



**CUMMINS MERCUISER DIESEL**  
**Charleston, SC 29405**  
**Marine Performance Curves**

Basic Engine Model  
**QSB5.9-440 HO**

Curve Number:  
**M-92284**

Engine Configuration  
**D403075MX03**

CPL Code:  
**1860**

Date:  
**12-Aug-08**

Displacement: **5.9 liter [359 in<sup>3</sup>]**  
 Bore: **102 mm [4.02 in]**  
 Stroke: **120 mm [4.72 in]**  
 Fuel System: **HPCR**  
 Cylinders: **6**

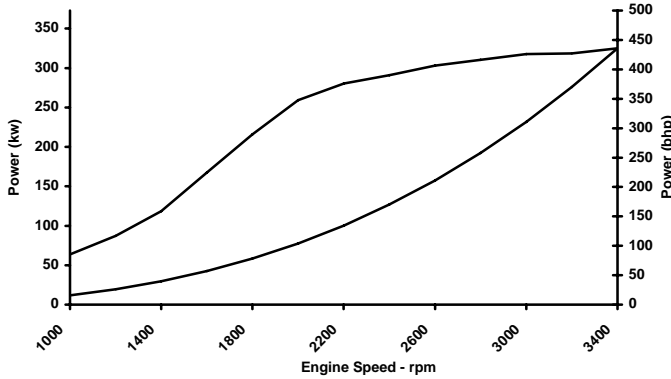
kW [bhp, mhp] @ rpm  
 Advertised Power: **324 [434, 440] @ 3400**

Aspiration: **Turbocharged / Sea Water Aftercooled**  
 Rating Type: **High Output**

CERTIFIED: This marine diesel engine complies with or is certified to the:

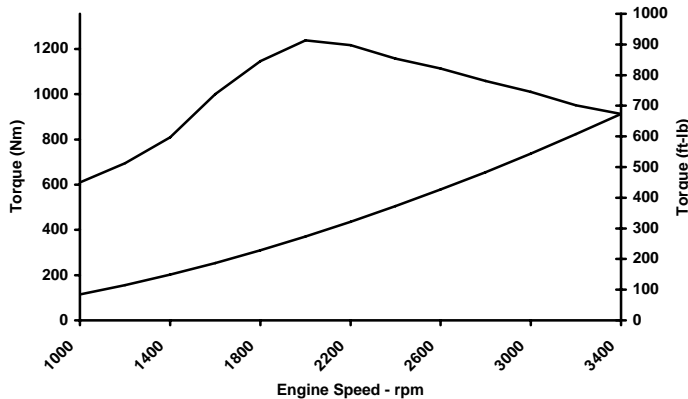
IMO - NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13  
 EPA Tier 2 - Model year requirements of the EPA marine regulation (40CFR94)

**RATED POWER OUTPUT CURVE**



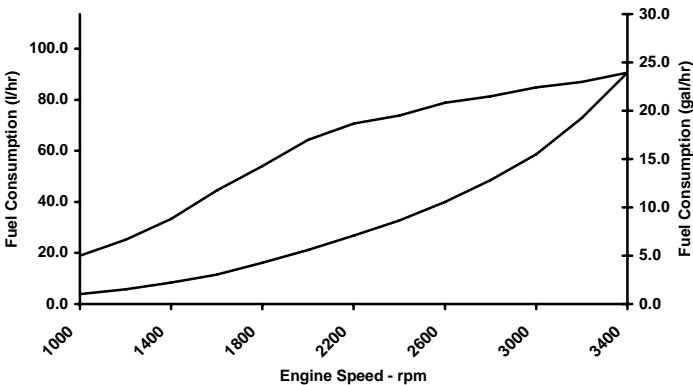
rpm	kw	bhp
3400	325	436
3200	319	427
3000	318	426
2800	310	416
2600	303	407
2400	291	390
2200	280	376
2000	259	348
1800	216	290
1600	168	225
1400	119	159
1200	87	117
1000	64	86

**FULL LOAD TORQUE CURVE**



rpm	N-m	ft-lb
3400	912	673
3200	951	701
3000	1011	746
2800	1058	780
2600	1114	821
2400	1157	854
2200	1217	898
2000	1238	913
1800	1146	845
1600	1001	738
1400	809	597
1200	695	513
1000	610	450

**FUEL CONSUMPTION - PROP CURVE**



rpm	l/hr	gal/hr
3400	90.6	23.9
3200	72.8	19.2
3000	58.7	15.5
2800	48.6	12.8
2600	40.0	10.6
2400	32.8	8.7
2200	26.9	7.1
2000	21.1	5.6
1800	16.2	4.3
1600	11.6	3.1
1400	8.4	2.2
1200	5.7	1.5
1000	3.8	1.0

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 300 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. Kuhlensch*

CHIEF ENGINEER



# Propulsion Marine Engine Performance Data

**Curve No.** M-92284  
**DS :** 4960  
**CPL :** 1860  
**DATE:** 12-Aug-08

## Exhaust System<sup>1</sup>

Exhaust Gas Flow .....	l/sec [cfm]	1026 [2174]
Exhaust Gas Temperature (Turbine Out) .....	°C [°F]	474 [884.9]
Exhaust Gas Temperature (Manifold) .....	°C [°F]	676 [1247.8]

## Emissions (in accordance with ISO 8178 Cycle E5)

NOx (Oxides of Nitrogen) .....	g/kw-hr [g/hp-hr]	5.11 [3.813]
HC (Hydrocarbons) .....	g/kw-hr [g/hp-hr]	0.29 [0.215]
CO (Carbon Monoxide) .....	g/kw-hr [g/hp-hr]	1.26 [0.937]
PM (Particulate Matter) .....	g/kw-hr [g/hp-hr]	0.11 [0.081]

## Cooling System<sup>1</sup>

### Sea Water After Cooled Engine

Sea Water Pump Specifications .....	MAB 0.08.17-07/16/2001	
Pressure Cap Rating.....	kPa [psi]	103 [15]
Thermostat Operating Range (Start to Open).....	°C [°F]	74 [165]
Thermostat Operating Range(Full Open).....	°C [°F]	85 [185]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

<sup>1</sup> All Data at Rated Conditions.

<sup>2</sup> Consult Installation Direction Booklet for Limitations.

<sup>3</sup> 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.

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

<sup>5</sup> May 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://marine.cummins.com>