

# **Dongfeng Cummins Techical Operations**



**ENGINE MODEL: 6CTA8.3-G1  
CURVE & DATASHEET: FR93038**

REV 00 15APR2009



**Generator Engine Performance Data**  
**DONGFENG CUMMINS ENGINE Co.,LTD**

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

Basic Engine Model:

**6CTA8.3-G1**

**FR93038**

**163 kW @ 1500 RPM**

**Configuration**

**D413059GX03**

**CPL Code**

**CPL: 1786**

**Revision**

**2009-4-15**

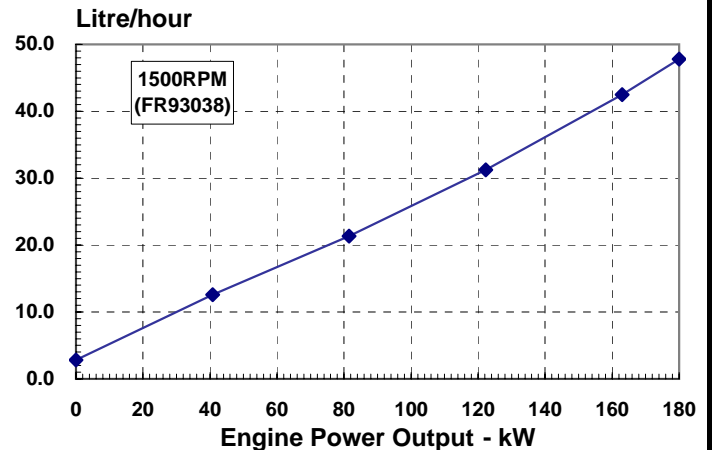
Compression Ratio:	<b>17.3:1</b>	Aspiration:	<b>Turbocharged &amp; Aftercooled</b>
Bore:	<b>114 mm</b>	Displacement:	<b>8.3 L</b>
Stroke:	<b>135 mm</b>	No. of Cylinders:	<b>6</b>
Emission Certification:	<b>MEP STAGE I</b>	Fuel System:	<b>BYC PB/RSV Mechanical</b>
Governor Regulation:	<b>≤8%</b>		

All data is based on the engine operating with fuel system, water pump, and 10 in H<sub>2</sub>O (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	180	241	163	218	133	178

**Engine Performance Data @ 1500 RPM**

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
<b>STANDBY POWER</b>				
100	180	241	219	48
<b>PRIME POWER</b>				
100	163	218	215	42
75	122	164	211	31
50	82	109	216	21
25	41	55	255	13
<b>CONTINUOUS POWER</b>				
100	133	178	212	34



**Engine Performance Data @ 1800 RPM**

**Not Available at 1800 RPM**

**Not Available at 1800 RPM**

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 <sup>2</sup>	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 <sup>2</sup>	29.8
— Pitch Axis.....	-kg-m <sup>2</sup>	76.8
— Yaw Axis.....	-kg-m <sup>2</sup>	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.....	-°C	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.....	-°C	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.....	-°	45
— Front Up.....	-°	45
— Side to Side.....	-°	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.....	-°C	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.....	-°C	82 - 95
Minimum Pressure Cap.....	-kPa	69
Maximum Top Tank Temperature for Standby / Prime Power.....	-°C	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

Fuel Rating Option used for these Data: **FR93038**

Governed Engine Speed.....	-rpm
Engine Idle Speed.....	-rpm
Gross Engine Power Output.....	-kW
Piston Speed.....	-m/s
Friction Horsepower.....	-kW
Engine Water Flow to Engine:.....	-litre/sec.
Intake Air Flow.....	-litre/sec.
Exhaust Gas Flow.....	-litre/sec.
Exhaust Gas Temperature.....	-°C
Air to Fuel Ratio.....	-air:fuel
Radiated Heat to Ambient.....	-kW
Heat Rejection to Coolant.....	-kW
Heat Rejection to Exhaust.....	-kW

STANDBY POWER		PRIME POWER	
1800	1500	1800	1500
<b>N/A</b>	700 - 900	<b>N/A</b>	700 - 900
	180		163
	6.8		6.8
	17		17
	3.3		3.3
	206		192
	578		521
	563		536
	22.5 : 1		24.5 : 1
	26		24
95	83		
139	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.