



CUMMINS MERCURISER DIESEL
Charleston, SC 29405
Marine Performance Curves

Basic Engine Model:

4.2L MI 200

Engine Configuration:

D913002MX03

Curve Number:

BC 9124

Inboard

Date:

15-Oct-04

Displacement: **4.2 liter** [254 in³]
 Bore: **94 mm** [3.7 in]
 Stroke: **100 mm** [3.94 in]
 Fuel System: **Bosch VP37**
 Cylinders: **6**

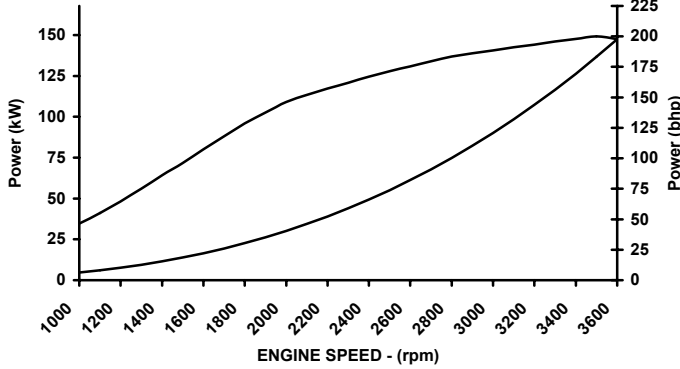
Advertised Power: **147 [198, 200] @ 3600**
 kW [bhp, mhp] @ rpm

Aspiration: **Turbocharged / Sea Water Aftercooled**
 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.

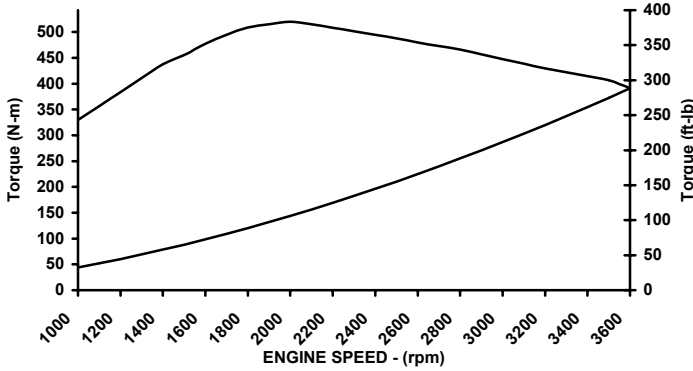
Preliminary

RATED POWER OUTPUT CURVE



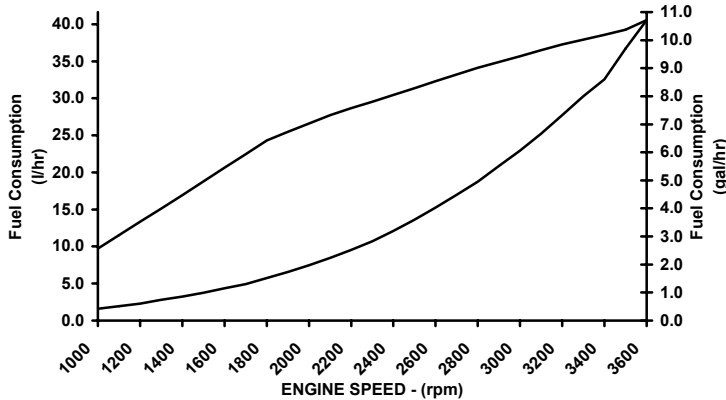
rpm	kW	bhp
3600	147	198
3400	148	198
3200	144	193
3000	141	188
2800	137	183
2600	131	175
2400	124	167
2200	117	157
2000	109	146
1800	96	129
1500	72	96
1200	48	65
1000	35	46

FULL LOAD TORQUE CURVE



rpm	N-m	ft-lb
3600	391	288
3400	415	306
3200	430	317
3000	447	330
2800	466	344
2600	480	354
2400	495	365
2200	508	375
2000	520	384
1800	477	375
1500	456	336
1200	384	283
1000	330	243

FUEL CONSUMPTION - PROP CURVE



rpm	l/hr	gal/hr
3600	40.6	10.7
3400	32.6	8.6
3200	27.7	7.3
3000	22.9	6.1
2800	18.7	5.0
2600	15.2	4.0
2400	12.1	3.2
2200	9.5	2.5
2000	7.5	2.0
1800	5.7	1.5
1500	3.7	1.0
1200	2.3	0.6
1000	1.6	0.4

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. 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 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. Kahlisch

CHIEF ENGINEER

Marine Engine Performance Data

Curve No.: BC9124

Preliminary

DATE: 15Oct04

General Engine Data

Engine Model.....		4.2L MI 200
Rating Type		High Output
Rated Engine Power.....	kW [bhp]	147 [198]
Rated Engine Speed.....	rpm	3600
Rated HP Production Tolerance	±%	5
Rated Engine Torque.....	N•m [ft•lb]	391 [288]
Peak Engine Torque @ 2000 rpm	N•m [ft•lb]	520 [384]
Brake Mean Effective Pressure	kPa [psi]	1180 [171]
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	4220
	Maximum	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 [2362]
Firing Order.....		1-5-3-6-2-4
Weight (Dry) Engine With Heat Exchanger System - Average.....	kg [lb]	460 [1015]

Fuel System¹

Fuel Consumption @ Rated Speed.....	l/hr [gal/hr]	40.6 [10.7]
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]	N.A.
Fuel Transfer Pump Pressure Range.....	kPa [psi]	N.A.

Air System¹

Intake Manifold Pressure	kPa [in Hg]	140 [41]
Intake Air Flow.....	l/sec [cfm]	225 [477]
Heat Rejection to Ambient	kW [Btu/min]	14 [817]
Maximum Air Cleaner Inlet Temperature Rise Over Ambient.....	°C [°F]	17 [30]

Exhaust System¹

Exhaust Gas Flow.....	l/sec [cfm]	380 [806]
Exhaust Gas Temperature	Turbine Out.....	°C [°F]
	Manifold	°C [°F]
		N.A.

Cooling System¹

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]	133 [7571]

TBD = To Be Decided

N/A = Not Applicable

N.A. = Not Available

¹All Data at Rated Conditions

²Consult Installation Direction Booklet for Limitations

³Heat 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.

⁴Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

⁵May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.

CUMMINS ENGINE COMPANY, INC.
COLUMBUS, INDIANA

All Data is Subject to Change Without Notice - Consult the following Cummins intranet site for most recent data:

<http://www.cummins.com>