb.(kg).....	8365(3798)
Radiator Cooled Engine (Ref. Installation Diagram No. ) - lb.(kg) .....	8805(3997)
Center of Gravity from Rear Face of flywheel housing FH6017 (Engine Only) – in. (mm) .....	38.6(980)
Center of Gravity above Crankshaft Centerline (Engine Only) – in. (mm).....	11(279)
Moment of Inertia of Rotating Components (Including Flywheel FW6001) – lb-ft <sup>2</sup> (kg m <sup>2</sup> ).....	248(10.4)
Firing Order .....	1R-6L-5R-2L-3R-4L-6R-1L-2R-5L-4R-3L

### ENGINE MOUNTING

Maximum Allowable Bending Moment at Rear Face of Block - lb.-ft. (N*m).....	4500 (6100)
Moment of Inertia About Roll Axis of Complete Engine – lb-ft <sup>2</sup> (kg m <sup>2</sup> ) .....	

### EXHAUST SYSTEM

Maximum Allowable Back Pressure – in.Hg (kPa).....	3.0 (10)
Exhaust Pipe Size Normally Acceptable in.(mm).....	6.0 (152)

### AIR INTAKE SYSTEM

Maximum Allowable Intake Air Restriction with Heavy Duty Air Cleaner	
— Clean Element - in. H <sub>2</sub> O(kPa) .....	15 (3.73)
— Dirty Element - in. H <sub>2</sub> O(kPa) .....	25 (6.25)
Minimum Allowable Dirt Holding Capacity with Heavy Duty Air Cleaner - g/cfm(g-L/s).....	25 (53)

### COOLING SYSTEM

Coolant Capacity - Engine Only - U.S. gal (litre).....	31.2 (118)
- With Heat Exchanger [100°F (38°C)] - U.S. quart (litre).....	344 (325)
Maximum Coolant Friction Head External to Engine – PSI(kPa).....	5.0 (35)
Maximum Static Head of Coolant Above Engine Crankshaft Centerline ft (m) .....	25 (7.6)
Maximum Air Restriction Across Radiator – in.H <sub>2</sub> O (kPa).....	0.5 (0.12)
Standard (modulating) Thermostat Range - °F (°C) .....	180-200 (82-93)
Maximum Coolant Pressure (Exclusive of Pressure Cap) – PSI (kPa).....	35 (241)
Minimum Allowable Pressure Cap –PSI (kPa).....	10 (69)
Maximum Allowable Top Tank Temperature -°F (°C).....	220 (104)
Minimum Recommended Top Tank Temperature -°F (°C).....	160 (71)
Minimum Allowable Fill Rate –U.S.GPM(L/min).....	5 (18.9)
Maximum Allowable Initial Fill Time –min.....	5
Minimum Allowable Coolant Expansion Space – % of System Capacity .....	5
Maximum Allowable Deaeration Time – min.....	25
Minimum Allowable Drawdown – U.S.quart(litre).....	22 (21)

(Drawdown Must Exceed the Volume Not Filled at Initial Fill & Must Not Include Expansion Space)

