

Cummins Technical Operations



ENGINE MODEL: 6LTAA8.9-M315

CURVE & DATASHEET: FR92291

REV 00 25Apr2009



Marine Engine Performance Data
Cummins Engine Co., Ltd.

Basic Engine Model:
6LTAA8.9-M315
FR92291

315 BHP (230kW) @ 2134 RPM
1350 N·m @ 1400 RPM

Configuration
D563014MX03

CPL Code
2724

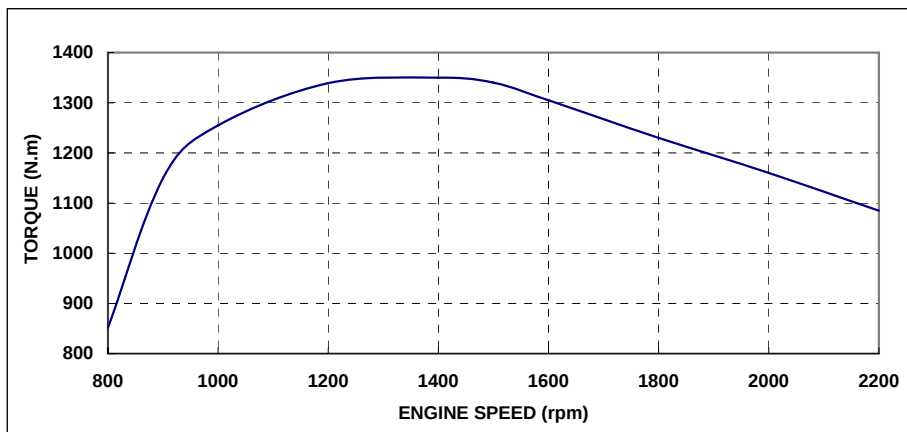
Revision
2009-4-25

Compression Ratio: **16.6:1**
Bore: **114 mm**
Stroke: **145 mm**

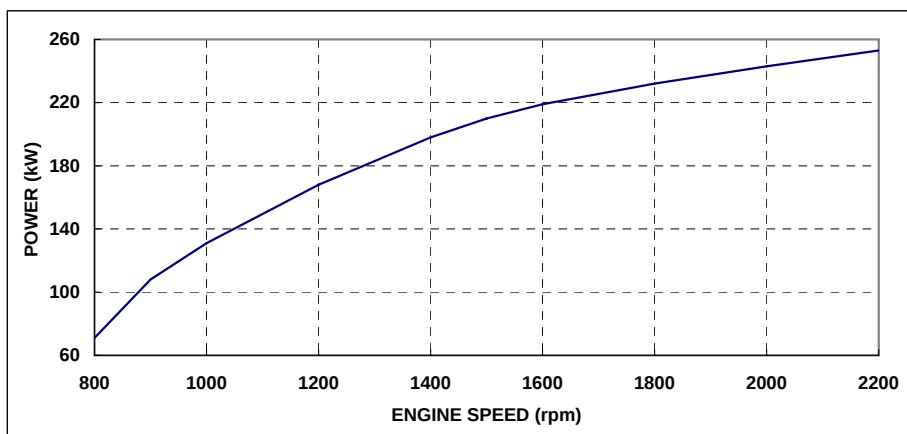
Aspiration: **Turbocharged and Charge Air Cooled**
Displacement: **8.9 L**
No. of Cylinders: **6**
Fuel System: **BOSCH P7100/RQV_K**

All data is based on the engine operating with fuel system, water pump, and 10 in H₂O (2.488 kPa) inlet air restriction with 5.98 in (152 mm) 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.

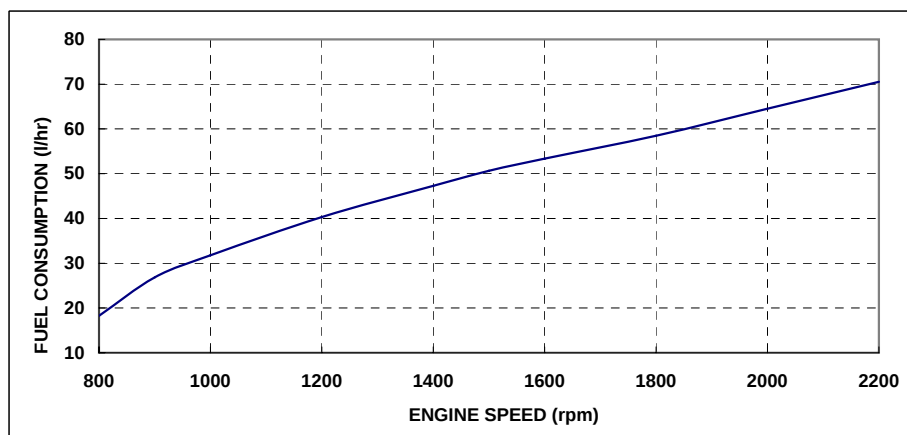
Performance curve



Torque Output	
rpm	N.m
800	852
900	1150
1000	1255
1200	1339
1400	1350
1500	1340
1600	1305
1800	1230
2000	1160
2200	1085



Power Output	
rpm	kW
800	71
900	108
1000	131
1200	168
1400	198
1500	210
1600	219
1800	232
2000	243
2200	253



Fuel Consumption	
rpm	l/hr
800	18
900	27
1000	32
1200	40
1400	47
1500	51
1600	53
1800	58
2000	65
2200	71

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

Engine Model.....	6LTAA8.9-M315
Rating Type	Continuous
Rated Engine Power.....	-kW [bhp] 230kW (315 BHP)
Rated Engine Speed.....	-rpm 2134
Max Power.....	-kW 253
Max Power Speed.....	-rpm 2200
Peak Engine Torque @ 1400 rpm	-N•m 1350
Idle Speed Setting.....	-rpm 600-800
High Idle Speed	-rpm 2430
Compression Ratio	16.6:1
Piston Speed*	-m/sec 10.3
Firing Order.....	1-5-3-6-2-4
Weight (Dry) Engine only - Average.....	-kg 650
Center of Gravity from Front Face of Block.....	-mm 427
Center of Gravity above Crankshaft Centerline.....	-mm 163

ENGINE MOUNTING

Maximum (Static) Bending Moment at Front Support Mounting Surface.....	-N•m 495
Maximum (Static) Bending Moment at Rear Face of Block.....	-N•m 1356
Installation/Operating Angles - Engine Installation Angles	
-In-Line drive: Installation: Static Installed Engine Pitch Angle	
-Engine Front Up From Horizontal	Min. 0°
-Engine Front Up From Horizontal.....	Max. 12°
-Vee Drive: Installation: Static Installed Engine Pitch	
-Engine Front Up From Horizontal	Min. 2°
-Engine Front Up From Horizontal	Max. 12°

EXHAUST SYSTEM*

Maximum Back Pressure.....	-kPa 10.1
Exhaust Gas Flow.....	-litre/sec TBD
Exhaust Gas Temperature Turbine Out.....	-°C 480
Exhaust Pipe Size Normally Acceptable.....	-mm 100
Maximum Static Supported Weight at the Turbocharger Outlet Flange.....	-N•m 14

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 Air Flow*.....	-litre/sec TBD
Heat Rejection to Ambient	-kW TBD
Recommended intake piping size (inner diameter).....	-mm 125

CHARGE AIR COOLING SYSTE

Maximum allowable pressure drop across charge air cooler and OEM CAC	
piping(IMPD):.....	-kPa 14
Maximum Intake Manifold Temperature Differential (Ambient to IMT) (IMTD) -°C	35
Intake manifold temperature for Fan-ON.....	-°C 60

FUEL SYSTEM

Maximum Fuel Flow on the Supply Side of the Fuel Pump.....	-litre/hr 300
Maximum fuel supply restriction at fuel pump inlet	
— with clean fuel filter element(s) at maximum fuel flow.....	-kPa 13.6
— with dirty fuel filter element(s) at maximum fuel flow	-kPa 27.1
Maximum fuel drain restriction (total head)	
— before (or without) check valve.....	-kPa 69
Maximum fuel inlet temperature.....	-°C 60

COOLING SYSTEM*

Coolant capacity - engine only.....	-litre	11.1
Minimum water pump inlet pressure with non-deaerating or partially deaerating cooling system.....	-kPa	TBD
Maximum static head of coolant above crankshaft centerline.....	-m	TBD
Standard (modulating) Thermostat Range.....	-°C	82-93
Max. Allowable Block Coolant System Pressure	-kPa	TBD
Minimum pressure cap rating at sea level.....	-kPa	50
Maximum coolant operating temperature at engine outlet (max. top tank temp):.....	-°C	100
Minimum operating block coolant temperature.....	-°C	70
Minimum coolant expansion space (% of system capacity).....	- %	6
Heat Rejection to Coolant.....	-kW	TBD
Maximum recommended external coolant flow restriction in engine circuit:.....	-kPa	34
Maximum deaeration time.....	-min.	25
Minimum drawdown (% total cooling system capacity).....	- %	11
Full ON Fan engine coolant outlet temperature.....	-°C	93.3

LUBRICATION SYSTEM

Normal Operating Oil Pressure Range		
— minimum low idle.....	-kPa	69
—maximum rated speed.....	-kPa	426
Maximum Lube Oil Flow for Engine Accessories.....	-litre/min.	7.6
Maximum Sump Oil Temperature.....	-°C	138
Minimum Required Lube System Capacity - Sump plus Filters.....	-litre	27.6
By-pass Filtration Required.....	-Yes/No	Yes
Angularity of Standard Oil Pan: (Values stated are for intermittent operation only):		
— Front Down.....	- °	30
— Front Up.....	- °	30
— Side to Side.....	- °	30

CRANKING SYSTEM

Minimum Battery Capacity - Cold Soak at 0°F (–18°C) or Above	12V	24V
— Engine Only - Cold Cranking Amperes.....	-CCA	1500 750
— Engine Only - Reserve Capacity.....	-min.	360 180
Maximum Starting Circuit Voltage Drop.....	-Volts	TBD
Minimum Ambient Temperature for Unaided Cold Start.....	-°C(°F)	-12 (10)
Minimum Cranking Speed Required for Unaided Cold Start.....	-rpm	150
Maximum starting circuit resistance.....	-Ohm	0.00075 0.002

EMISSIONS DATA

NO _x (Oxides of Nitrogen).....	-g/kW.h	TBD
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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.