

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

Tel: 86-13710087995

Web: www.fdkenergy.com Email: info@fdkenergy.com

DATA SHEET

DIESEL GENERATOR 800KW MODEL#FDK-CG1000/H1 50HZ/1500RPM CUMMINS MODEL: QST30-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.

I DR Dieser Generator Set	Dala		
Genset Model	FDK-CG800/H1	Engine Make	Cummins Original
Prime Power	728KW/910KVA	Engine Model	QST30-G3
Standby Power	800KW/1000KVA	Alternator model	Stamford HCI634H
Output Frequency / Rated speed	50Hz/1500rpm	Control System	DSE7320
Rated Voltage	230V/400V	Phase	Three

FDK Diesel Generator Set Data

(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	QST30-G3	Aspiration	Turbo-charged	
Engine Manufacturer	Cummins	Bore x Stroke (mm x mm)	140×165	
	ORIGINAL USA	Displacement	30.48L	
Cylinder quantity	12	Compression Ratio	14.0:1	
Cylinder Arrangement	50° Vee	Prime power / Speed (KW/RPM)	806kw/1500	
Cycle	4	Standby power/ Speed (KW/RPM)	895kw/1500	





FDK reserves the right to change the specifications and designs without noice.



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Type Injection System	Bosch P8500
	Direct Injection
Piston Speed	9.9m/s
Friction Energy Output	82kw
Total Lubrication System Capacity (L)	154

	Web: www.fdl	ail: info@fdkenergy.com			
Fuel	Consumption	at	100%	load	194 at 1500rpm
(g/KW	′h)				
Starte	r motor		DC24V		
Low ic	lle				700-900pm
Coola	nt Capacity (L)				85

Alternator Specifications

Alternator model	HCI634H	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	940KVA	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.





ISO9001:2008 FDK reserves the right to change the specifications and designs without noice.



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Ор	Optional								
Gen	erator set	Alte	rnator	Low	environment Temp	ATS	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						
Fue	l system	Con	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

Soundproof Version

Overall Size:	3800×1818×2350	Overall Size:	5800×2000×2550
L×W×H (mm)		L×W×H (mm)	
Weight (kg)	7450	Weight (kg)	9700

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**.



cummins	CUMMINS ENGINE CO		Basic Engine Model: QST30-G3	Curve Number: FR-5278	G-DRIVE Q30	
			Engine Critical Parts List:	Date:	1	
	ENGINE PERFORMANCE CURVE		CPL: 3206	10JAN11		
Displacement :	30.48 liter (1860 in ³)	Bore : 14	Bore : 140 mm (5.51 in.) Stroke : 165 mm (6.50 in.)			
No. of Cylinder	Io. of Cylinders : 12 Aspiratio		ation : Turbocharged and Aftercooled			

Engine Speed	Standby Power		Prime	Power	Continuous Power		
RPM	kWm	BHP	kWm	BHP	kWm	BHP	
1500	895	1200	806	1080	634	850	
1800	1007	1350	910	1220	731	980	

Engine Performance Data @ 1500 RPM

		WED	F		SUMDTI	ON			
%	kWm	ВНР	kg/ kWm∙h	lb/ BHP∙h	liter/ hour	U.S. Gal/ hour	200.0	1500 RPM_	
STAN	DBY PO	WER			T				
100	895	1200	0.194	0.319	204	53.9	150.0		
PRIME	POWE	R			1		100.0		
100	806	1080	0.194	0.319	184	48.5	100.0		
75	604	810	0.195	0.321	139	36.6	50.0		
50	403	540	0.198	0.325	94	<u>2</u> 4.7			
25	201	270	0.215	0.353	51	13.4	0.0		
CONT	INUOUS	POWE	R	r	1	r	(0 100 200 300 400 500 600 700 800 900	
100	634	850	0.195	0.321	146	38.4		Gross Engine Power Output - kWm	

CONVERSIONS: (liters = U.S. Gal x 3.785)

 $(kWm = BHP \times 0.746)$

(U.S. Gal = liters x 0.2642)

(BHP = kWm x 1.34)

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 Standby Power rating. This rating should be applied where reliable utilitypower 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 situationawhere 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

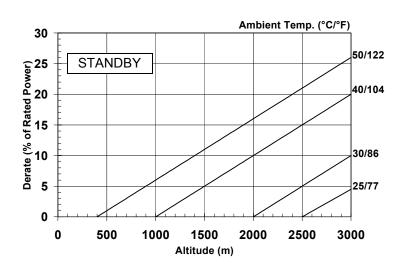
Applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating

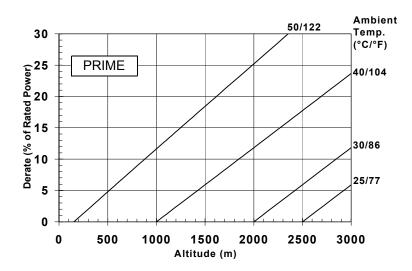
Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 dies or a fuel corresponding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

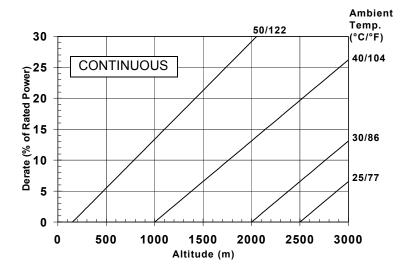
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/liter (7.1 lbs/U.S. gal).

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.

NON CERTIFIED







Reference Standards:

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

Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 10% per 500 m (1640 ft), and 15% per 10° C (18° F).

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

cummin ⁵		, INC	Basic Engine Model: QST30-G3	Curve Number: FR-5278	G-DRIVE Q30 3
CO	Columbus, Indiana 47201		Engine Critical Parts List:	Date:	
ENGINE PERFORMANCE CUR		RVE	CPL: 3206	10JAN11	
Displacement :	30.48 liter (1860 in ³)	Bore : 14	0 mm (5.51 in.) Stroke : 165 mm (6.50 in.)	
No. of Cylinder	s : 12	Aspiration : Turbocharged and Aftercooled			
	••		• •		

Engine Speed	Standby Power		Prime	Power	Continuous Power		
RPM	kWm	BHP	kWm	BHP	kWm	внр	
1500	895	1200	806	1080	634	850	
1800	1007	1350	910	1220	731	980	

Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION				
%	kWm	внр	kg/ kWm∙h	lb/ BHP∙h	liter/ hour	U.S. Gal/ hour	70 1800 RPM
STAN	STANDBY POWER					1	
100	1007	1350	0.194	0.319	228	60.2	
PRIMI	PRIME POWER						
100	910	1220	0.193	0.318	207	54.6	
75	683	915	0.192	0.315	154	40.6	
- 50	455	610	0.198	0.325	106	27.9	
- 25	228	305	0.222	0.365	59	15.7	0 150 300 450 600 750 900 1050 1200 1350 150
	INUOUS						 Gross Engine Power Output - BHP
	731	980	0.192	0.315	165	43.5	

CONVERSIONS: (liters = U.S. Gal x 3.785) $(kWm = BHP \times 0.746)$

(U.S. Gal = liters x 0.2642)

(BHP = kWm x 1.34)

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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

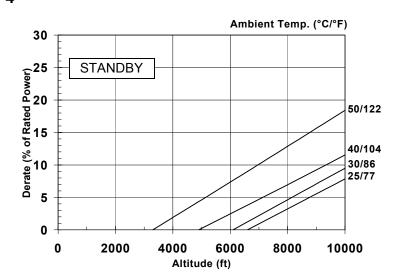
Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding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

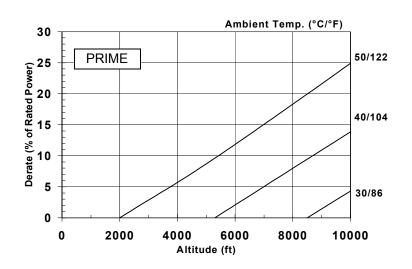
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/liter (7.1 lbs/U.S. gal).

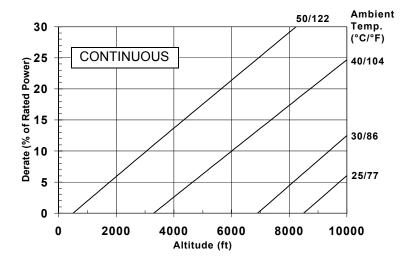
Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

NON CERTIFIED

QST30-G3 Derate Curves @ 1800 RPM







Reference Standards:

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

Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 8% per 500 m (1640 ft), and 15% per 10° C (18° F).

Note: Derates shown are based on 15 irH₂0 air intake restriction and 2 in Hg exhaust back pressure.

Cummins Engin Engine D	e Company, Inc. ata Sheet		G-DRIVE Q30 5
ENGINE MODEL : QST30-G3 CONFIGURATION NU	MBER : D573001GX03 PEI	Ī	HEET: DS-5278 DATE: 10JAN11 JRVE: FR-5278
INSTALLATION DIAGRAM• Fan to Flywheel: 3170342	CPL NUMBER • Engine Critical Parts List	: 3206	
GENERAL ENGINE DATA			
Туре			e; 12-Cylinder Diesel
Aspiration		-	and Aftercooled
Bore x Stroke	· • • • • • • • • • • • • • • • • • • •	140 x165 (5.51	x 6.50)
Displacement	— liter (in ³)	30.48 (1860)	
Compression Ratio		14.0	
Dry Weight		0007	(0540)
Fan to Flywheel Engine	— kg (lb)	2967	(6540)
Wet Weight			(0==0)
Fan to Flywheel Engine	— kg (lb)	3062	(6750)
Moment of Inertia of Rotating Components	. 2		(222)
• with FW 5050 Flywheel		8.7	(206)
Center of Gravity from Rear Face of Flywheel Housing (FH 5031)	. ,	845	(33.3)
Center of Gravity above Crankshaft Centerline		195	(7.7)
Maximum Static Loading at Rear Main Bearing	— kg (lb)	950	(2100)
ENGINE MOUNTING			
Maximum Bending Moment at Rear Face of Block	— N • m (lb • ft)	3100	(2286)
EXHAUST SYSTEM			
Maximum Back Pressure	— mm Hg (in Hg)	76	(3.0)
AIR INDUCTION SYSTEM			
Maximum Intake Air Restriction			
with Dirty Filter Element	- mm H ₂ O (in H ₂ O)	635	(25)
with Normal Duty Air Cleaner and Clean Filter Element	- mm H ₂ O (in H ₂ O)	254	(10)
with Heavy Duty Air Cleaner and Clean Filter Element		381	(15)
		001	(10)
COOLING SYSTEM			
	liter (LIC col)	05	(22.4)
Coolant Capacity — Engine Only		85	(22.4)
	— kPa (psi)	69.0	(10.0)
•	— kPa (psi)	48.0	(7.0)
Maximum Static Head of Coolant Above Engine Crank Centerline		14	(46)
Standard Thermostat (Modulating) Range		82 - 95	(180 - 203)
Minimum Pressure Cap		69.0	(10)
Maximum Top Tank Temperature for Standby / Prime Power	— °C (°F)	104 / 100	(220 / 212)
LUBRICATION SYSTEM			
Oil Pressure @ Idle Speed	— kPa (psi)	166	(24.0)
@ Governed Speed	— kPa (psi)	310 - 386	(45.0 - 56.0)
Maximum Oil Temperature	— °C (°F)	121	(250)
Oil Capacity with OP 5133 Oil Pan : High - Low	— liter (US gal)	133 - 114	(35 - 30)
Total System Capacity (Including Bypass Filter)		154	(40.7)
Angularity of OP 5133 Oil Pan — Front Down			17°
— Front Up			35°
— Side to Side			35°

FUEL SYSTEM

FUEL SYSTEM		
	Bosch P8500 [Direct Injection
Maximum Restriction at Lift Pump — with Clean Fuel Filter	102	(4)
— with Dirty Fuel Filter	203	(8)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)	508	(20)
Maximum Fuel Flow to Injection Pumps (LB and RB Combined) — 1800 RPM — liter / hr (US gph)	570	(150)
— 1500 RPM———————————————————————————————	550	(145)
Maximum Drain Flow (@ Minimum load) — 1800 RPM	550	(145)
— 1500 RPM — liter / hr (US gph)	530	(140)
Maximum Fuel Inlet Temperature	66	(150)
ELECTRICAL SYSTEM		
Cranking Motor (Heavy Duty, Positive Engagement) — volt	24	
Battery Charging System, Negative Ground	35	
Maximum Allowable Resistance of Cranking Circuit	0.002	
Minimum Recommended Battery Capacity		
• Cold Soak @ 10 °C (50 °C) and Above	1200	
• Cold Soak @ 0 °C to 10 °C (32 °F to 50 °F)	1280	
• Cold Soak @ -18 °C to 0 °C (0 °F to 32 °F) — 0°F CCA	1800	
COLD START CAPABILITY		
Minimum Ambient Temperature for Aided (with Coolant Heater) Cold Start within 10 seconds to Rated Speed — °C (°F)	10	(50)
Minimum Ambient Temperature for Aided (with Grid Heater) Cold Start	-10	(14)
Minimum Ambient Temperature for Unaided Cold Start	0	(32)
	Ŭ	(02)
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 : 99 kPa (29.3 in Hg) Air Temperature : 25 °C (77 °F	-)	
Altitude: 110 m (361 ft)Relative Humidity: 30%		
Steady State Stability Band at any Constant Load	+/- 0.25	
Estimated Free Field Sound Pressure Level of a Typical Generator Set;		
Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); 1800 / 1500 rpm	96.1 / 93	3.2 (est.)

Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°; (1800 / 1500 rpm)....... — dBA

STANDBY PRIME POWER 60 hz 50 hz 60 hz 50 hz Governed Engine Speed...... rpm 1800 1500 1800 1500 Engine Idle Speed..... - rpm 700 - 900 700 - 900 700 - 900 700 - 900 1007 (1350) 895 (1200)910 (1220) 806 (1080) Brake Mean Effective Pressure - kPa (psi) 2206 (320) 2358 (342) 1993 (289) 2117 (307)9.9 (1634)Piston Speed..... — m / s (ft / min) (1949)8.3 9.9 (1949)8.3 (1634)82 (110)58 (78) 82 (110) 58 (78) Engine Water Flow at Stated Friction Head External to Engine: • 5 psi Friction Head..... — liter / s (US gpm) 15.5 (246)12.5 (198) 15.5 (246)12.5 (198) Maximum Friction Head.....
 Hiter / s (US gpm) 15.0 (238)12.0 15.0 12.0 (190)(238)(190) Engine Data with Dry Type Exhaust Manifold Intake Air Flow liter / s (cfm) 1270 (2690)935 (1985)1190 (2520) 865 (1830)Exhaust Gas Temperature..... - °C (°F) 481 (897) 563 (1046)464 (867) 541 (1005)Exhaust Gas Flow..... — liter / s (cfm) 3280 (6945) 2720 (5755) 3000 (6365) 2430 (5150) Air to Fuel Ratio air : fuel 27.3:1 22.7 : 1 28.4 : 1 23.1:1 Radiated Heat to Ambient - kW_m (BTU / min) 115 (6570) 105 (5840) 105 (5920) 90 (5250) 490 (27940)405 (22970) 455 (25790) 375 (21200) 695 (39590)650 (37060) 615 (34890) 580 (32830)

N.A. - Data is Not Available

N/A - Not Applicable to this Engine

TBD - To Be Determined

ENGINE MODEL: QST30-G3 DATA SHEET: DS-5278 DATE: 10JAN11 CURVE NO.: FR-5278

119.7 / 116.9 (est.)

CUMMINS ENGINE COMPANY, INC.