

# Dongfeng Cummins Technical Operations



ENGINE MODEL: 4BTA3.9-GM47  
CURVE & DATASHEET: FR92492

REV 00 15APR2009



**Generator Engine Performance Data**

DONGFENG CUMMINS ENGINE Co.,LTD

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Basic Engine Model:

**4BTA3.9-GM47**

**FR92492**

**47kW @ 1500 RPM**

<b>Configuration</b> D383060MX02	<b>CPL Code</b> CPL:2720	<b>Revision</b> 2009-4-15
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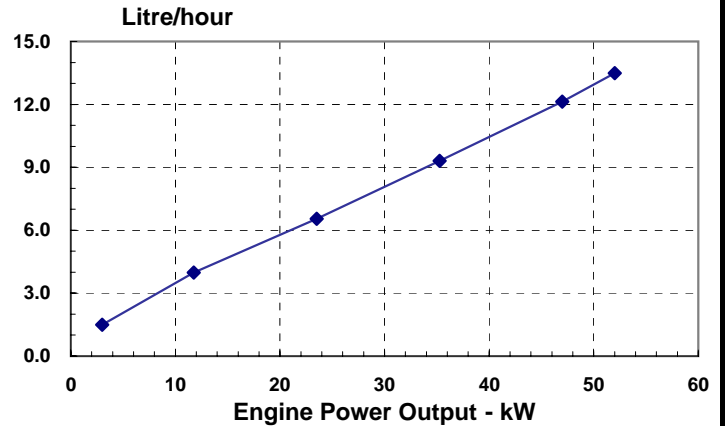
Compression Ratio:	<b>17.3 : 1</b>	Aspiration:	<b>Turbocharged and Aftercooled</b>
Bore:	<b>102 mm</b>	Displacement:	<b>3.9 L</b>
Stroke:	<b>120 mm</b>	No. of Cylinders:	<b>4</b>
Governor Regulation:	<b>≤3%</b>	Fuel System:	<b>BYC A/GAC 24V</b>

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	52	70	47	63	TBD	TBD

**Engine Performance Data @ 1500 RPM**

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
<b>STANDBY POWER</b>				
100	52	70	214	13.5
<b>PRIME POWER</b>				
100	47	63	213	12
75	35	47	218	9
50	24	31	230	7
25	12	16	280	4
<b>CONTINUOUS POWER</b>				
TBD	TBD	TBD	TBD	TBD



**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.

**GENERAL ENGINE DATA**

Weight (Dry) Engine only - Average.....	-kg	350
Idle Speed Setting.....	-rpm	1000±50
Compression Ratio .....		17.3 : 1
Piston Speed* .....	-m/sec	6.0
Firing Order.....		1-5-3-6-2-4

**ENGINE MOUNTING**

Maximum (Static) Bending Moment at Rear Face of Block.....	-N•m	1356
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**EXHAUST SYSTEM\***

Maximum Back Pressure.....	-kPa	10.1
Exhaust Gas Flow.....	-litre/sec	TBD
Exhaust Gas Temperature Turbine Out (Rated Power).....	-°C	530
Exhaust Gas Temperature Turbine Out (Standby Power).....	-°C	560
Maximum Static Supported Weight at the Turbocharger Outlet Flange.....	-N•m	6

**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	53
Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger.....	-°C	17
Intake Manifold Pressure .....	-mmHg	TBD
Intake Air Flow*.....	-litre/sec	TBD
Heat Rejection to Ambient .....	-kW	TBD

**FUEL SYSTEM\***

Maximum Fuel Flow on the Supply Side of the Fuel Pump.....	-litre/hr	127
Maximum fuel supply restriction at fuel pump inlet		
— with clean fuel filter element(s) at maximum fuel flow.....	-kPa	8
— with dirty fuel filter element(s) at maximum fuel flow .....	-kPa	14
Maximum fuel inlet temperature.....	-°C	60
Maximum Allowable Return Line Pressure .....	-kPa	34

**LUBRICATION SYSTEM**

Normal Operating Oil Pressure Range		
— minimum low idle.....	-kPa	69
— rated speed (Min/Max).....	-kPa	207 - 448
Maximum Sump Oil Temperature.....	-°C	120
Minimum Required Lube System Capacity - Sump plus Filters.....	-litre	10.9
By-pass Filtration Required.....	-Yes/No	Yes

**COOLING SYSTEM\***

Coolant capacity - engine only.....	-litre	7.9	
Minimum Coolant Makeup Capacity .....	-litre	3	
Standard (modulating) Thermostat Range.....	-°C	82-95	
Minimum pressure cap rating at sea level.....	-kPa	69	
Maximum coolant operating temperature at engine outlet (max. top tank temp):.....	-°C	100	
Minimum operating block coolant temperature.....	-°C	71	
Minimum coolant expansion space (% of system capacity).....	- %	5	
Heat Rejection to Coolant.....	-kW	TBD	
Maximum recommended external coolant flow restriction in engine circuit:.....	-kPa	34	

**CRANKING SYSTEM**

Minimum Battery Capacity - Cold Soak at 0°F (-18°C) or Above		12V	24V
— Engine Only - Cold Cranking Amperes.....	-CCA	1375	625
— Engine Only - Reserve Capacity.....	-min.	TBD	TBD
Maximum Starting Circuit Voltage Drop.....	-Volts	TBD	
Minimum Ambient Temperature for Unaided Cold Start.....	-°C(°F)	-12	
Minimum Cranking Speed Required for Unaided Cold Start.....	-rpm	TBD	
Maximum starting circuit resistance.....	-Ohm	0.0012	0.004

**EMISSIONS DATA (in accordance with ISO8178 Cycle D2)**

NO <sub>x</sub> (Oxides of Nitrogen).....	-g/kW.h	N.A.
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\*All Data at Rated Conditions

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.**