

GUANGDONG FUDIANKANG DIESEL GENSET CO., LTD SHENZHEN FUDIANKANG DIESEL GENSET CO., LTD

Tel: 86-13710087995 Email: info@fdkenergy.com

Web: www.fdkenergy.com

DATA SHEET

DIESEL GENERATOR 1100KW

MODEL#FDK-CG1375/H1

50HZ/1500RPM

CUMMINS MODEL: KTA50-G3



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

FDK-CG1375/H1
1000KW/1250KVA
1100KW/1375KVA
50Hz/1500rpm
230V/400V

Engine Make	Cummins		
Engine Model	KTA50-G3		
Alternator model	Stamford LVI634G		
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	KTA50-G3			
Engine Manufacturer	Cummins			
	ORIGINAL			
Cylinder quantity	16			
Cylinder Arrangement	60° Vee			
Cycle	4			

Assisation	Tumba abanaad
Aspiration	Turbo-charged
Bore x Stroke (mm x mm)	159×159
Displacement	50.3L
Compression Ratio	13.9:1
Prime power / Speed (KW/RPM)	1150kw/1500
Standby power/ Speed (KW/RPM)	1227kw/1500







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Type Injection System	Cummins PT	Fuel Consumption at 100% load	202 at 1500rpm
	Direct Injection	(g/KWh)	
Piston Speed	7.9m/s	Starter motor	DC24V
Friction Energy Output	116kw	Low idle	725-775pm
Total Lubrication System Capacity	177L	Coolant Capacity (L)	161

Alternator Specifications

Alternator model	LVI634G	Number of phase	3		
Alternator manufacturer	STAMFORD	Rated voltage	400V (Available with		
Exciter type	Single bearing, Brushless,		custom requirements)		
	Self-excited	Power factor	0.8		
Rated output prime power	1250KVA	Voltage regulation NL-FL	≤±1%		
Rated speed	1500 rpm	Insulation grade	Н		
Rated frequency	50Hz	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.







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Optional

Generator set		Alte	rnator	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	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:	4900×2150×2450
L×W×H (mm)	
Weight (kg)	10300

Soundproof Version

Overall Size:	7000×2300×2800
L×W×H (mm)	
Weight (kg)	12500

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
- Service and parts are available from FDK or distributors in your location.
- ◆ FDK guarantee use **BRAND NEW & GENUINE MACHINE**.





CUMMINS ENGINE COMPANY, INC

Columbus, Indiana 47201

Basic Engine Model:
KTA50-G3

Curve Number: FR6120 (PRIME) FR6250 (STANDBY)

R6250 (STANDB

Page No.

ENGINE PERFORMANCE CURVE

Engine Critical Parts List:

CPL: 2227

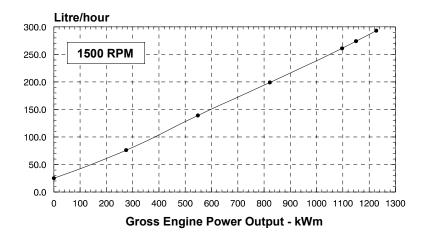
25MAY12

Displacement : 50.3 litre (3067 in ³)	Bore : 159 mm (6.25 in.) Stroke : 159 mm (6.25 in.)
No. of Cylinders : 16	Aspiration : Turbocharged and Aftercooled

Engine Speed	Standb	y Power		Prime Pov	wer Rating		Continuo	us Power
Engine Speed	Ra	ting	Limite	d Time	Unlimit	ed Time	Ra	ting
RPM	kWm	ВНР	kWm	ВНР	kWm	ВНР	kWm	ВНР
1500	1227	1645	1150	1541	1097	1470	900	1206
1800	1380	1850	1300	1742	1220	1635	1000	1340

Engine Performance Data @ 1500 RPM

OUT	PUT POV	WER	FUEL CONSUMPTION					
%	kWm	ВНР	kg/ kWm∙h	lb/ litre/ BHP·h hour		U.S. Gal/ hour		
STANDBY POWER								
100	1227	1645	0.203	0.334	293	77.4		
PRIME	LIMITI	ED TIME	RUNNING	POWER				
100	1150	1541	0.202	0.333	72.3			
PRIME	UNLII	MITED TI	ME RUNNI	NG POWE	₹			
100	1097	1470	0.202	0.333	261	69.0		
75	822	1102	0.206	0.338	199	52.5		
50	548	735	0.216	0.355	139	36.6		
25	275	368	0.234	0.385	76	20.0		
CONTI	NUOUS	POWER				·		
100	900	1206	0.204	0.336	216	57.1		



CONVERSIONS:

(Litres = U.S. Gal x 3.785)

 $(kWm = BHP \times 0.746)$

 $(U.S. Gal = Litres \times 0.2642)$

(BHP = Engine kWm x 1.34)

DK. Truebl

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

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 Sandby 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.

PRIME POWER RATING

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

Limited Time 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 Limited Time Prime Power rating should use the Continuous Power rating.

CONTINUOUS POWER RATING

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.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.5 in Hg) barometric pressure [110 m (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 0.85 kg/litre (7.1 lbs/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, optional equipment and driven components.

TECHNICAL DATA DEPT. CERTIFIED WITHIN 5% CHIEF ENGINEER



CUMMINS ENGINE COMPANY, INC

Columbus, Indiana 47201 **ENGINE PERFORMANCE CURVE**

Basic Engine Model:	
KTA50-G3	

Curve Number: FR6120 (PRIME) FR6250 (STANDBY)

Date:

No.

Page

Engine Critical Parts List:

CPL: 2227

25MAY12

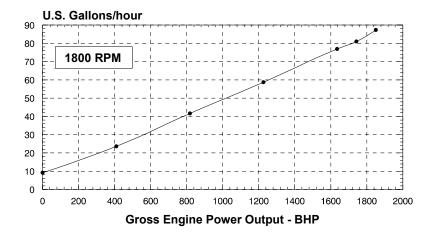
Displacement: 50.3 litre (3067 in³) Bore: 159 mm (6.25 in.) Stroke: 159 mm (6.25 in.)

No. of Cylinders: 16 Aspiration: Turbocharged and Aftercooled

Engine Speed	Standby Power			Prime Power Rating				us Power
Engine Speed	Rat	ting	Limited Time		Unlimited Time		Rating	
RPM	kWm	ВНР	kWm	ВНР	kWm	ВНР	kWm	ВНР
1500	1227	1645	1150	1541	1097	1470	900	1206
1800	1380	1850	1300	1742	1220	1635	1000	1340

Engine Performance Data @ 1800 RPM

OUT	JTPUT POWER FUEL CONSUMPTION						OUTPUT POWER FUEL CONSUMPTION				N
%	kWm	ВНР	kg/ kWm∙h	•		U.S. Gal/ hour					
STANDBY POWER											
100	1380	1850	0.204	0.335	330	87.3					
PRIME	LIMITI	ED TIME	RUNNING	POWER							
100	1300	1742	0.203	0.334	81.0						
PRIME	UNLII	MITED TI	ME RUNNI	NG POWE	₹						
100	1220	1635	0.203	0.334	291	76.9					
75	915	1226	0.207	0.340	222	58.7					
50	610	818	0.220	0.361	157	41.6					
25	305	409	0.249	0.410	89	23.6					
CONTI	NUOUS	POWER									
100	1000	1340	0.206	0.338	242	63.8					



CONVERSIONS:

(Litres = U.S. Gal x 3.785)

 $(kWm = BHP \times 0.746)$

 $(U.S. Gal = Litres \times 0.2642)$

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CONTINUOUS POWER RATING

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.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.5 in Hg) barometric pressure [110 m (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.

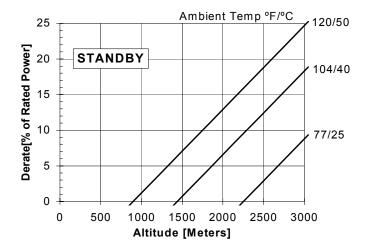
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/litre (7.1 lbs/U.S. gal).

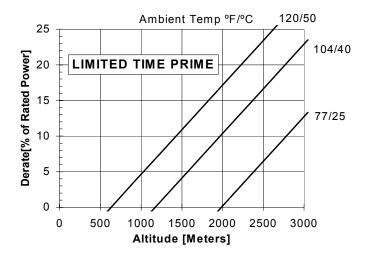
Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components. DK. Truebl

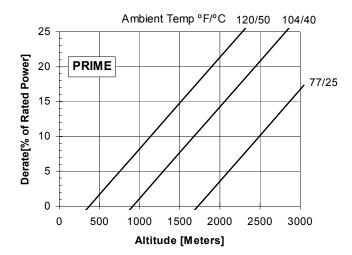
KTA50-G3 Derate Curves @ 1500 RPM

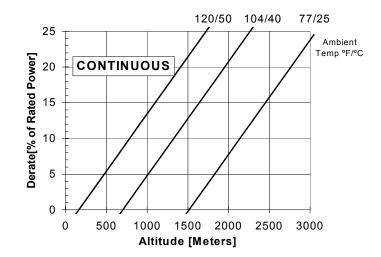
CURVE NO: FR6FŒ FR6250

DATE: 25MAY12









NOTE: Derates shown are based on 15 in H_20 air intake restriction and 2 in Hg exhaust back pressure.

For sustained operation above these conditions, derate by an additional 5% per 1000 ft (300 m) and 9% per 18° F (10° C).

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

Cummins Engine Company, Inc. Engine Data Sheet

DATE: GT OFFG
DATA SHEET: FR6120 (PRIME)
FR6250 (STANDBY) **ENGINE MODEL: KTA50-G3 CONFIGURATION NUMBER**: D283021DX02

• Fan to Flywheel : 3626420 <u>CPL NUMBER</u>
• Engine Critical Parts List : 2227

Type	4-Cycle; 60° V	ee; 16-Cylinder Die	iesel
Aspiration	Turbocharged	d and Aftercooled	
Bore x Stroke — in x in (mm x m	n) 6.25 x 6.25 (1	59 x 159)	
Displacement— in ³ (lit	r) 3067 (50.3)		
Compression Ratio	13.9 : 1		
Dry Weight			
Fan to Flywheel Engine	g) 11820	(5360)	
Heat Exchanger Cooled Engine — Ib (I	g) 12260	(5560)	
Wet Weight			
Fan to Flywheel Engine	12485	(5662)	
Heat Exchanger Cooled Engine — Ib (I	g) 13085	(5934)	
Moment of Inertia of Rotating Components			
• with FW 6009 Flywheel — lb _m • ft ² (kg • r	²) 301	(12.7)	
• with FW 6017 Flywheel		` ,	
Center of Gravity from Rear Face of Flywheel Housing (FH 6024) — in (m		` ,	
Center of Gravity Above Crankshaft Centerline		(/	
Maximum Static Loading at Rear Main Bearing	,	`	
NGINE MOUNTING			
Maximum Bending Moment at Rear Face of Block — lb • ft (N •	n) 4500	(6100)	
XHAUST SYSTEM			
Maximum Back Pressure @ Standby Power Rating — in Hg (mm H	g) 2	(51)	
IR INDUCTION SYSTEM			
Maximum Intake Air Restriction			
• with Dirty Filter Element @ Standby Power Rating — in H ₂ O (mm H ₂)) 25	(635)	
• with Clean Filter Element @ Standby Power Rating		` ,	
OOLING SYSTEM			
Coolant Capacity — Engine Only — US gal (lit	r) 42.5	(161)	
Maximum Coolant Friction Head External to Engine — 1800 rpm — psi (kF		(- /	
— 1500 rpm — psi (kf			
Maximum Static Head of Coolant Above Engine Crank Centerline		(/	
Standard Thermostat (Modulating) Range		(/	
		(/	
Minimum Pressure Cap (For Cooling Systems with less than 2 m [6 ft.] Static Head) — psi (kF Maximum Top Tank Temperature for Standby / Prime Power — °F (` '	
IDDIO ATION OVOTEM		•	
JBRICATION SYSTEM	-)	(400)	
Oil Pressure @ Idle Speed	,	` ,	
@ Governed Speed	•	,	
Maximum Oil Temperature —— °F (` '	
Oil Capacity with OP 6024 Oil Pan: High - Low	•	,	
Total System Capacity (Including Bypass Filter)		` ,	
Angularity of OP 6024 Oil Pan — Front Down		30°	
— Front Up		30°	
— Side to Side		30°	
JEL SYSTEM			
Type Injection System		Direct Injection Cu	umm
Maximum Restriction at PT Fuel Injection Pump — with Clean Fuel Filter		4.0 (10	02)
		`	03)
		`	65)
— with Dirty Fuel Filter Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head) Maximum Fuel Flow to Injection Pump	— in Hg (mm Hg) — in Hg (mm Hg)	8.0 (2	•

ELECTRICAL SYSTEM

— volt	24	
— ampere	35	
— ohm	0.002	
— 0°F CCA	1280	
— 0°F CCA	1800	
— 0°F CCA	1800	
	— ampere — ohm — 0°F CCA — 0°F CCA	— ampere 35 — ohm 0.002 — 0°F CCA 1280 — 0°F CCA 1800

C

Minimum Ambient Temperature for Aided (with Coolant Heater) Cold Start within 10 seconds	50	(10)
Minimum Ambient Temperature for Unaided Cold Start	45	(7)

PERFORMANCE DATA

All data is based on:

- · Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
- ISO 3046, Part 1, Standard Reference Conditions of:

Barometric Pressure : 100 kPa (29.53 in Hg) Air Temperature : 25 °C (77 °F)

Altitude : 110 m (361 ft) Relative Humidity :

+/- 0.25 Estimated Free Field Sound Pressure Level of a Typical Generator Set; 94.6 / 92.4 Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45° — 1800 / 1500 rpm..... dBA 126 / 125

Governed Engine Speed	rpm
Engine Idle Speed	
Gross Engine Power Output	
Brake Mean Effective Pressure	— psi (kPa)
Piston Speed	— ft / min (m / s)
Friction Horsepower	— HP (kW _m)
Engine Water Flow at Stated Friction Head Extern	al to Engine:
4 psi Friction Head	— US gpm (liter / s)
Maximum Friction Head	— US gpm (liter / s)

Engine Data with Dry Type Exhaust Manifold Intake Air Flow — cfm (liter / s) Exhaust Gas Temperature...... °F (°C) Exhaust Gas Flow — cfm (liter / s) Air to Fuel Ratio— air : fuel Radiated Heat to Ambient BTU / min (kW_m)

6		NDBY WER 50) hz	6	PRIME UNLIMIT 0 hz		_
1	800	1:	500	1	1800	1	500
725	5 - 775	725	- 775	72	5 - 775	725	- 775
1850	(1380)	1645	(1227)	1635	(1220)	1470	(1097)
265	(1827)	283	(1951)	235	(1620)	253	(1744)
1875	(9.5)	1562	(7.9)	1875	(9.5)	1562	(7.9)
225	(168)	155	(116)	225	(168)	155	(116)
535	(33.7)	440	(27.8)	535	(33.7)	440	(27.8)
470	(29.6)	400	(25.2)	470	(29.6)	400	(25.2)
3900	(1840)	3700	(1746)	3700	(1746)	3400	(1605)
887	(475)	977	(525)	860	(460)	968	(520)
9100	(4295)	8500	(4011)	8400	(3964)	7900	(3728)
26.5 · 1		27.	.0 : 1	27	7.5 : 1	28	.0 : 1
10000	(176)	8500	(150)	8500	(150)	7300	(130)
51000	(900)	44000	(775)	44000	(775)	38500	(680)
53000	(935)	48000	(845)	47000	(830)	43000	(760)
		l				l	

N.A. - Data is Not Available

N/A - Not Applicable to this Engine

TBD - To Be Determined

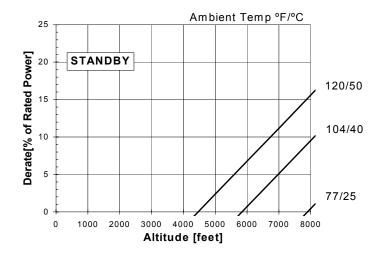
ENGINE MODEL: KTA50-G3 DATA SHEET: DS-6250

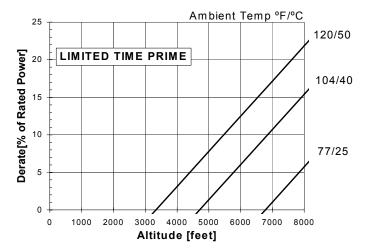
DATE: 25MAY12 **CURVE NO.:** FR6250 & FR6120

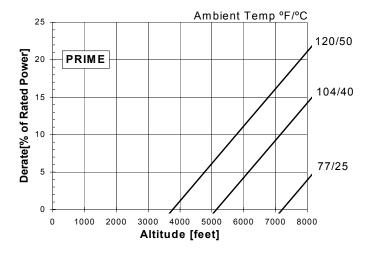
KTA50-G3 Derate Curves @ 1800 RPM

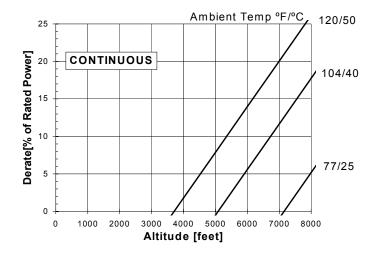
CURVE NO: FR6120 FR6250

DATE: 25MAY12









NOTE: Derates shown are based on 15 in H₂0 air intake restriction and 2 in Hg exhaust back pressure.

For sustained operation above these conditions, derate by an additional 6% per 1000 ft (300 m) and 8% per 18° F (10° C).