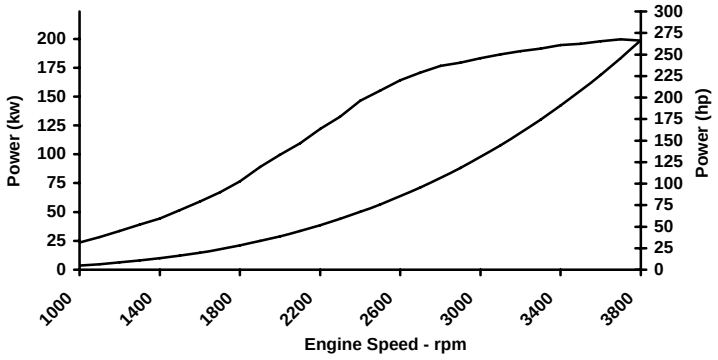
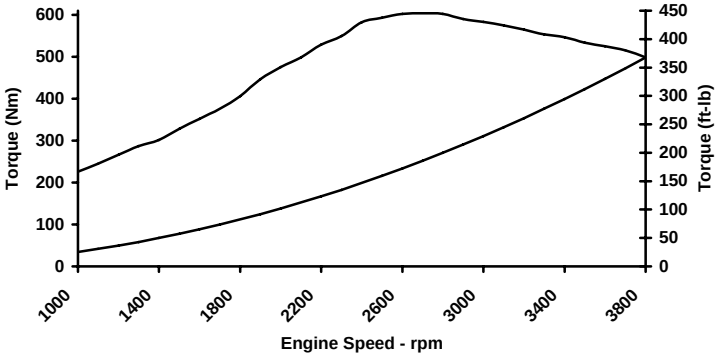
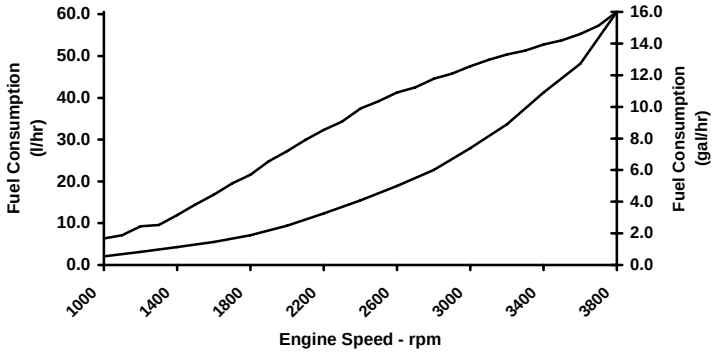
CUMMINS MERCRUISER DIESEL Charleston, SC 29405 Marine Performance Curves	Basic Engine Model **MR706LH**	Curve Number: **BC9151, BC9154**	
	Engine Configuration **D913003MX03**	CPL Code:	Date: **12-Aug-08**

Displacement:	**4.2 liter**	**[254 in³]**	kW [bhp, mhp] @ rpm	
Bore:	**94 mm**	**[3.70 in]**	Advertised Power:	**199 [266, 270] @ 3800**
Stroke:	**100 mm**	**[3.94 in]**		
Fuel System:	**Bosch Common Rail (CRS 2.0)**		Aspiration:	**Turbocharged/Sea Water Aftercooled**
Cylinders:	**6**		Rating Type:	**High Output**

CERTIFIED: This marine diesel engine is certified to the model year requirements of EPA Marine Tier 2 per 40 CFR 94 and conforms with the NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13 as applicable.







RATED POWER OUTPUT CURVE

rpm	kw	bhp
3800	199	266
3600	198	265
3400	195	261
3200	189	254
3000	183	246
2800	177	237
2600	164	220
2400	147	196
1800	77	103
1600	59	79
1200	33	45
1000	24	32

FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
3800	499	368
3600	525	387
3400	547	403
3200	565	417
3000	583	430
2800	603	444
2400	583	430
1800	406	299
1600	352	260
1200	266	196
1000	226	167

FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
3800	60.6	16.0
3600	48.1	12.7
3400	41.3	10.9
3200	33.7	8.9
3000	28.0	7.4
2800	22.8	6.0
2400	15.5	4.1
1800	7.1	1.9
1600	5.5	1.5
1200	3.1	0.8
1000	2.1	0.5

Rated Conditions: Ratings are based upon ISO 8665 and SAE J1228 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25deg. C [77 deg. F] and 30% relative humidity. Power is in accordance with IMCI procedure. Member NMMA.

Rated Curves (upper) represents rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 3046. Propeller Curve (lower) is based on a typical fixed propeller demand curve using a 2.7 exponent. Propeller Shaft Power is approximately 3% less than rated crankshaft power after typical reverse/reduction gear losses and may vary depending on the type of gear or propulsion system used.

Fuel Consumption is based on fuel of 35 deg. API gravity at 16 deg C [60 deg. F] having LHV of 42,780 kj/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

High Output (HO) Intended for use in variable load applications where full power is limited to one (1) hour out of every eight (8) hours of operation. Also, reduced power must be at or below 400 rpm of the maximum rated rpm. This power rating is for pleasure/non-revenue generating applications that operate 500 hours per year or less.

James D Kuhlenbeck

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No. **BC9151, BC9154**
DS :
CPL :
DATE: **12-Aug-08**

General Engine Data

Engine Model		MR706LH
Rating Type		High Output
Rated Engine Power	kW [hp]	199 [266]
Rated Engine Speed	rpm	3800
Rated Power Production Tolerance	±%	5
Rated Engine Torque	N·m [lb·ft]	499 [368]
Peak Engine Torque @ 2700 rpm	N·m [lb·ft]	603 [445]
Brake Mean Effective Pressure	kPa [psi]	1506 [218]
Indicated Mean Effective Pressure	kPa [psi]	1506 [218]
Minimum Idle Speed Setting	rpm	600
Normal Idle Speed Variation	rpm	25
High Idle Speed Range Minimum	rpm	3880
Maximum	rpm	3920
Maximum Allowable Engine Speed	rpm	3900
Maximum Torque Capacity from Front of Crank[2]	N·m [lb·ft]	0 [0]
Compression Ratio		17.5:1
Piston Speed	m/sec [ft/min]	12.7 [2493]
Firing Order		1-5-3-6-2-4
Weight (Dry) - Engine With Heat Exchanger System - Average	kg [lb]	460 [1014]

Fuel System[1]

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	l/hr [gal/hr]	39.3 [10]
Fuel Consumption at Rated Speed	l/hr [gal/hr]	60.6 [16]
Maximum Allowable Fuel Supply to Pump Temperature	°C [°F]	60.0 [140]
Approximate Fuel Return to Tank Temperature With Cooler	°C [°F]	41.1 [106]

Air System[1]

Intake Manifold Pressure	kPa [in Hg]	191 [57]
Intake Air Flow	l/sec [cfm]	295 [626]

TBD= To Be Determined **N/A = Not Applicable** **N.A. = Not Available**

1 **All Data at Rated Conditions.**
2 **Consult Installation Direction Booklet for Limitations.**
3 **Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.**
4 **Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.**
5 **May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.**

CUMMINS ENGINE COMPANY, INC

COLUMBUS, INDIANA

Propulsion Marine Engine Performance Data

Curve No.	**BC9151, BC9154**
DS :	
CPL :	
DATE:	**12-Aug-08**

Exhaust System[1]	
Exhaust Gas Temperature (Turbine Out) ….°C [°F]	480 [896]
Exhaust Gas Temperature (Manifold) ….°C [°F]	654 [1209]
Emissions (ISO 8178 Cycle E5 - for Traditional Propulsion Applications)	
NOx (Oxides of Nitrogen) ….g/kw·hr [g/hp·hr]	4.78 [3.56]
HC (Hydrocarbons) ….g/kw·hr [g/hp·hr]	0.28 [0.21]
CO (Carbon Monoxide) ….g/kw·hr [g/hp·hr]	1.24 [0.92]
PM (Particulate Matter) ….g/kw·hr [g/hp·hr]	0.28 [0.21]
Cooling System[1]	
Sea Water Pump Specifications ….MAB 0.08.17-07/16/2001	
Pressure Cap Rating (With Heat Exchanger Option) ….kPa [psi]	103 [15]
Engines without Low Temperature Aftercooling (LTA)	
Sea Water Aftercooled Engine (SWAC)	
Standard Thermostat Operating Range (Start to Open) ….°C [°F]	80 [176]
Standard Thermostat Operating Range (Full Open) ….°C [°F]	95 [202]

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