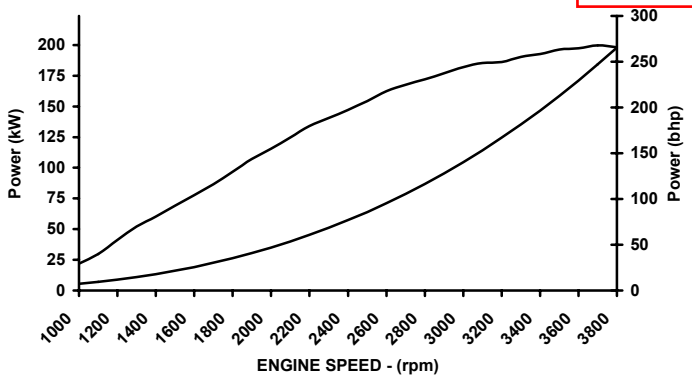
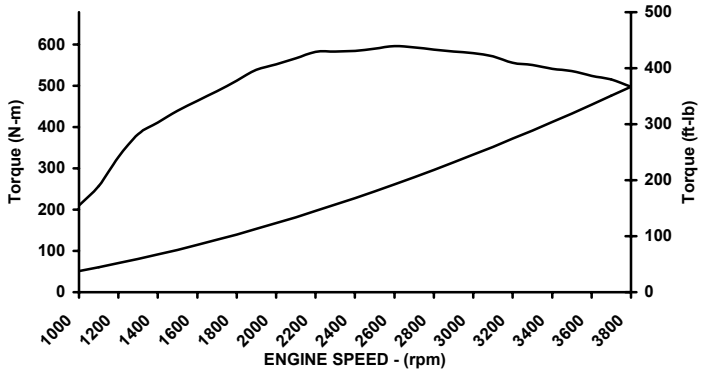
CUMMINS MERCRUISER DIESEL Charleston, SC 29405 Marine Performance Curves	Basic Engine Model: 4.2L EI 270	Curve Number: BC 9120	
	Engine Configuration: D913002MX03	Inboard	Date: 15-Oct-04

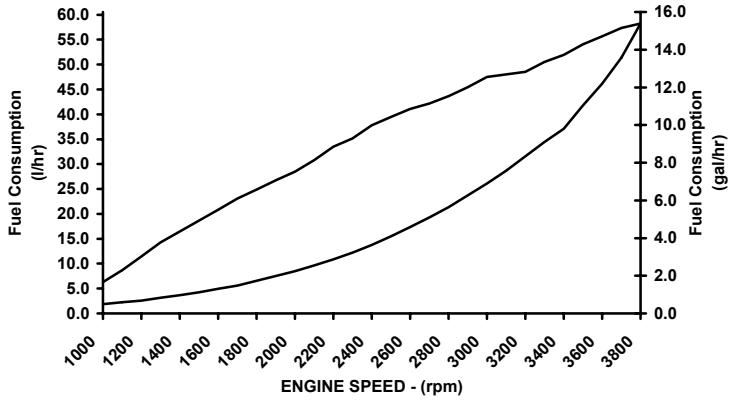
Displacement:	4.2 liter	[254 in^3]		kW [bhp, mhp] @ rpm
Bore:	94 mm	[3.7 in]	Advertised Power:	198 [266, 270] @ 3800
Stroke:	100 mm	[3.94 in]		
Fuel System:	Bosch VP37		Aspiration:	Turbocharged / Sea Water Aftercooled
Cylinders:	6		Rating Type:	High Output

CERTIFIED: This marine diesel engine conforms with the NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13 as applicable.

Preliminary







RATED POWER OUTPUT CURVE

rpm	kW	bhp
3800	198	266
3600	197	265
3400	193	258
3200	186	250
3000	182	244
2800	172	231
2600	162	218
2400	147	197
2200	134	180
2000	116	155
1800	97	130
1500	69	93
1000	22	30

FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
3800	498	367
3600	524	386
3400	541	399
3200	555	410
3000	579	427
2800	587	433
2600	596	440
2400	584	431
2200	582	429
2000	552	407
1800	512	378
1500	440	324
1000	210	155

FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
3800	58.2	15.4
3600	46.2	12.2
3400	37.1	9.8
3200	31.6	8.3
3000	26.1	6.9
2800	21.3	5.6
2600	17.3	4.6
2400	13.8	3.6
2200	10.9	2.9
2000	8.5	2.2
1800	6.5	1.7
1500	4.3	1.1
1000	1.8	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 25 deg. 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. F0 having LHV of 42,780 kj/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

High Output Rating: This Rating is 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 operations must be at or below 200 RPM of the maximum rated RPM. This rating is for pleasure/non-revenue generating applications that operate 300 hours per year.

James D Kuhlenbeck

CHIEF ENGINEER

Marine Engine Performance Data

Preliminary

Curve No.: BC9120

DATE: 15Oct04

General Engine Data

Engine Model		4.2L EI 270
Rating Type		High Output
Rated Engine Power	kW [bhp]	198 [266]
Rated Engine Speed	rpm	3800
Rated HP Production Tolerance	±%	5
Rated Engine Torque	N•m [ft•lb]	498 [367]
Peak Engine Torque @ 2600 rpm	N•m [ft•lb]	596 [440]
Brake Mean Effective Pressure	kPa [psi]	1502 [218]
Indicated Mean Effective Pressure	kPa [psi]	N/A
Minimum Idle Speed Setting	rpm	600
Normal Idle Speed Variation	±rpm	50
High Idle Speed Range Minimum	rpm	4220
Maximum	rpm	4280
Maximum Allowable Engine Speed	rpm	4280
Maximum Torque Capacity from Front of Crank[2]	N•m [ft•lb]	0
Compression Ratio		17:1
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 [1015]

Fuel System[1]

Fuel Consumption @ Rated Speed	l/hr [gal/hr]	58.2 [15.4]
Approximate Fuel Flow to Pump	l/hr [gal/hr]	N.A.
Maximum Allowable Fuel Supply to Pump Temperature	°C [°F]	60 [140]
Approximate Fuel Flow Return to Tank	l/hr [gal/hr]	N.A.
Approximate Fuel Return to Tank Temperature	°C [°F]	70 [158]
Maximum Heat Rejection to Drain Fuel[5]	kW [Btu/min]	2 [98]
Fuel Transfer Pump Pressure Range	kPa [psi]	N.A.

Air System[1]

Intake Manifold Pressure	kPa [in Hg]	190 [56]
Intake Air Flow	l/sec [cfm]	266 [564]
Heat Rejection to Ambient	kW [Btu/min]	30 [1707]
Maximum Air Cleaner Inlet Temperature Rise Over Ambient	°C [°F]	17 [30]

Exhaust System[1]

Exhaust Gas Flow	l/sec [cfm]	557 [1181]
Exhaust Gas Temperature Turbine Out	°C [°F]	530 [984]
Manifold	°C [°F]	N.A.

Cooling System[1]

Sea Water Pump Specifications Restriction	kPa [in.Hg]	17 [5]
Flow	l/min [gal/min]	114 [30]
Pressure Cap Rating (With Heat Exchanger Option)	kPa [psi]	103 [15]
Coolant Flow to Engine Heat Exchanger/Keel Cooler	l/min [gal/min]	300 [79]
Standard Thermostat Operating Range Start to Open	°C [°F]	80 [176]
Full Open	°C [°F]	95 [202]
Heat Rejection to Engine Coolant[3]	kW [Btu/min]	188 [10703]

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

[1]All Data at Rated Conditions
[2]Consult Installation Direction Booklet for Limitations
[3]Heat rejection 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