



CUMMINS MERCURISER DIESEL
 Charleston, SC 29405
Marine Performance Curves

Basic Engine Model
QSD4.2-350 HO

Curve Number:
BC9153, BC9156

Engine Configuration
D913003MX03

CPL Code:

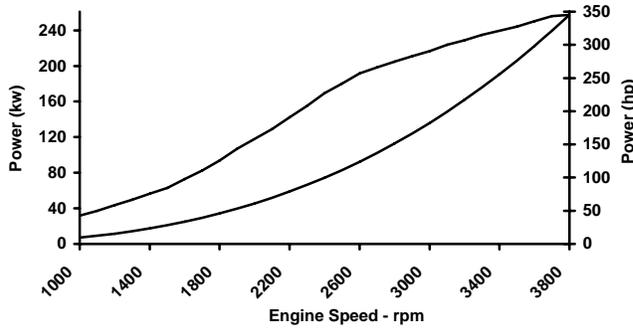
Date:
9-Jul-09

Displacement: **4.2 liter 254 in³**
 Bore: **94 mm 3.70 in**
 Stroke: **100 mm 3.94 in**
 Fuel System: **Bosch Common Rail (CRS 2.0)**
 Cylinders: **6**

kW [bhp, mhp] @ rpm
 Advertised Power: **257 [345,350] @ 3800**
 Aspiration: **Turbocharged/Sea Water Aftercooled**
 Rating Type: **High Output**

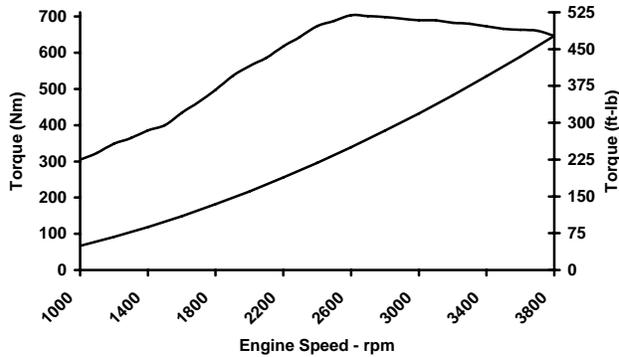
CERTIFIED: This marine diesel engine is certified to the model year requirements of EPA Marine Tier 2 per 40 CFR 94 and conforms with the NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13 as applicable.

RATED POWER OUTPUT CURVE



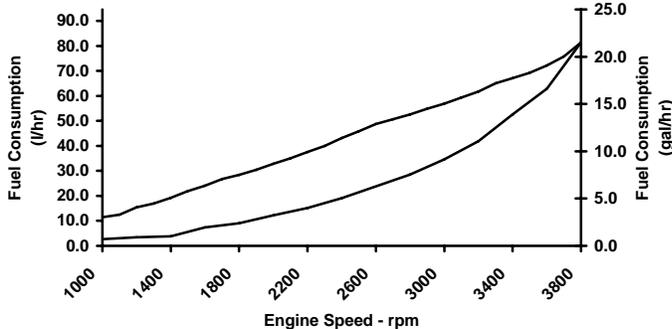
rpm	kw	bhp
3800	257	345
3600	250	336
3400	240	321
3200	229	307
3000	217	291
2800	205	275
2600	192	257
2400	169	227
2000	118	158
1600	73	98
1400	57	76
1000	32	43

FULL LOAD TORQUE CURVE



rpm	N-m	ft-lb
3800	647	477
3600	664	490
3400	673	496
3200	683	504
3000	690	509
2800	699	515
2600	704	519
2400	674	497
2000	563	415
1600	434	320
1400	386	285
1000	305	225

FUEL CONSUMPTION - PROP CURVE



rpm	l/hr	gal/hr
3800	81.4	21.5
3600	62.9	16.6
3400	52.6	13.9
3200	41.9	11.1
3000	34.7	9.2
2800	28.6	7.5
2600	23.8	6.3
2400	19.1	5.1
2000	12.2	3.2
1600	7.4	1.9
1400	3.8	1.0
1000	2.7	0.7

Rated Conditions: Ratings are based upon ISO 15550 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 15550. 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.

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No.	BC9153, BC9156
DS :	D91-MX-1
CPL :	
DATE:	9-Jul-09

General Engine Data

Engine Model	QSD4.2-350 HO
Rating Type	High Output
Rated Engine Power	257 [345]
Rated Engine Speed	3800
Rated Power Production Tolerance	±% 5
Rated Engine Torque	647 [477]
Peak Engine Torque @ 2600 rpm	704 [519]
Brake Mean Effective Pressure	1952 [283]
Indicated Mean Effective Pressure	1952 [283]
Minimum Idle Speed Setting	600
Normal Idle Speed Variation	25
High Idle Speed Range Minimum	3880
Maximum	3920
Maximum Allowable Engine Speed	3900
Compression Ratio	17.5:1
Piston Speed	12.7 [2493]
Firing Order	1-5-3-6-2-4
Weight (Dry) - Engine With Heat Exchanger System - Average	460 [1014]

Fuel System¹

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	52.7 [13.9]
Fuel Consumption at Rated Speed	81.4 [21.5]
Maximum Allowable Fuel Supply to Pump Temperature	60.0 [140]
Approximate Fuel Return to Tank Temperature With Cooler	41.1 [106]

Air System¹

Intake Manifold Pressure	227 [67]
Intake Air Flow	326 [690]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

- ¹ Unless otherwise specified, all data is at rated power conditions and can vary ± 5%.
- ² No rear loads can be applied when the FPTO is fully loaded. Max PTO torque is contingent on torsional analysis results for the specific drive system. 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

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<http://marine.cummins.com>

Propulsion Marine Engine Performance Data

Curve No. **BC9153, BC9156**
 DS : **D91-MX-1**
 CPL :
 DATE: **9-Jul-09**

Exhaust System¹

Exhaust Gas Flow	l/sec [cfm]	779 [1651]
Exhaust Gas Temperature (Turbine Out)	°C [°F]	583 [1081]
Exhaust Gas Temperature (Manifold)	°C [°F]	668 [1234]

Emissions (ISO 8178 Cycle E5 - for Traditional Propulsion Applications)

NOx (Oxides of Nitrogen)	g/kw-hr [g/hp-hr]	4.16 [3.10]
HC (Hydrocarbons)	g/kw-hr [g/hp-hr]	0.19 [0.14]
CO (Carbon Monoxide)	g/kw-hr [g/hp-hr]	1.58 [1.18]
PM (Particulate Matter)	g/kw-hr [g/hp-hr]	0.37 [0.28]

Cooling System¹

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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