DCEC CUMMINS ENGINE Co.,LTD

Generator Engine Performance Data

Basic Engine Model:

6BTA5.9-G2

FR92306
FR92943

FR92306 @ 1500 RPM &1800RPM
FR92943 @ 1500 RPM &1800RPM

Configuration	CPL Code	Revision
D403050DX02	CPL: 2697	2009-4-15

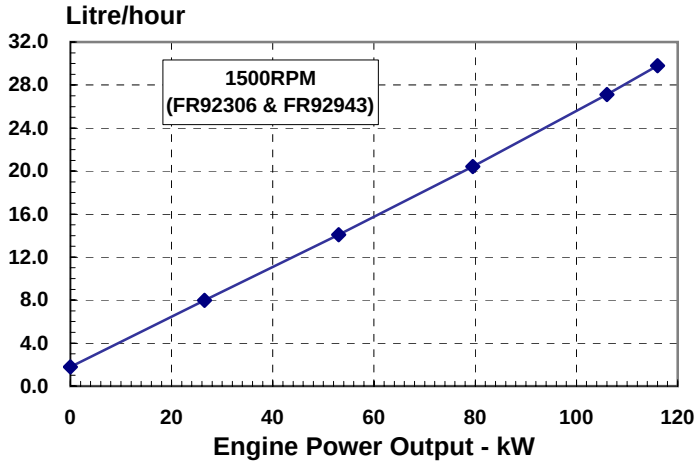
Compression Ratio:	**17.3:1**	Aspiration:	**Turbocharged & Aftercooled**
Bore:	**102 mm**	Displacement:	**5.9 L**
Storke:	**120 mm**	No. of Cylinders:	**6**
Emission Certification:	**MEP STAGE I**	Fuel System:	**FR92306: BYC PB/GAC 24V**
Governor Regulation:	**⩽3%**		**FR92943: BYC PB/GAC 12V**

All data is based on the engine operating with fuel system, water pump, and 10 in H_2O (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	Standby Power		Prime Power		Continuous Power	
RPM	kW	HP	kW	HP	kW	HP
1500	116	155	106	142	56	75
1800	132	177	120	161	TBD	TBD

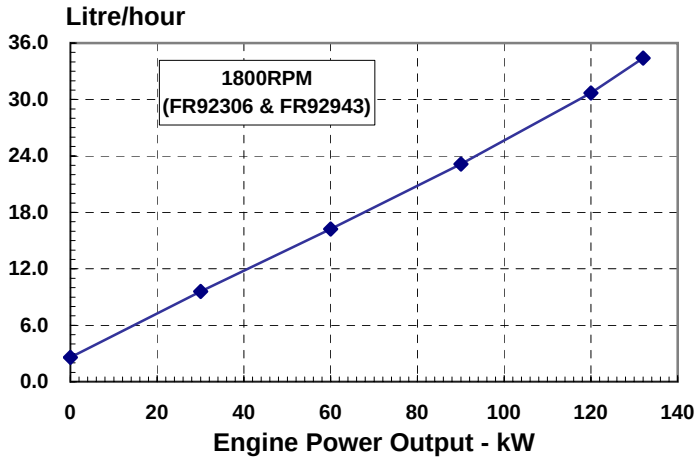
Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	116	155	212	30
PRIME POWER				
100	106	142	211	27
75	80	107	212	20
50	53	71	219	14
25	27	36	248	8
CONTINUOUS POWER				
100	56	75	218	15



Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	132	177	215	34
PRIME POWER				
100	120	161	211	31
75	90	121	212	23
50	60	80	223	16
25	30	40	264	10
CONTINUOUS POWER				
TBD	TBD	TBD	TBD	TBD



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	435
Mass Moment of Inertia of Rotating Components (No Flywheel)	-kg·m^2	0.25
Center of Gravity from Front Face of Block	-mm	391
Center of Gravity above Crankshaft Centerline	-mm	140
Crankshaft Thrust Bearing Load Limit		
—Maximum Intermittent	-N	3425
—Maximum Continuous	-N	1112

ENGINE MOUNTING

Maximum (Static) Bending Moment at Front Support Mounting Surface	-N.m	435
Maximum (Static) Bending Moment at Side Pad Mounting Surface	-N.m	TBD
Maximum (Static) Bending Moment at Rear Face of Block	-N.m	1356
Moment of Inertia of Complete Engine		
— Roll Axis	-kg·m^2	16.5
— Pitch Axis	-kg·m^2	41.1
— Yaw Axis	-kg·m^2	35.4

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	13.5
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	53
Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger	-℃	17
Recommended intake piping size (inner diameter)	-mm	76

LUBRICATION SYSTEM

Minimum Engine Oil Pressure for Engine Protection Devices:		
-Idle Speed	-kPa	207
-Governed Speed	-kPa	345
Maximum Oil Temperature	-℃	121
Oil Capacity with OP 9006 Oil Pan : High - Low	-litre	14.2 - 12.3
Minimum Required Lube System Capacity - Sump plus Filters	-litre	16.4
Angularity of Standard Oil Pan: (Values stated are for intermittent operation only):		
— Front Down	- º	40
— Front Up	- º	40
— Side to Side	- º	40

FUEL SYSTEM

Type Injection System		BYC PB Direct Injection
Maximum Restriction at Lift Pump	-kPa	13.6
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)	-kPa	67.7
Total Drain Flow (constant for all loads)	-litre/hr	30

COOLING SYSTEM

Coolant Capacity - Engine Only	-litre	10
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	14
Standard Thermostat (Modulating) Range	-℃	82 - 95
Minimum Pressure Cap	-kPa	69
Maximum Top Tank Temperature for Standby / Prime Power	-℃	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	800	400

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

Gaseous Emissions per GB 20891-2007, at 1800rpm：

—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: **FR92306** and **FR92943**

		STANDBY POWER		PRIME POWER	
Governed Engine Speed	-rpm	1800	1500	1800	1500
Engine Idle Speed	-rpm	750 - 850	750 - 850	750 - 850	750 - 850
Gross Engine Power Output	-kW	132	116	120	106
Piston Speed	-m/s	7.2	6	7.2	6
Friction Horsepower	-kW	16.4	12.7	16.4	12.7
Engine Water Flow to Engine:	-litre/sec.	2.4	2.0	2.4	2.0
Intake Air Flow	-litre/sec.	142	118	140	112
Exhaust Gas Flow	-litre/sec.	406	334	381	305
Exhaust Gas Temperature	-℃	580	570	540	540
Air to Fuel Ratio	-air:fuel	23.3 : 1	22.4 : 1	25.7 : 1	23.4 : 1
Radiated Heat to Ambient	-kW	20	18	18	16
Heat Rejection to Coolant	-kW	71	66	63	59
Heat Rejection to Exhaust	-kW	112	94	96	82

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.